ORIGINAL

COMMONWEALTH OF PENNSYLVANIA
PUBLIC UTILITY COMMISSION

IN RE: VILLANOVA UNIVERSITY vs. NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK); Consolidated Rail Corporation (CONRAIL); Southeastern Pennsylvania Transportation Authority (SEPTA); Pennsylvania Department of Transportation (PENNDOT); County of Delaware and Radnor Township Alleging, Inter Alia, that repondents-National Railroad Passenger Corporation (AMTRAK); Consolidated Rail Corporation (CONRAIL); Southeastern PA Transportation Authority (SEPTA); Commonwealth of Pennsylvania, (PENNDOT); County of Delaware and Radnor Township, Delaware County have failed to construct a safe and appropriate crossing where State Highway Route 225 crosses tracks of said companies in Villanova, Delaware County, and requesting Inter Alia, that the Commission enter an order requiring the improvement, relocation or alteration of existing facilities or crossing.
Further Hearing.

: DOCKET NUMBER: C-80011839

RECEIVED
DEC 23 9:33
PA. P.U.C.
SEC'Y'S BUREAU
DEC 26 1994
DOCUMENT FOLDER

Pages 169 through 246

Hearing Room 1
State Office Building
Broad & Spring Garden Streets
Philadelphia, Pennsylvania
Thursday, December 8, 1994

- - - - -

The above-entitled matter met, pursuant to notice, at 10:00 a.m.

- - - - -

BEFORE: THE HONORABLE HERBERT SMOLEN
Administrative Law Judge

- - - - -

BLUM-MOORE REPORTING SERVICES, INC.
350 SOUTH MAIN STREET, SUITE 203
DOYLESTOWN, PENNSYLVANIA 18901

APPEARANCES:

GINA D'ALFONSO, ESQ.
513 Transporation and Safety Building
Harrisburg, Pennsylvania 17120
(For PennDOT)

DENNIS M. MOORE, ESQ.
60 Massachusetts Avenue
Washington, D.C. 20002
(For AMTRAK)

SCOTT K. WASSERKRUG, ESQ.
2001 Market Street
Suite 16-A
Philadelphia, Pennsylvania 19101-1416
(For CONRAIL)

THOMAS G. JACKSON, ESQ.
2301 Market Street
Philadelphia, Pennsylvania 19101-8699
(For PECO)

- - - - -

I N D E X

WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
ROGER HEEBER				
BY MR. WASSERKRUG:	178			
DANIEL C. DeMARIA				
BY MS. D'ALFONSO:	187			
BY MR. JACKSON:		218		
LOUIS CHEIFETZ				
BY MR. MOORE:	221			
GIUSEPPE TERMINE				
BY MR. JACKSON:	230			
BY MS. D'ALFONSO:		235		

E X H I B I T S

NUMBER	DESCRIPTION	MK'D	REC'D
PennDOT Statement 1 (12/8/94)	Statement of Daniel DeMaria	220	220
PennDOT 1 (12/8/94)	Location Map	220	220
PennDOT 2 12/8/94)	As-Built Construction Drawings	220	220
PennDOT 3 (12/8/94)	Order dated 2/7/83	220	220
PennDOT 4 (12/8/94)	Order dated 1/15/86	220	220
PennDOT 5 (12/8/94)	Order dated 7/1/91	220	220
PennDOT 6 (12/8/94)	Order dated 4/29/92	220	220
PennDOT 7 (12/8/94)	List of Costs	220	220

E X H I B I T S, CONTINUED

NUMBER	DESCRIPTION	MK'D	REC'D
PennDOT 8 (12/8/94)	Invoice to Bell	220	220
PennDOT 9 (12/8/94)	Agreement between PennDOT and PECO	220	220
PennDOT 10 (12/8/94)	Invoice from PennDOT to PECO	220	220
PennDOT 11 (12/8/94)	Invoice issued to Phila. Suburban Water Co.	220	220
PennDOT 12 (12/8/94)	Invoice to Adelphia Cable	220	220
PennDOT 13 (12/8/94)	Agreement between PennDOT and SEPTA	220	220
PennDOT 14 (12/8/94)	Prelim. Engineering Agreement between PennDOT and AMTRAK	220	220
PennDOT 15 (12/8/94)	Construction Agreement between PennDOT and AMTRAK	220	220
PennDOT 16 (12/8/94)	Updated Right-of-Way Plans (LATE FILED EXHIBIT)	220	220
PennDOT 17 (12/8/94)	Tract Descriptions (LATE FILED EXHIBIT)	220	220
AMTRAK 1 (12/8/94)	List of Costs	226	228
PECO Statement 1 (12/8/94)	Statement of Giuseppe Termine	230	234
PECO 1 (12/8/94)	PECO Drawing 504-0532-1	230	234
PECO 2 (12/8/94)	PECO Drawing 504-0532-2	230	234
PECO 3 (12/8/94)	Summary of Expenses	230	234

ADMINISTRATIVE LAW JUDGE HERBERT SMOLEN: Let's go on the record. This is the matter of Villanova University versus National Railroad Passenger Corporation, also known as AMTRAK, Consolidated Rail Corporation, also known as CONRAIL, Southeastern Transportation Authority, also known as SEPTA, Pennsylvania Department of Transportation, also known as PennDOT, the County of Delaware and Radnor Township. The docket number is C-80011839.

My name is Herbert Smolen, Administrative Law Judge, assigned by the Commission to hear the evidence in this case and to render a decision in writing in due course.

Before proceeding with the taking of testimony, let the record show that the notice of this morning's hearing was sent to all parties under date of September 12, 1994. The notice specifically says that this hearing is being held to take testimony regarding costs incurred by all parties prior to allocation of those costs and responsibility for future maintenance. And along with the notice, the Bureau of Safety and Compliance included a list of questions to be addressed by the parties. Again, I'm going to ask counsel for PennDOT to bring me up to date on this case, since I was not involved in any

prior hearings and I'm interested, as I said before, to bring me up to today's hearing. Are we just supposed to take allocation costs today and allocate them, because the notice says testimony regarding costs incurred by all parties prior to allocation of those costs? I'm not exactly sure what that means, but we are going to make certain now. So please, bring me up to date.

MS. D'ALFONSO: Well, this project was completed on May 9, 1994, so the project is completed.

JUDGE SMOLEN: Initially, there was a complaint brought by Villanova University against the parties that I mentioned?

MS. D'ALFONSO: Right, and there were a number of different emergency orders rendered in the interim such as closing the bridge, the Department having to do certain repairs, posting signs saying bridge closed ahead.

JUDGE SMOLEN: So that there were prior hearings?

MS. D'ALFONSO: There were prior hearings. This predates me a little too. I'm just going by predation of the file. There were prior hearings and prior orders. The Department eventually, I don't

know whether we agreed or we were ordered to build a new structure at this location.

JUDGE SMOLEN: Does anyone have the date of the last order or a copy of the last order?

MS. D'ALFONSO: We have exhibits.

JUDGE SMOLEN: That's going to be an exhibit?

MS. D'ALFONSO: Yes.

JUDGE SMOLEN: And that's the one that orders PennDOT to construct or orders someone to construct?

MS. D'ALFONSO: Right.

JUDGE SMOLEN: That's what I don't have in the file. That wasn't sent down to me and and that's why I asked I be brought up to date. So that the project was completed as of what date did you say?

MS. D'ALFONSO: May 9, 1994.

JUDGE SMOLEN: Is that when it was open to the public?

MS. D'ALFONSO: Do you know when it was opened to the public?

MR. DeMARIA: I don't know when it was open, but that's when it was completed.

JUDGE SMOLEN: The further question, is it open to the public now?

MS. D'ALFONSO: Yes.

JUDGE SMOLEN: So sometime between May 9 and today, it was open to the public?

MS. D'ALFONSO: That's correct.

JUDGE SMOLEN: Now, are there any preliminary matters?

MR. WASSERKRUG: Your Honor, Scott Wasserkrug, associate general counsel for CONRAIL. CONRAIL's involvement in this project is minimal, if not non-existent. We incurred no costs. We have no operations under that bridge. We don't own the tracks. We feel our testimony would really have no bearing or impact on this proceeding and therefore, we would like to withdraw from the proceeding today if there is no objections.

JUDGE SMOLEN: Well, let's hear from the other counsel.

MS. D'ALFONSO: We have no objection to CONRAIL withdrawing and we are not seeking any type of reimbursement of costs from CONRAIL and if CONRAIL stated they have no facilities there, then we don't have a concern as to who is going to maintain CONRAIL facilities.

JUDGE SMOLEN: You have no operations over those rails?

MR. WASSERKRUG: No, Your Honor.

MR. MOORE: Your Honor, I'm Dennis Moore and I'm with the AMTRAK law Department and I would like to take this opportunity in addition to following CONRAIL's comment to enter my appearance this morning. I've signed in on the sheet and I would just like to note for the record that I'm a Pennsylvania lawyer, Pennsylvania bar number 24832 and I'll be appearing for AMTRAK in this proceeding. AMTRAK had earlier entered an appearance, although it was a different lawyer who did so years ago. AMTRAK has no objection to CONRAIL's withdrawal.

JUDGE SMOLEN: What about PECO, Mr. Jackson, do you have any objection to the withdrawal of CONRAIL?

MR. JACKSON: No, Your Honor. PECO has incurred costs in relocating its facilities, but given what counsel has represented, we have no objection to CONRAIL withdrawing.

JUDGE SMOLEN: All right, Mr. Wasserkrug, you have a witness with you?

MR. WASSERKRUG: Yes, Mr. Heebner.

JUDGE SMOLEN: What you have stated is a representation of counsel, which should be enough, but since you have a witness, why don't you put him on and let's take him under oath and you can be

excused. Will you raise your right hand, sir?

- - - - -

ROGER HEEBNER, having been duly sworn, was examined and testified as follows:

- - - - -

JUDGE SMOLEN: Please have a seat. Keep your voice up. State your full name and address.

THE WITNESS: Roger Heebner, H-E-E-B-N-E-R. My address is 2001 Market Street, here in Philadelphia, zip is 19101.

JUDGE SMOLEN: Do you want to take him through the questions that you represented or do you want me to ask?

MR. WASSERKRUG: Actually, you may feel free.

JUDGE SMOLEN: What is your position at --

MR. WASSERKRUG: I'm sorry, Your Honor, I just said that out of courtesy, if you would be more comfortable with me asking, I would be more than happy. What is your preference?

JUDGE SMOLEN: Why don't you go through the preliminaries?

- - - - -

DIRECT EXAMINATION

- - - - -

BY MR. WASSERKRUG:

Q. Mr. Heebner, what is your position at CONRAIL?

A. I'm a principal engineer in the engineering department for CONRAIL.

Q. And how long have you been in that position?

A. Approximately seven years.

Q. And are you a professional engineer?

A. Yes, I am.

Q. In the State of Pennsylvania?

A. Yes.

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

A. I am.

Q. And have you reviewed the notice put out by His Honor dated September 12, 1994?

A. I have.

Q. And have you reviewed the facts of the situation regarding CONRAIL's operation under the bridge in question?

A. I have.

Q. And would you state to His Honor CONRAIL's position?

A. Although CONRAIL has trackage rights on AMTRAK on this line of railroad, we have no regular

or irregular freight operations on the bridge. On occasion in the past, we have operated our business car on this line of railroad, but in fact, the intent of the business car is to inspect our facilities. So we do not even do that at this point. We have recently constructed, finished construction of a piece of railroad called the Engleside connection, which will allow us to remove some connections at zoo, which will actually make it almost impossible for us to get onto AMTRAK. Our operations are nonexistent presently.

JUDGE SMOLEN: Currently, you don't operate on the rails or at this rail-highway crossing?

THE WITNESS: Right.

JUDGE SMOLEN: And you have no operation?

THE WITNESS: Right, ownership rights.

JUDGE SMOLEN: Do you have some trackage rights you say?

THE WITNESS: Yes.

JUDGE SMOLEN: And what are they, to the best of your knowledge?

THE WITNESS: We have the right to operate under AMTRAK's dispatch and supervision our freight trains.

JUDGE SMOLEN: Have you incurred any costs in

connection with this project?

THE WITNESS: We have not.

JUDGE SMOLEN: Are you seeking any costs or reimbursement for anything in connection with this project?

THE WITNESS: We are not.

JUDGE SMOLEN: Any counsel want to ask any questions of the witness?

MR. MOORE: No, Your Honor.

MR. JACKSON: No, Your Honor.

MS. D'ALFONSO: No, Your Honor.

JUDGE SMOLEN: You are excused. Thank you very much and based upon counsel's representation, he is excused and CONRAIL likewise. Thank you.

MR. WASSERKRUG: Thank you, Your Honor.

JUDGE SMOLEN: Let's call on PennDOT. Miss D'Alfonso, call your witness.

MS. D'ALFONSO: If we could have a few more moments, indulge us, we are renumbering some exhibits here. But I have one for the court at this time.

JUDGE SMOLEN: Off the record.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. I just

want the record to show that appearances have been entered on behalf of the following parties: Gina M. D'Alfonso, Esq. on behalf of the Commonwealth of Pennsylvania, Department of Transportation. Scott Wasserkrug on behalf of Consolidated Rail Corporation. He previously presented his witness and has been excused. Thomas G. Jackson, Esq. on behalf of PECO Energy Company. And Dennis M. Moore, Esq. on behalf of the National Passenger Railroad Corporation better known today as AMTRAK. Off the record.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Let's go back on the record. We have had a prehearing conference prior to the taking of evidentiary testimony. I am going to place on the record what I perceive to be the positions of the various parties as elicited during the prehearing conference. Of course, the parties are free to correct any mistakes or errors that I make in summarizing this thing and following the summary, then we are going to take actual testimony from the witnesses which will support their positions and which will afford the other parties opportunity to cross-examine.

So let me start this way. As I understand it, PennDOT seeks reimbursement from the Philadelphia Suburban Water Company of $40,143 and from the Adelphia Cable Company, the sum of $11,988, both being costs paid out by PennDOT and not reimbursed.

In addition to that, PennDOT did certain work, did certain work for PECO and received from PECO reimbursement for bridge attachments in the amount of $99,486. PennDOT does not want to bear any of those costs and therefore, its position is that it should not be ordered to reimburse PECO for any of those bridge attachment costs.

In addition, PennDOT did certain work for Bell of Pennsylvania and Bell paid PennDOT $64,071 on account of that work. Again, PennDOT does not want to be required to reimburse Bell any of that $64,071.

Next, PennDOT agrees to reimburse AMTRAK for its, that is, for AMTRAK's remaining expenditures when that amount is certified by the Commission. At this time, the amount is in the approximate area of $8,062.77. That's only an approximate figure and AMTRAK is going to research that and do whatever is required by way of obtaining certification from the Commission.

PECO seeks reimbursement of $99,302.06 for relocation of its facilities which were located in public right-of-way and have been relocated to public right-of-way. PennDOT objects to reimbursement for such relocation costs.

With respect to maintenance, PennDOT agrees to maintain the substructure and superstructure including supporting -- the supporting structure sidewalk. PennDOT also agrees to maintain the roadway approaches from curb to curb and the roadway on the bridge from curb to parapet. PennDOT also agrees to perform snow, ice and debris removal on the roadway, curb to curb on the approaches and curb to parapet on the bridge itself.

It is PennDOT's position that the local municipality have responsibility to maintain the curbs on the approaches and the curb on the bridge as well as to perform snow, ice and debris removal on all of the curbs and sidewalks. Whenever I said curb before, I meant to include curb and sidewalk. That's the curbs and sidewalks on the approaches and the curb and sidewalk on the bridge.

Now, with respect to the stairway, up and down, it is PennDOT's position that maintenance thereof and snow, ice and debris removal should be on

AMTRAK or the local municipality (Radnor). AMTRAK's position on that is apparently claiming its federal exemption on that.

The question of streetlighting, that is energization and maintenance of the streetlighting on and below the structure is an open question at this time, although, PennDOT suggested that it be placed upon Villanova University. AMTRAK takes the position that if it is lighting on the platforms or on their own property, on AMTRAK's property, it will bear responsibility for that. However, this entire question of streetlighting is going to be reserved for late filed exhibits, briefs, memorandum, what have you, when better information is developed by the parties and we will set some kind of a date when we will expect to receive that information.

The record also disclosed that all parties have agreed that Spring Mill Road is a state highway designated Route 320.

I'm going to ask all the parties, did I omit anything from this memorialization of our prehearing discussion? If I did, you are free to bring it out on testimony. PennDOT, does that amply summarize your position?

MS. D'ALFONSO: Yes, Your Honor.

JUDGE SMOLEN: PECO, the only thing I would add to that is PECO would agree to maintain the duct work under the bridge that was part of the bridge attachments.

MS. D'ALFONSO: The remainder of PECO facilities also.

MR. JACKSON: Yes.

JUDGE SMOLEN: PECO will maintain its bridge attachments and its own facilities?

MR. JACKSON: Its own facilities.

JUDGE SMOLEN: At its own cost and expense?

MR. JACKSON: That's right.

JUDGE SMOLEN: Let the record further disclose, we haven't mentioned it before, that both Radnor Township and the County of Delaware distributed written answers to the questions propounded by the Bureau of Safety, I guess from the Bureau of Rail Safety and in which answers generally, these parties do not agree to accept any maintenance obligation or any costs.

MS. D'ALFONSO: With all due respect, I would have to object to the content of those letters being part of the record since neither the county or the township have any witness here for cross-examination.

JUDGE SMOLEN: Your objection is noted. I'm not going to rule on it at this time. I know we no longer have any correspondence file, nevertheless, there is correspondence and it will be placed in the file even though they are not officially made of record.

Let me ask AMTRAK, did I accurately summarize what your position is?

MR. MOORE: Yes, Your Honor.

JUDGE SMOLEN: Call your first witness.

MS. D'ALFONSO: And my only witness. Mr. DeMaria.

- - - - -

DANIEL C. DeMARIA, having been duly sworn, was examined and testified as follows:

- - - - -

JUDGE SMOLEN: Please have a seat. State your full name and address.

THE WITNESS: My name is Daniel C. DeMaria, D-E capital M-A-R-I-A. My business address is 150 Allendale Road, Courtside Square, King of Prussia, PA 19046.

JUDGE SMOLEN: Counsel.

- - - - -

DIRECT EXAMINATION

- - - - -

BY MS. D'ALFONSO:

Q. Mr. DeMaria, by whom are you employed?

A. Commonwealth of Pennsylvania, Department of Transportation.

Q. And are you authorized to represent the Department or to testify on behalf of the Department in today's proceedings?

A. Yes, I am.

Q. And do you have in front of what has been marked Department of Transportation Statement No. 1?

A. Yes, I do.

Q. And is that a representation of the Commonwealth's testimony in this proceeding?

A. Yes, it is.

Q. Do you have any corrections that you would like to make to Statement No. 1 at this time?

A. Yes, there are three changes I would like to make.

Q. And if you could point us to the page and count down the number of lines.

A. Okay, the first change would occur on page ten in my testimony. I would just like to add "From a prior order" before "AMTRAK" on the second paragraph.

Q. So the second paragraph will now begin with "From a prior order"?

A. That's correct.

JUDGE SMOLEN: You mean then it follows "AMTRAK was assigned"?

THE WITNESS: Yes.

JUDGE SMOLEN: It is supposed to say then, the start of the second paragraph will read as follows: From a prior order, AMTRAK was assigned responsibility for maintaining its tracks, et cetera, et cetera.

THE WITNESS: Yes, that's correct.

JUDGE SMOLEN: Go ahead.

THE WITNESS: The second change would occur on the bottom of page 11, the last paragraph. The second sentence should read, the Department will also maintain the roadway approaches from curb to parapet only on the bridge. I'm sorry. That's not the correction I would like to make.

JUDGE SMOLEN: I didn't think so. Do you want to add something there? Let's go off the record for a minute.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. What is your next correction?

THE WITNESS: The next correction I have is on page 12.

- - - - -

BY MS. D'ALFONSO:

Q. So there is nothing on page 11?

A. No changes on page 11. It would be the first full sentence on the top part of the page. And it reads "Additionally, the Department will assume responsibility for snow and ice and debris removal from the roadway from curb to curb only and from curb to parapet on the bridge." So adding that "and curb to parapet on the bridge" after "only."

JUDGE SMOLEN: All right, let's go off the record then.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. We are now back on page 11 in your answer to question ten.

THE WITNESS: Yes, right.

JUDGE SMOLEN: Second sentence, how do you want it to read?

THE WITNESS: The Department will also

maintain the road approaches from curb to curb only and roadway from curb to bridge.

JUDGE SMOLEN: And roadway on the bridge?

THE WITNESS: From curb to parapet only.

JUDGE SMOLEN: All right, so now there has been a correction made on page 11 and one on page 12, in addition to your first one.

- - - - -

BY MS. D'ALFONSO:

Q. Do you have any more corrections, additions?

A. Yes, there is one more addition on page 12. I wish to add in the second full sentence, starting with the Department feels the local --

JUDGE SMOLEN: Wait a minute, second full sentence starts with the word "the railroad" -- oh, the Department feels, go ahead.

THE WITNESS: The local municipality should be responsible for snow and ice and debris removal from the sidewalks and they should maintain the sidewalk surface and curbs on the approaches and on the bridge deck.

JUDGE SMOLEN: You better read that one back. The Department feels the local municipality should be responsible, go ahead, for --

THE WITNESS: For snow and ice and debris removal from the sidewalks and the maintenance of the sidewalk surfaces and curbs on the approaches and on the bridge deck.

JUDGE SMOLEN: Okay, that's what we added before, so now it is again, so it is punctuated we really mean it. Any other changes?

THE WITNESS: No, that's it, Your Honor.

MR. MOORE: Your Honor, with your permission, may we go off the record for a moment?

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. Something else?

THE WITNESS: Yes, there is an additional correction on page 8 of my testimony. On the first paragraph, I wish to delete the last sentence that begins, since this tunnel will mostly benefit.

JUDGE SMOLEN: All right, that entire sentence deleted?

THE WITNESS: The entire sentence.

JUDGE SMOLEN: Make sure that the court reporter gets a fully corrected copy of the testimony, because we are going to direct the court

reporter to transcribe the testimony when it is offered into the record as though it were, questions and answers were made in oral form.

I want to ask a question. We have never mentioned tunnel in our summary when we first went back on the record or in our prehearing. Is there something that I ought to know about the tunnel? Because we didn't discuss it at all, the tunnel.

MR. MOORE: Your Honor, earlier orders in this proceeding reflect the fact that there is a pedestrian tunnel that goes underneath the right-of-way and earlier orders as the Commission or rather as PennDOT's testimony accurately reflects directed AMTRAK to maintain that tunnel and --

JUDGE SMOLEN: Is it AMTRAK's property?

THE WITNESS: We believe, Your Honor, that this situation may raise certain legal issues that are probably not proper to address in the context of this evidentiary hearing, however, for the purpose of this morning's evidence, it is a fact that earlier orders of the Commission have already completely addressed this issue by assigning the responsibility to AMTRAK.

JUDGE SMOLEN: At its sole cost and expense?

MR. MOORE: Yes.

JUDGE SMOLEN: Let's go off the record.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record.

- - - - -

BY MS. D'ALFONSO:

Q. Mr. DeMaria, do you have any corrections, additions and/or changes to your testimony today?

A. No, I don't.

Q. Does Statement No. 1 also identify a number of exhibits?

A. Yes, they do.

Q. Can you just briefly take us through the 15 exhibits to identify them as they are marked for identification purposes for the record?

A. Yes, I can. Exhibit No. 1 is a location map showing the subject crossing.

Q. Is the crossing circled on that exhibit?

A. Yes, it is.

Exhibit No. 2 is the as-built construction drawings as requested by the Commission.

Q. Do you know how many pages are in here, Mr. DeMaria?

A. I would have to count them up, minus the

cross sections, so --

Q. Well, if you don't know --

A. No, I do not know.

Q. Exhibit No. 3?

A. Exhibit No. 3 is a prior order which was entered February 7, 1983 on the subject crossing.

Exhibit No. 4 is a prior order which was entered January 15, 1986 on the subject crossing.

Exhibit No. 5, is a prior order which was entered July 1st, 1991 on this crossing.

Exhibit No. 6 is a prior order entered April 29, 1992 on this crossing.

Exhibit No. 7 is an itemized list of the costs by the Department for the construction of this project.

Exhibit No. 8 is an invoice issued to Bell from the Commonwealth for bridge attachment on the bridge.

Exhibit No. 9 is an agreement between the Commonwealth of Pennsylvania and PECO Electric Division for a bridge attachment on the bridge itself and it is dated February 12 --

Q. May I approach the witness?

JUDGE SMOLEN: Sure.

THE WITNESS: February 12, 1992. I'm sorry,

1993.

JUDGE SMOLEN: February 12, 1993.

THE WITNESS: Exhibit No. 10 is an invoice from the Commonwealth of Pennsylvania to PECO for reimbursement for the bridge attachment.

Exhibit No. 11 is an invoice issued to Philadelphia Suburban Water Company for the installation of a bridge attachment by PennDOT.

Exhibit No. 12 is an invoice to Adelphia Cable Communication from PennDOT for its bridge attachment.

Exhibit No. 13 is an agreement for the engineering costs between Commonwealth of Pennsylvania and SEPTA dated August 14, 1992.

Exhibit No. 14 is a preliminary engineering agreement between AMTRAK and the Commonwealth of Pennsylvania dated November 4, 1988.

And Exhibit No. 15 is a construction agreement between Commonwealth of Pennsylvania and AMTRAK dated August 17, 1992 for the subject crossing.

- - - - -

BY MS. D'ALFONSO:

Q. Mr. DeMaria, if I can, there is one more or two more corrections that we need to make, since the

exhibits were renumbered. Can I direct your attention to your testimony, Statement No. 1? We would ask leave to file two late filed exhibits.

A. Yes.

Q. We would need to, Exhibit No. 19 will be late filed Exhibit 16.

JUDGE SMOLEN: This is the first line on page 5 now reads Department exhibits -- it now reads Department Exhibits 19 and 20, respectively, it is now to read what?

MS. D'ALFONSO: Sixteen and 17.

JUDGE SMOLEN: Sixteen and 17.

- - - - -

BY MS. D'ALFONSO:

Q. Is that correct, Mr. DeMaria?

A. That is correct.

Q. And what are those late filed exhibits?

A. Exhibit 16 is a copy of the updated acquisition of right-of-way plans. And Exhibit No. 17 is tract descriptions relocating those changes in right-of-way.

JUDGE SMOLEN: Is the Commission being asked to appropriate any property here?

THE WITNESS: Yes, it is.

JUDGE SMOLEN: From whom?

THE WITNESS: From AMTRAK, the railroad.

JUDGE SMOLEN: Are these the descriptions that you are talking about?

THE WITNESS: Yes.

JUDGE SMOLEN: We need, I need actual descriptions, metes and bounds, et cetera, of the tracts which the -- which PennDOT is requesting the Commission to appropriate. Now, you are saying that these tracts or the property that you are requesting be appropriated is property of AMTRAK?

THE WITNESS: To the best of my knowledge, it is the railroad. I believe it is AMTRAK.

JUDGE SMOLEN: You know that happens in most cases, they say the railroad, now, there is SEPTA, there is CONRAIL, there is AMTRAK, they all fit under the category of the railroad, but the order has to be specific.

MS. D'ALFONSO: Your Honor, if I may, a prior order of the Commission, the order adopted April 23, 1992, did describe AMTRAK property that was subsequently appropriated by the Commission for this project. This is corrections of those descriptions as a result of the as-built plans. So we will provide property descriptions so that the correct property descriptions can be made a part of the

record.

JUDGE SMOLEN: But did the Commission already appropriate them?

THE WITNESS: Yes.

JUDGE SMOLEN: Were they filed and registered in the Recorder of Deeds?

THE WITNESS: The original ones were.

MS. D'ALFONSO: These would be corrected property descriptions.

JUDGE SMOLEN: You will have to take whatever action is required to procure those and put the correct ones in and I will be rendering questions to make a corrected appropriation.

MS. D'ALFONSO: That's correct and I'm sure Mr. Moore will make sure we get the correct property descriptions from the Recorder of Deeds.

JUDGE SMOLEN: Now, I have another question for -- it is really a question for AMTRAK. I'll ask this witness, have any arrangements been made for costs, reimbursements to AMTRAK for these appropriations or has no request been made of you, of PennDOT?

THE WITNESS: I'm not sure about the new ones.

MS. D'ALFONSO: I have no knowledge, Your

Honor.

JUDGE SMOLEN: Well, that's another issue we will have to discuss, which will have to be discussed later on as to whether or not there is any request for costs for these appropriations. We will put that aside.

THE WITNESS: If I can explain something, this project was redesigned at value by the contractor prior to construction.

JUDGE SMOLEN: I'm not sure that the Commission actually makes cost assessments for such appropriations, but at least the record ought to show whether or not AMTRAK is seeking such reimbursements and if it is, then it has to take the appropriate action to recover those, whether it is in the Common Pleas Court out there or the Board of View, whatever the procedure is, you will determine that and you will notify me along with the streetlighting as well as other issues you may want to brief.

Next question of this witness, if any.

MS. D'ALFONSO: I did not -- Mr. DeMaria was in the middle, he had asked if he could explain something, did you explain that?

JUDGE SMOLEN: That the project was redesigned.

THE WITNESS: And therefore changed some of the tract descriptions.

MS. D'ALFONSO: I have no further questions for Mr. DeMaria.

- - - - -

(Whereupon, the following testimony was typed into the record as if orally read:

Q. State your name and business address?

A. My name is Daniel C. DeMaria and my business address is 150 Allendale Road, Courtside Square, King of Prussia, PA 19046.

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

A. I am employed by the Commonwealth of Pennsylvania, Department of Transportation District 6-0, hereinafter called Department, as the District Railroad Coordinator.

Q. In the course of your duties, have you familiarized yourself with the proceedings of the subject complaint?

A. Yes, I have.

Q. Have you prepared the answers to the questions as developed by the Commission concerning this hearing?

A. Yes, I have.

Q. Are you authorized to testify on behalf of the Pennsylvania Department of Transportation in this hearing?

A. Yes, I am.

Q. Question one, Pennsylvania Department of Transportation (PennDOT) submit a map or plan of the general area of the involved crossing showing, among other things, the location of the existing rail-highway crossing in relation to adjacent highways, rail lines, and other public rail-highway crossings on the involved rail line; and submit testimony describing the location of the subject rail-highway crossing, in relation to the public improvements, facilities and adjacent public rail-highway crossings.

A. Department Exhibit #1 is a general location map showing the subject crossing in relation to adjacent highways, rail lines and other rail-highway crossings. Spring Mill Road is a grade separated structure carrying SR 320 over four (4) AMTRAK railroad tracks. There are no at-grade crossings on this project. There is a pedestrian tunnel running below the tracks connecting the northbound station platform to the southbound platform.

Q. Question two, PennDOT submit testimony

describing and comparing the general type of both the demolished and the newly constructed crossing structures, including number of spans, principal dimensions, roadway width, number and width of sidewalks, and the horizontal and vertical clearance of the structure with respect to the railroad tracks; identify the date the demolished structure was constructed, the purpose of its construction and who constructed it.

A. The demolished structure consisted of a single span, through truss bridge and was erected sometime before 1914. The original structure was 72'-9" long with 20'-10" between center line of trusses and the clear roadway between curbs was 18'-6" with little or no shoulders. The Department has no records identifying the purpose of its construction on who constructed the bridge.

The new crossing consists of a 26'-0" roadway with an 8'-0" shoulder on the north side and a 5'-0" sidewalk on the south side. The new horizontal alignment remains on tangent and maintains the approximate 63 degrees skew angle to the track. The structure is a two span 8" thick composite deck having reinforced concrete parapets, 32 inches high, topped with 6'-0" protective barrier to service as a

safety shield for the electrified rails. The minimum vertical clearance from top of rails is 22'-6-3/4" while the minimum horizontal clearance is 21'-7-1/4" on the west side and 21'-1/4" on the east side.

This project was constructed by the Department to improve the vertical alignment, widen the roadway approaches and to eliminate the posted weight limit restriction.

Q. Question three, PennDOT submit into evidence copies of its pertinent as-built construction plans for the subject crossing.

A. Department Exhibit #2 is a copy of the as-built construction plans for the subject crossing. Since the contractor opted for a value engineered redesign, the bridge structure changed significantly prior to construction. The redesign is reflected in the structure plans submitted as part of Department Exhibit #2. The redesign included eliminating one of the piers, creating a two span bridge and increasing the span lengths. The elevation of the roadway surface both along the approaches and on the structure was increased to allow for greater beam depths while not affecting the minimum vertical clearance to rails. Abutments along the west and east sides were pushed back to increase

the horizontal clearance from center line of tracks to face of abutments. These changes have caused a change in the right-of-way plans as well as the tract descriptions. The Department requests permission to file the updated acquisition of right-of-way plans and Tract descriptions as Department Exhibits 16 and 17 respectively within sixty (60) days to the Commission.

Q. Question four, PennDOT submit testimony regarding the highway involved at the subject crossing, indicating the name, route and termini thereof, and indicate its relation to the other existing highways and any planned new highways in the area.

A. As can be seen on Department's Exhibit #1, the subject crossing, SR 320, is named Spring Mill Road and generally runs in a northeast-southwest direction. Spring Mill Road, at the location of this crossing, runs from Lancaster Avenue (SR 0030) on the southwest end, to County Line Road, a local road, toward the northeast.

To the best of my knowledge, there are no plans from the Department for future highways in this area.

Q. Question five, PennDOT submit testimony

explaining in full its reasons for replacement of the subject bridge and state how the Commonwealth's transportation system has benefitted therefrom.

A. Pursuant to the instant complaint filed by Villanova University alleging "inadequate and dangerous facilities for pedestrian movement across the lines of track in the vicinity" of the subject crossing, a PUC order for Complaint Docket C-80011839 was adopted by the Commission on December 17, 1982. This order directed the Department to annually inform the Commission of progress made toward replacement of this bridge. In complying with the aforementioned order, and to eliminate the posted weight limit restrictions, the Department submitted preliminary plans for bridge replacement and approach roadway reconstruction to the Commission on August 20, 1990. This improvement eliminates weight limit posting for vehicles utilizing this rail-highway crossing as well as improving the conditions for pedestrian movement across the rail lines.

Q. Question six, PennDOT submit testimony indicating the daily volume of pedestrian and vehicular traffic that was using the demolished crossing structure, including a breakdown by type of vehicle, and the estimated volume of pedestrian and

vehicular traffic, including a breakdown by type of vehicle, that will use the new crossing structure in the future.

A. The Department has no records of pedestrian traffic on this structure. The Average Annual Daily Traffic (A.A.D.T.) in 1990 was 12,900 vehicles of which 3% was estimated to be trucks. It is estimated by the year 2011, the A.A.D.T. will be 13,300 consisting of 3% trucks.

Q. Question seven, PennDOT submit testimony describing in detail the type, condition and width of pavement, and the horizontal and vertical alignment, of the roadway approaches to the subject crossing structure?

A. As is stated in Department's answer to Question 2, the new bituminous pavement consists of a 26'-0" inch roadway with an 8'-0" shoulder on the north side and a 5'-0" concrete sidewalk on the south side. The horizontal alignment is on tangent crossing the track at a skew angle of 63 degrees. The west approach is a 5.10% grade up and the east approach is 5.41% grade up to the structure which is on a vertical crest.

Q. Question eight, PennDOT submit into evidence copies of past orders or actions of this

Commission, or its predecessor, which may have dealt with the construction, alteration, reconstruction or maintenance of the subject crossing.

A. Department Exhibit #3 is a copy of the PUC Order C-80011839 entered February 7, 1983. This opinion and order assigns maintenance responsibility for the pedestrian tunnel that connects the northbound platform to the southbound platform, at sole cost and expense to the National Railroad Passenger Corporation (AMTRAK).

Department Exhibit #4 is a copy of the PUC order entered January 15, 1986 for the subject crossing. This particular order assigns PADOT the responsibility to erect and maintain signs for a fifteen (15) ton weight limit posting for the bridge as well as establishing and maintaining a detour for vehicles over fifteen (15) tons. AMTRAK was ordered by the Commission to make repairs and maintain the bridge structure to carry fifteen (15) tons.

Department Exhibit No. 5 is a copy of the PUC order for the subject crossing and was entered July 1, 1991. In part this order assigns at initial cost and expense to the Department the following responsibilities:

1 - Erect and maintain adequate barricades to

prevent traffic from crossing the bridge as well as "BRIDGE CLOSED AHEAD" signs.

2 - Establish, mark, and maintain a suitable detour route for all vehicles.

Department Exhibit No. 6 is a copy of the PUC order entered April 29, 1992. This order assigns the following responsibilities to the Department at its initial cost and expense:

1 - The demolishing of the old bridge and the construction of the new bridge and roadway approaches.

2 - Continued maintenance of the previously established detours and traffic controls.

3 - The demolition and removal of any non-utility structures located upon property required for the construction of the crossing.

4 - Furnish all material and perform all work necessary to complete the remainder of the crossing improvement project.

5 - Pay all compensation for damages due to the owners of property taken, injured or destroyed by reason of this construction project.

6 - To maintain substructure and superstructure of the bridge, the highway approaches thereto, and the property retaining walls constructed

at each corner of the bridge, the stairways leading to the railroad platform from the bridge deck.

This order also assigns the Department the responsibility of reimbursing the National Railroad Passenger Corporation for furnishing all material and performing all work required to alter or relocate its facilities which may be required as incidental to the construction of the crossing at the Department's sole cost and expense.

From a prior order, AMTRAK was assigned responsibility for maintaining its tracks, catenaries, station platforms and other railroad facilities located within the limits of the improvement and to maintain the pedestrian tunnel in a safe and satisfactory condition.

All noncarrier public utility companies are ordered to relocate their facilities to accommodate this construction project. This necessary relocation was to be completed at the initial cost of said utilities located within public right-of-way. Also all noncarrier public utility companies are ordered to relocate their facilities located outside public right-of-way and to maintain their relocated facilities located in both public and private right-of-way after project completion.

Q. Question nine, PennDOT state what maintenance and improvements it has performed on the demolished crossing structure, if any, together with the approximate dates and cost of such work; and state what obligations it has been assigned or has assumed with respect to the maintenance of the crossing improvement.

A. To the best of my knowledge, the Department has fulfilled all of its maintenance obligations assigned to it in all previous orders from the Public Utility Commission. The Department will not seek reimbursement for the maintenance it has performed on the demolished crossing structure.

Q. Question ten, PennDOT state what portions of the crossing improvement it will agree to maintain in the future and what maintenance cost it will agree to assume; and state which party or parties should, in its opinion, be required to perform and assume the cost of maintenance of the remaining portions, if any, and state its reasons therefore.

A. The Department will assume the responsibility of maintaining the substructure and superstructure, including the sidewalk structure of the bridge. The Department will also maintain the roadway approaches from curb to curb only and from

curb to parapet on the bridge. The Department will not assume maintenance responsibility for the stairways leading from the bridge deck to the railroad passenger platforms below the structure. Additionally, the Department will assume responsibility for snow and ice and debris removal from the roadway from curb to curb only and from curb to parapet on the bridge. The Department feels the local municipality should be responsible for snow and ice and debris removal from the sidewalks and maintenance of its surface sidewalks on the approaches and on the bridge deck. The railroad should be ordered to maintain the stairs leading from the bridge deck sidewalks to the railroad platform below as well as the snow, ice, and debris removal from the stairs. Since patrons from either the railroad line or the local municipality will be receiving the most benefits from the pedestrian sidewalk and stairway improvements, parties other than the Department should be responsible for its maintenance and cost thereof. The Department feels all noncarrier public utilities and all railroads should be solely responsible for the maintenance and cost thereof their respective facilities.

Since the streetlighting below and across the

bridge is an extension of the parking lot of Villanova University, the maintenance and cost of service for the lighting and cost of maintenance should be assigned to the University.

Q. Question 11, PennDOT submit into the record a detailed, itemized summary of all costs and expenses incurred by it in furnishing material and performing work in accordance with the Commission order adopted April 23, 1992 and submit testimony explaining in full its summary of all costs.

A. Department Exhibit No. 7 is an itemized listing for all costs and expenses incurred for furnishing material and performing work in accordance with the Commission's order adopted April 23, 1992. This list of costs paid out by the Department does not include inspection charges.

The costs incurred by the Department to date for this project are broken down as follows:

Design $195,387.56.

Right-of-way $85,539.66.

Railroad $473,326.80.

Utility Relocation 0.00.

Construction (Contractor) $2,917,283.18.

(Department) $377,303.06.

Total $4,048,840.26.

Included within the above construction (Contractor) total are the utility bridge attachments:

UTILITY	COST	ITEM
Phila. Suburban Water Company	$40,143.00	9000-0006
Philadelphia Electric Company	21,472.00	9000-0007
Bell Telephone Company	18,294.00	9000-0008
Adelphia Cable Company	3,405.00	9000-0009

Additional work completed by the contractor for utility relocations in the roadway are as follows:

UTILITY	COST	ITEM
Philadelphia Electric Company	$78,014.00	9000-0034
Bell Telephone Company of PA	45,778.00	9000-0035
Adelphia Cable Communications	8,583.00	9000-0036

For this work, the Department acted as the Contractor as required by the Utility on behalf of the respective Utility Invoices were sent to the Utility for reimbursement of Department expenses. The Department expects 100% reimbursement for this work and will not agree to bear any of these costs.

Department Exhibit 8 is a copy of the Invoice #021328 from the Department to Bell Atlantic and dated August 2, 1994 for $64,071.00.

Department Exhibit 9 is a copy of the

agreement #063425 dated February 12, 1993 between the Department and PECO Energy.

Department Exhibit 10 is a copy of the invoice #021329, dated August 2, 1994, from the Department to PECO Energy for $99,486.00.

Department Exhibit 11 is a copy of Invoice #021327 dated August 2, 1994 from the Department to Philadelphia Suburban Water Company for $40,143.00.

Department Exhibit 12 is a copy of the Invoice #021326 dated August 2, 1994 from the Department to Adelphia Cable Communications for $11,988.00.

In summary, the Department is seeking the following reimbursements:

Philadelphia Suburban Water Company $40,143.00

Adelphia Cable Communications $11,988.00.

Q. Question 12, PennDOT state whether any funds appropriated by the federal government or by the Bridge Bill were expended in performing any of the work.

A. This project was constructed using 75% Federal funds and 25% Commonwealth funds in accordance with the Billion Dollar Bridge Program II.

Q. Question 14, PennDOT submit testimony

indicating which items of costs incurred by it or by others it agrees to bear and which party it suggests should bear the remaining items of costs, with the basis for such suggested assignment of costs.

A. The Department will agree to bear all costs incurred by SEPTA and AMTRAK to construct this project, and costs of utility facilities, protected, adjusted or relocated that were located in private right-of-way or having a compensable interest within the public right-of-way.

Department Exhibit 13 is a copy of the preliminary engineering reimbursement agreement #063423 dated August 14, 1992 between the Commonwealth and SEPTA.

Department Exhibit 14 is a copy of the preliminary engineering reimbursement agreement #063236 dated November 4, 1988 between the Commonwealth and AMTRAK.

Department Exhibit 15 is a copy of the construction reimbursement agreement #063424 dated August 17, 1992 between the Commonwealth and AMTRAK.

The Department will not agree to reimburse a privately owned noncarrier utility for costs incurred for the protection, adjustment or relocation of facilities that were located in legal (public)

right-of-way.

For work completed by the contractor in relocating utility facilities, the following utilities have reimbursed the Department:
Philadelphia Electric Company $99,486.00
Bell Atlantic of PA $64,071.00

Additionally, Philadelphia Suburban Water Company has been billed $40,143 for a bridge attachment of its facilities completed by the Contractor. As of December 6, 1994, the Department has not received payment.

The Department has also expended $11,988.00 for installing conduit for Adelphia Cable Communications facilities in connection with the subject bridge and roadway construction. The Department has performed this work in good faith for the cable company and expects 100% reimbursement for installing the facilities as they requested which were located in public right-of-way. Since the cable company's facilities were and still are located in public right-of-way by means of Utility Occupancy Permit, and if the 100% compensation due the Department is not satisfied, the cable company should be ordered to remove all of its facilities from the conduit.

The Department also will not reimburse utility companies for any betterment received from the relocation of its facilities.

Q. Question 30, query whether any party in interest, or any other party, desires to submit any additional relevant testimony.

A. The Department does not wish to submit any additional testimony at this time.

- - - - -

(Whereupon, the written testimony was concluded.)

- - - - -

JUDGE SMOLEN: All right, let's go to AMTRAK.

MR. MOORE: AMTRAK has no questions for this witness.

JUDGE SMOLEN: Mr. Jackson for PECO.

- - - - -

CROSS-EXAMINATION

- - - - -

BY MR. JACKSON:

Q. Just several questions. Mr. DeMaria, could I direct your attention to I believe Commonwealth Exhibit No. 10, which is the invoice I believe you testified to that the Department issued to PECO

Energy Company?

A. Yes.

Q. Do you have that, Mr. DeMaria?

A. Yes.

Q. The amount of that invoice is what again?

A. Ninety-nine thousand four hundred eighty-six dollars and no cents.

Q. Just a point of clarification, Mr. DeMaria, the $99,486 was for a bridge attachment which PECO Energy, then Philadelphia Electric Company, negotiated with the Commonwealth; is that correct?

A. Yes, it is.

Q. And that $99,000 figure contained no assessment for relocated facilities; is that correct?

A. I do not believe so.

MR. JACKSON: I have no further questions.

JUDGE SMOLEN: Any redirect?

MS. D'ALFONSO: No redirect.

JUDGE SMOLEN: The witness is excused. Thank you very much for appearing and testifying.

MS. D'ALFONSO: Your Honor, at this time, I would like to move for the admission of Statement No. 1 as if orally read. We will provide a copy of the corrections to the court reporter, as well as Commonwealth Exhibits 1 through 15 and we need leave

to file late filed Exhibits 16 and 17.

JUDGE SMOLEN: Any objections? Hearing no objections, the exhibits are received. The Department is granted leave to file late filed Exhibits 16 and 17 within 60 days and the Exhibits 1 through 15 are received of record. Sixteen and 17 also are received of record even though they are going to be late filed.

- - - - -

(Documents marked Exhibit PennDOT Statement No. 1 and PennDOT Exhibits 1 through 17 for identification and received into evidence.)

- - - - -

JUDGE SMOLEN: Now, AMTRAK, do you have a witness?

MR. MOORE: Yes, Your Honor. AMTRAK calls Mr. Louis Cheifetz.

- - - - -

LOUIS CHEIFETZ, having been duly sworn, was examined and testified as follows:

- - - - -

JUDGE SMOLEN: Please have a seat. State your full name and your business address.

THE WITNESS: Louis Cheifetz, C-H-E-I-F-E-T-Z. AMTRAK, 30th Street Station,

Philadelphia, Pennsylvania 19104.

JUDGE SMOLEN: L-O-U-I-S?

THE WITNESS: That's correct.

JUDGE SMOLEN: Counsel.

- - - - -

DIRECT EXAMINATION

- - - - -

BY MR. MOORE:

Q. Thank you, Your Honor. Mr. Cheifetz, in what department of AMTRAK do you work?

A. Engineering design department.

Q. Are you a professional engineer by training?

A. Yes, I am.

Q. And how long have you worked for AMTRAK in the engineering department?

A. Eighteen and a half years.

Q. Is your -- could you tell us what particular division of the engineering department that you are employed in currently?

A. Bridge and tunnel section.

Q. And would you give the office address for the record? You already did that, didn't you? Sorry. Are you authorized to testify on behalf of AMTRAK in this hearing?

A. Yes, I am.

Q. And Mr. Cheifetz, are you familiar with the notice of hearing for this proceeding that was issued by the Commission on September 12, 1994?

A. Yes, I am.

Q. And have you read those questions and are you familiar with them?

A. Yes.

Q. AMTRAK was directed to respond to a certain number of questions and I direct your attention now to question 14 in which AMTRAK was to submit testimony indicating the total number of tracks presently located at the crossing site and to state whether any track is electrified, state the number of tracks owned and/or operated over or by AMTRAK and identify the owner of the remaining tracks, state the volume, class and approximate speed of all AMTRAK trains operating daily over these tracks and state whether any changes in such AMTRAK operations are contemplated in the foreseeable future. Can you respond to that question, please?

A. AMTRAK presently owns and operates on four electrified tracks at the subject location. There are approximately 20 AMTRAK trains and 83 commuter trains that pass by the subject crossing on a daily

basis. AMTRAK trains are travelling at speeds of up to 60 miles per hour. We are not contemplating any changes to AMTRAK operations in the foreseeable future.

JUDGE SMOLEN: Four electrified tracks, does that mean eight rails?

THE WITNESS: Yes.

JUDGE SMOLEN: Go ahead.

- - - - -

BY MR. MOORE:

Q. Next I would like to direct your attention to question 15, which reads AMTRAK state how the railroad company is benefitted by the existence of the completed crossing structure.

A. AMTRAK receives the same benefit as the travelling public who use the bridge. It provides a safe crossing for train, vehicular and pedestrian traffic.

