ORIGINAL

COMMONWEALTH OF PENNSYLVANIA

PUBLIC UTILITY COMMISSION

In re:	Investigation upon the Commission's own motion into the matters pertaining to the proper service, accommodation, convenience and safety of the traveling public using the rail-highway crossing carrying 59th Street over and above the grade of the tracks of National Railroad Passenger Corporation in the city of Philadelphia, to determine the condition, disposition and responsibility for maintenance of the existing crossing structure.	Docket No. I-830373
	Further Hearing	

DOCUMENT FOLDER

Pages 46 through 141

Room 1306
State Office Building
Broad and Spring Garden Streets
Philadelphia, Pennsylvania

Tuesday, June 18, 1985

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SECRETARY'S OFFICE
Public Utility Commission

Met, pursuant to notice, at 10:10 a.m.

BEFORE:

JOSEPH J. KLOVEKORN, Administrative Law Judge

DOCKETED
JUN 28 1985

APPEARANCES:

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P R O C E E D I N G S

ADMINISTRATIVE LAW JUDGE JOSEPH J. KLOVEKORN: I call to order this hearing in the case of I-830373, investigation of the rail-highway crossing carrying 59th Street over and above the grade of the tracks of Amtrak.

At this point, would the parties please identify themselves for the record?

MR. HERSKOVITZ: Richard Herskovitz, representing the PUC Trial Staff.

MR. DONOVAN: Daniel F. Donovan, representing Conrail.

MR. BOWERS: Roger Bowers, representing SEPTA.

MR. COHEN: Harold Cohen, representing Amtrak.

MR. CLARK: Gerald Clark, representing the City of Philadelphia.

MR. ZAHN: Herbert Zahn. I don't know what I'm doing here, but I represent PennDOT.

JUDGE KLOVEKORN: Does any party have any statement they wish to make before we begin today's hearing? If not, Mr. Clark, would you like to begin?

MR. CLARK: Yes. The City of Philadelphia has been directed to answer several questions, one of which deals with the expenses that the City of Philadelphia has incurred in compliance with the Public Utility Commission's order of 1984, in the repair of the expansion dams on 59th Street bridge, and that is where we would like to start first. I have handed the

exhibits which detail the expenses that the City has incurred to the court reporter, and I believe everybody has these exhibits.

Besides the two that have already been admitted in the hearing held in August of 1983, which were listed as Exhibit No. 2 and Exhibit No. 3, I have and would like to identify for the record the other exhibits that the City would like to have marked for this hearing.

I started with -- besides No. 2 and No. 3, which I will just briefly summarize, Exhibit No. 2 was for the work performed on March 2nd, 1983, to March 22nd, 1983, by Bridge Maintenance and 1st Highway. It involved the amount of $11,168.49.

Exhibit No. 3 was the expenses incurred by the City from July 7th, 1983 to July 29th. That amount, previously submitted, was $3911.62.

Now, what I would like to have marked as Exhibit No. 11 on behalf of the City would be the contract for work performed by the City of Philadelphia by Belbold, B-e-l-b-o-l-d, Construction Company. They did the actual work on the expansion dams. The price paid to them was $102,024.60. That would be Exhibit No. 11.

I would like to have marked as Exhibit No. 12 the expenses incurred by the Bridge Maintenance Unit of the Streets Department, City of Philadelphia, for work from May of 1984, through January of 1985. That is a total of $16,373.54.

Exhibit No. 13 would be the expenses incurred by the Bridge Maintenance Unit for April 2nd, 1984, April 3rd, 1984, and June 9th, 1984. That amount is $2,625.88.

Exhibit No. 14 would be the expenses incurred by the 1st Highway Maintenance District of the City of Philadelphia, Streets Department. That total would be $2,196.54. That's No. 14.

No. 15 would be the work performed by the Bridge Engineering Division, Streets Department, City of Philadelphia. That would be for work in October of 1983, March of 1984, April of 1984, and January of 1985, for a total of $2,332.53.

Exhibit No. 16 would be the work performed by Traffic Engineering of the Streets Department of the City of Philadelphia. That would be for the detours, placing and removal of them. The correct amount is $880.86.

The final exhibit on this part of the hearing, Exhibit No. 17, is the charges from the Water Department for their testing on this particular job. That was for $128.

The correct total amount for all of the expenses incurred by the City of Philadelphia in compliance with PUC's orders prior to April of 1984, and the two emergency orders on this particular project, is $141,642.06.

That is the amount that the City is seeking to be reimbursed for the work. I do want to make one other correction, something that was a mistake that I note by the PUC.

Back in January of 1985, I notified the Public Utility Commission, pursuant to the order, that the work of Belbold Construction Company on behalf of the City of Philadelphia was done between December 3rd, 1984, and January, 1985.

The correct starting date should have been October 26th, 1984. The mistake is due to my part. The actual contract did not finish being signed by the Finance Department and the other Departments in the City of Philadelphia until December of 1983. But because of the PUC order directing the City of Philadelphia to complete this work within six months of the April, 1984 order, and the fact that the bid had been accepted prior to December of 1984, work was actually done by Belbold starting on October 26th, 1984, and continued into January of 1985.

They began work before the final contract was signed by all of the appropriate Departments in the City of Philadelphia because they needed to get work done in the construction season and to get it done within or as close as possible to the six month time limit as set by the Public Utility Commission.

So, I would like to, for the record, correct the error that I made when I said that the actual contract work did not start until December of 1984.

May I proceed?

JUDGE KLOVEKORN: Yes, Mr. Clark.

MR. CLARK: Thank you. I would like to call as my witness on behalf of the expenses incurred by the City of Philadelphia, Rachel Williams of the City of Philadelphia.

Whereupon,

J. RACHEL WILLIAMS

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CLARK:

Q. Would you please state your name, present title and present business address?

A. Rachel Williams, Construction Engineer, Streets Department, Room 930, Municipal Services Building.

Q. Okay. And, between January of 1983, and May of 1985, what Division or Department within the City of Philadelphia did you work for and what was your title?

A. I was in the Streets Department with the Highway Division, a Bridge Maintenance Engineer.

Q. And were you, in fact, the City of Philadelphia's Bridge Maintenance Engineer responsible for the work that was performed by the City and the City contractor on the 59th Street Bridge between February of 1983, and January of 1985?

A. That's correct.

Q. And, were you responsible for whatever work was done pursuant to the emergency orders made in 1983 by the Public Utility Commission?

A. Yes.

Q. And those expenses, which were previously submitted as Exhibit No. 2 and Exhibit No. 3, of approximately $15,000; was that done by forces under your supervision?

A. Yes.

Q. And, were you also the person that was therefore responsible and on the site for the work done by Belbold Construction Company between October of 1984, and January of 1985?

A. Yes, we administered the contract.

Q. And, when did Belbold Construction Company actually begin work on the 59th Street Bridge?

A. October 26th, 1984.

Q. And, what was the contract with Belbold? What was Belbold supposed to do?

A. We contracted with them for the replacement of the expansion dams on 59th Street Bridge.

Q. Okay. And, which expansion dams were replaced or repaired?

A. The expansion dam at the south pier and the one at the north abutment.

Q. Were there expansion dams on the 59th Street structure that were not replaced?

A. Yes.

Q. And, how many were not replaced?

A. Three additional ones.

Q. And, why weren't they replaced?

A. We determined that they had not failed.

Q. And, did you have an opportunity while you were at the site, on behalf of the City of Philadelphia, while Belbold was actually doing the work to examine the expansion dams that were in fact replaced?

A. Yes.

Q. And, what was the condition of these expansion dams that were replaced?

A. The concrete in the area of the expansion dams had deteriorated. There was corrosion of the steel and the connecting rivets on the installation. The asphalt had crumbled in the area adjacent to the expansion dams.

Q. And, were the old expansion dams removed and new ones replaced?

A. That's correct.

Q. And, what part of the structure -- by "structure" I mean the 59th Street Bridge -- are the expansion dams attached to?

A. They are part of the superstructure.

Q. Okay, they're part of the superstructure. What is the other main part of the structure?

A. The substructure would be the other main division.

Q. And, how are these expansion dams attached to the

superstructure?

A. They're bolted to the floor beams and encased in concrete so that only the top angle of the expansion dams are exposed.

Q. And, while you were out at the 59th Street Bridge, you say you had an occasion to actually examine the expansion dams that were removed?

A. That's correct.

Q. And, were you able to determine or form an opinion as to what caused the problem with the two expansion dams that were removed that caused them to fail?

A. Yes.

Q. And, what was that?

A. Moisture got into the area adjacent to the expansion dams because the bituminous surface and the concrete were very poor and salt materials also with that moisture, corrosion of the steel and wear, too, by the traffic moving across the bridge.

Q. Okay. These parts of the expansion dams that were removed and that became corroded, were they parts other than what were visible on the surface, the bituminous wearing surface?

A. Could you repeat that question for me?

Q. The parts of the expansion dams that were replaced and those parts that were corroded, were they parts other than

the parts that were visible and level with the bituminous wearing surface?

A. Right. The embedded portion of the anchorage and the angles not visible below the corroded roadway surface.

Q. And, is it correct that that type of corrosion that did exist is a problem with the bridge deck?

A. That's correct.

Q. Is that what allowed the moisture or a contributing factor to allowing moisture to reach those parts of the expansion dams that did become corroded below the surface, the wearing surface?

A. Yes, because the wearing surface is gravel and concrete below that which was deteriorated, so it forms a very permeable surface through which water infiltrates and attacks the steel.

Q. When the old expanision dams were removed and before the new ones that were placed on the bridge were in fact placed there, did you have an opportunity to view and to look at the bridge deck, the concrete deck in the area of the expansion dams?

A. Yes.

Q. And, what was that condition that you observed?

A. It's really the condition of the concrete. It was not very strong material. As we saw through, across the roadway to the concrete, it was crumbled in areas.

Q. Would you say that it is in good condition, fair condition, poor condition in those areas that you saw?

A. I'd say fair, fair to poor condition.

Q. From your experience as an engineer with the Bridge Maintenance Division of the City Of Philadelphia, is it, from an engineering standpoint, feasible to repair only the bituminous wearing surface and economically or in a common sense-type way without having a repair of the bridge deck itself?

A. It is not really practical economically or very feasible if you're trying just to replace the bituminous. You are going to, in fact, expose deteriorated concrete which also has to be repaired and restored and repainted.

Q. Were there conditions on this 59th Street Bridge structure, other than the exact areas where the expansion dams were replaced by Belbold Construction Company, that you observed what you considered to be a safety hazard to the traveling public?

A. I would say potholes on the bridge deck that I observed during the course of work, they can be hazardous.

Q. Anything else?

A. Not really. First of all, we did all of our work from the top side of the bridge, so we didn't go under it. We didn't go under the bridge to observe any conditions other than what we could see from the surface.

Q. While you were on the bridge and the contractor was

working and the other city forces were working, were there any other engineers from any of the railroads or any other parties present?

A. At one point, I think for the final inspection and possibly at the preconstruction meeting a representative from Amtrak was present. As I recall, that was Mike Myhasuk.

Q. Other than the work that you did as the Bridge Maintenance Engineer for the City of Philadelphia, did you perform any other types of inspections on this bridge?

A. No.

Q. To your knowledge, as the Bridge Maintenance Engineer at the time for the City of Philadelphia, would the city have performed any work on the expansion dams on this structure had the PUC not ordered the city to do that?

MR. COHEN: I will object to that question. It is kind of speculative, I believe.

JUDGE KLOVEKORN: I'll sustain the objection.

THE WITNESS: We would not have.

BY MR. CLARK:

Q. Now, have you had an opportunity to review the exhibits which I have marked for identification as 11 through 17?

A. Yes.

Q. Okay. Are they the accurate compilation of the expenses that were incurred by the City of Philadelphia, to your

knowledge, in complying with the Public Utility Commission orders in this matter?

A. Yes. To the best of my knowledge, they are accurate.

MR. CLARK: I have nothing further for this witness.

JUDGE KLOVEKORN: Does any party have any questions of the witness?

MR. HERSKOVITZ: I do have one question, Your Honor.

CROSS-EXAMINATION

BY MR. HERSKOVITZ:

Q. You stated that three expansion dams were not replaced. How many were replaced?

A. Two.

MR. COHEN: I have a couple of questions.

CROSS-EXAMINATION

BY MR. COHEN:

Q. Do you know how many times this bridge has been repaved over any given time period?

A. No. I have no idea.

Q. And, do you know where the salt would have come from that you referred to in your testimony?

A. From the deicing operation I would imagine most of it.

Q. A city operation?

A. I would imagine it is a city operation, yes.

Q. Now, I believe either you or Mr. Clark said that Belbold began their operations in October of 1984?

A. That's correct.

Q. And finished in January of 1985?

A. That's correct.

Q. And, are all of the hours listed on page one of Exhibit No. 12 actual hours that you were either out at the bridge or traveling to or from it or something of that nature?

A. What page?

Q. Page one of Exhibit No. 12.

A. Yes, this is for me. These are the hours that I would have spent on the project from May of 1984 to January of 1985.

Q. Can you recall what there was to inspect before Belbold began its work?

A. Well, we were still under order by the PUC to contract for this work. So, there were preliminary operations or activities that we had to engage in; reviewing the contract document, following up on the bidding, the contractive activities normal to the city's competitive bidding process.

Q. Okay. Would that perhaps explain -- what time period, if you recall, would you say that would cover?

A. The contract, I think, was advertised in May. It would have been advertised in May, and bids were received probably late in June.

Q. So then during May and June, I take it, you would have been reviewing the drawings and plans and specifications before they went out?

A. Well, after the bids were taken, we generally follow-up with the Water Department, with the Procurement Department, with the Minority Business Enterprise Program to see in fact that the project was moving, because we were under order to complete the work in a timely fashion, and we were already in the construction season. We frequently followed-up on their progress, with the actual execution of the contract document.

Q. And, were you on vacation in July?

A. No. I was on vacation in August.

Q. Okay. Then what, to your recollection, can you recall what might have been happening in August and September before the work started?

A. We were receiving from the contractor his maintenance and protection of traffic scheme, his schedule of operation, his insurance documents. You know, we were reviewing these. The preconstruction meeting, I think, was held and notifying all those interested parties of the preconstruction meeting either late in August or early September.

Q. And, you keep a daily time record?

A. That's correct.

Q. I'm impressed. Thank you.

MR. COHEN: I have no further questions.

JUDGE KLOVEKORN: Are there any other questions of the witness?

MR. CLARK: I have one, if I may, just to clarify.

REDIRECT EXAMINATION

BY MR. CLARK:

Q. Part of your job as the Bridge Maintenance Engineer for this project is the administration of the project?

A. That's correct.

Q. And so some of the time, as Mr. Cohen says, isn't actually on the bridge but it is working performing in your office in preparation of the work being done?

A. Of work being done at the site, that's correct.

MR. CLARK: That's all. I would like to move for the admission of City Exhibits in this phase of our cost of Nos. 11 through 17.

JUDGE KLOVEKORN: The documents will be admitted into evidence, and the witness is excused.

(Whereupon, the documents were marked as City Exhibits Nos. 11 through 17 and were received in evidence.)

(Witness excused.)

JUDGE KLOVEKORN: Anything further?

MR. CLARK: That is the end of the City's expenses.

JUDGE KLOVEKORN: Mr. Cohen?

MR. COHEN: I'd like to call Mr. Cooper.

Whereupon,

RICHARD H. COOPER,

having been duly sworn, testified as follows:

MR. COHEN: Mr. Cooper is submitting one copy of our report to the Judge, three copies to the stenographer. I'm not sure, given the rather extensive record in this case, what the appropriate markings should be.

MR. CLARK: In my reading of the record, Amtrak's previous exhibit was just listed as No. 1. So, I think they would start with Exhibit No. 2. I have your previous exhibit listed as "Drawings." I'm reading from the transcript, page 3.

MR. COHEN: Why don't we call this Exhibit A?

JUDGE KLOVEKORN: The document will be identified as Exhibit A.

(Whereupon, the document was marked as National Railroad Passenger Corporation Exhibit A for identification.)

DIRECT EXAMINATION

BY MR. COHEN:

Q. Can you state your name and give your business address?

A. My name is Richard H. Cooper, and my business address is Room 330, 30th Street Station, Philadelphia, Pennsylvania, 19104.

Q. By whom are you employed and in what position?

A. I'm employed by the National Railroad Passenger Corporation, also known as Amtrak, as the Engineer of Public Projects for the Engineering Design Section.

Q. And, you are authorized to testify today on behalf of Amtrak?

A. Yes, I am.

Q. On May 1, 1985, the Commission notified the parties of record in this matter of the hearing today and asked each party to answer questions directed to them. Did you receive that notice, and are you ready to respond to the questions?

A. Yes.

Q. Question No. 1 directed Amtrak to submit testimony describing in detail its detailed inspection report, submitted March 12th, 1985, in compliance with the Commission's order entered May 1, 1984.

A. Amtrak performed a detailed inspection of the underside of the bridge on Tuesday, October 9th, 1984. The inspection was performed from the elevated platform of a highway rail truck. It consisted, basically, of a close visual inspection of the bridge superstructure.

The Gunite encasement was checked for soundness and the encased beams, where exposed, were checked for deterioration. The railroad did not remove entirely any encasement from around

any of the floor beams to determine actual deterioration of the beams. Measurements were made of the underside to compare them to the plans of the bridge.

The main girders, bearings, abutments, piers and other components of the bridge were cleaned where necessary and inspected to determine their condition. Photographs were taken of the components of the bridge.

Q. Did this report comply in all respects to what Amtrak was ordered to submit to the PUC by virtue of the previous order?

A. It complied to the extent that we did the inspection. We did not do an analysis of the bridge, which the Commission ordered us to do.

Q. Okay. Can you explain for the record and all the parties here why not?

A. According to the bridge plan, there is a note on the plan, and the plan was prepared by the Pennsylvania Railroad who built the bridge in 1927, I believe; the bridge was designed to carry a live load of a 40-ton truck, a 100-pound per square foot live load, and the bridge also had two trolley tracks which were designed to carry trolleys that weighed 600 pounds per linear foot. That was the load for the track.

That particular loading compares favorably with the type of loading that the bridge would be designed for today. Based on our opinion of the condition of the bridge -- which we

felt the bridge was in fair and good condition -- we felt that the bridge could carry the present day live load that would be applied to the bridge.

As a result we did not -- partly due to the manpower shortage in our office -- did not perform the detailed or numerical analysis of the bridge.

Q. After discussing this matter with the city, is there apparently some way to go forward with an analysis that would satisfy the city and also be something that would fit in with whatever parameters you are working?

MR. CLARK: Let me object to that. The issue is not whether it satisfies the city; it is whether it complies with the order. I think that is totally irrelevant. It may not satisfy the city, but that is not the issue that we're taking testimony on today.

MR. COHEN: Well, I'll change the question.

BY MR. COHEN:

Q. At this point, what kind of inspection or analysis would you recommend?

A. We would recommend an analysis that would show that the bridge is capable of sustaining the present day live load.

Q. And, how would that differ from a detailed inspection and rating?

A. That would be part of the detailed inspection and rating. That would be the rating.

Q. And, do you have sufficient information at this time or do you believe you can obtain sufficient information to calculate a rating with appropriate reliability?

A. We believe we have sufficient information and with certain good engineering assumptions could come up with a rating for the bridge.

Q. Does the Gunite encasement present any special kind of problem with regard to this structure?

A. It presents a problem as far as inspecting the bridge. To inspect the steel which is encased by the Gunite would require removal of a section of the Gunite. And, the railroad at the time of the inspection was not properly equipped to do that.

And that, again, removal of a section of Gunite would reveal, obviously, one particular steel member and from that we could assume or make some assumption about the deterioration of the other steel members.

But certainly it would not reveal perhaps the most deteriorated steel member, if there is one.

Q. All right. Let me go back to the questions earlier submitted. Amtrak was directed to submit testimony describing its recommendation, based on the findings in its report, and what portion of any work and cost thereof that it will agree to perform and bear, and what portion of the work and cost thereof that should be performed and borne by each of

the other parties.

A. It is Amtrak's opinion that the bridge is in fair to good condition and not in immediate need of any major repairs. Our opinion is based on the fact that the Gunite, while exhibiting signs of salt contamination, appears to be intact; and where removed to expose the steel, the steel showed minimum deterioration.

Amtrak will not agree to do any of the work needed to repair the bridge nor bear any of the costs thereof. It is Amtrak's opinion that the cost and the work should be performed by parties other than the railroad.

Q. Is Amtrak prepared to submit into the record a detailed itemized statement of the actual costs it incurred in furnishing material and performing work in accordance with the Commission's order of May 1, 1984?

A. Amtrak has a cost that it incurred in doing this work; however, it is not itemized, and we request an additional 15 days to prepare the itemized report and submit it to the Commission.

Q. Amtrak was directed to submit testimony as to what portion, if any, of those costs thus incurred that it will agree to bear; and what portion, if any, of the total costs of constructing the improvement that it will agree to bear; and what portion, if any, of the costs of the future maintenance that it will agree to bear; and what portion, if any, of said

construction, maintenance and cost thereof that should be performed and borne by each of the other parties hereto.

A. Amtrak does not agree to bear any portion of the costs thus expended to date or any of the costs of future maintenance of the structure.

Amtrak will not agree nor disagree at this time to participate in the cost of constructing improvement at this location but will review its position at such a time as an improvement is scheduled.

Amtrak recommends that the cost of construction and maintenance be borne by parties other than the railroad.

Q. Is there anything further you wish to testify to at this time?

A. No.

MR. COHEN: The witness is available for cross-examination.

CROSS-EXAMINATION

BY MR. CLARK:

Q. Mr. Cooper, who actually did the inspection that is the basis of this report which is dated February of 1985?

A. There were three people involved; myself, another structural engineer and a bridge inspector.

Q. And, how long did this report take -- how long did it take you doing the work to prepare this report?

A. The inspection was performed over a period of a day,

maybe a little bit more than a day, and the report was worked on periodically over a number of months.

Q. Now, if I take it from your direct testimony, Amtrak -- in your testimony you stated or you admitted that Amtrak did not perform a rating analysis?

A. That's right.

Q. Although, you were directed to -- that was one of the things you were directed to perform in the May 1st, 1984 order?

A. Right.

Q. Okay. But, you understand that you were supposed to, is that right?

A. Well, the purpose of the analysis, we presume, was to come up with a rating for the bridge.

Q. And, you didn't do that?

A. Well, we didn't do that because we felt that the bridge rated at a rating that would carry the present live loads that a bridge would be designed for today.

It's I guess in our opinion a back door analysis.

Q. Have you or the other structural engineer performed engineering analyses or rating analyses for other bridges?

A. Yes.

Q. And, are the figures that would be in a rating analysis generally included in that type of inspection?

A. I don't understand.

Q. When you have done other engineering analyses of other structures, did you include a rating analysis, you know, the figures, the computations?

A. Yes.

Q. Okay. Have you ever done one like this before where you didn't include them? Relied upon the assumptions you made by looking at whatever you looked at?

A. No, because this happens to be a situation which is a little bit different than other bridges in that the live loads of the bridge are very great, compared to other bridges that were not designed to the same criteria.

Q. You stated in direct examination that some of the reasons why you -- you, Amtrak -- did not perform a rating analysis was lack of manpower and budget?

A. Right.

Q. Did you ever notify the PUC that you were unable to do what they had directed in the order of May 1st, 1984?

A. No, we didn't.

Q. Now, if you were going to do a rating analysis of this bridge, the 59th Street Bridge, exactly what would you do? Tell me what you would do.

A. The analysis would consist of determining the various sections of the steel members and determining the capacity of each, based on an assumed loss of section.

Q. Okay. One of those determinations would be of the

main member of the bridge?

A. It would be of all of the members.

Q. Okay. So, you would do all of them?

A. Yes.

Q. And, how long would it take to do that?

A. Giving consideration to our schedule, manpower and what ever may arise as emergencies, Amtrak would want at least until October 30th.

Q. How long as an engineer would it take to do that, if you were able to start whenever you wanted to? Would it be five working days, ten working days?

A. It would take a couple of weeks.

Q. Ten working days, something like that?

A. Perhaps ten to fifteen working days.

MR. CLARK: May I have just a moment?

(Discussion off the record.)

BY MR. CLARK:

Q. In your opinion, the live loads that were noted on the drawings that you considered --

A. Yes.

Q. -- were they simultaneous live loads? Were they to be considered simultaneous?

A. I would think they could be, if you could get a trolley and a truck on there at the same time.

Q. But, you don't know whether they were to be

considered simultaneous?

A. I don't know.

Q. Now, you say that you took some photographs. Were these photographs of the bridge taken in the areas that were cleaned or were they taken of areas before they were cleaned?

A. They were taken of areas that were cleaned. They were taken before and after and of areas that weren't even touched.

Q. So that because -- correct me if I'm wrong -- you cannot at this time or is it correct that at this time you cannot give an opinion as to the condition of any of the main members because you hadn't looked at them?

A. The main members you're talking about?

Q. The main members of the bridge. You haven't done an analysis or rating of any of those?

A. Are you referring to the main girders or are you also referring to the floor beams?

Q. Break down for the both of those?

A. Well, we observed the main girders. They are observable. You can see them from the outside of the bridge. And, the bottom flange of some of the girders, the encasement is off of it, so you can see that.

The floor beams are basically what you can't see, the steel floor beams; they are fully encased.

Q. And, you also didn't, I take it, then, do any

analysis of the deck condition of the bridge?

A. No.

Q. And as an engineer -- I take it you've been an engineer for a number of years?

A. Yes.

Q. Is the bridge at 59th Street, if it's broken down into the two structures, one would be the substructure and the other would be superstructure?

A. Right.

Q. Is that correct?

A. Correct.

Q. And, as part of the superstructure, is the deck, in your opinion as an engineer, is that a part of the superstructure?

A. Yes, it is.

Q. How about the expansion dams? Would that also be part of the superstructure?

A. Yes.

Q. How about the bituminous wearing surface? Do you consider that to be part of the superstructure?

A. It is a wearing surface as such. The original concrete deck is obviously part of the superstructure. And, the pavement, the bituminous pavement over that, becomes over-layed and just adds to the dead weight of the structure.

Q. So, it could be subrogated from the deck?

A. Yes.

Q. How about the sidewalks, the curbing on the bridge?

A. That would be considered part of the bridge superstructure.

Q. And, any of the fencing or barriers along the sides of the bridge?

A. That would be considered miscellaneous to the bridge, I would think.

Q. Then, you wouldn't consider that under the definition of superstructure?

A. No, not as part of the superstructure. No.

Q. And also would part of the superstructure be the girders and the beams?

A. Correct.

Q. And then the substructure would be what, the abutments and the piers?

A. That's right.

Q. Anything else?

A. No.

Q. You've stated that in preparing to respond to the questions directed to all of the parties, Amtrak does not have a detailed breakdown of the costs which were incurred by it in complying with the order of May 1st, 1984, is that correct?

A. Right.

Q. What is the total? If it is not detailed, broken

down, what is the total?

A. The total right now is $4,016.74.

Q. And basically what areas did Amtrak do to build up or to compile expenses of a little over $4,000?

A. Those costs are basically the costs of performing the inspection, the equipment and the manpower to perform the inspection and the cost to repair the report.

Q. Basically, your time, the other engineer's time -- whatever protective services?

A. That's right.

Q. And, your in-house administrative costs in preparing this report?

A. Correct.

Q. The amount of $4,000 won't change -- you don't expect that to change, do you?

A. No.

MR. CLARK: I have nothing further. Thank you.

JUDGE KLOVEKORN: Any other questions? Mr. Bowers?

CROSS-EXAMINATION

BY MR. BOWERS:

Q. Did you personally inspect the roadway of the bridge itself?

A. Yes, I did.

Q. Did you see any trolley tracks there?

A. No.

Q. Are you familiar with the report submitted by Amtrak -- I don't know what marking this has; I received it by mail. Exhibit A? -- a detailed inspection report of February, 1985?

A. Yes.

Q. Do you know why there is an indication in the third paragraph that "two trolley tracks run in the center of the roadway?" It's on the summary sheet. I beg your pardon.

A. The plans that were prepared by the Pennsylvania Railroad include trolley tracks in that location.

Q. Yes, but you didn't visualize any?

A. I did'nt visually see them.

Q. Okay. The reason that you put that there, the reason that it was included in the report was because the plan showed that there were supposed to be trolley tracks there?

A. That's right.

Q. And, your last paragraph indicates that trolleys no longer operate on the bridge. Do you have any information indicating that trolleys ever did operate on that bridge?

A. No, I don't have any information on that.

Q. Do you know why that was put in the report by Amtrak, that trolleys no longer operate on the bridge?

A. Well, it was put on there with the presumption that the trolley tracks were actually included in the construction and that trolleys did operate at one time. Obviously, they do

not operate any more.

Q. Do you have any knowledge that they ever did?

A. No.

Q. Thank you, very much.

MR. BOWERS: No further questions.

JUDGE KLOVEKORN: Mr. Herskovitz?

CROSS-EXAMINATION

BY MR. HERSKOVITZ:

Q. You stated that the steel members are encased in Gunite and that makes it difficult to perform a true load carrying capacity analysis, is that correct? Because, you have to go through the encasement to get to each steel member? Is that one of the reasons for not performing an analysis?

A. Yes.

Q. Okay. If those members inside the encasements were deteriorated, would the encasements deteriorate first; so that you would have some indication that the steel members inside were deteriorating?

A. You would have more encasement falling off than is presently falling off. As the steel deteriorates, it rusts and corrodes and causes pressure within the encasement, and it would tend to force it off.

In the areas where the encasement is off now, the bottom flange and some of the beams, you can see this corrosion. That is exactly what is happening.

Q. So that if the members were deteriorated, the Gunite would fall off? You would recognize that?

A. Possibly, yes.

Q. Is there a chance that the members could deteriorate and the Gunite will not fall off, or is that usually the case?

A. Well, there is a chance that that could happen.

Q. I think you also stated that -- correct me if I'm wrong; I'm not too clear on this -- there is another way to determine the load carrying capacity of the structure without a detailed analysis? Did you state that?

A. No. The way we would go about doing an analysis would be to work with the original designed plans to determine the capacity of each of the members, and based on an assumed loss of section come up with a rating for the bridge.

Q. And, that has not been done?

A. That's right.

Q. And, is that what you stated would take ten to fifteen working days to perform?

A. Yes.

Q. That type of an analysis?

A. Yes.

Q. Do you know what the cost of that type of analysis would be?

A. It would be a few thousand dollars.

Q. Less than $10,000?

A. Yes, less than $10,000.

Q. Under the other method where you -- the more detailed analysis -- where you would have to examine each member, and I take it you would have to cut through the Gunite encasements to do that --

A. Yes.

Q. -- what would be the cost of performing that type of an inspection?

A. A more detailed inspection to determine the condition of the concrete and the deck and remove the Gunite around some members would cost probably in excess of $20,000 or $30,000.

Q. And, it would take much longer?

A. Yes.

Q. How long would that take?

A. I would have no idea. It certainly would take longer than the time necessary just to analysis it based on the plans.

Q. Is the bridge now capable of carrying maximum legal loads?

A. In Amtrak's opinion it is.

Q. Is it your engineering opinion that this alternate method of determining the load carrying capacity is sufficient to rely on the load capacity of this bridge if it was performed?

A. I would say yes.

Q. You stated Amtrak would not perform any work or maintenance at this location or bear the costs, is that correct?

A. Correct.

Q. What work is it that is required at this time? I'm not sure, from your inspection report, there was any recommedation other than joint, annual inspections.

A. We didn't feel there was any work required at this time.

Q. You did mention in your conclusion and recommendation on page 18 that some of the encasements are cracking. Do you feel that that should be repaired?

A. No.

Q. Wouldn't failure to repair that hasten the deterioration of the steel member inside?

A. The encasement is on the underside, and the only way anything gets to it is through the deck. Repairing it would just mean that whatever is coming through the deck will attack the new stuff.

Q. You mean the new encasements?

A. Yes.

Q. With a load carrying capacity analysis, either method -- meaning the expensive method or the inexpensive method -- would you still recommend that an annual inspection be performed?

A. I would say an annual or at least once every two years.

Q. Without either analysis, should more frequent inspections be performed?

A. I don't feel it would be necessary, no.

Q. According to some of your descriptions in here of icicles of lime and what have you, do you feel that this bridge should be cleaned and painted at this time?

A. The icicles are on the underside from the encasements. Cleaning and painting is what is normally done to steel. The steel girders of the bridge, the main steel girders are in fairly good condition except for where the concrete encasement has come off there is some corrosion. But as far as cleaning the underside of the bridge, I don't feel that is necessary.

Q. Why isn't it necessary to clean that part?

A. What you see is just the result of material coming through the -- liquid coming through the deck.

Q. It's not causing any deterioration, is that what you're saying?

A. Well, it might be causing some deterioration internally, but to clean it would be superficial. The other extreme would be to remove all of the Gunite on the bridge.

Q. What is your reasoning for making the statement that Amtrak should not pay any of the costs involved in this

case and not maintain any of the structure?

A. It is our position that Amtrak neither owns nor is responsible for maintaining the overhead highway bridges.

Q. Your tracks are below the bridge though, right?

A. That's right.

Q. Are your catenaries attached to this bridge?

A. Yes.

Q. And it is a separated structure which is much safer for both railroad and highway users, is that correct?

A. That's correct.

Q. One further question on this alternate method to determine the load carrying capacity. You say you make certain assumptions. And, I think you said it is section loss, is that correct?

A. That's correct.

Q. Could you explain what assumptions you made and how you make those assumptions?

A. The assumptions would be how much corrosion or deterioration is occurring to the steel members of the bridge, and those assumptions would be based on our observations when we did the inspection.

Q. You're talking about the steel members that are exposed? You make your assumptions based on those, right?

A. Right.

Q. Okay.

MR. HERSKOVITZ: I have no further questions. Thank you.

JUDGE KLOVEKORN: Does any other party have any questions for the witness?

MR. CLARK: May I ask a few follow-up questions?

FURTHER CROSS-EXAMINATION

BY MR. CLARK:

Q. Mr. Cooper, you just stated in response to a question by Mr. Herskovitz that Amtrak does not believe that it has any responsibility at all to maintain any highway over-passes. Isn't that what you just said?

A. That's correct.

Q. And, is that Amtrak's policy?

A. That's Amtrak's position.

Q. Do you know what the basis of that position is?

A. The basis of the position is what our legal staff has advised us on.

Q. And, you just follow -- you don't know -- there is nothing independent that you have; it's just that you're following the advice of your legal counsel?

A. Correct.

Q. Now, you stated in this February, 1985, report that you thought -- your opinion -- that joint, annual inspections be made, either annually or every two years, as you expanded it today?

A. Correct.

Q. And you have, according to this report, said that the annual inspection should be co-inspections, and you picked the City of Philadelphia as the other party to conduct the inspection?

A. Correct.

Q. Would Amtrak be willing, if in fact that was ever ordered by the Commission, would Amtrak be willing to pay whatever expenses were incurred by the city to do it annually or every two years?

A. I think Amtrak would be willing to share the cost. I don't think Amtrak would be willing to bear the costs, bear the entire cost of the inspection.

We would be willing to provide equiptment and personnel and basically bear our own expenses.

Q. For your part of the inspection you mean?

A. Yes.

Q. If you would be willing to do that -- from your testimony now -- why are you now asking or why are you going to ask for reimbursement of the expenses you incurred on attempting to fulfill the order of the Commission of May 1st, 1984?

A. I believe our position is that we would volutarily do -- voluntarily bear those costs to assure the city or to provide the city with the means to inspect the bridge. What was done now was ordered by the Commission as a result of the

city's complaint about the condition of the bridge.

Q. So, it is just prospective; you're willing to bear those costs?

A. Right.

Q. Now, also in response to a question from Mr. Herskovitz you said that you believe that the bridge currently can bear the legal load?

A. Right.

Q. It doesn't have to be posted for something that is less than what is legally permitted?

A. Right.

Q. And, the basis for your opinion is just the plans, the 1927 plans?

A. As well as our inspection, yes.

Q. But that portion of the inspection that -- well, what you did?

A. What we did, right.

Q. But then you have no -- you don't have any rating analysis to support that?

A. No. We testified that we didn't have that, and we were willing to come up with that.

Q. If ordered to do it again?

A. Right.

Q. Thank you.

MR. CLARK: I have nothing further.

JUDGE KLOVEKORN: Any redirect?

MR. COHEN: No, sir.

JUDGE KLOVEKORN: No further questions of the witness, the witness is excused. Thank you very much, sir.

(Witness excused.)

JUDGE KLOVEKORN: Let's take a five minute recess.

(Recess.)

JUDGE KLOVEKORN: Let's go back on the record. Mr. Cohen, do you want to move for the admission of your Exhibit A?

MR. COHEN: Yes. I'd like to move for the admission of the exhibit previously marked as Amtrak's Exhibit A into the record.

JUDGE KLOVEKORN: The document will be received into evidence.

(Whereupon, the document marked as National Railroad Passenger Corporation's Exhibit A was received in evidence.)

JUDGE KLOVEKORN: Mr. Clark?

MR. CLARK: Yes, thank you, Your Honor. Now the city would like to call Robert Washburn to answer the other questions that have been directed to the City of Philadelphia concerning comments on the inspection report submitted by Amtrak and Question No. 7, dealing with what portion if any of the costs the city will agree to bear and maintenance responsibilities

for the structure or portions thereof the city will agree to bear and who we think should bear the other portions.

Whereupon,

ROBERT M. WASHBURN

having been duly sworn, testified as follows:

MR. CLARK: Before we go, in response to these questions the city has, I have distributed, I believe, to all parties here, the court stenographer and to Your Honor five more exhibits which we have marked as 18, 19, 20, 21 and 22.

And, I would just like to have them marked for identification at this point because they will be referred to in the testimony, if I may.

JUDGE KLOVEKORN: The documents are so marked.

(Whereupon, the documents were marked as City's Exhibits Nos. 18 through 22 for identification.)

MR. CLARK: Thank you.

DIRECT EXAMINATION

BY MR. CLARK:

Q. Would you please state your name and your business address?

A. My name is Robert M. Washburn. My address is Room 930 Municipal Services Building, 15th and John F. Kennedy Boulevard, Philadelphia, Pennsylvania, 19102.

Q. By whom are you employed?

A. I'm employed by the City of Philadelphia, Department

of Streets.

Q. And, what subdivision of the Streets Department are you in?

A. In the Bridge Division.

Q. Is that a bridge engineer?

A. Yes.

Q. And how long have you been so employed by the City of Philadelphia?

A. I've been employed by the City of Philadelphia for the past 23 years, and my present Civil Service Classification is that of Staff Engineer.

Q. Your 23 years has always been as a bridge engineer?

A. That's correct.

Q. And are you familiar with the matter that brings us there today?

A. Yes, I am.

Q. Are you authorized to testify on behalf of the City of Philadelphia?

A. Yes, I am.

Q. Can you briefly describe for those present your educational background, work experience and professional qualifications?

A. I'm a graduate of the Drexel Institute of Technology, which is now known as Drexel University. I graduated in 1962 with a BS Degree in Civil Engineering, and I have worked with

the city's Bridge Division since that time. During the past 23 years, I've held various positions; such as design engineer, construction inspector, assistant engineer of construction, assistant to the chief bridge engineer, engineer of design and now staff engineer.

I have been a professional engineer registered in the Commonwealth for the past 19 years.

Q. Okay. Does the Bridge Division, Streets Department of the City of Philadelphia have occasion to perform engineering analyses of existing highway bridges?

A. Yes. The Bridge Division, among its other responsibilities, is in a continual process of performing engineering analyses of existing highway structures.

The structures analyzed are those maintained by the City of Philadelphia in accordance with existing agreements and other maintenance documentation.

Q. What's the purpose of performing an engineering analysis?

A. The purpose is to determine the live load capacity of the critical bridge members and of the structure itself. If warranted, posted load limit restrictions are recommended.

Engineering analyses also permit a quick determination of necessary work necessary to maintain the structures at their present capacities, and also support any recommendations concerning major rehabilitation and/or replacement of

structures.

Q. Have you had an opportunity to review the contents of what has been marked as Amtrak Exhibit A, entitled Detailed Inspection Report, dated February, 1985?

A. Yes, I have.

Q. And, are you familiar with the Commission's requirements as to the contents?

A. Yes, I am.

Q. Does the city feel that the report complies with the directive of this Commission -- of the PUC -- as recorded in their order entered May 1st, 1984?

A. No. The major elements which the Commission ordered Amtrak to include in the report are totally missing.

Q. And, what are those major elements?

A. The major element is the engineering analysis itself, which is totally missing. Amtrak states in the report that the existing structure is capable of carrying all those who presently use the bridge; however, this statement is unsupported by calculations.

The second deficiency is that Amtrak provides no recommendations for required work necessary to rehabilitate the structure in order to permit it to safely carry SH-20 loads.

Q. What is an SH-20 load?

A. An SH-20 load, which the Commission designates in their order, is a 36-ton truck, which is designated by the

American Association of State Highway and Transportation Officials; the front axle load is four ton and the remaining two axles are each sixteen tons.