Q. AMTRAK was asked in question 16 to submit answers to various questions originally directed to PennDOT. Question nine, to which AMTRAK was requested to respond states, question number nine asks AMTRAK to state what maintenance and improvements it has performed on the demolished crossing structure, if any, together with the

approximate dates and costs of such work and state what obligations it has been assigned or has assumed with respect to the maintenance of the crossing improvement?

A. AMTRAK may have performed some insignificant maintenance work on the demolished structure prior to its demolition. With respect to the crossing improvement, our only obligation is to maintain the railroad owned facilities at this location. Those facilities include, for example, electrification and communications and signal facilities.

Q. AMTRAK was also requested to respond to question number ten and in that question, AMTRAK was to state what portions of the crossing improvement it will agree to maintain in the future and what maintenance costs it will agree to assume. And to state what party or parties should in its opinion be required to perform and assume the costs of maintenance of the remaining portions, if any, and state its reasons therefore.

A. AMTRAK will agree to maintain its own facilities at this location at its sole cost and expense. It will not agree to assume any other responsibility or costs associated with the crossing

improvement. Other responsibility and costs should be borne by parties other than the railroad, but we have no opinion to offer as to whom the party or parties should be.

Q. AMTRAK was asked to respond to question 11 and as it relates to AMTRAK. AMTRAK was asked to submit into the record a detailed itemized summary of all costs and expenses incurred by it in furnishing material and performing work in accordance with the Commission order adopted April 23, 1992 and to submit testimony explaining in full its summary of all costs. Could you respond to that, please?

A. Costs and expenses incurred by AMTRAK personnel with regard to preliminary engineering and force account work is as follows: Preliminary engineering, $13,875.72. Force account work, $442,822.98. For a total of $456,698.70.

Q. Mr. Cheifetz, has AMTRAK been paid for any of those costs?

A. A detailed billing has been submitted to and approved by and paid by PennDOT for the total amount.

Q. And that total amount again was?

A. $456,698.70.

Q. Are there any costs that remain unbilled?

A. Yes. In addition to that amount, AMTRAK's Maintenance of Way accounting department estimates that 1993 additional costs that remain unbilled will be approximately $8,062.77 as reflected in AMTRAK's Exhibit No. 1.

MR. MOORE: Your Honor, I would like to hand you up, if I may approach the bench.

JUDGE SMOLEN: We will call this AMTRAK Exhibit No. 1.

MR. MOORE: A copy of AMTRAK Exhibit No. 1, the original and two copies for the reporter. And if I may take a moment to go off the record while I distribute these.

- - - - -

(Document marked Exhibit AMTRAK 1 for identification.)

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Go ahead, please.

THE WITNESS: When AMTRAK has completed its cost reconciliation process, final detail bills will be presented to PennDOT in accordance with the Commission's order of April 23, 1992.

JUDGE SMOLEN: Do you have any idea as to how

long that might take?

THE WITNESS: I'm sorry, I don't, Your Honor.

- - - - -

BY MR. MOORE:

Q. AMTRAK was asked to submit testimony indicating which items of cost incurred by it and others it agrees to bear and which party it suggests should bear the remaining items of cost with the basis for such suggested assignment of costs.

A. AMTRAK does not agree to bear any items of cost incurred to perform the work by itself or other parties. AMTRAK has no opinion as to whom should bear these costs.

Q. Does AMTRAK have any further testimony this morning?

A. No, we do not.

MR. MOORE: Thank you. I have no further direct questions.

JUDGE SMOLEN: Cross-examination now.

MS. D'ALFONSO: No questions, thank you.

MR. JACKSON: No questions, Your Honor.

JUDGE SMOLEN: Witness is excused. Thank you very much for appearing and testifying.

MR. MOORE: I would move the testimony be

submitted into evidence including AMTRAK Exhibit No. 1.

JUDGE SMOLEN: The testimony was oral, so it is in evidence and we will receive AMTRAK Exhibit No. 1 without objection, again, subject to your making your final corrections -- final summary of this matter which you will communicate to all parties as well as to the Commission.

- - - - -

(Document marked Exhibit AMTRAK 1 received into evidence.)

- - - - -

MR. MOORE: Your Honor, as I understand it, the Commission -- you have requested that AMTRAK submit its final cost figures to PennDOT and to the Commission for certification by the Commission in this proceeding?

JUDGE SMOLEN: That's correct. Anything further from AMTRAK?

MR. MOORE: No, Your Honor. Thank you.

JUDGE SMOLEN: PECO? Raise your right hand, sir.

- - - - -

GIUSEPPE TERMINE, having been duly sworn, was examined and testified as follows:

- - - - -

JUDGE SMOLEN: Please have a seat and state your full name and business address.

THE WITNESS: Giuseppe, G-I-U-S-E-P-P-E, Termine, T-E-R-M-I-N-E and my address is 2301 Market Street, Philadelphia, Pennsylvania 19101.

JUDGE SMOLEN: Mr. Jackson.

MR. JACKSON: Off the record for one moment.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. There has been distributed by Mr. Jackson a multi-page document which consists of three pages of testimony to which is attached three PECO exhibits. We are going to mark the first three pages as PECO Statement No. 1. I'm going to direct the court reporter to attach PECO Statement No. 1 as submitted and possibly as corrected or amended to attach it to the transcript of this proceeding rather than transcribing it directly into the record and the reason we are doing that in this case is because the reporter has indicated that there might be some problem in the transcription of a table which appears on page 2 of the testimony, so that for purposes of expediency, we

are just going to attach this, as I said before, to the transcript as PECO Statement No. 1.

The exhibits, of course, will be marked as they have been marked by PECO, Exhibits 1, 2 and 3 and subject to any objections, they will go with the record as ordinary exhibits. Now let's go on.

- - - - -

(Document marked Exhibit PECO Statement No. 1 and PECO Exhibits 1, 2 and 3 for identification.)

- - - - -

DIRECT EXAMINATION

- - - - -

BY MR. JACKSON:

Q. Mr. Termine, in what capacity are you employed by PECO?

A. Engineer, distribution branch, engineering design division.

Q. Could you keep your voice up a little? In the course of your duties in that capacity, Mr. Termine, have you had occasion to familiarize yourself with the project completed by the Pennsylvania Department of Transportation for the reconstruction of the Spring Mill Road bridge over AMTRAK?

A. Yes, I am.

Q. Are you authorized to testify this morning on behalf of PECO Energy Company in this proceeding?

A. Yes, I am.

Q. Mr. Termine, I show you a three-page statement which has been marked as PECO Statement No. 1, could you identify this document?

A. It is prepared testimony in response to Commission order which address certain questions to the parties in this proceeding.

Q. Did you prepare this testimony?

A. Yes, I did.

Q. Mr. Termine, to the best of your knowledge, is the information contained in PECO Statement No. 1 true and correct?

A. Yes.

Q. And if I were to ask you, Mr. Termine, the questions which appear in PECO Statement No. 1, would your answers be the same as those which appear on PECO Statement No. 1?

A. Yes.

Q. Are there any corrections at this time to PECO Statement No. 1 that you would like to make?

A. No.

MR. JACKSON: Your Honor, in the interest of time, as you noted previously, I would ask that PECO

Statement No. 1 be attached to the transcript of this record and PECO Exhibits 1, 2 and 3 be entered into the record.

JUDGE SMOLEN: All right, we will direct, your request is granted, PECO Statement No. 1 is ordered to be attached to the transcript of this record and as I said before, PECO Exhibits 1, 2 and 3 are received subject to any valid objection.

Before you go on, and this is for the reporter, we have had a lot of exhibits marked today, we have had a number of exhibits marked today starting with the number one. PennDOT has 15 exhibits starting with the number one and they are going to submit two late filed exhibits. PECO has three exhibits today starting with the number one. AMTRAK has one exhibit starting with the number one. In view of the fact that there were prior hearings in this case and some transcript built up, there may be other exhibits starting with the number one and continuing on down the line and we don't want anybody to be confused if we refer to PECO Exhibit 1 now and someone looks at the record, they will look at PECO Exhibit No. 1 could be from six years ago.

What I'm going to ask the reporter to do is to put the date in the index when you list the

exhibits here and I'm going to have all exhibits marked as follows: It will be PennDOT Exhibits 1 through 15 and 16 and 17 and each of those exhibits to be followed by a parenthetical December 8, 1994, 12/8/94, end of parentheses on all those exhibits so that there is no confusion in the record. Same is true with PECO Exhibits 1, 2 and 3, it should be followed with the parenthetical expression 12/8/94 and likewise with the AMTRAK 1 exhibit followed by the date 12/8/94 end of parentheses, that way there can't be any misunderstanding. The same with PECO Statement No. 1, we may have had other statements in other proceedings, put a parentheses 12/8/94 and the same with PennDOT. That has been transcribed of record and it has not been marked, we don't have to do anything with that testimony.

MS. D'ALFONSO: Just so that we are clear, our exhibits do have a date on them.

JUDGE SMOLEN: That's their official designation, Exhibit 1 through 15 with the parentheses 12/8/94 and 16 and 17 marked the same way. They are late filed.

MS. D'ALFONSO: Right.

JUDGE SMOLEN: All right, now, let's go on.

- - - - -

(PECO Statement No. 1 and PECO Exhibits 1, 2 and 3 received into evidence.)

- - - - -

BY MR. JACKSON:

Q. Mr. Termine, could you explain to the court what PECO Exhibit No. 1 is?

A. Exhibit No. 1 is a drawing, PECO drawing 504-0432-1 and it shows the PECO facilities prior to and after the bridge reconstruction and it represents the area of work that was done.

Q. And PECO Exhibit No. 2, Mr. Termine?

A. Exhibit No. 2 is a PECO drawing 504-0532-2 and it represents the underground work that was done prior to and after the bridge reconstruction.

Q. And PECO Exhibit No. 3, Mr. Termine?

A. Exhibit No. 3 is a detail summary, item -- it is a detailed summary of the expenses incurred by PECO to relocate its facilities due to the reconstruction of the bridge.

Q. Does PECO Exhibit No. 3 show the amount that PECO is seeking reimbursement for in this proceeding?

A. Yes, it does.

Q. And what is that amount?

A. The amount is $99,302.06.

Q. And could you generally describe, Mr. Termine, what we are seeking reimbursement for, what PECO is seeking reimbursement for?

A. PECO seeks the reimbursement on the work that was done due to the reconstruction of the bridge which included, but not limited to, the removal of wood poles and the relocation of some wood poles and the reconstruction of some duct bank and also the relocation of wires, conductors and transformers.

MR. JACKSON: The witness is available for cross-examination, Your Honor.

JUDGE SMOLEN: AMTRAK?

MR. MOORE: No cross-examination.

JUDGE SMOLEN: PennDOT?

- - - - -

CROSS-EXAMINATION

- - - - -

BY MS. D'ALFONSO:

Q. I do, Your Honor. Mr. Termine, what are some of your duties as an engineer with the distribution project branch?

A. Some of my duties include assisting designing, redesigning distribution circuits for the divisions, Delaware division.

Q. Are you involved at all in the

decision-making process as to where the facilities will be located?

A. No, I was not personally.

Q. In any other project, do you have that experience?

A. Oh yes, on other projects, yes, but not on this specific project.

Q. Someone else made this decision?

A. Yes.

Q. I'm looking at page 2 of your Statement No. 1, prior to construction there were eight poles and PECO only replaced three?

A. Yes.

Q. Did you find another way to traverse the area?

A. Five poles were permanently removed from across the bridge.

Q. So you have three poles instead of eight there?

A. Not in the bridge, but just before you get to the bridge, there are three poles which were relocated due to the expansion of the road and five poles were permanently removed from the site.

Q. When you replaced your facilities, did you replace them with like kind materials or did you

replace them with an improved quality?

MR. JACKSON: Counsel, clarify which facilities.

- - - - -

BY MS. D'ALFONSO:

Q. Let's start with aerial wires. Have there been any improvements in the quality of aerial wires from 1961 to 1993?

A. We replaced the facilities in accordance with the standards that we have and if the standards calls for a type of wire, that's what we would put in and the standards might have changed from the date that it was installed to the date that it was replaced.

JUDGE SMOLEN: Let me interrupt to ask you a question. Your testimony says with respect to the aerial wire that the expected service life was 40 years when it was installed in '61 and '63. And that at the time of relocation, it had a remaining service life of 21 or 22 years respectively; is that correct?

THE WITNESS: Yes.

JUDGE SMOLEN: The new wire that you put in, the new aerial wire, what is the expected life?

THE WITNESS: Forty years.

JUDGE SMOLEN: What is it?

THE WITNESS: Forty.

JUDGE SMOLEN: So the new wire has 40 years?

THE WITNESS: Yes.

JUDGE SMOLEN: I'm looking at the bottom of page 2 of your testimony and in there you say the new wood poles and wire, 40 years; is that correct?

THE WITNESS: Yes.

JUDGE SMOLEN: The underground cable 55 years, that's the new, the new underground cable?

THE WITNESS: Yes.

JUDGE SMOLEN: And the ducts, are we talking about those three ducts?

THE WITNESS: Now there are six ducts.

JUDGE SMOLEN: There are six ducts and previously there were three?

THE WITNESS: Yes.

JUDGE SMOLEN: And their remaining life is 27 and now you have 50 years?

THE WITNESS: Yes.

JUDGE SMOLEN: All right, that's all I want to know. What is this cathodic protection wire installed, is that different than the aerial wire?

THE WITNESS: Yes.

JUDGE SMOLEN: But what is the service life,

estimated service life of the new cathodic protection wire?

THE WITNESS: We don't have any new cathodic protection wires.

JUDGE SMOLEN: So has that been removed or is that in place?

THE WITNESS: No, it has been removed.

JUDGE SMOLEN: And therefore, and it wasn't reinstalled or whatever you had to do with it?

THE WITNESS: Correct.

JUDGE SMOLEN: Any salvage?

THE WITNESS: No.

JUDGE SMOLEN: Any salvage on any of these?

THE WITNESS: No.

JUDGE SMOLEN: On the aerial wire, the ducts and the underground cable?

THE WITNESS: No.

JUDGE SMOLEN: No salvage, go ahead.

- - - - -

BY MS. D'ALFONSO:

Q. Why not?

A. Because of the amount was not, didn't warrant reusing the wires.

Q. It was a business decision?

A. It is not just a business, but technical

decision just because of the conditions of the cable when it was removed from the location.

Q. The condition of the cable --

A. Like the underground cable.

Q. -- did not warrant being reused?

A. Correct.

Q. I'm still on page 2 of your statement, Mr. Termine. When you talk about the service life of the aerial wire, it was installed in '61 and '63, it was removed in '93, so it had been in place for 30 to 32 years; is that correct?

A. Correct.

Q. And it had an expected service life of 40 years?

A. Correct.

Q. But your testimony says it had an expected remaining service of 21 and 22 years?

A. Correct.

Q. Can you explain, this isn't I'll use the word straight-mouthed for a better term, you are not just subtracting years, is that what happens?

A. Yes.

Q. How did you reach the remaining expected service life of 21 and 22 years?

A. We use a table which shows equipment which

has been in place for a certain amount of years and that table gives us a guidance on what the condition of the cable would be after so many years and based on the fact that the equipment could be in good condition, the expected life is increased and that table is met up by statistical data that we have gathered through the years on equipment life.

Q. But in this particular case, the condition of the wire did not warrant reuse or salvage of the wire?

A. Well, because of the limited amount that was removed and the conditions that the wire was in.

Q. So is it safe for me to assume that the expected remaining service life of your other facilities was calculated in a similar manner as the aerial wire expected service life, you looked at a table and figured out what the remaining service life would be?

A. Yes.

Q. But in any event, none of the facilities that were used were reused at any other PECO locations?

A. Well, the aerial cable and the underground cable, no, but one of the transformers was reused.

Q. Reused at this location?

A. Yes, relocated.

Q. Relocated location?

A. Yes.

Q. So even though it was reused, it is not being shown as a salvage value?

A. Well, it was never taken -- it was taken out of service to be relocated, but was not taken out of -- from that location, so.

Q. In response to your question number 29 I believe, it states PECO agrees to bear the costs associated with that portion of the new six banks shown from point three to point 9A on your Exhibit 2. Are those costs shown anywhere on your summary of billing or have you excluded those costs from your summary of billing?

A. We have excluded that cost from the summary of the billing.

Q. Now, all your facilities were previously located in public right-of-way; is that correct?

A. Correct.

Q. And all of the facilities were relocated to public right-of-way; is that correct?

A. Correct.

Q. And when PECO makes the decision as to where to locate its facilities, does PECO keep in

mind its ratepayers and the benefits which may accrue to its ratepayers?

MR. JACKSON: Could you be a little more specific?

- - - - -

BY MS. D'ALFONSO:

Q. From locating your facilities in public right-of-way, does PECO keep in mind what benefits may accrue to its ratepayers by location of facilities in public right-of-way?

A. I guess we do in the sense that we don't have to obtain further permits to relocate the facilities, so it would be easier, yes.

Q. Sure, and you don't have to acquire right-of-way to locate your facilities; is that correct?

A. Correct.

Q. So when you make these decisions as to where to locate facilities, PECO is always mindful of its ratepayers; is that correct?

A. Correct.

Q. And you want to do what is best for your ratepayers, correct?

A. Correct.

MS. D'ALFONSO: I have nothing further for

Mr. Termine, thank you.

JUDGE SMOLEN: Redirect?

MR. JACKSON: None, Your Honor.

JUDGE SMOLEN: The witness is excused. Thank you very much for appearing and testifying. Let's be off the record.

Before we go off the record, are there any other parties in the hearing room who desire to be heard or is there any rebuttal testimony to be offered by any of the parties to any of this testimony?

MS. D'ALFONSO: No.

JUDGE SMOLEN: Hearing no response, then there are no other parties desiring to present testimony. Let's go off the record at this time.

- - - - -

(Discussion held off the record.)

- - - - -

JUDGE SMOLEN: Back on the record. At an off the record discussion, all the parties have agreed to the following procedural schedule. All late filed exhibits, which would include the corrected descriptions of appropriated property, which have been marked as PennDOT 16 and 17, the AMTRAK billing costs and the position of AMTRAK on the lighting to

be filed on or before February 8, 1995 and then briefs, February 28, 1995 and reply briefs, if any, March 7, 1995. Is that satisfactory with all parties?

MS. D'ALFONSO: Yes, Your Honor.

MR. JACKSON: Yes, Your Honor.

MR. MOORE: Yes.

JUDGE SMOLEN: It is agreed, so with that, we will adjourn today's session, with thanks of the Administrative Law Judge and the record will be officially closed as of March 7, 1995, the reply brief filing dates. Thank you very much. Happy holidays.

- - - - -

(Hearing was concluded at 12:10 p.m.)

- - - - -

C E R T I F I C A T I O N

I HEREBY CERTIFY that the proceedings and evidence are contained fully and accurately in the stenographic notes taken by me upon the foregoing matter on December 8, 1994, and that this is a correct transcript of same.

Robin Lynn Clark
Registered Professional Reporter

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.)

Notarial Seal
Robin L. Clark, Notary Public
Doylestown Boro, Bucks County
My Commission Expires June 22, 1996

DEPARTMENT OF TRANSPORTATION'S TESTIMONY
DOCKET NO. C-80011839 - DECEMBER 8, 1994
STATEMENT NO. 1 RC

Q. State your name and business address.

A. My name is Daniel C. DeMaria and my business address is 150 Allendale Road, Courtside Square, King of Prussia PA 19046.

RECEIVED
DEC 23 AM 9:39
PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

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

A. I am employed by the Commonwealth of Pennsylvania, Department of Transportation District 6-0, hereinafter called Department, as the District Railroad Coordinator.

Q. In the course of your duties, have you familiarized yourself with the proceedings of the subject complaint.

DOCUMENT
FOLDER
DEC 28 1994

A. Yes, I have.

Q. Have you prepared the answers to the questions as developed by the Commission concerning this hearing?

A. Yes, I have.

Q. Are you authorized to testify on behalf of the Pennsylvania Department of Transportation for this hearing?

A. Yes I am.

DEPARTMENT OF TRANSPORTATION'S TESTIMONY
DOCKET NO. C-80011839 - DECEMBER 8, 1994
STATEMENT NO. 1

QUESTION 1

Q. Pennsylvania Department of Transportation (PennDOT) submit a map or plan of the general area of the involved crossing showing, among other things, the location of the existing rail-highway crossing in relation to adjacent highways, rail lines, and other public rail-highway crossings on the involved rail line; and submit testimony describing the location of the subject rail-highway crossing, in relation to public improvements, facilities and adjacent public rail-highway crossings.

A. Department Exhibit #1 is a general location map showing the subject crossing in relation to adjacent highways, rail lines and other rail-highway crossings. Spring Mill Road is a grade separated structure carrying SR 320 over four (4) AMTRAK railroad tracks. There are no at-grade crossings on this project. There is a pedestrian tunnel running below the tracks connecting the northbound station platform to the southbound platform.

QUESTION 2

Q. PennDOT submit testimony describing and comparing the

general type of both the demolished and the newly constructed crossing structures, including number of spans, principal dimensions, roadway width, number and width of sidewalks, and the horizontal and vertical clearance of the structure with respect to the railroad tracks; identify the date the demolished structure was constructed, the purpose of its construction and who constructed it.

A. The demolished structure consisted of a single span, through truss bridge and was erected sometime before 1914. The original structure was 72'-9" long with 20'-10" between center line of trusses and the clear roadway between curbs was 18'-6" with little or no shoulders. The Department has no records identifying the purpose of its construction on who constructed the bridge.

The new crossing consists of a 26'-0" roadway with an 8'-0" shoulder on the north side and a 5'-0" sidewalk on the south side. The new horizontal alignment remains on tangent and maintains the approximate 63 degrees skew angle to the track. The structure is a 2 span 8" thick composite deck having reinforced concrete parapets, 32 inches high, topped with a 6'-0" protective barrier to service as a safety shield for the electrified rails. The minimum vertical clearance from top of rails is 22'-6-3/4" while the minimum horizontal clearance is 21'-7-1/4" on the west side and 21'-1/4" on the east side.

This project was constructed by the Department to improve the vertical alignment, widen the roadway approaches and to eliminate the posted weight limit restriction.

QUESTION 3

Q. PennDOT submit into evidence copies of its pertinent as-built construction plans for the subject crossing.

A. Department Exhibit #2 is a copy of the as-built construction plans for the subject crossing. Since the Contractor opted for a value engineered redesign, the bridge structure changed significantly prior to construction. The redesign is reflected in the structure plans submitted as part of Department Exhibit #2. The redesign included eliminating one of the piers, creating a two span bridge and increasing the span lengths. The elevation of the roadway surface both along the approaches and on the structure was increased to allow for greater beam depths while not affecting the minimum vertical clearance to rails. Abutments along the west and east sides were pushed back to increase the horizontal clearance from center line of tracks to face of abutments. These changes have caused a change in the right-of-way plans as well as the track descriptions. The Department requests permission to file the updated acquisition of right-of-way

plans and Tract Descriptions as Department Exhibits #~~19~~ 16 and #~~20~~ 17 respectively within sixty (60) days to the Commission.

QUESTION 4

Q. PennDOT submit testimony regarding the highway involved at the subject crossing, indicating the name, route and termini thereof, and indicate its relation to the other existing highways and any planned new highways in the area.

A. As can be seen on Department's Exhibit #1, the subject crossing, SR 320, is named Spring Mill Road and generally runs in a northeast-southwest direction. Spring Mill Road, at the location of this crossing, runs from Lancaster Avenue(SR 0030) on the southwest end, to County Line Road, a local road, toward the northeast.

To the best of my knowledge there are no plans from the Department for future highways in this area.

QUESTION 5

Q. PennDOT submit testimony explaining in full its reasons for replacement of the subject bridge and state how the Commonwealth's transportation system has benefitted therefrom.

A. Pursuant to the instant complaint filed by Villanova University alleging "inadequate and dangerous facilities for pedestrian movement across the lines of track in the vicinity" of the subject crossing, a PUC Order for Complaint Docket C-80011839 was adopted by the Commission on December 17, 1982. This order directed the Department to annually inform the Commission of progress made toward replacement of this bridge. In complying with the aforementioned order, and to eliminate the posted weight limit restrictions, the Department submitted preliminary plans for bridge replacement and approach roadway reconstruction to the Commission on August 20, 1990. This improvement eliminates weight limit posting for vehicles utilizing this rail-highway crossing as well as improving the conditions for pedestrian movement across the rail lines.

QUESTION 6

Q. PennDOT submit testimony indicating the daily volume of pedestrian and vehicular traffic that was using the demolished crossing structure, including a breakdown by type of vehicle, and the estimated volume of pedestrian and vehicular traffic, including a breakdown by type of vehicle, that will use the new crossing structure in the future.

A. The Department has no records of the pedestrian traffic on

this structure. The average annual daily traffic (A.A.D.T.) in 1990 was 12,900 vehicles of which 3% was estimated to be trucks. It is estimated by the year 2011, the A.A.D.T. will be 13,300 consisting of 3% trucks.

QUESTION 7

Q. PennDOT submit testimony describing in detail the type, condition and width of pavement, and the horizontal and vertical alignment, of the roadway approaches to the subject crossing structure.

A. As is stated in Department's answer to Question 2, the new bituminous pavement consists of a 26'-0" roadway with an 8'-0" shoulder on the north side and a 5'-0" concrete sidewalk on the south side. The horizontal alignment is on tangent crossing the track at a skew angle of 63 degrees. The west approach is a 5.10% grade up and the east approach is 5.41% grade up to the structure which is on a vertical crest.

QUESTION 8

Q. PennDOT submit into evidence copies of past orders or actions of this Commission, or its predecessor, which may have dealt with the construction, alteration, reconstruction or maintenance of the subject crossing.

A. Department Exhibit #3 is a copy of PUC Order C-80011839 entered February 7, 1983. This opinion and order assigns maintenance responsibility for the pedestrian tunnel that connects the northbound platform to the southbound platform, at sole cost and expense to the National Railroad Passenger Corporation (AMTRAK). ~~Since this tunnel will mostly benefit the patrons of the railroad and since the tunnel is outside the scope of this structure improvement, the Department feels the maintenance and cost thereof for this pedestrian tunnel remain at sole cost and expense to the railroad.~~

Department Exhibit #4 is a copy of the PUC Order entered January 15, 1986 for the subject crossing. This particular order assigns PADOT the responsibility to erect and maintain signs for a fifteen (15) ton weight limit posting for the bridge as well as establishing and maintaining a detour for vehicles over fifteen (15) tons. AMTRAK was ordered by the Commission to make repairs and maintain the bridge structure to carry fifteen (15) tons.

Department Exhibit NO. 5 is a copy of the PUC Order for the subject crossing and was entered July 1, 1991. In part this order assigns at initial cost and expense to the Department the following responsibilities:

1 - Erect and maintain adequate barricades to prevent

traffic from crossing the bridge as well as "BRIDGE CLOSED AHEAD" signs.

2 - Establish, mark, and maintain a suitable detour route for all vehicles.

Department Exhibit No. 6 is a copy of PUC Order entered April 29, 1992. This order assigns the following responsibilities to the Department at its initial cost and expense:

1 - The demolishing of the old bridge and the construction of the new bridge and roadway approaches.

2 - Continued maintenance of the previously established detours and traffic controls.

3 - The demolition and removal of any non-utility structures located upon property required for the construction of the crossing.

4 - Furnish all material and perform all work necessary to complete the remainder of the crossing improvement project.

5 - Pay all compensation for damages due to the owners of property taken, injured or destroyed by reason of this construction project.

6 - To maintain substructure and superstructure of the bridge, the highway approaches thereto, and the proprietary retaining walls constructed at each corner of the bridge, the stairways leading to the railroad platform from the bridge deck.

This order also assigns the Department the responsibility of reimbursing the National Railroad Passenger Corporation for furnishing all material and performing all work required to alter or relocate its facilities which may be required as incidental to the construction of the crossing at the Department's sole cost and expense.

from a prior order

AMTRAK was assigned responsibility for maintaining its tracks, catenaries, station platforms and other railroad facilities located within the limits of the improvement and to maintain the pedestrian tunnel in a safe and satisfactory condition.

All non-carrier public utility companies are ordered to relocate their facilities to accommodate this construction project. This necessary relocation was to be completed at the initial cost of said utilities located within public right-of-way. Also all non-carrier public utility companies are ordered to relocate their facilities located outside public right-of-way and to maintain their relocated facilities located in both public and private right-of-way after project completion.

QUESTION 9

Q. PennDOT state what maintenance and improvements it has

performed on the demolished crossing structure, if any, together with the approximate dates and cost of such work; and state what obligations it has been assigned or has assumed with respect to the maintenance of the crossing improvement.

A. To the best of my knowledge, the Department has fulfilled all of its maintenance obligations assigned to it in all previous orders from the Public Utility Commission. The Department will not seek reimbursement for the maintenance it has performed on the demolished crossing structure.

QUESTION 10

Q. PennDOT state what portions of the crossing improvement it will agree to maintain in the future and what maintenance cost it will agree to assume; and state which party or parties should, in its opinion, be required to perform and assume the cost of maintenance of the remaining portions, if any, and state its reasons therefore.

A. The Department will assume the responsibility of maintaining the substructure and superstructure, including the sidewalk structure of the bridge. The Department will also maintain the roadway approaches from curb to ~~curb~~ curb only and from curb to parapet on the bridge. The Department will not assume maintenance responsibility for the stairways leading from the bridge deck to the railroad

passenger platforms below the structure. Additionally, the Department will assume responsibility for snow and ice and debris removal from the roadway from curb to curb only. The Department feels the local municipality should be responsible for snow and ice and debris removal from the sidewalks on the approaches and on the bridge deck. The railroad should be ordered to maintain the stairs leading from the bridge deck sidewalks to the railroad platform below as well as the snow, ice, and debris removal from the stairs. Since patrons from either the railroad line or the local municipality will be receiving the most benefits from the pedestrian sidewalk and stairway improvements, parties other than the Department should be responsible for its maintenance and cost thereof. The Department feels all non-carrier public utilities and all railroads should be solely responsible for the maintenance and cost thereof their respective facilities.

Since the street lighting below and across the bridge is an extension of the parking lot of Villanova University, the maintenance and cost of service for the lighting and cost of maintenance should be assigned to the University.

QUESTION 11

Q. PennDOT submit into the record a detailed, itemized summary

of all costs and expenses incurred by it in furnishing material and perform work in accordance with the Commission order adopted April 23, 1992 and submit testimony explaining in full its summary of all costs.

A. Department Exhibit No. 7 is an itemized listing for all costs and expenses incurred for furnishing material and performing work in accordance with the Commission's order adopted April 23, 1992. This list of costs paid out by the Department does not include inspection charges.

The costs incurred by the Department to date for this project are broken down as follows:

Design	$ 195,387.56
Right-of-Way	$ 85,539.66
Railroad	$ 473,326.80
Utility Relocation	0.00
Construction (Contractor)	$2,917,283.18
(Department)	$ 377,303.06
TOTAL	$4,048,840.26

Included within the above construction (Contractor) total are utility bridge attachments:

UTILITY	COST	ITEM
Philadelphia Suburban Water Company	$40,143.00	9000-0006

Philadelphia Electric Company	21,472.00	9000-0007
Bell Telephone Company	18,294.00	9000-0008
Adelphia Cable Company	3,405.00	9000-0009

Additional work completed by the Contractor for utility relocations in roadway are as follows:

UTILITY	COST	ITEM
Philadelphia Electric Company	$78,014.00	9000-0034
Bell Telephone Company of PA	45,778.00	9000-0035
Adelphia Cable Communications	8,583.00	9000-0036

For this work, The Department acted as the Contractor as required by the Utility on behalf of the respective Utility. Invoices were sent to the Utility for reimbursement of Department expenses. The Department expects 100% reimbursement for this work and will not agree to bear any of these costs.

~~Department Exhibit #8 is a copy of the reimbursement Agreement #063427 dated September 18, 1992 between the Department and Bell Atlantic-Pennsylvania Inc.~~ Department Exhibit #9 is a copy of the Invoice #021328 from the Department to Bell Atlantic and dated August 2, 1994 for $64,071.00.

Department Exhibit ~~#10~~ 9 is a copy of the Agreement #063425 dated February 12, 1993 between the Department and PECO Energy. De-

partment Exhibit #~~11~~ 10 is a copy of the Invoice #021329, dated August 2, 1994 from the Department to PECO Energy for $99,486.00.

~~Department #12 is a copy of the Agreement #063426 dated September 14, 1992 between the Department and Philadelphia Suburban Water Company.~~ Department Exhibit #~~13~~ 11 is a copy of Invoice #021327 dated August 2, 1994 from the Department to Philadelphia Suburban Water Company for $40,143.00

~~Department Exhibit #14 is a copy of the unexecuted Agreement #063428 between the Department and Adelphia Cable Communications.~~ Department Exhibit #~~15~~ 12 is a copy of Invoice #021326 dated August 2, 1994 from the Department to Adelphia Cable Communications for $11,988.00.

In summary, the Department is seeking the following reimbursements:

Philadelphia Suburban Water Company	$ 40,143.00
Adelphia Cable Communications	$ 11,988.00

QUESTION 12

Q. PennDOT state whether any funds appropriated by the Federal government or by the Bridge Bill were expended in performing any of the work.

A. This project was constructed using 75% Federal funds and 25% Commonwealth funds in accordance with the Billion Dollar Bridge Program II.

QUESTION 14

Q. PennDOT submit testimony indicating which items of costs incurred by it and by others it agrees to bear and which party it suggests should bear the remaining items of costs, with the basis for such suggested assignment of costs.

A. The Department will agree to bear all costs incurred by SEPTA and AMTRAK to construct this project, and costs of utility facilities, protected, adjusted or relocated that were located in private right-of-way or having a compensable interest within the public right-of-way.

Department Exhibit #~~16~~ 13 is a copy of the preliminary engineering reimbursement agreement #063423 dated August 14, 1992 between the Commonwealth and SEPTA.

Department Exhibit #~~17~~ 14 is a copy of the Preliminary Engineering reimbursement Agreement #063236 dated November 4, 1988 between the Commonwealth and AMTRAK.

Department Exhibit #~~18~~ 15 is a copy of the construction reimbursement agreement #063424 dated August 17, 1992 between the Commonwealth and AMTRAK.

The Department will not agree to reimburse a privately owned non-carrier utility for costs incurred for the protection, adjustment or relocation of facilities that were located in legal (public) right-of-way.

For work completed by the Contractor in relocating utility facilities. The following utilities have reimbursed the Department:

Philadelphia Electric Company	$99,486.00
Bell Atlantic of PA	$64,071.00

Additionally, Philadelphia Suburban Water Company has been billed $40,143.00 for a bridge attachment of its facilities completed by the Contractor. As of December 6, 1994 the Department has not received payment.

The Department has also expended $11,988.00 for installing conduit for Adelphia Cable Communications facilities in connection with the subject bridge and roadway construction. The Department has performed this work in good faith for the cable company and expects 100% reimbursement for installing the facilities as they requested which were located in pub-

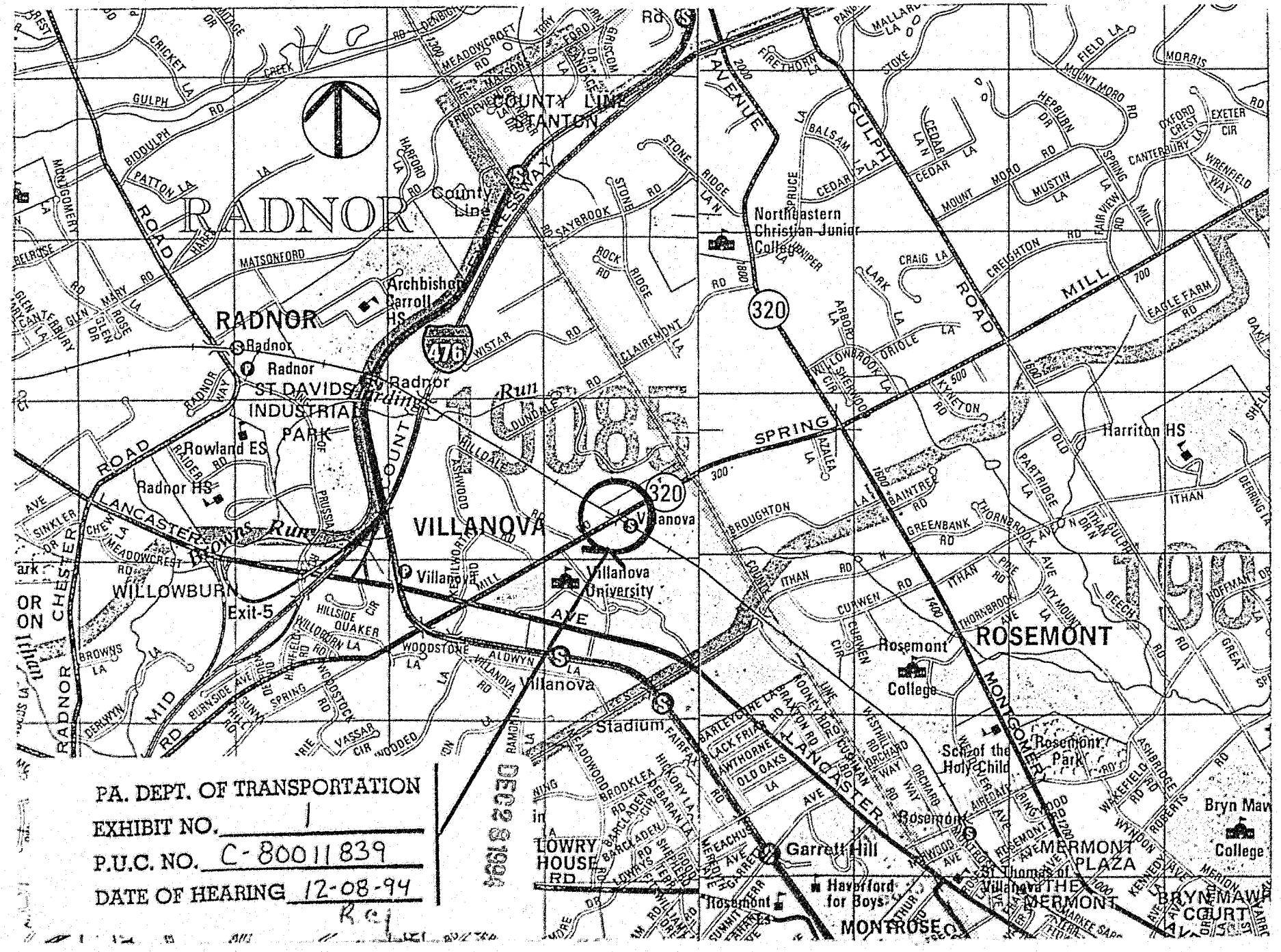
lic right-of-way. ~~Department Exhibit #14 is a copy of the reimbursement agreement #063428 and is currently pending execution from the Adelphia Cable.~~ Since the cable company's facilities were and still are located on public right-of-way by means of Utility Occupancy Permit, and if the 100% compensation due the Department is not satisfied, the cable company should be ordered to remove all of its facilities from the conduit.

The Department also will not reimburse utility companies for any betterment received from the relocation of its facilities.

QUESTION 30

Q. Query whether any party in interest, or any other party, desires to submit any additional relevant testimony.

A. The Department does not wish to submit any additional testimony at this time.



PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 1
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94
Reg

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS
6-0	DELAWARE	RADNOR	—	0320	12S	20

FEDERAL PROJECT NUMBER

SYS	L.R. or W.O.	SPUR	PHA	SECTION	DIST.	CO
C	03200	0	7	12S	06	3

S.R. 320 PREVIOUSLY KNOWN AS L.R. 225

DRAWINGS
FOR
CONSTRUCTION
OF

STATE ROUTE 0320 SECTION 12S

IN DELAWARE COUNTY

From Sta. 778 +70.00 To Sta. 792 +00.00 Length 1330.00 Ft. .0252 Mi.

FROM SEG. 0320 OFFSET 0590.5 TO SEG. 0320 OFFSET 1920.5

P.U.C. Application Docket No. C80011839

ALSO INCLUDED:

CROSS SECTIONS (UPON REQUEST)	17 SHEETS
TRAFFIC CONTROL PLANS	2 SHEETS
PAVEMENT MARKING PLAN	1 SHEET
EROSION AND SEDIMENT POLLUTION CONTROL PLAN	3 SHEETS
STRUCTURE PLANS S-17313	40 SHEETS
UTILITY RELOCATION PLANS	3 SHEETS

DEC 2 8 1994

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 2
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94
R.C.

SCALE

HORIZONTAL

VERTICAL

SCALE IN FEET

DESIGN DESIGNATION

	(URBAN)	TRAFFIC DATA	
HIGHWAY CLASSIFICATION	-MINOR ARTERIAL	CURRENT A.D.T.	- 12,900 (1991)
DESIGN SPEED	-30 MPH	DESIGN YEAR A.D.T.	- 15,300 (2011)
PAVEMENT WIDTH	-12'&14' LANES	D.H.V.	- 1203
SHOULDER WIDTH(EFFECTIVE)	-8' LT.	D	- 66%
MEDIAN WIDTH, MAXIMUM	-NONE	T	- 3%
MINIMUM	-NONE		

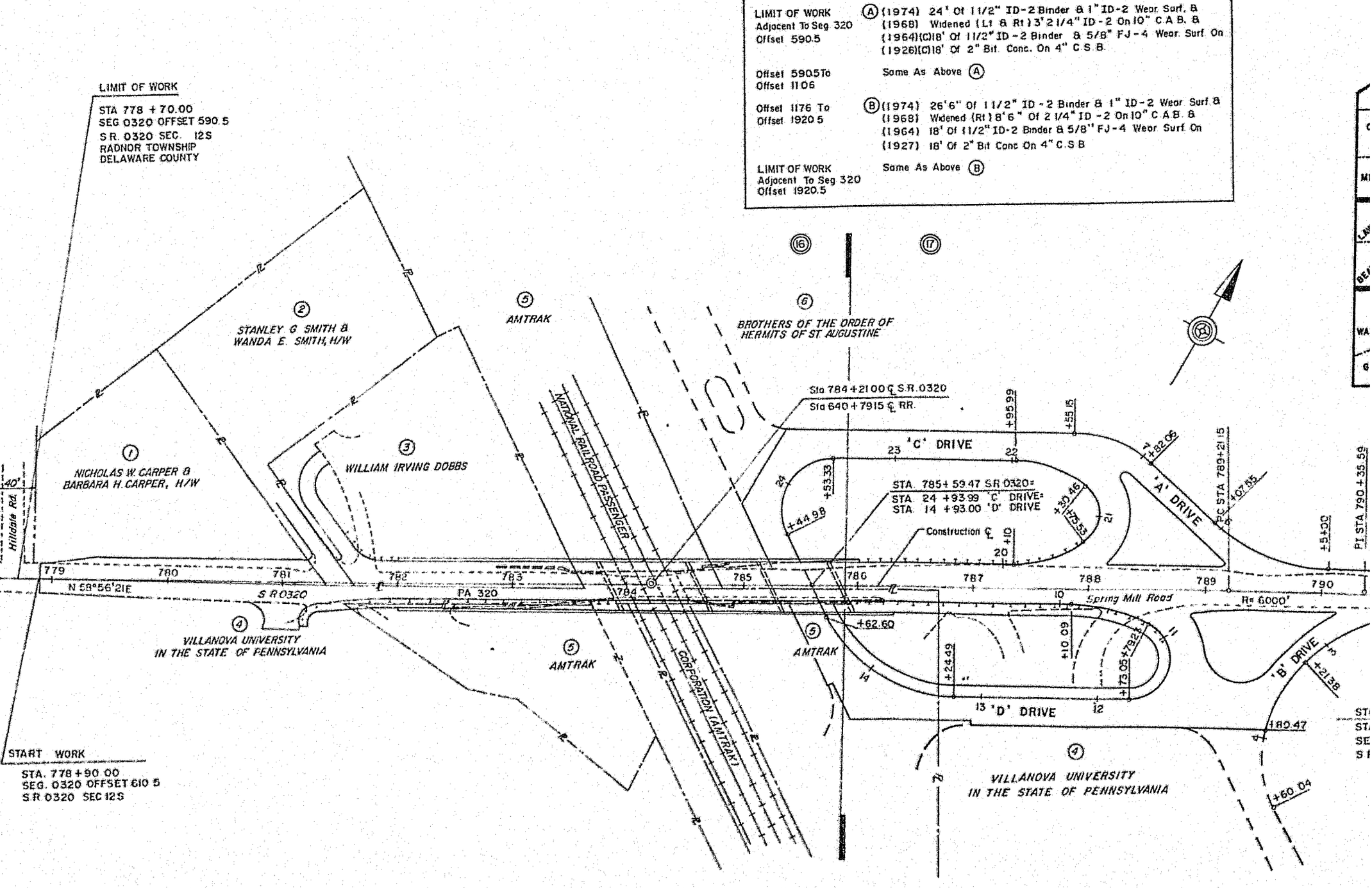
PREPARED BY:
URBAN ENGINEERS, INC.
CONSULTANTS PHILADELPHIA, PA 19106

Harry D. Tabby Jr.
March 9 1992

DOCUMENT FOLDER

RECEIVED
DEC 23 AM 9:39
P.U.C. CONTROL DIV.
INFO. CONTROL

RECOMMENDED MARCH 19 1992
Stephen B. Estes
DISTRICT ENGINEER
RECOMMENDED APR 2 1992
DEPUTY SECRETARY
APPROVED APR 21 1992
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS HIMSELF)


LIMIT OF WORK
STA 778 + 70.00
SEG 0320 OFFSET 590.5
S R. 0320 SEC. 12S
RADNOR TOWNSHIP
DELAWARE COUNTY
LIMIT OF WORK Adjacent To Seg 320 Offset 590.5
(A) (1974) 24' Of 1 1/2" ID-2 Binder & 1" ID-2 Wear. Surf. &
(1968) Widened (Lt & Rt) 3' 2 1/4" ID - 2 On 10" C.A.B. &
(1964)(C)18' Of 1 1/2" ID - 2 Binder & 5/8" FJ - 4 Wear. Surf. On
(1926)(C)18' Of 2" Bit. Conc. On 4" C.S.B.
Offset 590.5 To Offset 1106
Same As Above (A)
Offset 1176 To Offset 1920.5
(B) (1974) 26'6" Of 1 1/2" ID - 2 Binder & 1" ID - 2 Wear Surf. &
(1968) Widened (Rt) 8'6" Of 2 1/4" ID - 2 On 10" C.A.B. &
(1964) 18' Of 1 1/2" ID-2 Binder & 5/8" FJ - 4 Wear Surf. On
(1927) 18' Of 2" Bit Conc On 4" C.S.B
LIMIT OF WORK Adjacent To Seg 320 Offset 1920.5
Same As Above (B)
1 NICHOLAS W. CARPER & BARBARA H. CARPER, H/W
2 STANLEY G. SMITH & WANDA E. SMITH, H/W
3 WILLIAM IRVING DOBBS
4 VILLANOVA UNIVERSITY IN THE STATE OF PENNSYLVANIA
5 AMTRAK
6 BROTHERS OF THE ORDER OF HERMITS OF ST. AUGUSTINE
Hillside Rd.
40'
N 58°56'21E
S R 0320
PA 320
NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)
Sta 784+21.00 ℄ S.R. 0320
Sta 640+79.15 ℄ RR.
STA. 785+59.47 S.R. 0320 =
STA. 24 +93.99 'C' DRIVE =
STA. 14 +93.00 'D' DRIVE
Construction ℄
'A' DRIVE
'B' DRIVE
'C' DRIVE
'D' DRIVE
Spring Mill Road
R= 6000'
PC STA 789+21.15
PI STA 790+35.59
779
780
781
782
783
784
785
786
787
788
789
790
START WORK
STA. 778+90.00
SEG. 0320 OFFSET 610.5
S.R. 0320 SEC 12S
50 0 50
SCALE IN FEET
INDEX MAP
TABULATION OF SEGMENT EQUALITIES
Segment 320, Offset 590.5 = Station 778+70
Segment 320, Offset 1920.5 = Station 792+00

PUBLIC UTILITIES

COMMUNICATIONS, INC
EERING INQUIRIES
SALEM ROAD
RS, GA. 30208

TOWNSHIP OF RADNOR
301 IVEN AVENUE
WAYNE, PA. 19087
ATTN: MR ROBERT CROFFORD
TOWNSHIP ENGINEER
(215) 688 - 5600

TELEPHONE COMPANY

HERRY ST. 3RD FLOOR
STOWN, PA 19406
MS MARGARET NOLAN
278-0271

PHILADELPHIA SUBURBAN WATER CO
762 LANCASTER AVENUE
BRYN MAWR, PA 19010
ATTN. MR. THOMAS M. KIELY
(215) 525-1400

HEASTERN PENNSYLVANIA
SPORTATION AUTHORITY
W. WYOMING AVENUE
DELPHIA PA. 19140
MR. M.E. TRZEPACZ
CHIEF ENGINEER
FACILITIES ENGINEERING
& CONSTRUCTION DEPT
580-4137

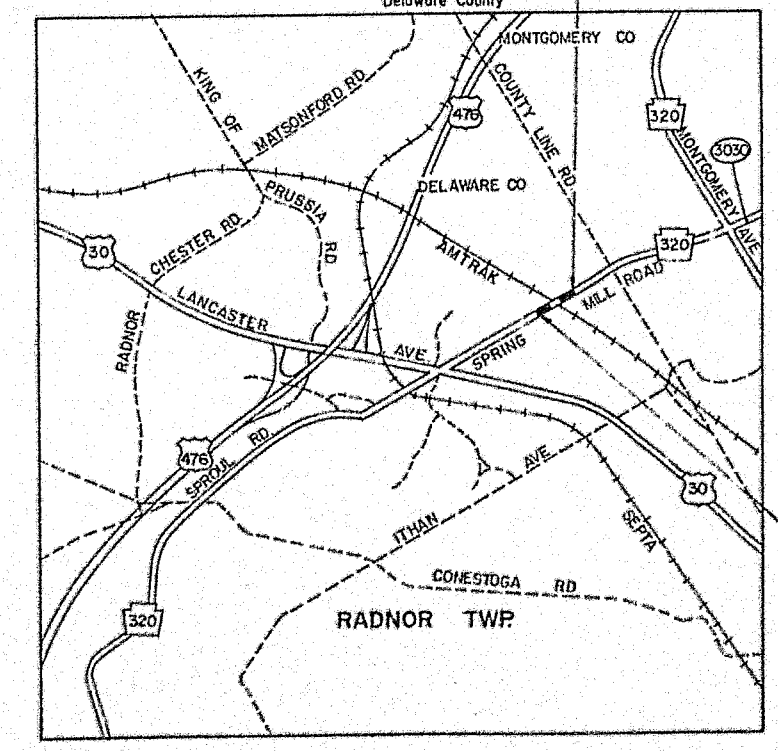
CONSOLIDATED RAIL CORPORATION
15 NORTH 32ND STREET
ROOM 1200
PHILADELPHIA, PA. 19104 - 2849
ATTN MR J.D. COSSELL
CHIEF ENGINEER, DESIGN
AND CONSTRUCTION
(215) 596 - 3846

DELPHIA ELECTRIC CO.
MARKET STREET
DELPHIA, PA. 19101
MR. WILLIAM J. HENSIL
NEGOTIATOR
841-5393

AMTRAK
30 TH ST. STATION S. TOWER 3RD FLOOR
PHILADELPHIA, PA. 19104
ATTN: MR J.J CUNNINGHAM
ASST. CHIEF ENGINEER
M OF W AND STRUCTURES
(215) 557 - 1511

PHIA CABLE COMMUNICATIONS
POLLO ROAD, BOX 198
UTH MEETING, PA 19462
MR MICHAEL KANE
328 - 4888

LIMIT OF WORK
STA. 792 +00
SEG. 0320 Offset 1920.5
S.R. 0320 Sec. 12S R/W
Radnor Township
Delaware County



LIMIT OF WORK
Sta. 778 + 70
Seg. 0320 Offset 590.5
S.R. 0320 Sec. 12S R/W
Radnor Township
Delaware County

LOCATION MAP

0 1/2 1
SCALE IN MILES

LEGEND
PROJECT
STATE HIGHWAY
TOWNSHIP ROAD
TOWNSHIP LINE

FOR DETOUR SEE TRAFFIC CONTROL PLAN AND SPECIAL PROVISIONS

GENERAL NOTES (CONT.)

DETAILS, OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

RC - 10	APR 1, 1991		BC - 317A	MAR. 2, 1981	
11 (2 SHTS)	JUNE 30, 1990		337A	MAR. 2, 1981	
12	JUNE 30, 1990		701	NOV. 15, 1989	
13	MAY 2, 1983		711	NOV. 15, 1989	
28	MAY 2, 1983		732	JAN. 20, 1989	
30 (3 SHTS)	APR 1, 1991		734	NOV. 15, 1989	
34 (9 SHTS)	FEB. 24, 1989		735	JAN. 20, 1989	
39 (3 SHTS)	MAY 20, 1988		736	JUNE 1, 1991	
50	MAY 15, 1991		739	SEPT. 3, 1991	
52 (5 SHTS)	JULY 26, 1991		752	JAN. 20, 1989	
54 (3 SHTS)	JULY 26, 1991		757	JUNE 1, 1991	
58 (3 SHTS)	JUNE 30, 1990		767	MAY 3, 1989	
64	FEB. 24, 1989		794	JAN. 20, 1989	
67 (2 SHTS)	OCT. 12, 1984	TC - 7702B		FEB. 1, 1984	
70 (4 SHTS)	MAY 15, 1991				
100 (2 SHTS)	MAR 21, 1986				
20 (2 SHTS)	FEB. 24, 1989				
23 (2 SHTS)	APRIL 1, 1991				

SUMMARY OF PROJECT COORDINATES

ROUTE	STATION	POINT	COORDINATES NORTH	COORDINATES EAST	BEARING
S.R. 0320	778+90	BEGIN STA	4440.89	4043.68	N 58°56'21" E
	789+21.15	P.C.	4972.91	4926.98	N 58°56'21" E
	790+35.59	P.I.	5031.96	5025.01	N 61°07'28" E
CONSTR ℄	791+50.00	P.T. END STA.	5087.22	5125.22	

TABULATION OF OVERALL LENGTH			
S.R. 0320	778+70.00 TO 792+00.00	1330 L.F.	0.252 MI

TABULATION OF CONSTRUCTION LENGTH			
ROUTE	STATION TO STATION	L.F.	MILES
S.R. 0320	778+90.00 TO 791+50.00	1260.00	0.239

EARTHWORK SUMMARY ENTIRE PROJECT

THE INFORMATION ON ESTIMATED AMOUNTS OF EARTHWORK HAS BEEN USED IN THE PRELIMINARY ESTIMATE. DO NOT USE AS A WAIVER OF ANY PROVISIONS OF THE SPECIFICATIONS AND CONTRACTS.

CU YDS OF EXCAVATION CLASS 1	CLASS 1A	CLASS 1B	CLASS 2	CLASS 3	CLASS 4	CUBIC YDS OF COMPLETED EMBANKMENT	CUBIC YDS OF FOREIGN BORROW EXCAVATION	CUBIC YDS OF WASTE	CUBIC YDS OF SELECT BORROW EXCAV. STRUC BACKFILL
9690	—	9	—	3300Δ	1898	16526	4758	4290	1170Δ

Δ INCLUDED IN L.S. STRUCTURE ITEMS

LIST OF EQUALITIES

NONE

6-0	DELAWARE	0320	12S	30F 20
RADNOR TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON S.R. 0320, FORMERLY L.R. 225, FROM STA. 778+90 TO STA. 791+50 IS VARIABLE IN WIDTH, BASED ON PLAN OF S.R. 0320, SECTION 12S R/W, SIGNED BY THE GOVERNOR ON AUG. 23, 1991 AND RECORDED ON , IN THE DELAWARE COUNTY RECORDERS OFFICE IN PLAN-BOOK , PAGE

THIS IS A FEDERAL AID PROJECT, AND AS SUCH IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE FEDERAL HIGHWAY ADMINISTRATION AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

VERTICAL DATUM IS BASED ON AN ASSUMED BENCH MARK

HORIZONTAL CONTROL IS BASED ON AN ASSUMED COORDINATE SYSTEM AND MAGNETIC NORTH.

TEMPORARY CONSTRUCTION EASEMENTS ARE REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

☒ THE DEPARTMENT RESERVES THE RIGHT TO ELIMINATE ANY OR ALL OF THIS WORK. DO NOT PERFORM WORK EXCEPT THAT WHICH IS WITHIN THE HIGHWAY RIGHT-OF-WAY UNTIL SO ORDERED IN WRITING BY THE ENGINEER

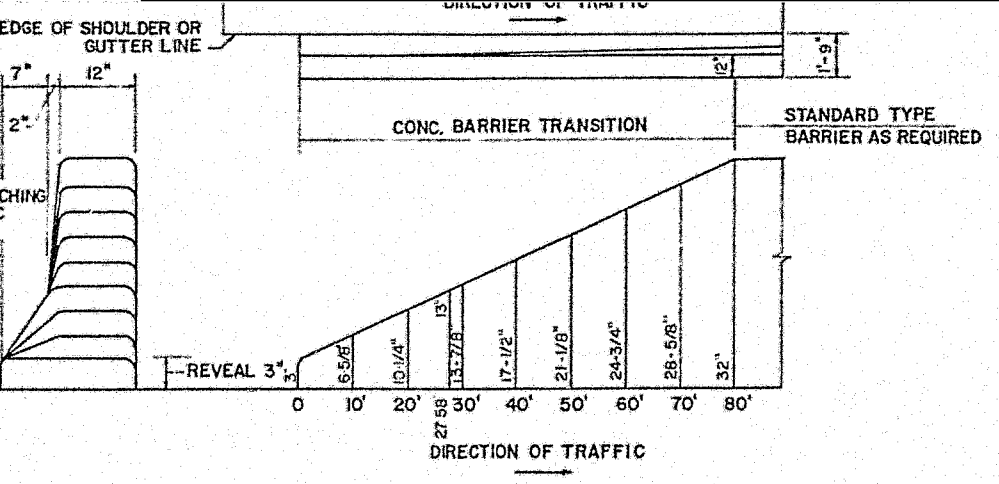
CONSTRUCT PROJECT IN ACCORDANCE WITH PUBLICATION 408 SPECIFICATIONS, DATED 1990.

ALL CURVE DATA IS BASED ON THE ARC DEFINITION UNLESS OTHERWISE INDICATED.

THE DEPARTMENT OF TRANSPORTATION DOES NOT GUARANTEE THE ACCURACY OF THE LOCATIONS OF THE EXISTING SUBSURFACE UTILITY STRUCTURES SHOWN ON THE PLANS, NOR DOES THE DEPARTMENT GUARANTEE THAT ALL SUBSURFACE STRUCTURES ARE SHOWN.

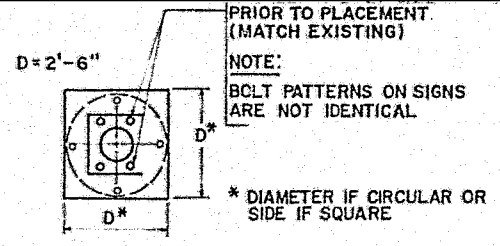
SEED ALL SLOPES FLATTER THAN 3:1 TO FORMULA D SEED MIXTURE.

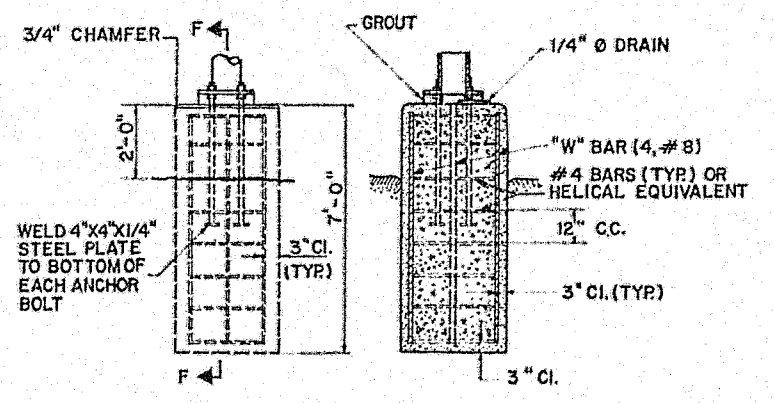
SLOPE EASEMENT. AN AREA LOCATED OUTSIDE THE RIGHT-OF-WAY FOR SUPPORT AND/OR PROTECTION OF THE AREA WITHIN THE RIGHT-OF-WAY LINES. PLACEMENT AND MAINTENANCE OF DRAINAGE FACILITIES ARE INCLUDED AS ALLOWED FOR THE PROTECTION OF THE HIGHWAY. ACQUISITION OF PROPERTY AS SLOPE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY USE OF THE AREA COVERED BY THE SLOPE EASEMENT WHICH IS NOT DETRIMENTAL TO THE NECESSARY SUPPORT OF THE AREA WITHIN THE RIGHT-OF-WAY LINES NOR TO THE SAFETY OF THE TRAVELING PUBLIC



CONCRETE BARRIER—APPROACH END TRANSITION

ITEM NO. 9000-0013



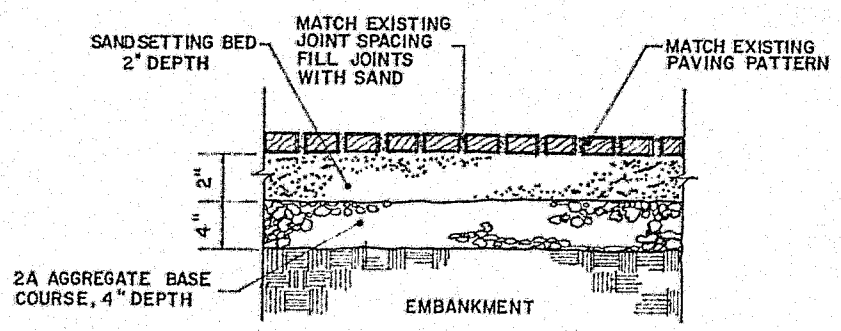


SECTION F-F

SEPTA SIGN FOUNDATION

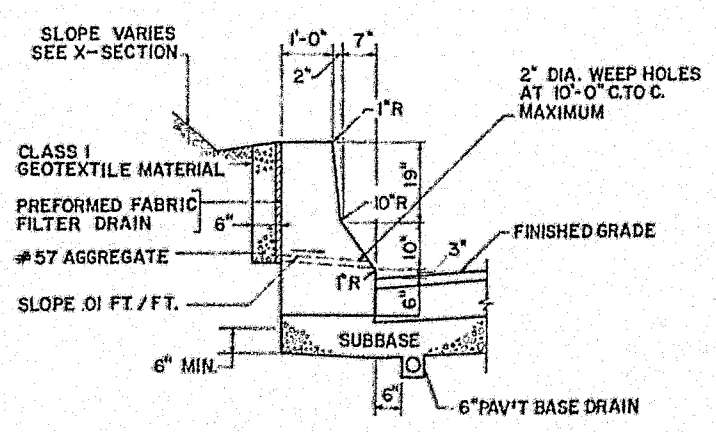
ITEM NO. 9000-0001

MISCELLANEOUS DETAILS



BRICK PAVEMENT, TYPE 1
BRICK PAVEMENT, TYPE 2

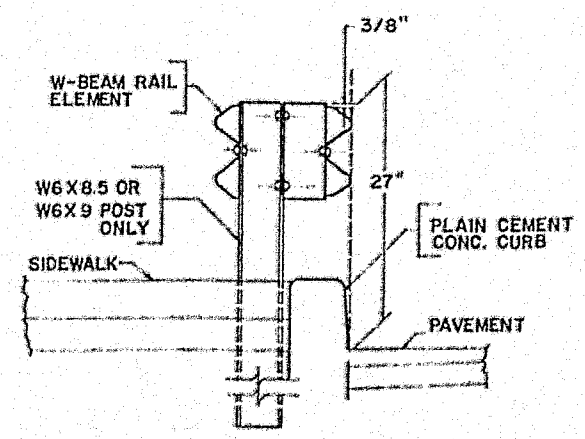
ITEM NO. 9000-0003 & 0004



SINGLE FACE CONCRETE BARRIER

TYPE 1

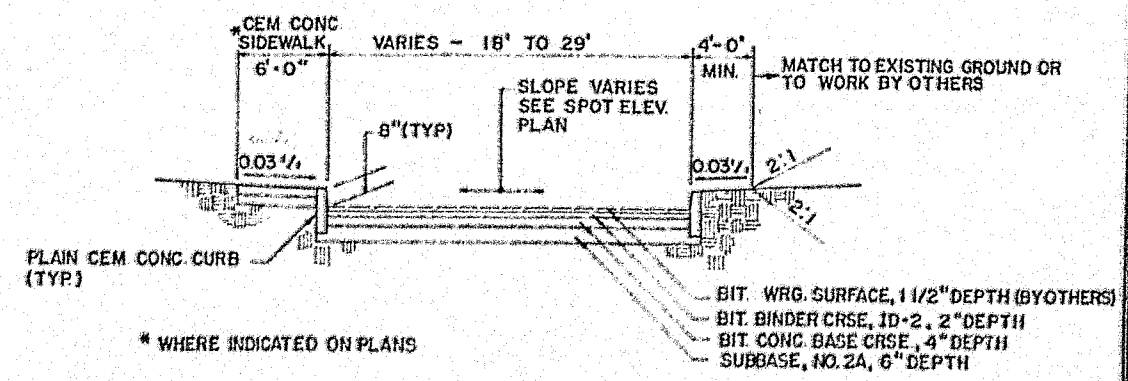
ITEM NO. 9000-0012



TYPE 2-SC AND 2S

GUIDE RAIL - SPECIAL

ITEM NOS. 4620-1075
4620-1100



* WHERE INDICATED ON PLANS

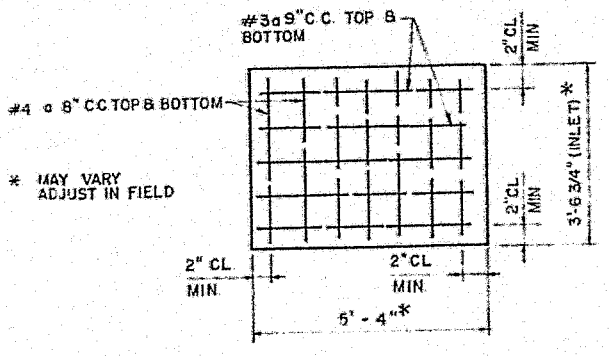
ACCESS DRIVES A, B, C & D

TYPICAL PAVEMENT SECTION

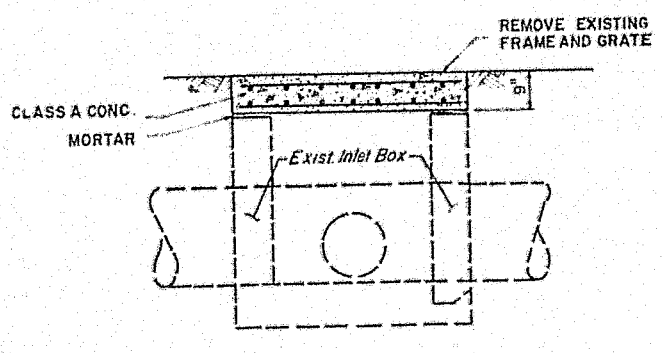
6-0	DELAWARE	0320	12

RADNOR TOWNSHIP

REVISION NUMBER	REVISIONS



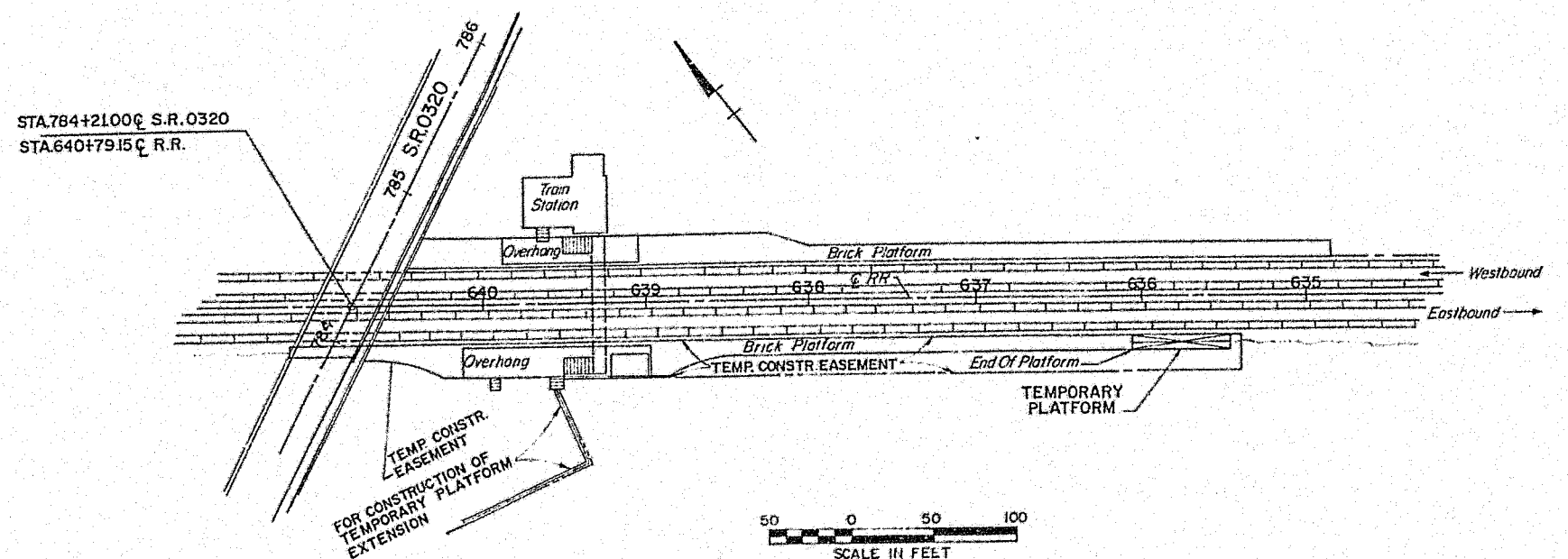
PLAN



ELEVATION

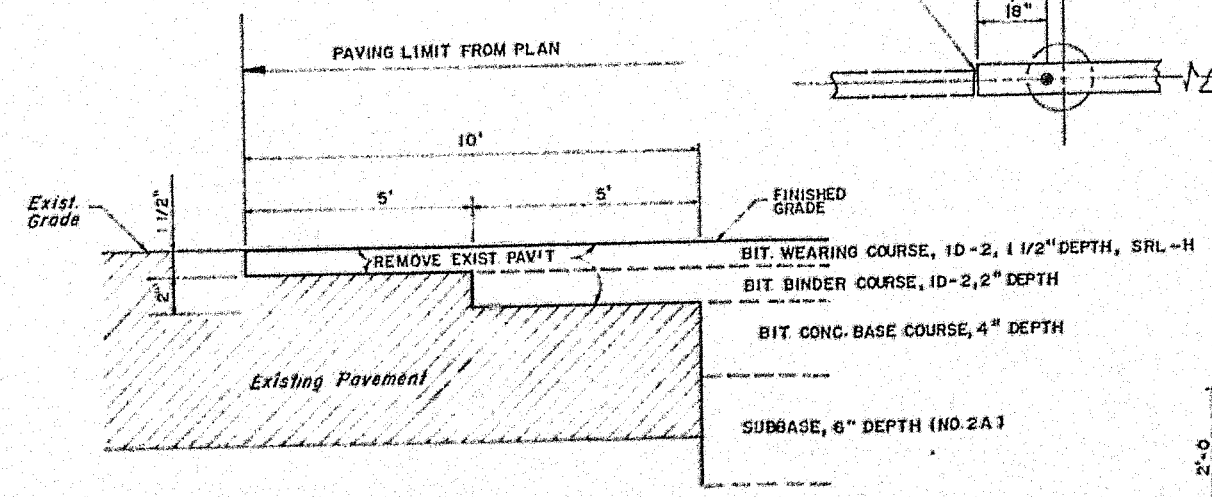
CAP EXISTING INLET

ITEM 9000-0015



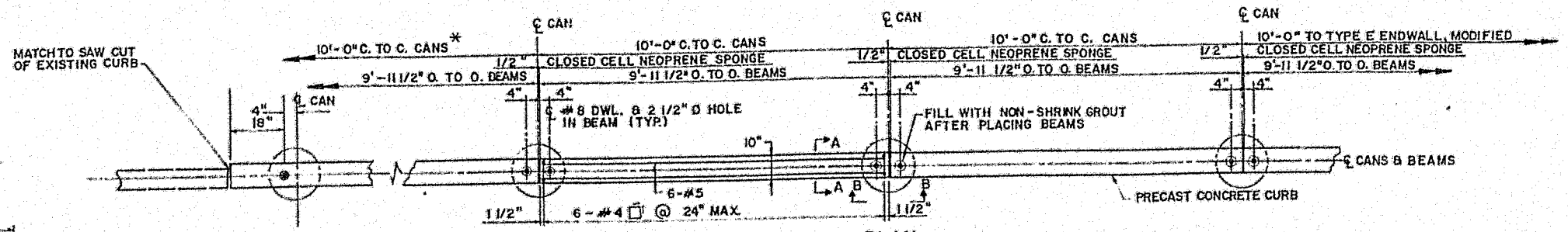
LOCATION FOR TEMPORARY PLATFORM

ITEM 9000 - 0005



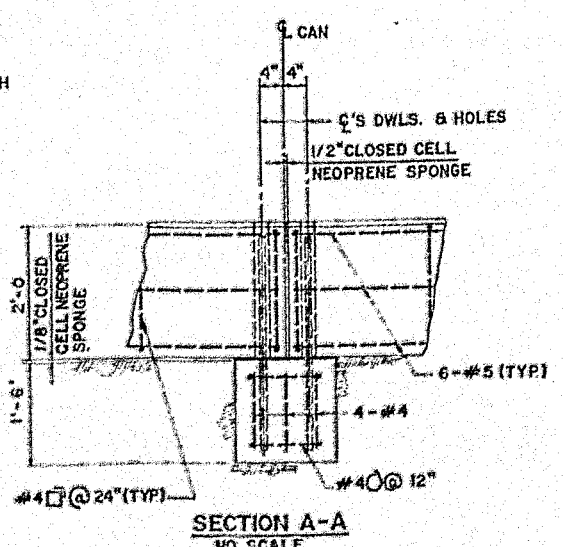
PAVING JOINT DETAIL AT PAVING LIMITS

* LAST UNIT LENGTH MAY VARY
TIE TO EXISTING CURB



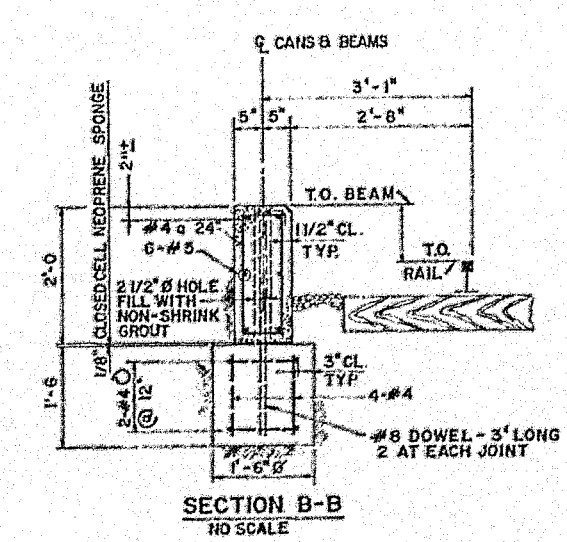
PLAN

NO SCALE



SECTION A-A

NO SCALE



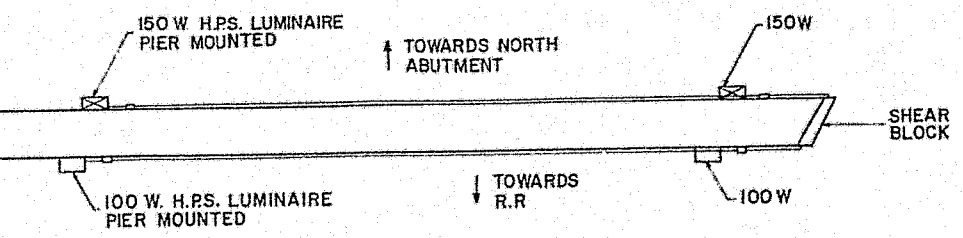
SECTION B-B

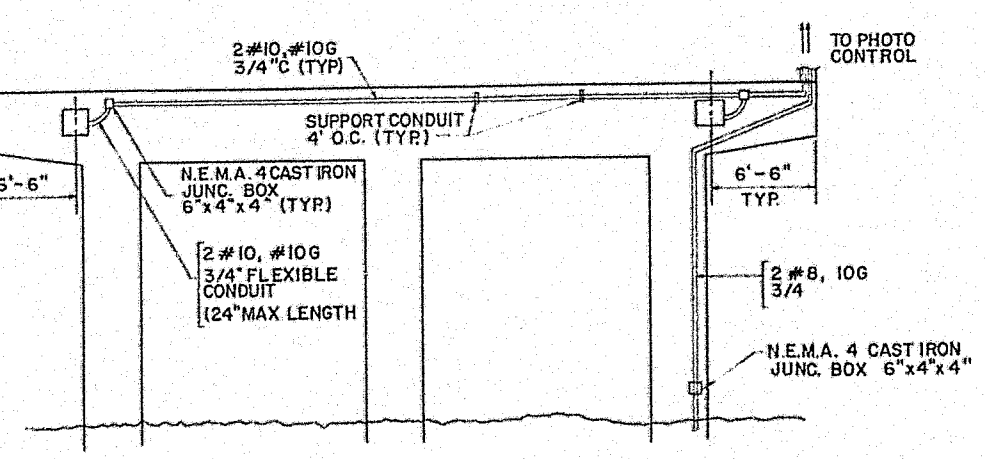
NO SCALE

PLATFORM CURB

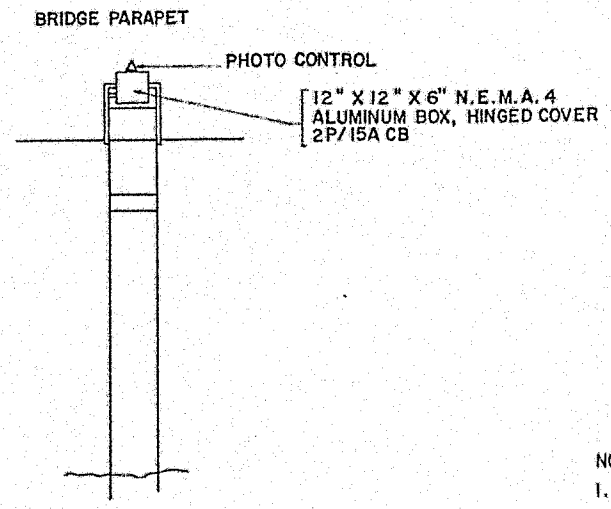
ITEM NO. 9000-0016

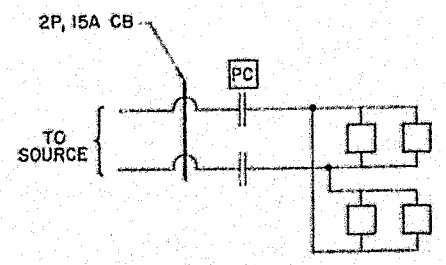
NUMBER			





PIER NO. 2
NO SCALE





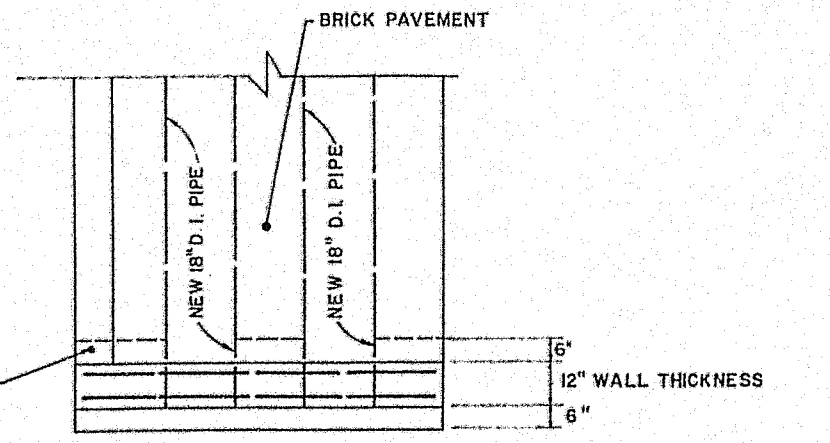
WIRING SCHEMATIC
NO SCALE

UNDERPASS LIGHTING DETAILS
ITEM NO. 8800-0001

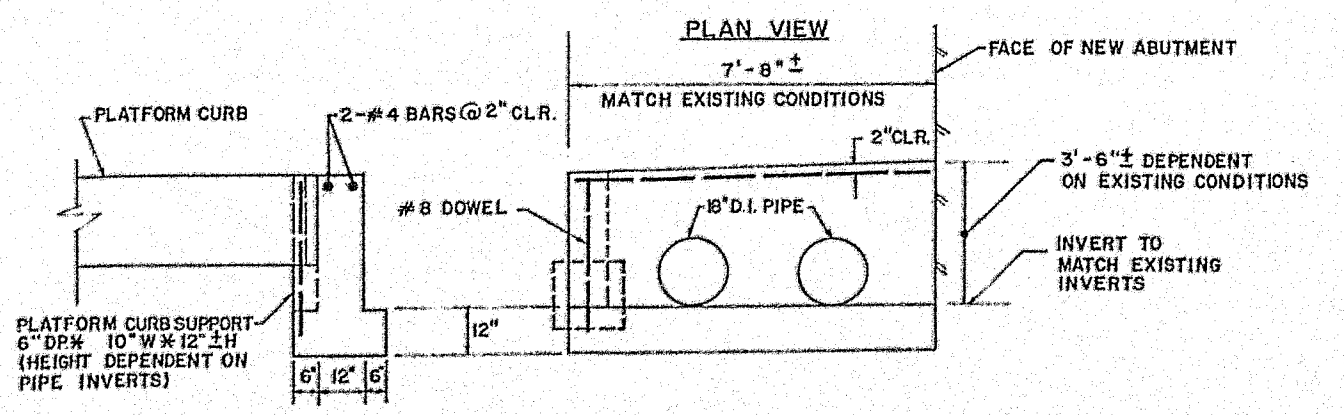
TABULATION OF LIGHTING ITEMS AND APPROXIMATE QUANTITIES

QUANTITY	UNITS	ITEM NUMBER	QUANTITY	DESCRIPTION
LUMP SUM	LS	8800-0001	–	UNDERPASS LIGHTING
ITEMS INCLUDED IN ITEM 8800-0001 FOR INFORMATION ONLY	EA	*	2	150 WATT HIGH PRESSURE SODIUM LUMINAIRE, PIER MOUNTED
	EA	*	2	100 WATT HIGH PRESSURE SODIUM LUMINAIRE, PIER MOUNTED
	EA	*	5	6"X4"X4" CAST IRON, N.E.M.A. 4, JUNCTION BOXES
	EA	*	1	12"X12"X6" N.E.M.A. 4 ALUMINUM BOX, HINGED COVER WITH 2 POLE, 15 AMP CIRCUIT BREAKER
	EA	*	1	PHOTO CONTROL
	LF	*	8	3/4" WATER TIGHT FLEXIBLE GALVANIZED STEEL CONDUIT
	LF	*	150	3/4" EXPOSED CONDUIT
	LF	*	280	1" DIRECT BURIAL CONDUIT (PVC.)
	LF	*	354	AWG 10 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR
	LF	*	960	AWG 8 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR

NOTES:
1. SEE PLATFORM CURB DETAIL ON SHEET 6 OF 20 FOR DETAILS OF PRECAST CURB, DOWEL BAR, HOLE & GROUTING FOR PLATFORM CURB
2. FOR BRICK PAVEMENT DETAILS SEE SHEET 5 OF 20



PLAN VIEW



END VIEW

ELEVATION

TYPE E ENDWALL, MODIFIED
ITEM NO. 9000-0017
NOT TO SCALE

(SHEET 1 OF 2)

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
———	0201 0001 L.S.	CLEARING AND GRUBBING		NO TAB
9690	0203 0001 C.Y.	CLASS 1 EXCAVATION		10
509	* 4203 0001 C.Y.	CLASS 1 EXCAVATION, SPECIAL		11
9	0203 0004 C.Y.	CLASS 1B EXCAVATION		10
1898	0204 0150 C.Y.	CLASS 4 EXCAVATION		12,13,14,15
4758	4205 0100 C.Y.	FOREIGN BORROW EXCAVATION, MODIFIED		10
509	* 4205 0200 C.Y.	SELECTED BORROW EXCAVATION, SPECIAL		11
6	* 0208 0001 HOURS	SPECIAL ROLLING		11
1626	0212 0001 L.F.	GEOTEXTILE, CLASS 1		14
13	0212 0003 S.Y.	GEOTEXTILE, CLASS 2, TYPE A		15
8294	0305 0003 S.Y.	BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH		10
8426	0350 0106 S.Y.	SUBBASE 6" DEPTH (NO. 2A)		10
5111	0420 0303 S.Y.	BITUMINOUS WEARING COURSE, ID-2, 1 1/2" DEPTH, SRL - H		10
8181	0421 0202 S.Y.	BITUMINOUS BINDER COURSE, ID-2, 2" DEPTH		10
258	0505 0001 S.Y.	BRIDGE APPROACH SLAB		10
379	0601 0022 L.F.	18" REINFORCED CEMENT CONCRETE PIPE, CLASS II		12,13
61	0601 0022 L.F.	EITHER 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II	2	12,13
61	0601 1424 L.F.	OR 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		
61	0601 2734 L.F.	OR 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE		
81	0601 0024 L.F.	24" REINFORCED CEMENT CONCRETE PIPE, CLASS II		12,13
118	0601 0026 L.F.	30" REINFORCED CEMENT CONCRETE PIPE, CLASS II		12,13
153	0601 0052 L.F.	EITHER 18" REINFORCED CEMENT CONCRETE PIPE, CLASS III	3	12,13
153	0601 1424 L.F.	OR 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		
153	0601 2734 L.F.	OR 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE		
247	0601 0087 L.F.	18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV		12,13

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
102	0601 0091 L.F.	EITHER 30" REINFORCED CEMENT CONCRETE PIPE, CLASS IV	4	12,13
102	0601 1430 L.F.	OR 36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		
102	0601 2759 L.F.	OR 36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 14 GAGE		
27	0601 0122 L.F.	18" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12,13
41	0601 0124 L.F.	EITHER 24" REINFORCED CEMENT CONCRETE PIPE, CLASS V	6	12,13
41	0601 1427 L.F.	OR 27" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		
108	0601 0128 L.F.	36" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12,13
24	0601 0126 L.F.	EITHER 30" REINFORCED CEMENT CONCRETE PIPE, CLASS V	5	12,13
24	0601 1430 L.F.	OR 36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		
24	0601 2777 L.F.	OR 36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 12 GAGE		
90	0601 0595 L.F.	24" CORRUGATED POLYETHYLENE (PE) CULVERT PIPE, TYPE S		15
120	0601 0763 L.F.	18" DUCTILE IRON PIPE		12,13
14	0601 1424 L.F.	18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		12,13
28	0601 1424 L.F.	EITHER 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE	1	12,13
28	0601 2734 L.F.	OR 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE		
288	0601 5400 C.Y.	COARSE AGGREGATE FOR PIPE TRENCH BACKFILL		12,13
219	0601 5403 C.Y.	AGGREGATE FOR BEDDING		12,13
8	0605 1300 EACH	TYPE A MANHOLE		12,13
13	0605 2010 EACH	TYPE C INLET, BICYCLE SAFE GRATE		12,13
2	0605 2070 EACH	TYPE M INLET, BICYCLE SAFE GRATE		12,13
13	0607 0200 V.F.	REBUILT MANHOLE		12,13,15
———	0608 0001 L.S.	MOBILIZATION		NO TAB
———	0609 0002 L.S.	INSPECTOR'S FIELD OFFICE AND INSPECTION FACILITIES, TYPE A		NO TAB

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
1626	0610 7002 L.F.	6" PAVEMENT BASE DRAIN		14
1	0610 7400 C.Y.	ADDITIONAL COARSE AGGREGATE FOR EXTRA DEPTH PAVEMENT BASE DRAIN		14
16	0615 0022 L.F.	6" SUBSURFACE DRAIN OUTLETS		14
1	0620 0400 EACH	TERMINAL SECTION, SINGLE		14
2	0620 0401 EACH	TERMINAL SECTION, DOUBLE		14
6	0620 0402 EACH	TERMINAL SECTION, BRIDGE CONNECTION		14
2017	* 0962 0620 L.F.	4" WHITE TRAFFIC ZONE PAINT, TYPE II		15
2520	* 0962 0640 L.F.	4" YELLOW TRAFFIC ZONE PAINT, TYPE II,		15
75	0620 1075 L.F.	TYPE 2-S GUIDE RAIL		14
519	* 4620 1075 L.F.	TYPE 2-S GUIDE RAIL, SPECIAL		14
25	0620 1100 L.F.	TYPE 2-SC GUIDE RAIL		14
25	* 4620 1100 L.F.	TYPE 2-SC GUIDE RAIL, SPECIAL		14
1	0620 1252 EACH	BREAKAWAY CABLE TERMINAL END TREATMENT		14
3377	0630 0001 L.F.	PLAIN CEMENT CONCRETE CURB		10
957	0676 0001 S.Y.	CEMENT CONCRETE SIDEWALK		10
———	* 0686 0004 L.S.	ENGINEERING STAKEOUTS, MODIFIED		NO TAB
———	0688 0021 L.S.	MICROCOMPUTER WITH BATTERY BACK UP SYSTEM, TYPE C		NO TAB
18	0694 0010 S.Y.	CURB CUT RAMPS, TYPE 1 SINGLE		10
53	0703 0023 C.Y.	NO. 67 COARSE AGGREGATE		15
1065	0803 0001 C.Y.	PLACING STOCKPILED TOPSOIL		NO TAB
290	0804 0013 LB.	SEEDING AND SOIL SUPPLEMENTS - FORMULA D		15
86	0804 0014 LB.	SEEDING - FORMULA E		15
11	* 4694 0014 S.Y.	CURB CUT RAMPS, TYPE 3, MODIFIED		10
2	0804 0051 ACRE	MOWING		NO TAB
1	0805 0022 TON	MULCHING - STRAW		NO TAB
8598	0806 0019 S.Y.	MULCH CONTROL NETTING		15

6-0	DELAWARE	0320	123
RADNOR TOWNSHIP			
REVISION NUMBER	REVISIONS		D

SUMMARY SHEET

(SHEET 2 OF 2)

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

QUANTITY	ITEM NUMBER		DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
10	0810 0002 EACH		SELECTIVE TREE REMOVAL AND TRIMMING		NO TAB
———	0845 0002 PDA		UNFORESEEN WATER POLLUTION CONTROL		15
13	0850 0022 S.Y.		ROCK, CLASS R-4		15
1412	* 9865 0002 L.F.		SILT BARRIER FENCE, 36" HEIGHT		15
———	* 0901 0001 L.S.		MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION		NO TAB
1	0901 0025 TON		CALCIUM CHLORIDE		NO TAB
1	1001 0020 C.Y.		CLASS C CEMENT CONCRETE		12,13
———	* 1018 0001 L.S.		REMOVAL OF EXISTING BRIDGE		10
100	* 1019 0010 S.Y.		PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)		11
300	* 1090 0332 L.F.		EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS		11
———	* 8040 0001 L.S.	EITHER	BRIDGE STRUCTURE, AS DESIGNED, S-17313	7	11
———	1005 0450 L.S.	AND	STEEL BEAM TEST PILES, HP12X53		
3030	1005 1103 L.F.	AND	STEEL BEAM BEARING PILES, HP12X53		
146	1005 1153 EACH	AND	STEEL BEAM PILE TIP REINFORCEMENT, HP12X53		
8	* 9000 0011 EACH	AND	REDRIVING STEEL BEAM TEXT PILES, HP12X53		
146	* 9000 0023 EACH	AND	REDRIVING STEEL BEAM BEARING PILES, HP12X53		

QUANTITY	ITEM NUMBER		DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
———	* 8100 0001 L.S.	OR	STEEL BRIDGE STRUCTURE	7 CONT'D	11
———	1005 0451 L.S.	AND	STEEL BEAM TEST PILES, HP12X53		
(---)	1005 1103 L.F.	AND	STEEL BEAM BEARING PILES, HP12X53		
(---)	1005 1153 EACH	AND	STEEL BEAM PILE TIP REINFORCEMENT, HP12X53		
(---)	* 9000 0037 EACH	AND	REDRIVING STEEL BEAM TEST PILES, HP12X53		
(---)	* 9000 0039 EACH	AND	REDRIVING STEEL BEAM BEARING PILES, HP12X53		
———	* 8000 0001 L.S.	OR	PRESTRESSED CONCRETE BRIDGE STRUCTURE		
———	1005 0452 L.S.	AND	STEEL BEAM TEST PILES, HP12X53		
(---)	1005 1103 L.F.	AND	STEEL BEAM BEARING PILES, HP12X53		
(---)	1005 1153 EACH	AND	STEEL BEAM PILE TIP REINFORCEMENT, HP12X53		
(---)	* 9000 0038 EACH	AND	REDRIVING STEEL BEAM TEST PILES, HP12X53		
(---)	* 9000 0040 EACH	AND	REDRIVING STEEL BEAM BEARING PILES, HP12X53		
L.S.	* 8600 0001 L.S.		WINGWALLS, S-17313 (APPROXIMATELY 7,030 S.F.)		11
———	* 8800 0001 L.S.		UNDERPASS LIGHTING		7, 15
2	* 9000 0001 EA.		REMOVE AND RELOCATE EXISTING SEPTA SIGNS		15
98	* 9000 0002 S.Y.		REMOVAL OF EXISTING BRICK PLATFORM		15
49	* 9000 0003 S.Y.		BRICK PAVEMENT, TYPE 1		15
49	* 9000 0004 S.Y.		BRICK PAVEMENT, TYPE 2		15
———	* 9000 0005 L.S.		TEMPORARY PLATFORM EXTENSION		15
———	* 9000 0006 L.S.		INSTALLATION OF PHILADELPHIA SUBURBAN WATER CO. FACILITY		11
———	* 9000 0007 L.S.		INSTALLATION OF PHILADELPHIA ELECTRIC COMPANY FACILITY		11
———	* 9000 0008 L.S.		INSTALLATION OF BELL TELEPHONE COMPANY FACILITY		11

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
———	* 9000 0009 L.S.	INSTALLATION OF ADELPHIA CABLE COMPANY FACILITY		11
———	* 9000 0010 L.S.	PROTECTION OF COMMUNICATION AND SIGNALIZATION DUCTS AT STRUCTURE S-17313		11
100	* 9000 0012 L.F.	SINGLE FACE CONCRETE BARRIER, TYPE 1		14
1	* 9000 0013 EACH	APPROACH END TRANSITION (80 FEET)		14
2	* 9000 0014 EACH	DEWATERING FILTER		15
1	* 9000 0015 EACH	CAP EXISTING INLET		12,13
100	* 9000 0016 L.F.	PLATFORM CURB		15
2	* 9000 0018 EACH	ROCK CONSTRUCTION ENTRANCE		15
1	* 9000 0019 EACH	RISER PIPE ASSEMBLY, MODIFIED		15
1	* 9000 0017 EACH	TYPE E ENDWALL, MODIFIED		12,13
2	* 9000 0022 EACH	METER SUPPORT		3 OF 3
210	* 9000 0024 S.Y.	PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES		11
2660	* 9000 0025 L.F.	TEMPORARY PROTECTIVE FENCE FOR EXISTING PLANT MATERIAL, SPECIAL		15
———	* 9000 0031 L.S.	UTILITY SERVICE REPLACEMENTS (PRIVATE RESIDENCE)		3 OF 3
———	* 9000 0032 L.S.	UTILITY SERVICE REPLACEMENTS (TO SOUTH TRAIN STATION)		3 OF 3
———	* 9000 0033 L.S.	UTILITY SERVICE REPLACEMENTS (TO NORTH TRAIN STATION)		3 OF 3
———	* 9000 0034 L.S.	NEW UNDERGROUND UTILITIES FOR PHILADELPHIA ELECTRIC COMPANY		3 OF 3
———	* 9000 0035 L.S.	NEW UNDERGROUND UTILITIES FOR BELL TELEPHONE COMPANY OF PA.		3 OF 3
———	* 9000 0036 L.S.	NEW UNDERGROUND UTILITIES FOR ADELPHIA CABLE COMMUNICATIONS		3 OF 3
62	* 9601 0642 L.F.	8" EXTRA STRENGTH VITRIFIED CLAY PIPE		12,13
1	* 9601 0643 EA.	1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE		12,13
1	* 9620 0001 EACH	APPROACH END TRANSITION WITH INLET PLACEMENT		14
3	* 9620 0002 EACH	APPROACH END TRANSITION WITHOUT INLET PLACEMENT		14
———	* 9999 9994 PDA	REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO. (NO OUTAGE)		11