Q. Have you seen any heavy vehicles using the 59th Street Bridge structure?

A. I have seen tractor trailer-type vehicles use this structure, but I don't know how heavy they were.

Q. What is the maximum legal weight in Pennsylvania for a tractor trailer of the type which you have seen using the 59th Street Bridge?

A. The maximum gross weight for a five axle tractor trailer, which I have seen, is 40 tons or 80,000 pounds, according to the PennDOT document which references Section 4943-B of the Pennsylvania Motor Vehicle Code.

Vehicles of this type are permitted to traverse the streets of the city and the Commonwealth without any special permits or supervision.

Q. Do you agree with Amtrak's statement on page 17 of the report, "The bridge can continue to safely carry all vehicles presently using the bridge?"

A. No, I don't, not on an everyday basis.

Q. Why not?

A. For two reasons, first because they have not submitted an engineering analysis which would support this statement; and second, because the city maintains a few

structures of this same type built around the same year, and the results of the analyses which were performed in-house on our structures do not support that statement.

Q. How long would you say it would take to complete an engineering analysis for the 59th Street Bridge?

A. After the results of an in-depth engineering inspection are available and using the set of drawings which Amtrak submitted as their Exhibit No. 1 at the previous hearing, I would estimate that it would take about seven to ten working days to do an engineering analysis and to have it checked.

Q. Does the City of Philadelphia have any design computations for this existing structure?

A. No, not to my knowledge. This structure was constructed by the Pennsylvania Railroad, pursuant to the ordinance, which was introduced as City Exhibit No. 4 at the previous hearing.

Q. The last paragraph on page 17 of the report states that the reason the bridge, in Amtrak's view, can continue to safely support all vehicles using the bridge is because of the fact that "trolleys no longer cross the bridge." Do you concur with this logic?

A. Assuming that the placement of live loads during the design of this structure has not changed appreciably from then until today, I do not.

Q. Why not?

A. Because the 100 pound per square foot loading condition sealed over the entire 70-foot width of the structure produces approximately three-and-one-half times the stress on the floor beams that two trolleys would produce, and two loads of H-40 trucks acting on the same floor beam would produce approximately ten times the amount of stress on the floor beam that two trolleys would produce.

Q. What conclusion do you reach from the comparison of live loads?

A. That the effect of a trolley loading case, noted on the drawings and in the report, did not go to the design of the floor beams and that their removal from use on the structure, if they were ever used, did not affect the design of the floor beam or its strength today.

Q. Why did you consider the floor beam when you compared three live load conditions, noted on the drawings in the report?

A. Because in a structure of this type, a girder floor beam structure, one of the interior floor beams is generally the critical member.

Q. Do you know if Amtrak has performed an engineering analysis?

A. I do now, but I didn't at the time that this testimony was prepared. They did not perform any, and they did not include any in their report.

Q. When and if Amtrak does perform an engineering analysis, would the city be interested in obtaining a copy?

A. Absolutely. Our office would review the engineering analysis and its conclusions and would make recommendations as to the posting of the structure if any posting is required.

Q. If the Commission would order that the structure be posted for a specific load limit, would the city post the structure as ordered?

A. Yes, we would.

Q. What does the city consider as the life expectancy of a highway overpass bridge?

A. The city considers the life expectancy of a highway overpass bridge to be, on the average, approximately 70 to 75 years. Some structures are much older. Some structures require major rehabilitation and/or replacement much sooner.

The 70 to 75 year figure is the amount of years prior to any major rehabilitation and/or replacement.

Q. With respect to the 59th Street Bridge, what does this mean?

A. It means that without the benefit of an engineering analysis, the life expectancy of the 59th Street Bridge is approximately 15 years if the structure had the useful life expectancy of 70 to 75 years when it was constructed.

The structure may be in good condition and may last well more than 15 years; however, if it is in very poor condition

the useful life is much less than 15 years. That's why an engineering analysis is so important. An analysis would reflect the actual condition of the structure and its remaining useful life before a major rehabilitation and/or replacement is required.

Q. Okay. Now, I want to show you what we have previously marked now as City's Exhibits 20, 21 and 22. What are they?

A. City Exhibits 20 and 21 are true and correct copies of ordinances dated November 23, 1905, consisting of eight pages; and July 8th, 1915, consisting of 16 pages, respectively.

MR. COHEN: May I ask for an offer of proof, Your Honor?

MR. CLARK: Yes. We would like to have these introduced. At the previous hearing, of the three ordinances that apply to this crossing, only the last one, 1926, was in fact submitted and admitted into evidence.

That ordinance is referred to as "amending previous ordinance," which we have listed as Exhibit No. 21, which is an ordinance dated July 8th, 1915.

July 8th, 1915, refers to the original ordinance which was November 23rd, 1905. The 1915 ordinance is amended to that 1905 ordinance. In order to have the complete history of this structure, as far as the city is concerned, and our position on

maintenance responsibilities, we feel that the court and the record should have a full and complete copy and history of the ordinances which were passed by the City of Philadelphia and enabled the Pennsylvania Railroad, at that time, to construct this particular bridge.

That is why we would like to at this time introduce them, to complete the record which was begun at the previous hearing.

MR. COHEN: Your Honor, I object to those on the basis that it seems to relate to an issue that has already been the subject of a prior hearing, extensive briefing and, if I remember correctly, an opinion by the court.

It seems to me that to supplement an element of the issues that were under consideration there is just too late. And to the extent that the issue is being raised again, it has already been decided in this case.

MR. CLARK: Well, may I respond?

JUDGE KLOVEKORN: Yes.

MR. CLARK: One of the questions that has been directed to us as the City of Philadelphia, again, by the Commission is what are the maintenance responsibilities in the future or from this date forward.

The City of Philadelphia is going to testify, through this witness, what our opinion is as to whose this maintenance responsibility should be. The basis of the opinion, as far as

the City of Philadelphia is concerned, and through this witness is based in part on these exhibits. Now, whether the Commission agrees that that basis that forms that part of our opinion is relevant or not or accurate, you know, that's something the Commission can decide.

However, I think that the city should be entitled to put in the record and have before the Commission all those elements which form the basis for the opinion of answering the question which has now been directed to us, the March, 1985, questions and procedures that set up this particular hearing.

And, that's why we would like to have them admitted. I think, again, it goes to the question of weight rather than admissibility.

JUDGE KLOVEKORN: I'll overrule the objection. You may proceed.

MR. CLARK: Thank you.

DIRECT EXAMINATION (Continued)

BY MR. CLARK:

Q. Go ahead, Mr. Washburn.

A. As counsel did state, the purpose for submitting the exhibits is to complete the documentation outlining the responsibility of the Pennsylvania Railroad relative to the construction and maintenance of the 59th Street Bridge and of Amtrak, the successor of the Pennsylvania Railroad and present owner and custodian of the structure.

MR. COHEN: I'll object to that, Your Honor, on the basis that the witness is not qualified and that it is a matter of legal conjecture and speculation that is appropriate for argument, if at all, and not through the testimony of an engineer.

MR. CLARK: Part of the basis, again, Your Honor, it's part of the basis on which we form the opinion as to who has the maintenance responsibility in the future.

MR. COHEN: Counsel can argue that, but I don't see that an engineer can support that conclusion.

MR. CLARK: Amtrak may not agree with it, but it is -- as the witness will testify -- it forms part of the basis of the opinion.

And, I think we're entitled to submit those elements, again, that do form the basis for our opinion. Obviously, the ordinances speak for themselves and whether they apply, of course, is a legal argument, and whether the Commission does in fact come up with the same position that the city does based on these ordinances is something that, you know, the Commission will then have to decide.

But, I don't think that that goes to the admissibility. It may go the weight, if any, that the Commission wishes to apply to these particular exhibits.

JUDGE KLOVEKORN: I'll overrule the objection.

MR. CLARK: Thank you.

BY MR. CLARK:

Q. The final part of these exhibits is Exhibit No. 22. It has been marked as Exhibit No. 22. Would you please explain Exhibit No. 22?

A. Exhibit No. 22 is a true and correct copy of an 18-page agreement between the city and the Pennsylvania Railroad Company.

This agreement covers the construction, maintenance and operation of this line of rail and of specific overgrade and undergrade structures of which the 59th Street Bridge is one.

Q. If Amtrak had formulated specific recommendations of work to be performed based upon an engineering analysis, what portion of the cost of the work would the city agree to bear?

A. None. The city cannot and will not agree to assume any costs associated with the maintenance, rehabilitation or replacement of the structure.

Q. What are the provisions or provision of the city railroad agreement, Exhibit No. 22, which support the city's position that it is unwilling to assume any costs associated with this particular structure?

A. On pages 3 and 13 of the agreement it provides for the construction and perpetual maintenance of the 59th Street Bridge by the railroad. Also contained on these pages is the

provision that the railroad is the insure that the city does not have any responsibility or liability with respect to the construction contained in the agreement.

Q. What are the other reasons that the city uses this to support its position that it cannot and will not agree to assume any costs associated with the maintenance of this structure?

A. One, because the ordinances contain the same construction and maintenance language as the agreement, including the lack of the city's future responsibilities and liability.

Two, because there is no deed or agreement between the city and any railroad company which transfers the ownership, maintenance or liability of and for the 59th Street Bridge, which would supersede the exhibits.

And, three, because it is just plain common sense that if the railroad pays to have the structure built and owns it, and still owns it, then the railroad had and still has the responsibility to maintain it at its own cost, unless there is an agreement between the parties to the contrary.

Q. Now, when the Bridge Division does an engineering analysis to determine its load capacity, what type of truck does the city use for highway overpasses?

A. The city uses an ML-70 truck, as designated in the 1970 Pennsylvania Motor Vehicle Code. I believe the ML-70 stands for maximum load 1970, referring to the Vehicle Code.

The maximum legal load at that time was 73,280 pounds.

Q. Why does the city use this type of vehicle?

A. Because of the axle loads and axle arrangement. It is very comparable to today's tri-drive or tri-axle concrete trucks and other trucks which carry heavy loads, which are prevalent in this area.

Q. Now, I'm going to hand you Exhibit No. 18, what we have marked as Exhibit No. 18, and ask you to explain this Exhibit No. 18.

A. City Exhibit No. 18 is single page drawing which represents the axle loads and axle arrangements of the ML-70 truck.

Q. And, who prepared this?

A. I did.

Q. Okay. And City Exhibit No. 19, what does that show and could you describe it?

A. City Exhibit No. 19 is a single page comparison of the three loading conditions noted in Amtrak's report and also on page 4 for the Pennsylvania Railroad Company's drawings.

The floor beam length in these illustrations is 70 feet, and the floor beam spacing is 6 feet. The figure at the bottom of the illustration is my interpretation on what an H-40 truck is, and this assumption is based on a similar HS-20 truck; the only difference being that on a HS-20 truck the last two axles or rear two axles each are two tons less in weight.

Q. What is the purpose of these two drawings?

A. The purpose of this exhibit is to clearly indicate that the presence or absence of trolley loadings on the structure had no effect on the original design of the floor beams and still has no effect on the existing structure and its capacity as implied in Amtrak's report.

Q. What steps would the city take if the structure was in need of major rehabilitation or replacement at this time or at some time in the future?

A. The city would request that the Pennsylvania Public Utility Commission order Amtrak, the present owner and custodian of the 59th Street Bridge, to perform whatever work is necessary to rehabilitate or replace the structure at its initial and final cost.

Q. Now the Public Utility Commission in its order of May, 1984, did direct the city to replace the expansion dams on the existing structure at its initial cost and expense. Were you in any way involved in this work?

A. Yes. I visited the site with other city personnel and determined that the expansion dams over the southern pier and at the north abutment would need all new expansion dams, which required replacement. The other expansion dams appeared to be in good condition.

I also prepared the sketches and the specifications for replacement of the noted expansion dams and the work was

performed by a city contract under the administration and instruction of the Bridge and Maintenance Section of the Department of Streets. This work was completed in January of 1985.

Q. What costs relating to these replacements -- the replacement of these two expansion dams -- does the city agree to bear initially and finally?

A. The city has already expended the monies for this work, as required by the Commission's order dated May 1, 1984. The city cannot and will not agree to bear these costs finally because of the reasons noted earlier.

Q. Now, what is the city requesting the Public Utility Commission to order Amtrak to do at this particular time?

A. The City of Philadelphia is requesting the Public Utility Commission to One, order Amtrak to fully comply with the Commission's order entered May 1, 1984, by A) providing an engineering analysis of the members of the structure and a determination of the safe load carrying capacity of the members; B) by providing recommendations of required work necessary to permit the structure to safely carry HS-20 loads; and C) to provide a recommendation as to the overall load carrying capacity of the structure.

Two, order Amtrak to reimburse the city the following sums of money which represent monies expended by the city on the 59th Street Bridge pursuant to the Public Utility

Commission's Docket Nos. M-830338 and I-830373. Item One, $11,168.49, submitted as City Exhibit No. 2; Item Two, $3,911.62, submitted as City Exhibit No. 3; Item Three, $102,024.60, submitted as City Exhibit No. 11; Item Four, $16,373.54, submitted as City Exhibit No. 12; Item Five, $2,625.88, submitted as City Exhibit No. 13; Item Six, $2,196.54, submitted as City Exhibit No. 14; Item Seven, $2,332.53, submitted as City Exhibit No. 15; Item Eight, $880.86, submitted as City Exhibit No. 16; Item Nine, $128, submitted as City Exhibit No. 17; for a grand total of $141,642.06.

Finally, three, to order Amtrak, the present owner and custodian of the 59th Street Bridge, to continue to be responsible for the maintenance, repair, rehabilitation or replacement of the entire structure including the substructure and the entire superstructure at Amtrak's initial and final costs and expense, pursuant to the provisions of the ordinances of the city railroad agreement for this structure, and for the other reasons which I have previously stated.

Q. What will the city agree to maintain on 59th Street?

A. The city agrees to be responsible for the maintenance of the approaches to the 59th Street Bridge as it was and has done in the past.

Q. Finally, the 59th Street Bridge can be divided into a substructure and a superstructure, is that correct?

A. That's correct.

Q. And from your experience for 23 years as a civil engineer, is it practical for one party or one person to maintain the bituminous wearing surface of the deck and have another party maintain the actual deck itself?

A. In my opinion, not in a structure that is in the condition that this structure is in. If the conditions were new -- and, there are instances where there is split maintenance along these lines -- it is feasible to separate the maintenance responsibility of the bituminous wearing course and the deck or superstructure.

However, in this case, the deck of the structure is so deteriorated, in our opinion, that any replacement or maintenance of the bituminous wearing course would not enhance the load carrying capacity of the bridge nor decrease the rate of deterioration of the structural members.

Q. You were present when the engineer from Amtrak testified about what parts of the bridge are considered superstructure and what parts are substructure, were you not?

A. Yes, I was.

Q. And, the abutments up to this bridge, they would be what?

A. That would be considered substructure.

Q. How about the bearings?

A. The bearings, most engineers will say, belong to the superstructure; however, there are those that consider the

girder bearings, in this case, as part of the substructure. I would consider it as part of the superstructure, myself.

Q. How about the deck?

A. The deck is clearly superstructure.

Q. Floor beams?

A. Again, clearly superstructure.

Q. And expansion dams?

A. Clearly superstructure.

Q. Could you maintain, from an engineering standpoint would it be possible or practical to maintain the deck without affecting the outer parts of the superstructure?

A. It is not practical in this type of construction. This construction is what we call jack arch-type construction, in which the floor beams are fully encased in concrete with an integral deck all poured at the same time.

The deck is reinforced and it is not feasible to replace without replacing the entire encasement around the floor beam.

Such replacement, in all probability -- it depends on the condition of the floor beams -- may be detrimental to them. So, therefore, the answer to that question is no.

Q. Thank you.

MR. CLARK: I have no further questions.

JUDGE KLOVEKORN: Mr. Cohen?

MR. COHEN: Thank you.

CROSS-EXAMINATION

BY MR. WASHBURN:

Q. Mr. Washburn, what work did you do to perpare for your testimony today?

A. I prepared the questions and answers.

Q. And, what documents did you review or what work did you do to enable you to prepare your answers to the questions?

A. I researched the ordinances which were submitted today, along with the city railroad agreement some time ago. I prepared the two exhibits, 18 and 19, which were submitted here today. And, I have called upon my 16 years of research withing the Bridge Division, Department of Streets, concerning maintenance responsibilities of the various highway structures in the city.

Q. Did you review the entire record in this case?

A. I read the transcript of testimony as required and read the report which was submitted by Amtrak, which was submitted to the city through the mail. I can't think of anything else I did. I probably did some other things, too.

Q. Did you review -- when I say the entire record, what I referred to was the record of testimony and all of the exhibits and documents that weren't submitted into evidence?

A. Generally, yes.

Q. Generally?

A. Generally.

Q. Can you recall which documents you reviewed?

A. I reviewed the 1926 ordinance and the plans which were prepared by the Pennsylvania Railroad, who had their title block shown, and along with the other drawings from Bethlehem Steel and so forth that were submitted by Amtrak.

Q. Did you have any law courses during the time you studied at Drexel?

A. No, sir.

Q. Have you taken any law courses since then?

A. No, sir.

Q. By the way, do you know if the Streets Department used salt in 1926?

A. No, I don't.

Q. Where in the documents submitted today is there justification for your referring to Amtrak as the owner and/or custodian of the bridge in question here?

A. None in the documents submitted today.

Q. And, where then in the documents that you just testified you reviewed before today is there evidence for that statement?

A. There were documents submitted at the previous hearing consisting of deed of transfer from the Pennsylvania Railroad to Penn Central to Conrail to Amtrak and so forth, along with some other documents concerning what the city

considers was the property that was transferred.

Q. But, you didn't mention those in the list of the documents that you reviewed in preparing for the hearing today?

A. No, I was aware of them, but I didn't review them.

Q. So, you know that somewhere in those documents there is a statement or statements that you interpret to mean that Amtrak is now the owner and/or custodian of the bridge?

A. That was testified to, I believe, at the last hearing.

Q. So, all you're doing now is using someone else's testimony as the basis for your testimony?

A. In part, yes. I was at other hearings in other cases where the same type of argument was presented to justify the city's position as to the ownership and maintenance of highway overpass bridges.

Q. With regard to this bridge?

A. No, sir.

Q. So, then, if I remember correctly it was either Mr. Fike or Mr. Nyman at the last hearing that testified to the city's position as to ownership and/or custodianship, is that correct?

A. That's correct.

Q. So, what you're saying is that having reviewed the transcript, you are taking their testimony on faith that it was accurate and you are making it as your own today?

A. It is their opinions as engineers that that is the intent of the exhibits that were submitted.

Q. So, in other words, you're saying yes, you're taking their testimony and their opinion as to the import of documents and agreements and deeds and other types of documents and that you are going to believe and testify as to that today?

A. That's correct.

Q. So you have, then, no independent knowledge --

A. No, sir.

Q. -- acquired on your own?

A. No, sir.

Q. Your testimony today indicated that you are requesting the Commission to order Amtrak to be solely responsible for the maintenance of the 59th Street Bridge, is that correct?

A. That's correct.

Q. Would that cover an instance, for instance, where a city truck drove off the bridge and damaged parts of the sidewalk or the fencing or anything like that?

A. That would not include that type of instance. I would think at that time that the city or a city truck would bear the costs of the repairs to the structure as required by damage.

Q. Why would that be?

A. We like to fess up to what we have done.

Q. To the damage that is caused by the city either

accidentally or on purpose?

A. Presumably, it would not be on purpose.

Q. Well, hasn't there been testimony today that the salt that is put on the bridge for highway purposes does substantial damages to the steel and other portions of the bridge?

A. I don't think the word "substantial" was used. I think the words that were used were that the salts used by the city in the deicing operations, along with the water intrusions, caused the steel to corrode.

Q. All right. Is the city responsible for that?

A. For what?

Q. For the damage caused by the salt?

A. No.

Q. Why not?

A. Because Amtrak should be responsible for the maintenance of the superstructure which, if it were performed and in a timely manner, it would not allow the salt to penetrate the deck and the steel below it.

Q. So, this is an instance, then, when the city would cause some damage that you say it would not be responsible for?

A. There are other factors involved in that particular instance.

Q. I mean, if the city didn't use salt there wouldn't be damage from the salt no matter what condition the bridge was

in, is that correct?

A. There wouldn't be damage from the salt, but there would be damage from the water penetrating the deck.

Q. Well, it is correct, isn't it, that the salt exacerbates to a degree the damage that the water would otherwise cause?

A. Exacerbates?

Q. Increase?

A. Yes.

MR. COHEN: No further questions.

JUDGE KLOVEKORN: Are there any other questions of the witness?

MR. HERSKOVITZ: I have some questions.

CROSS-EXAMINATION

BY MR. HERSKOVITZ:

Q. Mr. Washburn, I take it it's your position and the city's position there that they weren't satisfied with Amtrak's inspection report, is that correct?

A. We were not satisfied with the contents of the report in that they did not comply with the Commission's order. As far as the inspection is concerned in itself, it was adequate.

Q. If the Commission was to relieve Amtrak of that responsibility that they ordered in their last order to provide the rating analysis and whatever else is missing from this one and just go with what they did submit, is that satisfactory to

the city?

A. I would say no, because the conclusions that they reach are based on opionion and conjecture and not based on the actual conditions of the structure.

I think that an analysis should be performed not necessarily on every member, as indicated by Amtrak's witness, but at least on the critical member or members of the structure.

Q. Would the alternative method of performing a rating analysis, as Mr. Cooper discussed, by making certain assumptions, would that be satisfactory to the city? Maybe not to the Commission, but would it be satisfactory to the City?

A. Those assumptions are I assume you are talking about the ten percent reduction?

Q. Yes.

A. Those assumptions are, in some cases, applied by the city also where the city cannot practically or realistically remove the encasement in certain localized areas of the steel members in order to take actual member reduction measurements.

In most cases, however, we do remove or at least sound the encasement to see if it is sound and do remove, in some areas, the encasements, in particular on the bottom flange where it is fairly accessible and visibly measure the bottom flange of the members there and compare that measurement against the plan measurements to determine a percent of

reduction to be used.

Q. Well, I'm not sure whether Amtrak would do that specifically, but from what he described --

A. Based on the absence of that ten percent, I agree with Mr. Cooper's as a realistic type figure to be used; however, I should expand on that and state that the ten percent figure should not be taken on the entire beam. The ten percent should be taken on the area of the bottom flange and perhaps the top flange, and in this section modulus or section properties of the beam determined after that ten percent is removed from the flange areas.

I would not take the ten percent as a general reduction on the entire section of the property of a member being investigated.

Q. Would the city agree to perform a load carrying capacity analysis at its initial cost?

A. The city would not agree to perform such an analysis because we have our own inherent in-house problems with our efforts -- two-pronged efforts -- one, to inspect and perform an engineering analysis on the various city maintained structures in excess of 20 feet, as mandated by the federal government; and the other prong being the design, inspection and the administration of the bridge program which were already in the city's budget. We just don't have the manpower to forward aid to Amtrak in this regard.

Q. Well, then you can understand Amtrak's problems as well then?

A. Certainly. There are alternatives to --

Q. I'm not saying that's an excuse for them not following the PUC order, but --

A. We sympathize with Amtrak. Everybody has these kinds of problems. There's no reason why Amtrak cannot do what the city does and has done for many, many years. The city has engaged outside consulting engineers under contract to perform whatever it specifically either could not perform because of the expertise or because of the work load which they have in-house, to arrive at answers in that way.

The city does know and might be able to give Amtrak a list of consulting firms that do this type of work.

Q. If the city was directed to perform the analysis, would it be in-house, or would you contract out?

A. I would have to take it under advisement at the time the order came in.

Q. Do you know what the estimated cost for -- Mr. Cooper stated one cost for the alternate analysis would be under $10,000. Do you agree with that?

A. I think the cost should be well under $10,000.

Q. And the cost for the more detailed analysis which involves getting into the encasements and inspecting the members?

A. If that cost includes an in-depth inspection and the cost is related thereto, it could be in excess of $20,000, which I think is what Amtrak testified to.

Q. Now, you made a statement it would take seven to ten days to perform. What type of inspection are you talking about?

A. That's not an inspection; that's the engineering analysis. The question and answer -- the answer was if in fact given the results of an in-depth inspection in hand and the plans of Amtrak as at the time of the last hearing how long would it take. The answer to that was seven to ten days.

Q. How long would it take to -- if the Commission was to say either the city or Amtrak -- to do the alternate analysis? How long would it take to do that?

A. You're referring to the ten percent reduction?

Q. Yes, the assumptions.

A. That would, in essence, mean that the field investigation has already been completed, and we would take that result and then apply it to a section piece. So, that should be done in seven to ten working days.

Q. And that method of analysis, is that sound engineering practice?

A. It's done. It is done with the absence of additional information from the field.

Q. Based on what information Amtrak provided in this

report as well as whatever information you have with regard to this structure, do you feel any repairs are -- any additional repairs -- are needed now?

A. I can speak as an engineer. I don't know if I would be speaking on behalf of the city.

Q. Well, you did mention something --

A. I can give you my views on what I think should be done.

MR. CLARK: Are you asking the city?

MR. HERSKOVITZ: I am asking -- well, I'll ask both.

BY MR. HERSKOVITZ:

Q. As an engineer and then if you can speak on behalf of the city, what they recommend?

A. My views have not been reviewed by any of the supervisors downtown, so I'd be speaking not for the city but for myself.

Q. Well, I would like to know your engineering opinion.

A. There appears to be much corrosion in the bottom flanges of the floor beams. Also, the type of construction is very heavy. A lot of concrete is being supported by those floor beams.

The more dead loads that the floor beams have to take, the less stress available for live loads; therefore, the lower the rating for the specific members involved. If possible, I

would remove all of the loose or poorly sounding encasements from the area of the bottom flanges of the beam.

Q. Is that the area that I was speaking of with Mr. Cooper when I was cross-examining him when I asked him about cleaning and painting?

A. Yes, I believe it was. I can't speak for Mr. Cooper, but I got the impression that he thought that you were thinking about the underside of the concrete, also, which is not painted.

I'm talking about the exposed steel areas. I think he was, too.

Q. And, what are your recommendations?

A. My recommendation would be to knock as much of the loose deteriorated encasement off of the beams to lessen the dead weight, number one. And, number two, to expose the bottom of the steel to, number one, see how badly corroded the steel is and to let the steel be exposed to the air so that the water moisture in the concrete there can evaporate. All exposed areas of the steel should also be painted.

Q. Do you know how long this work would take and how much it would cost to do?

A. I don't know.

Q. Now, you mentioned that the deck is deteriorated. Would you recommend any work be performed to improve that situation?

A. I would not recommend any new bituminous material be placed on the deck because it would not serve any useful purpose. It would not enhance the life of the structure of the main bridge.

The problem is with the deck, in our opinion. It is extremely course. It was fairly weak when it was constructed, compared to today's standards. And, as Amtrak's report indicates, it shows evidence of general leakage throughout the entire deck area or roadway area, as indicated in their Figure 3 in the report.

The only thing that you could do to resolve this problem is to remove the deck. Now, as I said before, in this type of structure, the deck is monolithic. You would be dealing with the encasement.

So, I think what would probably happen would be you would probably end up taking out all of the concrete, exposing steel -- the floor beams. Once they are exposed, then they can be repaired, if they had to be repaired, and a new deck put on using today's modern materials.

Q. You're talking major reconstruction?

A. That's absolutely correct, yes.

Q. With the existing condition that we have, and assuming that the bridge can carry maximum load limits, would this bridge still be safe for 15 years or so? I think you stated that the average life is 75 years.

A. If you would ask five engineers that same question, you would get five different answers.

Q. Do you have an opinion?

A. I don't think it would last 15 years. I think it might last much less than that. I believe the city's witness at the last hearing indicated that the useful life was, I think, one or two, three years. Something along those lines.

We are already at that point. It is still there. Obviously, that was incorrect. I could say the same thing today and three years from today the bridge may still be there. So, it's just the opinion of an individual.

I can't give you any firm time when the structure will cease to be functional.

Q. Now, again, you're speaking from your own opinion and not as an official city position as to what further work should be done?

A. As far as the recommendation for deck replacement and so on?

Q. Yes.

A. Yes.

Q. Do you have any position on behalf of the city? Are you authorized to speak?

A. That was not discussed at all downtown, so I cannot answer for the city in that regard.

Q. Okay. In your own engineering opinion, can this

bridge carry legal loads right now, on what information you have?

A. As I indicated in the testimony, the legal load in Pennsylvania today is 40 tons. Tractor trailers that are capable of going that high use the structure, and I believe the testimony reflects that I seriously doubt that the structure is capable of taking that kind of live load and vibrations caused by the live load on an everyday basis.

Q. Well, what do you recommend be done? Assuming that there will be an engineering analysis made, what do you do in the meantime if you feel that it cannot carry legal loads now? Do you feel that it should be posted?

A. I think that would be contingent upon how fast an engineering analysis can be performed if ordered by the Commission.

The Commission could in the interim order the city to post the structure at a lower limit, at their discretion, and we would do so.

Q. I don't think the Commission would -- the Commission might order that it be posted at a certain weight limit. I don't think that the Commission would leave it open to a party.

But, are you saying that the bridge should be posted within the next few months?

A. I think once an engineering analysis is performed,

the results of the analysis will dictate that the structure will probably not be able to carry the loads as high as 40 tons.

Now, this is all based on recognized standards and allowable stresses and so forth for the steel used in the structure.

Q. Do you think, as a suggestion, that the bridge should be inspected periodically, maybe every month, every two months, every three months?

A. The bridge should certainly be inspected by any party responsible for the maintenance of the bridge. We inspect ours as frequently as possible.

We are actually mandated by the federal government to inspect all of the city maintained structures on a two-year basis.

Q. Well, based on the condition of this bridge right now, without the benefit of a detailed load carrying capacity analysis, do you feel that this bridge should be inspected frequently?

A. Based on a no load restriction?

Q. Yes.

A. I would say that it should be inspected probably on a six-months basis.

Q. Do you know whether or not this is mostly local traffic that uses this bridge, city traffic?

A. In part. There are two major firms in the area

which do require the use of large tractor trailers. One, I believe, is Acme; the other one is Pierce-Thelps.

Q. They are located in the city?

A. They are located in the city, but in all probability, other than from the factory, in all probability their trucks come from out of the city.

Q. So whatever repairs were performed and whatever repairs will be performed to this bridge, it does benefit city residents, city taxpayers?

A. And the railroad and others, yes.

Q. Yes. Thank you.

MR. HERSKOVITZ: I have no further questions.

JUDGE KLOVEKORN: Are there any other questions of Mr. Washburn?

MR. BOWERS: Yes.

CROSS-EXAMINATION

BY MR. BOWERS:

Q. Mr. Washburn, on the established weight limits for a bridge, does that take into consideration whether, on a bridge, whether you have traffic going both directions?

A. Not really, no. The analysis that is performed assumes the worst possible loading condition. It does not take into account, in almost all of the cases, the physical strident or the physical use of the bridge. If it were wide enough for two lanes, those two lanes would be placed on the

floor beams, in this case, and as close to the center of the roadway as possible to give you the worst condition. Three lanes would be split, I guess, as close to the center of the floor beams as possible regardless to which direction they were going.

Q. If the limit in Pennsylvania is 80,000 pounds and the bridge is safe for a load of that limit, can a truck weighing 80,000 pounds coming from one direction cross the bridge at the same time as a truck weighing 80,000 pounds coming from the opposite direction?

A. Yes.

Q. Okay. So, when you have an 80,000 pound limit on a two-way bridge, then it can take traffic coming both directions?

A. That's correct.

Q. And, if it's not safe for 80,000 pounds, could a vehicle weighing 80,000 pounds -- assuming they're coming from both directions -- could one go safely whereas two could not?

A. One could go safely if the structure were rated for a lesser capacity, yes.

Q. So long as you didn't have two at the same time on the bridge?

A. Even two possibly could go safely, even if the engineering analysis had a figure less than that. I'm not saying that it will, but it could.

Q. The bridge then, basically, is evaluated as an

entity rather than on an lane-by-lane basis?

A. The bridge members are evaluated based on the maximum loading conditions that would be imposed on the particular bridge members and not necessarily on a lane-by-lane basis, that's correct.

Q. So, if it became necessary to post the bridge for a certain limit, it would be possible then to permit a load greater than that limit to use the bridge as long as it was only being used by one vehicle at that particular time?

A. That's correct.

Q. Would the speed at which a vehicle would traverse the bridge have any effect upon the load bearing capacity of the bridge itself?

A. Yes. The speed would be a consideration in the impact factor of the live load. If a truck were to traverse the structure at say 10 or 15 miles an hour, there would be somewhat less vibration set up than a vehicle traversing at say 40 miles an hour.

This was quite evident at one of the previous field views held by the PUC held here in Philadelphia where a vehicle was traveling a bit too fast and created all kinds of vibrations.

Q. Therefore then, you can increase the load bearing capacity of a bridge in a practical sense by reducing the speed of the vehicles which use it?

A. Yes, but that wouldn't be considered as a

recommendation. If a structure were posted for 25 tons, for instance, that would be in our opinion the maximum load that could traverse the bridge.

Q. Thank you very much.

MR. BOWERS: I have no further questions.

JUDGE KLOVEKORN: Are there any other questions of Mr. Washburn?

MR. CLARK: I have a few questions on redirect.

REDIRECT EXAMINATION

BY MR. CLARK:

Q. Mr. Washburn, there were some questions directed to you by counsel for Amtrak pertaining with the salt or the deicing material that was used on this particular bridge.

The material that is used by the city, is that the type of material that is standard and used by the entities that deice roadways in the area such as Philadelphia, the street ramp area?

A. I wouldn't think that it is any different from any other materials.

Q. You testified that a bridge, in the City of Philadelphia's opinion on the life expectancy of a bridge is 70 to 75 years. Does that take into consideration the general wear and tear of having a bridge or a highway overpass in a geographic area such as the City of Philadelphia where there are climate changes?

A. Yes. The 70 to 75 year figure which is mentioned considers several things, one of them being the type of structure, the freeze-thaw cycles in this area, the materials used in the original construction and many, many other factors.

Q. Okay. So, if this bridge were in the desert, it would last longer?

A. In all probability it would last longer, as soon as the moisture that was in the deck now got out of the deck.

MR. CLARK: Thank you. I have no further questions.

JUDGE KLOVEKORN: No further questions of the witness, the witness is excused. Thank you very much, Mr. Washburn.

(Witness excused.)

MR. CLARK: The only other thing I have at this time is I would like to move for the admission of City Exhibits Nos. 18, 19, 20, 21 and 22, which were identified and described by the witness.

MR. COHEN: I'll object on the same basis.

JUDGE KLOVEKORN: The documents will be received into evidence.

MR. CLARK: Thank you.

(Whereupon, the documents marked as City's Exhibits Nos. 18 through 22 were received in evidence.)

MR. HERSKOVITZ: Staff has a witness, Your Honor.

JUDGE KLOVEKORN: Does SEPTA or Conrail have any

witnesses?

MR. HERSKOVITZ: Oh, I'm sorry.

MR. BOWERS: We have a witness and will be very brief, if we may, Your Honor.

JUDGE KLOVEKORN: Certainly, Mr. Bowers.

Whereupon,

BRIAN G. WOODBURN

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BOWERS:

Q. What is your name, employer address and present position with that employer?

A. Brian G. Woodburn. My business address is 200 West Wyoming Avenue, Philadelphia, Pennsylvania, 19140. I'm employed by Southeastern Pennsylvania Transportation Authority, also known as SEPTA, as a Project Engineer, and I have been so employed for the last six-and-a-half years.

Q. And, are you familiar with the matter before this body and are you authorized to testify on behalf of SEPTA?

A. Yes, I am.

Q. For the record, does SEPTA have any involvement at all at this crossing or with this bridge?

A. Yes, we have two involvements. One is our Route G bus which is operated on 59th Street. Underneath, we operate 45 scheduled round trips on our R-5 rail line to Paoli and

Bryn Mawr. These trips are made with selected silverliner cars on Amtrak right-of-way, using Amtrak power via trackage agreements.

In addition, there are dead-head moves to and from our Paoli car shop on a daily and as-needed basis, again using Amtrak trackage.

Q. Now, certain questions were directed to the participants by the PUC, dated March, 1985. I'm going to ask you some questions relating to that.

In answer to the PUC's Question No. 8, does SEPTA have any comments on Amtrak's inspection report or wish to make any recommendations concerning it?

A. We do take one exception to the report. On summary sheet page no. 1 there is mention made of the trolley tracks. I made an examination of our records, and it shows that no rail was ever installed at this location although definitely the bridge was designed to accommodate it.

Q. Would it be safe to assume then that no rail having been installed that no trolleys were ever operated on that bridge?

A. That's correct. Otherwise, we have no further comments or recommendations in regard to the report.

Q. Okay. Also in answer to PUC's Question No. 8, what portion of the work and cost should SEPTA bear in the opinion of SEPTA?

A. SEPTA does not own any of the facilities involved at this location, and therefore we do not agree to do any of the work or bear any of the costs involved.

Q. In answer to the PUC's Question No. 9, does SEPTA perform any work following the PUC order of May 1, 1984?

A. No, because the order did not call for any involvement on SEPTA's part.

Q. Okay. Finally, in answer to PUC Question No. 10, is SEPTA willing to bear any of the costs of past improvements or of future maintenance on this bridge?

A. Based on my answer for the procedures for Question No. 8, SEPTA does not own any of the facilities involved and therefore will not agree to bear any costs or do any maintenance.

Q. Is there anything further you wish to add to your testimony here today?

A. Nothing at this time.

MR. BOWERS: I have no further questions, Your Honor.

JUDGE KLOVEKORN: Thank you. Are there any questions of the witness?

Mr. Herskovitz?

CROSS-EXAMINATION

BY MR. HERSKOVITZ:

Q. You don't own any facilities; do you operate under this bridge?

A. Yes. As I testified, on Amtrak trackage.

Q. Okay. I don't recall whether or not you testified at the last hearing in this matter. How many trains operate daily?

A. 45.

Q. Okay. And, you operate buses across the bridge?

A. Correct.

Q. Okay. Thank you.

MR. HERSKOVITZ: No further questions.

JUDGE KLOVEKORN: Are there any further questions for the witness? If not, the witness is excused. Thank you very much, Mr. Woodburn.

THE WITNESS: Thank you.

(Witness excused.)

JUDGE KLOVEKORN: Mr. Donovan, do you have a witness?

MR. DONOVAN: Yes, sir, I do. I call Mr. Walker.

Whereupon,

STAFFORD C. WALKER

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. DONOVAN:

Q. Would you please state your full name?

A. Stafford C. Walker.

Q. And, what is your business address?

A. Room 1200, 15 North 32nd Street, Philadelphia, 19104.

Q. And, are you employed by Consolidated Rail Corporation?

A. I am.

Q. And in what capacity?

A. Principal Engineer in the Office of Public Improvements.

Q. And are you authorized to testify for Conrail today?

A. I am.

Q. Now I invite your attention, Mr. Walker, to the questions propounded by the Public Utility Commission in its letter of May 1, 1985, particularly Question No. 8.

Have you had an opportunity to review Amtrak's Exhibit A?

A. Yes, sir.

Q. And, do you have any recommendations or comments in connection with that exhibit?

A. No. We agree generally with the conclusions reached by Amtrak in its report.

Q. Question No. 9 inquires whether or not Conrail incurred any costs in furnishing material or performing work in accordance with the Commission's order of May 1, 1984.

A. Conrail was not ordered to do any work, and we have no record of any costs having been incurred.

Q. Question No. 10 inquires of Conrail what portion if any of the total costs of construction improvements that it will

agree to bear. Would you respond to that question?

A. We would agree to bear no costs.

Q. And what portion of the future maintenance would Conrail agree to bear, if any?

A. We would agree to bear none.

MR. DONOVAN: I have nothing further.

JUDGE KLOVEKORN: Mr. Herskovitz?

CROSS-EXAMINATION

BY MR. HERSKOVITZ:

Q. Conrail does not own any facilities under the structure?

A. I'm not certain as to the exact ownership of the trackage. We operate under the bridge on trackage rights from Amtrak, and a couple of the freight tracks, perhaps, we own on property of Amtrak. I'm not quite sure.

We do not own the underlying property. We may own some track structure on the property; I'm not sure of that.

Q. Do you know how many trains per day Conrail operates under that bridge?

A. There is no substantial change from our last testimony, and I think that was 13 trains a day, something like that.

MR. HERSKOVITZ: Thank you.

MR. CLARK: I just have a few questions, if I may, Mr. Walker.

CROSS-EXAMINATION

BY MR. CLARK:

Q. You stated that you generally agree with the conclusions that were arrived at by Amtrak in their engineering report?

A. Yes, sir.

Q. Do you also agree with Amtrak's testimony that they did not, in fact, perform any type of a rating analysis on the structure?