6-0	DELAWARE	0320	12S	10 Of 20
RADNOR TOWNSHIP			

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF ROADWAY ITEMS

0505 0001 S.Y. BRIDGE APPROACH SLAB	1018 0001 L.S. REMOVAL OF EXISTING BRIDGE	4205 0100 C.Y. FOREIGN BORROW EXCAVATION, MODIFIED	0203 0004 C.Y. CLASS 1B EXCAVATION	4694 0014 S.Y. CURB CUT RAMPS, TYPE-3, MODIFIED	0694 0010 S.Y. CURB CUT RAMPS, TYPE 1 SINGLE	0676 0001 S.Y. CEMENT CONCRETE SIDEWALK	0630 0001 L.F. PLAIN CEMENT CONCRETE CURB	0421 0202 S.Y. BITUMINOUS BINDER COURSE, ID-2, 2" DEPTH	0420 0303 S.Y. BITUMINOUS WEARING COURSE, ID-2, 1 1/2" DEPTH, SRL - H	0350 0106 S.Y. SUBBASE 6" DEPTH (NO. 2A)	0305 0003 S.Y. BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH	0203 0001 C.Y. CLASS 1 EXCAVATION	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
								1998	2012	2041	1985				LT.	778+90 TO 783+90	S.R. 0320
							183								RT.	779+00 TO 780+85	
						21	53	117		121	117			DRIVE ADJ.	RT.	781+00	
						222	265								RT	781+15 TO 783+90	
									66		66			DRIVE ADJ.	LT.	781+37	
									90		90			DRIVE ADJ.	LT.	781+61	
								2172	2187	2239	2157					785+64 TO 791+60	
							135								LT.	786+00 TO 787+35	
						169	203								RT.	785+82 TO 787+85	S.R. 0320
								243	243	252	243					20+10 TO 21+19	'C' DRIVE
								188	188	195	188					10+10.09 TO 11+12.91	'D' DRIVE
								142	142	147	142					5+00 TO 6+07.55	'A' DRIVE
								153	153	159	153					2+00 TO 3+28.15	'B' DRIVE
								692		718	692			INTERSECT. OF DRIVES 'D' & 'B'		11+73.05(D) TO 3+28.15(B)	'D-B' DRIVE
								169		175	169					6+07.55 TO 6+92.16	'A' DRIVE
								379		393	379			INTERSECT. OF DRIVES 'A' & 'C'		6+92.16(A) TO 21+95.99(C)	'A-C' DRIVE
								364		378	364					11+73.05 TO 13+09.46	'D' DRIVE
								632		656	632					13+09.46 TO 14+93	'D' DRIVE
								420		436	420					21+95.99 TO 23+53.33	'C' DRIVE
								497		516	497					23+53.33 TO 24+93.99	'C' DRIVE
						6	94	484							LT.	20+10 TO 24+93.99	'C' DRIVE
						12	420	483							RT.	10+10.09 TO 14+93	'D' DRIVE
								175							LT.	11+73.05 TO 13+09.46	'D' DRIVE
								136							LT. TO RT	14+17(D) TO 24+00(C)	'D-C' DRIVE
								311						ISLAND	LT.	788+15 TO 789+14	S.R. 0320
								397						ISLAND	RT.	788+91 TO 790+12	S.R. 0320
								255							RT.	5+00 TO 7+55.15	'A' DRIVE

0505 0001 S.Y. BRIDGE APPROACH SLAB	1018 0001 L.S. REMOVAL OF EXISTING BRIDGE	4205 0100 C.Y. FOREIGN BORROW EXCAVATION, MODIFIED	0203 0004 C.Y. CLASS 1B EXCAVATION	4694 0014 S.Y. CURB CUT RAMPS, TYPE-3, MODIFIED	0694 0010 S.Y. CURB CUT RAMPS, TYPE 1 SINGLE	0676 0001 S.Y. CEMENT CONCRETE SIDEWALK	0630 0001 L.F. PLAIN CEMENT CONCRETE CURB	0421 0202 S.Y. BITUMINOUS BINDER COURSE, ID-2, 2" DEPTH	0420 0303 S.Y. BITUMINOUS WEARING COURSE, ID-2, 1 1/2" DEPTH, SRL - H	0350 0106 S.Y. SUBBASE 6" DEPTH (NO. 2A)	0305 0003 S.Y. BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH	0203 0001 C.Y. CLASS 1 EXCAVATION	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
							192								LT.	2+00 TO 3+92.09	'B' DRIVE
							145								LT.	790+04.98 TO 791+50	S.R. 0320
															RT.	791+00 TO 791+50	
							50								RT.	789+02 TO 789+64	
						31								ISLAND	RT.	789+02 TO 789+64	
				11										ENDS OF WALK @ ISLAND		791+50 TO 791+60	S.R. 0320
								15	30						℄	783+47 TO 783+90	S.R. 0320
129															℄	785+64 TO 786+07	S.R. 0320
129																ENTIRE PROJECT	
	L.S.	7118	9									7560					
258	L.S.	7118	9	11	18	957	3377	8181	5111	8426	8294	7560		SHEET TOTALS			
258	L.S.	7118	9	11	18	957	3377	8181	5111	8426	8294	7560		TOTALS			

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	11 OF 20
RADNOR TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF STRUCTURE QUANTITIES

FOR INFORMATION ONLY (INCLUDED IN ITEM 8040-0001, AS DESIGNED)

CLASS 3 EXCAVATION SPECIAL C.Y.	SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL C.Y.	GEOTEXTILE, CLASS 1 L.F.	NO. 57 COARSE AGGREGATE C.Y.	1-1/2" DIAMETER PVC PIPE (SCHEDULE 40) L.F.	CLASS AAA CEMENT CONCRETE C.Y.	CLASS AA CEMENT CONCRETE C.Y.	CLASS A CEMENT CONCRETE C.Y.	REINFORCEMENT BARS LB.	REINFORCEMENT BARS, EPOXY COATED LB.	DOWEL HOLES, 22" DEPTH EACH	PROTECTIVE BARRIER L.F.	STAIR GRIT STRIPS EA.	1 1/2" DIAMETER ALUMINUM HANDRAIL (SCHEDULE 10) L.F.	PARAPET PROTECTIVE FENCE, VINYL-COATED STEEL L.F.	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) S.Y.	NEOPRENE STRIP SEAL DAM, (2" MOVEMENT) L.F.	PRESTRESSED CONCRETE ADJACENT BOX BEAMS, 48" x 30" L.F.
1380	840	72	7	25	200	158	890	109500	72000	18	144	73	320	280	1130	96	1680

BRIDGE STRUCTURE AS DESIGNED EITHER 8040 0001 L.S.	STEEL BEAM TEST PILES, HP12x53 AND 1005 0450 L.S.	STEEL BEAM BEARING PILES, HP12x53 AND 1005 1103 L.F.	STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 AND 1005 1153 EA.	REDRIVING STEEL BEAM TEST PILES HP12S53 AND 9000 0011 EA.	REDRIVING STEEL BEAM BEARING PILES HP12X53 AND 9000 0023 EA.	STEEL BRIDGE STRUCTURE OR 8100 0001 L.S.	STEEL BEAM TEST PILES, HP12x53 AND 1005 0451 L.S.	STEEL BEAM BEARING PILES, HP12x53 AND 1005 1103 L.F.	STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 AND 1005 1153 EA.	REDRIVING STEEL BEAM TEST PILES HP12S53 AND 9000 0037 EA.	REDRIVING STEEL BEAM BEARING PILES HP12X53 AND 9000 0039 EA.	PRESTRESSED CONCRETE BRIDGE STRUCTURE OR 8000 0001 L.S.	STEEL BEAM TEST PILES, HP12x53 AND 1005 0452 L.S.	STEEL BEAM BEARING PILES, HP12x53 AND 1005 1103 L.F.	STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 AND 1005 1153 EA.	REDRIVING STEEL BEAM TEST PILES HP12S53 AND 9000 0038 EA.	REDRIVING STEEL BEAM BEARING PILES HP12X53 AND 9000 0040 EA.		ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
LS	LS	3030	146	8	146	LS	LS	(---)	(---)	(---)	(---)	LS	LS	(---)	(---)	(---)	(---)			S-17313		784+21	S.R. 320
LS	LS	3030	146	8	146	LS	LS	(---)	(---)	(---)	(---)	LS	LS	(---)	(---)	(---)	(---)			SHEET TOTALS			
LS	LS	3030	146	8	146	LS	LS	(---)	(---)	(---)	(---)	LS	LS	(---)	(---)	(---)	(---)			TOTALS			

| CLASS 1 EXCAVATION, SPECIAL 4203 0001 C.Y. | SELECTED BORROW EXCAVATION, SPECIAL 4205 0200 C.Y. | SPECIAL ROLLING 0208 0001 HOURS | | PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) 1019 0010 S.Y. | EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS 1090 0332 L.F. | INSTALLATION OF PHILADELPHIA SUBURBAN WATER CO. FACILITY 9000 0006 L.S. | INSTALLATION OF PHILADELPHIA ELECTRIC CO. FACILITY 9000 0007 L.S. | INSTALLATION OF BELL TELEPHONE CO. FACILITY 9000 0008 L.S. | INSTALLATION OF ADELPHIA CABLE CO. FACILITY 9000 0009 L.S. | PROTECTION OF COMMUNICATION AND SIGNALIZATION DUCTS AT STRUCTURE S-17313 9000 0010 L.S. | PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES 9000 0024 S.Y. | REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO.(NO OUTAGE) 9999 9994 PDA | WINGWALLS, ** S-17313 (APPROXIMATELY 7,030) S.F. 8600 0001 L.S. | | | | | | | | | | | | | | | | | | |

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	12 Of 20

RADNOR TOWNSHIP

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF DRAINAGE QUANTITIES

(SHEET 1 OF 2)

* SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

EMBANKMENT (FOR INFORMATION ONLY)														9000 0017 TYPE E ENDWALL, MODIFIED EACH	9000 0015 CAP EXISTING INLET EACH	1001 0020 CLASS C CEMENT CONCRETE C.Y.	0607 0200 REBUILT MANHOLE V.F.	0601 0763 18" DUCTILE IRON PIPE L.F.	9601 0643 1/32 BEND,8"EXTRA STRENGTH VITRIFIED CLAY PIPE EACH	9601 0642 8" EXTRA STRENGTH VITRIFIED CLAY PIPE L.F.	0605 2070 TYPE M INLET, BICYCLE SAFE GRATE EACH	0605 2010 TYPE C INLET, BICYCLE SAFE GRATE EACH	0605 1300 TYPE A MANHOLE EACH	0601 * PIPE DESIGN NO. 6 L.F.	0601 * PIPE DESIGN NO. 5 L.F.	0601 * PIPE DESIGN NO. 4 L.F.	0601 * PIPE DESIGN NO. 3 L.F.	0601 * PIPE DESIGN NO. 2 L.F.	0601 * PIPE DESIGN NO. 1 L.F.	0601 5403 AGGREGATE FOR BEDDING C.Y.	0601 5400 COARSE AGGREGATE FOR PIPE TRENCH BACKFILL C.Y.	0601 1424 18" COATED CORR. GALV. STEEL PIPE, TYPE 1, TYPE B (2 2/3x1/2" CORRUGATIONS), 16 GAGE L.F.	0601 0128 36" REINFORCED CEMENT CONCRETE PIPE, CLASS V L.F.	0601 0122 18" REINFORCED CEMENT CONCRETE PIPE, CLASS V L.F.	0601 0087 18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV L.F.	0601 0052 30" REINFORCED CEMENT CONCRETE PIPE, CLASS III L.F.	0601 0024 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II L.F.	0601 0022 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II L.F.	0204 0150 CLASS 4 EXCAVATION C.Y.	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
X																																		
																		1		1							4	9.5						34	16			LT. TO RT.	780+63 TO 780+53	SR 0320
---																											3.5	8						29	13.5			LT. TO RT.	781+90 TO 781+90	SR 0320
---																					1						16	39.5						135	122			RT.	780+53 TO 781+90	SR 0320
52																										28	2.5	2							20			RT.	781+90	SR 0320
13																											2	4	14						10			RT.	781+90 TO 782+02	SR 0320
2.5																				1					10		1								10	INLET TO M.H.	RT.	14+31 TO 785+98	'D' DRIVE TO SR 0320
8																					1				102		12								98	CONNECT TO EXISTING C.M.P.	RT.	786+02 TO 786+99	SR 0320
75																					1						21	49		90					190		LT. TO RT.	786+73	SR 0320
76																											24	23				118			149		LT.	784+67 TO 785+77	SR 0320
64																				1					51		6								66		LT.	23+50.83	'C' DRIVE
54																					1			90			18								270	INCLUDES STUB	LT.	785+81 TO 786+73	SR 0320
221																					1		24				5								72		LT.	786+85 TO 786+88	SR 0320
60																						58					9								154		LT.	786+73 TO 787+31	SR 0320
132																																					LT.	787+00	SR 0320
																		1									13	30					81		120		LT.	787+35 TO 788+16	SR 0320
44																				1							9	7						75	70		RT. TO LT.	6+50 TO 788+18	'C' DRIVE TO SR 0320
43																				2							4	10						34	42		LT. TO RT.	788+18 TO 788+18	SR 0320
18																				1							9	22						72	84		RT.	788+20 TO 788+92	SR 0320
31																					1				10		1								6		RT.	788+93 TO 788+96	SR 0320
5																				1							29	73				247			199		RT.	788+95 TO 791+44	SR 0320
56																				2							3	7			27				18		LT. TO RT.	791+46 TO 791+46	SR 0320
---																			1	12	6	58	24	90	153	20	28	192	284	14	90	27	247	118	81	379	17295	SHEET TOTALS			
9545																			1																		TOTALS			

2 of 1

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	13 OF 20
	RADNOR TOWNSHIP			

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF DRAINAGE QUANTITIES

(SHEET 2 OF 2)

* SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

EMBANKMENT (FOR INFORMATION ONLY)												9000 0017 EACH TYPE E ENDWALL, MODIFIED	9000 0015 EACH CAP EXISTING INLET	1001 0020 C.Y. CLASS C CEMENT CONCRETE	0607 0200 V.F. REBUILT MANHOLE	0601 0763 L.F. 18" DUCTILE IRON PIPE	9601 0643 EACH 1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE	9601 0642 L.F. 8" EXTRA STRENGTH VITRIFIED CLAY PIPE	0605 2070 EACH TYPE M INLET, BICYCLE SAFE GRATE	0605 2010 EACH TYPE C INLET, BICYCLE SAFE GRATE	0605 1300 EACH TYPE A MANHOLE	0601 * L.F. PIPE DESIGN NO. 6	0601 * L.F. PIPE DESIGN NO. 5	0601 * L.F. PIPE DESIGN NO. 4	0601 * L.F. PIPE DESIGN NO. 3	0601 * L.F. PIPE DESIGN NO. 2	0601 * L.F. PIPE DESIGN NO. 1	0601 5403 C.Y. AGGREGATE FOR BEDDING	0601 5400 C.Y. COARSE AGGREGATE FOR PIPE TRENCH BACKFILL	0601 1424 L.F. 18" COATED CORR. GALV. STEEL PIPE, TYPE 1, TYPE B (2 2/3x1/2" CORRUGATIONS), 16 GAGE	0601 0128 L.F. 36" REINFORCED CEMENT CONCRETE PIPE, CLASS V	0601 0122 L.F. 18" REINFORCED CEMENT CONCRETE PIPE, CLASS V	0601 0087 L.F. 18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV	0601 0052 L.F. 30" REINFORCED CEMENT CONCRETE PIPE, CLASS III	0601 0024 L.F. 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II	0601 0022 L.F. 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II	0204 0150 C.Y. CLASS 4 EXCAVATION	ITEM NUMBER / UNIT REMARKS	SIDE	STATIONS	ROUTE
---															1																	LT.	786+82±	SR 0320
---														1																		BACKFILL INLET	LT.	786+91±	SR 0320
---												1				60											7						PIPE UNDER PLATFORM	LT. TO RT.	783+78 TO 784+05	SR 0320
---																60											7						PIPE UNDER PLATFORM	LT. TO RT.	783+82 TO 784+09	SR 0320
3																	1	12									1					4	MEET EXISTING PIPE	℄	6+05	'A' DRIVE
23																				1						41	5					33		℄	6+05 TO 6+50	'A' DRIVE
20																		50	1								3					25	LOW POINT INLET	LT.	788+46	SR 0320
290																					2						12			38		372	EXTRA DRAINAGE ⊠	RT.	787+01 TO 787+11	SR 0320
16																				1						27	4					23		LT	785+90 TO 786+12	SR 0320
352												1		1	1	120	1	62	1	2	2					68		39			38			457	SHEET TOTALS			
13065												1	1	1	1	120	1	62	2	14	8	58	24	90	153	68	28	231	288	14	128	27	247	118	81	379	21865	TOTALS			

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	14 Of 20

RADNOR TOWNSHIP

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF GUIDE RAIL

9620 0002 EACH	9620 0001 EACH	9000 0013 EA.	9000 0012 L.F.	4620 1100 L.F.	4620 1075 L.F.	0620 1252 EACH	0620 1100 L.F.	0620 1075 L.F.	0620 0402 EACH	0620 0401 EACH	0620 0400 EACH	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
		1	100										BURY END FULL HEIGHT	LT.	779+00 TO 780+80	S.R. 0320
1				12.5	256.25				2	1			RADIUS	RT.	781+16 TO 783+82	S.R. 0320
1							12.5	25	1		1		RADIUS	LT.	781+60 TO 781+93	S.R. 0320
	1					1	12.5	50	1					LT.	786+00 TO 787+00	S.R. 0320
1				12.5	262.5				2	1			RADIUS	RT.	785+88 TO 788+66	S.R. 0320
3	1	1	100	25	518.75	1	25	75	6	2	1		SHEET TOTALS			
3	1	1	100	25	518.75	1	25	75	6	2	1		TOTALS			

TABULATION OF PAVEMENT BASE DRAIN

0615 0022 L.F.	6" SUBSURFACE DRAIN OUTLETS	0610 7400 C.Y.	ADDITIONAL COARSE AGGREGATE FOR EXTRA DEPTH PAVEMENT BASE DRAIN	0610 7002 L.F.	6" PAVEMENT BASE DRAIN	0212 0001 L.F.	GEOTEXTILE, CLASS 1	0204 0150 C.Y.	CLASS 4 EXCAVATION	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
				159	159							LT.	778+90 TO 780+48.81	ROUTE 320
				161	161						CONNECT TO INLET	RT.	778+90 TO 780+51	
		0.1		13	13			0.1			EXTRA DEPTH, CONNECT TO INLET	LT.	780+48.81 TO 780+61	
		0.2		22	22			0.2			EXTRA DEPTH, CONNECT TO INLET	RT.	780+55 TO 780+77.21	
		0.1		12	12			0.1			EXTRA DEPTH	LT.	780+65 TO 780+77.21	
				113	113							LT.	780+77.21 TO 781+90	
				111	111							RT.	780+77.21 TO 781+88	
				125	125						CONNECT TO INLET	LT.	786+06 TO 787+31	
				170	170							RT.	786+24.7 TO 787+94	
		0.1		22	22			0.1			EXTRA DEPTH, CONNECT TO INLET	RT.	787+94 TO 788+16	
				59	59							LT.	787+35 TO 787+94	
		0.1		23	23			0.1			EXTRA DEPTH, CONNECT TO INLET	LT.	787+94 TO 788+16.32	
		0.1		3	3			0.1			EXTRA DEPTH, CONNECT TO INLET	RT.	788+20 TO 788+22.22	
				69	69							RT.	788+22.22 TO 788+91.1	
		0.1		2	2			0.1			EXTRA DEPTH, CONNECT TO INLET	LT.	788+20.22 TO 788+22.22	
												LT.	788+22.22 TO 791+50	
				328	328						CONNECT TO MANHOLE	RT.	788+97 TO 789+10	
	16			234	234							RT.	789+10 TO 791+44	
	16	0.8		1626	1626			0.8			SHEET TOTALS			
	16	0.8		1626	1626			0.8			TOTALS			

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	15 of 20
RADNOR TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

TABULATION OF MISCELLANEOUS ITEMS

9510 0003 EACH BENCH MARKS	9000 0016 L.F. PLATFORM CURB	8800 0001 L.S. UNDERPASS LIGHTING	9000 0005 L.S. TEMPORARY PLATFORM EXTENSION	9000 0004 S.Y. BRICK PAVEMENT, TYPE 2	9000 0003 S.Y. BRICK PAVMENT, TYPE 1	9000 0002 S.Y REMOVAL OF EXISTING BRICK PLATFORM	9000 0001 EACH REMOVE AND RELOCATE EXISTING SEPTA SIGNS	9000 0025 L.F. TEMPORARY PROTECTIVE FENCE FOR EXISTING PLANT MATERIAL, SPECIAL	9962 0230 L.F. 4" YELLOW TRAFFIC ZONE PAINT, TYPE I	9962 0200 L.F. 4" WHITE TRAFFIC ZONE PAINT, TYPE I	0607 0200 V.F. REBUILT MANHOLE	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
2	100	L.S.	L.S.	49	49	98	2	2660	2520	2017			ENTIRE PROJECT		778+90 TO 791+50	S.R. 0320
											7		SAN. SEWER M.H.	LT.	787+81±	S.R. 0320
											1		ELECTRIC M.H.	LT.	790+59±	S.R. 0320
											4		TELEPHONE M.H.	RT.	788+98±	S.R. 0320
2	100	L.S.	L.S.	49	49	98	2	2660	2520	2017	12		SHEET TOTALS			
2	100	L.S.	L.S.	49	49	98	2	2660	2520	2017	12		TOTALS			

TABULATION OF EROSION AND SEDIMENTATION CONTROL ITEMS

0805 0022 S.Y. MULCHING-STRAW	0212 0006 L.F. GEOTEXTILE, CLASS 3, TYPE B	0203 0001 C.Y. CLASS 1 EXCAVATION	0703 0025 C.Y. NO. 57 COARSE AGGREGATE	0703 0020 C.Y. NO. 1 COARSE AGGREGATE	0212 0003 S.Y. GEOTEXTILE, CLASS 2, TYPE A	9000 0019 EACH RISER PIPE ASSEMBLY, MODIFIED	9000 0018 EACH ROCK CONSTRUCTION ENTRANCE	0845 0002 --- UNFORESEEN WATER POLLUTION CONTROL	9000 0014 EA. DEWATERING FILTER	0865 0002 L.F. SILT BARRIER FENCE, 36" HEIGHT	0850 0003 S.Y. ROCK LINING, R-4	0806 0019 S.Y. MULCH CONTROL NETTING	0804 0014 LB. SEEDING - FORMULA E	0804 0013 LB. SEEDING AND SOIL SUPPLEMENTS - FORMULA D	0703 0023 C.Y. NO. 67 COARSE AGGREGATE	0601 0595 L.F. 24" CORRUGATED POLYETHYLENE (PE) CULVERT PIPE, TYPE S	0204 0150 C.Y. CLASS 4 EXCAVATION	ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS	ROUTE
4.8								---				8598	86	290					ENTIRE PROJECT		778+90 TO 791+50	S.R. 0320
										125					2					LT.	780+05 TO 780+97	
										145					2					LT.	781+20 TO 782+53	
							1			116					1					LT.	782+47 TO 783+63	
				15											9					RT.	780+78 TO 782+48	
										56					1					LT.	783+47 TO 783+73	
																90				RT.	783+60 TO 784+10	
									1											RT.	783+75	
									1											LT.	784+70	
				13							13						6			RT.	784+00	
										165					2					RT.	782+48 TO 784+05	
										200					2					LT.	784+35 TO 786+00	
				13											8					RT.	785+78 TO 786+54	
							1													LT.	786+82±	
										25					1					LT.	786+90	
										40					1					RT.	785+91 TO 786+10	
										195					2					RT.	784+60 TO 786+37	
										345					4					RT.	785+76 TO 789+17	
0.1		125	1			1						150	1							LT.	787+00	
0.1	70	12	15					---				147	1							RT.	786+25	
																					ENTIRE PROJECT	
5.0	70	137	16	28	13	1	2	---	2	1412	13	8895	88	290	35	90	6		SHEET TOTALS			
5.0	70	137	16	28	13	1	2	---	2	1412	13	8895	88	290	35	90	6		TOTALS			

P/S Concrete Spread Box Beam
72' Span 2 – 60' Span 3 – 54'
al Clearance – 22'-6"
– 34'
8.3"
mended
UCTURE

s Bridge
70'
l Clearance – 22 0'
– 18.5'

REVISION NUMBER	REVISIONS	DATE	BY

RADNOR TOWNSHIP

SURVEY ℄ 'A' STA. 9 + 71.33

SURVEY ℄ 'A' STA. 7+51.70

STA. 0+00 ℄ 'Z'

Sta 0+00 ℄ 'Y'

WILLIAM IRVING DOBBS

DRIVEWAY ADJUSTMENTS

Dwelling

Septic System

LEGAL LIMIT OF SLOPE LINE

TEMPORARY CONSTRUCTION EASEMENT (FOR ACCESS)

SINGLE FACE CONC. BARRIER TYPE I

NEW POLE (BY OTHERS)

LEGAL RIGHT OF WAY LINE

CONSTRUCTION ℄ Sta 7+51.70 S.R. 0320

LIMIT OF AERIAL EASE. STA. 783+67.7

LIMIT OF AERIAL EASE. STA. 785+86.4

PIPE DESIGN NO.

LEGAL LIMIT OF SLOPE LINE

DRIVE ADJUSTMENT

LEGAL RIGHT OF WAY LINE AMTRAK

TEMPORARY CONSTRUCTION EASEMENT (FOR ACCESS)

AERIAL EASEMENT AMTRAK

FUTURE DRIVE (BY OTHERS)

TEMPORARY CONSTRUCTION EASEMENT (FOR DRIVE CONSTRUCTION)

BROTHERS OF THE ORDER OF HERMIT OF ST. AUGUSTINE

Tennis Courts (To Be Abandoned)

LIMIT OF NEW PAVING

STA. 784 + 21.00 ℄ S.R. 0320

STA. 640 + 79.15 ℄ RAILROAD

LEGAL LIMIT OF SLOPE LINE

LEGAL R/W LINE

AERIAL EASEMENT

CONSTRUCT ENDWALL

STA. 785+59.47 S.R. 0320
STA. 24 + 93.99 'C' DRIVE
STA. 14 + 93.00 'D' DRIVE

B. M. #1 Elev. 85.78
42.5' ± RT. Sta. 784+69 ±
Box Cut On Concrete Curb

Westbound Tracks

Center Near Rail

Corner Bridge Abutment

Waiting Shed Pad

Elev 85.78

Rte 320

PLAN

SCALE IN FEET 25 0 25 50

AREA OF PLATFORM REMOVAL

FOR LOCATION OF TEMPORARY PLATFORM EXTENSION SEE SHEET NO. 6

FOR PROFILE SEE SHEET NO. 18

FOR NEW UTILITY LINES, SEE UTILITY RELOCATION PLANS AND STRUCTURE PLANS

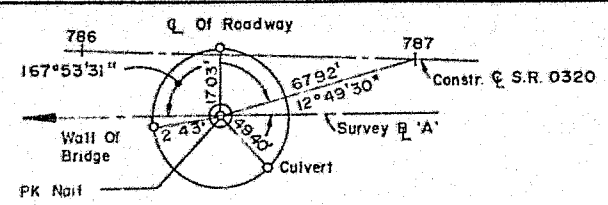
* DEPRESSED CURB SHALL MATCH THE CURB CONFIGURATION FOR THE CURB CUT RAMP ON THE OPPOSING SIDE OF THE DRIVE.

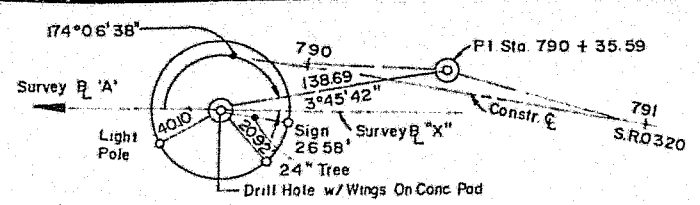
SURVEY BK NO. 45896

MATCH TO SHEET NO 17

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	17 of 20
	RADNOR TOWNSHIP			

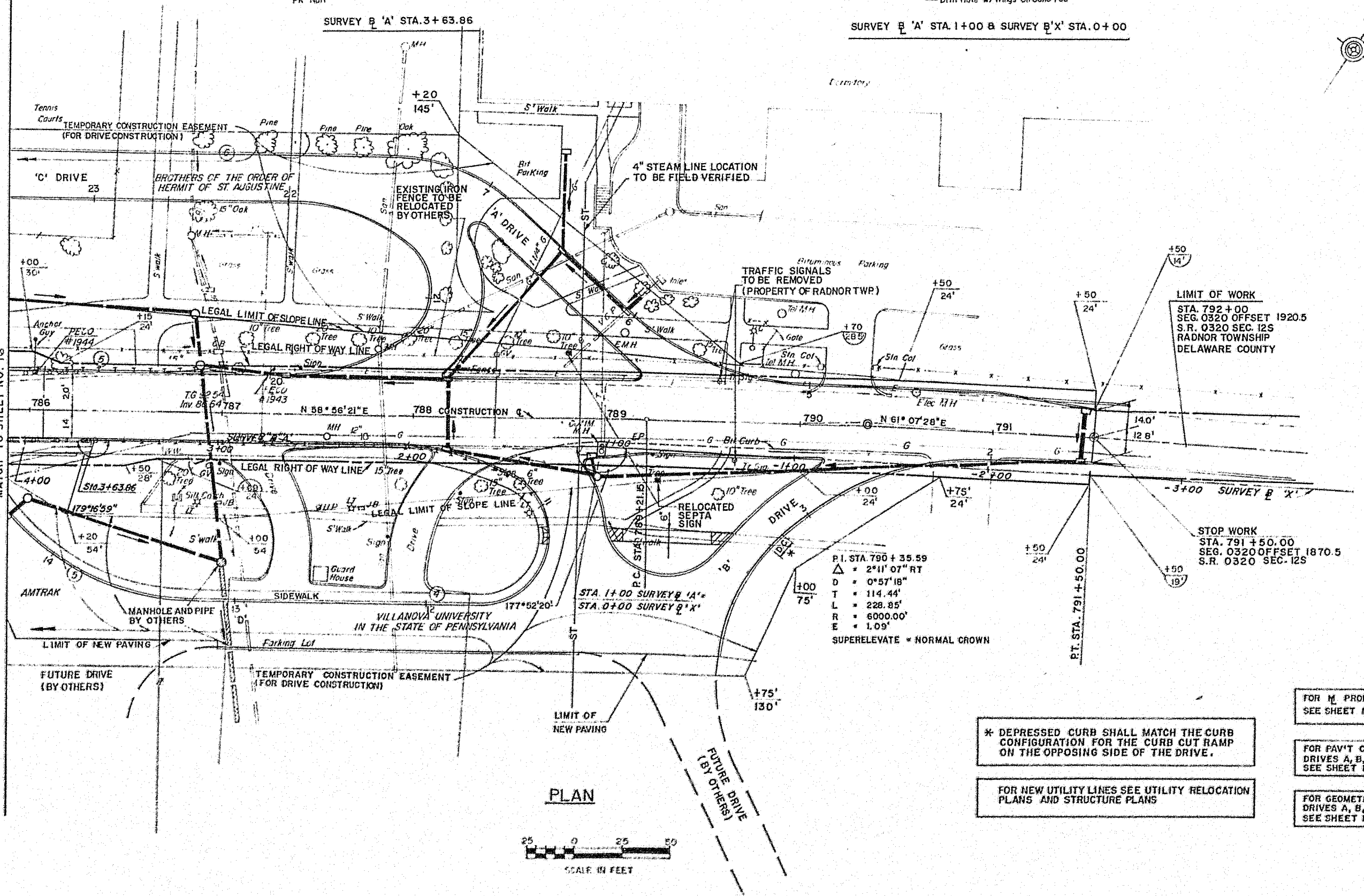
REVISION NUMBER	REVISIONS	DATE	BY





SURVEY ℄ 'A' STA. 1+00 & SURVEY ℄ 'X' STA. 0+00

SURVEY ℄ 'A' STA. 3+63.86



PLAN

SCALE IN FEET

* DEPRESSED CURB SHALL MATCH THE CURB CONFIGURATION FOR THE CURB CUT RAMP ON THE OPPOSING SIDE OF THE DRIVE.

FOR NEW UTILITY LINES SEE UTILITY RELOCATION PLANS AND STRUCTURE PLANS

FOR ℄ PROFILE SEE SHEET NO. 18

FOR PAV'T CONTROL OF DRIVES A, B, C & D SEE SHEET NO. 20

FOR GEOMETRY OF DRIVES A, B, C & D SEE SHEET NO. 19

SURVEY BK. NO. 45896

℄ Hilldale Rd.

LIMIT OF WORK
STA. 778+70
SEG. 0320 OFFSET 590.5
S.R. 0320 SEC. 12S R/W
RADNOR TOWNSHIP
DELAWARE COUNTY

MATCH EXIST. PAV'T.
STA. 778+90

P.V.C.

P.V.I. STA. 781+00
ELEV. 101.12
V.C. 400'
M.O. +3.99'
H.L.S.D. 217'

P.V.I. STA. 784+00
ELEV. 100.78
V.C. 400'
S.S.D. 206'

L.P.

P.V.R.C.

H.P.

+5.10%

-5.41%

-3.77%

+5.10%

Drive, Rt.

Drive, Lt.

Drive, Lt.

Drive, Rt.

INLET LT
INV. 101.12
INLET RT
INV. 100.78

Existing Abutments

EDGE of BRIDGE

22'-6" MIN. VERT. CLEAR. @

PIERS

ABUTMENT

Existing 6" Water Line

Existing 12" S Gas Line Rt

INLET RT.
INV. 98.80

INLET LT.
INV. 99.14

MANHOLE RT.
INV. 93.72

Railroad, Lt.

Railroad, Rt.

108.49
106.92 G-106.92
105.53 G-106.53
G-106.16
104.70 G-104.85
103.13 G-103.76
102.09 G-103.30
G-103.36
101.17 G-103.44
100.23 G-104.21
100.27 G-105.59
100.96 G-107.58
G-108.55
104.54 G-109.93
109.22 G-111.58
111.50
G-112.40
G-112.51
111.50 G-112.41
107.57 G-111.59
103.53 G-109.96

DATUM 80

+50 | +90 779 | +10 | +50 | 780 | +50 | +63.01 | +90 781 | +50 | 782 | +50 | +70 783 | +50 | +74 784 | +21 | +25.28 +30 | +50 | 785 | +50

MATCH EXIST. PAV'T.
STA. 791+50

LIMIT OF WORK
STA. 792+00
SEG. 0320 OFFSET 1920.5
S.R. 0320 SEC 12S R/W
RADNOR TOWNSHIP
DELAWARE COUNTY

REPLACEMENT
OF EXISTING PAVEMENT

P.V.I. STA. 788+20
ELEV. 95.61
V.C. 460'
M.O. +6.56'
H.L.S.D. 216'

P.V.T.

18" STORM SEWER

INLET LT.
INV. 111.50

INLET RT.
INV. 110.40

PROPOSED ABUTMENT

MANHOLE LT.
INV. 82.21

24" STORM SEWER

-5.41%

+6.00%

L.P.

24" STORM SEWER

18" STORM SEWER

Drive, Rt

Drive, Rt

Drive, Rt

INLET RT
INV. 99.06

MANHOLE RT.
INV. 97.35

INLET RT
INV. 95.19

INLET LT
INV. 94.52

Existing 12" S Gas Line Rt.

Existing Elec. Duct Lt

Railroad, Rt.

MANHOLE RT.
INV. 81.19
(BY OTHERS)

36" STORM SEWER

103.53 G-109.96
99.50 G-108.06
G-107.53
97.16 G-105.25
92.80 G-103.60
93.87 G-102.57
95.64 G-102.16
G-102.17
97.54 G-102.37
100.13 G-103.20
103.11 G-104.65
106.17 G-106.72
109.40 G-109.41
G-110.91
112.45 G-112.40
G-113.79
115.03 G-116.03
117.10

DATUM 80

+50 | +90 786 | +50 | 787 | +50 | 788 | +08.11 | +20 | +50 | P.C.STA. 789+21.15 | 789 | +50 | 790 | +50 | +75 | 791 | +25 | +50 | P.T. STA. 791+50.00 | 792

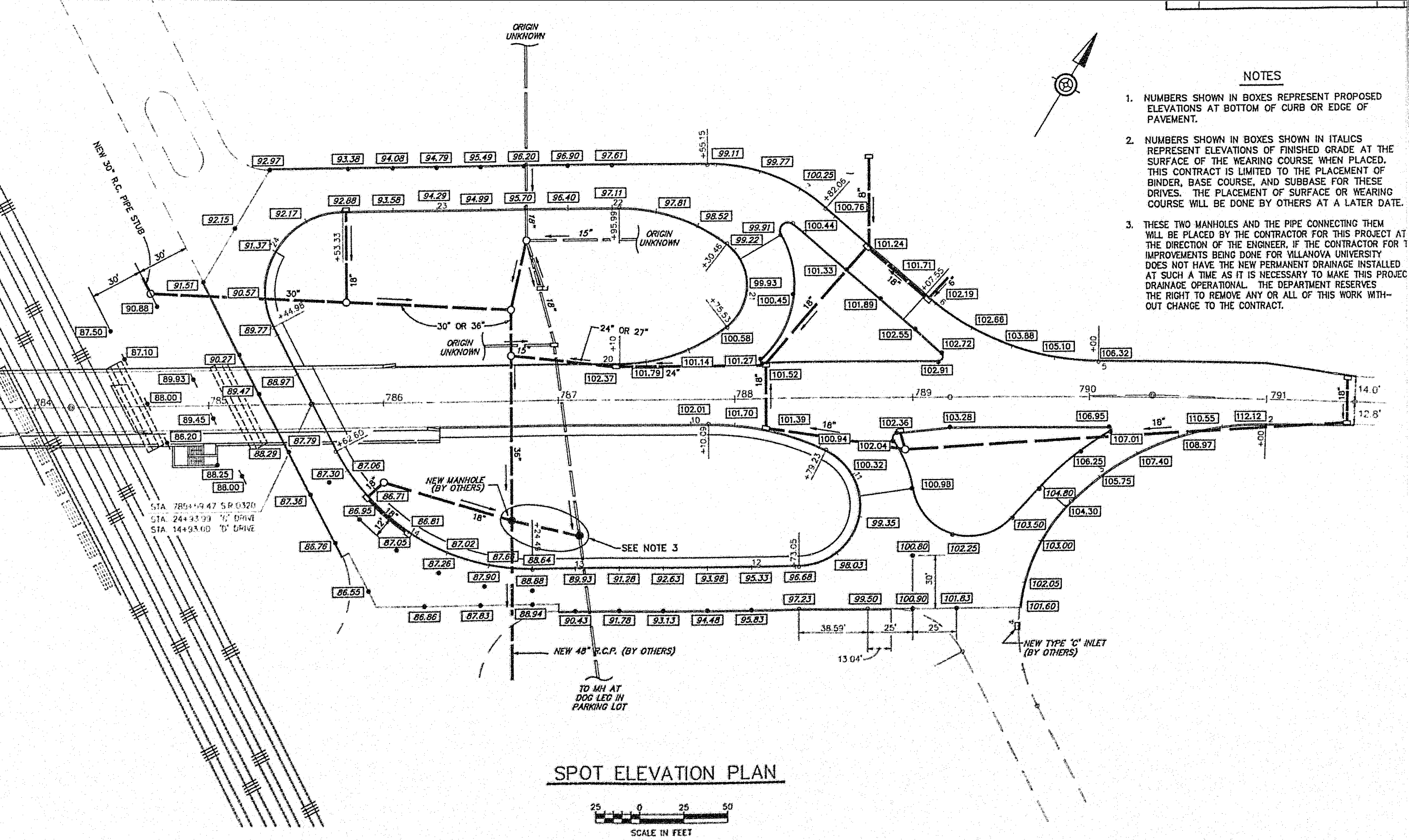
NOTES

1. THOSE ITEMS SHOWN AS DASHED REPRESENT FUTURE DEVELOPMENT BY OTHERS AND ARE NOT PART OF THIS CONTRACT.

GEOMETRIC TIE PLAN

25 0 25 50

SCALE IN FEET



NOTES

1. NUMBERS SHOWN IN BOXES REPRESENT PROPOSED ELEVATIONS AT BOTTOM OF CURB OR EDGE OF PAVEMENT.
2. NUMBERS SHOWN IN BOXES SHOWN IN ITALICS REPRESENT ELEVATIONS OF FINISHED GRADE AT THE SURFACE OF THE WEARING COURSE WHEN PLACED. THIS CONTRACT IS LIMITED TO THE PLACEMENT OF BINDER, BASE COURSE, AND SUBBASE FOR THESE DRIVES. THE PLACEMENT OF SURFACE OR WEARING COURSE WILL BE DONE BY OTHERS AT A LATER DATE.
3. THESE TWO MANHOLES AND THE PIPE CONNECTING THEM WILL BE PLACED BY THE CONTRACTOR FOR THIS PROJECT AT THE DIRECTION OF THE ENGINEER. IF THE CONTRACTOR FOR T IMPROVEMENTS BEING DONE FOR VILLANOVA UNIVERSITY DOES NOT HAVE THE NEW PERMANENT DRAINAGE INSTALLED AT SUCH A TIME AS IT IS NECESSARY TO MAKE THIS PROJEC DRAINAGE OPERATIONAL. THE DEPARTMENT RESERVES THE RIGHT TO REMOVE ANY OR ALL OF THIS WORK WITH-OUT CHANGE TO THE CONTRACT.

SPOT ELEVATION PLAN

25 0 25 50

SCALE IN FEET

NUMBER			

TRAFFIC CONTROL PLAN

SIGN LEGEND

FOR INFORMATION ONLY

(W) BRIDGE OUT 1/8 MILE AHEAD LOCAL TRAFFIC ONLY — R11-3 (60"x30"), R11-3-1 (48"x12"), TYPE III BARRICADE

(Y) 320 — BRIDGE OUT 3 MILES AHEAD LOCAL TRAFFIC ONLY — M1-6 (30"x24"), R11-3 (60"x30"), R11-3-1 (48"x12"), TYPE III BARRICADE

(A) ROAD CLOSED — R11-2 (48"x30"), TYPE III BARRICADE

(B) BRIDGE OUT 1/4 MILE AHEAD LOCAL TRAFFIC ONLY — DETOUR — R11-3 (60"x30"), R11-3-1 (48"x12"), G20-6R (48"x18"), TYPE III BARRICADE

(C) BRIDGE OUT 1/4 MILE AHEAD LOCAL TRAFFIC ONLY — DETOUR — R11-3 (60"x30"), R11-3-1 (48"x12"), G20-6L (48"x18"), TYPE III BARRICADE

(D) DETOUR NORTH 320 → — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M6-1 (21"x15")

(E) DETOUR NORTH 320 ← — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M6-1 (21"x15")

(F) DETOUR NORTH 320 ↖ — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M6-2R (21"x15")

(G) DETOUR NORTH 320 ↑ — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M6-3 (21"x15")

(H) END DETOUR NORTH 320 — G20-7 (24"x18"), M3-1 (24"x12"), M1-6 (30"x24")

(J) DETOUR SOUTH 320 → — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M6-1 (21"x15")

(K) DETOUR SOUTH 320 ← — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M6-1 (21"x15")

(L) DETOUR SOUTH 320 ↗ — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M6-2R (21"x15")

(N) DETOUR SOUTH 320 ↑ — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M6-3 (21"x15")

(O) END DETOUR SOUTH 320 — G20-7 (24"x18"), M3-3 (24"x12"), M1-6 (30"x24")

(Q) ROAD CLOSED 1500 FT. — W20-3 (36"x36"), W30-1-3

(R) ROAD CLOSED 1000 FT. — W20-3 (36"x36"), W30-1-2

(S) ROAD CLOSED 500 FT. — W20-3 (36"x36"), W30-1-1

(T) DETOUR AHEAD — W20-2 (36"x36"), W30-1-6

(V) SOUTH 320 + DETOUR AHEAD — M3-3 (24"x12"), M1-6 (30"x24"), W20-2 (36"x36"), W30-1-6

(V-1) DETOUR AHEAD — W20-2 (48"x48"), W30-1-6

(V-2) NORTH 320 + DETOUR AHEAD — M3-1 (24"x12"), M1-6 (30"x24"), W20-2 (36"x36"), W30-1-6

(D-1) DETOUR NORTH 320 ↱ — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M5-1R (21"x15")

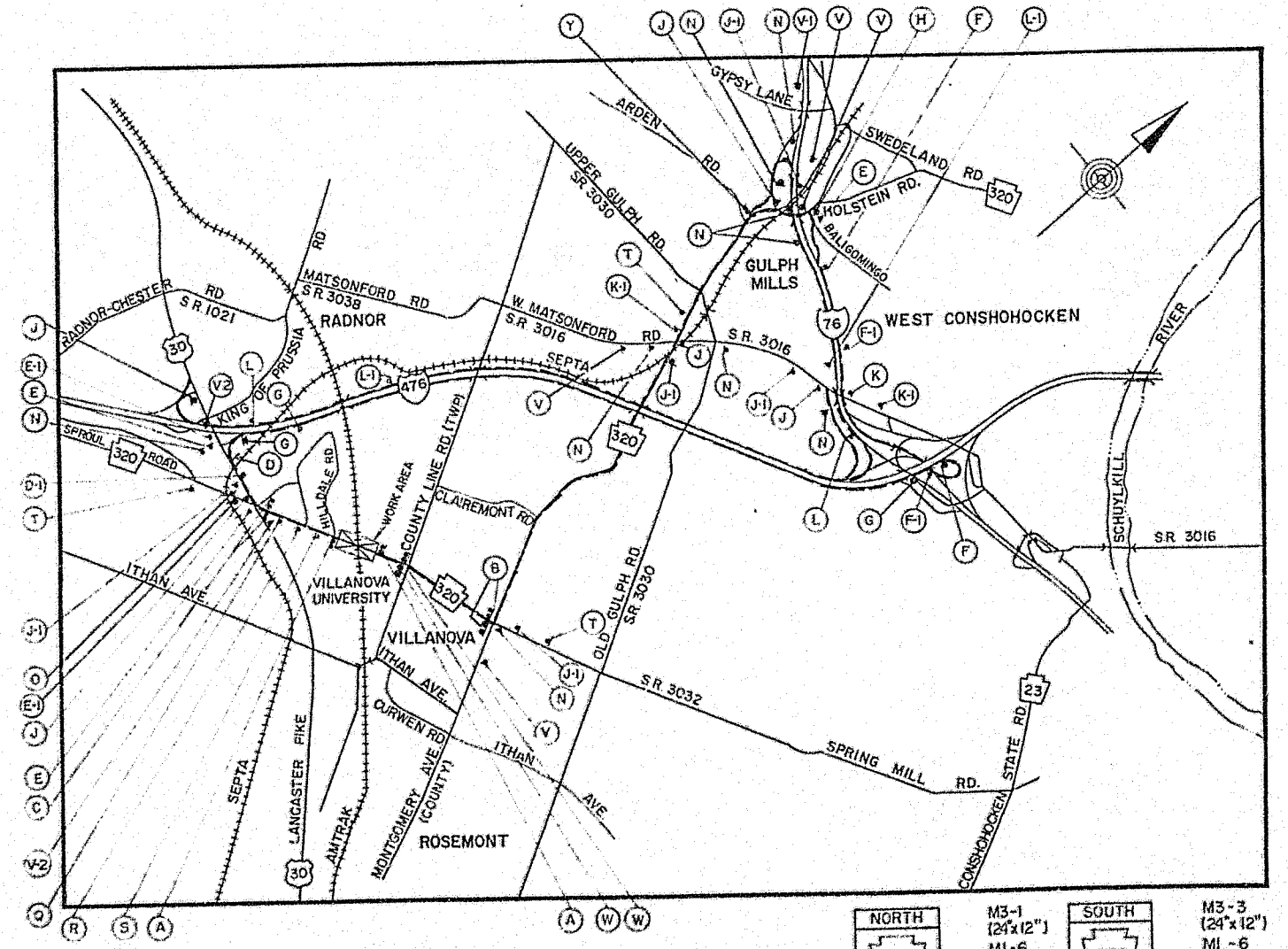
(E-1) DETOUR NORTH 320 ↰ — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M5-1L (21"x15")

(F-1) DETOUR NORTH 320 ↱ — M4-8 (24"x12"), M3-1 (24"x12"), M1-6 (30"x24"), M5-2R (21"x15")

(J-1) DETOUR SOUTH 320 ↱ — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M5-1R (21"x15")

(K-1) DETOUR SOUTH 320 ↰ — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M5-1L (21"x15")

(L-1) DETOUR SOUTH 320 ↱ — M4-8 (24"x12"), M3-3 (24"x12"), M1-6 (30"x24"), M5-2R (21"x15")



RECOMMENDED

DISTRICT TRAFFIC ENGINEER

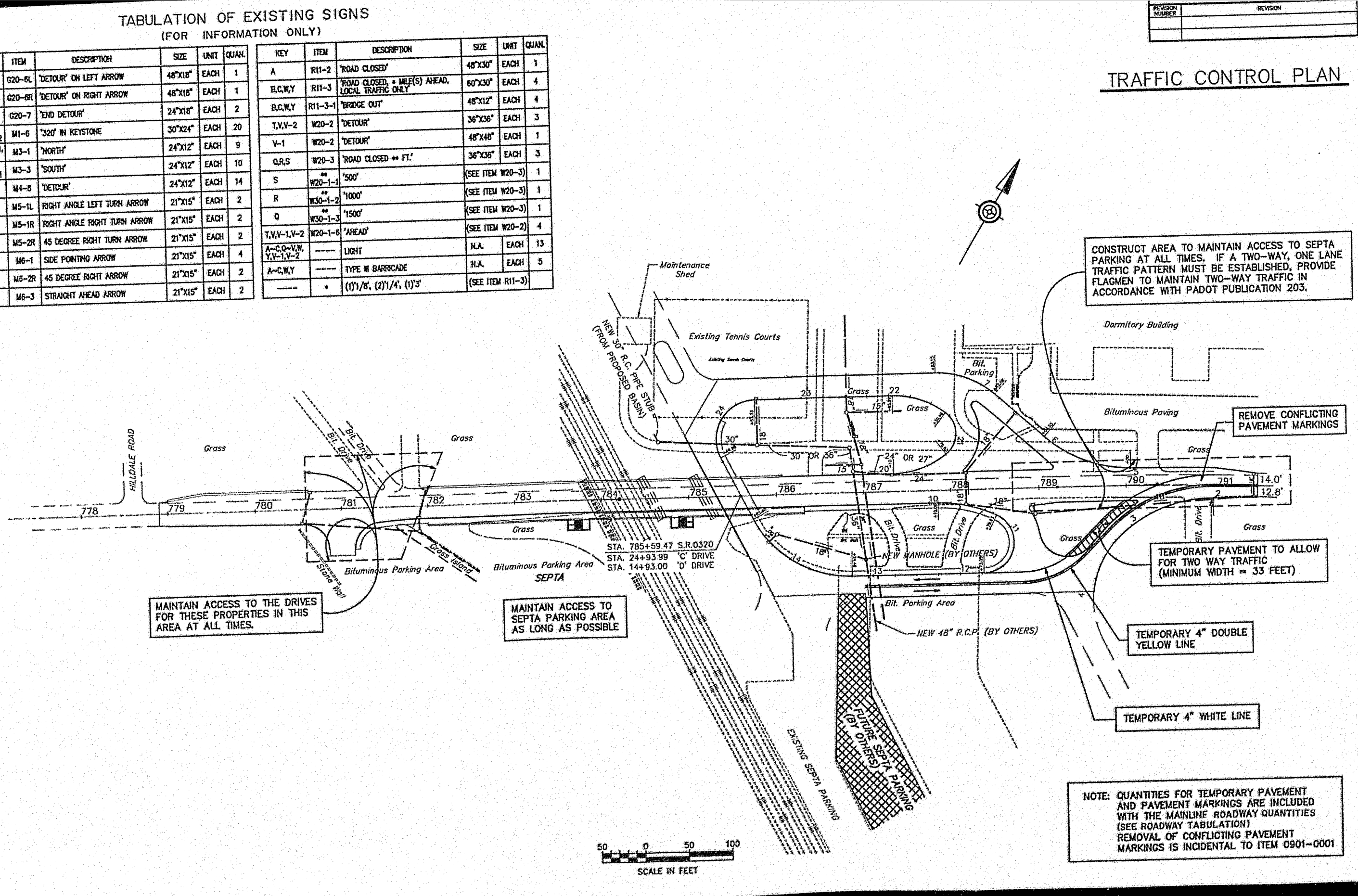
REVISION NUMBER	REVISION	DATE	BY

TRAFFIC CONTROL PLAN

TABULATION OF EXISTING SIGNS
(FOR INFORMATION ONLY)

KEY	ITEM	DESCRIPTION	SIZE	UNIT	QUAN.
C	G20-6L	'DETOUR' ON LEFT ARROW	48"X18"	EACH	1
B	G20-6R	'DETOUR' ON RIGHT ARROW	48"X18"	EACH	1
H,O	G20-7	'END DETOUR'	24"X18"	EACH	2
~O,V,Y, -1 TO V-2	M1-6	'320' IN KEYSTONE	30"X24"	EACH	20
~H,D-1,E-1, -1,V-2	M3-1	'NORTH'	24"X12"	EACH	9
~O,V,J-1, -1,L-1,V-1	M3-3	'SOUTH'	24"X12"	EACH	10
~G,,J~N, -1~L-1	M4-8	'DETOUR'	24"X12"	EACH	14
E-1,K-1	M5-1L	RIGHT ANGLE LEFT TURN ARROW	21"X15"	EACH	2
D-1,J-1	M5-1R	RIGHT ANGLE RIGHT TURN ARROW	21"X15"	EACH	2
F-1,L-1	M5-2R	45 DEGREE RIGHT TURN ARROW	21"X15"	EACH	2
D,E,J,K	M6-1	SIDE POINTING ARROW	21"X15"	EACH	4
F,L	M6-2R	45 DEGREE RIGHT ARROW	21"X15"	EACH	2
G,N	M6-3	STRAIGHT AHEAD ARROW	21"X15"	EACH	2

KEY	ITEM	DESCRIPTION	SIZE	UNIT	QUAN.
A	R11-2	'ROAD CLOSED'	48"X30"	EACH	1
B,C,W,Y	R11-3	'ROAD CLOSED, * MILE(S) AHEAD, LOCAL TRAFFIC ONLY'	60"X30"	EACH	4
B,C,W,Y	R11-3-1	'BRIDGE OUT'	48"X12"	EACH	4
T,V,V-2	W20-2	'DETOUR'	36"X36"	EACH	3
V-1	W20-2	'DETOUR'	48"X48"	EACH	1
Q,R,S	W20-3	'ROAD CLOSED ** FT.'	36"X36"	EACH	3
S	** W20-1-1	'500'	(SEE ITEM W20-3)		1
R	** W30-1-2	'1000'	(SEE ITEM W20-3)		1
Q	** W30-1-3	'1500'	(SEE ITEM W20-3)		1
T,V,V-1,V-2	W20-1-6	'AHEAD'	(SEE ITEM W20-2)		4
A~C,Q~V,W, Y,V-1,V-2	-----	LIGHT	N.A.	EACH	13
A~C,W,Y	-----	TYPE III BARRICADE	N.A.	EACH	5
-----	*	(1)'1/8', (2)'1/4', (1)'3'	(SEE ITEM R11-3)		



CONSTRUCT AREA TO MAINTAIN ACCESS TO SEPTA PARKING AT ALL TIMES. IF A TWO-WAY, ONE LANE TRAFFIC PATTERN MUST BE ESTABLISHED, PROVIDE FLAGMEN TO MAINTAIN TWO-WAY TRAFFIC IN ACCORDANCE WITH PADOT PUBLICATION 203.

REMOVE CONFLICTING PAVEMENT MARKINGS

TEMPORARY PAVEMENT TO ALLOW FOR TWO WAY TRAFFIC (MINIMUM WIDTH = 33 FEET)

TEMPORARY 4" DOUBLE YELLOW LINE

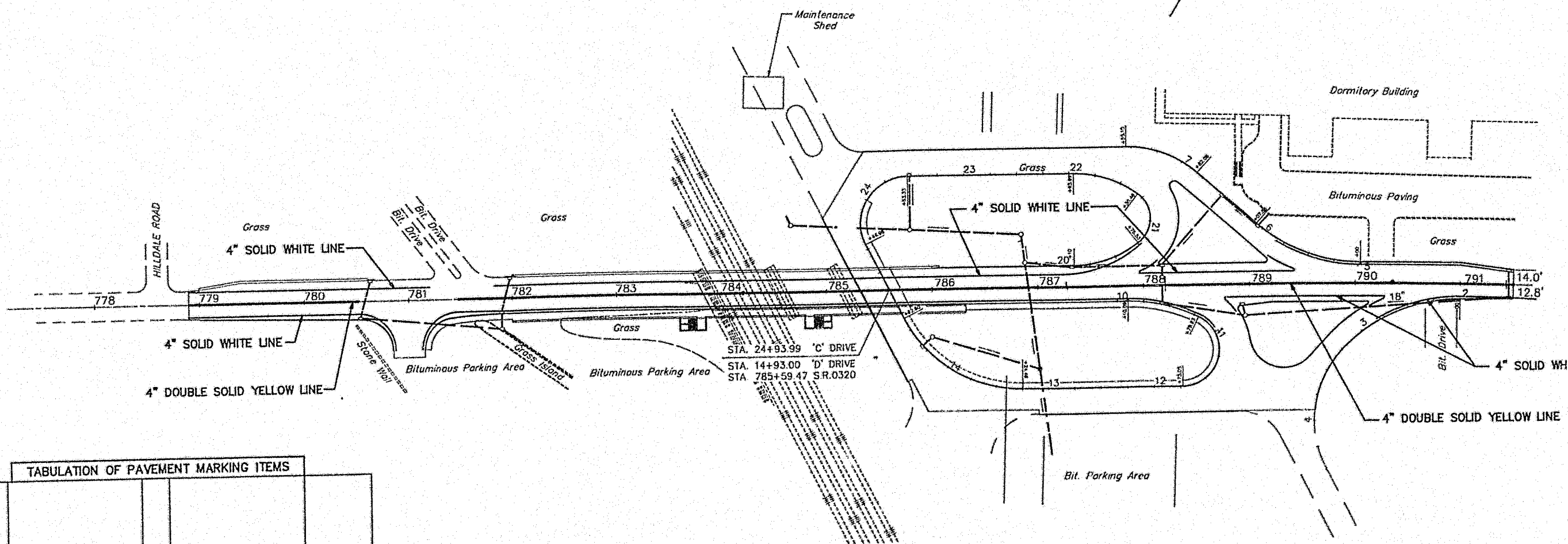
TEMPORARY 4" WHITE LINE

MAINTAIN ACCESS TO THE DRIVES FOR THESE PROPERTIES IN THIS AREA AT ALL TIMES.

MAINTAIN ACCESS TO SEPTA PARKING AREA AS LONG AS POSSIBLE

NOTE: QUANTITIES FOR TEMPORARY PAVEMENT AND PAVEMENT MARKINGS ARE INCLUDED WITH THE MAINLINE ROADWAY QUANTITIES (SEE ROADWAY TABULATION)
REMOVAL OF CONFLICTING PAVEMENT MARKINGS IS INCIDENTAL TO ITEM 0901-0001

PAVEMENT MARKING PLAN



TABULATION OF PAVEMENT MARKING ITEMS

0962 0640 4" YELLOW TRAFFIC ZONE PAINT, TYPE II L.F.	0962 0620 4" WHITE TRAFFIC ZONE PAINT, TYPE II L.F.	ITEM NUMBER UNIT REMARKS	SIDE	STATIONS	ROUTE
	845	LANE EDGE	LT.	778+90 TO 787+35	S.R. 0320
	99	LANE EDGE	LT.	788+16 TO 789+15	S.R. 0320
	100	LANE EDGE	LT.	790+50 TO 791+50	S.R. 0320
	165	LANE EDGE	RT.	778+90 TO 780+56	S.R. 0320
	643	LANE EDGE	RT.	781+42 TO 787+85	S.R. 0320
	114	LANE EDGE	RT.	788+91 TO 790+05	S.R. 0320
	50	LANE EDGE	RT.	791+00 TO 791+50	S.R. 0320
2520		CENTER LINE	℄	778+90 TO 791+50	S.R. 0320
2520	2017	TOTALS			

PLAN

50 0 50 100

SCALE IN FEET

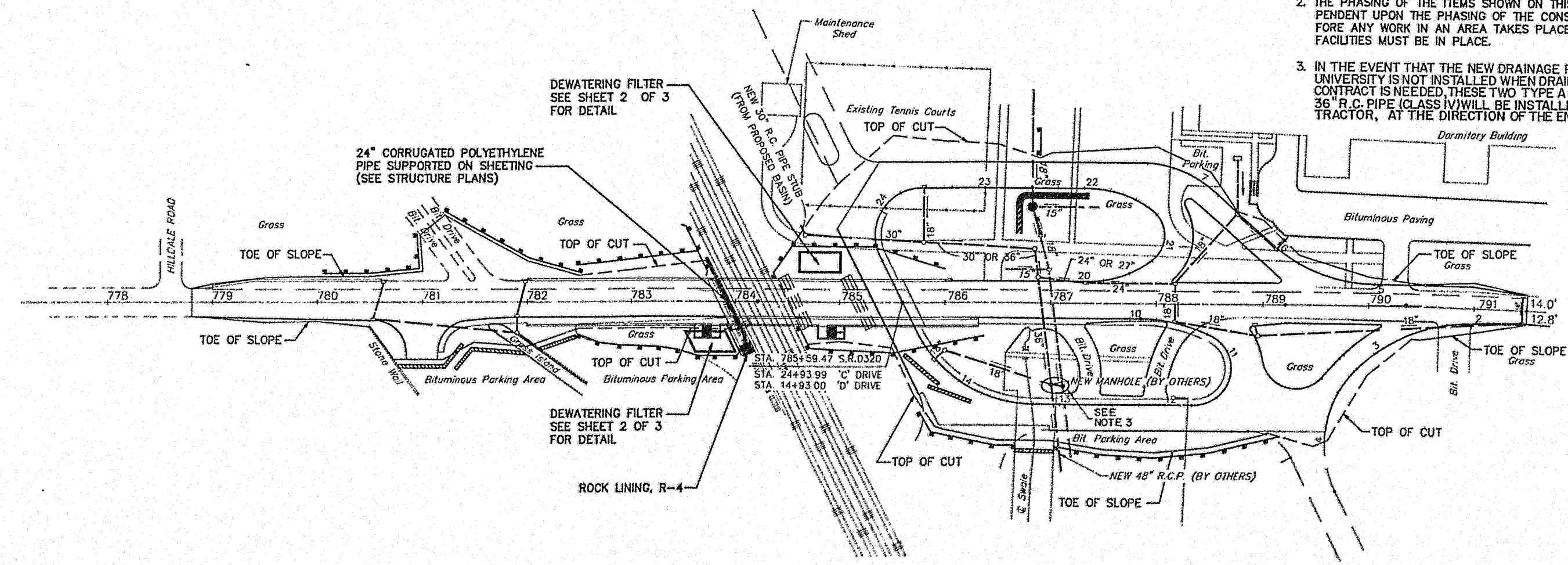
6-0	DELAWARE	0320	12S	1 of 3
RADNOR TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

NOTES

1. ALL ITEMS FOR EROSION AND SEDIMENT POLLUTION CONTROL ARE TO BE MAINTAINED BY THE CONTRACTOR UNTIL THEIR REMOVAL. THE MAINTENANCE AND REMOVAL OF ALL EROSION AND SEDIMENT POLLUTION CONTOL ITEMS IS INCLUDED IN THE CONTRACT UNIT PRICE FOR SAID ITEMS.
2. THE PHASING OF THE ITEMS SHOWN ON THIS PLAN ARE DEPENDENT UPON THE PHASING OF THE CONSTRUCTION. BEFORE ANY WORK IN AN AREA TAKES PLACE, THE CONTROL FACILITIES MUST BE IN PLACE.
3. IN THE EVENT THAT THE NEW DRAINAGE PLANNED BY THE UNIVERSITY IS NOT INSTALLED WHEN DRAINAGE FOR THIS CONTRACT IS NEEDED, THESE TWO TYPE A MANHOLES AND 36" R.C. PIPE (CLASS IV) WILL BE INSTALLED BY THIS CONTRACTOR, AT THE DIRECTION OF THE ENGINEER.



PLAN

50 0 50 100

SCALE IN FEET

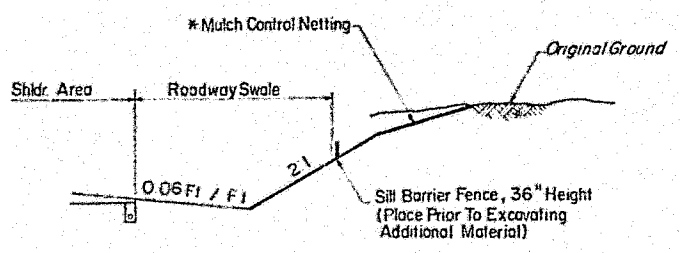
LEGEND

SYMBOL	DESCRIPTION
	ROCK LINING AT PIPE OUTLET, (10'x10')
	AASHTO NO. 67 STONE BERM
	36" WIRE MESH REINFORCED SILT FENCE WITH 6' PERPENDICULAR INTERRUPTS @ 25'
	RISER PIPE ASSEMBLY, MODIFIED
	EARTH RETENTION BERM

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	2 of 3
RADNOR TOWNSHIP				

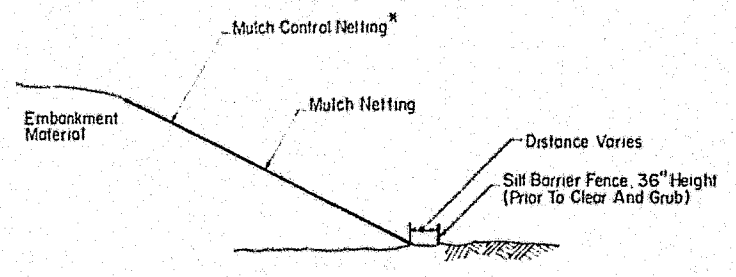
REVISION NUMBER	REVISION	DATE	BY

EROSION AND SEDIMENT POLLUTION CONTROL PLAN



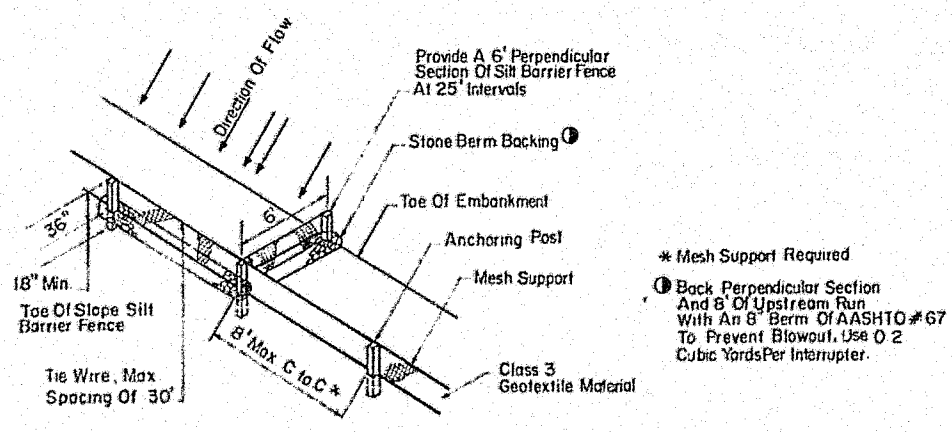
*As Indicated On Tab Sheet

CUT SLOPE STABILIZATION

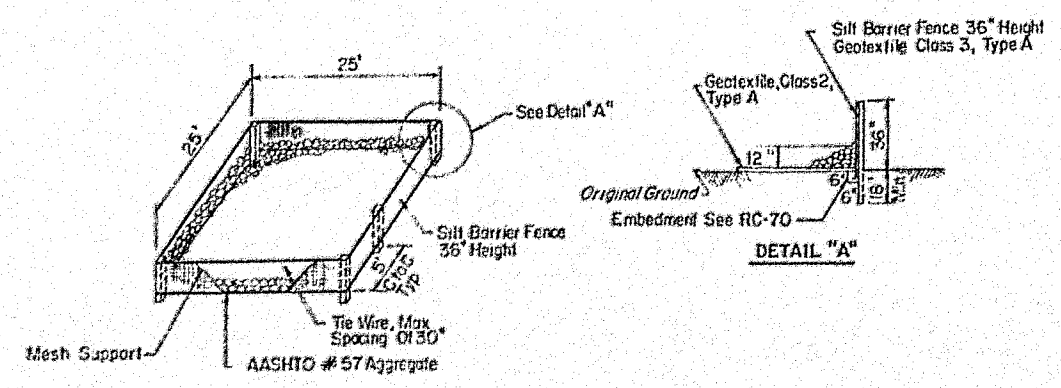


*As Indicated On Tab

FILL SLOPE STABILIZATION



SILT BARRIER FENCE



DEWATERING FILTER
ITEM NO 9000-0014

GENERAL NOTES

CONSTRUCT SOIL EROSION AND SEDIMENT CONTROL FACILITIES IN ACCORDANCE WITH THE METHODS INCICATED ON THESE DRAWINGS AND THE FOLLOWING:

1. THE SPECIAL PROVISIONS OF THIS CONTRACT
2. PADOT PUBLICATION 408, ENTITLED SPECIFICATIONS
3. PADOT PUBLICATION 35, APPROVED CONSTRUCION MATERIALS
4. DELAWARE COUNTY CONSERVATION DISTRICT STANDARDS

ALL APPLICABLE EROSION AND SEDIMENTATION CONTROL PRACTICES MUST REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED. SECURE THE APPROVAL OF THE DELAWARE COUNTY SOIL CONSERVATION DISTRICT ENFORCEMENT OFFICER AT FAIR ACRES, LIMA, PA. BEFORE REMOVING ANY CONTROL DEVICES.

PRIOR TO THE START OF ANY EARTHMOVING ACTIVITY, ANY TREES TO BE PROTECTED MUST BE CLEARLY MARKED BY THE ENGINEER. THE CONTRACTOR MUST INSTALL SNOW FENCING COMPLETELY AROUND THE TREES AT THE DRIP LINE AND MUST BE EXTREMELY DILIGENT IN THE PROTECTION OF THESE TREES.

PLACE ALL EROSION AND SEDIMENTATION CONTROL FACILITIES PRIOR TO ANY GRADING OPERATION IN THE CONCERNED AREA AND/OR THE INSTALLATION OF PROPOSED STRUCTURES.

THE CUT FACE OF THE EARTH EXCAVATIONS AND EMBANKMENTS MUST BE NO STEEPER THAN THE SAFE ANGLE OF REPOSE FOR THE MATERIALS ENCOUNTERED. PERMANENTLY SEED ANY EXPOSED FACE WHICH WILL NOT BE DISTURBED AGAIN IN THIS CONSTRUCTION.

ALL DISTURBED AREAS MUST BE LEFT WITH A NEAT AND FINISHED APPEARANCE AND MUST BE PROTECTED FROM EROSION.

TRACKING OR FLOWING OF MUD ONTO PUBLIC RIGHT-OF-WAY BY CONSTRUCTION EQUIPMENT MUST BE PREVENTED BY SURFACING ALL EXIT RAMPS WITH LARGE SIZE CRUSHED STONE (AASHTO NO. 1).

THE CONTRACTOR MUST UTILIZE ALL METHODS NECESSARY TO PREVENT THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES.

* IF THE LAND AREA EXPOSURE IS ANTICIPATED TO EXCEED 20 DAYS, THE AREA MUST BE TEMPORARILY FERTILIZED AND SEEDED WITH ANNUAL RYE GRASS AT THE RATE OF 1 POUND PER 1,000 SQUARE FEET. ANCHOR MULCH WITH A LIQUID MULCH BINDER AT RATES RECOMMENDED BY THE MANUFACTURER.

* PERMANENTLY SEED ALL EXPOSED SLOPES WITH THE FORMULA INDICATED IN THE TABULATION SHEETS FOR CONSTRUCTION AS SOON AS FINAL GRADE IS ACHIEVED AND THE SLOPES ARE DRESSED.

DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL MEASURES SHOWN IN THESE PLANS IN THE DESIGN CONDITION. IF FOR ANY REASON A CONTROL MEASURE BECOMES CLOGGED OR OTHERWISE INOPERABLE, THE CONTRACTOR MUST REPAIR OR REPLACE THE AFFECTED MEASURE WITHIN 24 HOURS.

THE CONTRACTOR MUST MAINTAIN EROSION AND SEDIMENTATION CONTROL FACILITIES IN THE APPROVED DESIGN CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD OR UNTIL THE APPROVED DESIGN AREA IS STABILIZED. UPON PERMANENT STABILIZATION OF ALL AREAS, NO MAINTAINANCE EXCEPT FOR PERIODIC MOWING IS ANTICIPATED. UPON ACCEPTANCE BY THE OWNER, THE MAINTAINANCE OF THE FACILITIES AND MEASURES IS THE RESPONSIBILITY OF THE OWNER.

INSPECT SILT BARRIER FENCES IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS MUST BE MADE IMMEDIATELY.

SHOULD THE FABRIC ON THE SILT BARRIER FENCE DECOMPOSE OR BECOME INEFFECTIVE DUE TO CLOGGING PRIOR TO THE END OF ITS NEED, REPLACE THE FABRIC PROMPTLY. THIS EFFORT SHALL BE CONSIDERED ROUTINE MAINTAINANCE.

INSPECT ALL FACILITIES AT THE END OF EACH STORM EVENT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THEY ACCUMULATE TO ONE-THIRD THE HEIGHT OF THE BARRIER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER FENCE IS NO LONGER NEEDED MUST BE REMOVED OR DRESSED TO CONFORM TO THE SURROUNDING GRADE, FERTILIZED AND SEEDED.

ANY SILT, SEDIMENT AND MUD LEAVING THE SITE MUST WILL BE CONSTRUED AS DAMAGE TO NEIGHBORING PROPERTY AND IT WILL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN UP THE SEDIMENT AND RESTORE THE PROPERTY TO ITS ORIGINAL CONDITION, TO THE SATISFACTION OF THE NEIGHBORING PROPERTY OWNER, UPON OBTAINING THE APPROVAL OF THE PROPERTY OWNER TO ENTER UPON SAID PROPERTY.

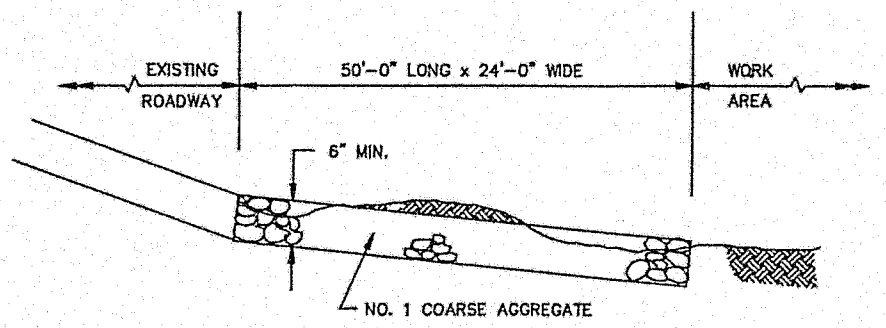
ANY ADDITIONAL MEASURES THAT THE CONTRACTOR IS DIRECTED TO PLACE WILL BE PAID FOR UNDER THE ITEM 0845-0002 'UNFORESEEN WATER POLLUTION CONTROL', UNLESS THE NEED SUCH MEASURES IS A DIRECT RESULT OF AN ARBITRARY CHANGE IN PHASING OR STAGING ELECTED BY THE CONTRACTOR. IN SUCH A CASE, THE CONTRACTOR WILL PLACE THE MEASURES AS DIRECTED AT HIS OWN EXPENSE.

6–0	DELAWARE	0320	12S	3 of 3
	RADNOR TOWNSHIP			

REVISION NUMBER	REVISION	DATE	BY

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

DETAILS

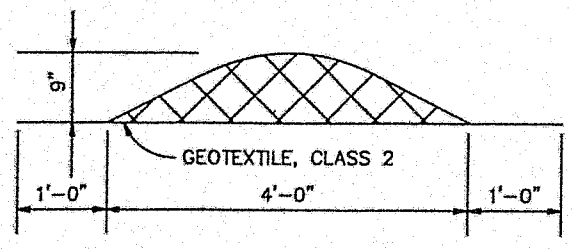


PROFILE

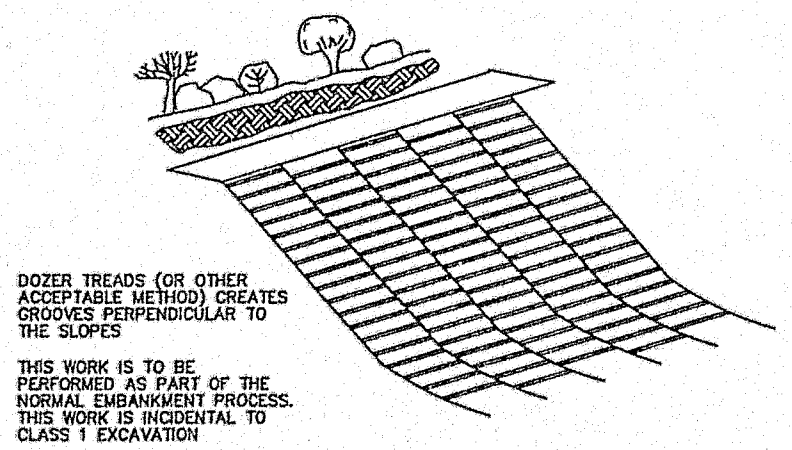
NOTES:
EXCAVATION FOR THIS ITEM IS INCLUDED IN THE ITEM.

ROCK CONSTRUCTION ENTRANCE

ITEM NO. 9000–0018



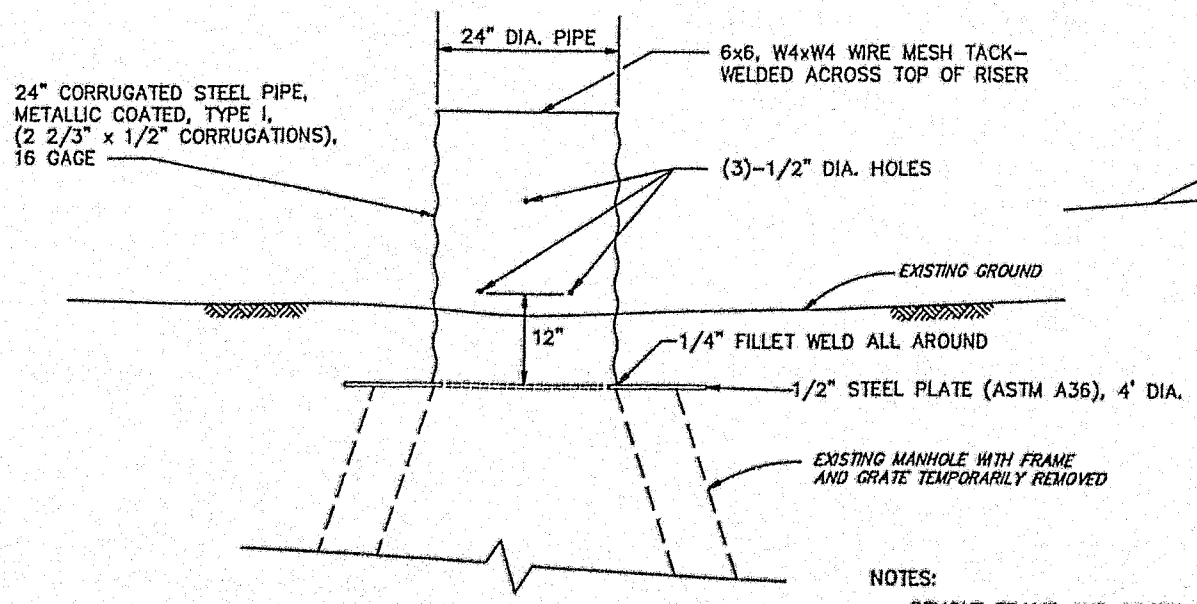
STONE BERM ON PAVEMENT



DOZER TREADS (OR OTHER ACCEPTABLE METHOD) CREATES GROOVES PERPENDICULAR TO THE SLOPES

THIS WORK IS TO BE PERFORMED AS PART OF THE NORMAL EMBANKMENT PROCESS. THIS WORK IS INCIDENTAL TO CLASS 1 EXCAVATION

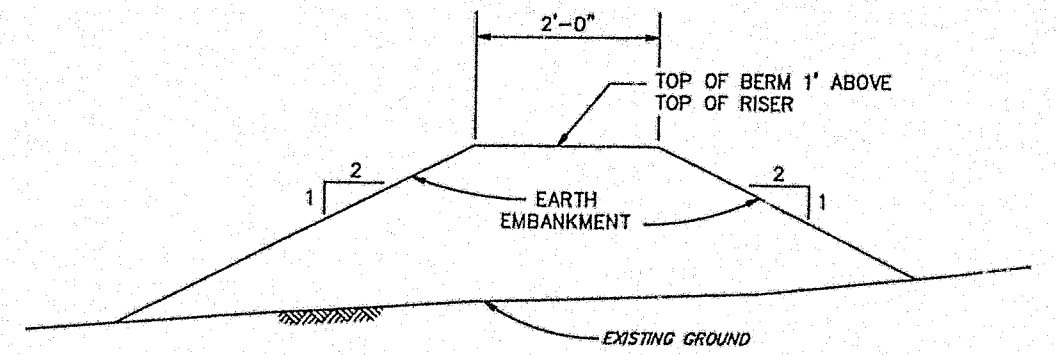
SLOPE TRACKING



NOTES:
REMOVE FRAME AND GRATE AND REPLACE WITH RISER PIPE ASSEMBLY. CAREFULLY HAND–TAMP DIRT AROUND RISER TO A CONTOUR MATCHING THE EXISTING GRADE.

RISER PIPE ASSEMBLY, MODIFIED

ITEM NO. 9000–0019



TEMPORARY EARTH BERM

INCIDENTAL TO ITEM NO. 9000–0019

RISER AND BERM DETAILS
(FOR SPECIAL SEDIMENT POND)

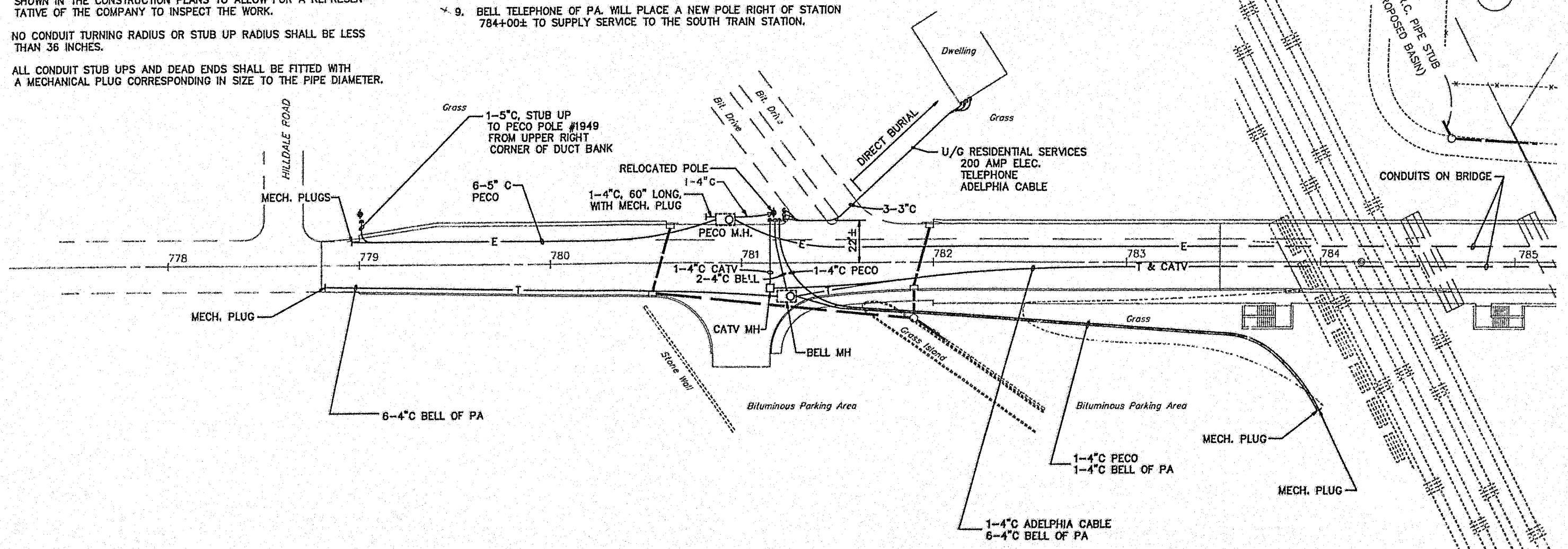
6-0	DELAWARE	0320	12S	1 Of 3
RADNOR TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

UTILITY RELOCATION PLANS

NOTES

1. THE NEW UTILITIES SHOWN ON THIS PLAN MUST BE DONE AS EARLY IN THE CONSTRUCTION AS IS PHYSICALLY POSSIBLE IN ORDER TO CLEAR CERTAIN AREAS FOR CONSTRUCTION. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO STAGE THE PLACEMENT OF THESE LINES WITH HIS CONSTRUCTION SCHEDULE.
2. THE NEW LINES ARE SHOWN ON THESE SEPARATE PLANS FOR CLARITY. CROSS CHECK WITH THE CONSTRUCTION PLANS FOR POSSIBLE CONFLICTS WITH EXISTING UTILITY LINES, DRAINAGE AND OTHER FEATURES PRIOR TO DIGGING. THE CONTRACTOR IS HEREBY ALERTED THAT VILLANOVA UNIVERSITY HAS CAMPUS UTILITIES IN THIS AREA, SUCH AS STEAM, COMMUNICATIONS, AND ELECTRIC LINES.
3. THE CONTRACTOR WILL INFORM THE ENGINEER SEVEN WORKING DAYS PRIOR TO THE PERFORMANCE OF ANY OF THIS WORK. THE ENGINEER WILL CONTACT THE UTILITY COMPANIES AFFECTED AT THE ADDRESS SHOWN IN THE CONSTRUCTION PLANS TO ALLOW FOR A REPRESENTATIVE OF THE COMPANY TO INSPECT THE WORK.
4. NO CONDUIT TURNING RADIUS OR STUB UP RADIUS SHALL BE LESS THAN 36 INCHES.
5. ALL CONDUIT STUB UPS AND DEAD ENDS SHALL BE FITTED WITH A MECHANICAL PLUG CORRESPONDING IN SIZE TO THE PIPE DIAMETER.
6. THE CONRACTOR WILL PROVIDE A FISH LINE IN ALL CONDUITS.
7. IF AT THE COMPLETION OF THIS CONSTRUCTION, THE PHILADELPHIA ELECTRIC COMPANY HAS OCCUPIED THE NEW FACILITIES NORTH OF THE NEW BRIDGE AND HAS ABANDONED THE UNDERGROUND DUCT BANK RUNNING ALONG THE LEFT SIDE OF RT. 320, THE CONTRACTOR WILL, AT THE DIRECTION OF THE ENGINEER, BACKFILL THE EXISTING MANHOLE LEFT OF STATION 790+60 WITH CLASS C CEMENT CONCRETE. THE FRAME AND LID WILL BE LEFT IN PLACE SO AS NOT TO DISRUPT THE NEW PAVING.
8. THE WIRING FOR ITEM NO. 8800-0001 'UNDERPASS LIGHTING' IS TO BE SUPPLIED FROM A NEW METER ATTACHED TO ONE OF THE TWO NEW METER SUPPORTS SHOWN ON SHEET 2 OF 3 OF THIS SET. THE OTHER METER SUPPORT WILL CARRY THE METER FOR THE NORTH TRAIN STATION.
9. BELL TELEPHONE OF PA. WILL PLACE A NEW POLE RIGHT OF STATION 784+00± TO SUPPLY SERVICE TO THE SOUTH TRAIN STATION.



PLAN

25 0 25 50
SCALE IN FEET

SEE SHEET 16 OF 20 OF THE CONSTRUCTION PLANS FOR OTHER FEATURES OF CONSTRUCTION

SEE SHEET 3 OF 3 OF THIS SET FOR TABULATION OF THESE QUANTITIES

UTILITY RELOCATION PLANS

Existing Tennis Courts

NEW 30" R.C. PIPE STUB (FROM PROPOSED BASIN)

Dormitory Building

Bit. Parking

Grass

Bituminous Paving

TRANSFORMER PAD (6'x6') EXCAVATION (30" DEEP)
(PECO TO SUPPLY PAD AND TRANSFORMER)

2-4"C PECO

6-5"C PECO

MECH. PLUGS

1-4"C

30" OR 36"

24" OR 27"

CONDUITS ON BRIDGE

6-5"C PECO

PECO MH

1-4"C CATV

2-4"C BELL

CATV

MECH. PLUG

MECH. PLUGS

PECO M.H.

7-4"C
6 BELL OF PA
1 ADELPHIA CABLE

1-4"C PECO

2 NEW METER SUPPORTS

CATV MH

BELL MH

1-4"C ADELPHIA CABLE

6-4"C BELL OF PA

STA. 785+59.47 S.R.0320

STA. 24+93.99 'C' DRIVE

STA. 14+93.00 'D' DRIVE

NEW MANHOLE (BY OTHERS)

Bit. Drive

Bit. Parking Area

NEW 42" R.C.P. (BY OTHERS)

PROPOSED GAS LINE RELOCATION (BY OTHERS)
LOCATION AND DATE OF INSTALLATION IS
INDETERMINATE AT THIS TIME.

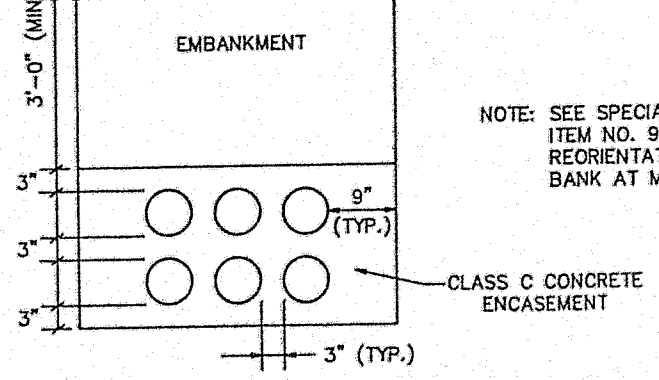
PLAN

SCALE IN FEET

25 0 25 50

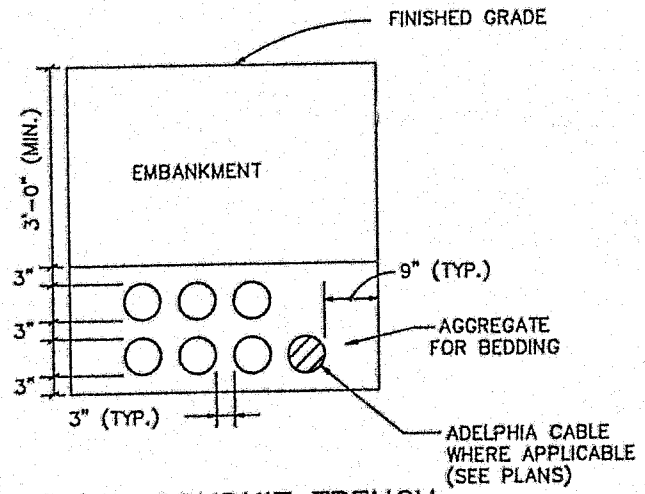
SEE SHEET 17 OF 20 OF THE CONSTRUCTION PLANS FOR OTHER FEATURES OF CONSTRUCTION

SEE SHEET 3 OF 3 OF THIS SET FOR TABULATION OF THESE QUANTITIES

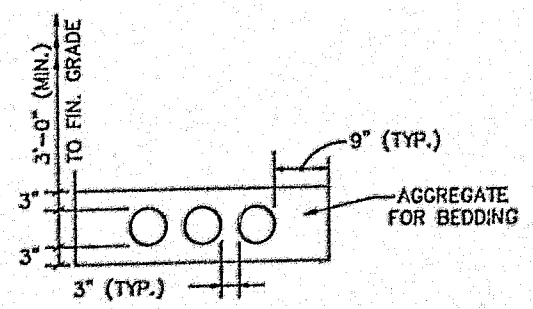


NOTE: SEE SPECIAL PROVISIONS FOR ITEM NO. 9000-0034 FOR THE REORIENTATION OF PECO DUCT BANK AT MANHOLE ENTRY.