A. Yes. Our agreement with their conclusions is based on the reasons that they used in reaching their conclusions.

Q. As an engineer for a railroad, a rating analysis would be helpful in your opinion?

A. Yes.

Q. And, are you familiar with the Commission's order that precipitated this report?

A. Yes.

Q. And, did you understand that a rating analysis was something that was something that was going to be required?

A. The order called for it, yes, and I agreed with Amtrak's reasons for not having made it.

Q. Does Conrail have the capability of doing a rating analysis for highway overpass structures?

A. We have the capacity, yes, sir -- the capability.

Q. And therefore, if ordered, Conrail could perform the engineering rating analysis for this structure?

A. We could but we would do it only under duress.

Q. I didn't say "would" you do it; I said "could" you do it?

A. We could do it, yes, sir.

Q. And, would you agree with what has been testified to by various engineers in this matter that it would take seven to ten days to do the analysis once all of the information was gathered?

A. Yes, sir.

Q. By that, if Conrail got all the information or had all of the information available, it would take seven to ten working days? Is that accurate?

A. Yes, sir.

Q. And, would you also agree as an engineer that the deck of the bridge is part of the superstructure?

A. It varies from structure to structure. In this particular structure, the way the jack arches are part of the deck structure, yes, the deck is a part of the superstructure.

Q. How about the expansion dams?

A. The expansion dams are part of the superstructure.

Q. Thank you.

MR. CLARK: I have nothing further.

JUDGE KLOVEKORN: No further questions of the witness,

the witness is excused. Thank you very much, sir.

(Witness excused.)

JUDGE KLOVEKORN: Mr. Herskovitz?

MR. HERSKOVITZ: Before I begin, Your Honor, is there anybody here from Philadelphia Electric or Philadelphia Gas or Bell Telephone?

(No response.)

MR. HERSKOVITZ: Then, I call Dave Hart on behalf of the Commission.

Whereupon,

DAVID C. HART

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HERSKOVITZ:

Q. Would you please state your name?

A. David C. Hart.

Q. And your business address?

A. Room 408, Transportation and Safety Building, Harrisburg, Pennsylvania.

Q. And, by whom are you employed?

A. Pennsylvania Public Utility Commission.

Q. And, in what capacity?

A. I'm a civil engineer.

Q. Are you a registered professional engineer in Pennsylvania?

A. Yes, I am.

Q. And, are you familiar with the structure which is the subject matter in this hearing?

A. Yes, I am.

Q. And, you testified previously in this case?

A. Yes.

Q. Have you read Amtrak's inspection report that was submitted as Exhibit A?

A. Yes, I have.

Q. And you have heard the testimony of all of the witnesses today?

A. Yes.

Q. Do you have an opinion whether or not a load carrying capacity analysis should be required for this bridge?

A. Yes. In my opinion, an engineering analysis should be performed on the structure at this time to determine the overall load carrying capacity.

Q. Do you have a reason why there should be an analysis?

A. Well, due to the inspection report there appears to be certain deterioration of the members. I think at this time it would be an ideal situation to perform a detailed inspection and analysis of the structure.

Q. We have heard two types of analyses. One is what I will call the assumed, where you make certain assumptions, and the other is the more traditional detailed analysis which

is, of course, a lot more expensive. Do you have any recommendation to make for this case which one should be conducted?

A. I think it should be sort of a combination of the both. Where it is necessary to get to the members where the Gunite has fallen off, there is physical maintenance that should be taken at that time to determine certain sectional loss, especially to the critical members.

Then, at certain sections of the bridge where they cannot obtain the measurements, I think the other procedure would be adequate.

Q. Then we will call this the half-and-half approach.

A. Yes.

Q. But that can be, in your opinion, that's feasible?

A. Yes. That is feasible, in my opinion.

Q. You visited the site?

A. I visited the site when the expansion dams were in disrepair, but I haven't been there recently.

Q. Not since its be done there?

A. Right.

Q. Okay. Based on what you did see then and based on the report and other testimony, do you feel any additional repairs are required at this time?

A. I viewed the bridge from the top surface. Based on the report, I feel at this time that there is nothing necessary to be done at this time.

Q. Do you feel that the bridge should be posted for a lesser than legal load limit?

A. Not at this time. I would wait until the engineering analysis is performed and see what the report has to say.

Q. Do you feel that any inspections are required?

A. I believe that an inspection should be performed on the bridge, I would say annually, once a year, in the future.

Q. You don't feel that there has been anything that would require more frequent inspections?

A. Not at this time.

Q. Thank you.

MR. HERSKOVITZ: That's all I have.

JUDGE KLOVEKORN: Does any party have any questions of Mr. Hart? If there are no further questions, the witness is excused. Thank you very much, sir.

(Witness excused.)

JUDGE KLOVEKORN: Is there anything further to transact this afternoon?

MR. HERSKOVITZ: I have nothing further, Your Honor.

JUDGE KLOVEKORN: Amtrak will be directed to submit within 15 days the detailed itemized statement of actual costs incurred, in accordance with the Commission's order.

MR. COHEN: Fine.

JUDGE KLOVEKORN: That document will be identified as

Exhibit B.

MR. CLARK: Do you want briefs from us?

JUDGE KLOVEKORN: I don't think so. This hearing stands adjourned. Thank you.

(Whereupon, at 12:50 p.m., the hearing was concluded.)

***

C E R T I F I C A T E

I hereby certify, as the stenographic reporter, that the foregoing proceedings were taken stenographically by me, and thereafter reduced to typewriting by me or under my direction; and that this transcript is a true and accurate record to the best of by ability.

COMMONWEALTH REPORTING COMPANY, INC.

By: Bonnie J. Kline
Bonnie J. Kline

***

JUN 28 1985
SECRETARY'S OFFICE
Public Utility Commission

COMPENSATION AFFIDAVIT
(Check Applicable Item)

- ☐ INDIVIDUAL
- ☐ PARTNERSHIP
- ☒ CORPORATION

84-4359

In re Contract of BELBOLD CONTRACTING CORP.

STATE OF PENNSYLVANIA,
CITY AND COUNTY OF PHILADELPHIA } ss.

Before me, the subscriber, a Notary Public in and for the Commonwealth of Pennsylvania, residing in the City and County of Philadelphia, personally appeared Alfred J. Beljan

who being duly sworn according to law, doth depose and say, That he is BELBOLD CONTRACTING CORP. President

for all the work of completing and performing the work for replacement of the expansion dams on 59th Street bridge over AMTRAK and doing all appurtenant and other work as ordered and required by the Department of Streets

under contract with the City of Philadelphia, dated the 10th day of August, A. D. 1984, and that he/they has/have fully complied with all the terms and conditions of the Workmen's Compensation Act in reference to the liability insurance for his/their employees, and also has/have fully complied with all the terms, provisions and conditions of the Act of Assembly, approved July 18th, A. D. 1917, and its Supplements and Amendments, relating to the Compensation Insurance and has/have secured insurance.

RECEIVED
[illegible]

DOCKETED
JUN 28 1985

Sworn and subscribed before me, this 10th
day of August *A. D. 19* 84

V. Louise Byer
Notary Public

V. LOUISE BYER
NOTARY PUBLIC OF PA.
Bristol Twp., Bucks County, Pa. 19055
My Commission Expires April 4, 1987

Alfred J. Beljan

28-49 (Rev. 3/66)

City's
EXHIBIT 11

6/18/85
I-830373
Philadelphia, Pennsylvania
BJK

LABOR AND MATERIALMEN'S BOND

84-4359

Know all Men by these Presents, THAT WE,

BELBOLD CONTRACTING CORP.

Principal (hereinafter called the Principal Obligor), and INSURANCE COMPANY OF NORTH AMERICA

Surety, are jointly and severally held and firmly bound unto The City of Philadelphia for the use of any and every person, co-partnership, association or corporation interested, in the sum of ONE HUNDRED THOUSAND DOLLARS ($100,000.00) lawful money of the United States of America, to be paid to the said City of Philadelphia, its successors and assigns for the use of any and every person, co-partnership, association or corporation interested, to which payment, well and truly to be made we do bind ourselves and each of us, our and each of our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

Sealed with the CORPORATE seal of the said BELBOLD CONTRACTING CORP. and with the corporate seal of the said INSURANCE COMPANY OF NORTH AMERICA duly attested by the proper officers thereof.

Dated the 10th day of August in the year of our Lord one thousand nine hundred and EIGHTY FOUR (1984).

WHEREAS, the above bounden Principal Obligor, in and by a certain contract with The City of Philadelphia, of even date herewith, agreed to complete and perform the work for the replacement of the expansion dams on 59th Street bridge over AMTRAK and do all appurtenant and other work as ordered and required by the Department of Streets

in strict and exact accordance with a certain proposal and specifications attached thereto and made a part thereof.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, That if the said Principal Obligor shall and will promptly pay or cause to be paid to any and every person, co-partnership, association or corporation, all sums of money which may be due for material furnished, equipment or machinery rented, services rendered by public utilities, and labor supplied or performed in the prosecution of the work covered by the above mentioned contract, whether or not the said material, equipment, machinery, public utility services, or labor enter into and become component parts of the work or improvement contemplated, including inter alia (a) all material furnished, equipment or machinery rented, services rendered by public utilities, and labor supplied or performed in preparing the site for the performance of the work covered by said contract, (b) equipment, machinery, public utility services, labor, shoring, sheathing and blasting supplies and other materials used on the site in doing such excavating as may be necessary or required to institute or perform the work specified in the contract, and (c) all material furnished, equipment or machinery rented, services rendered by public utilities and labor supplied or performed in the prosecution of work of repair or of maintenance required by or performed under the terms of said contract, then this obligation to be null and void; otherwise, to be and remain in full force and virtue.

It is understood and agreed that every person, co-partnership, association or corporation who, whether as sub-contractor or otherwise, has furnished material, rented equipment or machinery rendered services or supplied or performed labor in the prosecution of the work above mentioned and described, and who has not been paid therefor, may sue in assumpsit on this bond, in the name of The City of Philadelphia, for his, their, or its use, and prosecute the same to final judgment, for such sum or sums as may be justly due him, them, or it and have execution thereon: PROVIDED, HOWEVER, That The City of Philadelphia shall not be liable for the payment of any costs or expense of any suit.

It is likewise understood and agreed that no such suit shall be commenced prior to ninety (90) days from the date upon which the said person, co-partnership, association, or corporation furnished, leased, rented, rendered services, supplied or performed the last of the material or labor for which the said claim is made; and every such suit shall be commenced not later than one (1) year from the date of final settlement under the said contract with The City of Philadelphia.

It is also understood and agreed that any such person, co-partnership, association or corporation, who has no contractual relationship, express or implied, with the Principal Obligor, shall not have a right of action upon this bond, unless the said person,-co-partnership, association or corporation shall have given written notice to said Principal Obligor, or to his, their, or its surety, not later than ninety (90) days from the date on which the said person, co-partnership, association or corporation furnished, leased, rented, rendered services, supplied or performed the last of the material or labor for which the said claim is made, stating, with substantial accuracy, the amount claimed and the name of the party with whom the said person, co-partnership, association or corporation contracted. Said notice shall be served either in the manner now or hereafter provided by law for the service of a summons, save that service need not be made by the sheriff, or by mailing said notice by registered mail, postage prepaid, in an envelope addressed to the Principal Obligor at the Principal Obligor's last known place of business or residence, or to the surety at any of its offices or places of business.

The undersigned Principal Obligor and Surety, for themselves and each of them, their and each of their heirs, executors, administrators, successors and assigns, further agree, jointly and severally, that no modification, alteration, addition or extension of the terms of the above mentioned contract or alteration, addition or diminution of the work to be done under it above mentioned and described, and no forbearance on the part of either the City or of the Principal Obligor to the other, either by the grant of an extension of time for the performance of the contract, of the payments to be made under it, or otherwise, shall be deemed to release the undersigned or either of them, their or either of their heirs, executors or administrators, successors or assigns, from respective liability hereunder; notice to said surety of any such modification, alteration, addition, extension, diminution and/or forbearance hereby being waived.

It is understood and agreed that the term "Principal Obligor" as used herein shall be construed to include both singular and plural, and shall be deemed to include and designate each and every of the individuals, co-partnership, associations and artificial body of persons, who have entered into the above mentioned contract with The City of Philadelphia, who have been designated above as "Principal," and who other than the surety have signed and executed this present Indenture.

Signed, sealed and delivered in the presence of:

BELBOLD CONTRACTING CORP (SEAL)

Clifford J. Belbold (SEAL)

President/~~Vice President~~

Margaret Belbold (SEAL)

Secretary/Treasurer

INSURANCE COMPANY OF NORTH AMERICA

R.H. Shepherd Jr

R. H. Shepherd, Jr ATTORNEY-IN-FACT

84-4359

Know all Men by these Presents, THAT WE,

BELBOLD CONTRACTING CORP.

Principal (hereinafter called the Principal Obligor), and

INSURANCE COMPANY OF NORTH AMERICA

Surety, are jointly and severally held and firmly bound unto The City of Philadelphia, in the sum of

ONE HUNDRED THOUSAND DOLLARS ($100,000.00)

lawful money of the United States of America, to be paid to the said City of Philadelphia, its successors and assigns; to which payment, well and truly to be made, we do bind ourselves and each of us, our and each of our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

Sealed with the CORPORATE seal of the said

BELBOLD CONTRACTING CORP.

and with the corporate seal of the said

INSURANCE COMPANY OF NORTH AMERICA

duly attested by the proper officers thereof.

Dated the 10th day of August

in the year of our Lord one thousand nine hundred and Eighty-FOUR (1984).

WHEREAS, the above bounden Principal Obligor , in and by a certain contract with The City of Philadelphia, of even date herewith, agreed to complete and perform the work for the replacement of the expansion dams on 59th Street bridge over AMTRAK and do all appurtenant and other work as ordered and required by the Department of Streets in strict and exact accordance with a certain proposal and specifications attached thereto and made a part thereof

as is in said contract more fully set forth.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, That if the said Principal Obligor shall and do well and truly, in all respects, comply with all the terms, conditions and covenants contained in the above-mentioned contract, and shall and do pay unto The City of Philadelphia upon demand, any and all loss, damage and expenses which the said City may or shall sustain by reason of the failure of the said Principal Obligor to comply with the terms of the said contract, it being hereby understood and agreed that the decision of the COMMISSIONER - STREETS as to such failure in complying with the terms of the said contract and as to the amount of loss or damage sustained by reason thereof, being binding and conclusive upon the parties hereto, then this obligation to be null and void; otherwise, to be and remain in full force and virtue.

The undersigned Principal Obligor and Surety hereby agree that no modification of the terms of the above-mentioned contract or alteration in the work to be done under it, and no forbearance on the part of either the City or of the contractor to the other, either by the grant of an extension of time for the performance of the contract or otherwise, shall be deemed to release the undersigned or either of them, their or either of their heirs, executors, administrators or assigns, from their liability hereunder, notice to the Surety of any such modification, alteration, extension or forbearance hereby being waived.

And we do for ourselves and each of us, our and each of our heirs, executors, administrators, successors and assigns, hereby authorize and empower the City Solicitor of Philadelphia or any other attorney of any court of record in Pennsylvania or elsewhere by him deputized for the purpose, upon the filing of this instrument or a copy thereof, duly attested as correct by the City Solicitor of Philadelphia, to appear for us or either of us, our or either of our heirs, executors or administrators, successors or assigns, and in our names or in the name of either of us, our or either of our heirs, executors or administrators, successors or assigns, confess a judgment against us or either of us, our or either of our heirs, executors, administrators, successors or assigns, in favor of The City of Philadelphia, for the sum named in this bond, without defalcation, with costs of suit, release of errors, and with five per centum added for collection fees; hereby waiving the benefit of all exemption laws and the holding of inquisition on any real estate that may be levied upon by virtue of such judgment, voluntarily condemning such real estate and authorizing the entry of such condemnation upon any writ of fieri facias and agreeing that said real estate may be sold under the same; and further waiving all errors, defects and imperfections whatsoever in the entering of the said judgment or any process thereon, and hereby agreeing that no writ of error or objection or motion or rule to open or strike off judgment or to stay execution or appeal, shall be made or taken thereto. The right and power to appear and to enter or confess judgment hereinabove provided for and the right to assess damages under any such judgment shall be exercisable any number of times and shall not be exhausted by one or more uses thereof. And for the doing of these acts this instrument or a copy thereof attested as aforesaid shall be full warrant and authority.

Signed, Sealed and Delivered in the presence of

.....

.....

BELBOLD CONTRACTING CORP. (SEAL)

.....

President/~~Vice President~~ (SEAL)

.....

Secretary/Treasurer (SEAL)

INSURANCE COMPANY OF NORTH AMERICA

R. H. Shepherd, Jr. ATTORNEY-IN-FACT

84-4359

WORK CONTRACT "A"

This Agreement, Made this 10 62 day of August in the year of our Lord one thousand nine hundred and ~~seventy~~ EIGHTY FOUR (19 84), between (a) THE CITY OF PHILADELPHIA, hereinafter called the party of the first part, and (b) BELBOLD CONTRACTING CORP.

hereinafter called the party of the second part,

WITNESSETH, That the said party of the second part, for and in consideration of the payments hereinafter specified and agreed to be made by the party of the first part to the said party of the second part, hereby covenants and agrees to and with the said party of the first part, to furnish and deliver all materials required to be furnished and delivered, and to do and perform all the work and labor required to be done and performed, in completing and performing the work for the replacement of the expansion dams on 59th Street bridge over AMTRAK and doing all appurtenant and other work as ordered and required by the Department of Streets

in strict and exact accordance with the proposal, specifications and standard contract requirements hereto attached, which said proposal, specifications and standard contract requirements are hereby made a part of this agreement as fully to all intents and purposes and to the same extent as though herein set out at length.

The party of the second part covenants and agrees to perform the said work in a good and workmanlike manner, under the supervision and to the satisfaction of the Commissioner of Streets; agrees to prosecute said work vigorously, without any delays, and with such force of mechanics and workmen and with such equipment as shall be satisfactory to the said Commissioner; agrees to furnish and supply all the labor and materials, in the quantity and of the quality, required and necessary for the proper performance of said work, which materials so furnished shall be of the best kind and quality and subject to the inspection and approval of said Commissioner; and agrees to strictly conform to the orders, instructions and directions given by the said Commissioner. It is understood and agreed that the decision of the said Commissioner on any questions arising in connection with the performance of said contract shall be binding and conclusive upon the parties hereto.

It is agreed that in case any of the said materials furnished and supplied in performing this contract are rejected by the said Commissioner as unsuitable or unfit, such materials so rejected shall be removed at once by the said party of the second part, and other materials of the proper kind and quality, and fully up to the requirements of this contract, furnished in place thereof, to the satisfaction of the said Commissioner, at the cost and expense of the said party of the second part. If in the opinion of the said Commissioner any of the work under this contract has been improperly constructed or is defective and unsuitable, such work shall be taken down and done anew by the party of the second part to the satisfaction and approval of the said Commissioner, and at the cost and expense of the party of the second part.

If the party of the second part, at any time during the progress of the said work, shall, in the opinion of the said Commissioner neglect or refuse to furnish suitable materials in place of any which may be rejected as unsuitable as aforesaid, or shall refuse, omit or neglect to furnish and supply a sufficiency of properly skilled workmen and necessary equipment, or either, or shall fail in any respect to prosecute the said work with promptness and diligence, or fail in the performance of any of the provisions in this agreement contained, the said Commissioner, acting for and on behalf of the party of the first part, shall, after forty-eight (48) hours notice in writing to be given to the party of the second part, requiring the party of the second part to furnish and deliver suitable materials, or supply more workmen and equipment, or either, push the work more rapidly, or perform the terms and provisions of the agreement, have the right, at his option, if the party of the second part remains in default in the opinion of the said Commissioner (whose opinion thereon shall be binding and conclusive upon the parties hereto), to secure materials of the quality and quantity required by this contract and the necessary number of workmen and mechanics and the required equipment, in the open market, at the then current market prices, from any party or parties, to carry forward the said work and complete this contract, and in the event of the same being done, the party of the second part covenants and agrees to pay unto the party of the first part, upon demand, any difference between the cost thus

paid in open market for such labor, materials and equipment and the price or prices named in this contract, together with all charges and expenses incident to the same; it likewise being agreed that the party of the first part shall have the right to appropriate to the payment of the moneys thus becoming due and payable to it by the party of the second part, any moneys which may then and there be due or which may thereafter become due to the party of the second part under this or any other contract; or the said Commissioner, acting for and on behalf of the party of the first part, shall have the right, at his option, if the party of the second part remains in default in the opinion of the said Commissioner (whose opinion thereon shall be binding and conclusive upon the parties hereto as above set forth) to annul and vacate this contract and to readvertise all or any portion of the work and the required materials herein contracted for, and in the event of his so doing, the party of the second part agrees to be responsible for and to pay unto the party of the first part, upon demand, any difference between the contract price or prices herein provided for and the price or prices which may be paid upon such readvertising, together with all the costs and expenses of such readvertisement, it being likewise agreed that the party of the first part shall have the right to appropriate to the payment of the moneys thus to become due and payable to it by the party of the second part any moneys which may then and there be due or which may thereafter become due to the party of the second part under this or any other contract.

If the said Commissioner shall secure workmen, mechanics and equipment in the open market to carry forward the said work or shall annul and vacate this contract, as in the preceding paragraph set forth, the said Commissioner for and on behalf of the party of the first part, shall have the privilege, at his option, of taking possession, for the purpose of completing the work included under this contract, of all materials, tools, appliances and equipment on the premises, intended for use in the performance of this contract, the party of the second part hereby assigning unto the party of the first part all the right, title and interest of the party of the second part in and to such materials, tools, appliances and equipment.

The remedies herein provided shall be in addition to and not in substitution of the rights and remedies which would otherwise be vested in the party of the first part under the terms of this agreement, including those contained in the specifications and standard contract requirements, hereto attached, or otherwise, all of which rights and remedies are specifically reserved by the party of the first part.

It is understood and agreed that the party of the second part shall be deemed and considered an independent contractor in respect to the work covered by this agreement, and shall assume all risks and responsibility for casualties of every description in connection with the work, except that he shall not be held liable or responsible for delays or damage to work caused by acts of God, acts of public enemy, acts of government, quarantine restrictions, general strikes throughout the trade, or freight embargoes not caused or participated in by the Contractor. Party of the second part shall have charge and control of the entire work until completion and acceptance of the same by party of the first part. Party of the second part shall observe all State and City Laws, Ordinances and regulations, and shall defend and save harmless the City of Philadelphia from all suits and claims for loss of life or injury occurring to employees who perform such work, including that of repair or maintenance. Party of the second part shall be alone liable and responsible for and agrees to fully indemnify, protect and save harmless the City, the said Commissioner and his subordinates, from any and all liability and from all suits and actions of every kind and description brought or which may be brought against them or any of them, for or on account of any loss sustained by any person or party either during the performance or subsequent to the completion of the work covered by this agreement, by reason of injuries to person and damage to property, buildings or adjacent work that may occur during the performance or subsequent to the completion of said work, or that may be sustained as a result or consequence thereof, irrespective of whether or not such injuries or damage be due to negligence or to the inherent nature of the work or to the negligence of the City of Philadelphia, its servants, agents or employees. It is not the intention of this agreement or anything herein provided to confer a third party beneficiary right of action upon any person whatsoever and nothing hereinbefore or hereinafter set forth shall be construed so as to confer upon any person other than the City of Philadelphia a right of action either under this contract or in any manner whatsoever, except that nothing herein contained shall affect the rights conferred upon any person whatsoever by the terms of any labor or materialmen's bond required by law or by this contract. The party of the second part shall obtain and maintain in full force and effect during all times from the making of this contract until the final acceptance of the work by the party of the first part a policy of contractor's comprehensive liability insurance against injury to persons and damage to property, with such insurers as shall be approved by the City Solicitor and in such amounts as shall be provided in the specifications which are part of this agreement, but in no event less than $300,000—$1,000,000 for personal injury and $100,000 for property damage. Such insurance shall be endorsed with a hold harmless clause in favor of the City of Philadelphia. Evidence of such insurance shall be furnished to the operating department before the work is begun. The term "work" as used herein shall be deemed to include work of repair or maintenance performed under this agreement, irrespective of whether or not the same is required by the terms hereof. In the event of the party of the first part sustaining any loss or damage from claims for which the party of the second part is liable and responsible as above set forth and provided, the party of the second part agrees to pay to the party of the first part, on demand, the amount of such loss or damage, including any and all costs sustained in connection therewith. Neither payments by the party of the first part to the party of the second part, nor the failure of the party of the first part to withhold payments to the party of the second part, nor the acceptance of the work by the party of the first part, nor the failure of the party of the first part to give notice to the party of the second part of defectiveness, either in material or workmanship, of the work of the party of the second part, nor the failure of the party of the first part to give notice to the party of the second part of the necessity and duty of the party of the second part to make repairs to and maintain the work as provided for in this agreement, shall be deemed or construed as a waiver by the party of the first part of its rights to be protected and indemnified against claims, liability, loss and damage as in this paragraph specifically provided for and set forth. In the event of any claims being made against or loss or damage suffered by the party of the first part, for which the party of the second part is liable and responsible as above set forth, the amount of such claims, loss or damage may be retained by the party of the first part out of any payments due or to grow due to the party of the second part under this or any other contract.

It is agreed that this contract shall not be sublet as a whole nor shall any part thereof be assigned or transferred, and that no payment, or part payment, which may accrue hereunder, shall be assigned. The said party of the second part avers and represents that no such subletting, assignment or transfer of said contract has ever been made and that no payment or part payment, which may accrue hereunder, has ever been assigned. It is understood that said averment and representation is a material inducement to the execution of this agreement by the party of the first part.

It is further expressly understood and agreed by and between the parties hereto, and it is hereby made part of this agreement, that nothing contained in this contract or in the proposal, specifications and standard contract requirements hereto attached, shall be taken or construed to preclude the said party of the first part from contesting the estimates or certificates of any officer of the City of Philadelphia or the claim of the said party of the second part under this contract, or under such estimate or certificate; and that the said party of the first part shall be at full liberty to make every legal defence by reason of the character, quality and quantity of the said work and materials, and to the time and manner in which the same shall be furnished and done, notwithstanding the certificates or approval of any officer of said City.

It is further understood and agreed that this contract is entered into under and subject to the provisions of the Philadelphia Home Rule Charter, to the provisions of all Acts of Assembly of the said Commonwealth and Ordinances of the City of Philadelphia, and to the supplements and amendments of such Acts and Ordinances. It is agreed that the liability of the City of Philadelphia under the contract shall be limited by the amounts which shall have been or may be from time to time appropriated for the same.

In consideration of the premises, the said party of the first part hereby agrees to pay to the party of the second part, in checks to be drawn by the City Treasurer, for the said work and materials, the sums or prices as set forth in the proposal and specifications attached hereto and made a part hereof.

The party of the second part agrees to accept the said checks in payment as cash.

It is further distinctly understood and agreed that the total amount to be paid for the said work to be performed and such materials to be supplied under this contract shall in no event exceed the sum of

ONE HUNDRED THOUSAND DOLLARS ($100,000.00)

The said Commissioner, for and on behalf of the party of the first part, shall have the right to reduce the quantity or amount of work and materials provided for in this agreement to be performed and supplied, and in the event of such reduction the limit of the total amount to be paid under this contract shall be reduced proportionately, but such reduction shall not affect any of the other provisions of this agreement.

The term "party of the second part," as used in this agreement, shall be construed to include both singular and plural, and shall be deemed to include each and every of the individuals, co-partnerships and corporations specifically named above under (b) and there designated as "party of the second part." The masculine gender shall be deemed to include the feminine and neuter genders.

The parties hereto bind themselves, their heirs, executors, administrators and successors for the faithful performance of this agreement.

IN WITNESS WHEREOF, the Procurement Commissioner of the said City has executed these presents, and the said party of the second part has hereunto set its corporate seal duly attested the day and year first above written.

Marvin L. Chaikelson 11/26/84

Procurement Commissioner

Signed, Sealed and Delivered in the presence of

BELBOLD CONTRACTING CORP. SEAL

Alfred J. Belbold SEAL

President/~~Vice President~~

Mary Raimbold SEAL

Secretary/Treasurer

Approved as to form

City Solicitor

Per

Assistant City Solicitor

#85-13307
84-4359

THIS AGREEMENT OF AMENDMENT, made this 25th day of March A.D., 1985, by and between the CITY OF PHILADELPHIA, hereinafter called "City" and BELBOLD CONTRACTING CORPORATION, hereinafter called "Contractor";

W I T N E S S E T H :

WHEREAS, by Agreement dated August 10, 1984, by and between City and Contractor, Contractor agreed to complete and perform the work for replacement of the expansion dams on the 59th Street bridge over Amtrak, and do all appurtenant work as ordered and required by the Department of Streets; and

WHEREAS, during the course of work, it was discovered that the actual bridge dimensions were different from the bridge dimensions shown on the work plan; and

WHEREAS, City requires Contractor to complete the cementing of the birdge in conformance with the actual bridge dimensions; and

WHEREAS, it is necessary to amend the aforesaid Agreement to provide compensation for Contractor's additional services.

NOW, THEREFORE, the parties hereto intending to be legally bound hereby, mutually covenant and agree:

1. That Contractor complete all necessary work, and all such work shall be in accordance with the direction of the City's Engineer.

2. That in consideration of such additional work, a portion of the monetary limit clause of the aforesaid Agreement be amended to read as follows:

> "It is further distinctly understood and agreed that the total amount to be paid for the said work to be performed and such materials to be supplied under this Agreement shall in no event exceed the sum of ONE HUNDRED TWO THOUSAND TWENTY FOUR DOLLARS and SIXTY CENTS ($102,024.60)."

3. In all other respects, the terms, covenants and conditions of the said Agreement dated August 10, 1984, shal be and remain in full force and effect.

IN WITNESS WHEREOF, and intending to be legally bound hereby, the City of Philadelphia has caused these presents to be executed by its Procurement Commissioner and Contractor has caused these presents to be properly executed and its corporate seal to be hereunto affixed the day and year first above written.

APPROVED AS TO FORM:
BARSAMIAN, PATRICK, CITY SOLICITOR

PER _____ 4/3/85
ASSISTANT CITY SOLICITOR

THE CITY OF PHILADELPHIA

By: _____ APR 12 1985
Procurement Commissioner

CORPORATE SEAL:

BELBOLD CONTRACTING CORPORATION

By: _____
President/~~Vice President~~

Attest: _____
Secretary/~~Treasurer~~

C O N S E N T

INSURANCE COMPANY OF NORTH AMERICA, Surety on the Labor and Materialmen's Bond and the Performance Bond accompanying the said Agreement dated August 10, 1984, approves of and consents to the Amendment of the aforesaid Agreement and bonds this 25th day of March, A.D., 1985.

CORPORATE SEAL:

INSURANCE COMPANY OF NORTH AMERICA

By: R.H. Shepherd Jr
Attorney-In-Fact

59th Street Bridge over AMTRAK

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Exhibit 12

Administration and Inspection
May 1984 to January 1985

JUN 27 1985
SECRETARY'S OFFICE
Public Utility Commission

J. Rachel Williams - Bridge Maintenance Engineer

Month	# of Hours	Rate of Pay	Total
May 1984	15	$16.40	$246.00
June 1984	17	$16.40	$278.00
July 1984	9	$16.77	$150.93
August 1984	18	$16.77	$301.86
September 1984	12	$16.77	$201.24
October 1984	19	$16.77	$318.63
November 1984	24	$16.77	$402.28
November 1984	8	$25.16(overtime)	$201.28
December 1984	20	$16.77	$335.40
January 1985	9	$16.77	$150.93
		Total without fringe benefits	$2587.55

DOCUMENT FOLDER

DOCKETED
JUN 28 1985

City's Exhibit No. 12
6/10/85
I-830373
Philadelphia, Pennsylvania
BJK

59th Street Bridge over AMTRAK

Exhibit 12

Administration and Inspection
May 1984 to January 1985

J.J. Gelgot - Bridge Inspection Supervisor

Month	# of Hours	Rate of Pay	Total
May 1984	12	$11.91	$142.92
September 1984	3	$12.18	$ 36.54
October 1984	2	$12.18	$ 24.36
October 1984	4	$15.59(overtime)	$ 62.36
November 1984	18	$12.18	$219.24
November 1984	8	$15.59(overtime)	$124.72
December 1984	6	$12.18	$ 73.08
January 1984	2	$12.18	24.36
		Total without fringe benefits	$707.58

59th Street Bridge over AMTRAK

Exhibit 12

Administration and Inspection
May 1984 to January 1985

E.R. Carbonetti - Bridge Maintenance Inspector

Month	# of Hours	Rate of Pay	Total
September 1984	3	$10.52	$ 31.56
October 1984	120	$10.52	$1262.40
October 1984	11.5	$15.59(overtime)	$179.29
November 1984	104	$10.52	$1094.08
November 1984	47	$15.59(overtime)	$732.73
November 1984	4	$20.79(Dbl. time)	$ 83.16
November 1984 (1)	40	$11.74	$469.60
December 1984	120	$11.74	$1408.80
December 1984 (2)	24	$15.59(overtime)	$374.16
December 1984 (3)	4	$20.79(Dbl. time)	$ 83.16
January 1985	88	$11.74	$1033.12
		Total without fringe benefits	$6752.06

1. Promotion; changed base hourly rate
2. Maximum overtime rate permitted in this job classification
3. Maximum doubletime rate permitted in this job classification

Exhibit 12

Administration and Inspection
May 1984 to January 1985

D.J. McDonnell, - Bridge Inspector

Month	# of Hours	Rate of Pay	Total
May 1984	4	$10.44	$41.76
September 1984	3	$10.44	$31.32
		Total without fringe benefits	$73.08

59th Street Bridge over AMTRAK

Exhibit 12

Bridge Maintenance Unit
Fringe Benefits For Wages
May 1984 to January 1985

Month	Total Wages	Percentage-Fringe Benefits	Total
May 1984	$430.68	59%	$254.10
June 1984	$278.80	59%	$164.49
July 1984	$150.93	62%	$ 93.58
August 1984	$301.86	62%	$187.15
September1984	$300.66	62%	$186.41
October 1984	$1847.04	62%	$1145.16
November 1984	$3327.29	62%	$2062.92
December 1984	$2274.60	62%	$1410.25
January 1985	$1208.41	62%	$749.21
		Total Fringe benefits	$6253.27

EXHIBIT 12

Bridge Maintenance Unit
Total Wages including fringe benefits for
Administration and Inspection
May 1984 to January 1985

Name	Wages
J. Rachel Williams	$2587.55
D.J. McDonnell	$ 73.08
E.R. Carbonetti	$6752.06
J.J. Gelgot	$ 707.58
Fringe benefits	$6,253.27
Total Wages and Fringe benefits	$16,373.54

59th Street Bridge over AMTRAK

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Public Utility Commission

EXHIBIT 13

Bridge Maintenance Unit - LABOR

Dates:	4-2-84	4-3-84	6-9-84	Total Hours	St.Time Rate	OverTime Rate	Total
Williams, Eng	2	1	4	3-st 4-ot	$16.40	$24.60	$147.60
Colitus, **	4	4	_	8	$13.42	_____	$107.36
Keeler, I.W.*	4	8	_	12	$10.44	_____	$125.28
Michael, I.W.	4	8	_	12	$ 9.85	_____	$118.20
Corbin, I.W.	4	8	_	12	$ 9.85	_____	$118.20
Patterson,***	14	_	8	4-st 8-ot	$9.01	$13.52	$144.20
Tucker, I.W.	_	8	_	8	$9.85	_____	$ 78.80
Mullaney, **	_	_	8	8-ot	_____	$18.66	$149.28
Rhoads, I.W.	_	_	8	8-ot	_____	$14.62	$116.96
Zottich, I.W.	_	_	8	8-ot	_____	$14.62	$116.96
Pender, I.W.	_	_	8	8-ot	_____	$13.54	$108.32
Hollis, ****	_	8	_	8	$10.01	_____	$ 80.80

Sub total	$1411.96
Fringe benefits 59%	$833.06
TOTAL LABOR	$2245.02

Supt-**
Foreman *
E.O.1 - ***
E.O.2 - ****

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JUN 2[illegible]985

City's Exhibit No. B
6/18/85
I-830373
Philadelphia, Pennsylvania
BJK

EXHIBIT 13

Bridge Maintenance Unit.

Dates:	4-2-84	4-3-84	6-9-84	Total Units	Price Per Unit	Total
Material						
5/32 WeldingRods	3	8	6	17	$ .58	$ 9.86
Oxygen, c.f.	—	—	30	30	$2.00	$60.00
Acetylene c.f.	—	—	15	15	$2.00	$30.00
Sets-45 (patching)	—	—	8	8	$15.00	$120.00
				TOTAL MATERIAL		$219.86

	4-2-84	4-3-84	6-9-84	Total Hours	Cost Per/Hour	Total
Equipment						
Truck-Crew Cab	4	8	8	20	$4.50	$90.00
Welding Machine	2	4	4	10	$1.50	$15.00
Boom Truck	—	—	8	8	$7.00	$56.00
					TOTAL EQUIPMENT	$161.00

59th Street Bridge over AMTRAK

EXHIBIT 13

Total Expenses by Bridge Maintenance Unit

for 4-2-84, 4-3-84, 6-9-84

Labor:	$2245.02
Material:	$ 219.86
Equipment:	$ 161.00
TOTAL	$2625.88

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Utility Commission

59th Street Bridge over AMTRAK

EXHIBIT 14

1st Highway Maintenance District.
Repair of potholes and work to secure steelplates July 1983 to January 1985

Dates	Type of Work	# of Hours	Labor Costs
7-1-83	repair of potholes	2	$110.42
7-8-83	secure plate	2	$137.62
8-1-83	secure plate	2	$137.62
12-30-83	repair potholes	2	$110.42
1-31-84	repair potholes	2	$110.42
3-5-84	repair potholes	2	$110.42
3-8-84	secure plate	2	$137.62
3-19-84	repair potholes	3	$193.64
4-25-84	repair potholes	2	$110.42
5-23-84	repair potholes	2	$110.42
1-18-85	repair potholes	2	$110.42
		subtotal	1379.44

Labor costs plus
fringe benefits.

Fiscal year 1984 $1269.02 x 1.59	$2,017.74
Fiscal year 1985 $11042 x 1.62	$ 178.80
Total labor costs including fringe benefits	$2,196.54

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Public Utility Commission

59th Street Bridge over AMTRAK

EXHIBIT 15

Bridge Engineering Division

Month	Salary	Fringe Benefits	Total
October 1983	$115.46	$68.12	$183.58
March 1984	$504.82	$297.84	$802.66
April 1984	$804.80	$474.83	$1279.63
January 1985	$ 41.15	$ 25.51	$ 66.66
		Total Salary and Fringe Benefits	$2,332.53

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TOTAL COST (LABOR, MATERIALS & EQUIPMENT) $ 880.86

LABOR

NUMBER	CLASSIFICATION	HOURLY RATE	HOURS	COST
1	SUB-FOREMAN	9.20	14	128.80
1	TRUCK DRIVER	8.55	14	119.70
1	LABORER	8.53	14	119.42
1	ENG. AIDE III	10.25	6	61.50
			TOTAL COST	429.42

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MATERIAL

QUANTITY	DESCRIPTION		UNIT COST	COST
2	"STREET CLOSED AHEAD"	METAL	54.36	108.72
2	"DETOUR AHEAD"	METAL	54.36	108.72
1	"STREET CLOSED. DETOUR (LA)"	PLYWOOD	24.00	24.00
1	"STREET CLOSED AHEAD. LOCAL TRAFFIC ONLY - DETOUR (RA)"	PLYWOOD	24.00	24.00
3	DETOUR ←	WOOD	18.00	54.00
3	DETOUR →	WOOD	18.00	54.00
2	END OF	WOOD	18.00	36.00
			TOTAL COST	409.44

EQUIPMENT

NUMBER	TYPE	HOURLY RATE	NO. OF HOURS	COST
1	TRUCK	3.00	14	42.00
				42.00

6/18/85
I-830373
City's EXHIBIT 16 BJK
Philadelphia, Pennsylvania

MEMORANDUM

CITY OF PHILADELPHIA

TO : Gerald Clark, Law Department

DATE 5/23/85

FROM : John E. Durrant, Materials Testing Laboratory Chief, Water Dept.

SUBJECT: Streets Dept. Contract No. 84-4359

RECEIVED
JUN 27 1985
SECRETARY'S OFFICE
Public Utility Commission

Attached, please find laboratory reports for samples tested from the two concrete pours on the 59th Street Bridge over Amtrak. The first pour was submitted under contract number 16733 and the second pour under contract number 84-4359.

Each pour represents four concrete cylinder samples. The eight cylinders are charged for at the rate of ten tests per sample. For fiscal year 1985 the per test charge $1.60. Therefore, the eight samples tested at $16.00 each accounts for the $128.00 charges to this project for the Laboratory's services.

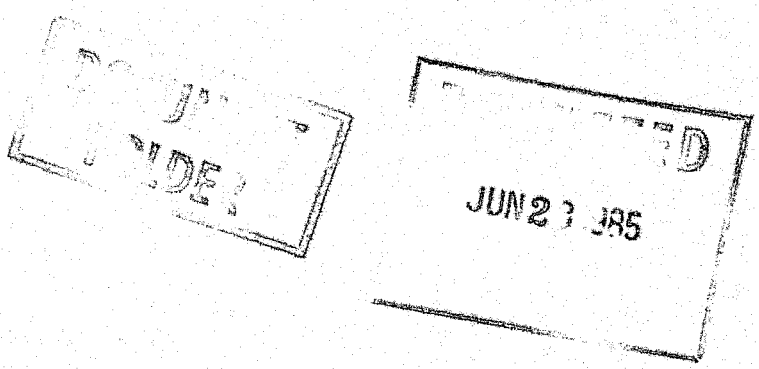
If you require additional information, please contact me at 686-1690.

John E. Durrant
Materials Testing Laboratory Chief

na

CC: Thomas Gallagher

encl.



6/18/85
I-830373
Philadelphia, Pennsylvania
BJK

City's
EXHIBIT 17

CITY OF PHILADELPHIA - WATER DEPARTMENT - ENGINEERING DIVISION
MATERIALS TESTING LABORATORY
7TH ST.&LEHIGH AVE. PHILA.,PA. 19133 PHONE MU-6-1776(EX-23-245)

REPORT ON: CONCRETE CYLINDERS

FOR: STREETS DEPARTMENT

BRIDGE SECTION

J. LEASURE,CHIEF

930 MSB

ATTENTION- CARBONETTI

CONTRACT NO- 16733
CONCRETE MFG-TRAP ROCK

ENG/INS- CARBONETTI
LOCATION- 59TH STREET BRIDGE
CONTRACTOR- BELROLD
CLASS- 3750

DATE CAST- 11/23/84
DATE RECEIVED-11/26/84

LABORATORY NUMBER	S T	POUR NO	SAMPLE NO	DATE TESTED	TEST AGE	U.WT. (PCF)	COMPRESSIVE STRENGTH	SI UNITS (KPA)
8521133101	06	1	59-1	11/26/84	3D	153.5	4790 PSI	33017
8521133102	06	1	59-2	11/26/84	3D	154.3	5130 PSI	35361
8521133103	06	1	59-3	12/21/84	28D	154.8	6510 PSI	44873
8521133104	06	1	59-4	12/21/84	28D	153.5	6580 PSI	45356

REMARKS-

TUE, MAY 28, 1985 10

CHIEF-MATERIALS TESTING LABORATORY DATE OF REPORT

CITY OF PHILADELPHIA - WATER DEPARTMENT - ENGINEERING DIVISION
MATERIALS TESTING LABORATORY
7TH ST.&LEHIGH AVE. PHILA.,PA. 19133 PHONE MU-6-1776(EX-23-245)

REPORT ON: CONCRETE CYLINDERS

FOR: STREETS DEPARTMENT

HIGHWAY CONSTRUCTION

J. LOWRY

820 MSB

ATTENTION- CARBONETTI

CONTRACT NO- 84-4359
CONCRETE MFG-TRAP ROCK

ENG/INS- CARBONETTI
LOCATION- 59TH ST. AMTRAK EXP. BAMS
CONTRACTOR- BELBOLD
CLASS- 3750

DATE CAST- 12/14/84
DATE RECEIVED-12/17/84

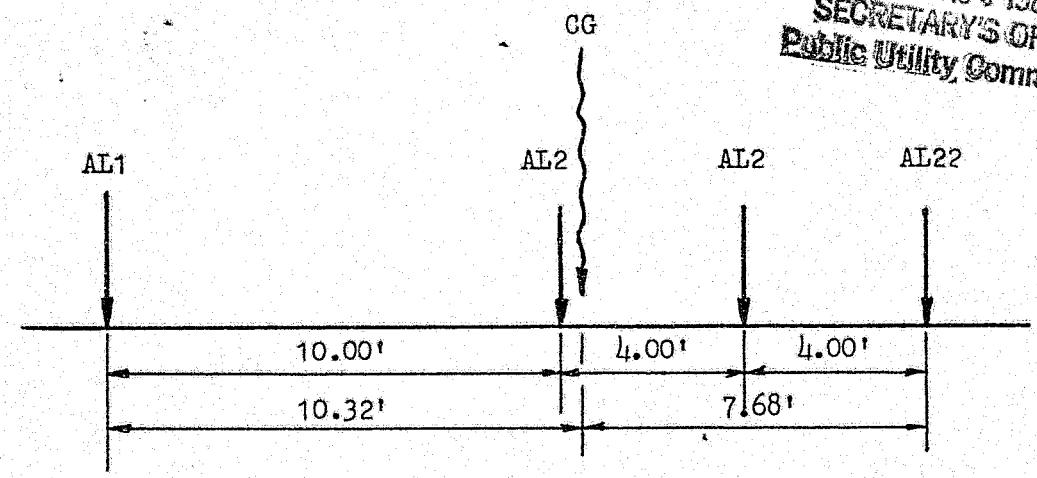
LABORATORY NUMBER	S T	POUR NO	SAMPLE NO	DATE TESTED	TEST AGE	U.WT. (PCF)	COMPRESSIVE STRENGTH	ST (UNITS (KPA)
8521135201	06	2	59-5	12/17/84	3D	153.5	4170 PSI	28744
8521135202	06	2	59-6	12/17/84	3D	154.8	4140 PSI	28537
8521135203	06	2	59-7	1/11/85	28D	154.6	5570 PSI	38394
8521135204	06	2	59-8	1/11/85	28D	153.8	4490 PSI	30950

REMARKS-

TUE, MAY 28, 1985 10

CHIEF-MATERIALS TESTING LABORATORY DATE OF REPORT

JUN 27 1985
SECRETARY'S OFFICE
Public Utility Commission



AL1 = Front Axle Load = 19,280 pounds
AL2 = Rear Axle Load = 18,000 pounds
CG = Center of Gravity of all loads

GVW = Gross Vehicle Weight = 73,280 pounds = CG

MAXIMUM LOAD 1970 (ML70)
TRUCK LOADING

Lateral or transverse distance between centers of wheel groups in the given vehicle = 6.00'.

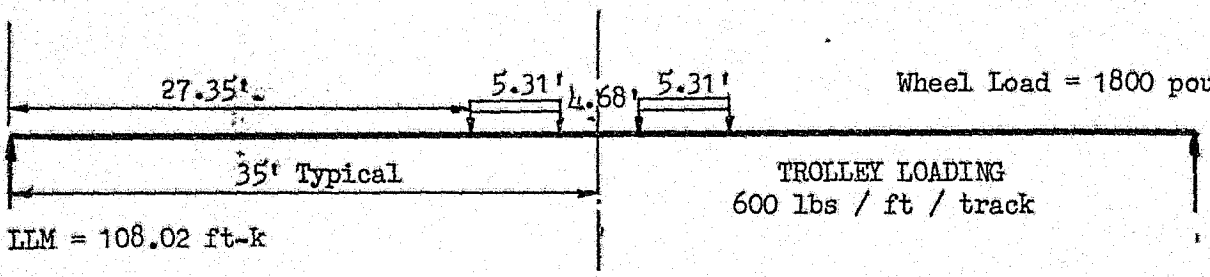
Lateral or transverse distance between centers of wheel groups of two adjacent vehicles = 4.00' for Design, or 3.00' for Analyses or Ratings.

JUN 27 1985

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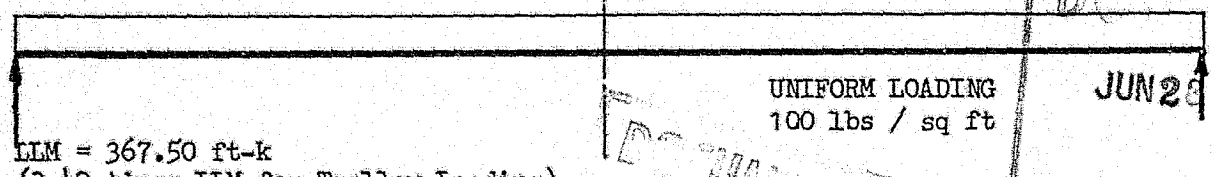
CITY EXHIBIT 18

For purposes of comparison, the live-load moment has been calculated for the following conditions. Live-load moment is measured in foot-pounds or foot-kips. 1 foot-kip = 1000 foot-pounds. Live-load moment is abbreviated LLM.

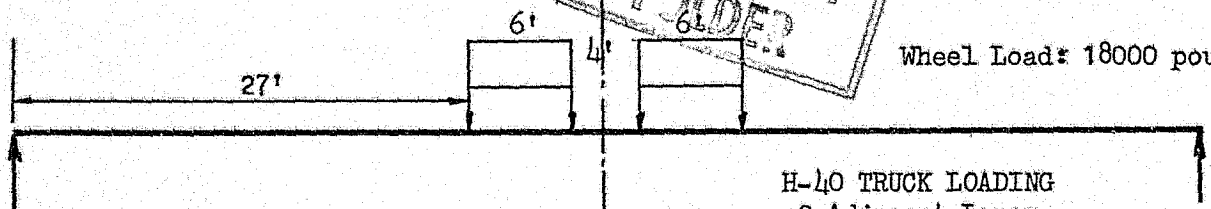


LLM = 108.02 ft-k

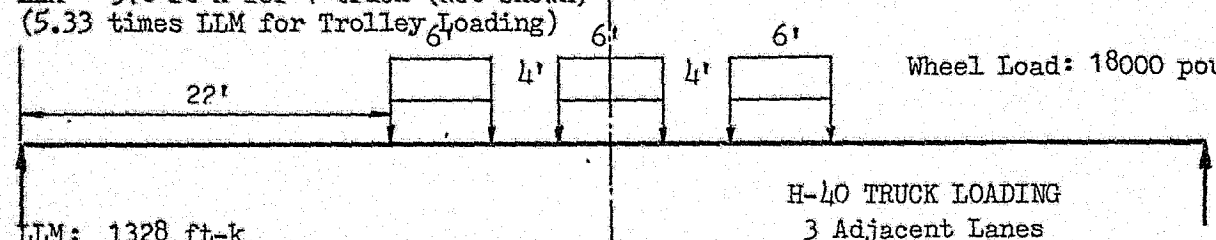
Using 6' c. to c. of Floorbeams: Uniform Load = 600 lbs / lin ft



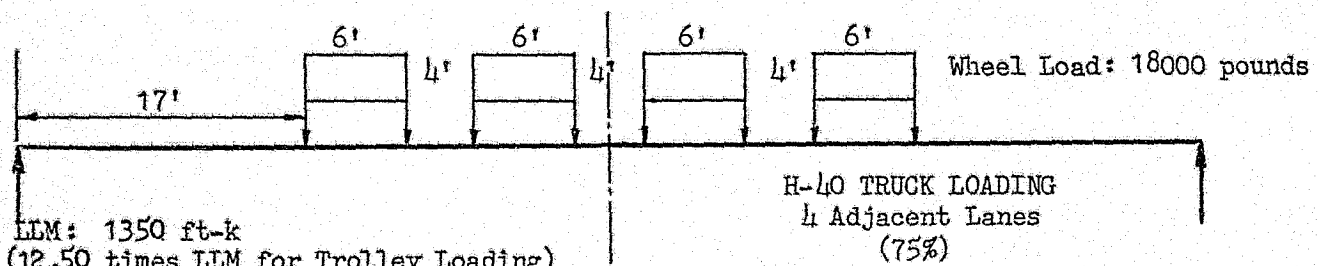
LLM = 367.50 ft-k
(3.40 times LLM for Trolley Loading)



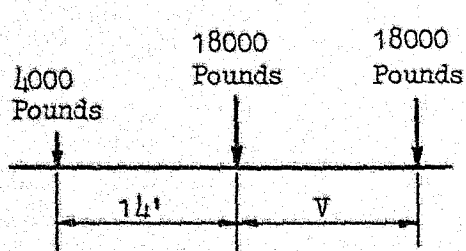
LLM: 1080 ft-k
(10.00 times LLM for Trolley Loading)
LLM = 576 ft-k for 1 truck (Not Shown)
(5.33 times LLM for Trolley Loading)



LLM: 1328 ft-k
(12.30 times LLM for Trolley Loading)



LLM: 1350 ft-k
(12.50 times LLM for Trolley Loading)



All loads shown are Wheel Loads
V = 14' (min) to 30' (max)
GVW = 40 Tons or 80,000 pounds

CITY EXHIBIT 19

6/18/85
I-830373
Philadelphia, Pennsylvania
BJK

CITY EXHIBIT 30
6/18/85
I-830373
Philadelphia, Pennsylvania
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bard streets, joining the Twenty-third and Lombard streets school building, one thousand two hundred (1,200) dollars.

SECT. 2. The City Controller is further authorized to transfer the sum of eighty-two thousand one hundred and ninety (82,190) dollars and eighty-five (85) cents from the amount set aside for the payment of mandamuses to new Item 36 in the annual appropriation to the City Commissioners, to pay for the building of the Juvenile House of Detention, northeast corner of Twenty-second and Arch streets.

This bill is approved, with the exception of item in Section 2. "Transfer of the sum of eighty-two thousand one hundred and ninety (82,190) dollars and eighty-five (85) cents, from the amount set aside for the payment of mandamuses, to new item 36, in the annual appropriation to the City Commissioners, to pay for the building of the Juvenile House of Detention, northeast corner of Twenty-second and Arch streets."

The balance of the bill I approve.

Approved the sixteenth day of November, A. D. 1905.

JOHN WEAVER,
Mayor of Philadelphia.

AN ORDINANCE

Giving authority and consent by the City of Philadelphia to the construction, maintenance and operation of so much of the proposed branch or improved line of the Pennsylvania Railroad Company, extending from a point in the said City on its present main line at or near Fifty-sixth street, Philadelphia, to connections with its low grade line and Trenton Branch, at or near Glen Loch, in Chester County, as is located within the limits of said City, and for the purpose of aiding and enabling the construction thereof, providing upon certain terms

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and conditions for change and alteration of certain City plans by revising the lines and grades of certain streets thereon; by striking therefrom and vacating portions of certain streets; by extending certain existing streets; by opening certain new streets, and by making such revision of lines and grades of streets as may be necessary to properly complete the City plans within certain limits of the Thirty-fourth Ward, of the said City.

WHEREAS, The Pennsylvania Railroad Company, has in the exercise of its lawful power and authority duly located and adapted and is about to construct a branch or improved line of its railroad, commencing at a point on its present main line at or near Fifty-sixth street in the City and County of Philadelphia, and extending thence through said City and through the County of Delaware, into the County of Chester, to points of connection with the said Company's low grade line and Trenton Branch at or near Glen Loch, in said last mentioned County, the portion of said branch or improved line located within the said City of Philadelphia beginning at the aforesaid point on its present main line of railroad at or near Fifty-sixth street aforesaid, and thence curving to the westward passing under the intersection of Sixty-second street and Lancaster avenue; thence in a tunnel passing under Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street to a point west of Sixty-fourth street; thence passing under Sixty-sixth street and over Sixty-eighth street and Sixty-ninth street; thence curving to the southward, passing over Seventy-third street and under Haverford avenue, Westminster street and Vine street, and over Race street, Arch street and Ashurst street to the City Line at Cobbs Creek, near Woodbine avenue; and

AND WHEREAS, A revision of the lines and grades of certain streets on said City plans, by striking therefrom and vacating portions of certain streets; by extending certain existing streets, and by opening certain new streets in the Thirty-fourth Ward of said City, is necessary to enable the said Railroad Company to construct its said branch or improved line of railroad in such manner as will accommodate the public convenience and promote the public safety in its operation; now, therefore,

SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain,* That the authority and consent of the said City of Philadelphia be, and is hereby given to the Pennsylvania Railroad Company to construct, maintain and operate the said line of railroad in the Thirty-fourth Ward of the City of Philadelphia, from a point in the present line of the Pennsylvania Railroad at or near Fifty-sixth street to a point in the boundary line between Philadelphia and Delaware Counties near Woodbine avenue, and to cross by undergrade or overhead bridges, all streets, roads and lanes which are now open or may hereafter be opened across the line of the said Railroad: *Provided,* That nothing herein contained shall authorize the longitudinal occupation at grade crossing at grade of any street, road or lane.

SECT. 2. The location and grade of the said railroad shall be substantially as shown upon a plan and profile which, before this ordinance shall have any effect or confer any authority upon the said railroad company, shall be approved by the proper officials of the Pennsylvania Railroad Company and filed in the Department of Public Works (Bureau of Surveys.)

SECT. 3. The Department of Public Works (Board of Surveyors) is hereby authorized to revise the lines and grades of any and all streets and roads now open or upon the City plan adjacent to the line of the said railroad, or affected by its construction, between Fifty-ninth street and Cobbs Creek, or affected by any changes in the grades of the Pennsylvania Railroad between Fifty-second street and Woodbine avenue, caused by, or made in connection with the construction of the said railroad; to strike from the City plan and vacate the following streets: Malvern avenue as now located, between Lancaster avenue and Sixtieth street; Sixty-second street as now located, between a point about 400 hundred feet south of Woodbine avenue and Lancaster avenue; the Lancaster turnpike road, between Fifty-ninth street and Lancaster avenue and between Fifty-sixth street and Montgomery avenue; and Columbia avenue, between the Lancaster turnpike road and Jefferson street, except such portions of said streets as may lie

within the line of new streets herein authorized: to place upon the City plan the following streets: Malvern avenue, seventy feet wide, between its present intersection with Sixtieth street, and its present intersection with Lancaster avenue; Jefferson street, seventy feet wide, between Fifty-fourth street and Montgomery avenue; Fifty-sixth street, sixty feet wide, between Lancaster avenue and the new line of Jefferson street; Sixty-second street, fifty feet wide, between a point about four hundred feet south of Woodbine avenue and the new line of Malvern avenue; to revise the lines and grades of Upland way, or Sixtieth street, between Coleman avenue and Lebanon avenue, and of Lancaster turnpike road, or Montgomery avenue, between Lebanon avenue and Fifty-seventh street; and to make such other revisions in the lines and grades of streets, and to lay out such new streets within the territory bounded by City avenue on the north, Fifty-fourth street on the east, Lansdowne avenue on the south and Cobb's Creek on the west, as may be necessary to complete the City plan in that vicinity.

SECT. 4. When streets or roads, legally or physically open, are cut off or diverted, or their lines and grades, or both changed, necessary and proper outlets approved by the Board of Surveyors, must be made to other streets or roads, and the said streets or roads, or their substitutes, shall be restored to a condition equal to that existing at the time of the change, at the expense of the railroad company, which shall pay all cost of such changes and all damages occasioned thereby.

SECT. 5. No street now or hereafter placed upon the City plan shall cross the said railroad at grade; and all streets upon the City plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad. The said Pennsylvania Railroad Company shall bear the entire cost of constructing and forever maintaining all bridges, whether overhead or under grade and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and upon the lines of Sixty-eighth and Sixty-ninth streets, and shall agree to

pay one-half of the entire cost of construction, and the whole cost of maintenance, of all bridges, whether overhead or undergrade, upon the lines of all streets or roads now upon the City plan or placed thereon under authority of this ordinance, and not otherwise provided for therein, and hereafter opened across the line of the said railroad, whenever Councils, by ordinance, shall direct the construction of said bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty (20) feet above the tops of the rails, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans for the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. The said railroad company shall keep its road, wherever it crosses the line of any street or road, in good order and condition at all times, and shall save the City of Philadelphia harmless, so far as the said City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid, or for the longitudinal occupation of Malvern avenue with a tunnel.

SECT. 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions or changes of streets and roads herein authorized, the said Pennsylvania Railroad Company shall enter into an agreement, satisfactory to the City Solicitor, to comply with the following conditions: To reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary, from a point in Sixty-second street, about four hundred (400) feet south of Woodbine avenue, along Sixty-second street, Malvern ave-

nue, Sixtieth street, Montgomery avenue and Jefferson street, and thence across property of the said railroad company to Lancaster avenue near Fifty-sixth street, and such other existing sewers, drainage channels, water pipe, electrical conduits and othe municipal structures as may be affected by the construction of said railroad and the changes of lines and grades of streets herein authorized, together with all necessary appurtenances and connections with existing sewers, in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); to forever maintain said sewer or sewers and appurtenances at its own expense wherever they lie within property owned by the said railroad company; to permit inspection of the same by representatives of the Department of Public Works at any time and to repair same whenever directed to do so by the Director of said department. To construct its railroad in tunnel from a point northeast of Lancaster avenue, under Malvern avenue, Sixty-third street, Gross street, and Sixty-fourth street: *Provided,* That there shall be no openings in the surface of Malvern avenue from the said tunnel to a point west of Sixty-fourth street, and to at once construct steel or masonry bridges with floors paved with asphalt, and to construct satisfactory approaches to the same to the grades established under authority of this ordinance, at its own expense, for carrying Sixty-sixth street and Haverford avenue, of their full width as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad; also to at once construct single span steel or masonry bridges for carrying the said railroad over and above Sixty-eighth street and Sixty-ninth street of their full widths as now confirmed or confirmed under authority of this ordinance, and to forever maintain all the bridges named in this section at its own expense. To dedicate or agree to dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City plan or placed upon the City plan under authority of this ordinance, crossing under or over the said railroad; to dedicate or indemnify the City against all damages and costs for the opening of the following streets now upon the City plan

or placed thereon under authority of this ordinance: Jefferson street, between Fifty-fourth street and Montgomery avenue; Malvern avenue, between Sixtieth street and Lancaster avenue; Sixtieth street or Upland way, between Coleman avenue and Montgomery avenue; Sixty-second street, between a point about four hundred feet south of Woodbine avenue and Malvern avenue; the unopened portion of Fifty-sixth street, between Lancaster avenue and Jefferson street; Montgomery avenue, between Sixtieth street and Jefferson street; and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it. To open, grade and macadamize to the lines and grades confirmed under authority of this ordinance, and to construct the necessary bridges upon the following streets at its own expense: Malvern avenue, between Lancaster avenue and Sixtieth street; Sixtieth street, between Coleman avenue and Montgomery avenue; Montgomery avenue between Sixtieth street and Jefferson street; Jefferson street, between Montgomery avenue and Fifty-fourth street; and the unopened portion of Fifty-sixth street between Lancaster avenue and Jefferson street. To maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad. The Pennsylvania Railroad Company shall also agree not to claim any damages for the opening, grading or changing of grade of any street or road now open or upon the City plan, or placed upon the City plan under authority of this ordinance, or upon or across any property owned or controlled by it within the territory covered by this ordinance, and shall file its bond in the sum of two hundred and fifty thousand (250,000) dollars duly executed under its corporate seal, in a form satisfactory to the City Solicitor, conditioned to indemnify the City against any and all damages which may arise by reason of the construction of the said railroad and the consequent changes of lines and grades of any street or road now legally or physically open, and also to faithfully comply with all the conditions, requirements and provisions of this ordinance; and shall pay

into the City Treasury the sum of fifty (50) dollars for printing the same.

SECT. 7. The authority herein granted for the construction of the said railroad shall terminate and become null and void if the said railroad is not completed within ten years from the date of the appoval of this ordinance.

Approved the twenty-third day of November, A. D. 1905.

JOHN WEAVER,
Mayor of Philadelphia.

RESOLUTION

Authorizing the Department of Public Works to issue permits for breaking streets during the months of December, 1905, January and February, 1906, and suspending Joint Rule No. 30 of the Select and Common Councils.

Resolved, by the Select and Common Councils of the City of Philadelphia, That all ordinances or parts of ordinances which forbid or prevent the Department of Public Works from issuing permits or permitting the doing of work in any streets of the City during the winter months (from the first day of December, 1905, to the first day of March, 1906, following, or any other day or date) be, and the same are hereby suspended and declared to be inoperative, at the judgment and discretion of the Mayor and the Director of the Department of Public Works, during the winter months, to the end that the Department of Public Works, as far as possible, permit the carrying on or continuance of all classes of work in said Department which may give employment to our people. And that Joint Rule No. 30 of Select and Common Councils be suspended for the purpose of permitting the Clerks of Councils to present this resolution to the Mayor for his approval or disapproval.

Approved the twenty-third day of November, A. D. 1905.

JOHN WEAVER,
Mayor of Philadelphia.

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Philadelphia, Pennsylvania
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CITY EXHIBIT 21

Boulevard and Tabor road; Chadwick street, between Tasker and Morris streets; Springfield avenue west of Baltimore Central Railroad; sixteen (16) lights from Chestnut street pier to the following locations: two (2) Kensington Recreation Center; Eleventh street, between Ellsworth street and Washington avenue; Haverford and Girard avenues; Twentieth street and Oregon avenue; Twentieth and Johnson streets; Twentieth street and Erie avenue; Snyder avenue and Swanson street; Oxford street, between Sixty-first and Sixty-third streets; Church lane and Twentieth streets; Chelten avenue, west of York road; Broad and Butler streets; Forty-eighth and Spruce streets; Fifty-eighth and Sanson streets; Ludlow street, between Fortieth and Forty-first streets; McKean street, west of Twenty-third street; from Thomas avenue and Ithan street to Fifty-sixth and Thomas avenue; from Sixteenth street north of Chestnut street to Seventeenth and Ranstead streets.

Approved the eighth day of July, A. D. 1915.

RUDOLPH BLANKENBURG,
Mayor of Philadelphia.

AN ORDINANCE

Amendatory of and supplementary to an ordinance entitled "An Ordinance giving authority and consent by the City of Philadelphia to the construction, maintenance and operation of so much of the proposed branch or improved line of the Pennsylvania Railroad Company, extending from a point in the said City on its present main line at or near Fifty-sixth street, Philadelphia, to connections with its low grade line and Trenton Branch, at or near Glen Loch, in Chester County, as is located within the limits of said City, and for the purpose of aiding and enabling the construction thereof, providing upon certain terms and conditions for change and alteration of certain City plans by revising the lines

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and grades of certain streets thereon; by striking therefrom and vacating portions of certain streets, by extending certain existing streets, by opening certain new streets, and by making such revisions of lines and grades as may be necessary to properly complete the City plans within certain limits of the Thirty-fourth Ward of the said City," approved the 23d day of November, 1905.

SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain,* That an ordinance entitled "An Ordinance giving authority and consent by the City of Philadelphia to the construction, maintenance and operation of so much of the proposed branch or improved line of the Pennsylvania Railroad Company, extending from a point in the said City on its present line at or near Fifty-sixth street, Philadelphia, to connections with its low grade line and Trenton Branch, at or near Glen Loch, in Chester County, as is located within the limits of said City, and for the purpose of aiding and enabling the construction thereof, providing upon certain terms and conditions for change and alteration of certain City plans by revising the lines and grades of certain streets thereon, by striking therefrom and vacating portions of certain streets, by extending certain existing streets, by opening certain new streets and by making such revision of lines and grades of streets as may be necessary to properly complete the City plans within certain limits of the Thirty-fourth Ward of the said City," approved the 23d day of November, 1905, be amended and supplemented as follows:

That Section 5 of said ordinance, which reads as follows:

"SECTION 5. No street now or hereafter placed upon the City plan shall cross the said railroad at grade; and all streets upon the City plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad. The said Pennsylvania Railroad Company shall bear the entire cost of constructing and forever maintaining all bridges, whether

overhead or undergrade, and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and upon the lines of Sixty-eighth and Sixty-ninth streets, and shall agree to pay one-half of the entire cost of construction, and the whole cost of maintenance, of all bridges, whether overhead or undergrade, upon the lines of all streets or roads now upon the City Plan or placed thereon under authority of this ordinance, and not otherwise provided for therein, and hereafter opened across the line of the said railroad, whenever Councils, by ordinance, shall direct the construction of such bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty (20) feet above the tops of the rails, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans for the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. The said railroad company shall keep its road, wherever it crosses the line of any street or road, in good order and condition at all times, and shall save the City of Philadelphia harmless, so far as the said City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid, or for the longitudinal occupation of Malvern avenue with a tunnel," be, and the same is hereby amended so as to read as follows:

SECTION 5. No street now or hereafter placed upon the City plan shall cross the said railroad at grade; and all streets upon the City plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad. The said Pennsylvania Railroad Company shall bear the entire cost of

constructing and forever maintaining all bridges, whether overhead or undergrade, and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and the new street to be opened across the main line and yards extending from the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, and the bridge from the east side of Sixty-eighth street to the west side of Sixty-ninth street, and shall agree to pay one-half of the entire cost of construction, and the whole cost of maintenance, of all other bridges, whether overhead or undergrade, upon the lines of all streets or roads, now upon the City plan or placed thereon under authority of this ordinance, and not otherwise provided for herein, and hereafter opened across the line of the said railroad, whenever Councils, by ordinance, shall direct the construction of said bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty-three (23) feet above the tops of the rails, except the bridge to be constructed across the Main Line and yards at the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, which shall have a clearance of not less than seventeen and one-half ($17\frac{1}{2}$) feet over the Main Line passenger tracks and not less than twenty-three (23) feet over the yard tracks and the bridge on the line of Malvern avenue, which shall have a clearance of not less than seventeen and one-half ($17\frac{1}{2}$) feet over the west bound passenger tracks, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans of the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. The said railroad company shall keep its road, wherever it crosses the line of any street or road, in good order and condition

at all times, and shall save the City of Philadelphia harmless, so far as the City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid or for the longitudinal occapation of Malvern avenue with a tunnel.

That Section 6 of said ordinance, which reads as follows:

"SECTION 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions or changes of streets and roads herein authorized, the said Pennsylvania Railroad Company shall enter into an agreement, satisfactory to the City Solicitor, to comply with the following conditions: To reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary, from a point in Sixty-second street, about four hundred (400) feet south of Woodbine avenue, along Sixty-second street, Malvern avenue, Sixtieth street, Montgomery avenue and Jefferson street, and thence across property of the said railroad company to Lancaster avenue, near Fifty-sixth street, and such other existing sewers, drainage channels, water pipe, electrical conduits and other municipal structures, as may be affected by the construction of said railroad and the changes of lines and grades of streets herein authorized, together with all necessary appurtenances and connections with existing sewers, in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); to forever maintain said sewer or sewers and appurtenances at its own expense wherever they lie within property owned by the said railroad company; to permit inspection of the same by representatives of the Department of Public Works at any time and to repair same whenever directed to do so by the Director of said Department. To construct its railroad in tunnel from a point northeast of Lancaster avenue, under Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street: *Provided,* That there shall be no

openings in the surface of Malvern avenue, from the said tunnel to a point west of Sixty-fourth street, and to at once construct steel or masonry bridges with floors paved with asphalt, and to construct satisfactory approaches to the same to the grades established under authority of this ordinance, at its own expense, for carrying Sixty-sixth street and Haverford avenue, of their full width as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad; also to at once construct single span steel or masonry bridges for carrying the said railroad over and above Sixty-eighth street and Sixty-ninth street of their full widths as now confirmed or confirmed under authority of this ordinance, and to forever maintain all the bridges named in this section at its own expense. To dedicate or agree to dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City plan or placed upon the City plan under authority of this ordinance crossing under or over the said railroad; to dedicate or indemnify the City against all damages and costs for the opening of the following streets now upon the City plan or placed thereon under authority of this ordinance: Jefferson street, between Fifty-fourth street and Montgomery avenue; Malvern avenue, between Sixtieth street and Lancaster avenue; Sixtieth street, or Upland Way, between Coleman avenue and Montgomery avenue; Sixty-second street, between a point about four hundred (400) feet south of Woodbine avenue and Malvern avenue; the unopened portion of Fifty-sixth street, between Lancaster avenue and Jefferson street; Montgomery avenue, between Sixtieth street and Jefferson street, and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it. To open, grade and macadamize to the lines and grades confirmed under authority of this ordinance, and to construct the necessary bridges upon the following streets at its own expense: Malvern avenue, between Lancaster avenue and Sixtieth street; Sixtieth street, between Coleman avenue and Montgomery avenue; Montgomery avenue, between Sixtieth street and Jefferson street; Jefferson street between

Montgomery avenue and Fifty-fourth street, and the unopened portion of Fifty-sixth street, between Lancaster avenue and Jefferson street. To maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad. The Pennsylvania Railroad Company shall also agree not to claim any damages for the opening, grading or changing of grade of any street or road now open or upon the City plan, or placed upon the City plan under authority of this ordinance, or upon or across any property owned or controlled by it within the territory covered by this ordinance; and shall file its bond in the sum of two hundred and fifty thousand (250,000) dollars duly executed under its corporate seal, in a form satisfactory to the City Solicitor, conditioned to indemnify the City against any or all damages which may arise by reason of the construction of the said railroad and the consequent changes of lines and grades of any street or road now legally or physically open, and also to faithfully comply with all the conditions, requirements and provisions of this ordinance, and shall pay into the City Treasury the sum of fifty (50) dollars for printing the same," be, and the same is hereby amended so as to read as follows:

SECTION 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions and changes of streets and roads herein authorized, the said Pennsylvania Railroad Company shall enter into an agreement satisfactory to the City Solicitor, to comply with the following conditions: to reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary from the intersection of Malvern and Lancaster avenues to a point in the present sewer west of the vacated Fifty-sixth street, about six hundred (600) feet north of Lancaster avenue, and construct a sewer from Sixty-first street and Lebanon avenue along Lebanon avenue to Lancaster avenue, and

along Lancaster avenue to Fifty-ninth street, and construct and maintain at its own expense a channel for drainage, in addition to the sewer system, from Fifty-eighth street and Lebanon avenue to the southeast side of Upland Way, and reconstruct such other existing sewers, drainage channel, water pipes, electrical conduits and other municipal structures as may be affected by the construction of said railroad and the changes of lines and grades of streets herein authorized, together with all necessary new sewers and inlets and appurtenances and connections therewith and with existing sewers, in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); to forever maintain said sewer or sewers and appurtenances at its own expense, wherever they lie within property owned by the said railroad company or cross under the lines of railroad owned by it; to permit inspection of the same by representatives of the Department of Public Works at any time, and to repair same whenever directed to do so by the Director of said Department; those portions of said sewers that are relocated within the lines of any street or streets now on the City plan or placed thereon by authority of this ordinance are to be maintained by the City, except where they cross under the lines of the said railroad company; to construct its railroad in tunnel from a point northeast of Lancaster avenue, under Lancaster avenue, Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street: *Provided*, That there shall be no openings in the surface of Malvern avenue from the said tunnel, between the portal northeast of Lancaster avenue and a point west of Sixty-fourth street, and to construct steel or masonry bridges, with paved floors, and to construct satisfactory paved approaches to the same to the grades established under authority of this ordinance, at its own expense, for carrying Sixty-sixth street, Haverford avenue, Jefferson street and the new street from the proposed intersection of Fifty-ninth street and Lancaster avenue to the proposed intersection of Fifty-seventh street and Upland Way, of their full widths as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad, also to con-

struct a steel or masonry bridge for carrying the said railroad from the east side of Sixty-eighth street to the west side of Sixty-ninth street over and above said streets, and to relocate and reconstruct bridges, with columns on curb lines carrying its tracks, connecting with the Schuylkill Valley Railroad, over Jefferson street, between Fifty-third and Fifty-fourth streets, and to relocate, reconstruct and build additional bridges with columns in the center of the street to carry its main and yard tracks over and above Fifty-second street, between Merion avenue and Monticello street, and to extend the present arch bridge over Woodbine avenue for three tracks, with clearances not less than under the present arch, or build bridges for three additional tracks with clear spans and of clearance of not less than fourteen (14) feet over Woodbine avenue, of their full widths as now confirmed, or confirmed under authority of this ordinance, and to forever maintain all of the bridges named in this section at its own expense. To dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City plan or placed upon the City plan under authority of this ordinance, crossing under or over the said railroad; to dedicate the property or indemnify the City against all damages or costs for the opening of the following streets now upon the City plan or placed thereon under authority of this ordinance: Upland Way, between Fifty-fourth street and Woodbine avenue; Malvern avenue, between Upland Way and Lancaster avenue; Sixty-second street, betwen a point about four hundrd (400) feet south of Woodbine avenue and Lancaster avenue; Fifty-ninth street, eighty (80) feet wide, between Nassau street and Lancaster avenue; a new street, seventy (70) feet wide, over the tracks and property of the Pennsylvania Railroad, from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Fifty-seventh street, between Upland Way as proposed to be laid out and Lebanon avenue; Columbia avenue, from Fifty-ninth street to Lancaster avenue, including the intersection of Columbia avenue, Fifty-ninth street and Lan-

caster avenue; and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it; and to indemnify the City against all damages and costs for the changes of lines and grades of the following streets, as authorized by this ordinance: Fifty-seventh street, from Berks street to Lebanon avenue; Lebanon avenue, from Fifty-seventh street to Fifty-ninth street; Fifty-ninth street, from Lebanon avenue to Malvern avenue; Coleman avenue, from Upland Way to a point about five hundred and fifty (550) feet east of Upland Way; Upland Way, between Woodbine avenue and Coleman avenue; Malvern avenue, from Lancaster avenue to Sixty-third street; Sixty-second street, from Woodbine avenue to a point about four hundred (400) feet south of Woodbine avenue, and from Lancaster avenue to a point about five hundred and seventy (570) feet south thereof; Oxford street, from Fifty-seventh street to Sixtieth street; Fifty-sixth street, from the summit north of Berks street to Upland Way; Berks street, from about three hundred (300) feet east of Fifty-sixth street to Fifty-seventh street; Columbia avenue, from Fifty-ninth street to Lancaster avenue; Fifty-ninth street, from Oxford street to Nassau street; Fifty-seventh street, from Lancaster avenue to Nassau street; and Lancaster avenue, from a point about 350 feet west of Fifty-sixth street to Sixtieth street. To open, grade and pave, with materials to be designated by the Director of the Department of Public Works, to the lines and grades confirmed under authority of this ordinance the following streets at its own expense: Malvern avenue, between Sixty-third street and Lancaster avenue, as proposed to be laid out; Lancaster avenue, between Sixty-second street and Sixty-third street; Sixty-second street, between Woodbine avenue and Lancaster avenue, and between Lancaster avenue and a point about five hundred and seventy (570) feet south thereof; Fifty-ninth street, between Nassau street and Lancaster avenue; a new seventy (70) feet wide street over the tracks and property of the Pennsylvania Railroad from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street

and Upland Way; Fifty-seventh street, between Upland Way as proposed to be laid out and Lebanon avenue. To open and grade to the lines and grades as authorized by this ordinance Upland Way, between Woodbine avenue and Fifty-fourth street, and to pave a strip twenty-four (24) feet in width of said Upland Way with bituminous bound macadam. To maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad.

That Section 7. of said ordinance, which reads as follows:

SECT. 7. The authority herein granted for the construction of the said railroad shall terminate and become null and void if the said railroad is not completed within ten years from the date of the approval of this ordinance," be, and the same is hereby, repealed.

SECT. 2. The dedications of property to the City and the work in connection with the opening, grading and paving of streets, building of sewers and other municipal structures, and building of bridges which the said Pennsylvania Railroad Company obligates itself to carry out along its main line from Fifty-fourth street to Sixty-third street and Woodbine avenue, shall be started within three months after the date of confirmation of the City plans by the Board of Surveyors, and completed within two and one-half years from the date of said confirmation, excepting that the widening of the bridge over Woodbine avenue shall be completed within seven years after date of said confirmation. The dedications of property, and the work in connection with the opening, grading and paving of streets and building of sewers and other municipal structures, and building of bridges which the said Pennsylvania Railroad Company obligates itself to carry out along its said branch or improved line from Sixty-third street and Malvern avenue to the City Line at Cobb's Creek, near Woodbine avenue, shall be completed within five years, and the construction of the

tunnel under Malvern avenue shall be completed within eight years from the date of the approval of the amendatory and supplementary ordinances. The relocation of tracks and construction of bridges necessary to permit the City to change the grade of Fifty-fourth street, from Jefferson street to Upland Way, as placed upon the City Plan under authority of this ordinance, and of Jefferson street, from Fifty-third street to Fifty-fourth street, shall be completed within seven years from the date of the approval of this amendatory and supplementary ordinance.