TYPICAL CONDUIT TRENCH
(FOR PHILADELPHIA ELECTRIC CO.)
NOT TO SCALE



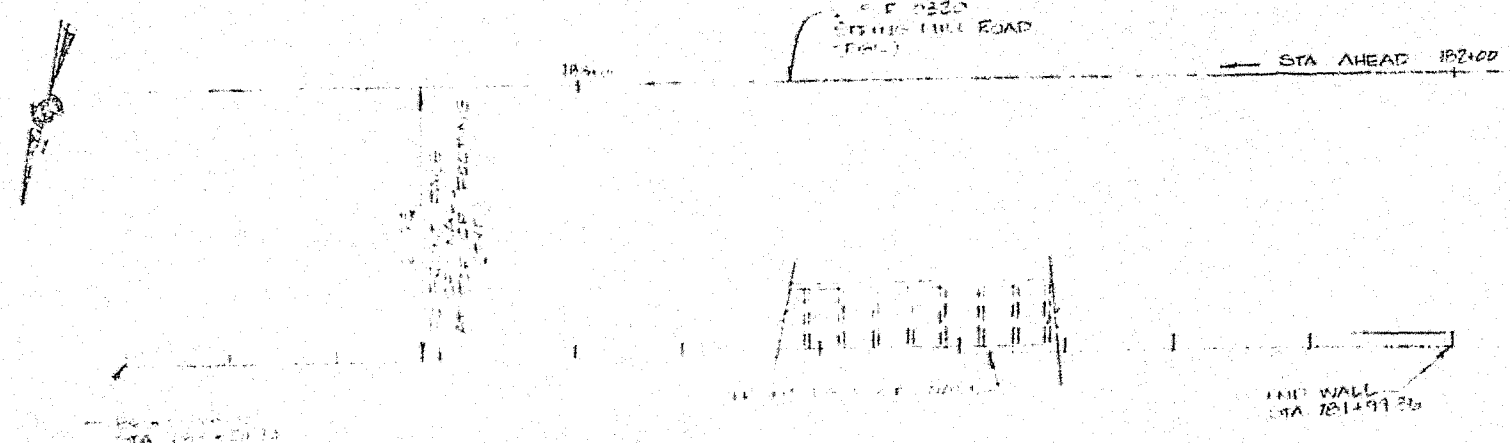
TYPICAL CONDUIT TRENCH
(FOR BELL OF PA)
(AND ADELPHIA CABLE WHERE APPLICABLE)
NOT TO SCALE



TYPICAL CONDUIT TRENCH
(FOR ONE, TWO & THREE CONDUITS)
NOT TO SCALE

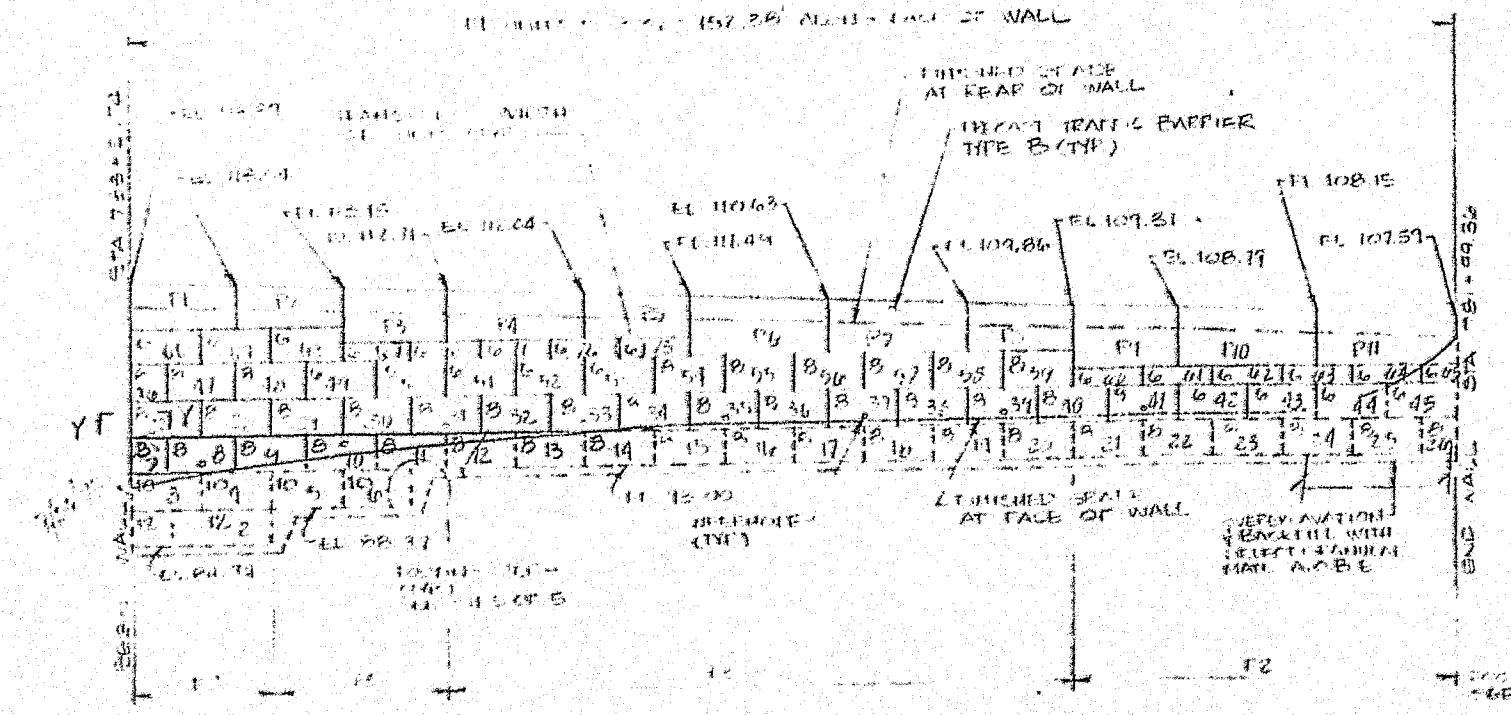
TABULATION OF UTILITY QUANTITIES
(FOR INFORMATION ONLY)

AFFECTED UTILITY	5" MECHANICAL PLUG (FOR INFORMATION ONLY)	4" MECHANICAL PLUG (FOR INFORMATION ONLY)	SERVICE HEAD AND CONDUIT	METER SUPPORT	WIRE FOR CABLE TV RESIDENTIAL SERVICE CONNECTION	WIRE FOR TELEPHONE RESIDENTIAL SERVICE CONNECTION	WIRE FOR 200 AMP RESIDENTIAL SERVICE CONNECTION	CATV MANHOLE	TELEPHONE MANHOLE	ELECTRIC MANHOLE	5" DIAMETER PVC PIPE, FED. SPEC. WC-1094A (TYPE EB DUCT)	4" DIAMETER PVC PIPE, SCHEDULE 40 ASTM D1785	3" DIAMETER PVC PIPE, SCHEDULE 40 ASTM D1785	CLASS C CEMENT CONCRETE BACKFILL FOR EXISTING UTILITY MANHOLES (AS DIRECTED)	CLASS C CEMENT CONCRETE ENCASEMENT FOR PECO DUCT BANKS	AGGREGATE FOR BEDDING	EMBANKMENT	CLASS 4 EXCAVATION	APPLIES TO ITEM NUMBER	SIDE	TIONS	ROUTE
	EACH	EACH	L.S.	EACH	L.F.	L.F.	L.F.	EACH	EACH	EACH	L.F.	L.F.	L.F.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	UNIT			
PECO	6	1									1170	5			31		49	86	9000-0034	LT.	778+96 TO 780+86	S.R. 320
PECO		1								1	1530	25			41	1	81	150	9000-0034	LT.	780+91 TO 783+48	S.R. 320
PECO										1	678				18		41	75	9000-0034	LT.	786+07 TO 787+23	S.R. 320
BELL		6										1434				40	79	124	9000-0035	RT.	778+82 TO 781+20	S.R. 320
BELL									1			1320				38	102	138	9000-0035	RT.	781+25 TO 783+49	S.R. 320
BELL									1			1776				51	108	179	9000-0035	RT.	786+07 TO 789+08	S.R. 320
BELL		6										1440				42	82	129	9000-0035	RT.	789+13 TO 791+50	S.R. 320
ADELPHIA		1										44				3	9	13	9000-0036	LT.& RT.	789+13 TO 789+23	S.R. 320
ADELPHIA								1				235				4	16	25	9000-0036	RT.	781+17 TO 783+48	S.R. 320
ADELPHIA												315				3	7	10	9000-0036	RT.	786+07 TO 789+21	S.R. 320
ADELPHIA		1						1				230				13	47	65	9000-0036	RT.	789+23 TO 791+50	S.R. 320
PECO	6										2550			5	68		128	209	9000-0034	LT.	787+28 TO 791+50	S.R. 320
ADELPHIA		1										36				2	7	9	9000-0036	LT.& RT.	781+15 TO 781+15	S.R. 320
PECO		2										160				5	18	30	9000-0033	LT.	787+25 TO 787+85	S.R. 320
BELL		2										90				3	10	14	9000-0035	LT.& RT.	789+08 TO 789+08	S.R. 320
PECO				2															9000-0022	RT.	785+88	S.R. 320
PECO, BELL, & ADELPHIA			1		150	150	150						162			5	30	35	9000-0031	LT.	781+18 TO 782+15	S.R. 320
PECO & BELL		4				335	335					710				24	79	106	9000-0032	LT.& RT.	781+17 TO 783+98	S.R. 320
PECO		2										270				16	50	67	9000-0033	RT.& LT.	785+87 TO 787+85	S.R. 320

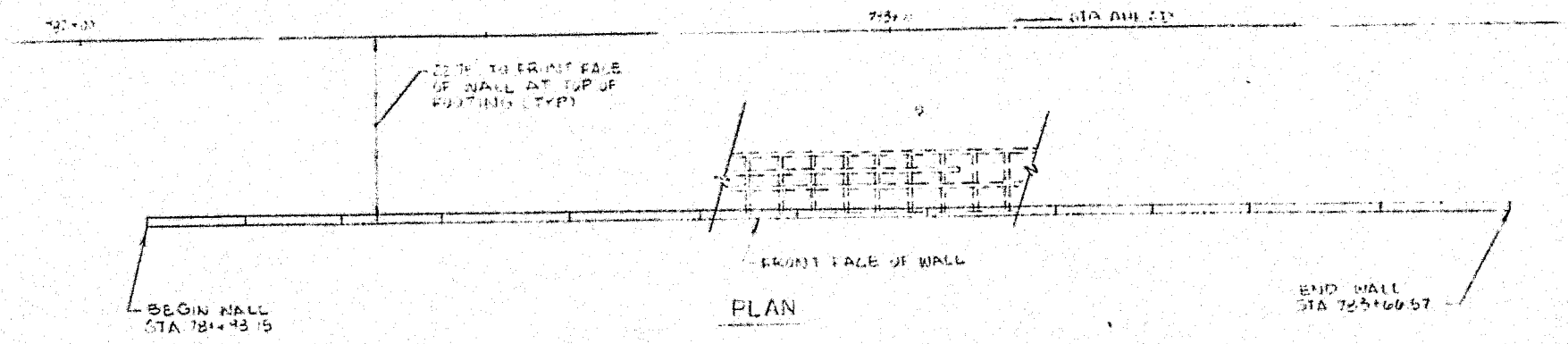


WALL 'A'

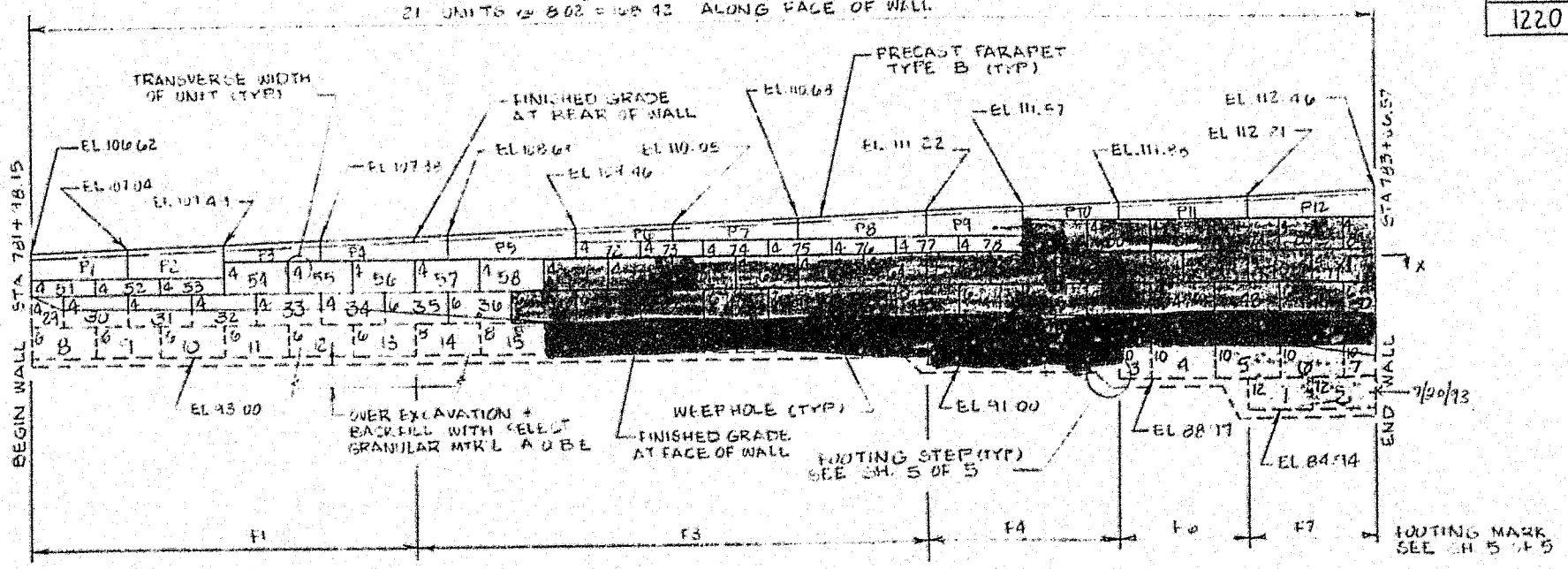
MARK NO	MODULE NO	NO OF UNITS
600	42-45 , 49-53	9
601	66-68	3
680	65	1
681	60-64,69-73	10
800	8-10,27,28,35-39	10
801	55-59	5
805	54	1
808	29,40	2
809	34	1
810	30-33,41,47,48	7
815	12-21	10
816	11	1
820	23-25	3
821	22	1
895	46	1
897	26	1
899	7	1
1010	3,4	2
1020	5,6	2
1220	1,2	2



MARK NO	MODULE NO.	UNITS
400	30-34,60-71	17
401	54-58,79-83	10
402	59	1
481	51-53,72-78	10
493	84	1
499	29	1
610	35-49	15
619	13	1
620	8-12	5
695	50	1
810	25-28	4
820	14-21	8
1010	6	1
1020	4	1
1030	5	1
1072	22-24	3
1095	7	1
1097	3	1
1220	1,2	2



PLAN



ELEVATION

"These drawings are intended for use only at the site for which they were prepared. Doublerval Corporation disclaims any liability for any other use".

NO MODIFICATION TO THESE PLANS MAY BE MADE WITHOUT THE APPROVAL OF DOUBLERVAL CORPORATION AND THE ENGINEER.

S-1733A

Mark	Description	By.	Chk'd.	App'd.	Date
	REVISIONS				

S.R. PREVIOUSLY KNOWN AS L.R.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STATE ROUTE 0320 SEC 12S
RADNOR TOWNSHIP
DELAWARE COUNTY PENNSYLVANIA
WINGWALL B
PLAN AND ELEVATION

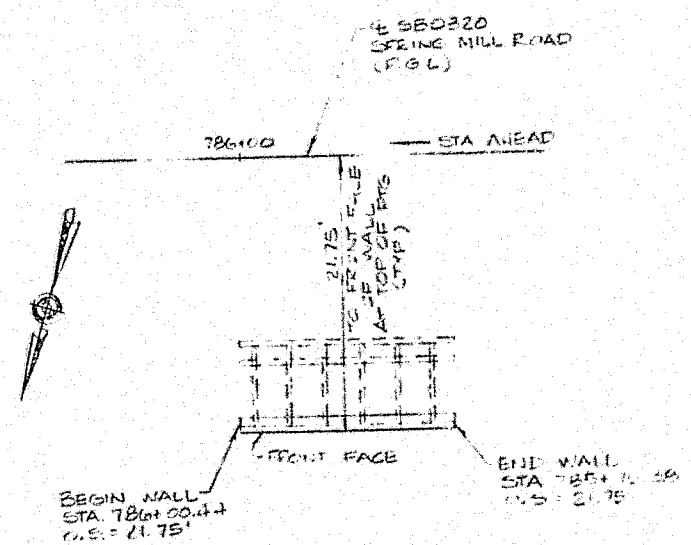
RECOMMENDED _____
BRIDGE ENGINEER

SHEET __ OF __
S -

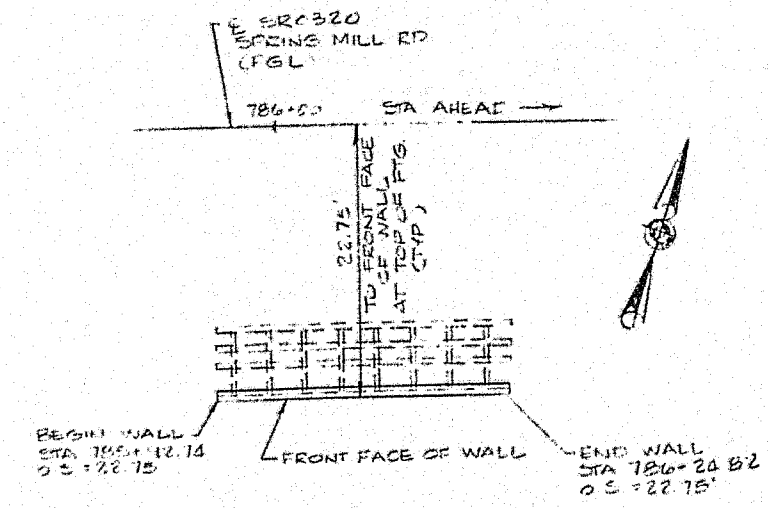
ERECTION DRAWING
ISSUED: 5/27/93

DOUBLERVAL CORPORATION
PLAINVILLE, CONNECTICUT 06062

This drawing contains information proprietary to Doublerval Corporation and is being furnished for the use of PENN DOT only in connection with this project and the information contained herein is not to be disclosed to any other organization or used in any way without authorization in writing by Doublerval Corporation. The furnishing of this drawing does not convey any express or implied license to practice any patents owned by Doublerval Corporation or others and U.S. Patent Nos. 4,195,464; 4,243,706; 4,351,500; 4,441,294; 4,449,338; 4,471,594; 4,558,539; 4,561,230; 4,570,406; 4,571,910; 4,586,303; 4,587,778; 4,589,234; 4,590,722; 4,593,504; 4,598,516; 4,599,838; 4,604,844; 4,606,161; 4,611,444; 4,612,744; 4,614,072; 4,614,073; 4,614,074; 4,614,075; 4,614,076; 4,614,077; 4,614,078; 4,614,079; 4,614,080; 4,614,081; 4,614,082; 4,614,083; 4,614,084; 4,614,085; 4,614,086; 4,614,087; 4,614,088; 4,614,089; 4,614,090; 4,614,091; 4,614,092; 4,614,093; 4,614,094; 4,614,095; 4,614,096; 4,614,097; 4,614,098; 4,614,099; 4,614,100; 4,614,101; 4,614,102; 4,614,103; 4,614,104; 4,614,105; 4,614,106; 4,614,107; 4,614,108; 4,614,109; 4,614,110; 4,614,111;



PLAN



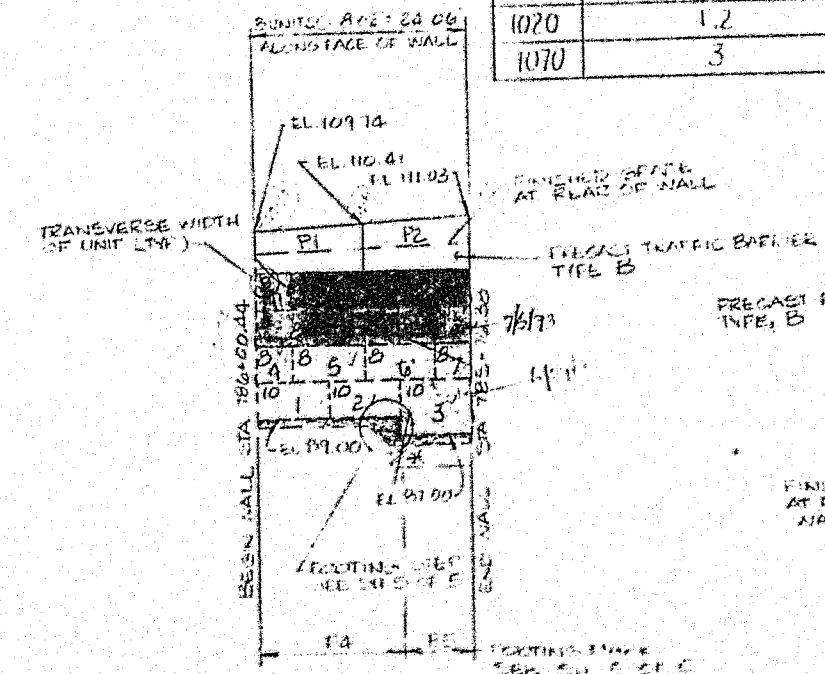
PLAN

WALL C

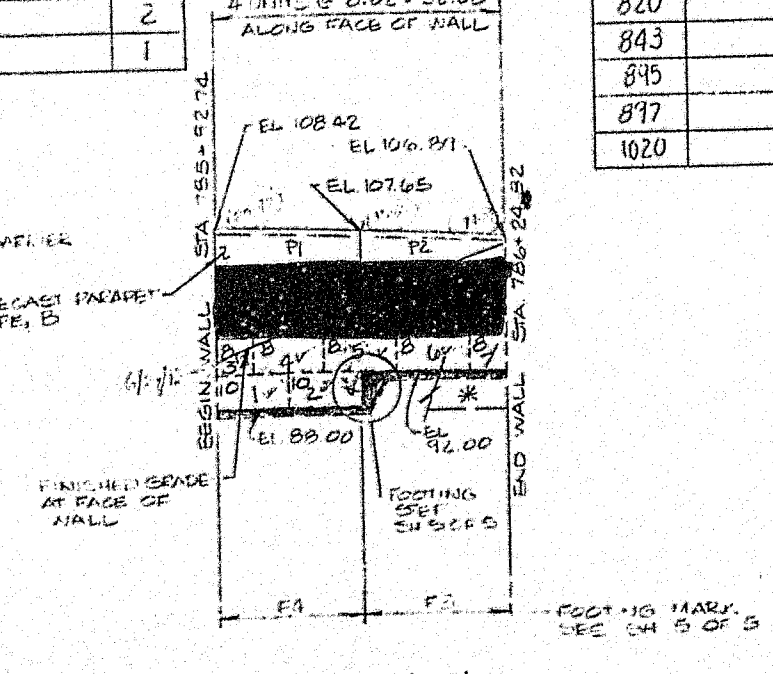
MARK NO	MODULE NO	NO OF UNITS
800	5, 6, 8-10	5
801	12, 13	2
893	11, 14	2
899	4, 7	2
1020	1, 2	2
1070	3	1

WALL D

MARK NO	MODULE NO	NO. OF UNITS
401	13-15	3
443	12, 16	2
610	8-11	4
810	4	1
820	6	1
843	5	1
895	3	1
897	7	1
1020	1, 2	2



ELEVATION
WALL C



ELEVATION
WALL D

* OVEREXCAVATION & BACKFILL WITH SELECT GRANULAR MATERIAL AS REQ'D.

NO MODIFICATION TO THESE PLANS MAY BE MADE WITHOUT THE APPROVAL OF DOUBLEWAL CORPORATION AND THE ENGINEER.

"These drawings are intended for use only at the site for which they were prepared. Doublewal Corporation disclaims any liability for any other use".

ERECTION DRAWING

ISSUED: 8/10/93

Mark	Description	By	Chk'd	App'd	Date
	REVISIONS				

S.R. PREVIOUSLY KNOWN AS L.R.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STATE ROUTE 0320 SEC 17B
RADNOR TOWNSHIP
DELAWARE COUNTY PENNSYLVANIA
WINGWALLS C & D
PLAN & ELEVATION

RECOMMENDED _____

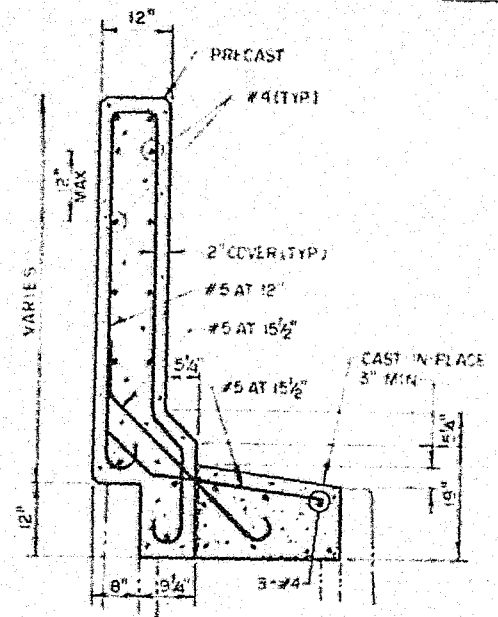
_____ BRIDGE ENGINEER

SHEET 4 OF 5

This drawing contains information proprietary to Doublewal Corporation and is being furnished for the use of [illegible] only in connection with this project, and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Doublewal Corporation. The furnishing of this drawing does not constitute an expressed or implied license under U.S. Patent Numbers 4,196,161 & 4,351,607

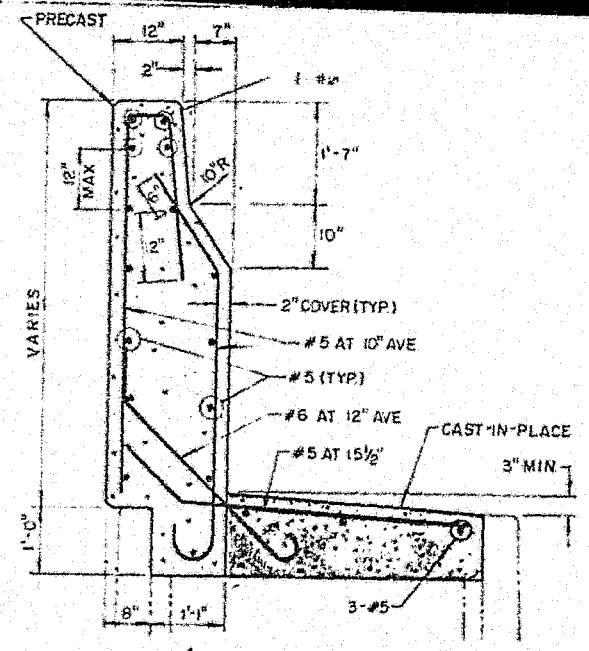
DATE	4-15-93
DR BY	[illegible]
CHK BY	[illegible]
SCALE	1" = 10'-0"
JOB NO	48029
DWG NO	SS-1
SHEET	4 OF 5

DOUBLEWAL CORPORATION
PLAINVILLE, CONNECTICUT 06062



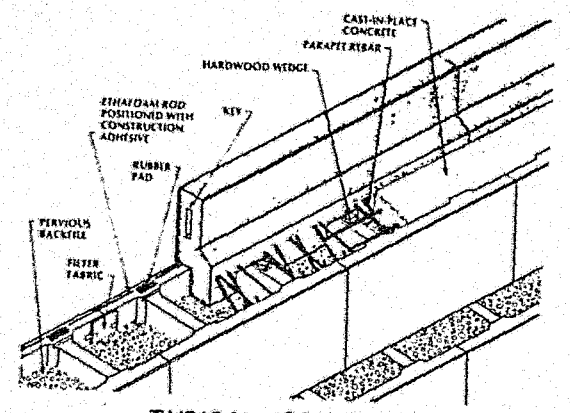
PRECAST PARAPET TYPE B

SCALE: 3/4" = 1'-0"



PRECAST TRAFFIC BARRIER TYPE B

SCALE: 3/4" = 1'-0"

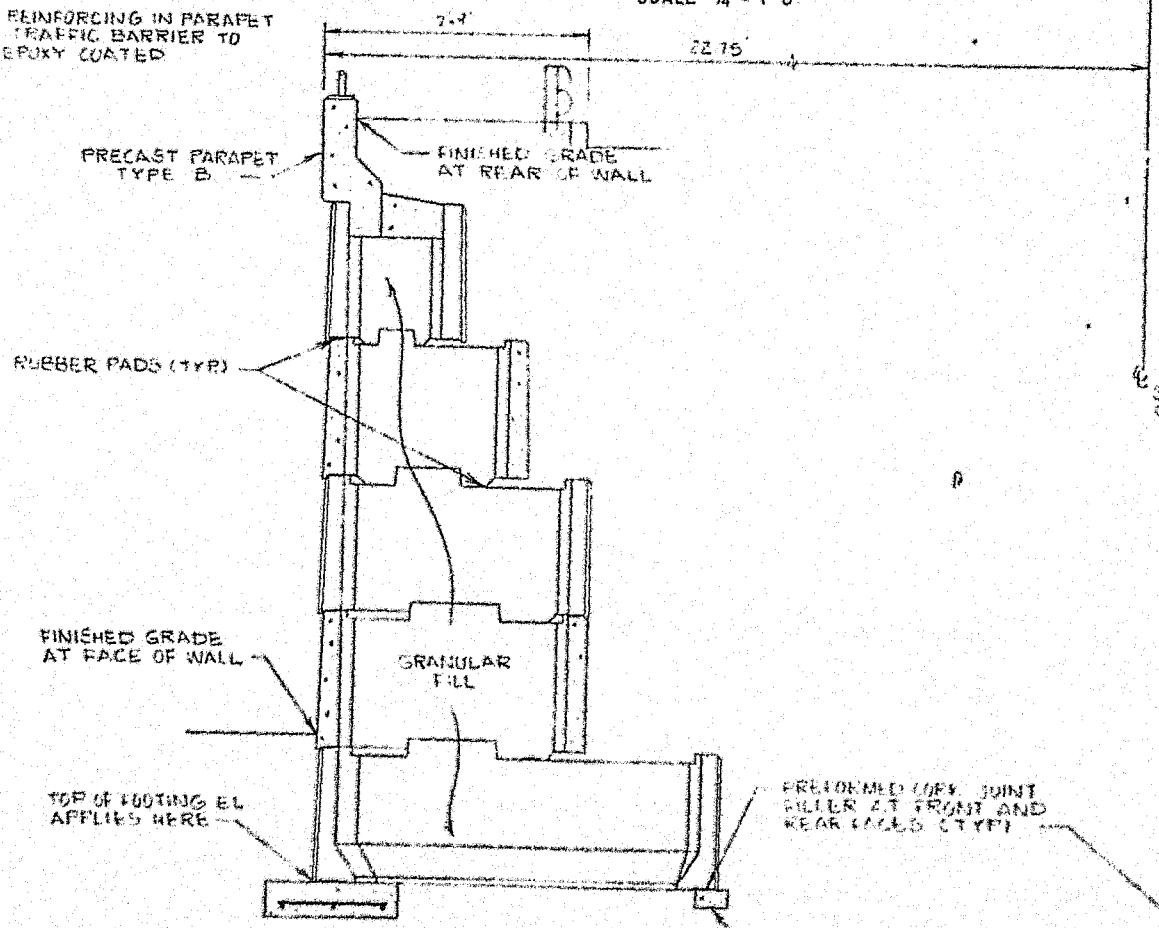


TYPICAL ISOMETRIC

(REAR FACE OF WALL)

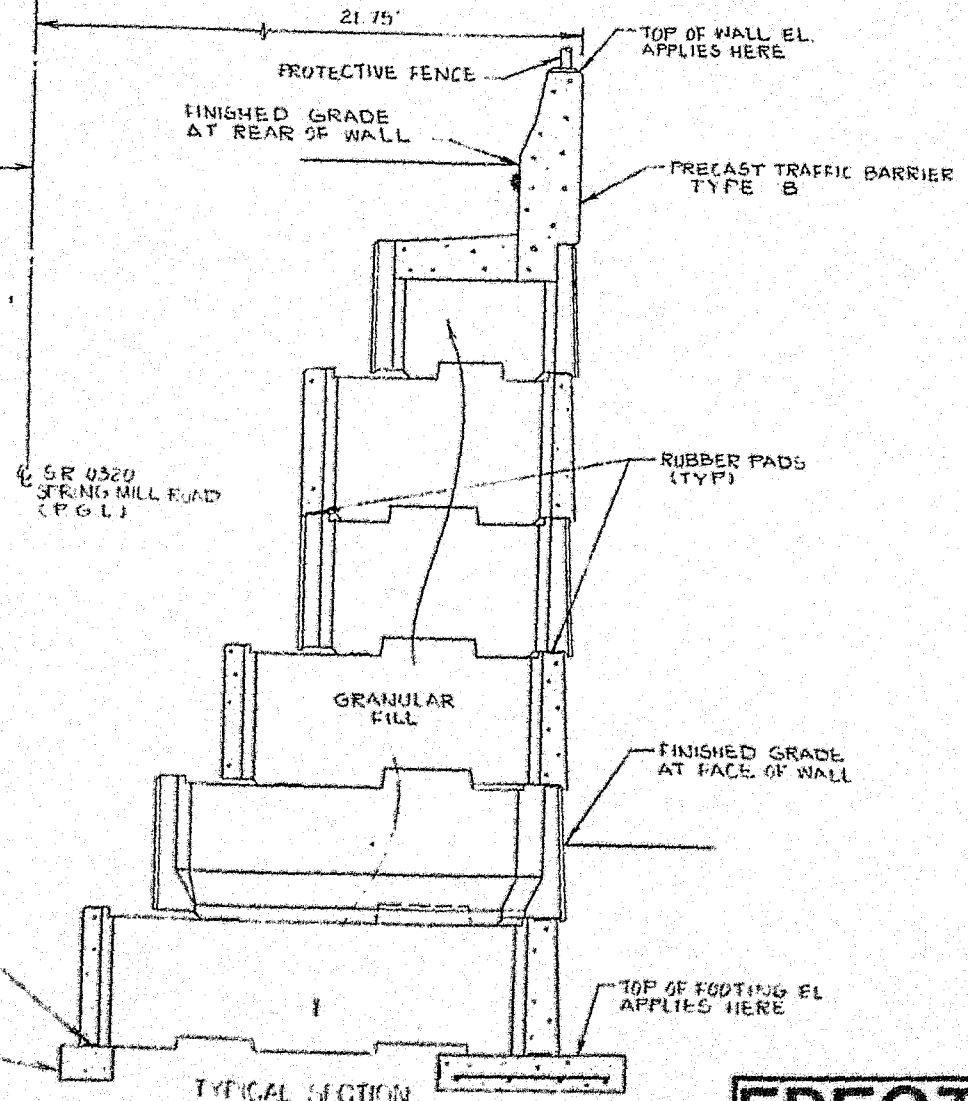
NOTE

ALL REINFORCING IN PARAPET AND TRAFFIC BARRIER TO BE EPOXY COATED



TYPICAL SECTION WALLS B & D AT PARAPET

SCALE: 3/8" = 1'-0"



TYPICAL SECTION WALLS A & C AT TRAFFIC BARRIER

SCALE: 3/8" = 1'-0"

S-17313A

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. PREVIOUSLY KNOWN AS L.R.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STATE ROUTE 0320 SEC. 12S
RADNOR TOWNSHIP
DELAWARE COUNTY . PENNSYLVANIA
WINGWALLS A, B, C AND D
TYPICAL SECTION AND DETAILS

RECOMMENDED _____
BRIDGE ENGINEER

SHEET ___ OF ___

S -

ERECTION DRAWING

ISSUED: 3/18/93

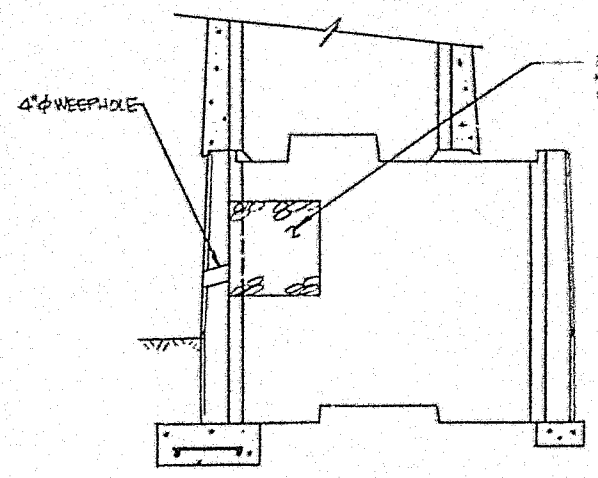
DOUBLEWAL CORPORATION
PLAINVILLE, CONNECTICUT 06062

DATE 4-15-93	SCALE AS SHOWN	DWG NO. 93-1	
DR BY [illegible]	JOB NO. 4202B	SHEET 5 OF 5	
CHK BY W.L.B.			

"These drawings are intended for use only at the site for which they were prepared. Doublewal Corporation disclaims any liability for any other use".

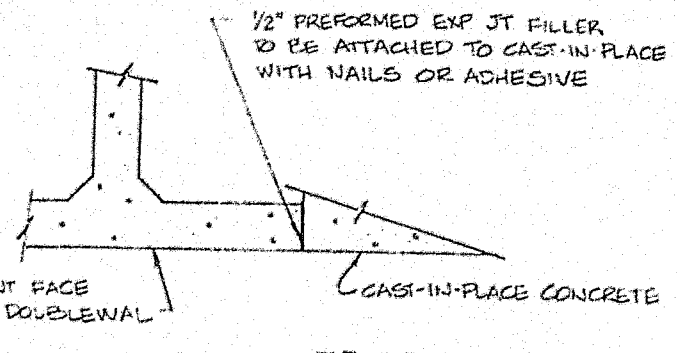
[illegible] WITHOUT THE APPROVAL OF DOUBLEWAL CORPORATION AND THE ENGINEER.

This drawing contains information proprietary to Doublewal Corporation and is being furnished for the use of [illegible] only in connection with the [illegible] and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Doublewal Corporation. The furnishing of this drawing does not constitute an expressed or implied license under U.S. Patent Numbers 4 190 181 4 251 190 4 351 507 [illegible] or other Patents Pending



WEEPHOLE DETAIL

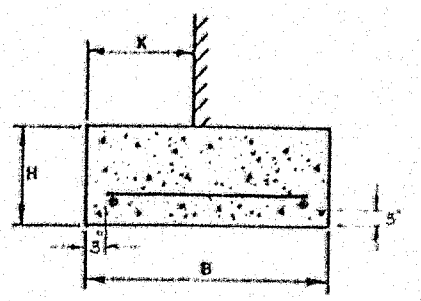
SCALE: 1/2"= 1'-0"



SECTION X-X

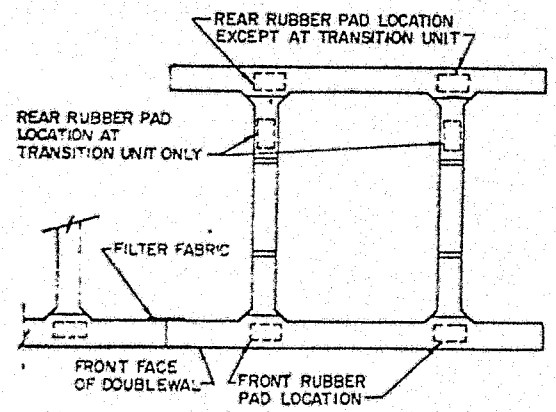
N.T.S

(SECTION Y-Y OPPOSITE HAND)



FOOTING DETAIL

N.T.S.

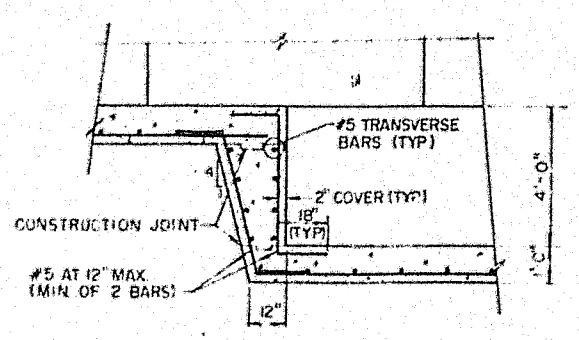


UNIT PLAN VIEW

N.T.S.

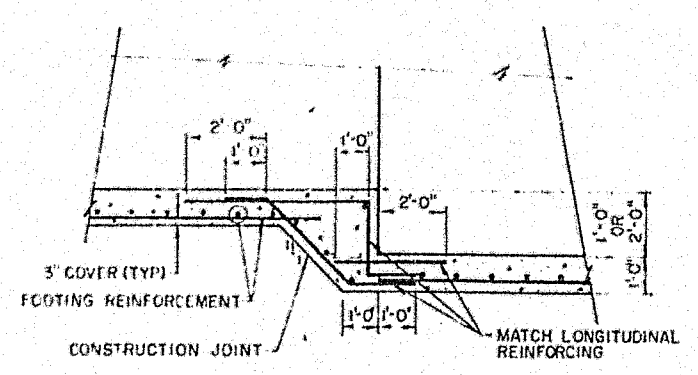
NOTES:

1) ALL RUBBER PADS SHALL BE 5"x 8"x 3/8" ±. PADS MAY BE USED IN COMBINATIONS OF 1/8", 1/4", & 3/8" MAX. TOTAL THICKNESS OF 3/4". PADS SHALL BE MANUFACTURED BY J.V.I. INC., SKOKIE, ILL.
2) THE SPACE BETWEEN PADS IN FRONT FACE SHALL BE FILLED WITH CLOSED CELL POLYETHYLENE FOAM ROD JOINT FILLER.
3) ALL HALF-UNITS SHALL HAVE THREE PADS AT FRONT FACE.



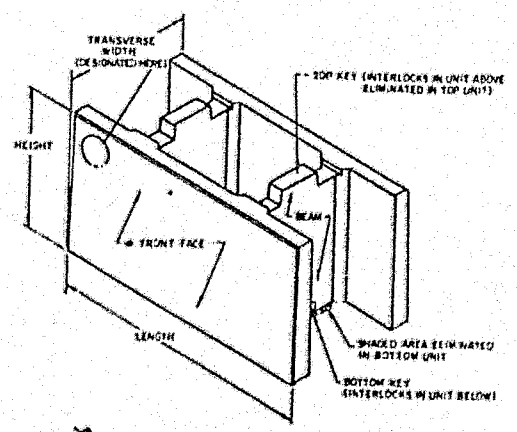
4' FOOTING STEP DETAIL

SCALE 3/8" = 1'-0"



1' OR 2' FOOTING STEP DETAIL

SCALE 3/8" = 1'-0"



TYPICAL DOUBLEWAL MODULE

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. PREVIOUSLY KNOWN AS L.R.

S-17313A

FOR GENERAL NOTES SEE S-17313A SH. 2 OF 3.

DOUBLEWAL UNITS TO BE MIN. 5000 PSI CONCRETE AT 28 DAYS, ENTRAINED AIR CONTENT TO BE 6% ± 1½% AS DETERMINED IN ACCORDANCE WITH PTM NO. 615.

DESIGN: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1969 WITH SUBSEQUENT INTERIM SPECIFICATIONS AND AS SUPPLEMENTED BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION DESIGN MANUAL, PART 4 STRUCTURES (INCLUDING THE I-90 REVISIONS).

BASIS OF DESIGN

THE DESIGN OF THE DOUBLEWAL PRECAST WALLS ARE BASED ON THE FOLLOWING ASSUMED DESIGN LOADS, SOIL DATA. THE ALLOWABLE BEARING CAPACITY WAS FURNISHED BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

MINIMUM FACTORS OF SAFETY USED IN THE ANALYSIS ARE:
F.S. OVERTURNING = 2.0
F.S. SLIDING = 1.5

1. LATERAL EARTH PRESSURE
THE WALLS HAVE BEEN DESIGNED USING THE COULOMB METHOD AND THE FOLLOWING CHARACTERISTICS:

120 PCF = SOIL UNIT WEIGHT OF BACKFILL MATERIAL
120 PCF = SOIL UNIT WEIGHT OF INSIDE MATERIAL
38.00° = ANGLE OF INTERNAL FRICTION
ANGLE OF FRICTION BETWEEN WALL AND BACKFILL PER DM4, 8.5-6.1
= 17° a) CONTINUOUS PRESSURE SURFACE (1/2Φ)
= 25.5° b) AVERAGE PRESSURE SURFACE (3/4Φ)
0 = C, COHESION
.65 = COEFFICIENT OF SLIDING FRICTION AT BASE OF WALL (SOIL ON SOIL)
.50 = COEFFICIENT OF SLIDING FRICTION AT BASE OF WALL (CONCRETE ON SOIL)

2. SURFACE LIVE LOADS:
AN EQUIVALENT HEIGHT OF 2.0' OF SOIL, 250 KSF, AS A SURCHARGE WHERE APPLICABLE.

3. HORIZONTAL LOAD AT TOP OF BARRIER PER AASHTO REQUIREMENTS, WHERE APPLICABLE.

ALLOWABLE BEARING CAPACITY = 5.0
ALL FOOTINGS DESIGNED FOR A BEARING CAPACITY OF 5.0 KSF MAX.

	H	F	K				H	F	K

This drawing contains information proprietary to Doublewal Corporation and is being furnished for the use of ... only in connection with this project and the original contract between ... and Doublewal Corporation. Reuse of this drawing does not specifically authorized in writing by Doublewal Corporation. Reuse of this drawing does not convey to any person or entity not a party to such contract any right, title or interest in or to any ... Doublewal Corporation ... Connecticut ... Patent No. ...

DATE 4-15-93 | SCALE AS NOTED | DWG NO S5-1
DR BY ... | JOB NO ... | SHEET 5 OF 5
CHK BY ...

ERECTION DRAWING

ISSUED: 5/13/93

DOUBLEWAL CORPORATION
PLAINVILLE, CONNECTICUT 06062

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STATE ROUTE 0320 SEC 125
RADNOR TOWNSHIP
DELAWARE COUNTY PENNSYLVANIA
WINGWALLS A, B, C & D
MISCELLANEOUS DETAILS

RECOMMENDED _____
BRIDGE ENGINEER

SHEET ... OF ...
S -

REVISION NUMBER	REVISION	DATE	BY

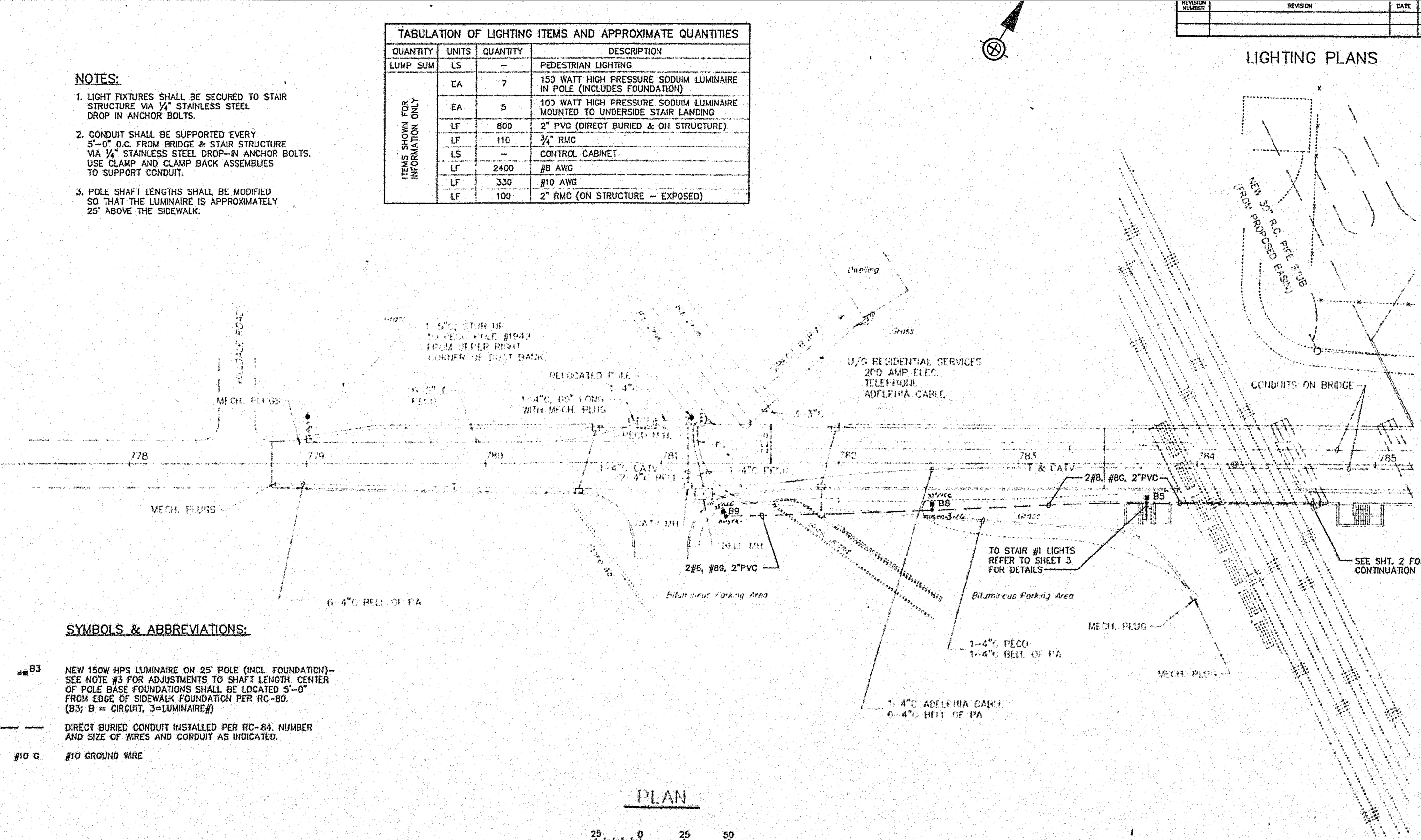
LIGHTING PLANS

NOTES:

1. LIGHT FIXTURES SHALL BE SECURED TO STAIR STRUCTURE VIA ¼" STAINLESS STEEL DROP IN ANCHOR BOLTS.
2. CONDUIT SHALL BE SUPPORTED EVERY 5'-0" O.C. FROM BRIDGE & STAIR STRUCTURE VIA ¼" STAINLESS STEEL DROP-IN ANCHOR BOLTS. USE CLAMP AND CLAMP BACK ASSEMBLIES TO SUPPORT CONDUIT.
3. POLE SHAFT LENGTHS SHALL BE MODIFIED SO THAT THE LUMINAIRE IS APPROXIMATELY 25' ABOVE THE SIDEWALK.

TABULATION OF LIGHTING ITEMS AND APPROXIMATE QUANTITIES

QUANTITY	UNITS	QUANTITY	DESCRIPTION
LUMP SUM	LS	–	PEDESTRIAN LIGHTING
ITEMS SHOWN FOR INFORMATION ONLY	EA	7	150 WATT HIGH PRESSURE SODUIM LUMINAIRE IN POLE (INCLUDES FOUNDATION)
	EA	5	100 WATT HIGH PRESSURE SODUIM LUMINAIRE MOUNTED TO UNDERSIDE STAIR LANDING
	LF	800	2" PVC (DIRECT BURIED & ON STRUCTURE)
	LF	110	¾" RMC
	LS	–	CONTROL CABINET
	LF	2400	#8 AWG
	LF	330	#10 AWG
	LF	100	2" RMC (ON STRUCTURE – EXPOSED)



SYMBOLS & ABBREVIATIONS:

- B3 — NEW 150W HPS LUMINAIRE ON 25' POLE (INCL. FOUNDATION)– SEE NOTE #3 FOR ADJUSTMENTS TO SHAFT LENGTH. CENTER OF POLE BASE FOUNDATIONS SHALL BE LOCATED 5'–0" FROM EDGE OF SIDEWALK FOUNDATION PER RC-80. (B3; B = CIRCUIT, 3=LUMINAIRE#)
- — — — DIRECT BURIED CONDUIT INSTALLED PER RC-84. NUMBER AND SIZE OF WIRES AND CONDUIT AS INDICATED.
- #10 G — #10 GROUND WIRE

PLAN

25 0 25 50

SCALE IN FEET

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	2 of 3
RADNOR TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

LIGHTING PLANS

Existing Tennis Courts

Dormitory Building

NEW 30" R.C. PIPE STUB (FROM PROPOSED BASIN)

Grass

Bit. Parking

TRANSFORMER PAD (6'x6') EXCAVATION (30" DEEP) (PECO TO SUPPLY PAD AND TRANSFORMER)

Bituminous Paving

2-4"C PECO

6-5"C PECO

MECH. PLUGS

CONDUITS ON BRIDGE

REFER TO SHEET1 FOR CONTINUATION

30" OR 36"

24" OR 27"

1-4"C

PECO MH

T & CATV

2#8,#8G,2"PVC

B1

A1

A2

2-4"C BELL

1-4"C CATV

CATV MH

BELL MH

MECH. PLUG

MECH. PLUGS

TO STAIR #2 LIGHTS. REFER TO SHEET 3 FOR DETAILS

2 NEW METER SUPPORTS

1-4"C PECO

STA. 785+59.47 S.R.0320

STA. 24+93.99 'C' DRIVE

STA. 14+93.00 'D' DRIVE

LIGHTING CONTROL CABINET INSTALLED PER RC-84. SEE SHEET 3 FOR REQUIREMENTS.

NEW MANHOLE (BY OTHERS)

Bit. Parking Area

NEW 42" R.C.P. (BY OTHERS)

1-4"C ADELPHIA CABLE

6-4"C BELL OF PA

PROPOSED GAS LINE RELOCATION (BY OTHERS) LOCATION AND DATE OF INSTALLATION IS INDETERMINATE AT THIS TIME.