SECT. 3. The Department of Public Works (Board of Surveyors) is hereby authorized to revise the lines and grades of all streets and roads now open or upon the City plan adjacent to the said branch or improved line or affected by its construction between Fifty-ninth street and Cobbs creek, or affected by any changes of the location or grades of the Pennsylvania Railroad between Fifty-second street and Woodbine avenue, caused by or made in connection with the construction of the said branch or improved line; to make the following changes in the City plans. To strike from the City plan and vacate the following streets: Sixty-second street, from a point about four hundred (400) feet south of Woodbine avenue to Malvern avenue; Upland Way, from Woodbine avenue to Malvern avenue; Montgomery avenue, as the same now appears on the City plan, from Malvern avenue to Fifty-fourth street; Jefferson street, from Montgomery avenue to Fifty-fourth street; Lebanon avenue, from Montgomery avenue to Fifty-ninth street; Fifty-seventh street, from Jefferson street to Berks street; Fifty-sixth street, from Lancaster avenue to Berks street; Berks street, from Fifty-sixth street to Fifty-seventh street; Columbia avenue, from Jefferson street, as now located, to Fifty-fourth street; Fifty-ninth street, as now located, from Oxford street to Columbia avenue, except such portions of said streets as may lie within the lines of new streets hereinafter authorized. To place upon the City plan the following streets: Sixty-second street, fifty (50) feet wide, from a point about four hundred (400) feet south of Woodbine avenue to Lancaster avenue; Upland Way,

seventy (70) feet wide, from Woodbine avenue to Malvern avenue; Upland Way, eighty (80) feet wide, from Malvern avenue to Fifty-fourth street; Fifty-seventh street, eighty (80) feet wide, from Upland Way, as hereinbefore proposed to be laid out, to Berks street; Fifty-ninth street, eighty (80) feet wide, from Nassau street to Lancaster avenue; the intersection of Columbia avenue, Fifty-ninth street and Lancaster avenue; a new street seventy (70) feet wide, over the tracks and property of the Pennsylvania Railroad Company, from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Berks street, sixty (60) feet wide, from Fifty-sixth street to Fifty-seventh street; Fifty-sixth street, seventy (70) feet wide, from Berks street to Upland Way; Montgomery avenue, seventy (70) feet wide, from Fifty-fourth street to Upland Way. To widen Fifty-fourth street to eighty (80) feet, and revise the grade from Jefferson street to Upland Way, as placed upon the City plan under authority of this ordinance; Upland Way to seventy (70) feet, and revise the grade of same between Woodbine avenue and Malvern avenue; to widen Fifty-ninth street to eighty (80) feet, and revise the grade of same between Nassau street and Oxford street. To revise the grades of Lancaster avenue, from a point about three hundred and fifty (350) feet west of Fifty-sixth street to Sixtieth street; Malvern avenue, from Lancaster avenue to Fifty-ninth street; Sixty-second street, from Woodbine avenue to a point about four hundred (400) feet south of Woodbine avenue; Coleman avenue, from Upland Way to a point about five hundred and fifty (550) feet east of Upland Way; Fifty-ninth street, from Malvern avenue to Lebanon avenue; Lebanon avenue, from Fifty-eighth street to Fifty-ninth street; Fifty-seventh street, from Lebanon avenue to Berks street, and from Lancaster avenue to Jefferson street; Columbia avenue, from Lancaster avenue to Sixtieth street; Jefferson street, from Fifty-third street to Fifty-fourth street; Nassau street, from Fifty-seventh to Fifty-ninth street; Oxford street, from Fifty-seventh street to Sixtieth street; Fifty-sixth street,

from Montgomery avenue to the summit in Fifty-sixth street, north of Berks street; Berks street, from Fifty-sixth street to a point about three hundred (300) feet east of Fifty-sixth street; and to make such other revisions in the lines and grades of streets, and to lay out such new streets, within the territory bounded by City avenue on the north, Fifty-fourth street on the east, Lansdowne avenue on the south, and Cobb's creek on the west, as may be necessary to complete the City plan in that vicinity.

SECT. 4. The location and grade of the said branch or improved line shall be substantially as shown upon a plan and profile which, before this ordinance shall have any effect or confer any authority upon the said railroad company, shall be approved by the proper officials of the Pennsylvania Railroad Company and the proper officials of the City and filed in the Department of Public Works (Bureau of Surveys), and said plan and profile are hereby substituted for the plan and profile approved and filed pursuant to Section two (2) of the ordinance which this ordinance supplements and amends.

SECT. 5. The Pennsylvania Railroad Company shall covenant, promise and agree to the following conditions:

First. To equip and operate electrically the Malvern Avenue Tunnel and that portion of the proposed branch or improved line of railroad between Fifty-ninth street and City Line at Cobbs Creek.

Second. That, inasmuch as it is claimed by the railroad company that the electrical operation of a classification freight yard of the type proposed is at the present time in more or less of an experimental stage, it will not place in service the new freight yard proposed between Fifty-fourth street and Malvern avenue until four years after the date of the approval of this amendatory and supplementary ordinance, and that before said new freight yard or any part thereof is placed in operation the question of the motive power to be used therein shall be submitted to a board consisting of three members, one member of said board to be the Honorable Edwin S. Stuart, one to be

chosen by the railroad company, and the third by the two so chosen. Vacancies, if any, in said board, shall be filled from time to time by the parties originally selecting them, except that in the case of the office provided herein to be filled by the Honorable Edwin S. Stuart, the vacancy shall be filled by the Mayor of the City from a list of five names presented to him by the Overbrook Club and the Overbrook Association. The decision of the board, or a majority of them, shall be made in the light of information and experience then available, and, subject to the approval of the Public Service Commission of the Commonwealth of Pennsylvania, shall be binding and conclusive upon the railroad company and the City: *Provided, however,* That the decision of the board shall not operate as a waiver of any rights of said City or said railroad company in regard to the motive power which shall thereafter be used in the operation of said yard.

The railroad company will make necessary and reasonable experiments and demonstrations in said yard of systems of motive power for said board to assist it in reaching a decision.

Third. After the passage of this ordinance, no steam locomotive shall be stored or parked, and no roundhouse or railroad coaling plant or repair shop shall be constructed west of Fifty-fourth street to City avenue and along the proposed branch or improved line within the City limits.

SECT. 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions or changes of streets and roads herein authorized, the said Pennsylvania Railroad Company, which has duly entered into an agreement to comply with the conditions contained in Section six (6) of the ordinance to which this is an amendment, shall enter into a supplemental agreement, satisfactory to the City Solicitor, to comply with the conditions contained in said Section six (6) as amended and supplemented by Section one (1) of this ordinance, and with conditions contained in Section five (5) of this ordinance. The Pennsylvania Railroad

Company shall also agree not to claim any damages for the opening, grading or changing of grade of any street or road now open or upon the City plan or placed upon the City plan under authority of this ordinance, or of the ordinance to which this is amendatory, upon or across any property owned or controlled by it within the territory covered by the above recited ordinance, as amended by this ordinance, and having filed its bond in the sum of two hundred and fifty thousand (250,000) dollars, duly executed under its corporate seal, in a form satisfactory to the City Solicitor, as provided in the ordinance to which this is an amendment, shall file an amended bond in the sum of two hundred and fifty thousand (250,000) dollars, duly executed under its corporate seal, in a form satisfactory to the City Solicitor, in lieu of and substitution for the said bond heretofore filed, conditioned to indemnify the City against any and all damages which may arise by reason of the construction of the said branch or improved line and the consequent changes of lines and grades of any street or road now legally or physically open, or opened under authority of this ordinance, and also to faithfully comply with the conditions, requirements and provisions of the said ordinance approved the twenty-third day of November, 1905, as hereby amended and supplemented, and shall pay into the City Treasury the sum of fifty (50) dollars for printing this amendatory and supplementary ordinance.

SECT. 7. It is hereby understood and agreed that neither the purpose nor intent, nor the obligation of this contract, if and when approved by the Public Service Commission of the Commonwealth of Pennsylvania, is such as to impair or in any wise affect the exercise by said commission of any of the powers vested in it by the Public Service Company Law, approved July 26, 1913.

Approved the eighth day of July, A. D. 1915.

RUDOLPH BLANKENBURG,

Mayor of Philadelphia.

CITY EXHIBIT 22

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Philadelphia, Pennsylvania
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lines and grades of certain streets thereon, etc., as provided by Ordinance of Councils approved the Twenty-third day of November, A. D. 1905, as amended by the Ordinance of Councils approved the Eighth day of July, A. D. 1915,

WHEREAS, in and by an Ordinance of the Select and Common Councils of the City of Philadelphia, approved the Eighth day of July, A. D. 1915, entitled:

AN ORDINANCE

Amendatory of and supplementary to an ordinance entitled "An Ordinance giving authority and consent by the City of Philadelphia to the construction, maintenance and operation of so much of the proposed branch or improved line of the Pennsylvania Railroad Company, extending from a point in the said City on its present main line at or near Fifty-sixth street, Philadelphia, to connections with its low grade line and Trenton Branch, at or near Glen Loch, in Chester County, as is located within the limits of said City, and for the purpose of aiding and enabling the construction thereof, providing upon certain terms and conditions for change and alteration of certain City plans by revising the lines and grades of certain streets thereon; by striking therefrom and vacating portions of certain streets, by extending certain existing streets, by opening certain new streets, and by making such revisions of lines and grades as may be necessary to properly complete the City plans within certain limits of the Thirty-fourth Ward of the said City," approved the 23d day of November, 1905. It was ordained as follows:

SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain,* That an ordinance entitled "An Ordinance giving authority and consent by the City of Philadelphia to the construction, maintenance and operation of so much of the proposed branch or improved line of the Pennsylvania Railroad Company, extending from a point in the said City on its present line at or near Fifty-sixth street, Philadelphia, to connections with its

low grade line and Trenton Branch, at or near Glen Loch, in Chester County, as is located within the limits of said City, and for the purpose of aiding and enabling the construction thereof, providing upon certain terms and conditions for change and alteration of certain City plans by revising the lines and grades of certain streets thereon, by striking therefrom and vacating portions of certain streets, by extending certain existing streets, by opening certain new streets and by making such revision of lines and grades of streets as may be necessary to properly complete the City plans within certain limits of the Thirty-fourth Ward of the said City," approved the 23d day of November, 1905, be amended and supplemented as follows:

That Section 5 of said ordinance, which reads as follows:

"SECTION 5. No street now or hereafter placed upon the City Plan shall cross the said railroad at grade; and all streets upon the City Plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad. The said Pennsylvania Railroad Company shall bear the entire cost of constructing and forever maintaining all bridges, whether overhead or undergrade, and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and upon the lines of Sixty-eighth and Sixty-ninth streets, and shall agree to pay one-half of the entire cost of construction, and the whole cost of maintenance, of all bridges, whether overhead or undergrade, upon the lines of all streets or roads now upon the City Plan or placed thereon under authority of this ordinance, and not otherwise provided for therein, and hereafter opened across the line of the said railroad, whenever Councils, by ordinance, shall direct the construction of such bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty (20) feet above the tops of the rails, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans for the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. The said railroad company shall keep its road, wherever it crosses the line of any street or road, in good order and condition at all times, and shall save the City of Philadelphia harmless, so far as the said City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid, or for the longitudinal occupation of Malvern avenue with a tunnel,"

be, and the same is hereby, amended so as to read as follows:

SECTION 5. No street now or hereafter placed upon the City Plan shall cross the said railroad at grade; and all streets upon the City Plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad. The said Pennsylvania Railroad Company shall bear the entire cost of constructing and forever maintaining all bridges, whether overhead or undergrade, and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and the new street to be opened across the main line and yards extending from the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, and the bridge from the east side of Sixty-eighth street to the west side of Sixty-ninth street, and shall agree to pay one-half of the entire cost of construction, and the whole cost of maintenance, of all other bridges, whether overhead or undergrade, upon the lines of all streets or roads, now upon the City Plan or placed thereon under authority of this ordinance, and not otherwise provided for herein, and hereafter opened across the line of the said railroad, whenever Councils, by ordinance, shall direct the construction of said bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty-three (23) feet above the tops of the rails, except the bridge to be constructed across the Main Line and yards at the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, which shall have a clearance of not less than seventeen and one-half (17½) feet over the Main Line passenger tracks and not less than twenty-three (23) feet over the yard tracks and the bridge on the line of Malvern avenue, which shall have a clearance of not less than seventeen and one-half (17½) feet over the west-bound passenger tracks, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans of the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. The said railroad company shall keep its road, wherever it crosses the line of any street or road, in good order and condition at all times, and shall save the City of Philadelphia harmless, so far as the City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid or for the longitudinal occupation of Malvern avenue with a tunnel.

That Section 6 of said ordinance, which reads as follows:

"SECTION 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions or changes of streets and roads herein authorized, the said Pennsylvania Railroad Company shall enter into an agreement, satisfactory to the City Solicitor, to comply with the following conditions: To reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary, from a point in Sixty-second street, about four hundred (400) feet south of Woodbine avenue, along Sixty-second street, Malvern avenue, Sixtieth street, Montgomery avenue and Jefferson street, and thence across property of the said railroad company to Lancaster avenue, near Fifty-sixth street, and such other existing sewers, drainage channels, water-pipe, electrical conduits and other municipal structures, as may be affected by the construction of said railroad and the changes of lines and grades of streets herein authorized, together with all necessary appurtenances and connections with existing sewers, in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); to forever maintain said sewer or sewers and appurtenances at its own expense wherever they lie within property owned by the said railroad company; to permit inspection of the same by representatives of the Department of Public Works at any time and to repair same whenever directed to do so by the Director of said Department. To construct its railroad in tunnel from a point northeast of Lancaster avenue, under Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street; *Provided*, That there shall be no openings in the surface of Malvern avenue, from the said tunnel to a point west of Sixty-fourth street, and to at once construct steel or masonry bridges with floors paved with asphalt, and to construct satisfactory approaches to the same to the grades established under authority of this ordinance, at its own expense, for carrying Sixty-sixth street and Haverford avenue, of their full width as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad; also to at once construct single span steel or masonry bridges for carrying the said railroad over and above Sixty-eighth street and Sixty-ninth street of their full widths as now confirmed or confirmed under authority of this ordinance, and to forever maintain all the bridges named in this section at its own expense. To dedicate or agree to dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City Plan or placed upon the City Plan under authority of this ordinance crossing under or over the said railroad; to dedicate or indemnify the City against all damages and costs for the opening of the following streets now upon the City Plan or placed thereon

under authority of this ordinance: Jefferson street, between Fifty-fourth street and Montgomery avenue; Malvern avenue, between Sixtieth street and Lancaster avenue; Sixtieth street, or Upland Way, between Coleman avenue and Montgomery avenue; Sixty-second street, between a point about four hundred (400) feet south of Woodbine avenue and Malvern avenue; the unopened portion of Fifty-sixth street, between Lancaster avenue and Jefferson street; Montgomery avenue, between Sixtieth street and Jefferson street, and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it. To open, grade and macadamize to the lines and grades confirmed under authority of this ordinance, and to construct the necessary bridges upon the following streets at its own expense: Malvern avenue, between Lancaster avenue and Sixtieth Street; Sixtieth street, between Coleman avenue and Montgomery avenue; Montgomery avenue, between Sixtieth street and Jefferson street; Jefferson street, between Montgomery avenue and Fifty-fourth street, and the unopened portion of Fifty-sixth street, between Lancaster avenue and Jefferson street. To maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad. The Pennsylvania Railroad Company shall also agree not to claim any damages for the opening, grading or changing of grade of any street or road now open or upon the City Plan, or placed upon the City Plan under authority of this ordinance, or upon or across any property owned or controlled by it within the territory covered by this ordinance, and shall file its bond in the sum of two hundred and fifty thousand dollars ($250,000) duly executed under its corporate seal, in a form satisfactory to the City Solicitor, conditioned to indemnify the City against any or all damages which may arise by reason of the construction of the said railroad and the consequent changes of lines, and grades of any street or road now legally or physically open, and also to faithfully comply with all the conditions, requirements and provisions of this ordinance, and shall pay into the City Treasury the sum of fifty (50) dollars for printing the same," be, and the same is hereby amended so as to read as follows:

SECTION 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions and changes of streets and roads herein authorized, the said Pennsylvania Railroad Company shall enter into an agreement satisfactory to the City Solicitor, to comply with the following conditions: to reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary from the intersection of Malvern and Lancaster avenues to a point in the

present sewer west of the vacated Fifty-sixth street, about six hundred (600) feet north of Lancaster avenue, and construct a sewer from Sixty-first street and Lebanon avenue along Lebanon avenue to Lancaster avenue, and along Lancaster avenue to Fifty-ninth street, and construct and maintain at its own expense a channel for drainage, in addition to the sewer system, from Fifty-eighth street and Lebanon avenue to the southeast side of Upland Way, and reconstruct such other existing sewers, drainage channel, water-pipes, electrical conduits and other municipal structures as may be affected by the construction of said railroad and the changes of lines and grades of streets herein authorized, together with all necessary new sewers and inlets and appurtenances and connections therewith and with existing sewers, in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); to forever maintain said sewer or sewers and appurtenances at its own expense, wherever they lie within property owned by the said railroad company or cross under the lines of railroad owned by it; to permit inspection of the same by representatives of the Department of Public Works at any time, and to repair same whenever directed to do so by the Director of said Department; those portions of said sewers that are relocated within the lines of any street or streets now on the City Plan or placed thereon by authority of this ordinance are to be maintained by the City, except where they cross under the lines of the said railroad company; to construct its railroad in tunnel from a point northeast of Lancaster avenue, under Lancaster avenue, Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street; *Provided*, That there shall be no openings in the surface of Malvern avenue from the said tunnel, between the portal northeast of Lancaster avenue and a point west of Sixty-fourth street, and to construct steel or masonry bridges, with paved floors, and to construct satisfactory paved approaches to the same to the grades established under authority of this ordinance, at its own expense, for carrying Sixty-sixth street, Haverford avenue, Jefferson street and the new street from the proposed intersection of Fifty-ninth street and Lancaster avenue to the proposed intersection of Fifty-seventh street and Upland Way, of their full widths as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad; also to construct a steel or masonry bridge for carrying the said railroad from the east side of Sixty-eighth street to the west side of Sixty-ninth street over and above said streets, and to relocate and reconstruct bridges, with columns on curb lines carrying its tracks, connecting with the Schuylkill Valley Railroad, over Jefferson street, between Fifty-third and Fifty-fourth streets, and to relocate, reconstruct and build additional bridges with columns in the center of the street to carry its main and yard tracks over and above Fifty-second street, between Merion avenue and Monticello street, and to extend the present arch bridge

over Woodbine avenue for three tracks, with clearances not less than under the present arch, or build bridges for three additional tracks with clear spans and of clearance of not less than fourteen (14) feet over Woodbine avenue, of their full widths as now confirmed, or confirmed under authority of this ordinance, and to forever maintain all of the bridges named in this section at its own expense. To dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City Plan or placed upon the City Plan under authority of this ordinance, crossing under or over the said railroad; to dedicate the property or indemnify the City against all damages or costs for the opening of the following streets now upon the City Plan or placed thereon under authority of this ordinance: Upland Way, between Fifty-fourth street and Woodbine avenue; Malvern avenue, between Upland Way and Lancaster avenue; Sixty-second street, between a point about four hundred (400) feet south of Woodbine avenue and Lancaster avenue; Fifty-ninth street, eighty (80) feet wide, between Nassau street and Lancaster avenue; a new street seventy (70) feet wide over the tracks and property of the Pennsylvania Railroad, from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Fifty-seventh street, between Upland Way as proposed to be laid out and Lebanon Avenue; Columbia avenue, from Fifty-ninth street to Lancaster avenue including the intersection of Columbia avenue, Fifty-ninth street and Lancaster avenue; and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it; and to indemnify the City against all damages and costs for the changes of lines and grades of the following streets, as authorized by this ordinance: Fifty-seventh street, from Berks street to Lebanon avenue; Lebanon avenue, from Fifty-seventh street to Fifty-ninth street; Fifty-ninth street, from Lebanon avenue to Malvern avenue; Coleman avenue, from Upland Way to a point about five hundred and fifty (550) feet east of Upland Way; Upland Way, between Woodbine avenue and Coleman avenue; Malvern avenue, from Lancaster avenue to Sixty-third street; Sixty-second street, from Woodbine avenue to a point about four hundred (400) feet south of Woodbine avenue, and from Lancaster avenue to a point about five hundred and seventy (570) feet south thereof; Oxford street, from Fifty-seventh street to Sixtieth street; Fifty-sixth street, from the summit north of Berks street to Upland Way; Berks street, from about three hundred (300) feet east of Fifty-sixth street to Fifty-seventh street; Columbia avenue, from Fifty-ninth street to Lancaster avenue; Fifty-ninth street, from Oxford street to Nassau street; Fifty-seventh street, from Lancaster avenue to Nassau street; and Lancaster avenue, from a point about 350 feet west of Fifty-sixth street to Sixtieth street. To open, grade and

pave, with materials to be designated by the Director of the Department of Public Works, to the lines and grades confirmed under authority of this ordinance the following streets at its own expense: Malvern avenue, between Sixty-third street and Lancaster avenue, as proposed to be laid out; Lancaster avenue, between Sixty-second street and Sixty-third street; Sixty-second street, between Woodbine avenue and Lancaster avenue, and between Lancaster avenue and a point about five hundred and seventy (570) feet south thereof; Fifty-ninth street, between Nassau street and Lancaster avenue; a new seventy (70) feet wide street over the tracks and property of the Pennsylvania Railroad from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Fifty-seventh street, between Upland Way as proposed to be laid out and Lebanon avenue. To open and grade to the lines and grades as authorized by this ordinance Upland Way, between Woodbine avenue and Fifty-fourth street, and to pave a strip twenty-four (24) feet in width of said Upland Way with bituminous bound macadam. To maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad.

That Section 7 of said ordinance, which reads as follows:

"SECT. 7. The authority herein granted for the construction of the said railroad shall terminate and become null and void if the said railroad is not completed within ten years from the date of the approval of this ordinance," be, and the same is hereby, repealed.

SECT. 2. The dedications of property to the City and the work in connection with the opening, grading and paving of streets, building of sewers and other municipal structures, and building of bridges which the said Pennsylvania Railroad Company obligates itself to carry out along its main line from Fifty-fourth street to Sixty-third street and Woodbine avenue, shall be started within three months after the date of confirmation of the City Plans by the Board of Surveyors, and completed within two and one-half years from the date of said confirmation, excepting that the widening of the bridge over Woodbine avenue shall be completed within seven years after date of said confirmation. The dedications of property, and the work in connection with the opening, grading and paving of streets and building of sewers and other municipal structures, and building of bridges which the said Pennsylvania Railroad Company obligates itself to carry out along its said branch or improved line from Sixty-third street and Malvern avenue to the City Line at Cobb's Creek, near Woodbine avenue, shall be com-

pleted within five years, and the construction of the tunnel under Malvern avenue shall be completed within eight years from the date of the approval of this amendatory and supplementary ordinance. The relocation of tracks and construction of bridges necessary to permit the City to change the grade of Fifty-fourth street, from Jefferson street to Upland Way, as placed upon the City Plan under authority of this ordinance, and of Jefferson street, from Fifty-third street to Fifty-fourth street, shall be completed within seven years from the date of the approval of this amendatory and supplementary ordinance.

SECT. 3. The Department of Public Works (Board of Surveyors) is hereby authorized to revise the lines and grades of all streets and roads now open or upon the City Plan adjacent to the said branch or improved line or affected by its construction between Fifty-ninth street and Cobb's Creek, or affected by any changes of the location or grades of the Pennsylvania Railroad between Fifty-second street and Woodbine avenue, caused by or made in connection with the construction of the said branch or improved line; to make the following changes in the City Plans. To strike from the City Plan and vacate the following streets: Sixty-second street, from a point about four hundred (400) feet south of Woodbine avenue to Malvern avenue; Upland Way, from Woodbine avenue to Malvern avenue; Montgomery avenue, as the same now appears on the City Plan, from Malvern avenue to Fifty-fourth street; Jefferson street, from Montgomery avenue to Fifty-fourth street; Lebanon avenue, from Montgomery avenue to Fifty-ninth street; Fifty-seventh street, from Jefferson street to Berks street; Fifty-sixth street, from Lancaster avenue to Berks street; Berks street, from Fifty-sixth street to Fifty-seventh street; Columbia avenue, from Jefferson street, as now located, to Fifty-fourth street; Fifty-ninth street, as now located, from Oxford street to Columbia avenue, except such portions of said streets as may lie within the lines of new streets hereinafter authorized. To place upon the City Plan the following streets: Sixty-second street, fifty (50) feet wide, from a point about four hundred (400) feet south of Woodbine avenue to Lancaster avenue; Upland Way, seventy (70) feet wide, from Woodbine avenue to Malvern avenue; Upland Way, eighty (80) feet wide, from Malvern avenue to Fifty-fourth street; Fifty-seventh street, eighty (80) feet wide, from Upland Way, as hereinbefore proposed to be laid out, to Berks street; Fifty-ninth street, eighty (80) feet wide, from Nassau street to Lancaster avenue; the intersection of Columbia avenue, Fifty-ninth street and Lancaster avenue; a new street seventy (70) feet wide, over the tracks and property of the Pennsylvania Railroad Company, from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Berks street, sixty (60) feet wide, from Fifty-sixth street to Fifty-

seventh street; Fifty-sixth street, seventy (70) feet wide, from Berks street to Upland Way; Montgomery avenue, seventy (70) feet wide, from Fifty-fourth street to Upland Way. To widen Fifty-fourth street to eighty (80) feet, and revise the grade from Jefferson street to Upland Way, as placed upon the City Plan under authority of this ordinance; Upland Way to seventy (70) feet, and revise the grade of same between Woodbine avenue and Malvern avenue; to widen Fifty-ninth street to eighty (80) feet, and revise the grade of same between Nassau street and Oxford street. To revise the grades of Lancaster avenue, from a point about three hundred and fifty (350) feet west of Fifty-sixth street to Sixtieth street; Malvern avenue, from Lancaster avenue to Fifty-ninth street; Sixty-second street, from Woodbine avenue to a point about four hundred (400) feet south of Woodbine avenue; Coleman avenue, from Upland Way to a point about five hundred and fifty (550) feet east of Upland Way; Fifty-ninth street, from Malvern avenue to Lebanon avenue; Lebanon avenue, from Fifty-eighth street to Fifty-ninth street; Fifty-seventh street, from Lebanon avenue to Berks street, and from Lancaster avenue to Jefferson street; Columbia avenue, from Lancaster avenue to Sixtieth street; Jefferson street, from Fifty-third street to Fifty-fourth street; Nassau street, from Fifty-seventh to Fifty-ninth street; Oxford street, from Fifty-seventh street to Sixtieth street; Fifty-sixth street, from Montgomery avenue to the summit in Fifty-sixth street, north of Berks street; Berks street, from Fifty-sixth street to a point about three hundred (300) feet east of Fifty-sixth street; and to make such other revisions in the lines and grades of streets, and to lay out such new streets, within the territory bounded by City avenue on the north, Fifty-fourth street on the east, Lansdowne avenue on the south, and Cobb's Creek on the west, as may be necessary to complete the City Plan in that vicinity.

SECT. 4. The location and grade of the said branch or improved line shall be substantially as shown upon a plan and profile which, before this ordinance shall have any effect or confer any authority upon the said railroad company, shall be approved by the proper officials of the Pennsylvania Railroad Company and the proper officials of the City and filed in the Department of Public Works (Bureau of Surveys), and said plan and profile are hereby substituted for the plan and profile approved and filed pursuant to Section Two (2) of the ordinance which this ordinance supplements and amends.

SECT. 5. The Pennsylvania Railroad Company shall covenant, promise and agree to the following conditions:

First. To equip and operate electrically the Malvern Avenue Tunnel and that portion of the proposed branch

or improved line of railroad between Fifty-ninth street and City Line at Cobb's Creek.

Second. That, inasmuch as it is claimed by the railroad company that the electrical operation of a classification freight yard of the type proposed is at the present time in more or less of an experimental stage, it will not place in service the new freight yard proposed between Fifty-fourth street and Malvern avenue until four years after the date of the approval of this amendatory and supplementary ordinance, and that before said new freight yard or any part thereof is placed in operation the question of the motive power to be used therein shall be submitted to a board consisting of three members, one member of said board to be the Honorable Edwin S. Stuart, one to be chosen by the railroad company, and the third by the two so chosen. Vacancies, if any, in said board, shall be filled from time to time by the parties originally selecting them, except that in the case of the office provided herein to be filled by the Honorable Edwin S. Stuart, the vacancy shall be filled by the Mayor of the City from a list of five names presented to him by the Overbrook Club and the Overbrook Association. The decision of the board, or a majority of them, shall be made in the light of information and experience then available, and, subject to the approval of the Public Service Commission of the Commonwealth of Pennsylvania, shall be binding and conclusive upon the railroad company and the City. *Provided, however,* that the decision of the board shall not operate as a waiver of any rights of said City or said railroad company in regard to the motive power which shall thereafter be used in the operation of said yard.

The railroad company will make necessary and reasonable experiments and demonstrations in said yard of systems of motive power for said board to assist it in reaching a decision.

Third. After the passage of this ordinance, no steam locomotive shall be stored or parked, and no roundhouse or railroad coaling plant or repair shop shall be constructed west of Fifty-fourth street to City avenue and along the proposed branch or improved line within the City limits.

SECT. 6. Before this ordinance shall become effective or confer any authority upon the said Pennsylvania Railroad Company, and before the Board of Surveyors may confirm any of the revisions or changes of streets and roads herein authorized, the said Pennsylvania Railroad Company, which has duly entered into an agreement to comply with the conditions contained in Section Six (6) of the ordinance to which this is an amendment, shall enter into a supplemental agreement satisfactory to the City Solicitor to comply with the conditions contained in said Section Six (6) as amended and supplemented by Section One (1) of this ordinance, and with conditions contained in Section Five (5) of this ordinance. The Pennsylvania Railroad

Company shall also agree not to claim any damages for the opening, grading or changing of grade of any street or road now open or upon the City Plan or placed upon the City Plan under authority of this ordinance, or of the ordinance to which this is amendatory, upon or across any property owned or controlled by it within the territory covered by the above recited ordinance, as amended by this ordinance, and having filed its bond in the sum of two hundred and fifty thousand (250,000) dollars, duly executed under its corporate seal, in a form satisfactory to the City Solicitor as provided in the ordinance to which this is an amendment, shall file an amended bond in the sum of two hundred and fifty thousand (250,000) dollars duly executed under its corporate seal, in a form satisfactory to the City Solicitor, in lieu of and substitution for the said bond heretofore filed, conditioned to indemnify the City against any and all damages which may arise by reason of the construction of the said branch or improved line and the consequent changes of lines and grades of any street or road now legally or physically open, or opened under authority of this ordinance, and also to faithfully comply with the conditions, requirements and provisions of the said ordinance approved the twenty-third day of November, 1905, as hereby amended and supplemented and shall pay into the City Treasury the sum of fifty (50) dollars for printing this amendatory and supplementary ordinance.

SECT. 7. It is hereby understood and agreed that neither the purpose nor intent, nor the obligation of this contract, if and when approved by the Public Service Commission of the Commonwealth of Pennsylvania, is such as to impair or in any wise affect the exercise by said commission of any of the powers vested in it by the Public Service Company Law, approved July 26th, 1913.

NOW, THEREFORE, Pursuant to, and in accordance with the foregoing Ordinance approved the 8th day of July, A. D. 1915, amending and supplementing the Ordinance approved the Twenty-third day of November, A. D. 1905, this Agreement between the City of Philadelphia, party of the one part, and the Pennsylvania Railroad Company, party of the other part, WITNESSETH, that for and in consideration of the premises and of the privileges and advantages to each of them thereunto moving and the mutual covenants hereinafter contained and set forth, the said parties hereto have mutually covenanted and agreed for themselves, their successors and assigns, and do by these presents severally covenant, promise and agree to and with each other as follows, that is to say:

First: The said City of Philadelphia hereby covenants, promises and agrees to and with the said The Pennsylvania Railroad Company that no street now or hereafter placed upon the City Plan shall cross the said railroad at grade; and all streets upon the City Plan, as revised in accordance with the provisions of this ordinance, and all streets, roads and lanes now open or hereafter opened, shall be carried over or under the said railroad.

The Pennsylvania Railroad Company covenants, promises and agrees with the City of Philadelphia that the said Railroad Company shall bear the entire cost of constructing and forever maintaining all bridges, whether overhead or undergrade, and all tunnels upon the lines of streets, roads or lanes now legally or physically open, and the new street to be opened across the main line and yards extending from the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, and the bridge from the east side of Sixty-eighth street to the west side of Sixty-ninth street, and it shall pay one-half of the entire cost of construction, and the whole cost of maintenance of all other bridges, whether overhead or undergrade, upon the lines of all streets or roads, now upon the City Plan or placed thereon under authority of said Ordinance, and not otherwise provided for in said Ordinance, and hereafter opened across the line of the said railroad, whenever Councils, by Ordinance, shall direct the construction of said bridges. All bridges for carrying the said railroad over and above streets and roads now opened or hereafter opened shall have a clearance of at least fourteen (14) feet above the confirmed grade of the street, and all bridges for carrying streets or roads over and above the said railroad shall have a clearance of at least twenty-three (23) feet above the tops of the rails, except the bridge to be constructed across the Main Line and yards at the intersection of Fifty-ninth street and Lancaster avenue to Fifty-seventh street and Upland Way, which shall have a clearance of not less than seventeen and one-half (17½) feet over the Main Line passenger tracks and not less than twenty-three (23) feet over the yard tracks and the bridge on the line of Malvern avenue, which shall have a clearance of not less than seventeen and one-half (17½) feet over the west-bound passenger tracks, and shall be designed in accordance with the standard specifications of the Department of Public Works (Bureau of Surveys) for the designing of bridges. No bridge of any kind or character shall be erected until the plans of the same shall have been approved by the Director of the Department of Public Works and the Board of Surveyors. And the said Railroad Company covenants, promises and agrees to keep its road, wherever it crosses the line of any street or road, in good order and condition at all times, and shall save the City of Philadelphia harmless, so far as the City may be liable therefor, from any liability or responsibility that may arise from the construction or operation of the said railroad over or under any of the streets aforesaid or for the longitudinal occupation of Malvern avenue with a tunnel, as set forth in Section 5 of the hereinbefore recited Ordinance, and made part hereof.

And the said The Pennsylvania Railroad Company covenants, promises and agrees to and with the said City of Philadelphia that it will reconstruct at its own expense such portions of the Mill Creek sewer as the Director of the Department of Public Works may deem necessary,

from the intersection of Malvern and Lancaster avenues to a point in the present sewer west of the vacated Fifty-sixth street, about six hundred (600) feet north of Lancaster avenue, and will construct a sewer from Sixty-first street and Lebanon avenue, along Lebanon avenue to Lancaster avenue, and along Lancaster avenue to Fifty-ninth street, and construct and maintain at its own expense a channel for drainage in addition to the sewer system from Fifty-eighth street and Lebanon avenue to the southeast side of Upland Way, and reconstruct such other existing sewers, drainage channels, water pipes, electrical conduits, and other municipal structures as may be affected by the construction of the said railroad and the changes of lines and grades of streets herein authorized, together with all necessary new sewers, inlets, appurtenances and connections therewith and with existing sewers in accordance with plans and specifications to be prepared by the Department of Public Works (Bureau of Surveys); and shall and will forever maintain said sewer or sewers and appurtenances at its own expense wherever they lie within property owned by the said railroad company, or cross under the lines of railroad owned by it, and to permit inspection of the same by representatives of the Department of Public Works at any time, and to repair same whenever directed to do so by the Director of the said Department; those portions of the said sewers that are relocated within the lines of any street or streets now upon the City Plan or placed thereon by authority of this Ordinance are to be maintained by the City, except where they cross under the lines of the said Railroad Company. And to construct its railroad in tunnel from a point northeast of Lancaster avenue under Lancaster avenue, Malvern avenue, Sixty-third street, Gross street and Sixty-fourth street; Provided, that there shall be no openings in the surface of Malvern avenue, from the said tunnel between the portal northeast of Lancaster avenue and a point west of Sixty-fourth street; and that it will also construct steel or masonry bridges with paved floors, and to construct satisfactory paved approaches to the same to the grades established under authority of this ordinance, at said Railroad Company's own expense, for carrying Sixty-sixth street, Haverford avenue, Jefferson street, and the new street from the proposed intersection of Fifty-ninth street and Lancaster avenue to the proposed intersection of Fifty-seventh street and Upland Way, of their full widths, as now confirmed or as confirmed under authority of this ordinance, over and above the said railroad; and will also construct a steel or masonry bridge for carrying the said railroad from the east side of Sixty-eighth street to the west side of Sixty-ninth street, over and above said streets; and will relocate and reconstruct bridges with columns on curb lines carrying its tracks, connecting with the Schuylkill Valley Railroad over Jefferson street, between Fifty-third and Fifty-fourth streets, and will relocate, reconstruct and build additional bridges with columns in the center of the street to carry its main and yard

tracks over and above Fifty-second street between Merion avenue and Monticello street, and to extend the present arch bridge over Woodbine avenue for three tracks, with clearances not less than under the present arch, or build bridges for three additional tracks with clear spans and of clearance of not less than fourteen (14) feet over Woodbine avenue, of their full widths as now confirmed, or confirmed under authority of this ordinance, and will forever maintain all of the bridges named in section Sixth of said ordinance approved the 23d day of November, A. D. 1905, as amended by said ordinance approved the 8th day of July, A. D. 1915, at its own expense, and shall and will dedicate to the City as much of the property owned or controlled by it as may be required to widen or open any street or road now upon the City Plan or placed upon the City Plan under authority of the hereinbefore mentioned ordinance, crossing under or over the said railroad; and shall and will dedicate the property or indemnify the City against all damages or costs for the opening of the following streets now upon the City Plan or placed thereon under authority of the hereinbefore recited ordinance: Upland Way, between Fifty-fourth street and Woodbine avenue; Malvern avenue, between Upland Way and Lancaster avenue; Sixty-second street, between a point about four hundred (400) feet south of Woodbine avenue and Lancaster avenue; Fifty-ninth street, eighty (80) feet wide, between Nassau street and Lancaster avenue; a new street seventy (70) feet wide over the tracks and property of the Pennsylvania Railroad, from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Fifty-seventh street between Upland Way as proposed to be laid out and Lebanon avenue; Columbia avenue, from Fifty-ninth street to Lancaster avenue, including the intersection of Columbia avenue; Fifty-ninth street and Lancaster avenue; and so much of Lancaster avenue, between Fifty-sixth street and Malvern avenue, as is owned or controlled by it; and shall and will indemnify the City against all damages and costs for the changes of lines and grades of the following streets, as authorized by the hereinbefore recited ordinance: Fifty-seventh street, from Berks street to Lebanon avenue; Lebanon avenue, from Fifty-seventh street to Fifty-ninth street; Fifty-ninth street, from Lebanon avenue to Malvern avenue; Coleman avenue from Upland Way to a point about five hundred and fifty (550) feet east of Upland Way; Upland Way, between Woodbine avenue and Coleman avenue; Malvern avenue, from Lancaster avenue to Sixty-third street; Sixty-second street, from Woodbine avenue to a point about four hundred (400) feet south of Woodbine avenue, and from Lancaster avenue to a point about five hundred and seventy (570) feet south thereof; Oxford street, from Fifty-seventh street to Sixtieth street; Fifty-sixth street, from the summit north of Berks street to Upland Way; Berks street, from about three hundred

(300) feet east of Fifty-sixth street to Fifty-seventh street; Columbia avenue, from Fifty-ninth street to Lancaster avenue; Fifty-ninth street, from Oxford street to Nassau street; Fifty-seventh street, from Lancaster avenue to Nassau street; and Lancaster avenue, from a point about three hundred and fifty (350) feet west of Fifty-sixth street to Sixtieth street.

And the said The Pennsylvania Railroad Company further covenants, promises and agrees to open, grade and pave with materials to be designated by the Director of the Department of Public Works, to the lines and grades confirmed under authority of the hereinbefore recited ordinance the following streets, at its own expense: Malvern avenue, between Sixty-third street and Lancaster avenue, as proposed to be laid out; Lancaster avenue, between Sixty-second street and Sixty-third street; Sixty-second street, between Woodbine avenue and Lancaster avenue, and between Lancaster avenue and a point about five hundred and seventy (570) feet south thereof; Fifty-ninth street, between Nassau street and Lancaster avenue; a new seventy (70) feet wide street over the tracks and property of the Pennsylvania Railroad from the hereinbefore proposed intersection of Fifty-ninth street and Lancaster avenue to the hereinbefore proposed intersection of Fifty-seventh street and Upland Way; Fifty-seventh street, between Upland Way as proposed to be laid out and Lebanon avenue; and it shall and will open and grade to the lines and grades as authorized by the hereinbefore recited ordinance Upland Way between Woodbine avenue and Fifty-fourth street; and shall and will pave a strip twenty-four (24) feet in width of said Upland Way with bituminous bound macadam; and shall and will maintain travel in a manner satisfactory to the Director of the Department of Public Works upon all streets and roads now open to public use, or upon streets or roads substituted therefor, at all times during the construction of the said railroad, as provided in Section 6 of the hereinbefore mentioned amended ordinance.

And the Pennsylvania Railroad Company further covenants, promises and agrees to and with the said City of Philadelphia that it will equip and operate electrically the Malvern Avenue Tunnel and that portion of the proposed branch or improved line of railroad between Fifty-ninth street and City Line at Cobb's Creek.

And the said The Pennsylvania Railroad Company further covenants, promises and agrees that it will not place in service the new freight yard proposed between Fifty-fourth street and Malvern avenue until four years after the date of the approval of the said hereinbefore mentioned amendatory and supplemental ordinance:

And it is further agreed between the said parties hereto that before the said new freight yard, or any part thereof, is placed in operation, the question of the motive power to be used therein shall be submitted to a board consisting of three members, as set forth in the second paragraph of the Fifth Section of the hereinbefore mentioned ordinance,

provided, however, that the decision of said board shall not operate as a waiver of any rights of said City, or said Railroad Company in regard to the motive power which shall thereafter be used in the operation of said yard;

And the said Railroad Company covenants, promises and agrees to make necessary and reasonable experiments and demonstrations in said yard of systems of motive power for said board mentioned in the hereinbefore recited ordinance to assist it in reaching a decision.

It is further understood and agreed between the said parties that after the passage of the hereinbefore mentioned amended ordinance no steam locomotive shall be stored or parked, and no roundhouse or railroad coaling plant or repair shop shall be constructed west of Fifty-fourth street to City avenue, and along the proposed branch or improved line within the City limits.

And it is also further covenanted and agreed by The Pennsylvania Railroad Company that it will do and perform each, every and all of the matters and things in the hereinbefore recited amended ordinance stipulated to be done and performed by it and be subject to all liabilities thereof, and fully and faithfully comply with all the provisions, terms and conditions, matters and things of every nature and kind in said ordinance contained so far as the same are to be complied with by The Pennsylvania Railroad Company, with the same force and effect as if the same were herein fully set forth and covenanted to be done and performed by it; and shall file its bond in the sum of Two Hundred and Fifty Thousand ($250,000) Dollars, duly executed under its corporate seal, in form satisfactory to the City Solicitor, conditioned to indemnify the City against any or all damages which may arise by reason of the construction of the said railroad and the consequent changes of grade of any street or road now legally or physically open; and also to faithfully comply with all the conditions, requirements and provisions of said ordinance, and shall pay into the City Treasury the sum of fifty (50) dollars for printing the same.

And the City of Philadelphia covenants, promises and agrees to fully and faithfully perform each and every thing contained in said ordinance on its part to be done and performed;

And it is further agreed between the said parties that all the covenants and agreements in this contract contained shall extend to and bind the successors and assigns of each of the corporation parties hereto with the same force and effect as if the words "successors and assigns" had in each case been particularly mentioned.

It is hereby understood and agreed that neither the purpose nor intent, nor the obligation of this contract, if and when approved by the Public Service Commission of the Commonwealth of Pennsylvania, is such as to impair or in any wise affect the exercise by said commission of any of the powers vested in it by the Public Service Company Law, approved July 26, A. D. 1913.

IN WITNESS WHEREOF, the City of Philadelphia has affixed its corporate seal, duly attested by the Mayor thereof, and the Pennsylvania Railroad Company has also fixed its corporate seal, duly attested by the proper officers thereof, the day and year first written. First day of November A. D. 1915

CITY OF PHILADELPHIA, .

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

Rudolph Blankenburg
Mayor of Philadelphia.

PENNSYLVANIA RAILROAD COMPANY.

by

W. W. Atterbury
Vice President.

ATTEST:

Lewis Neilson
Secretary.

Approved as to form:
MICHAEL J. RYAN,
City Solicitor.

per J. Temple Hopple
Asst. City Solicitor.

RECEIVED
JUN 27 1985
SECRETARY'S OFFICE
Public Utility Commission

DETAILED INSPECTION REPORT
FOR THE BRIDGE CARRYING
59TH STREET
OVER THE TRACKS OF
AMTRAK
IN THE CITY OF PHILADELPHIA
PHILADELPHIA, PENNSYLVANIA

PA. P.U.C. I-830373

PREPARED BY

OFFICE OF DEPUTY CHIEF ENGINEER

AMTRAK, PHILADELPHIA

FEBRUARY, 1985

RECEIVED
JUN 28 1985

NRPC'S Exhibit A
BJK
6/18/85
I-830373
Philadelphia, Pennsylvania

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	APPENDIX		

SUMMARY

The 59th Street bridge over Amtrak in the Overbrook section of Philadelphia is a four (4) span jack arch bridge, 309"-0" long. The roadway is 52' wide between curbs with a 9'-0" wide sidewalk on each side. The bridge was built by the Pennsylvania Railroad in 1927 and carries the street over 12 tracks; five (5) tracks are active of which three (3) have energized catenary, and seven (7) tracks are inactive.

The bridge was inspected close-up underneath with the use of a highway rail platform truck. The structure by design, is completely encased in concrete and gunite. Some of the encasing has fallen off, revealing parts of the steel members. Generally, the bridge exhibits the effects of applying salt or de-icing chemicals on the roadway surface. The encasement is cracked and icicles of lime are hanging from many areas. The steel members that are exposed exhibit corrosion, from the effects of water permeating the deck.

The bridge was designed to carry 3 live loads comprised of a 1) 40 Ton Truck, 2) 100 #/SF uniform load, and 3) 600 #/LF per each trolley track; the two trolley tracks run in the center of the roadway.

In our opinion, based on the design parameters and the fact that trolleys no longer operate on the bridge, the structure can carry all vehicles up to the maximum weight limit under applicable codes.

We recommend that the City and Amtrak jointly inspect the bridge on an annual basis. When and if repairs or replacement is necessary, the City should take the lead to effect the work to provide for the safety and convenience of the travelling public.

INTRODUCTION

The bridge which is the subject of this report, carries 59th Street over the tracks of the National Railroad Passenger Corporation or Amtrak.

The bridge is located in the Overbrook section of the City of Philadelphia and provides access to and from traffic Route 30 which parallels the tracks in this area.

The matter of the condition of the bridge was brought to the attention of the Public Utility Commission by the City on February 22, 1983; the Commission instituted a formal investigation by order dated May 12, 1983 in Docket I-830373. On February 25, 1983, the Commission issued an emergency order directing the City to make emergency repairs to the expansion dams. On May 1, 1984, the Commission ordered Amtrak to perform an in-depth inspection of the bridge and report its findings to the Commission and all parties of record. The City was ordered to replace the expansion dams which it did. Amtrak has completed its detailed inspection and presents its findings in the following report.

DESCRIPTION

The bridge carrying 59th Street in the City of Philadelphia over the tracks of the National Railroad Passenger Corporation is a four (4) span steel girder/jack arch bridge. Figure 1, Page 4, is a map showing the location of the bridge in the Overbrook section of Philadelphia. Three (3) spans of the bridge measure 89'-9' between centerlines of the piers and from the piers to the north abutment backwall; the fourth span measure 30'-9" from the centerline of the pier to the south abutment backwall. The total length of the bridge is 309'-0". The roadway across the bridge is 52'-0" wide between curbs. Two (2) 9'-0" wide sidewalks added to the roadway result in a total width of 70'-0" between girders. From south to north, the vertical dimension at Pier 1 from the top of footing to the top of the pier is 22'-5 7/8", at Piet 2, its 24'-8 1/2", and at Pier 3, its 22'-11 1/2". The minimum vertical clearance indicated on the plans, is 23"-0".

Appendix A of the report is a reduced size set of plans made from the original rendition which Amtrak obtained from the Penn Central company, April, 1976. Appendix B contains pictures taken during the inspection. Page B-1 is an artists rendition of the bridge as seen looking toward Lancaster. This rendition was done by the Pennsylvania Railroad prior to 1927, the year the railroad built the bridge. page B-2 shows the roadway surface and the sidewalk on the west side of the bridge as you approach the bridge from the north. Page B-5 shows the northern

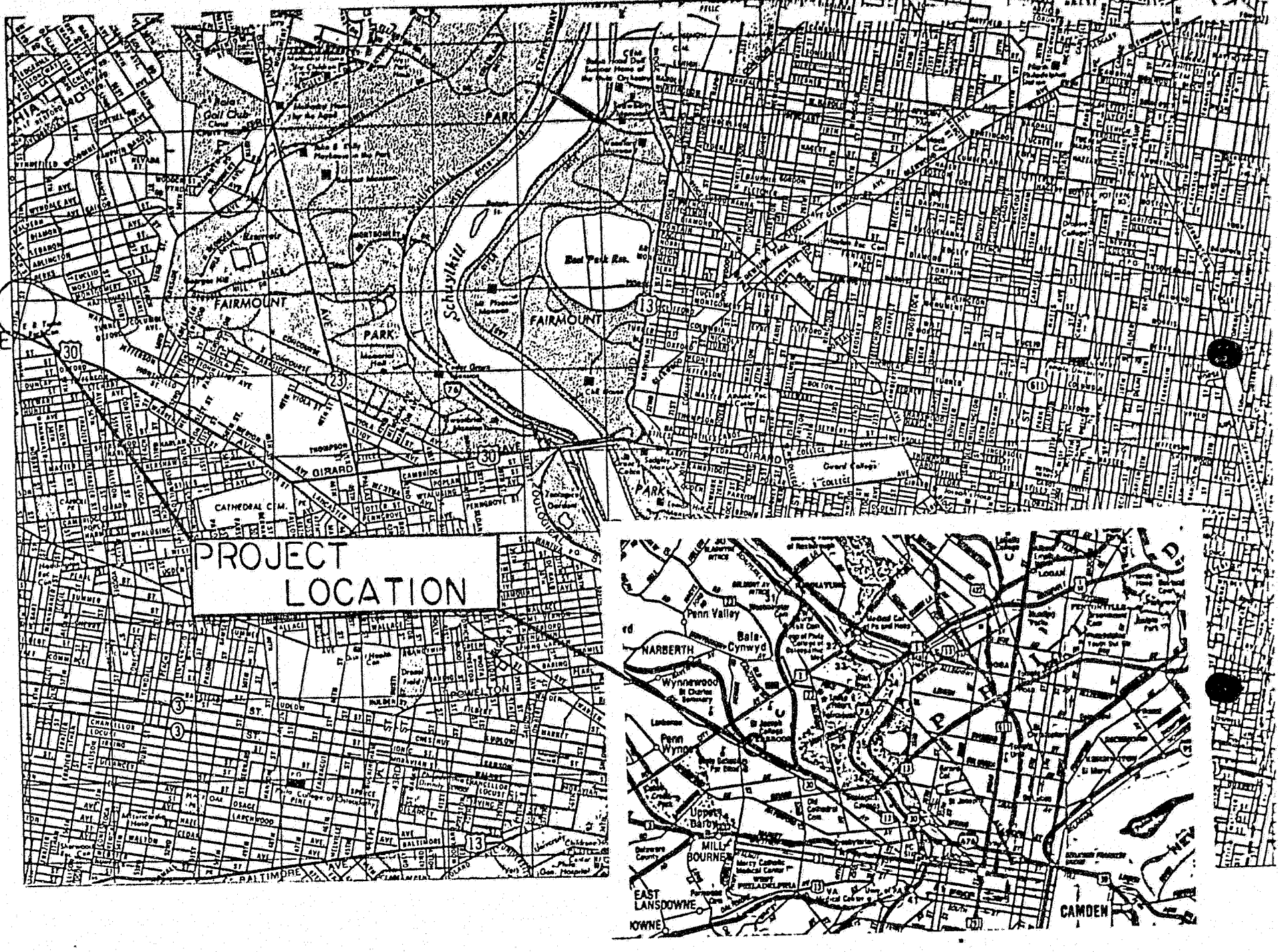

PROJECT LOCATION
FAIRMOUNT PARK
Schuylkill
FAIRMOUNT
PARK
CATHEDRAL C.M.
POWELTON
Penn Valley
Bala-Cynwyd
NARBERTH
Wynnewood
Penn Wynne
Upper Darby
MILLBOURNE
EAST LANSDOWNE
CAMDEN

FIGURE 1

most span between the north abutment and Pier 3. Page B-6 shows the other three (3) spans from the east side or the side corresponding to the artists' rendition. The southern most span between Pier 1 and the abutment is seen better on page B-7. Page B-7 also shows the west side of the northern span while Page B-2 shows the two (2) most southern spans.

From the south, the roadway approaches the bridge at a +3% grade, crests on the bridge and then descends at a -1.5% grade.

There are 12 tracks under the 59th Street Bridge; five (5) are active or live, and seven (7) are inactive. The track breakdown by span follows:

Span	Active	Inactive
Span 1 - North	2	1
Span 2 (Pier 2-3)	1	2
Span 3 (Pier 1-2)	2	4
Span 4 - South	0	0

There are electric cantenary facilities above these tracks but only three (3) tracks have energized catenary; the two (2) active tracks under Span 3 and the northern active track under Span 1. Figure 2, Val Map No. 181 shows the tracks under the bridge and notes the active and electrified tracks; unlabeled tracks are inactive.

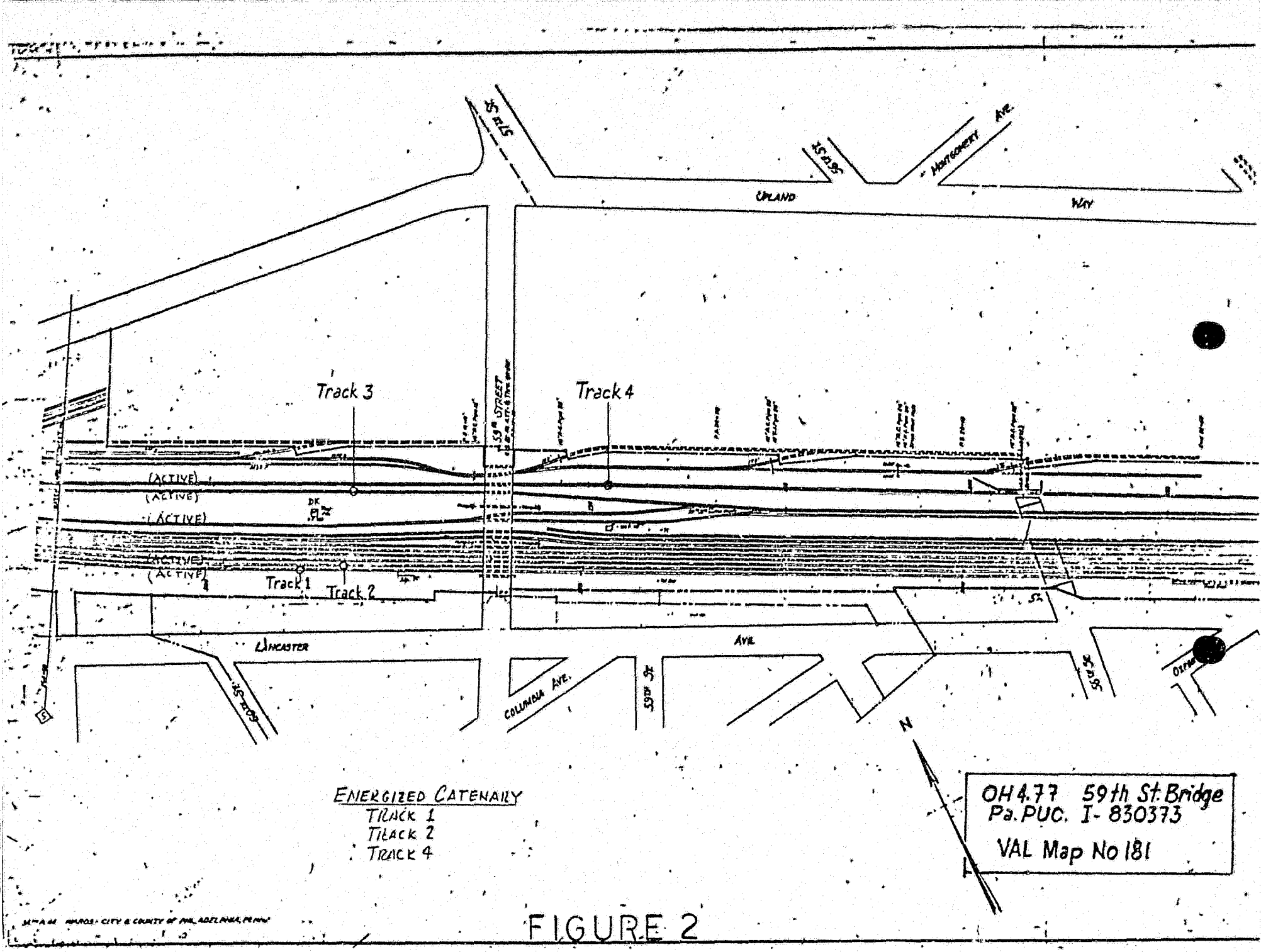

Track 3
Track 4
(ACTIVE)
(ACTIVE)
(ACTIVE)
(ACTIVE)
Track 1
Track 2
59th STREET
UPLAND
WAY
MONTGOMERY AVE.
LANCASTER
AVE.
COLUMBIA AVE.
60th ST.
59th ST.
N
ENERGIZED CATENARY
TRACK 1
TRACK 2
TRACK 4
OH 4.77 59th St. Bridge
Pa. PUC. I-830373
VAL Map No 181

FIGURE 2

DETAILED INSPECTION

ABUTMENTS

The north and south abutments are concrete, gravity type abutments. Pages B-4 and B-5 in Exhibit B shows the condition of the abutments, while A-1, Exhibit, shows the design details.

The face of the north abutment exhibits the corrosive action of salt laden water which is finding its way thru the roadway dams and flows down, over the abutment. The condition is not serious but alerts those concerned that there is a problem with the roadway joints or dams.

The abutments visually appear to be plumb and do not exhibit cracks or any other signs of potential problems.

PIERS

The bridge piers are very large concrete piers that measure approximately 6'-0" x 22'-8" at the base and taper to 4'-0" x 8'-0" at the cap. The piers shown on pages A-1 and A-2 of Exhibit A, and seen in some of the photographs in Exhibit B, are in good condition

BRIDGE DECK

The bridge deck, shown on page A-4 of Exhibit A, is a concrete, jack arch deck with a bituminous surface. The steel floor beams supporting the arch deck are spaced to 6'-0" apart in span 1 and 5'-10" apart in the other 3 spans. The arch rises up 1'-7 1/2" from its spring line on a 2" thick, precast, granite form. At the center, the arch is 8 5/8" thick plus at least a 2" thick overlay. Trolley tracks are depicted on the half-cross-section shown on A-4. The plan annotates the tracks were not be be placed at the time the bridge was built in 1927.

The inspection revealed that the jack arches are basically intact but exhibit numerous cracks and are heavily stained by water percolating through the deck. This water carries deicing chemicals, which are applied on the surface, through the deck where it attacks the deck concrete and reinforcing. It is evident not only by the stains but also from stalactites on the bottom flange encasement of the main girders and numerous floor beams throughout the bridge. This condition is seen on Page B-7 (South End Span), B-10, and B-11 of Exhibit B. The concrete, in some locations, was very damp. We not that the inspection was performed on October 9, 1984m and according to U.S. Weather Service, there was 0.85 inches of rain on October 1, 1984; no rain fell between 1st and 9th of October.

Figure 3, which is the plan view of the bridge, shows the general location and type of deterioration on the floor beams and main steel girders. Very little of the bottom flange of any

POOR ORIGINAL

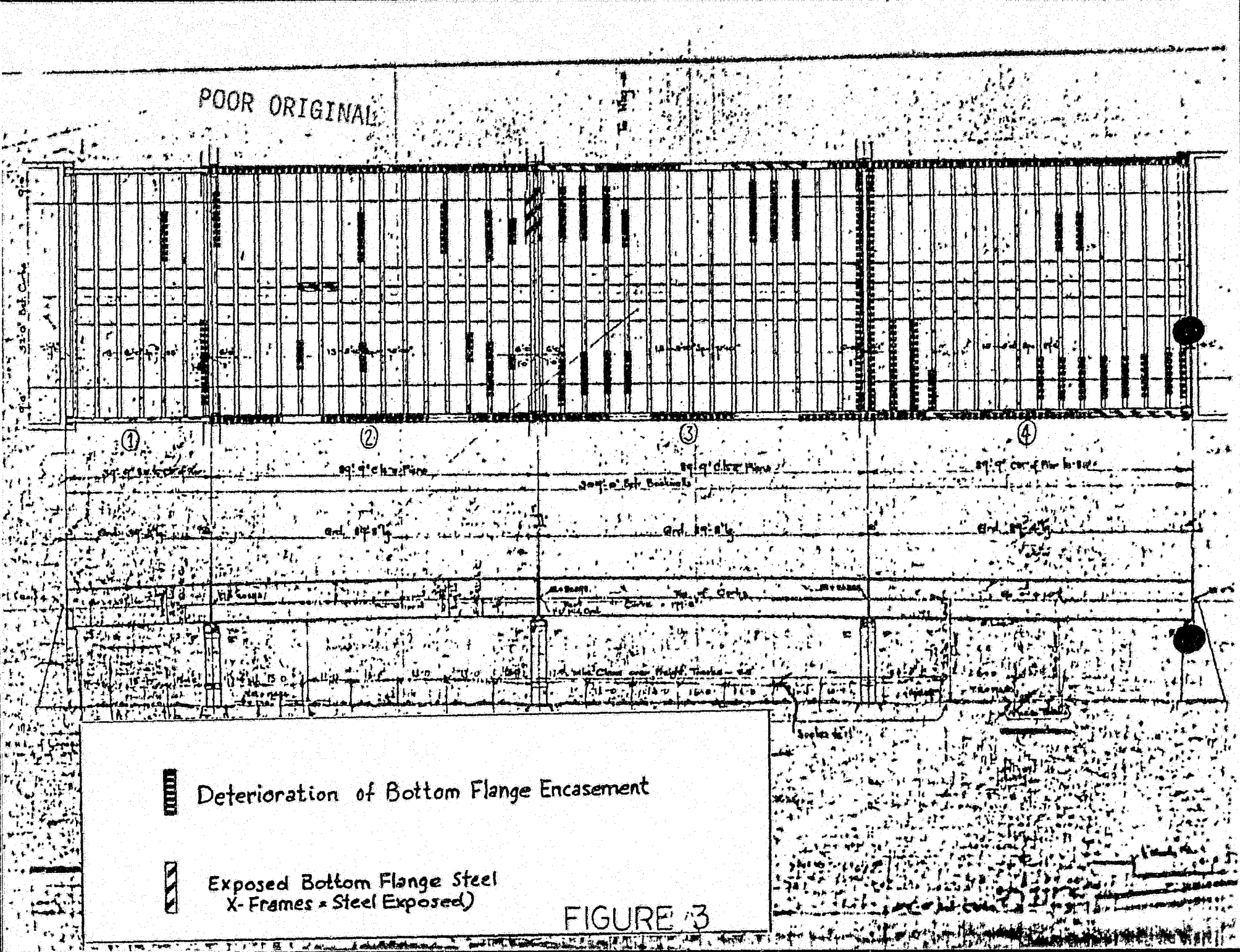


FIGURE 3

member is exposed but considering the damp condition of the encasement, we expect some deterioration of the steel even though we did not further expose any steel beam.

The surface of the bridge, except for certain roadway joints, is in fair to good condition. Pages B-2 and B-3, of Exhibit B show the expansion joints at either end of the bridge. We should note here that subsequent to the inspection, the City of Philadelphia repaired the joints in accordance with the Public Utility Commission order and as such, we will not address this matter specifically in this report.

FLOOR BEAMS

The floor beams, pages A-9 and A-10 of Exhibit A, are fabricated steel beams that taper under the sidewalks of the bridge. The web plate is a 54" x 1/2" plate; the top and bottom flanges which are comprised two (2) 14" x 5/8" and one (1) 14" x 1/2" plates are fastened to the web with 6" x 6" x 5/8" angles, and 7/8" diameter rivets.

The beams are encased in gunite and were not inspected, per se. At some locations though the bottom flange is exposed where the encasement has deteriorated. Page B-10 of Exhibit B displays a picture of the underside of the bridge, particularly an area where we presume that corrosion of the bottom flange of the floor beams is causing the encasement to fall off.

MAIN GIRDERS

The main steel girders, pages B-5 B-6, B-7 B-8 and B-9 of Exhibit B, appear to be in good condition. The girders for the 39'-9" Span 1 are comprised of a 10'-10 3/4" x 1/2" web plate with two (2) 8" x5/8" angles, two (2) vertical plates 18" x 5/8" and five (5) full length cover plates, 24" x 5/8".

The bottom flange of the girders is encased in gunite. The condition of the encasement is noted on Figure 3 and seen on the pages, listed above in Exhibit B. On Page B-9 the upper photograph shows moss growing in the cracked encasement which indicated the presence of moisture. It is obvious that the deteriorated and spalled encasement is a result of rusting of the bottom flanges as well as freezing and thawing of moisture or water contained or finding its way into encasement.

BEARINGS

Page B-12 of Exhibit B are photographs of the nested roller and fixed bearings on the east side of Pier 3. The roller bearing is corroded and was covered with lime deposits which were cleaned off before the photograph was taken. We presume the bearing does not function as an expansion bearing because of its condition, but it obviously continues to provide the necessary support for the bridge.

SIDEWALKS

The sidewalks of the bridge are 7'-6" wide and are in good condition. It should be noted, however, that there was vegetation growing in some areas along the curb.

RATING

The 59th Street bridge was designed by the Pennsylvania Railroad for the following live load conditions:

a) 40 Ton Truck

b) 100 #/SF uniform load

c) 600 #/LF for each trolley track

The concrete mix was specified to be 2500 psi concrete at 28 days.

Compared to the design practices in 1927, the 59th Street bridge was obviously designed for ahead of its time.

Since Amtrak did not remove any encasement from the floor beams or main girders, we cannot state what reduction, in section, if any, has occurred to those members. It has been our experience although, with other bridges where the members are encased, that when we removed the encasement we found about a 10% reduction in section.

It is our opinion, in light of the original design parameters and the fact that trolleys no longer cross the bridge, the bridge can continue to safely carry all vehicles presently using the bridge.

CONCLUSION AND RECOMMENDATION

The four (4) span steel girder/jack arch bridge carrying 59th Street in the Overbrook section of the City of Philadelphia over the property and tracks of Amtrak is in fair to good condition. The bridge was built in 1927 and was designed by the Pennsylvania Railroad to carry trolleys in addition to other vehicles. There are twelve (12) tracks under the bridge. Five (5) are in use and of those five (5), three (3) have energized catenary above them

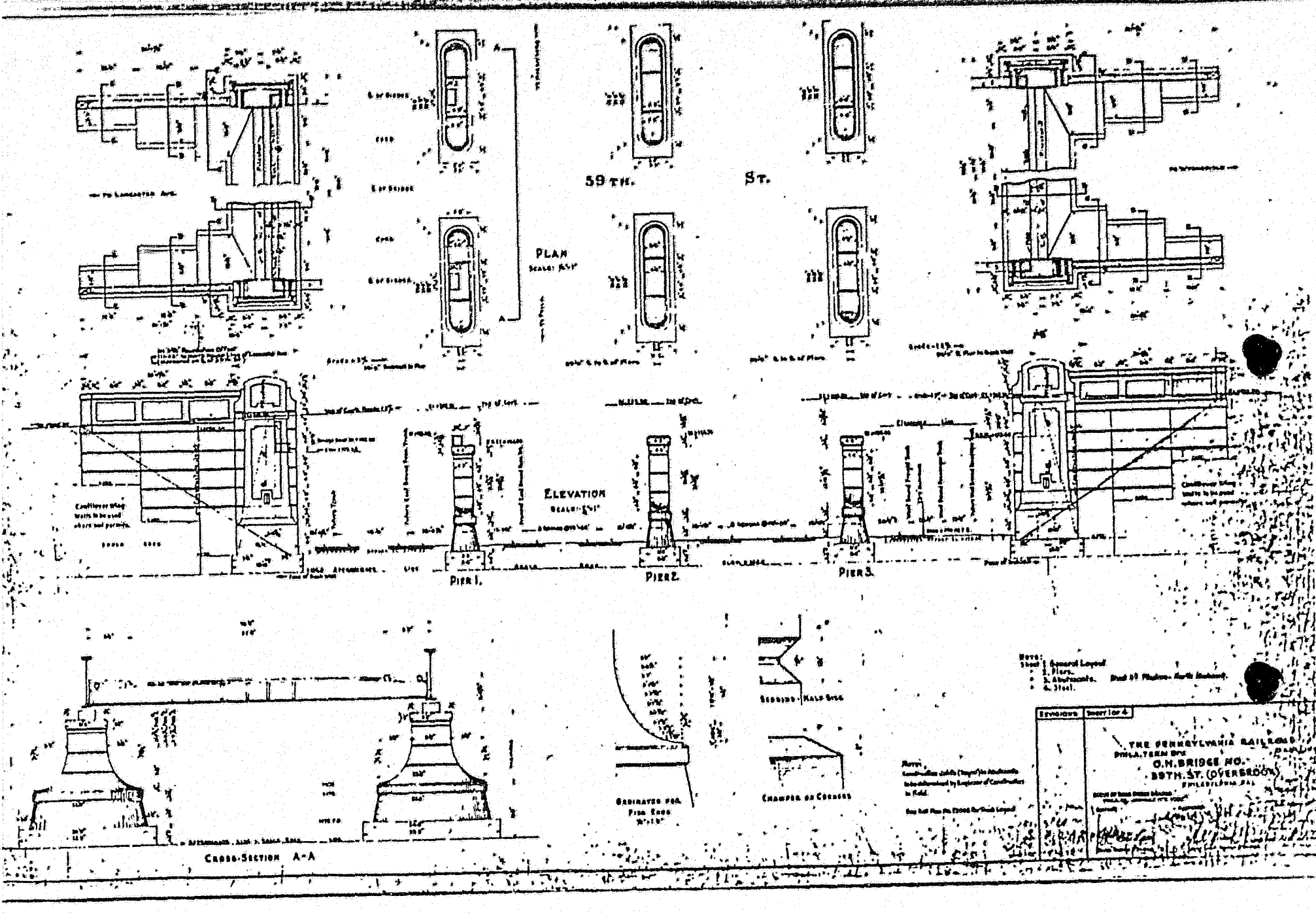
The bridge exhibits deterioration typical of that found on highway bridges on which salt or de-icing chemicals have been applied. The salt attacks the concrete and the moisture and air that accompany the sale migration, causes the steel reinforcing and other members to corrode. Fortunately, the steel floor beams and bottom flanges of the main girders are encased in concrete or gunite thereby affording some resistance to rapid deterioration. The encasement is cracked and at certain locations has fallen off the bottom flanges. At other locations, the bottom flange encasement is broken from internal pressure buildup resulting from the rusting and corroding steel. The encasement was wet to the touch at some locations with icicles of lime hanging from many areas under the bridge.

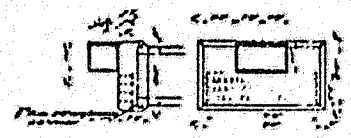
The bridge deck appeared to be in fair condition except for the expansion joints which, we understand, have been repaired by the City of Philadelphia.

The sidewalks and protection fence on top of the parapets are in good condition.

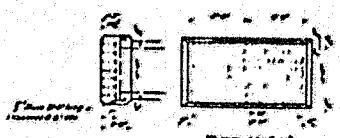
Based on our inspection, we conclude there is no immediate concern for the safety and convenience of the travelling public and recommend that the City and Railroad jointly inspect the bridge on an annual basis to insure its integrity.

APPENDIX A


59 TH.
ST.
PLAN
ELEVATION
PIER 1.
PIER 2.
PIER 3.
CROSS-SECTION A-A
THE PENNSYLVANIA RAILROAD
O.H. BRIDGE NO.
59TH. ST. (OVERHEAD)

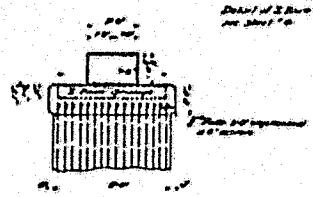


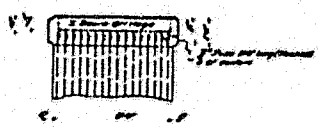
PIER № 1

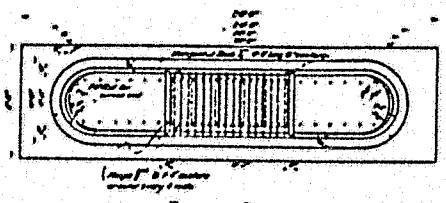


PIER № 2

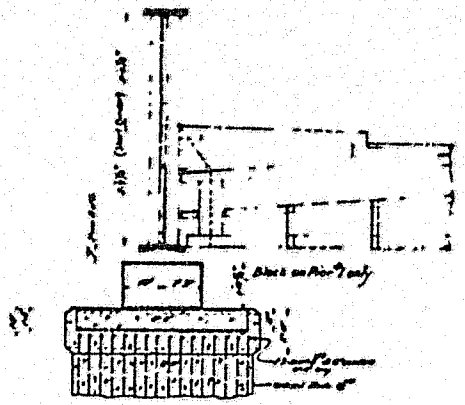
DETAILS OF TOP OF PIERS



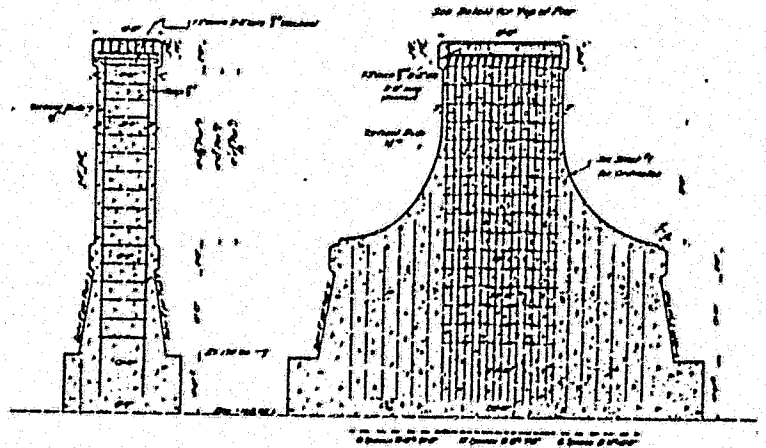




PLAN OF PIERS



SECTION OVER PIER

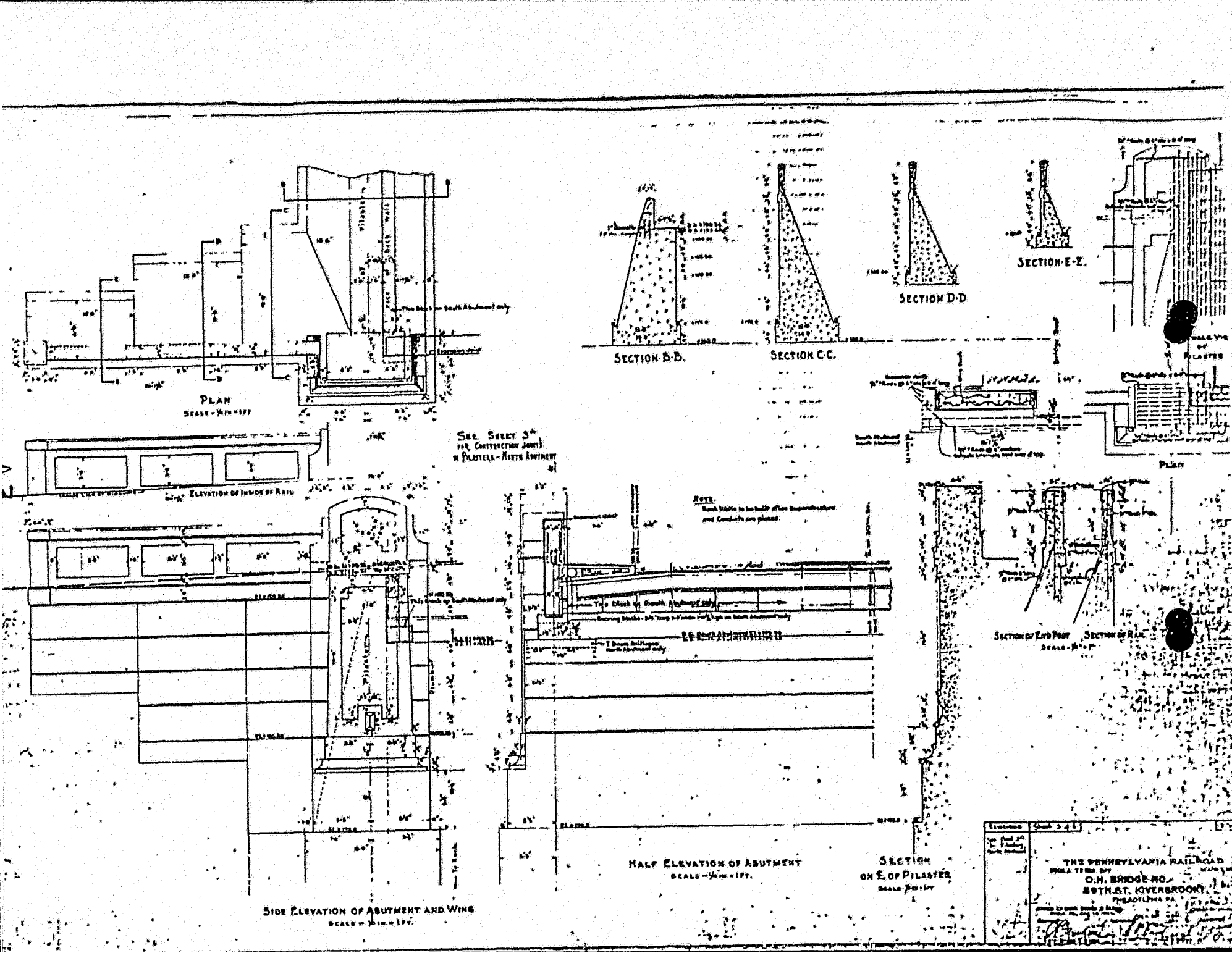


CROSS SECTION

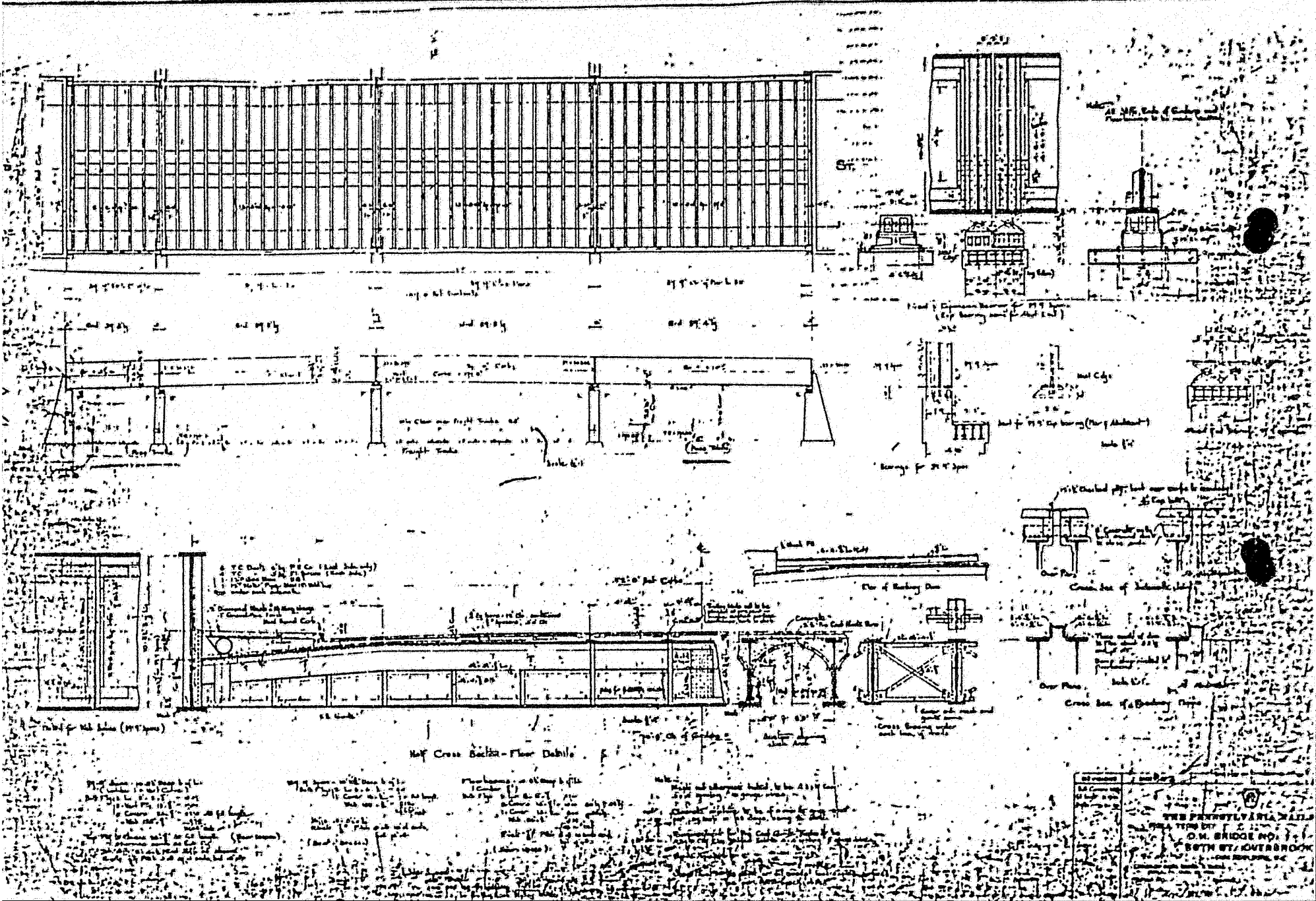
SECTION ON ℄

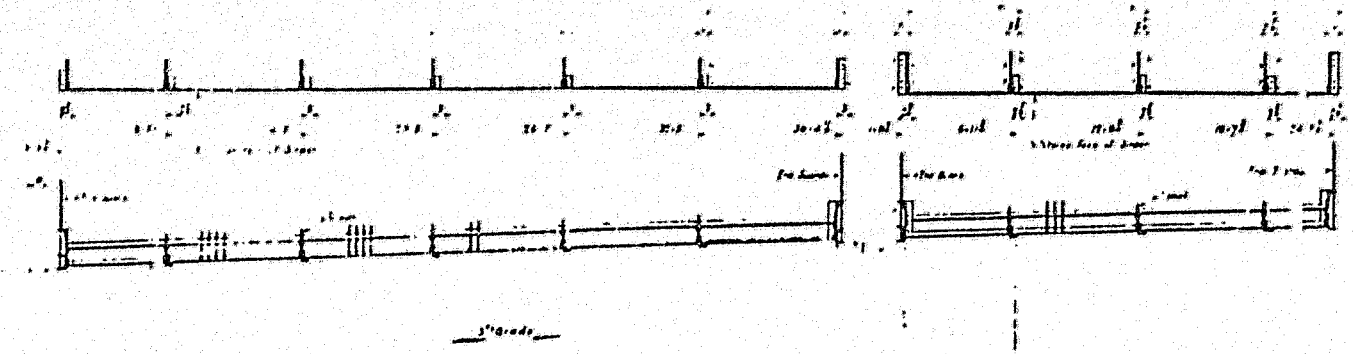
Revisions | Sheet 1 of 4

THE PENNSYLVANIA RAILROAD
PHILA. TERM. DIV. MAIN LINE
O.H. BRIDGE № 59TH ST. (OVERBROOK)
PHILADELPHIA, PA.