PLAN

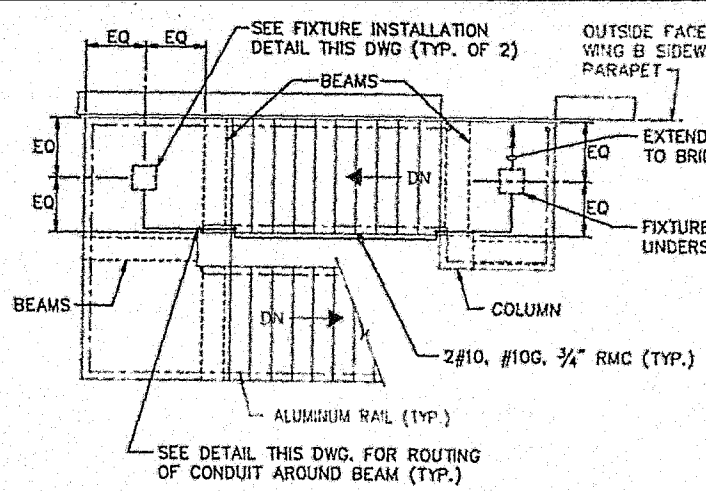
25 0 25 50

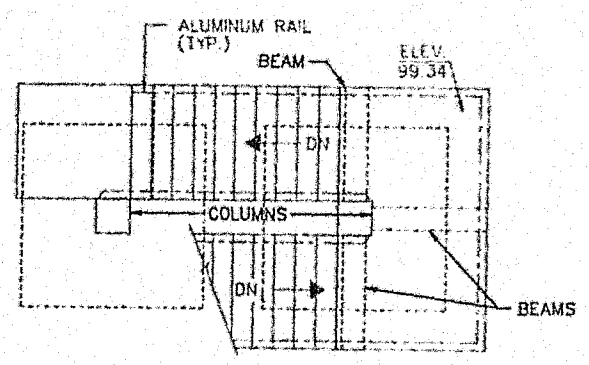
SCALE IN FEET

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	34 of 3
	RADNOR TOWNSHIP			

REVISION NUMBER	REVISION	DATE	BY

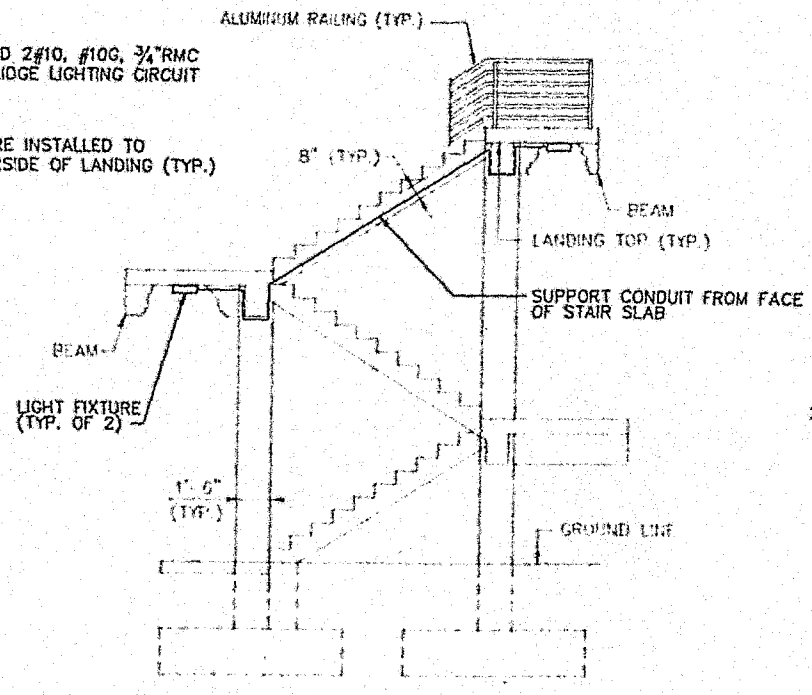
LIGHTING PLANS





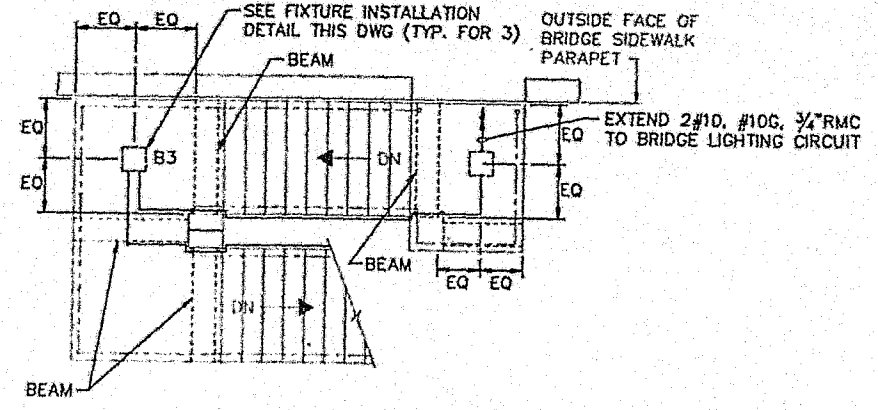
PLAN – STAIR 1

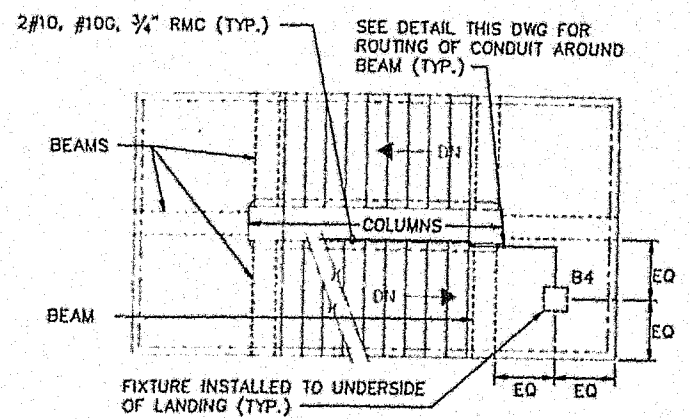
SCALE: 1/4" = 1'-0"

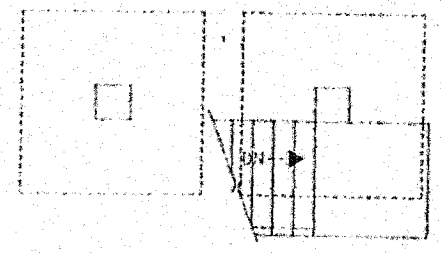


ELEVATION – STAIR 1

SCALE: 1/4" = 1'-0"

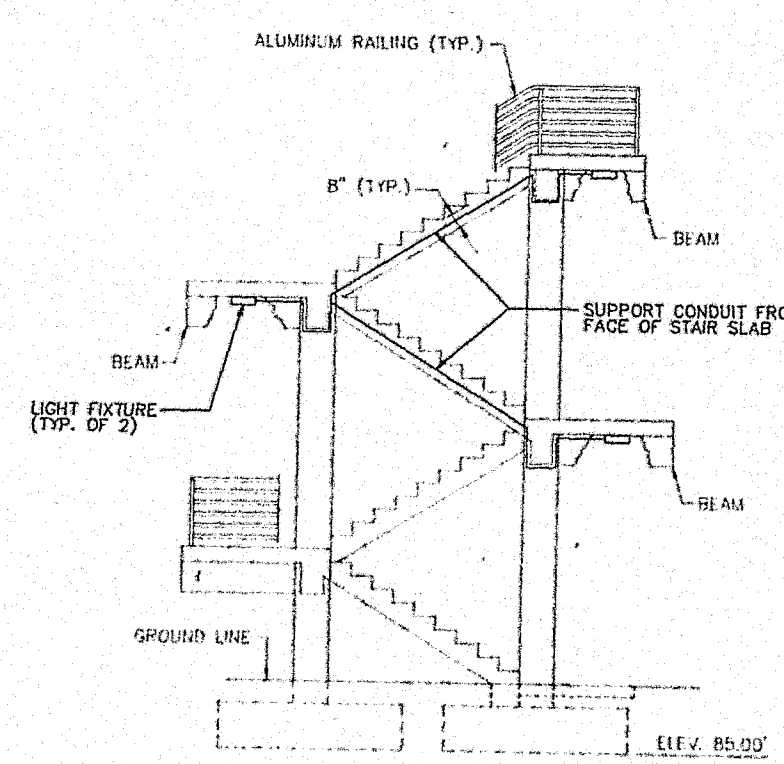






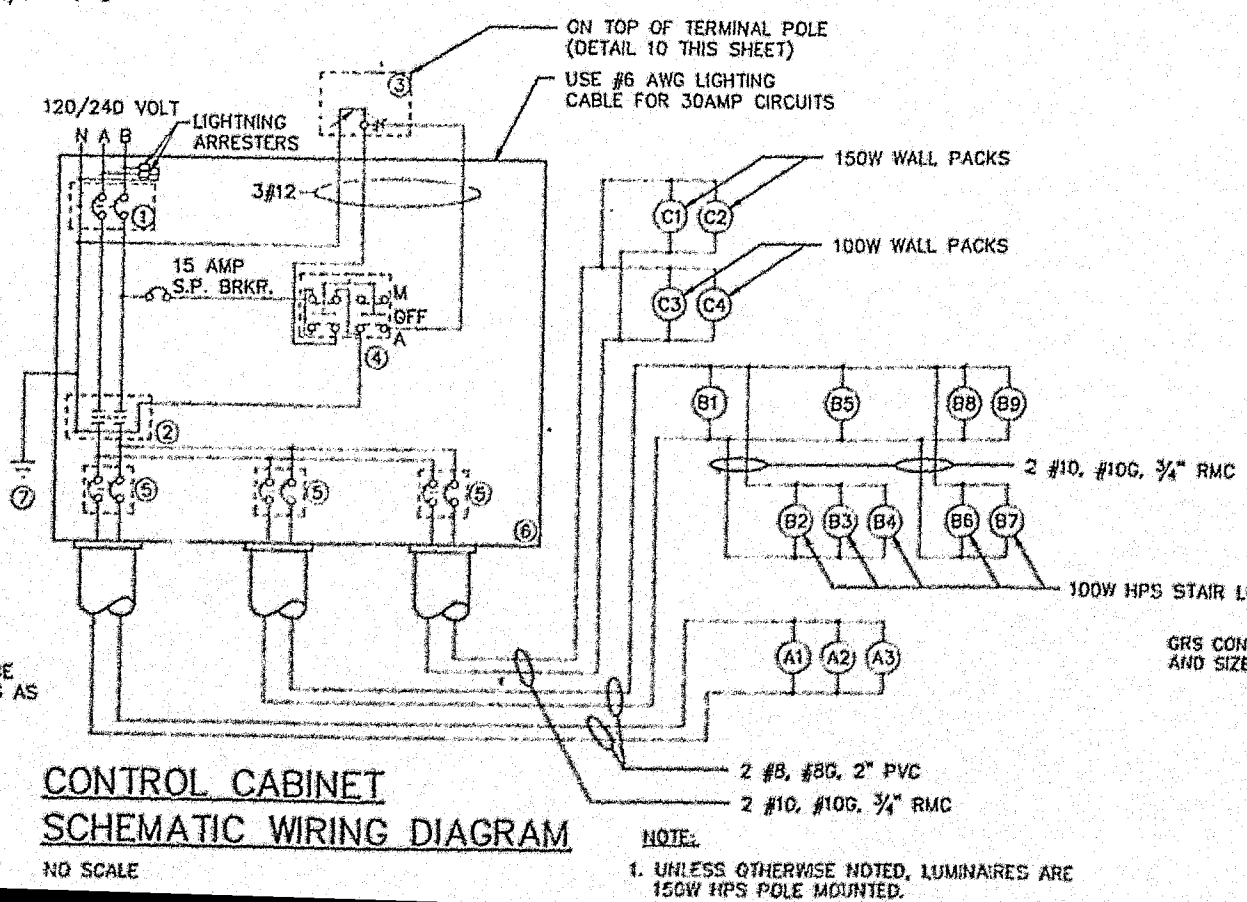
PLAN – STAIR 2

SCALE: 1/4" = 1'-0"



ELEVATION – STAIR 2

SCALE: 1/4" = 1'-0"



① 60AMP MAIN CIRCUIT BREAKER

② 60 AMP CONTACTOR

③ PHOTOELECTRIC CELL (PLUG-IN TYPE)

④ SELECTOR SWITCH

⑤ 15AMP TWO POLE DISTRIBUTION BREAKERS

⑥ CONTROL CABINET

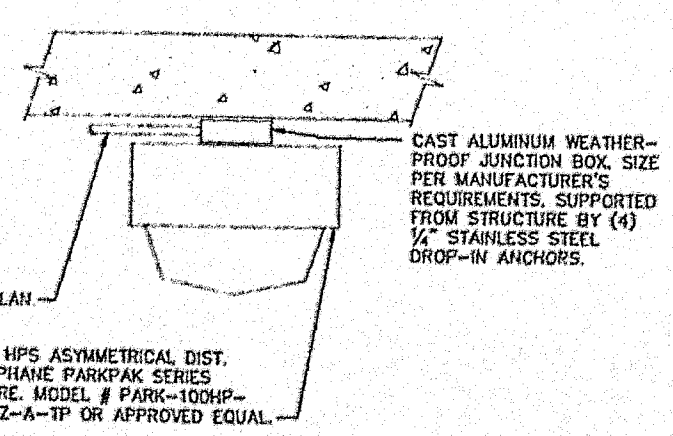
⑦ 25 OHMS MAX. RESISTANCE ADDITIONAL GROUND RODS AS REQUIRED.

CONTROL CABINET SCHEMATIC WIRING DIAGRAM

NO SCALE

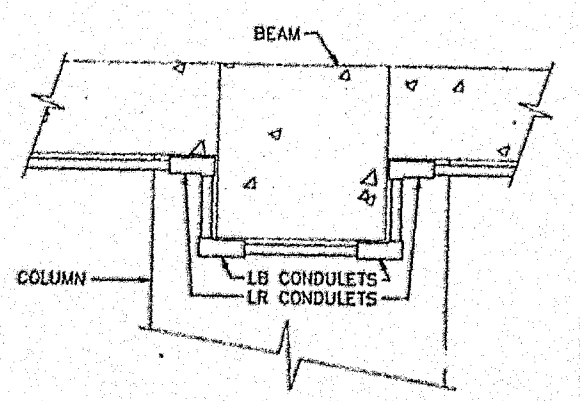
NOTE:

1. UNLESS OTHERWISE NOTED, LUMINAIRES ARE 150W HPS POLE MOUNTED.



TYPICAL FIXTURE INSTALLATION DETAIL

N.T.S.



DETAIL

N.T.S.

NOTE: TYPICAL CONDUIT ARRANGEMENT AT BEAMS

℄ BRGS. ABUTMENT 1
℄ EXISTING DRAINAGE PIPES (TO REMAIN)
EXISTING SIDEWALK (TO REMAIN)
GUIDE RAIL (ROADWAY ITEM)
R/W LINE
WING A
APPROACH SLAB (ROADWAY ITEM)
STA. AHEAD
BEGIN STRUCTURE-STA. 783+72.89
STA. 783+75.50
EL. 112.10
EXISTING ABUTMENT
WING B
R/W LINE
EXISTING 12" GAS LINE
GUIDE RAIL (ROADWAY ITEM)
STAIR 1
STA. 783+81.43
12'-6" MIN. REQD. HOR. CLR.
21'-7¼" ACTUAL HOR. CLR.
℄ EXISTING DUCT BANK (TO REMAIN)
PT. OF MIN. VERT. CLR.
STA. 784+21.00 S.R. 0320
STA. 640+79.15 AMTRAK MAIN LINE
MH #93
63°18'28.3"
STA. 784+73.50
EL. 112.13
EXISTING ABUTMENT
STA 785+00.00
CAT. P-128A
STAIR 2
12'-6" MIN. REQD. HOR. CLR.
27'-0¼" ACTUAL HOR. CLR.
℄ BRGS. ABUTMENT 2
PT. OF MIN VERT CLR.
STA. 785+71.50
EL. 109.00
END STRUCTURE – STA. 785+74.11
APPROACH SLAB (ROADWAY ITEM)
GUIDE RAIL (ROADWAY ITEM)
WING C
WING D
25'-0" MIN. (TYP.)
10'-0" MIN. HOR. CLR.
24'-0" ROADWAY
VN1 VN2 VN3 VN4 VN5 VN6 VN7 VN8 VN9 VN10 VN11 VN12 VN13 VN14 VN15
℄ S.R. 0320 SPRING MILL ROAD (P.G.L.)
2'-0" 12'-0" 12'-0" 8'-0" 21'-9" 22'-9" 44'-6"

-3.77% +5.10% +5.41%

P.V.I. STA. 780 + 90
ELEV. = 99.37'
V.C. = 360'
M.O. = 3.99'
H.L.S.D. = 217'

P.V.I. STA. 784 + 30
ELEV. = 116.71'
V.C. = 320'
M.O. = -4.20'
H.L.S.D. = 206'

VERTICAL CURVE DATA

PLAN
0 10 20 30 FT.

℄ BRGS. ABUTMENT 1
℄ BRGS PIER
℄ BRGS. ABUTMENT 2
98'-0" SPAN 1
98'-0" SPAN 2
10'-0"
72'-0
PROTECTIVE BARRIER, EACH FACE
LUMINAIRES (E.F) (HIGHWAY ITEM)
PROTECTIVE FENCE (TYP.)
E
F
FINISHED GRADE
EL.92.00
EXISTING GRADE
DATUM 65
MODULAR PRECAST WALL (TYP.)
EL.90.00
EL.88.00
EL.84.00
EST. PILE TIP EL. VAR. 66.00 TO 68.00
EXIST. AND FINAL GROUND EL.86.34±
EL.81.00
22'-6" MIN. REQD. VERT. CLR.
22'-6 3/4" ACTUAL VERT. CLR.
EL.108.99
EL.86.42±
EL.80.50
EST PILE TIP EL 66.00
EL.106.52
EL.87.47
EL.82.00
14'-6" MIN. REQD. VERT. CLR.
19'-0½" ACTUAL VERT. CLR.
EL.91.00 (WING D)
EL.88.00 (WING C)
EL.87.00 (WING D)
EL.86.00 (WING C)
EST. PILE TIP EL. VAR. 52.00 TO 62.00

ELEVATION
0 10 20 30 FT.

NOTES
- FOR GENERAL NOTES AND INDEX OF DRAWINGS SEE SHEET 2
- FOR TYPICAL SECTION SEE SHEET 19

Mark	Description	By	Chk'd.	Reco.	Date
	REVISIONS				

P.U.C. DOCKET NO.
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

BRIDGE RATING

D TYPE	H (1)	HS (1)	ML(2)	P (2)
NTORY NG	27 TONS	49 TONS	92 TONS	140 TONS
RATING NG	45 TONS	82 TONS	154 TONS	233 TONS
MATE ENT ACITY	4320 FT-KIPS	4320 FT-KIPS	3474 FT-KIPS	3474 FT-KIPS
MATE AR ACITY	313 KIPS	256 KIPS	244 KIPS	233 KIPS

S ARE FOR SECTION AT PIER
INGS GIVEN FOR SECTION AT ℄ OF SPAN 1
RATING WERE OBTAINED USING LOAD FACTOR DESIGN

THE DESIGN REVIEW IS FOR GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND THE DEPARTMENT'S DESIGN AND CONSTRUCTION CRITERIA AND STANDARDS. IT IS NOT INTENDED TO RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE PLANS OR FOR COMPLETE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

REVIEWED BY
Urban Engineers, Inc.
3001 N. 3rd Street
PHILADELPHIA, PA 19105
Michael P Wetzel
4-6-95

ROBERT W. PRIEAUX, JR.
REG. PROF. ENGR. PA
NO. 52619-E
DATE: 4-1-93

PREPARED BY:
WILBUR SMITH ASSOCIATES
501 MARTINDALE ST.
PITTSBURGH, PA 15212
(412) 323-8101

DESCRIPTION	DWG. NO.	APP. DATE
SUPPLEMENTAL DRAWINGS		
BRIDGE APPROACH SLAB	RC-23	4-1-91
BACKFILL AT STRUCTURES	RC-12	6-30-90
CLASSIFICATION OF EARTHWORK FOR STRUCT.	RC-11	6-30-90
PROTECTIVE BARRIER	BC-711	11-15-89
PROTECTIVE FENCE	BC-701	11-15-89
RAILING ANCHOR SYSTEM	BC-337A	3-2-81
THREADED INSERT ANCHOR ASSEMBLY	BC-734	11-15-89
PERMANENT METAL DECK FORMS	BC-732	1-20-89
WALL CONST. & EXPANSION JOINT DETAILS	BC-735	1-20-89
REINFORCEMENT BAR FABRICATION DETAILS	BC-736	6-1-91
BRIDGE PARAPET TO GUIDERAIL TRANSITION	BC-739	9-3-91
CONCRETE DECK SLAB DETAILS	BC-752	1-20-89
STEEL GIRDER DETAILS	BC-753	6-1-91
STEEL DIAPHRAGMS FOR STEEL BEAM/GIRDER STRUCTURES (STRAIGHT GIRDERS ONLY)	BC-754	6-1-91
PILE TIP REINFORCEMENTS AND SPLICES	BC-757	6-1-91
NEOPRENE STRIP SEAL DAM	BC-767	5-3-89

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
GENERAL PLAN AND ELEVATION

RECOMMENDED James J. Rowan 4-26-93
DISTRICT BRIDGE ENGINEER

SHEET 1 OF 35
S – 17313 A

GENERAL NOTES

PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, PUBLICATION 408/90, AASHTO/AWS BRIDGE WELDING CODE, 1992 AND CONTRACT SPECIAL PROVISIONS

DESIGN SPECIFICATIONS:

DESIGN DIVISION I OF AASHTO, STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1989, INCLUDING THE 1990 INTERIM, AND AS SUPPLEMENTED BY DESIGN MANUAL, PART 4, 1988, INCLUDING REVISIONS THROUGH 9-91.

LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED UPON THE AASHTO METHOD.

DESIGN IS IN ACCORDANCE WITH THE STRENGTH DESIGN METHOD (LOAD FACTOR DESIGN).

DESIGN LIVE LOADS:

HS25 LOADING OR 125 PERCENT OF THE ALTERNATE MILITARY LOADING, OR P-82 (204k PERMIT LOAD) WITH THE AASHTO GROUP IB LOADING.

FATIGUE DESIGN IS BASED ON THE YEAR 2011 ADTT OF 399, RESULTING IN TRUCK LOADINGS AT 500,000 CYCLES AND LANE LOADINGS AT 100,000 CYCLES.

DEAD LOADS:

INCLUDES 30 PSF FOR FUTURE WEARING SURFACE ON THE DECK SLAB.

INCLUDES 15 PSF OF DECK AREA FORMED USING PERMANENT METAL DECK FORMS (WEIGHT OF FORMS PLUS WEIGHT OF CONCRETE IN THE VALLEYS OF FORMS).

SEISMIC FORCES WERE CONSIDERED FOR THIS STRUCTURE.

USE A TEMPERATURE RANGE OF -10° F TO 110° F FOR DESIGN.

SUPERSTRUCTURE DIMENSIONS SHOWN ARE FOR A NORMAL TEMPERATURE OF 68° F.

ALL DIMENSIONS SHOWN ARE HORIZONTAL EXCEPT AS NOTED.

PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50W (ASTM A588) DESIGNATION EXCEPT WHEN NOTED OTHERWISE. ALL GIRDER MATERIAL REQUIRES CATEGORY III SHOP FABRICATION.

ALL FABRICATED STRUCTURAL STEEL MEMBERS DESIGNATED AS (T) ARE SUBJECT TO TENSILE STRESS, AND SHALL BE FABRICATED TO MEET THE SUPPLEMENTARY NOTCH TOUGHNESS REQUIREMENTS FOR THE LONGITUDINAL CHARPY V-NOTCH (CVN) TESTS SPECIFIED FOR ZONE 2, IN TABLE 51 OF THE AASHTO MATERIALS SPECIFICATIONS.

DO NOT MAKE WELDS BY MANUAL SHIELDED METAL ARC PROCESS FOR PRIMARY GIRDER WELDS, SUCH AS FLANGE TO WEB WELDS OR FOR SHOP SPLICES OF WEBS AND FLANGES.

DO NOT WELD PERMANENT METAL DECK FORMS OR OTHER ATTACHMENTS TO GIRDER FLANGES IN TENSION AREAS, AS DESIGNATED ON SHEET 20.

ALL FASTENERS ARE 7/8-INCH-DIAMETER A325 HS BOLTS EXCEPT AS NOTED.

REAMING OF FIELD SPLICES IS REQUIRED IN THE FABRICATION SHOP.

PROVIDE WELDED STUD SHEAR CONNECTORS MANUFACTURED FROM STEEL CONFORMING TO ASTM A108.

SET ANCHOR BOLTS TO TEMPLATE OR IN PREFORMED HOLES - DO NOT DRILL. FILL THE PREFORMED HOLES WITH NONSHRINK GROUT. FILL THE CLEARANCE BETWEEN ANCHOR BOLTS AND HOLES IN THE MASONRY PLATES WITH APPROVED NONHARDENING CAULKING COMPOUND CONFORMING TO PUBLICATION 408/90, SECTION 705.8.

PREPARE BEARING AREAS AS SPECIFIED IN PUBLICATION 408/90, SECTION 1001.3(K)8.

USE CLASS AAA CEMENT CONCRETE IN THE DECK SLAB. USE RETARDER CONFORMING TO PUBLICATION 408/90 IN THE CONCRETE DECK SLAB.

USE CLASS AA CEMENT CONCRETE IN PARAPETS, BARRIERS, CHEEKWALLS, AND ABUTMENT BACKWALLS.

USE CLASS A CEMENT CONCRETE IN PIERS, ABUTMENTS BELOW BRIDGE SEAT, WINGWALLS AND FOOTINGS.

USE EITHER PERMANENT METAL DECK FORMS OR REMOVABLE FORMS TO CONSRUCT THE DECK SLAB.

ABUTMENT BACKWALLS MAY BE PLACED UP TO A CONSTRUCTION JOINT BELOW THE LEVEL OF THE BOTTOM OF DECK SLAB PRIOR TO CONSTRUCTION OF THE DECK.

PLACE CHEEKWALL AND BACKWALL CONCRETE AFTER BEAMS ARE SET IN POSITION.

IF GIRDERS CANNOT BE SHIPPED IN THE LENGTHS SHOWN ON THE PLANS, FIELD SPLICES WILL BE PERMITTED AT THE REQUEST OF THE CONTRACTOR, BUT NO COMPENSATION WILL BE ALLOWED FOR THE SPLICES.

PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT (A 615), RAIL STEEL (A 616), OR AXLE STEEL (A 617). DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED. GRADE 40 REINFORCING STEEL BARS MAY BE SUBSTITUTED WITH A PROPORTIONAL INCREASE IN CROSS-SECTIONAL AREA.

EPOXY COAT ALL REINFORCING BARS IN THE DECK SLAB, PARAPETS, BARRIERS, ABUTMENT BACKWALLS, AND ABUTMENT SEATS. ALSO EPOXY COAT SUBSTRUCTURE REINFORCEMENT AS INDICATED.

PROVIDE MINIMUM LAP AND EMBEDMENT LENGTH OF 30 DIAMETERS OR IN ACCORDANCE WITH 1989 AASHTO, WHICHEVER IS GREATER.

REINFORCEMENT BAR SCHEDULE IS FOR INFORMATION ONLY. VERIFY IT PRIOR TO BIDDING AND FABRICATION.

PROVIDE 2" CONCRETE COVER ON REINFORCEMENT BARS EXCEPT AS NOTED.

CHAMFER EXPOSED CONCRETE EDGES 1 INCH BY 1 INCH EXCEPT AS NOTED.

RAKE FINISH ALL HORIZONTAL CONSTRUCTION JOINTS EXCEPT AS INDICATED.

DECK SLAB THICKNESS INCLUDES A 1/2 INCH INTEGRAL WEARING SURFACE.

DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.

VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED, AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANIES INVOLVED IN THE PROTECTION OF THEIR EQUIPTMENT. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF THE SIZE,TYPE, AND LOCATION OF ANY UTILITY.

PAINT ALL STRUCTURAL STEEL WITHIN 5'-0" OF THE EXPANSION DAM AT BOTH ABUTMENTS IN ACCORDANCE WITH SECTION 1060 OF PUBLICATION 408/90

USE PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES IN ACCORDANCE WITH SECTION 1019 OF PUBLICATION 408/90 TO PROTECT THE SUBSTRUCTURE UNITS FROM STAINING DUE TO THE WEATHERING STEEL.

PILE DRIVING NOTES

DRIVE TEST PILES AT THE SUBSTRUCTURE LOCATIONS AS INDICATED ON THE PLANS PRIOR TO DRIVING THE BEARING PILES. DRIVE THE TEST PILES TO ABSOLUTE REFUSAL AT OR BELOW THE ESTIMATED TIP ELEVATIONS SHOWN ON THE DRAWINGS FOR THE RELATED BEARING PILES UNLESS OTHERWISE INDICATED BY THE ENGINEER. THE ENGINEER SHALL VERIFY FROM THE TEST PILE THE CAPABILITY OF THE PILE HAMMER SELECTED BY THE CONTRACTOR.

DRIVE BEARING PILES TO ABSOLUTE REFUSAL INTO THE STRATUM DEFINED BY A TIP ELEVATION WHICH IS PREDETERMINED BY THE ENGINEER FROM THE TEST PILES. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE BEARING PILES WHICH ATTAIN ABSOLUTE REFUSAL ABOVE THE PREDETERMINED TIP ELEVATIONS.

REDRIVE TEST PILES AND BEARING PILES AS SPECIFIED IN SPECIAL PROVISION FOR "REDRIVING STEEL BEAM PILES HP 12 x 53".

DESIGN LOAD = 60 TONS/PILE

INDEX OF DRAWINGS

DWG. NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	GENERAL NOTES
3	QUANTITIES 1
4	QUANTITIES 2
5	STAKE-OUT PLAN
6	ABUTMENT 1
7	ABUTMENT 2
8	ABUTMENT DETAILS
9	ABUTMENT 1 FOOTING PLAN AND DETAILS
10	ABUTMENT 2 FOOTING PLAN AND DETAILS
11	WINGWALL A
12	WINGWALL B
13	WINGWALL C
14	WINGWALL D
15	ABUTMENT 1 BAR SCHEDULE
16	ABUTMENT 2 BAR SCHEDULE
17	PIER
18	PIER REINFORCEMENT SCHEDULE
19	TYPICAL SECTION
20	FRAMING PLAN AND DETAILS
21	STEEL DETAILS
22	DECK ELEVATIONS
23	DECK SLAB
24	REINFORCEMENT SCHEDULE
25	MISCELLANEOUS DETAILS
26	STAIR 1 AND STAIR 2
27	STAIR DETAILS
28	STAIR REINFORCEMENT SCHEDULE
29	TEST BORINGS
30	TEST BORINGS
31	TEST BORINGS
32	TEST BORINGS
33	TEST BORINGS
34	TEST BORINGS
35	TEST BORINGS

Mark	Description	By	Chk'd.	App'd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
GENERAL NOTES

RECOMMENDED 4-26-93

SHEET 2 OF 35

S -17313A

	CY.	*	1230	CLASS 3 EXCAVATION, SPECIAL	630	120		420	–	–	60
	LF.	*	72	GEOTEXTILE, CLASS 1	36	–	–	36	–	–	–
	CY.	*	7	NO. 57 COARSE AGGREGATE	3	–	–	3	–	–	1
	CY.	*	820	SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL	440	50		320	–	–	10
	@CY.	*	230	CLASS AAA CEMENT CONCRETE	–	–	–	–	–	230	–
	CY.	*	103	CLASS AA CEMENT CONCRETE	18	1		18	66	–	
	CY.	*	770	CLASS A CEMENT CONCRETE	370	140		260	–	–	
	LB.	*	83,500	REINFORCEMENT BARS, EPOXY COATED	9,450	–	–	7,400		67,300	
	LB.	*	62,850	REINFORCEMENT BARS	28,450	16,500		19,000		–	–
	LF.	*	144	PROTECTIVE BARRIER	–	–	–	–	144	–	–
	LF.	*	280	PARAPET PROTECTIVE FENCE, VINYL COATED STEEL	32	–	–	23	225	–	–
	SY.	*	1,250	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)	–	–	–	–	350	900	–
	LF.	*	96	NEOPRENE STRIP SEAL DAM, " MOVEMENT	48	–	–	48	–	–	–
	TONS	*	1385	FABRICATED STRUCTURAL STEEL	–	–	–	–	1385	–	–
		*			–		–	–	–	–	–
	EA.	*	73	STAIR GRIT STRIPS	–	–	–	–	–	–	73
	LF.	*		1 1/2" DIAMETER ALUMINUM HANDRAIL (SCHEDULE 10)	–	–	–	–	–	–	
	LF.	*	25	1 1/2" DIAMETER PVC PIPE (SCHEDULE 40)	–	–	–	–	25	–	–
L.S.	L.S.	1005-0450		STEEL BEAM TEST PILES, HP12x53	2 @ 16'	2 @ 17'		2 @ 28'	–	–	–
3030	L.F.	1005-1103		STEEL BEAM BEARING PILES, HP12x53	680	440		1,000	–	–	–
146	EA.	1005-1153		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	52	28		38	–	–	–
8	EA.	9000-0037		REDRIVING STEEL BEAM TEST PILES, HP12x53	2	2		2	–	–	–
146	EA.	9000-0039		REDRIVING STEEL BEAM BEARING PILES, HP12x53	52	28		38	–	–	–
OR L.S.	L.S.	8100-0001		STEEL BRIDGE STRUCTURE	–	–	–	–	–	–	–
–	L.F.	1005-0451		STEEL BEAM TEST PILES HP12x53	2 @ 16'	2 @ 17'	–	2 @ 28'	–	–	–
–	L.F.	1005-1103		STEEL BEAM BEARING PILES, HP12x53	680	440	–	1,000	–	–	–
–	EA.	1005-1153		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	52	28	–	38	–	–	–
–	EA.	9000-0037		REDRIVING STEEL BEAM TEST PILES, HP12x53	2	2	–	2	–	–	–
–	EA.	9000-0039		REDRIVING STEEL BEAM BEARING PILES, HP12x53	52	28	–	38	–	–	–
OR L.S.	L.S.	8000-0001		PRESTRESSED CONCRETE BRIDGE STRUCTURE	–	–	–	–	–	–	–
–	L.F.	1005-0452		STEEL BEAM TEST PILES, HP12x53	–	–	–	–	–	–	–
–	L.F.	1005-1103		STEEL BEAM BEARING PILES, HP12x53	–	–	–	–	–	–	–
–	EA.	1005-1153		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	–	–	–	–	–	–	–
–	EA.	9000-0038		REDRIVING STEEL BEAM TEST PILES, HP12x53	–	–	–	–	–	–	–
–	EA.	9000-0040		REDRIVING STEEL BEAM BEARING PILES, HP12x53	–	–	–	–	–	–	–
ER L.S.	L.S.	8642-0001		WINGWALLS, PRECAST MODULAR, S-17313A,(APPROXIMATELY 6,850 S.F.)	–	–	–	–	–	–	–
L.S.	L.S.	8610-0001		WINGWALLS, CAST IN PLACE, S-17313A,(APPROXIMATELY 6,850 S.F.)	–	–	–	–	–	–	–
L.S.	L.S.	1018-0001		REMOVAL OF EXISTING BRIDGE	–	–	–	–	–	–	–
L.S.	L.S.	9000-0006		INSTALLATION OF PHILA. SUBURBAN WATER CO. FACILITY	–	–	–	–	–	–	–
L.S.	L.S.	9000-0007		INSTALLATION OF PHILA. ELECTRIC CO. FACILITY	–	–	–	–	–	–	–
L.S.	L.S.	9000-0008		INSTALLATION OF BELL TELEPHONE CO. FACILITY	–	–	–	–	–	–	–
L.S.	L.S.	9000-0009		INSTALLATION OF ADELPHIA CABLE CO. FACILITY	–	–	–	–	–	–	–
L.S.	L.S.	9000-0010		PROTECTION OF COMMUNICATION & SIGNALIZATION DUCTS AT STRUCTURE S-17313	–	–	–	–	–	–	–
PDA	PDA	9999-9994		REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO. (NO OUTAGE)	–	–	–	–	–	–	–
300	LF.	1090-0332		EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS	–	–	–	–	–	300	–
100	S.Y.	1019-0010		PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)	–	–	–	–	–	100	–
210	S.Y.	9000-0024		PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES	20	–		130	–	–	–
509	C.Y.	4203-0001		CLASS 1 EXCAVATION, SPECIAL	434	–	–	75	–	–	–
509	C.Y.	4205-0200		SELECTED BORROW EXCAVATION, SPECIAL	434	–	–	75	–	–	–
6	HOUR	0208-0001		SPECIAL ROLLING	4	–	–	2	–	–	–

* SUB-ITEMS INCLUDED IN ITEM 0100-0001
FOR INFORMATION ONLY

@ NOTE: QUANTITY OF CLASS AAA CEMENT CONCRETE INCLUDES CONCRETE IN THE VALLEYS OF THE METAL FORMS.

Mark	Description	By	Chk'd.	Reco.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
QUANTITIES

RECOMMENDED 4-26-93

SHEET 3 OF 3

S-17313

UTILITY MATERIALS

BILL OF MATERIALS (INFORMATION ONLY) INCLUDED IN ITEM 9000-0006

	MATERIAL	FURNISHED BY	INSTALLED BY	UNIT	AMOUNT
PHILADELPHIA SUBURBAN WATER CO. FACILITY (FOR FUTURE USE)	EPOXY COATED PIPE ROLLER AND HANGER ASSEMBLY	CONTRACTOR	CONTRACTOR	EA.	16
	FABRICATED STRUCTURAL STEEL (PAINTED)	CONTRACTOR	CONTRACTOR	LBS.	1250
	5/8" DIA. BOLTS WITH WASHERS AND NUTS	CONTRACTOR	CONTRACTOR	EA.	80
	OPENING THROUGH BACKWALL	CONTRACTOR	CONTRACTOR	EA.	1
	8" DIA. STEEL WATER MAIN	CONTRACTOR	CONTRACTOR	L.F.	218
	12" DIA. STEEL CASING PIPE	CONTRACTOR	CONTRACTOR	L.F.	134
	ZIPPER-TYPE CASING SEALS	CONTRACTOR	CONTRACTOR	EA.	2
	8"x12" CARRIER TO CASING INSULATORS	CONTRACTOR	CONTRACTOR	EA.	21

TOTAL WEIGHT OF FACILITY = 20,820 LBS
EMPTY WEIGHT OF FACILITY = 16,500 LBS

BILL OF MATERIALS (INFORMATION ONLY) INCLUDED IN ITEM 9000-0007

	MATERIAL	FURNISHED BY	INSTALLED BY	UNIT	AMOUNT
P.E. CO. FACILITY (FOR FUTURE USE)	5" DIA. FRE DUCT	CONTRACTOR	CONTRACTOR	L.F.	1140
	5" DIA. PVC DUCT	CONTRACTOR	CONTRACTOR	L.F.	480 **
	4 x 2 DUCT HANGER ASSEMBLY *	CONTRACTOR	CONTRACTOR	EA.	16
	FABRICATED STRUCTURAL STEEL (PAINTED) *	CONTRACTOR	CONTRACTOR	LBS.	670
	FRE EXPANSION JOINTS	CONTRACTOR	CONTRACTOR	EA.	12
	5" DIA. STOP RINGS	CONTRACTOR	CONTRACTOR	EA.	12
	5/8" DIA. BOLTS WITH WASHERS AND NUTS *	CONTRACTOR	CONTRACTOR	EA.	48
	OPENING THROUGH BACKWALL *	CONTRACTOR	CONTRACTOR	EA.	2
	5" DIA. FRE TO PVC ADAPTERS	CONTRACTOR	CONTRACTOR	L.F.	12
	CLASS A CEMENT CONCRETE *	CONTRACTOR	CONTRACTOR	C.Y.	1

TOTAL WEIGHT OF FACILITY = 14,080 LBS
EMPTY WEIGHT OF FACILITY = 2,200 LBS

BILL OF MATERIALS (INFORMATION ONLY) INCLUDED IN ITEM 9000-0008

	MATERIAL	FURNISHED BY	INSTALLED BY	UNIT	AMOUNT
BELL TELEPHONE CO. FACILITY (FOR FUTURE USE)	4" DIA. FRE DUCT	CONTRACTOR	CONTRACTOR	L.F.	1140
	4" DIA. PVC DUCT	CONTRACTOR	CONTRACTOR	L.F.	480 **
	4 x 2 DUCT HANGER ASSEMBLY *	CONTRACTOR	CONTRACTOR	EA.	16
	FABRICATED STRUCTURAL STEEL (PAINTED) *	CONTRACTOR	CONTRACTOR	LBS.	510
	FRE EXPANSION JOINTS	CONTRACTOR	CONTRACTOR	EA.	12
	4" DIA. STOP RINGS	CONTRACTOR	CONTRACTOR	EA.	12
	5/8" DIA. BOLTS WITH WASHERS AND NUTS *	CONTRACTOR	CONTRACTOR	EA.	36
	OPENING THROUGH BACKWALL *	CONTRACTOR	CONTRACTOR	EA.	1.5
	4" DIA. FRE TO PVC ADAPTERS	CONTRACTOR	CONTRACTOR	L.F.	12
	CLASS A CEMENT CONCRETE *	CONTRACTOR	CONTRACTOR	C.Y.	75

TOTAL WEIGHT OF FACILITY = 13,790 LBS
EMPTY WEIGHT OF FACILITY = 1,900 LBS

BILL OF MATERIALS (INFORMATION ONLY) INCLUDED IN ITEM 9000-0009

	MATERIAL	FURNISHED BY	INSTALLED BY	UNIT	AMOUNT
ADELPHIA CABLE CO. FACILITY (FOR FUTURE USE)	4" DIA. FRE DUCT	CONTRACTOR	CONTRACTOR	L.F.	190
	4" DIA. PVC DUCT	CONTRACTOR	CONTRACTOR	L.F.	80 **
	4 x 2 DUCT HANGER ASSEMBLY *	CONTRACTOR	CONTRACTOR	EA.	4
	FABRICATED STRUCTURAL STEEL (PAINTED) *	CONTRACTOR	CONTRACTOR	LBS.	180
	FRE EXPANSION JOINTS	CONTRACTOR	CONTRACTOR	EA.	2
	4" DIA. STOP RINGS	CONTRACTOR	CONTRACTOR	EA.	2
	5/8" DIA. BOLTS WITH WASHERS AND NUTS *	CONTRACTOR	CONTRACTOR	EA.	12
	OPENING THROUGH BACKWALL *	CONTRACTOR	CONTRACTOR	EA.	.5
	4" DIA. FRE TO PVC ADAPTERS	CONTRACTOR	CONTRACTOR	L.F.	2
	CLASS A CEMENT CONCRETE *	CONTRACTOR	CONTRACTOR	C.Y.	.25

TOTAL WEIGHT OF FACILITY = 2,420 LBS
EMPTY WEIGHT OF FACILITY = 440 LBS

* SHARED SUPPORT MATERIALS DIVIDED BETWEEN BELL TELEPHONE CO. AND ADELPHIA CABLE CO.

** QUANTITY DOES NOT INCLUDE DUCT BEYOND APPROACH SLAB SEE ROADWAY DRAWINGS.

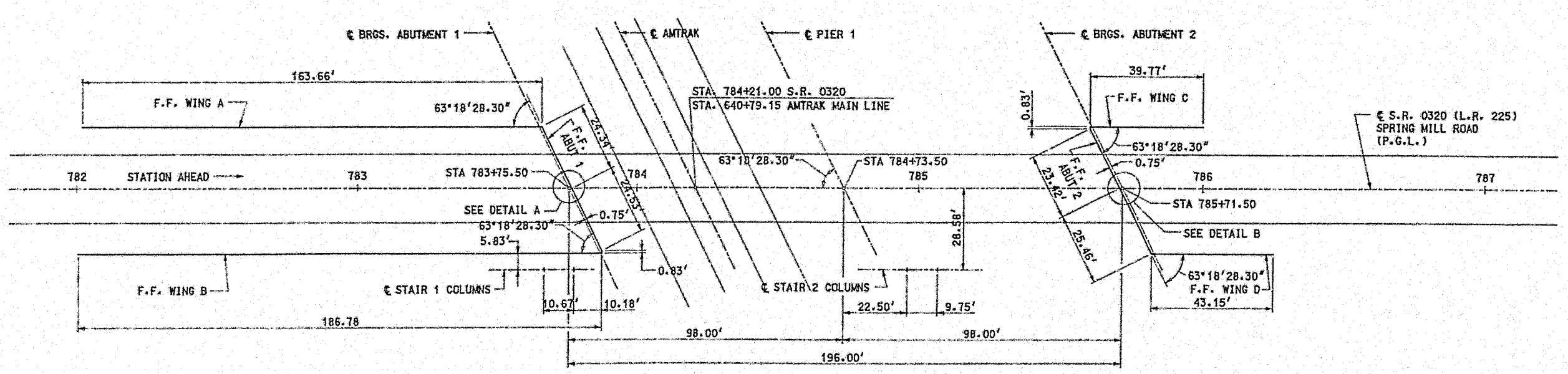
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

Mark	Description	By	Chk'd	Reco	Date
	REVISIONS				

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

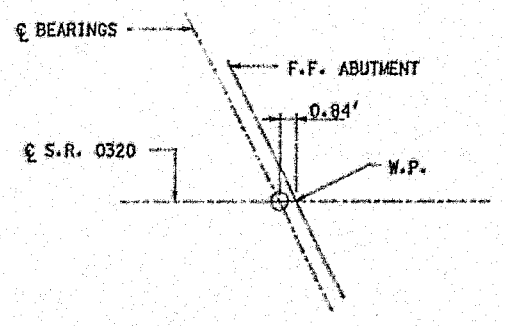
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
QUANTITIES 2

RECOMMENDED 4-26-93



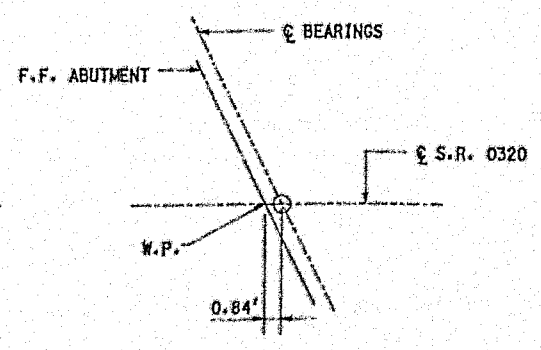
STAKE - OUT PLAN

SCALE: 1" = 20'-0"



DETAIL A

N.T.S.



DETAIL B

N.T.S.