PLAN
SECTION B-B.
SECTION C-C.
SECTION D-D
SECTION E-E.
PLAN
SEE SHEET 3 FOR CONSTRUCTION JOINTS IN PILASTERS - NORTH ABUTMENT
ELEVATION OF INSIDE OF RAIL
NOTE
SECTION OF END POST
SECTION OF RAIL
SIDE ELEVATION OF ABUTMENT AND WING
HALF ELEVATION OF ABUTMENT
SECTION ON E. OF PILASTER
THE PENNSYLVANIA RAILROAD
O.M. BRIDGE NO.
58TH ST. OVERBROOK

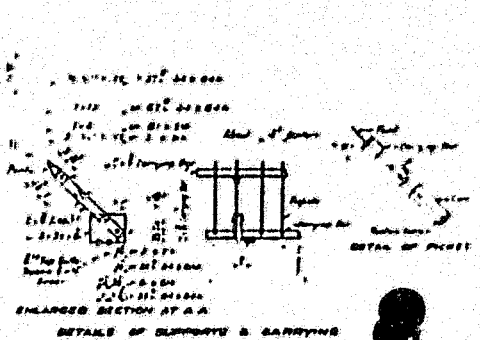
POOR ORIGINAL





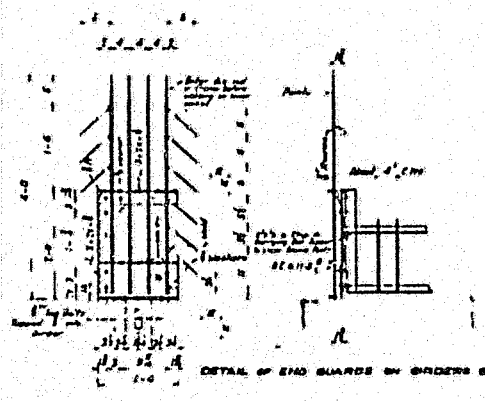
ONE FENCE AS SHOWN FOR GIRDER G1A
& G1 OPP HAND & G1

ONE FENCE AS SHOWN FOR GIRDER G2
& G2 OPP HAND & G2

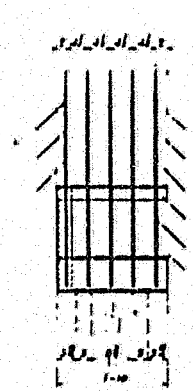


ENLARGED SECTION AT A-A

DETAILS OF SUPPORTS & CARRYING BARS FOR PICKETS

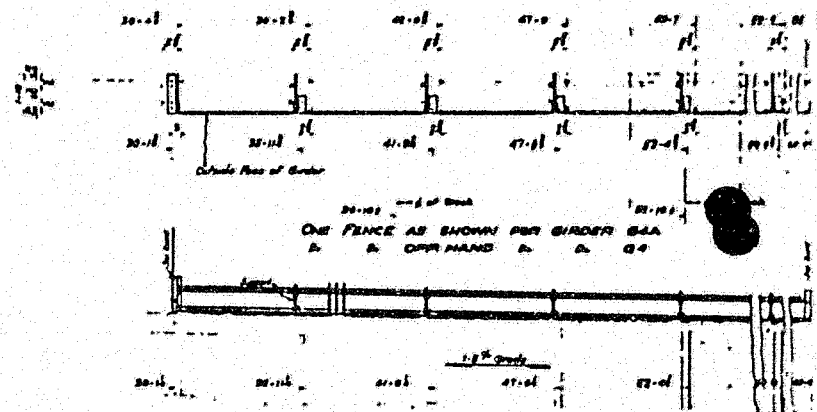


DETAIL OF END GUARDS ON GIRDERS G1A & G1

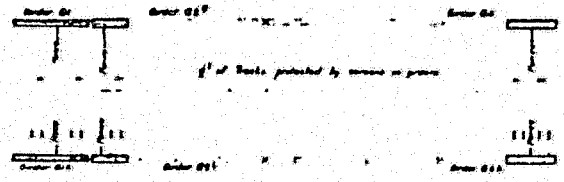


DETAIL OF END GUARDS ON GIRDERS G2 & G3 & G4A

Parts & Dimensions not shown or noted the same as for guards on girders G1 & G1A



ONE FENCE AS SHOWN FOR GIRDER G4A
& G4 OPP HAND & G4



LOCATION PLAN

Note: Paint all exposed steel work two coats of red lead paint before erection.

All unknown figures to be verified before ordering material.

REVISIONS

SHEET 8 OF 8

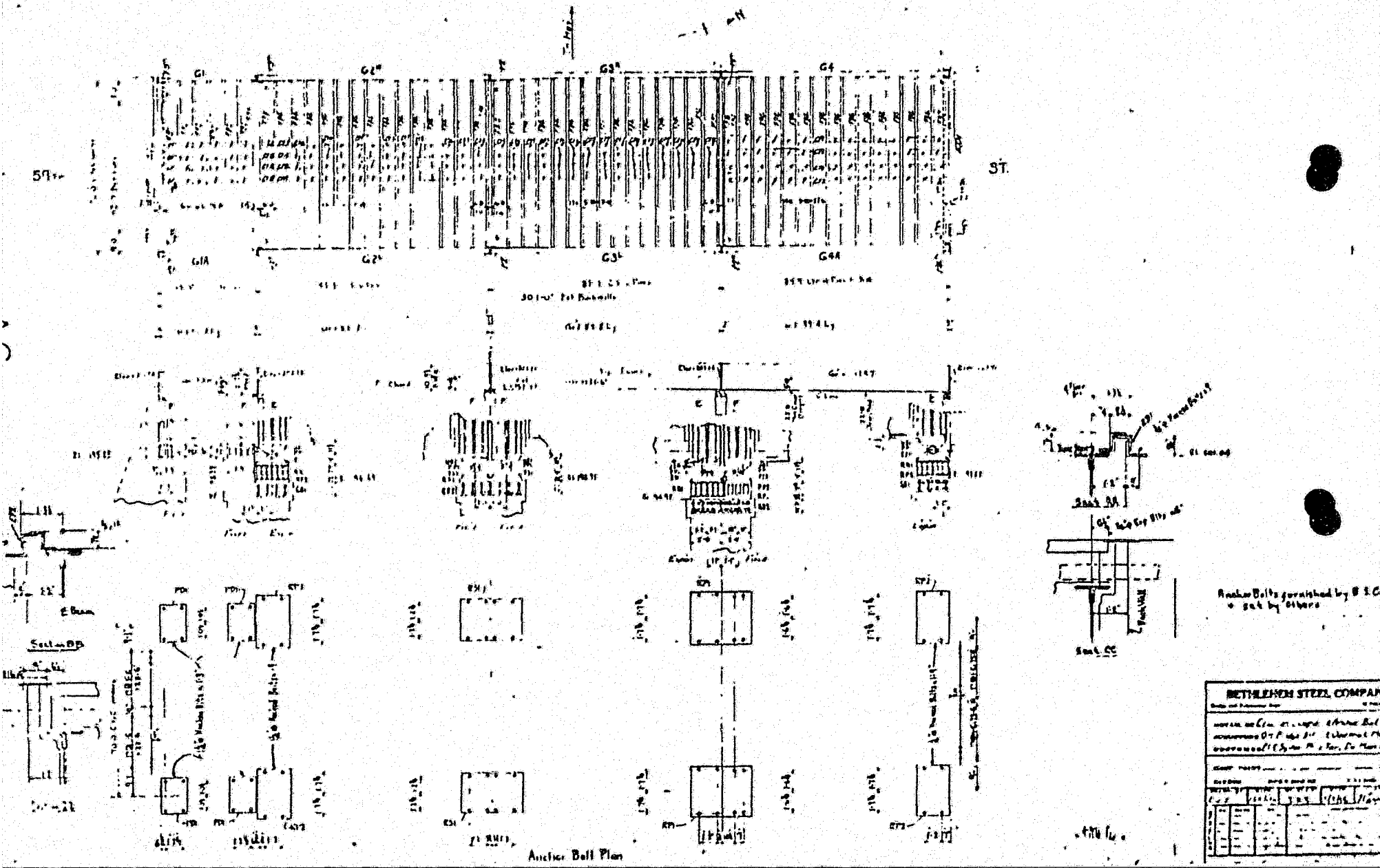
THE PEN

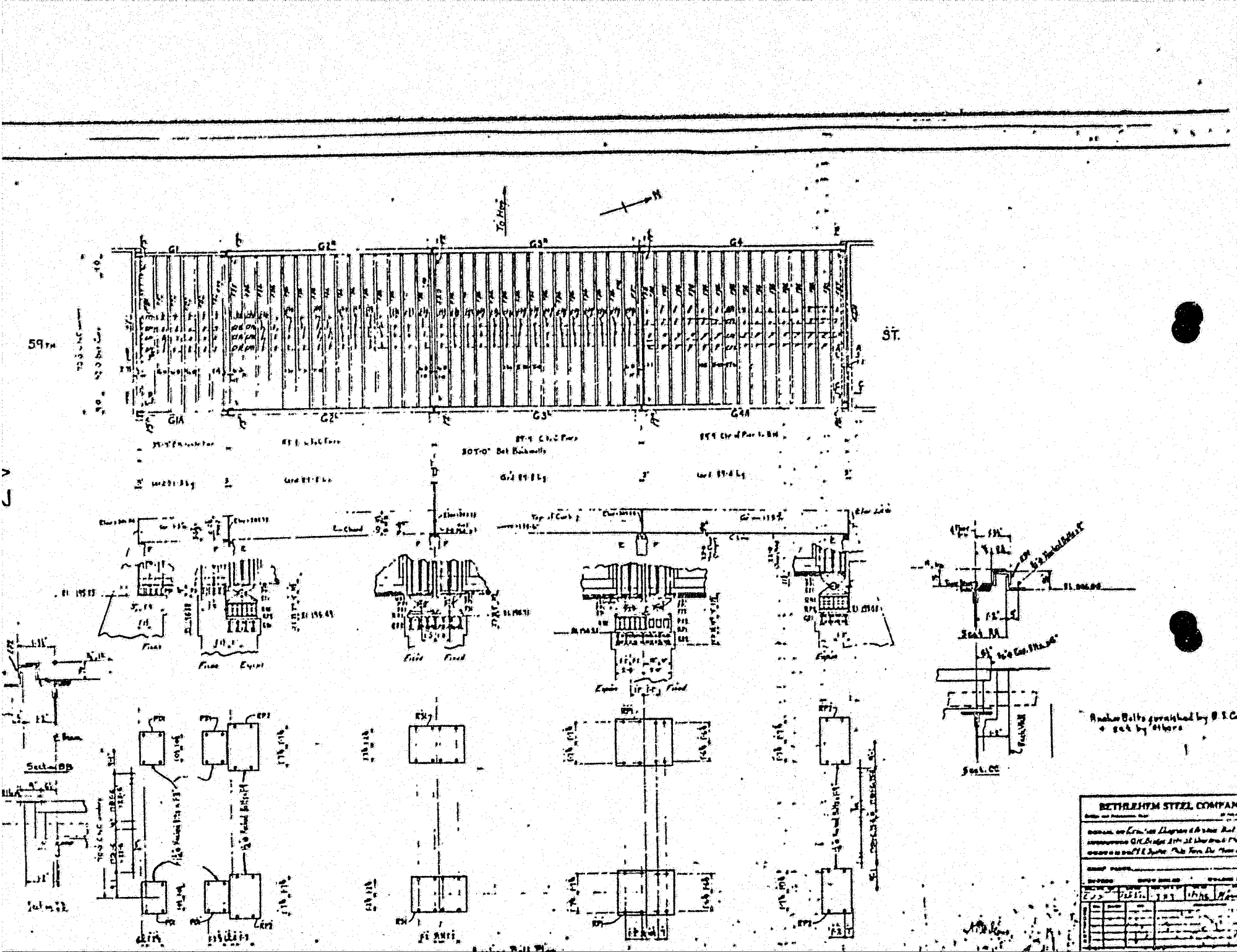
RY DIV.

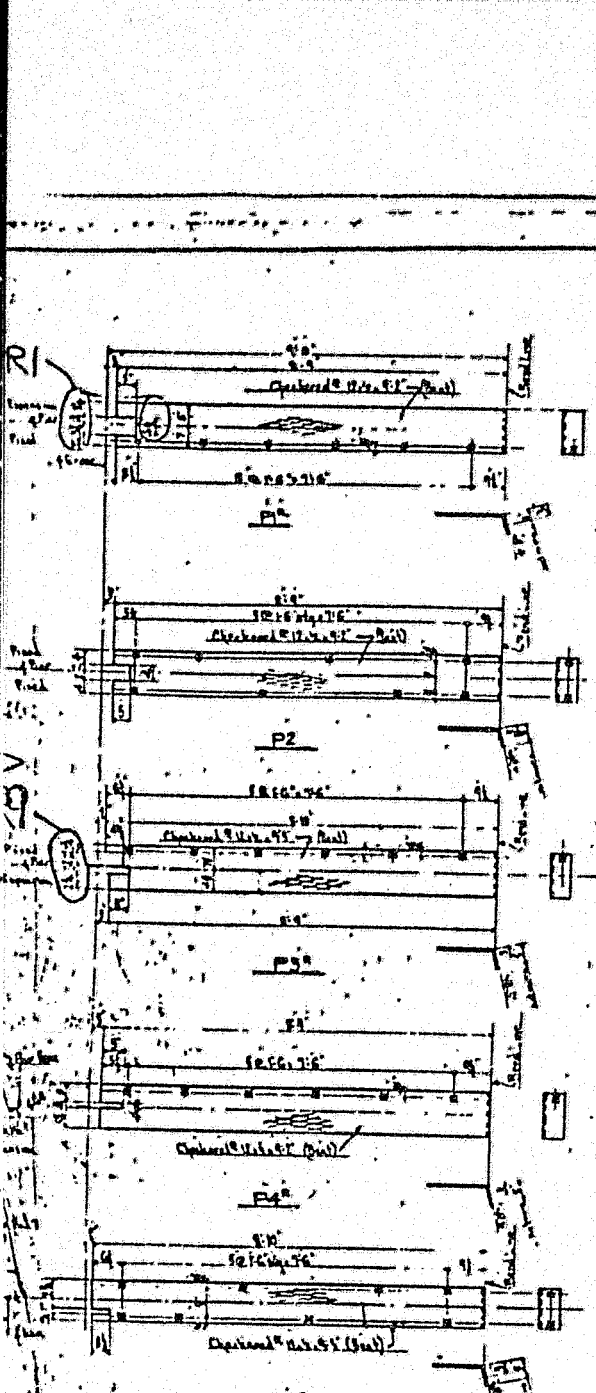
SHEET

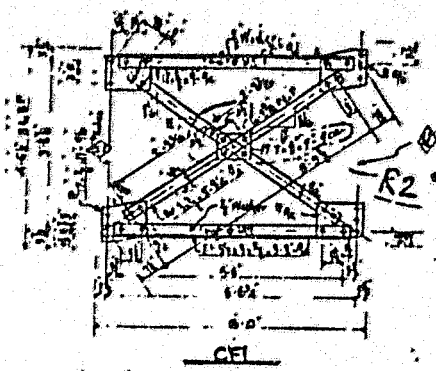
G.M. DIST

Office of the Bridge Engineer
Philadelphia Pa. Dec 1
A.G. Thom
Eng. Bridge & Bldg.

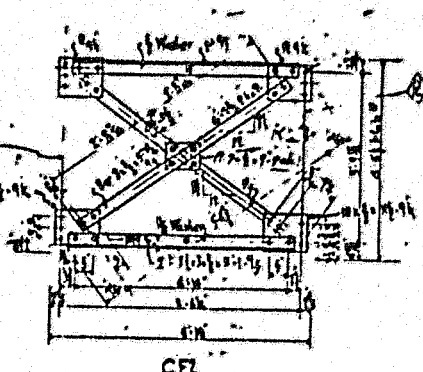

G1
G2
G3
G4
G1A
G2A
G3A
G4A
ST.
Section BB
Anchor Bolt Plan
Anchor Bolts furnished by B.S.C.
set by others
BETHLEHEM STEEL COMPANY


59TH
ST.
G1
G2
G3
G4
G1A
G2A
G3A
G4A
To Hoy
Section BB
Section CC
Anchor Bolts furnished by B.S.C.
set by others
BETHLEHEM STEEL COMPANY

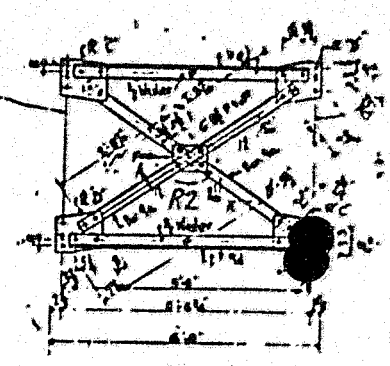




CF1

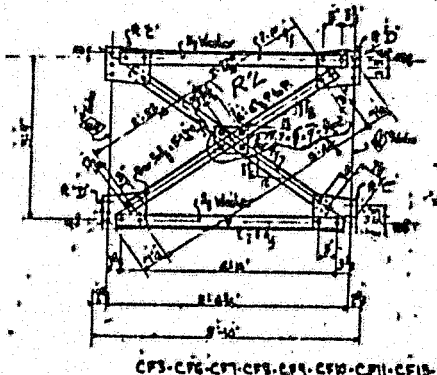


CF1



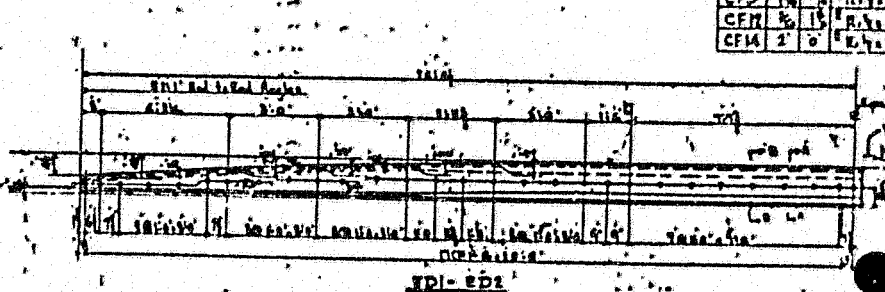
CF4 - CF8 - CF12 - CF14

Mark	A	B	Plate 'C'	Plate 'D'
CF4	1"	1"	[illegible]	
CF5	1⅛	⅝	[illegible]	
CF7	⅝	1⅛	[illegible]	
CF14	2"	0"	[illegible]	



CF5 - CF6 - CF7 - CF8 - CF9 - CF10 - CF11 - CF13 - CF15

Mark	A	B	Plate 'C'	Plate 'D'
CF6	1⅛	⅝	[illegible]	
CF7	1⅛	⅝	[illegible]	
CF8	⅝	⅝	[illegible]	
CF9	1"	⅝	[illegible]	
CF10	1⅛	⅝	[illegible]	
CF11	1⅛	⅝	[illegible]	
CF13	1⅛	⅝	[illegible]	
CF15	1⅛	⅝	[illegible]	
CF5	1"	1"	[illegible]	



FD1 - FD2

Reinforcing Bar Schedule

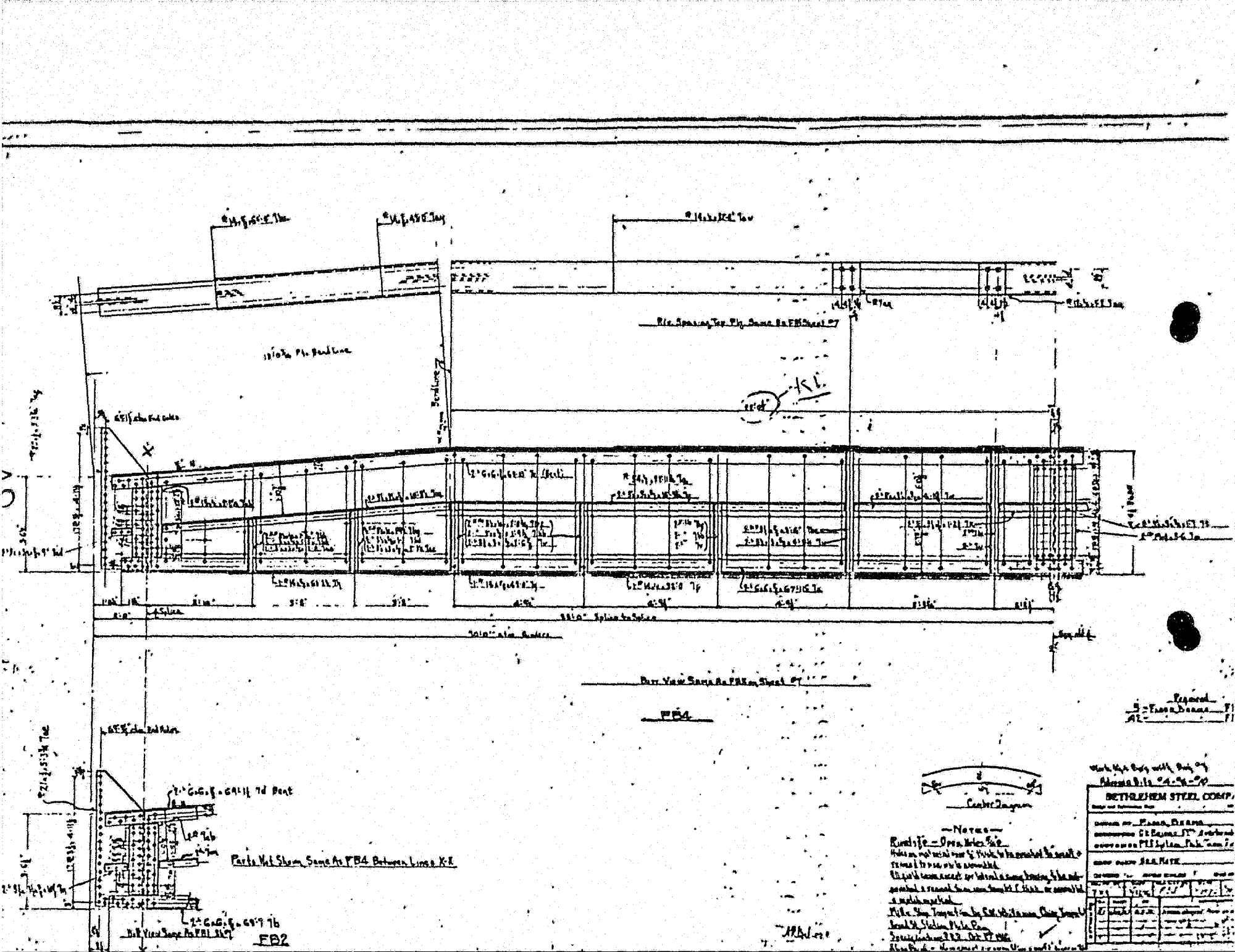
Mark	Diameter	Length	Remarks
[illegible]			

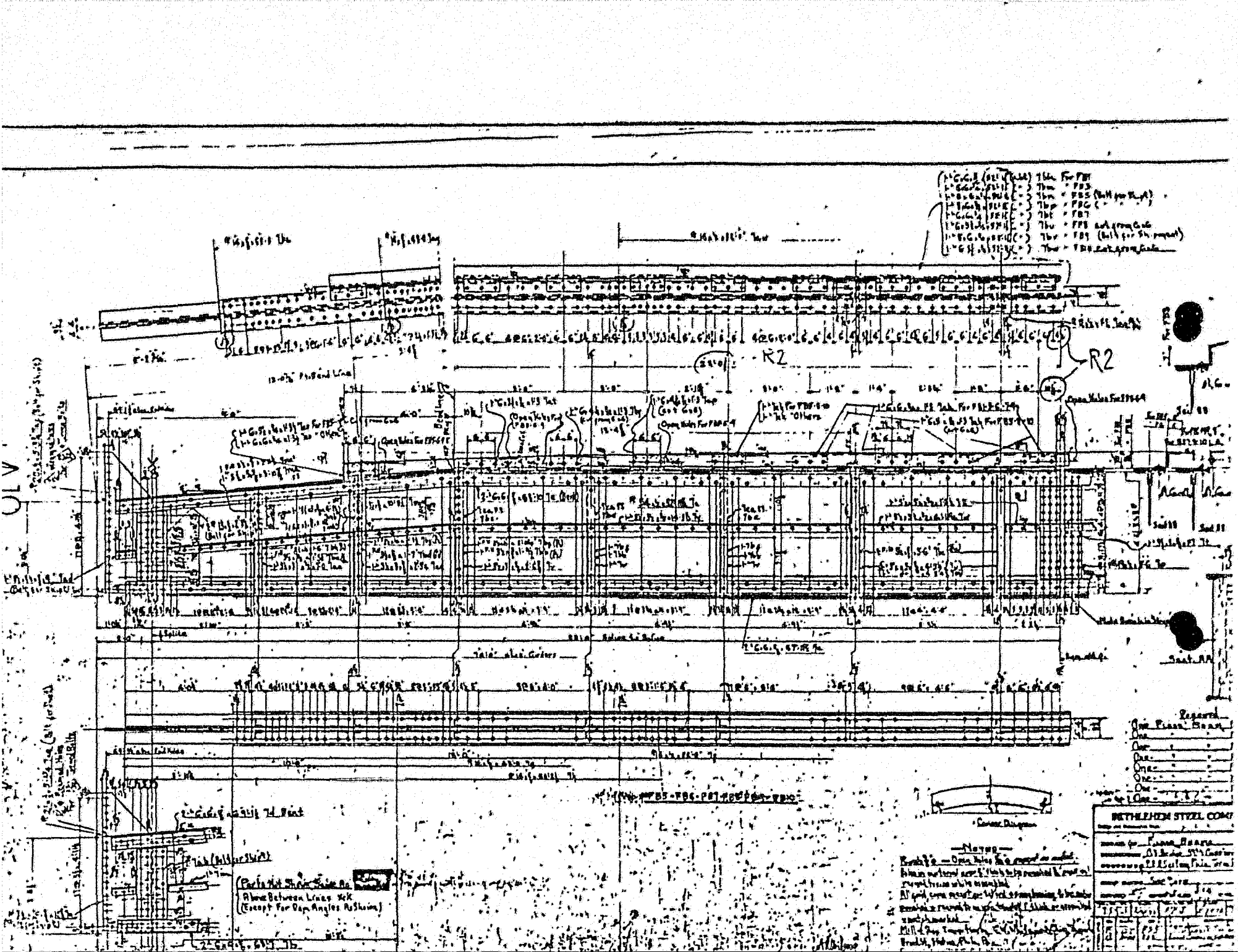
Notes

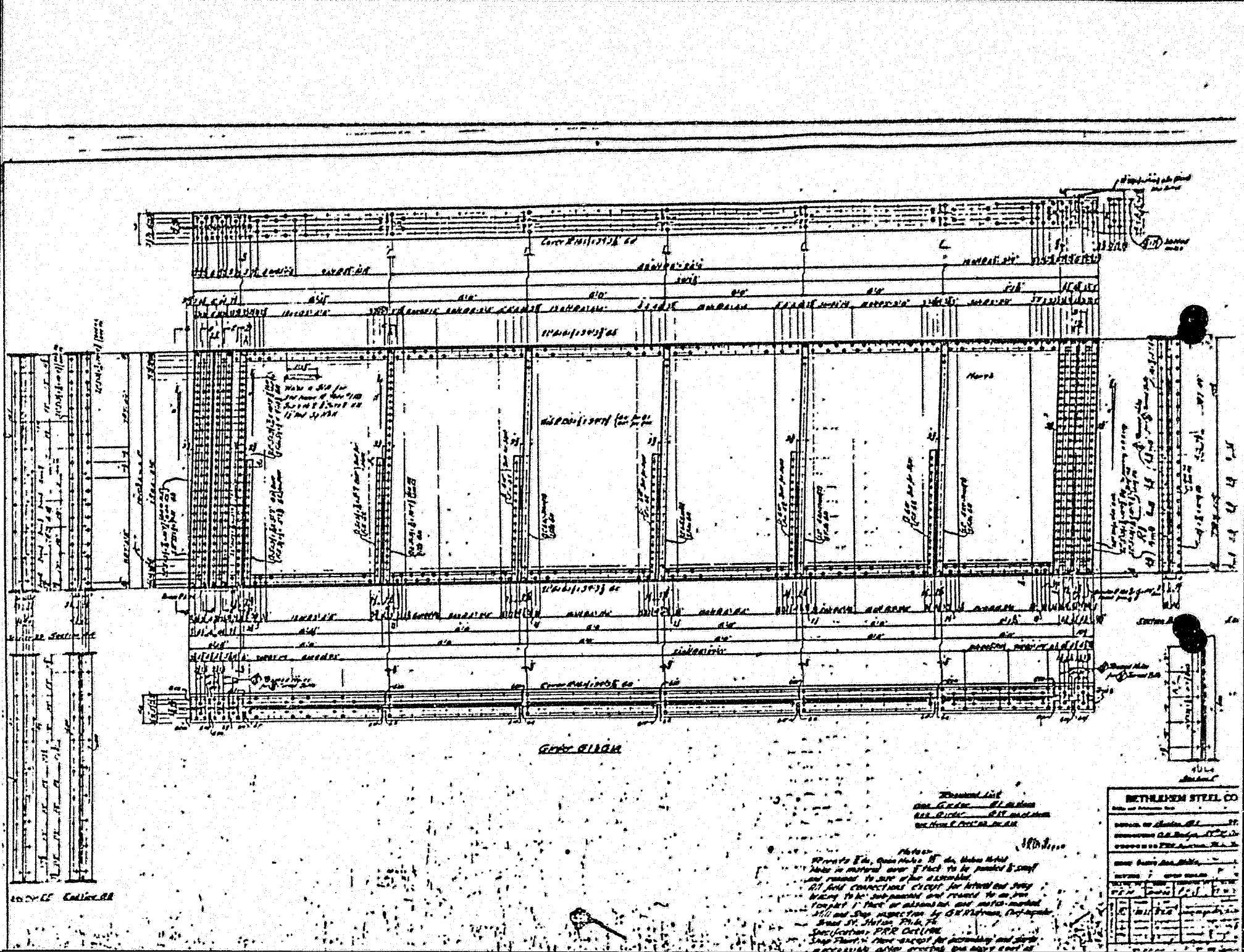
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

BETHLEHEM STEEL COMPANY

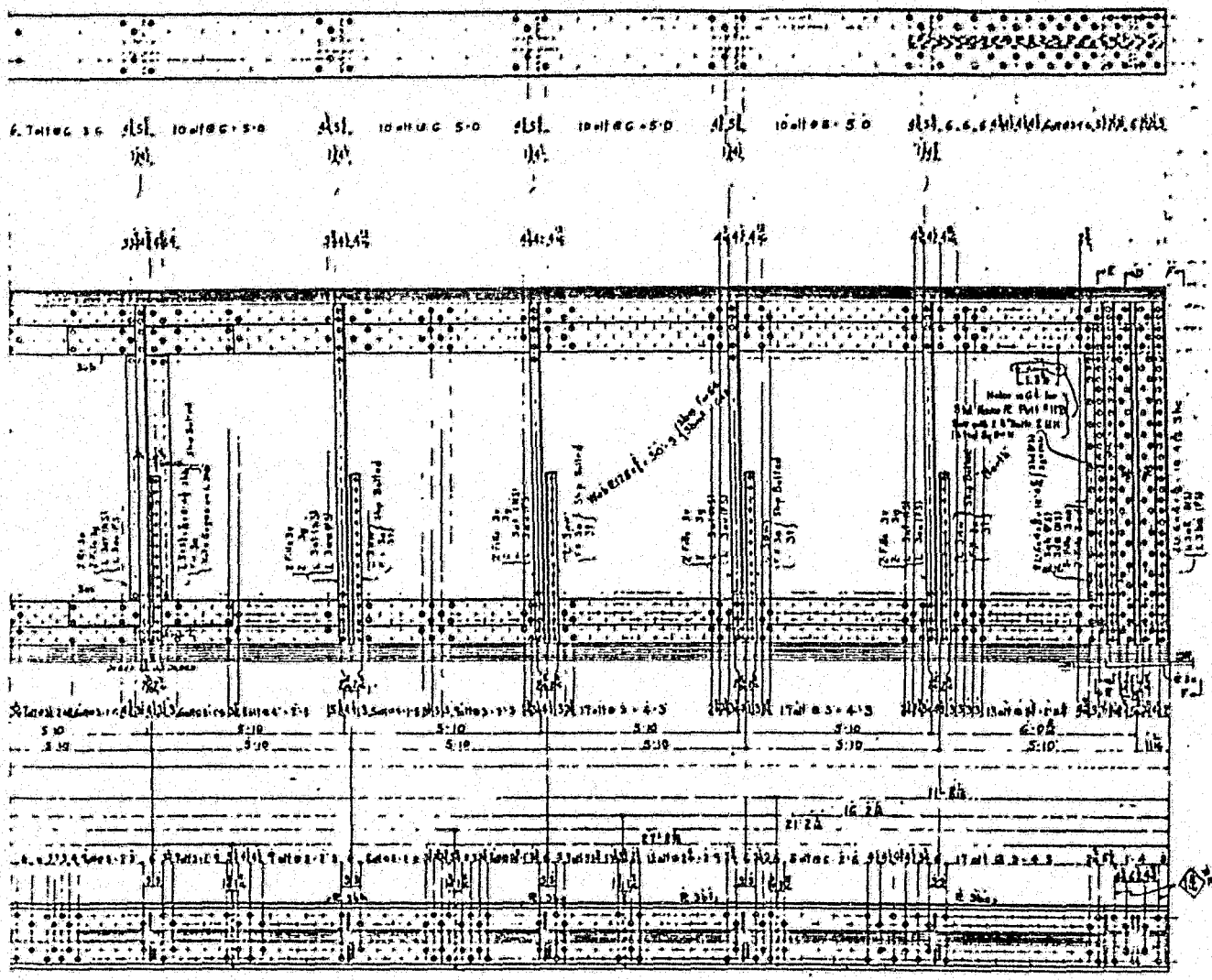
[illegible]

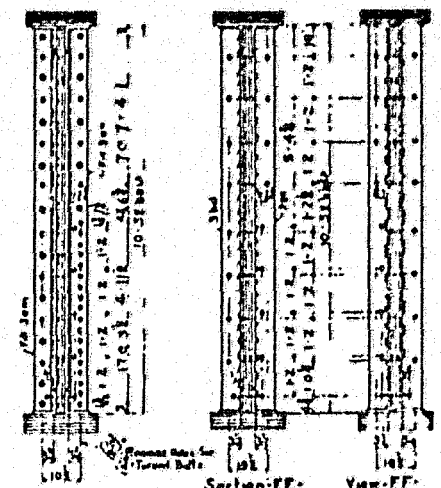

FB4
FB2
Camber Diagram
—Notes—
BETHLEHEM STEEL COMP


R2
R2
Notes
BETHLEHEM STEEL CO



BETHLEHEM STEEL CO.



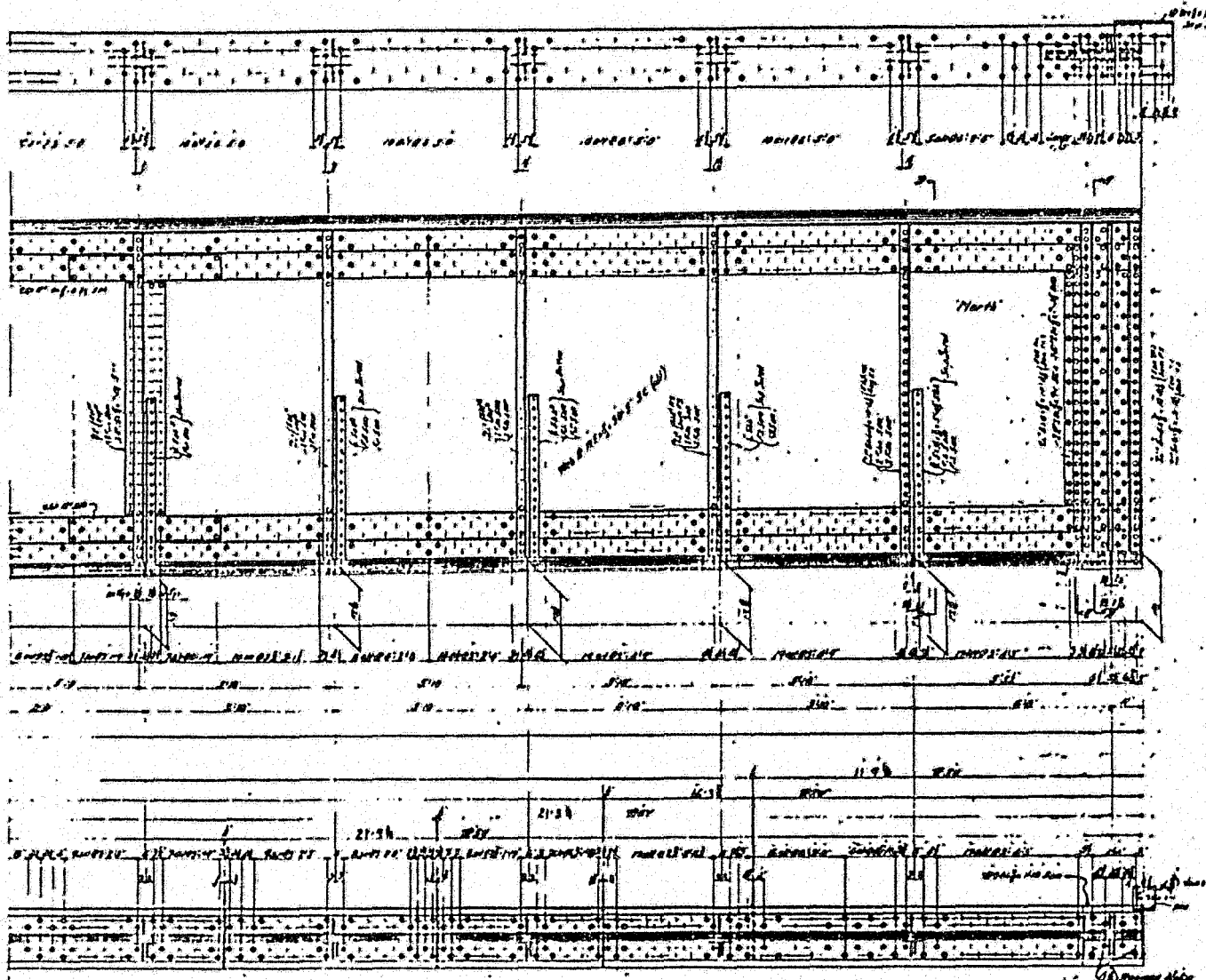


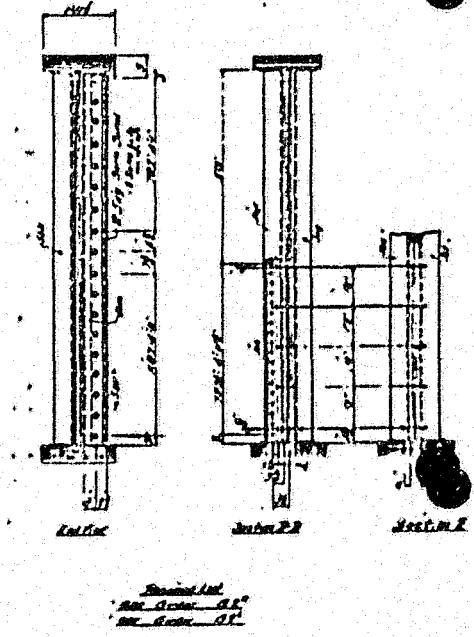
Rivets 1" Holes Notes

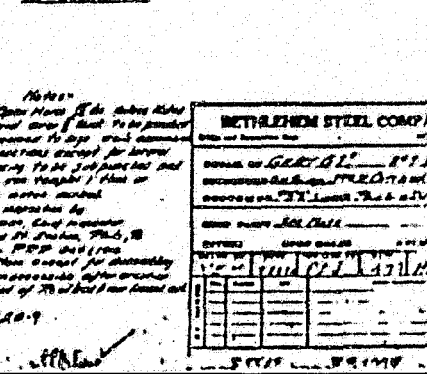
Weld List
One Girder G4 As Shown
One Girder G4A Opp st Shown
One Web R Plt [illegible] for G4

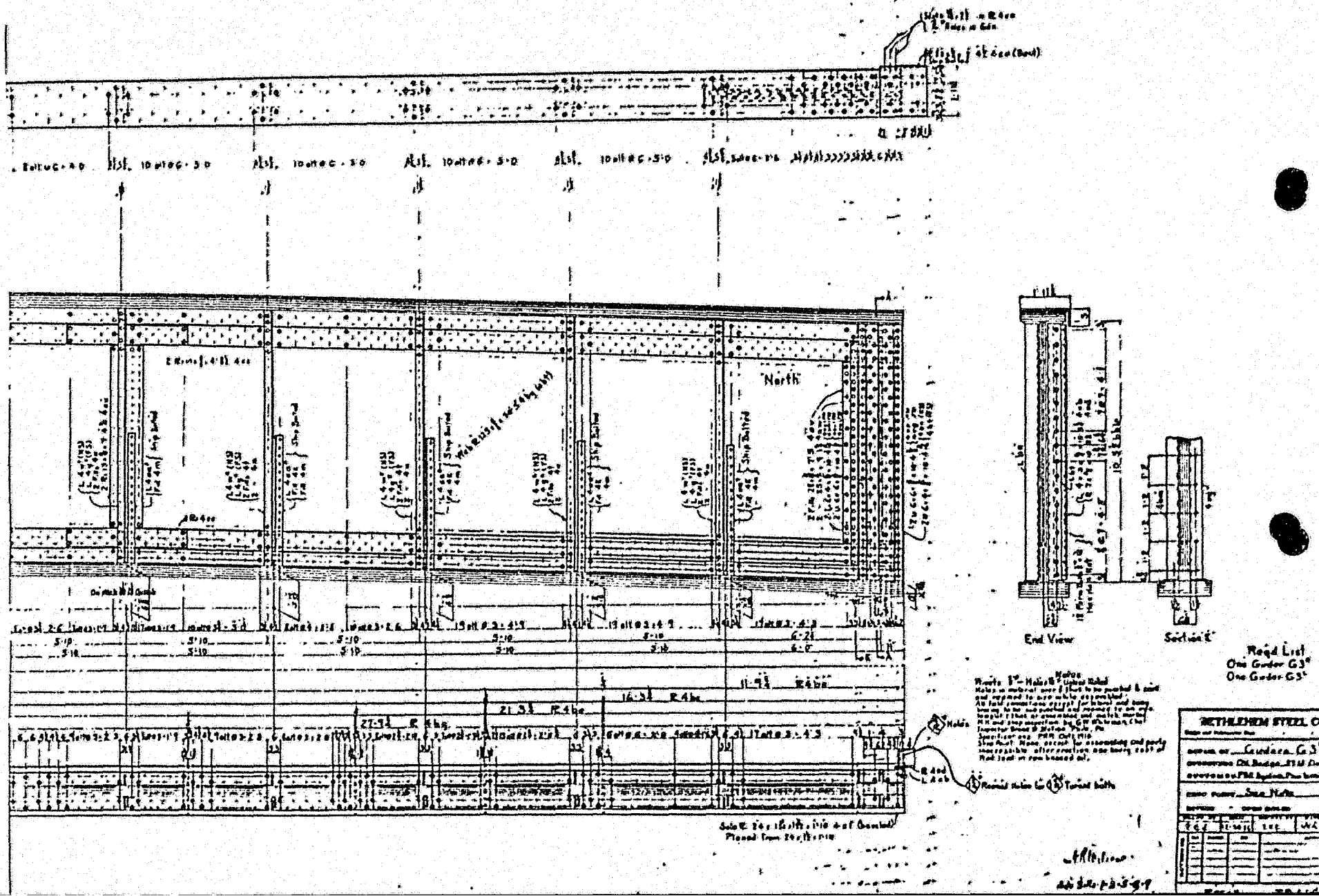
BETHLEHEM STEEL COMPA

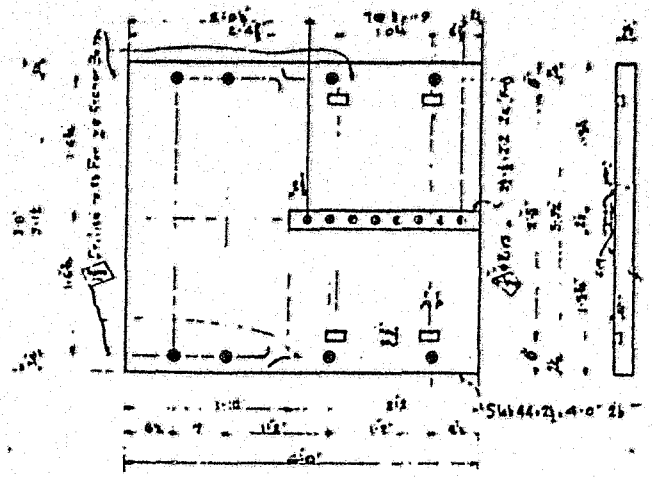
Girders G4



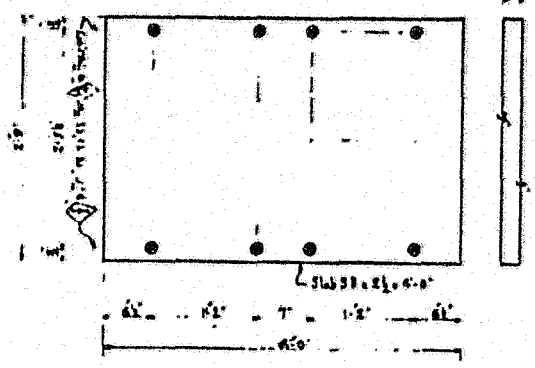




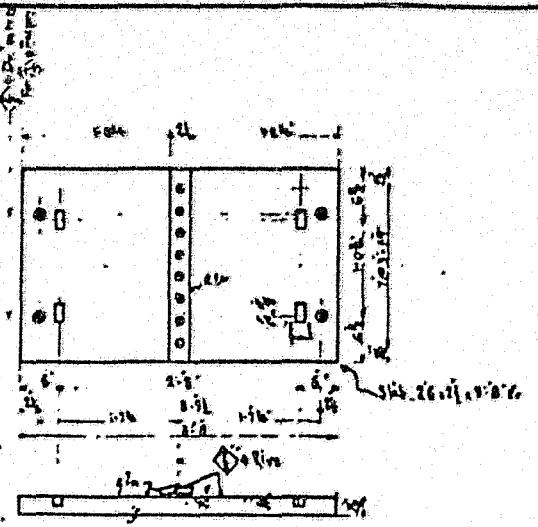

North
End View
Section E
Rigid List
One Girder G3*
One Girder G3*
BETHLEHEM STEEL COMP



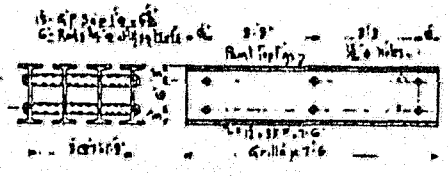
RPL



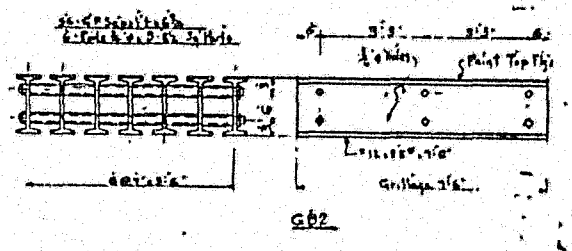
RSL



RP2



GSL



GS2

Remarks

1- Rerun Main RPL
4- " RP2
2- Slabs RSL
4- Gratings GSL
4- " GS2

Notes.

Shop Paint:- One Coat Inhibitive Red Lead Oil.
Field Painting:- One Coat White Lead and Tallow
Specifications - P.R.R. Oct. 1st 1916

BETHLEHEM STEEL COMP

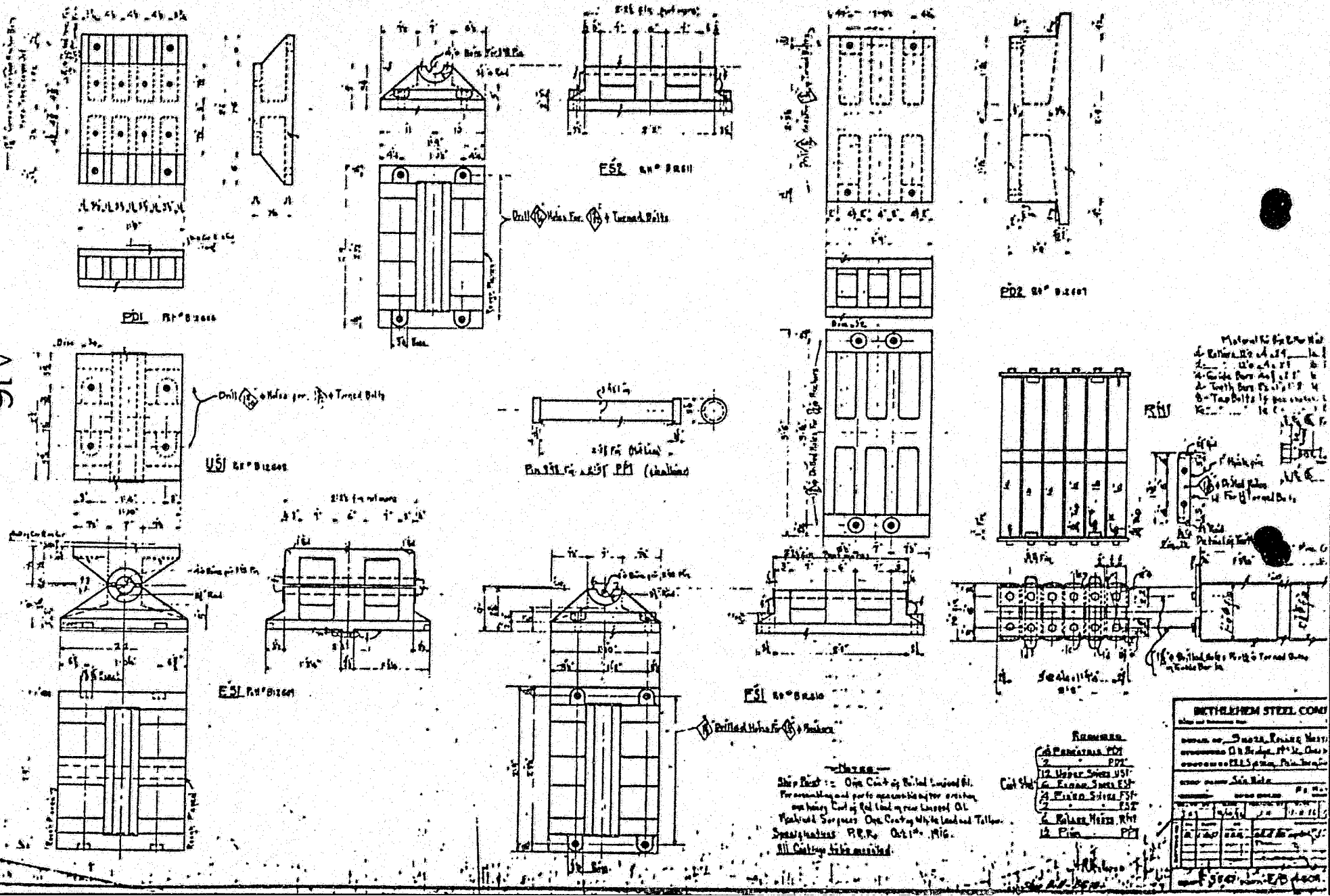
Rerun Main RPL Slabs Gratings
O.B. Bridge
P.R.R. System

Sub Order

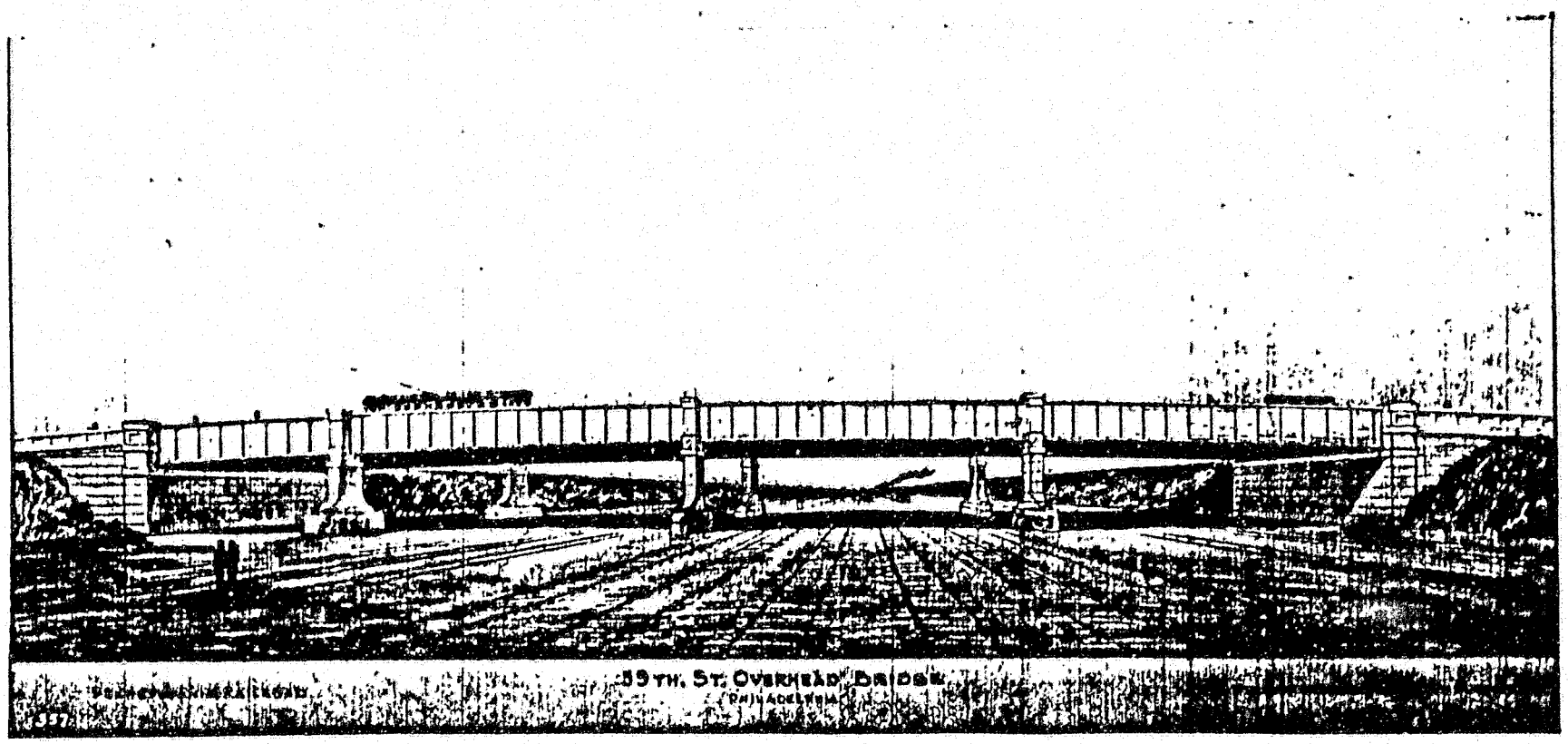
Shop Order

P 5547 E 84049

A15


PD1
PD2
ES1
ES2
US1
FS1
RH1
Drill Holes for Turned Bolts
Drilled Holes for Turned Bolts
Material List
Notes
Remarks
BETHLEHEM STEEL COMP

APPENDIX B



B-1



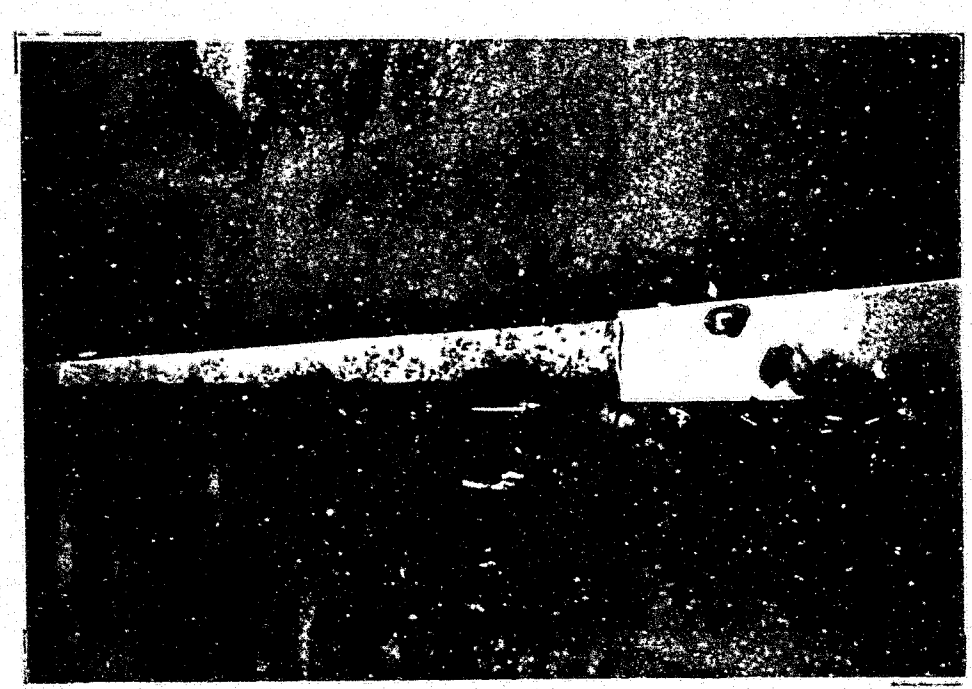
Bridge Approach from
North End



North End Expansion Joint
Northbound Side



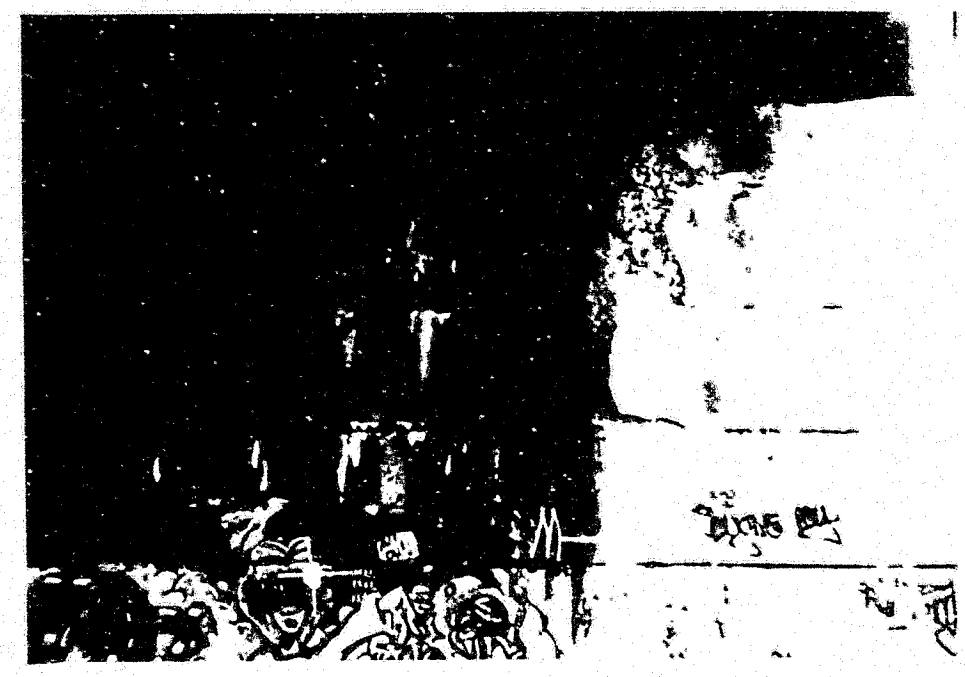
South End Expansion Joint
Northbound Side



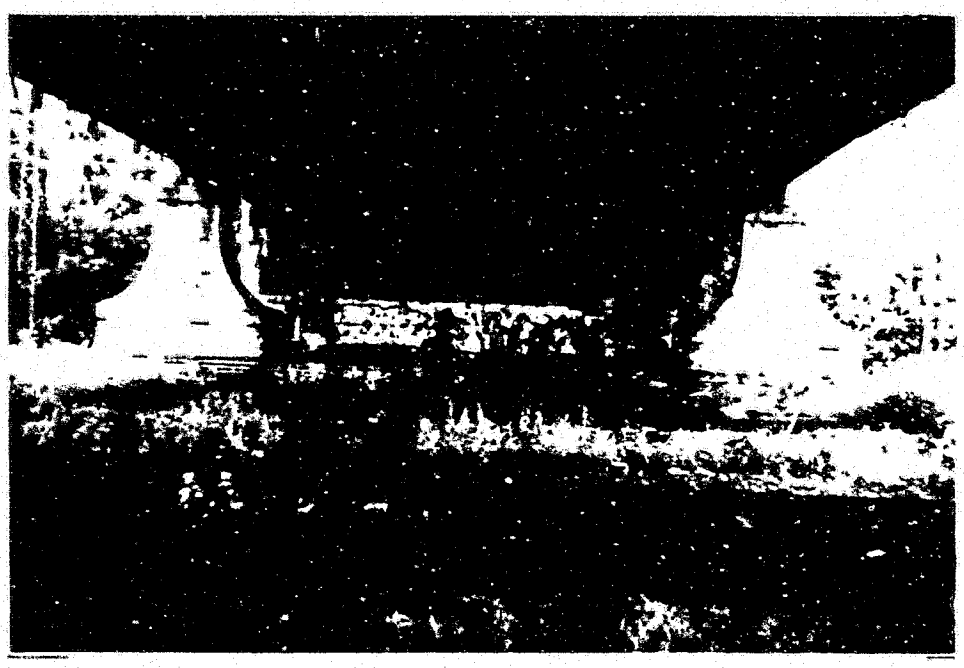
Southbound Side of
same Joint



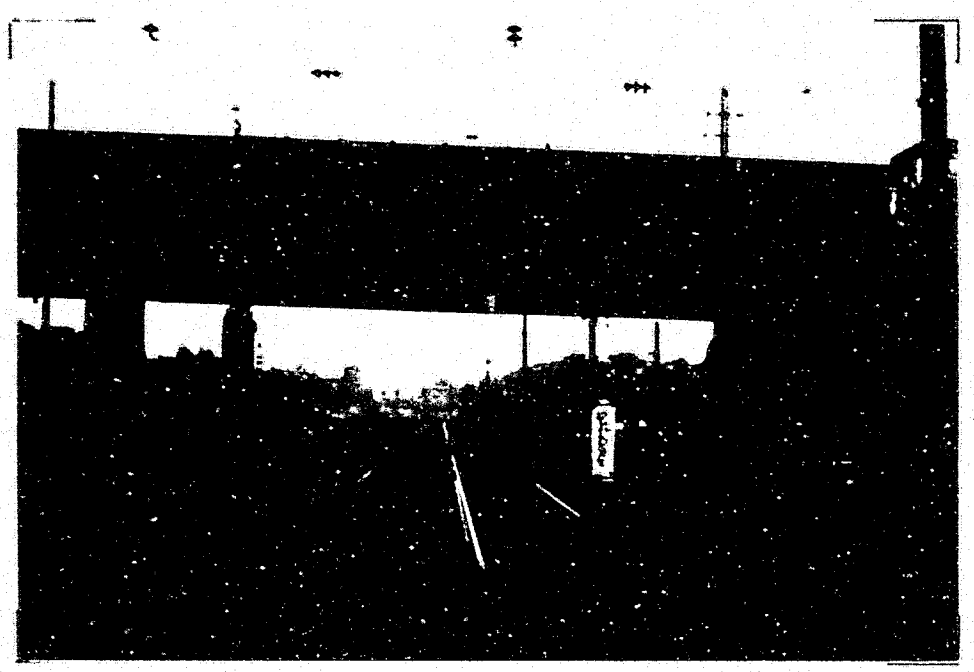
NORTH ABUTMENT



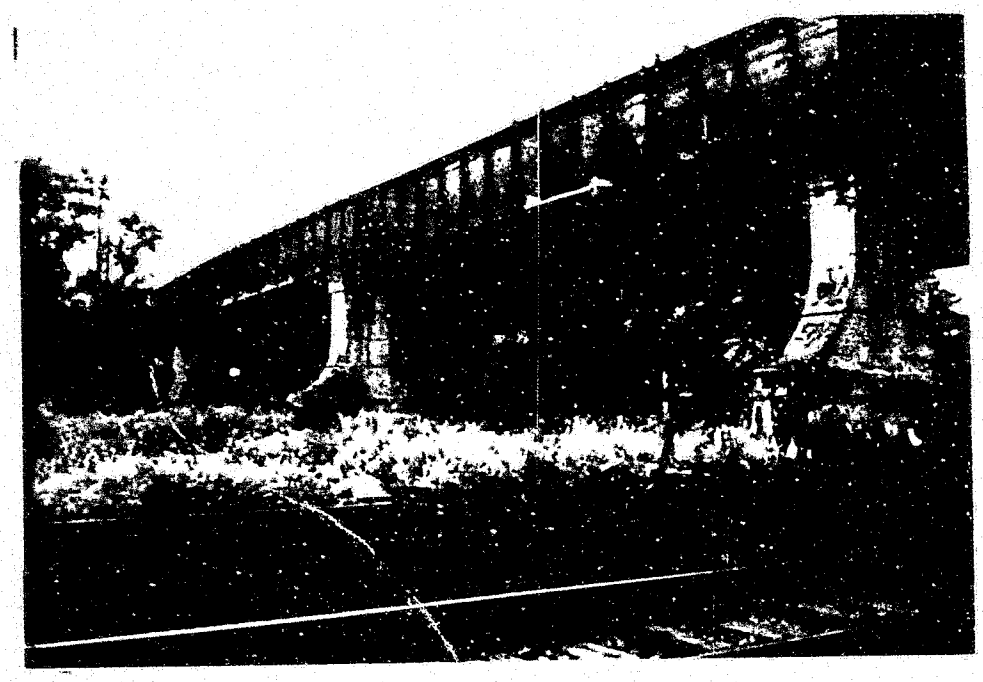
EAST END, NORTH ABUTMENT



SOUTH ABUTMENT



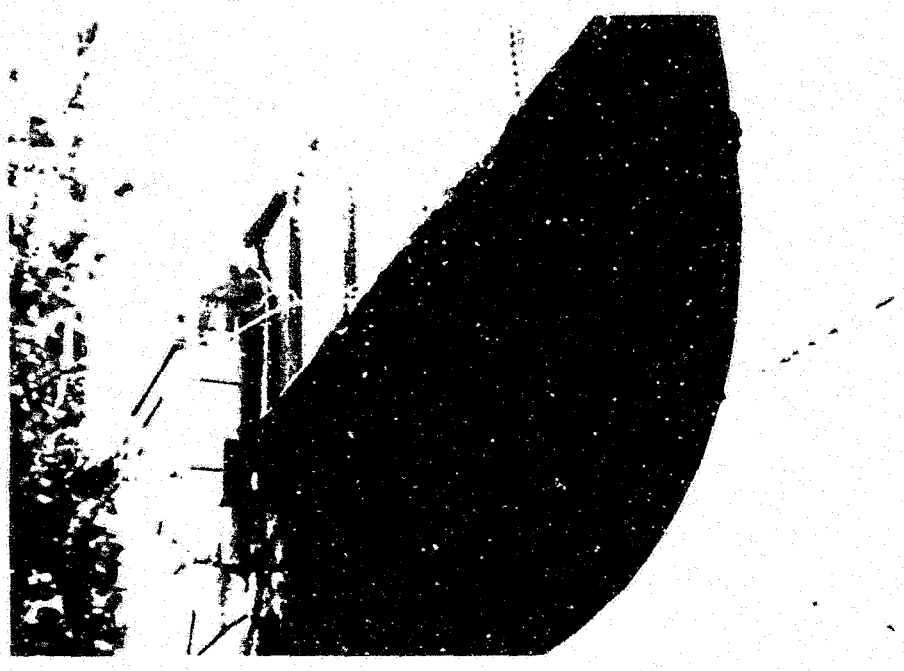
EAST SIDE NORTHERN SPAN



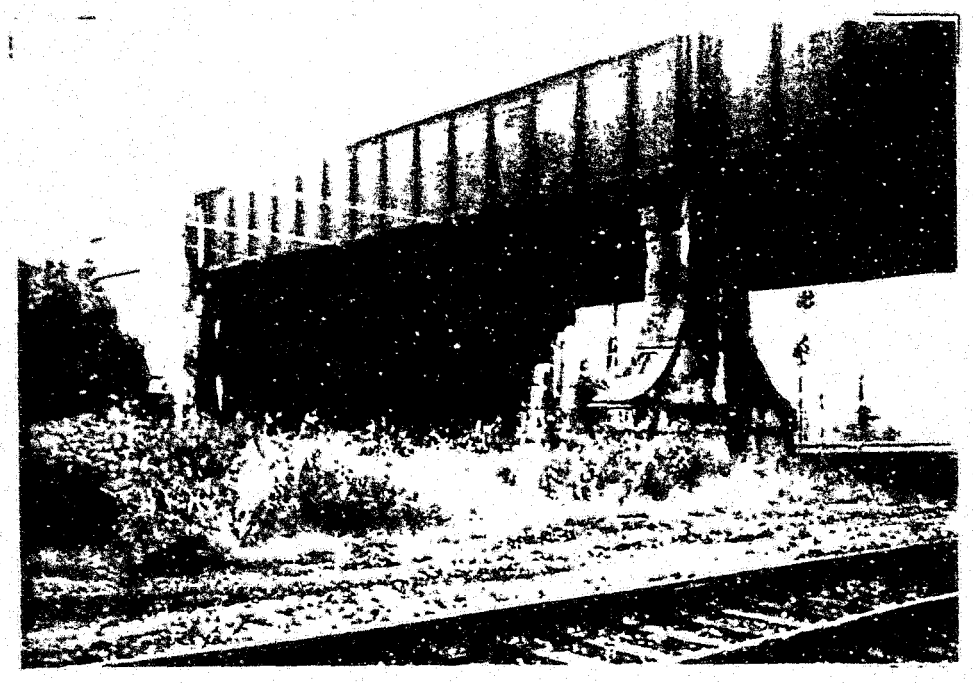
3 SOUTHERN SPANS - EAST SIDE



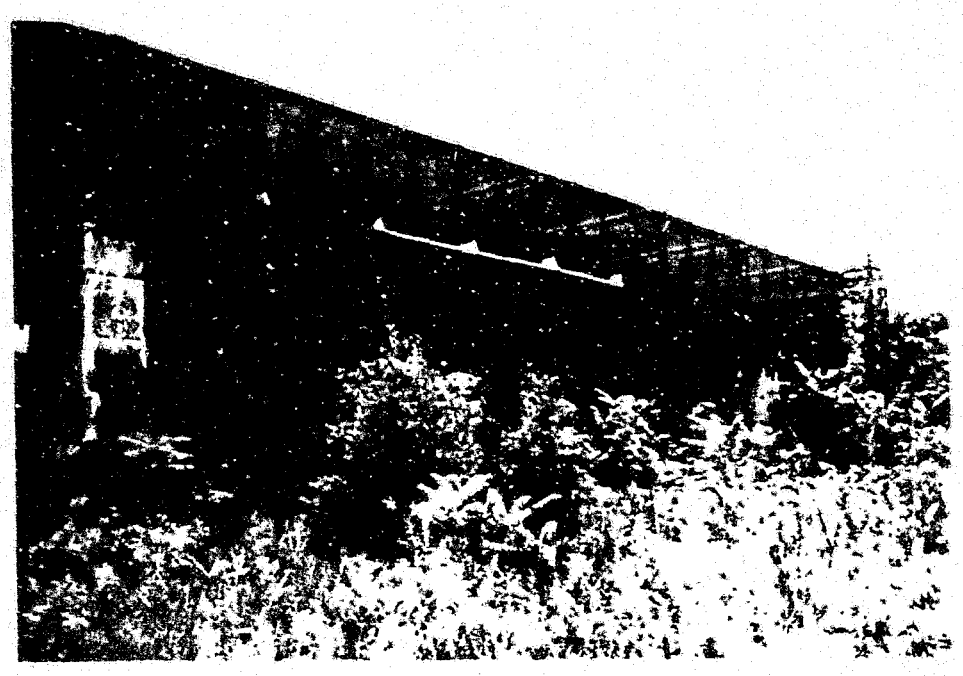
EAST GIRDER - 2nd SPAN
from NORTH



SOUTH END SPAN
EAST SIDE



NORTH SPAN
WEST SIDE



2 SOUTHERN SPANS
WEST SIDE



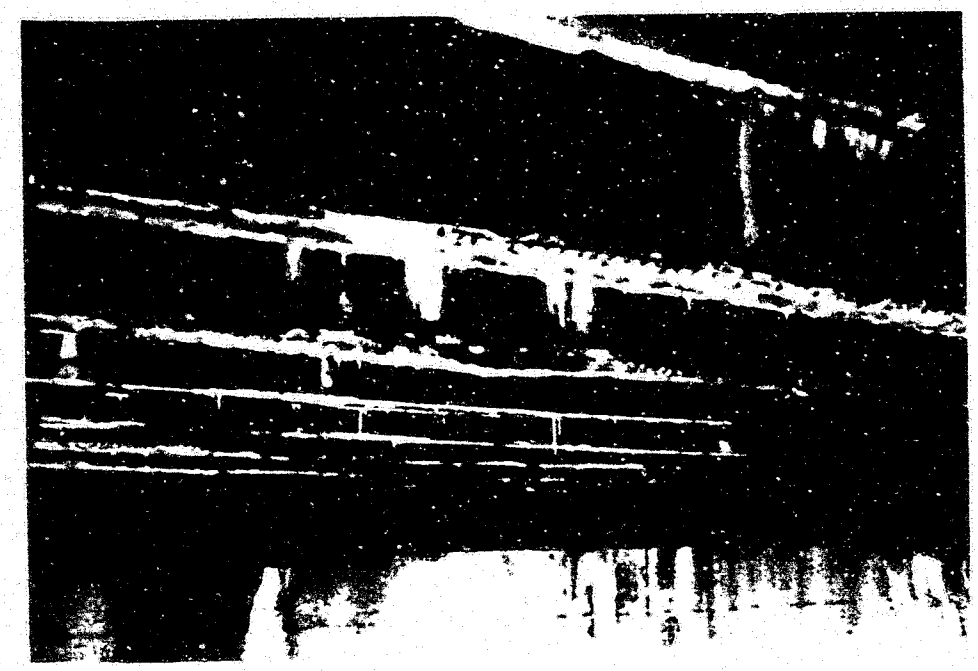
MAIN GIRDER ENCASEMENT
WEST SIDE - TRACK 2



Encasement of Main Girder
West Side - Note growing moss
in Center



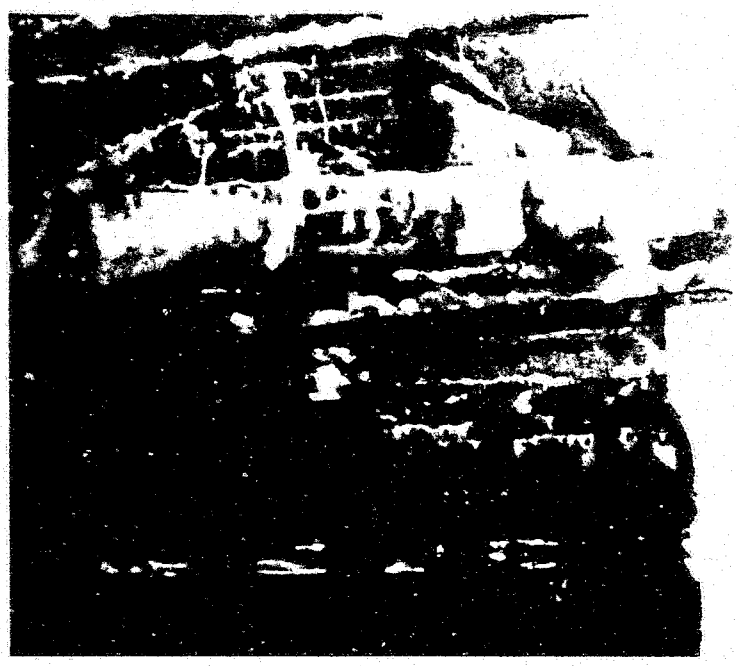
Encasement of Main Girder
Middle Span - West Side



FLOOR BEAM -
NORTHERN SPAN



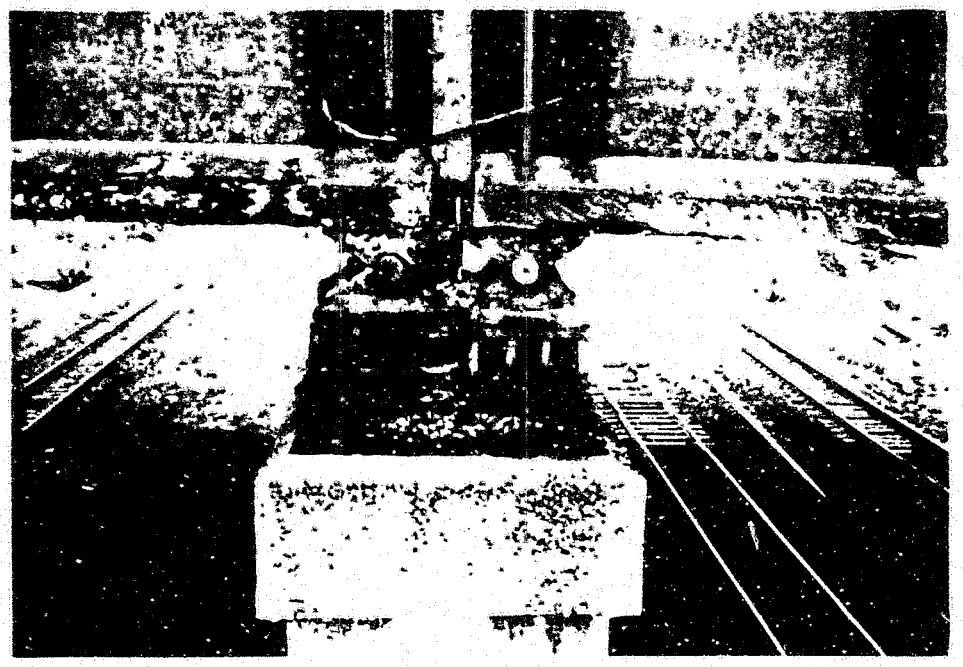
DIAPHRAGM CONNECTION
TO FLOOR BEAMS



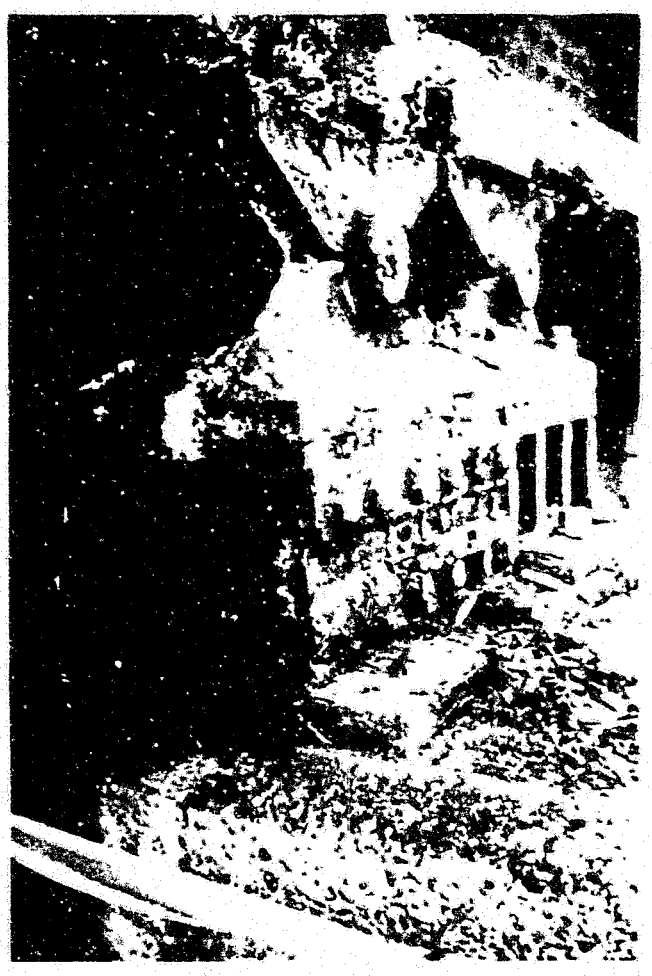
SOUTH END SPAN UNDER
EXPANSION DAM - EAST SIDE



2nd SPAN FROM SOUTH END-ARCHES



NESTED ROLLERS & FIXED
BEARING PIER 1 - EAST SIDE



CLOSE-up of same Bearing