LEGEND

F.F.	=	FRONT FACE
BRGS.	=	BEARINGS
W.P.	=	WORK POINT
N.T.S.	=	NOT TO SCALE

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

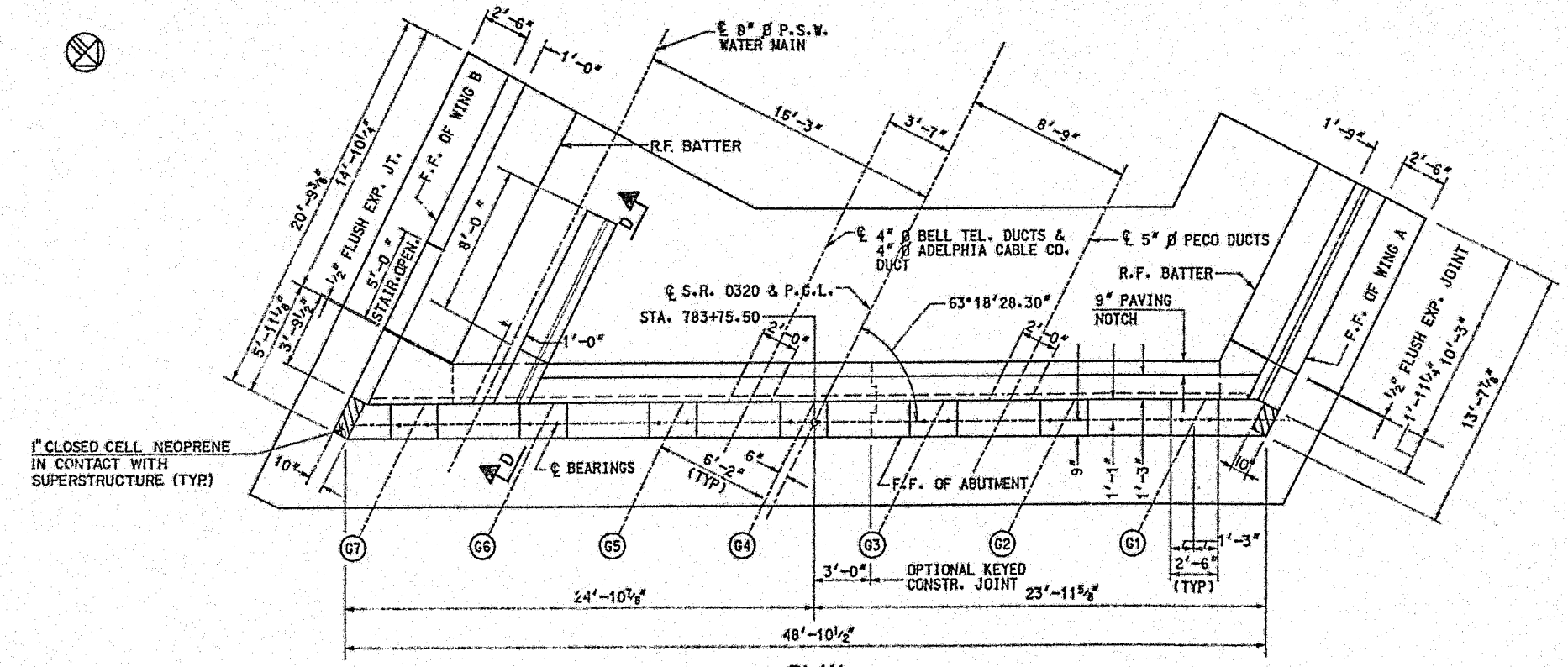
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
STAKE - OUT PLAN

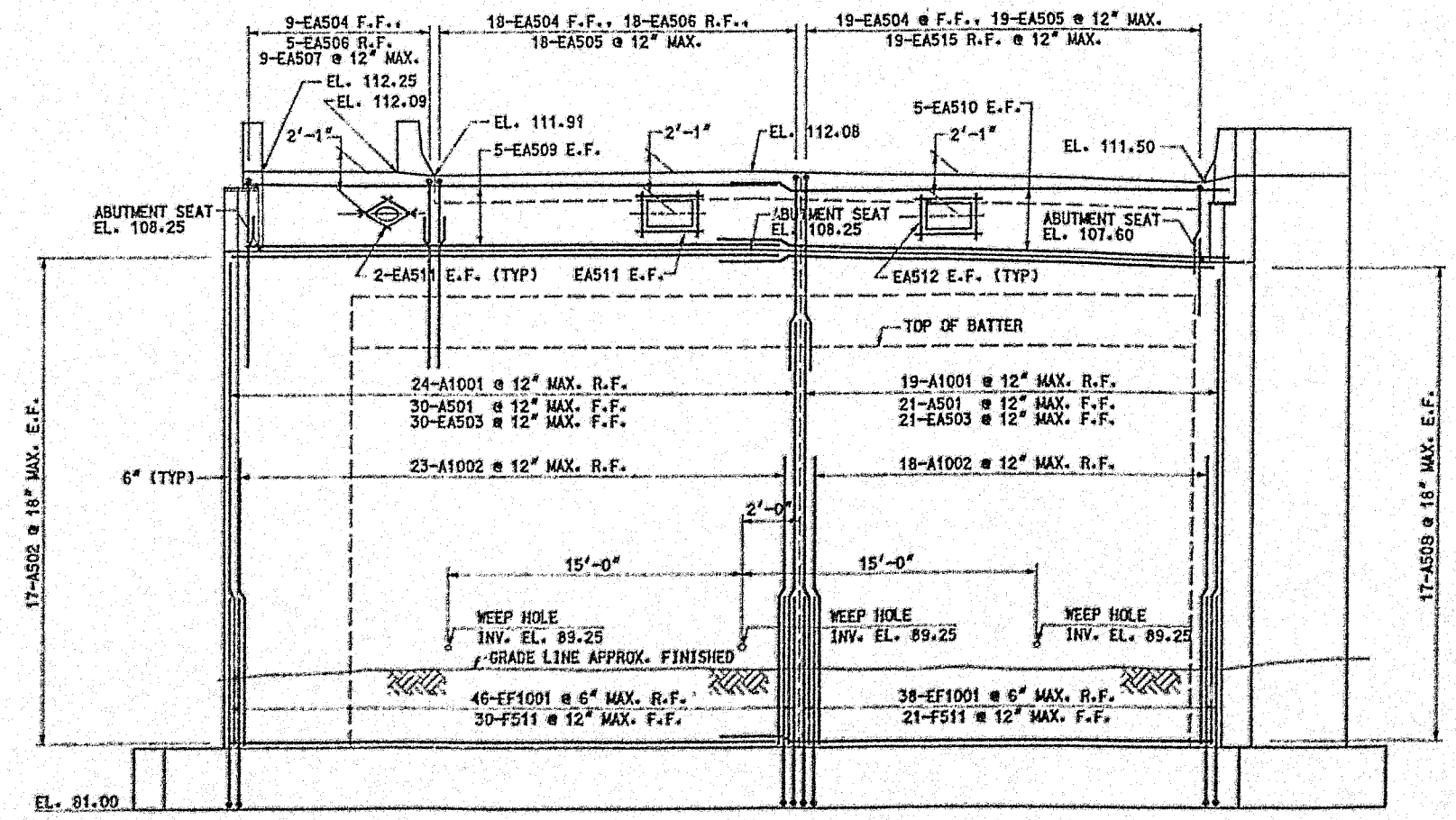
RECOMMENDED 42693

SHEET 5 OF 35



PLAN

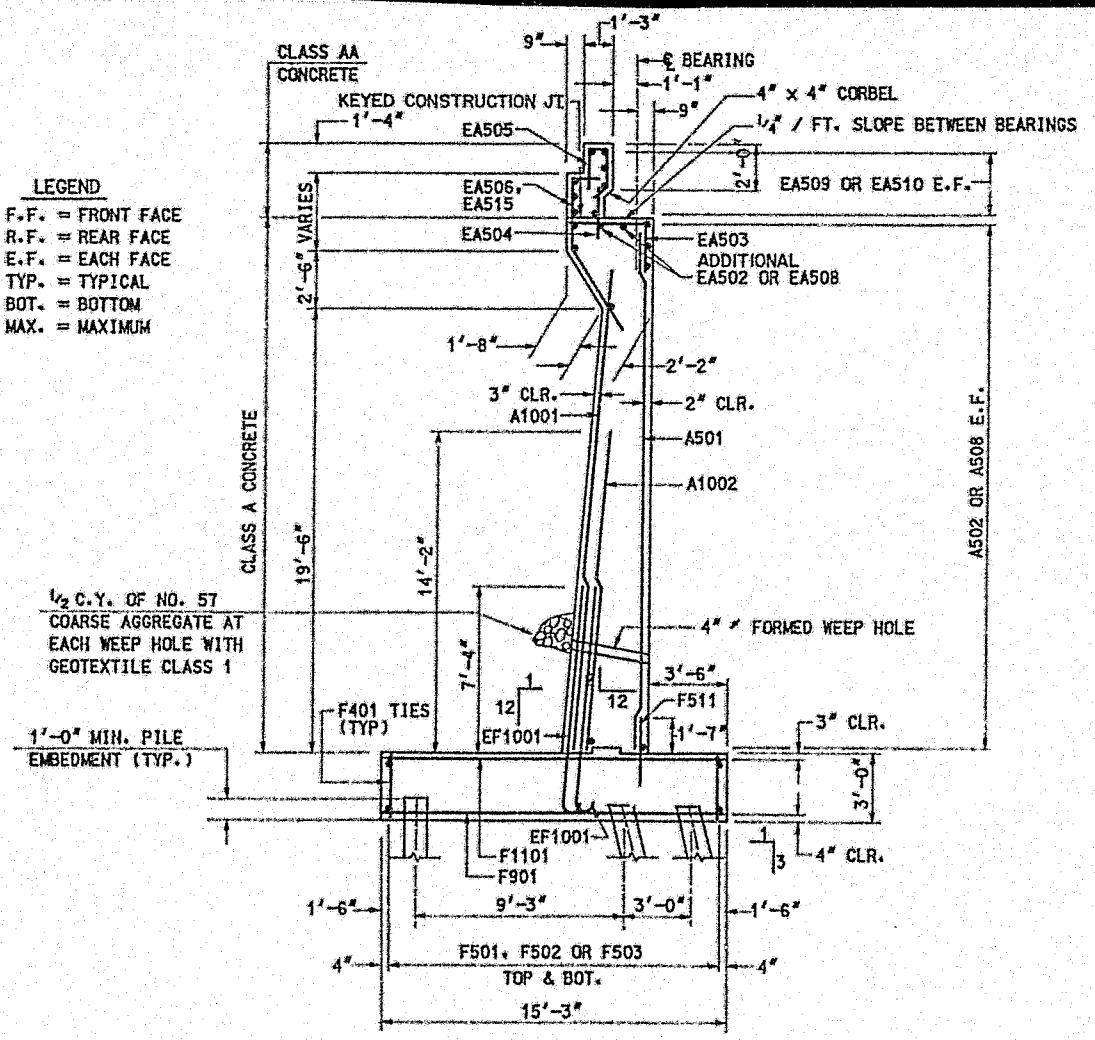
SCALE: ¼" = 1'-0"



ELEVATION

SCALE: ¼" = 1'-0"

LEGEND
F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE
TYP. = TYPICAL
BOT. = BOTTOM
MAX. = MAXIMUM



TYPICAL SECTION

SCALE: ¼" = 1'-0"

BEARING SEAT ELEVATION	
G1	107.91
G2	108.09
G3	108.27
G4	108.42
G5	108.35
G6	108.27
G7	108.52

Mark	Description	By	Chk'd.	App'd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

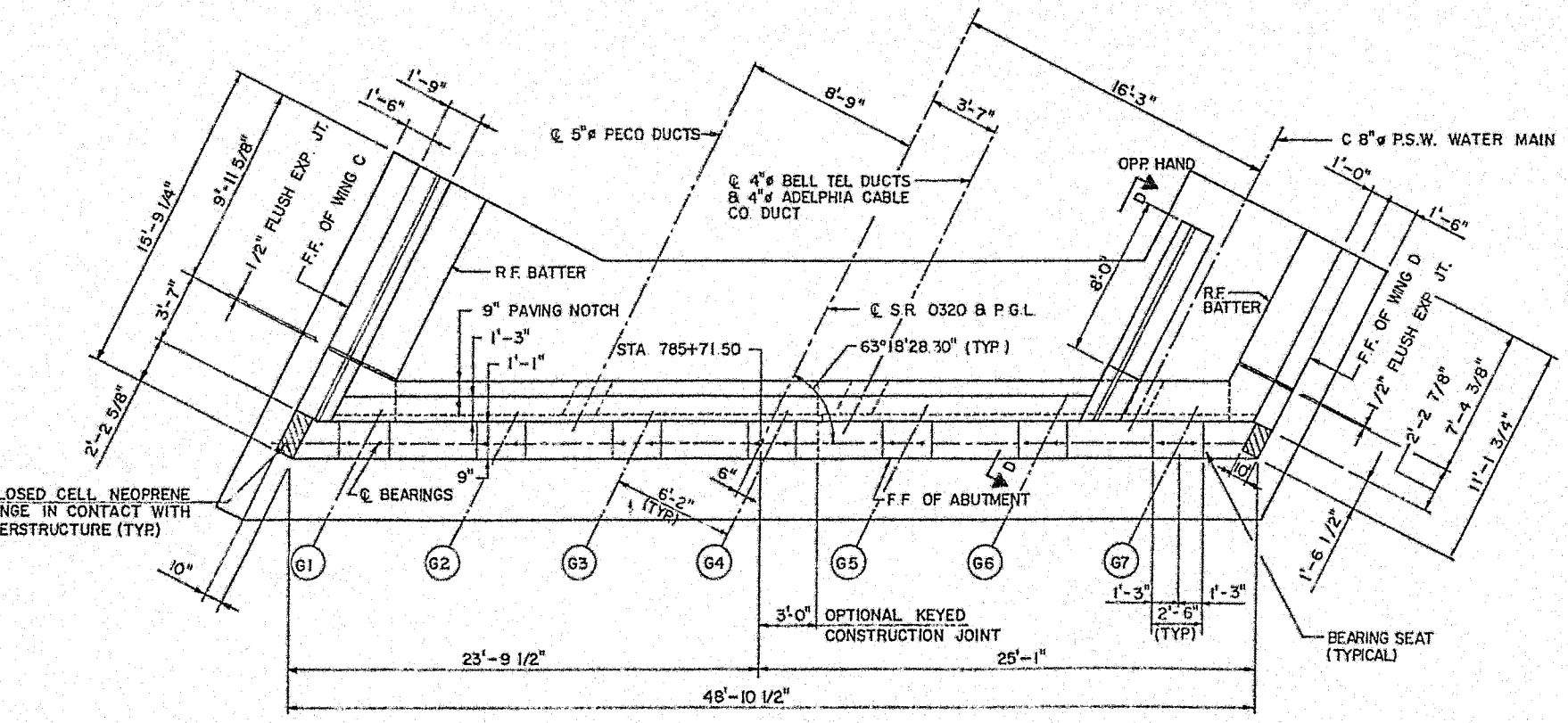
NOTES:
- FOR GENERAL NOTES, SEE SHEET NO. 2
- FOR BAR SCHEDULE, SEE SHEET 15
- CUT AND PLACE BACKWALL REINFORCEMENT TO ACCOMODATE UTILITY OPENINGS
- FOR SECTION A-A, B-B, AND C-C SEE SHEET 9
- FOR UTILITY OPENING DETAILS, SEE SHEET 8
- FOR SECTION D-D, SEE SHEET 8
- TOP OF BACKWALL ELEVATIONS ARE AT FRONT FACE.
- FOR P.S.W.CO. PIPE SLEEVE DETAIL, SEE BC-794

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT 1

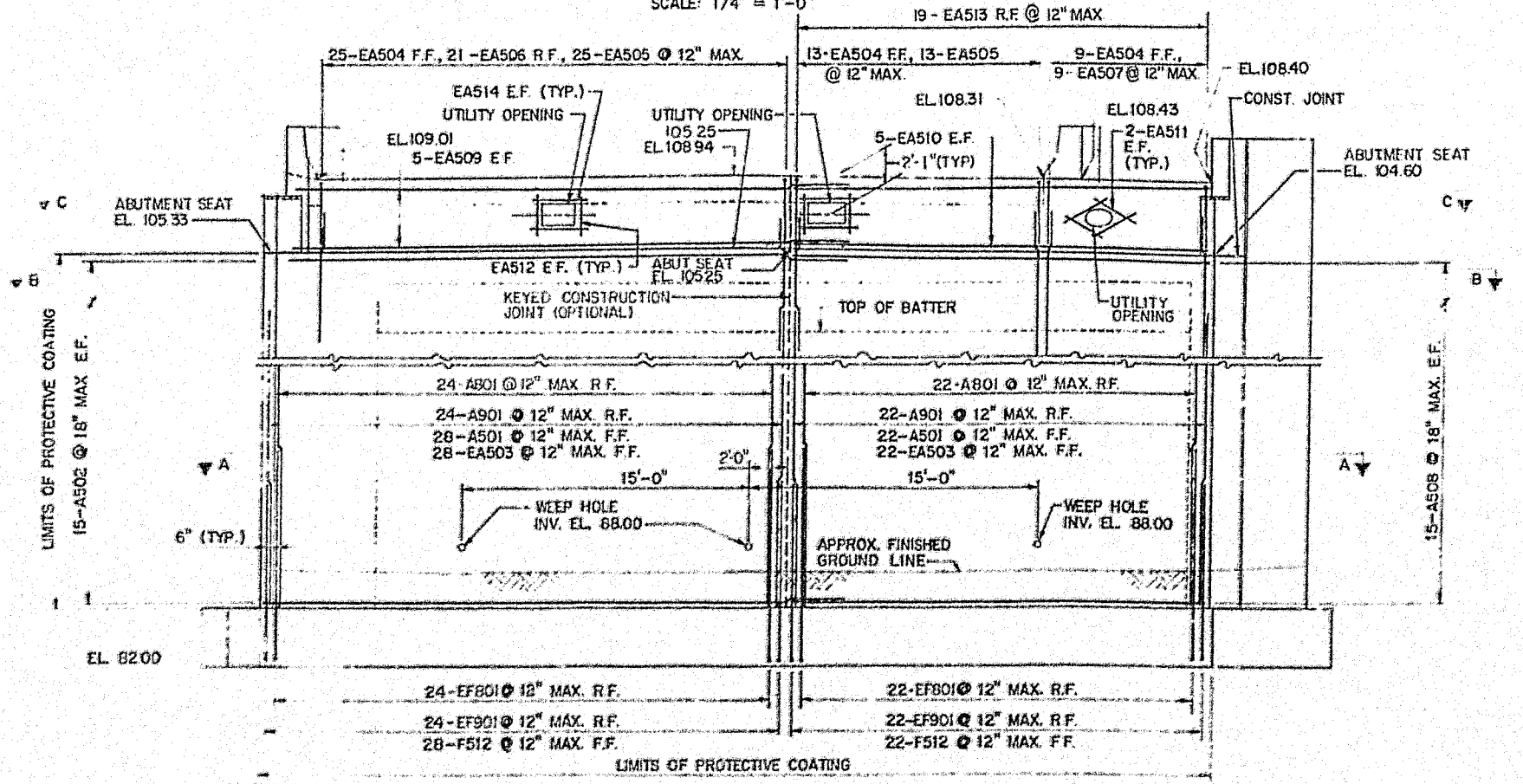
RECOMMENDED 4-26-93

SHEET 6 OF 35



PLAN

SCALE: 1/4" = 1'-0"

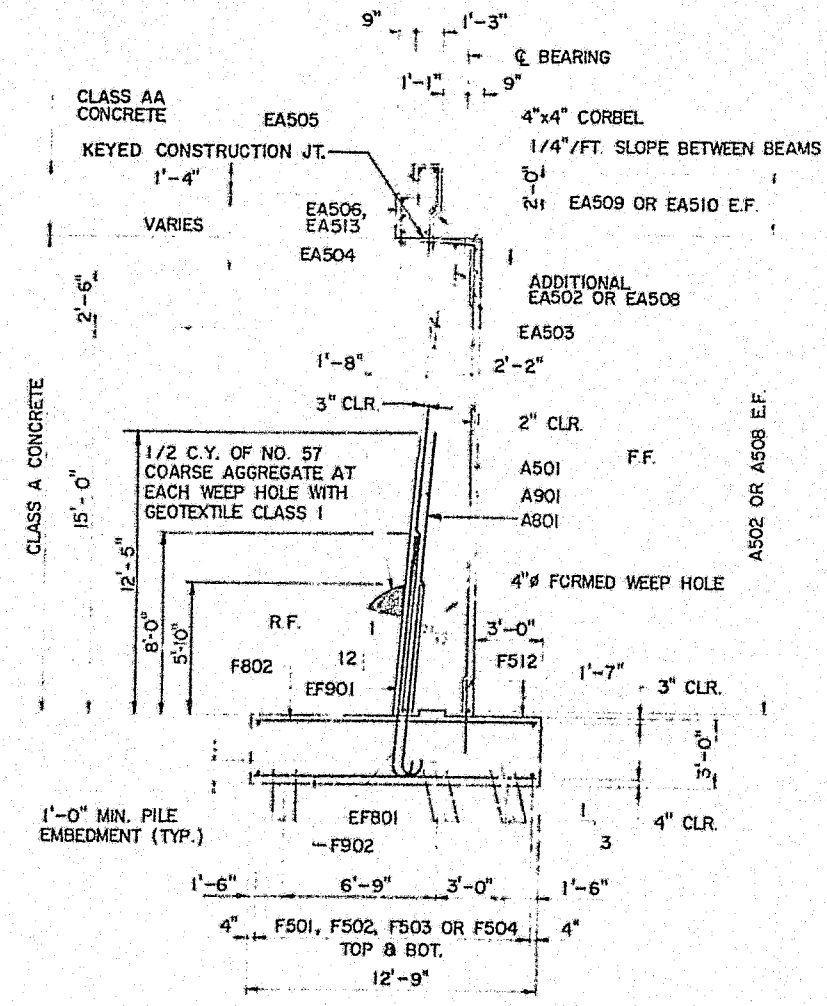


ELEVATION

SCALE: 1/4" = 1'-0"

LEGEND

F.F.	=	FRONT FACE
R.F.	=	REAR FACE
E.F.	=	EACH FACE
TYP.	=	TYPICAL
BOT.	=	BOTTOM
MAX.	=	MAXIMUM



TYPICAL SECTION

SCALE: 1/4" = 1'-0"

BEARING SEAT ELEVATIONS	
G1	105.39
G2	105.37
G3	105.35
G4	105.30
G5	105.03
G6	104.75
G7	104.80

NOTES

- FOR GENERAL NOTES SEE SHEET 2
- TOP OF BACKWALL ELEVATIONS ARE GIVEN AT FRONT FACE
- FOR BAR SCHEDULE SEE SHEET 16
- CUT AND PLACE BACKWALL REINFORCEMENT TO ACCOMODATE AND PLACE UTILITY OPENINGS
- FOR SECTION A-A, B-B AND C-C SEE SHEET 10
- FOR UTILITY OPENING DETAILS SEE SHEET 8
- FOR SECTION D-D SEE SHEET 8
- FOR P.S.W.CO. PIPE SLEEVE DETAIL SEE BC-794

Mark	Description	By	Chk'd	Recd	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

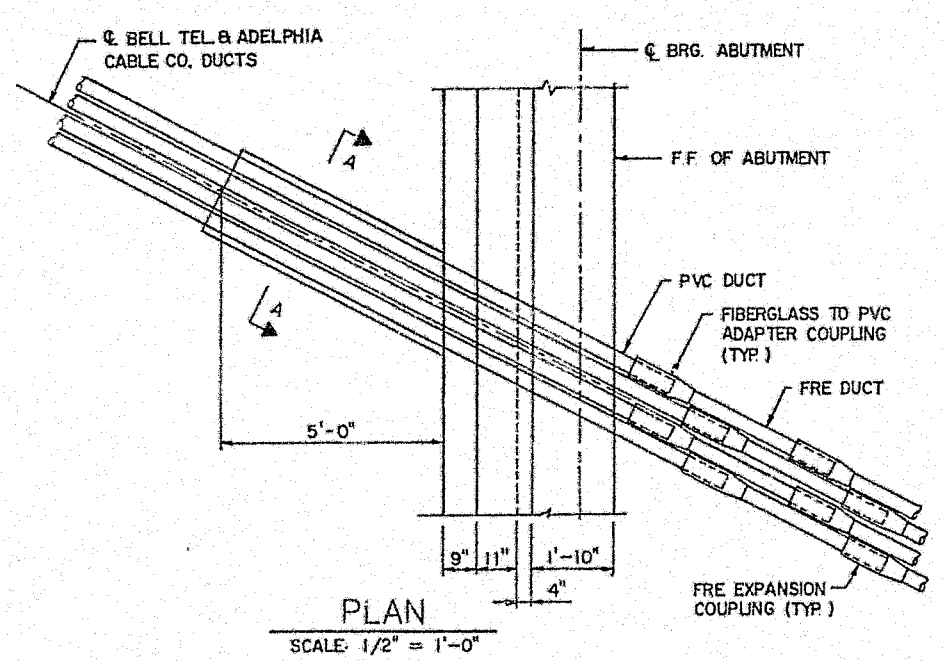
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT 2

RECOMMENDED 4-26-93

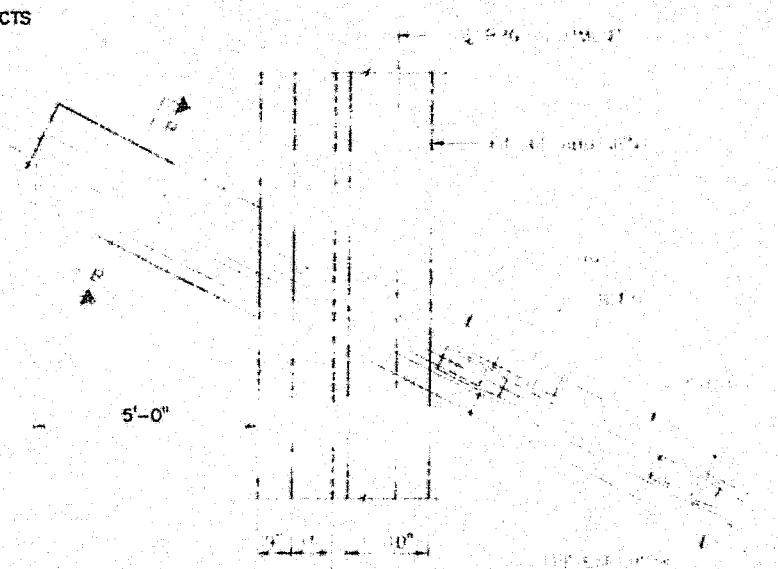
SHEET 7 OF 35

S-17313A



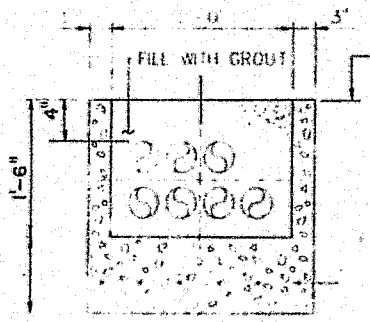
PLAN

SCALE: 1/2" = 1'-0"

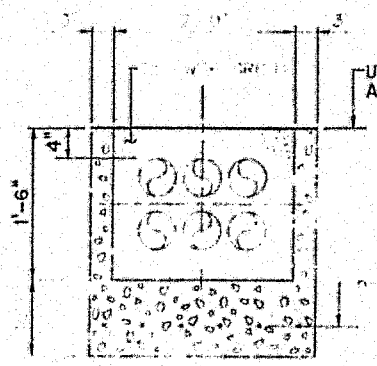


PLAN

SCALE: 1/2" = 1'-0"

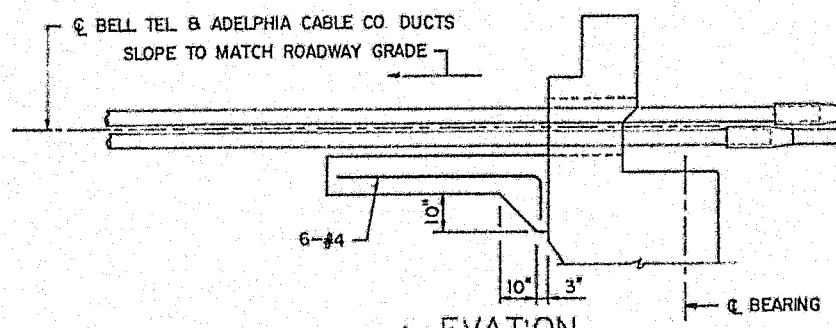


SECTION A–A



SECTION B–B

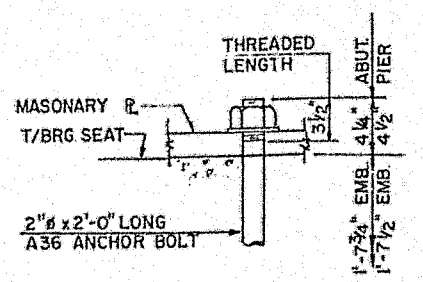
SCALE: 1" = 1'-0"



ELEVATION

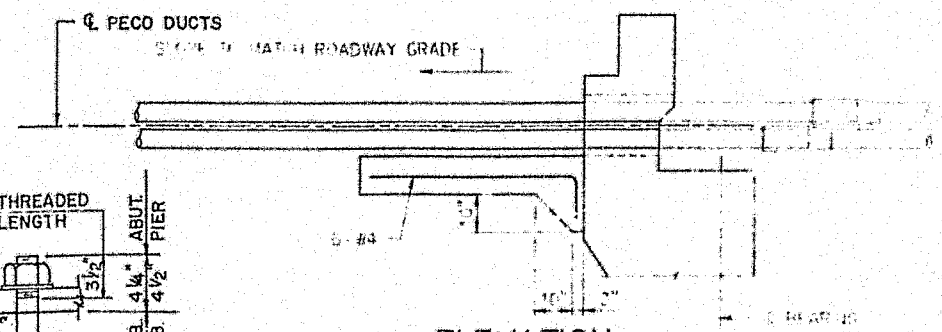
SCALE: 1/2" = 1'-0"

BELL TE... & ADELPHIA CABLE CO. DUCTS AT ABUTMENTS



ANCHOR BOLT DETAIL

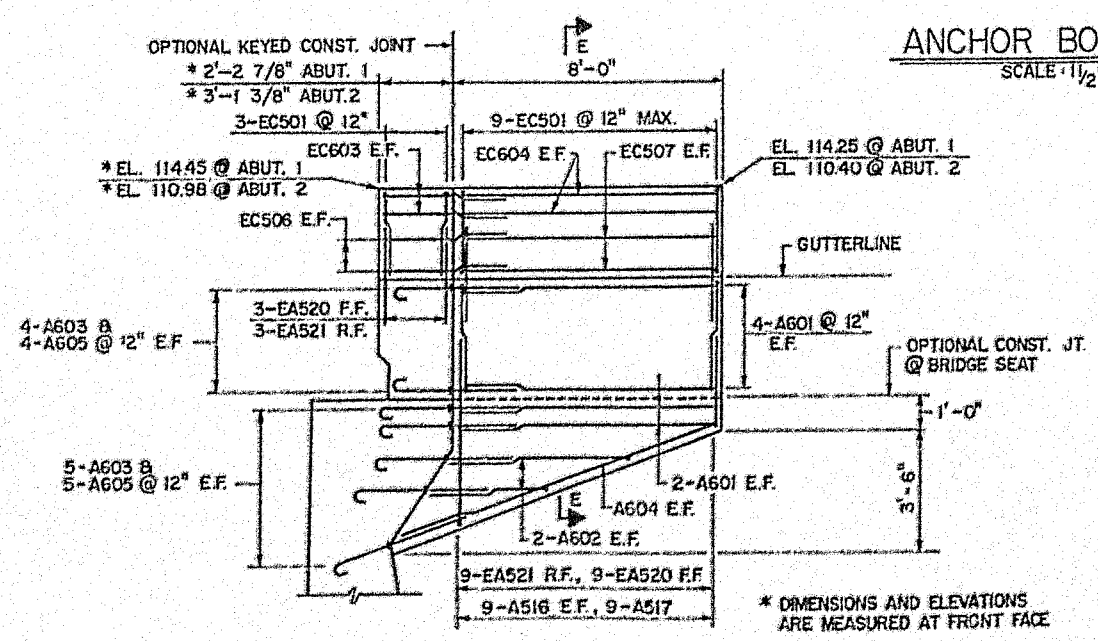
SCALE: 1½"=1'-0"



ELEVATION

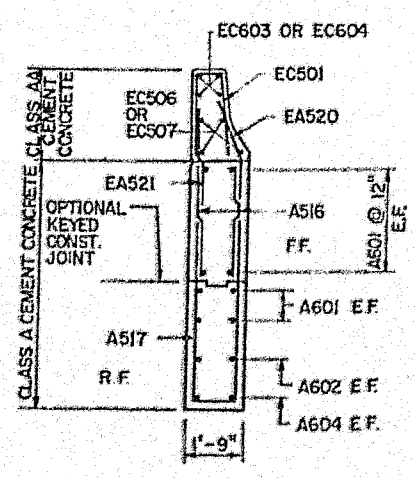
SCALE: 1/2" = 1'-0"

PECO DUCTS AT ABUTMENT



SECTION D–D

SCALE: 3/8" = 1'-0"



SECTION E–E

SCALE: 3/8" = 1'-0"

NOTES

- FOR ABUTMENT 1 SEE SHEET 6
- FOR ABUTMENT 2 SEE SHEET 7
- FOR ST. RY SUPPORT DETAILS AND ADDITIONAL NOTES SEE SHEET 19
- FOR TABLE OF QUANTITIES & MISCELLANEOUS DETAILS SEE SHEET 8

Mark	Description	By	Chk'd	Rev.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

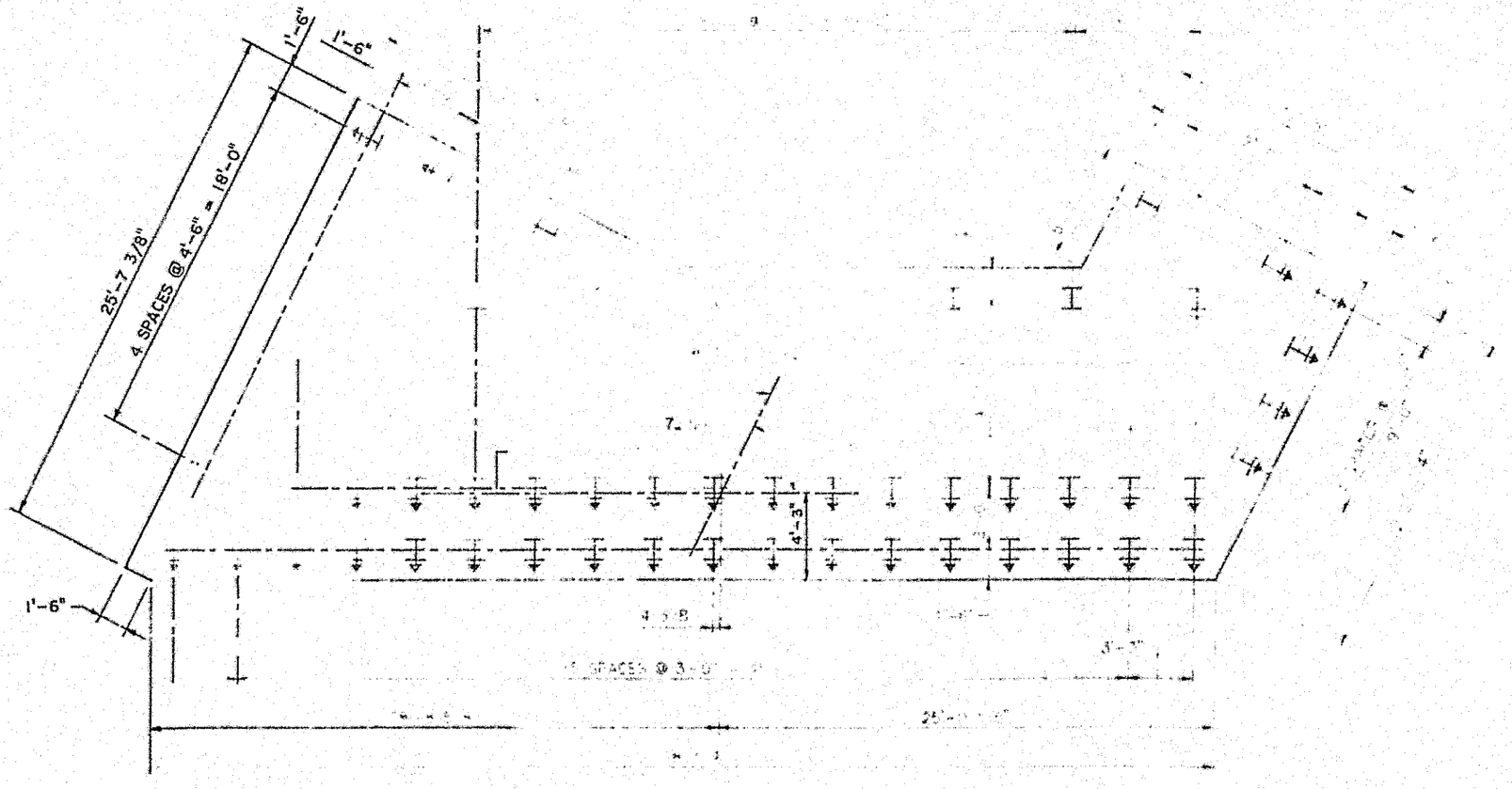
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT DETAILS

RECOMMENDED 4-26-93

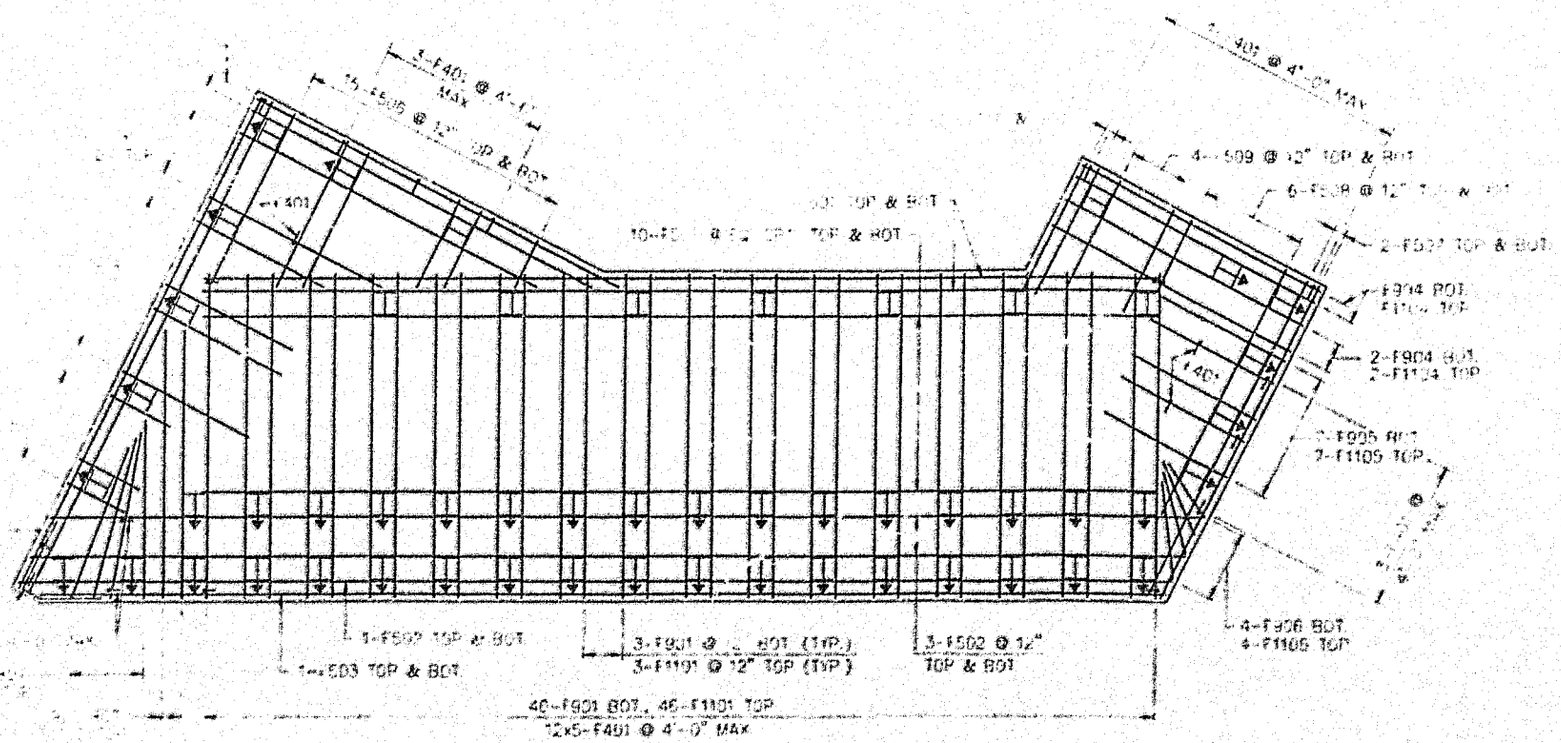
SHEET 8 OF 35

S-173134



FOOTING PLAN

SCALE 1/4" = 1'-0"



REINFORCEMENT PLACEMENT PLAN

SCALE 1/4" = 1'-0"

NOTES

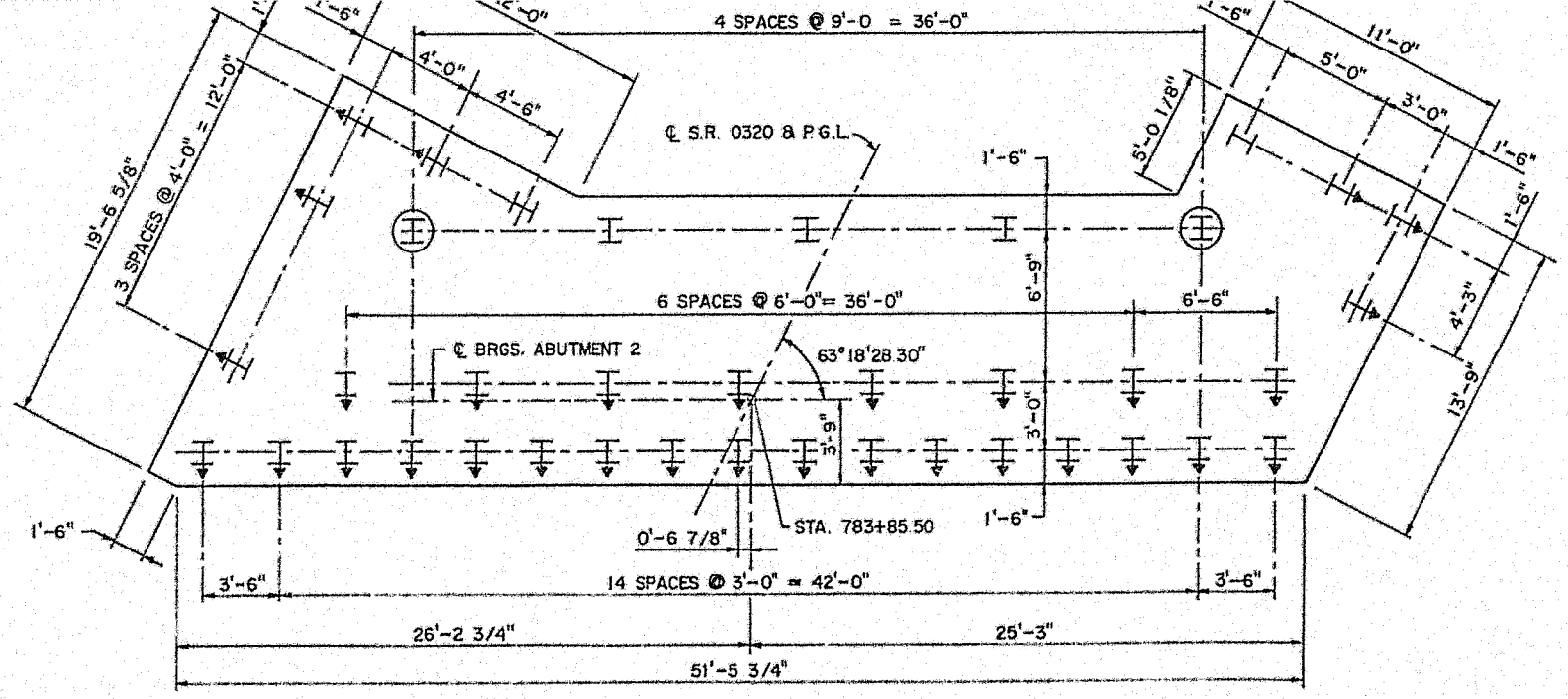
- WORK THIS SHEET WITH SH
- FOR GENERAL NOTES, SEE S
- FOR BAR SCHEDULE SEE SH

LEGEND

- I DENOTES VERTICAL PIL
- I DENOTES BATTERED PI DIRECTION OF ARROW
- (I) DENOTES TEST PILES

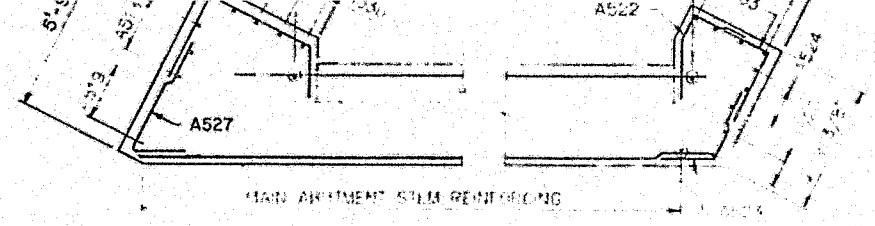
PILE NOTES

- ALL PILES ARE HP12x53 ST
- MAX. PILE DESIGN LOAD =
- ESTIMATED PILE TIP ELEVAT TO EL 6800



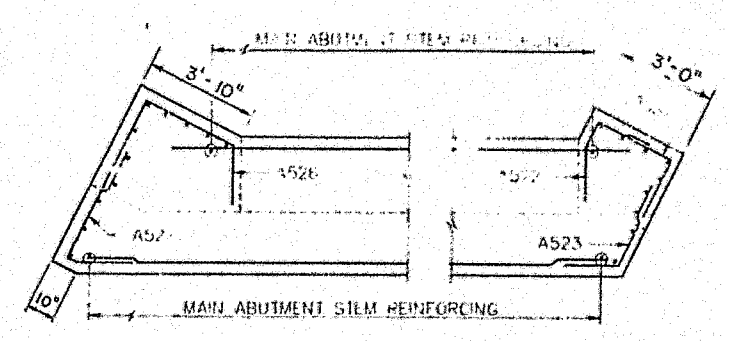
FOOTING PLAN

SCALE 1/4" = 1'-0"



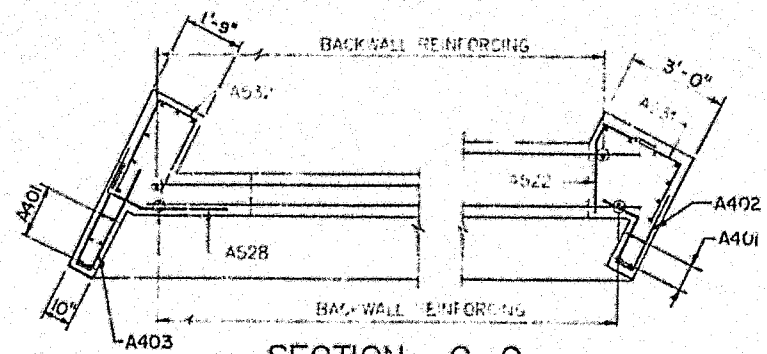
SECTION A–A

SCALE 3/8" = 1'-0"



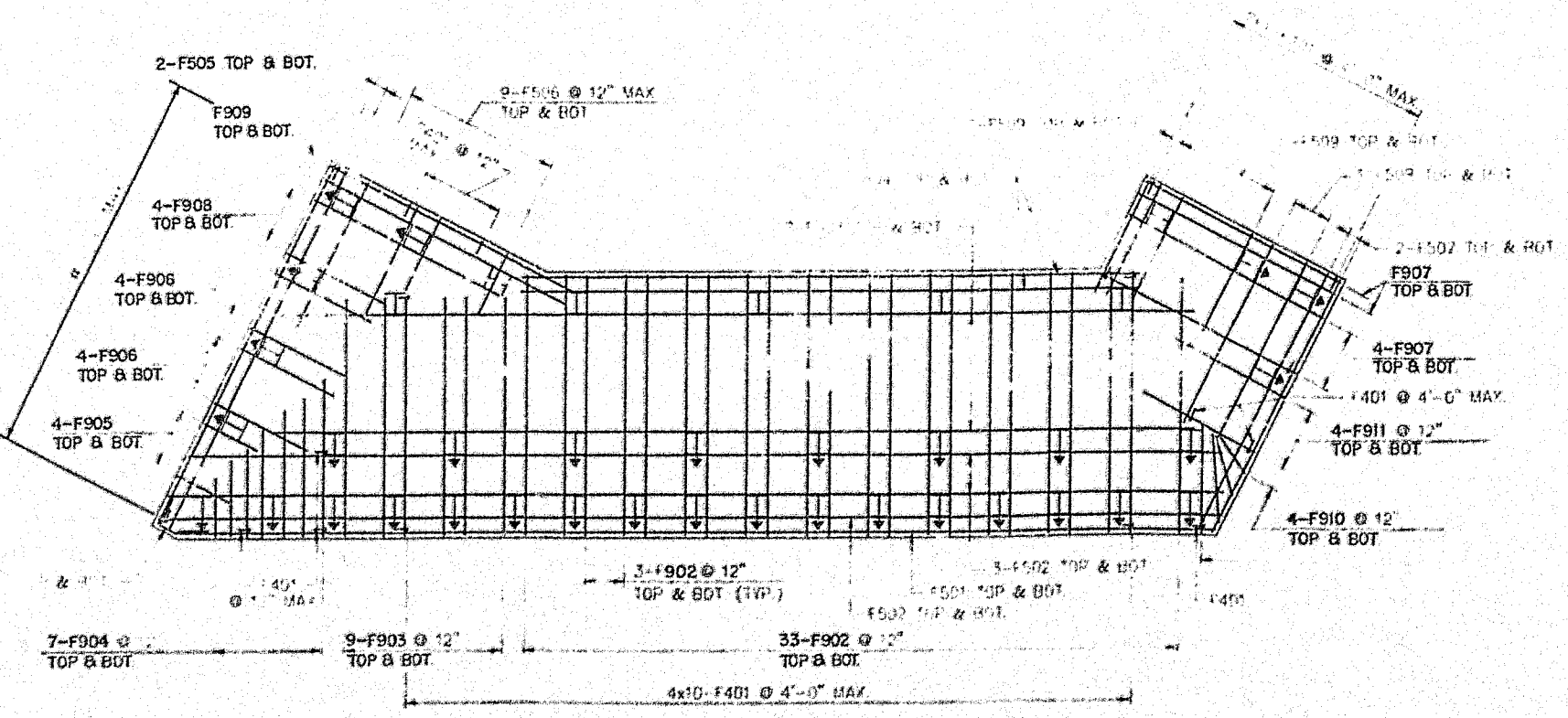
SECTION B–B

SCALE 3/8" = 1'-0"



SECTION C–C

SCALE 3/8" = 1'-0"



REINFORCEMENT PLACEMENT PLAN

SCALE 1/4" = 1'-0"

NOTES

- WORK THIS SHEET WITH SHEETS 7, 13 & 14
- FOR BAR SCHEDULE SEE SHEET 16
- FOR GENERAL NOTES SEE SHEET 2

LEGEND

- I — DENOTES VERTICAL PILES
- I — DENOTES BATTERED PILES 1 TO 3 DIRECTION OF ARROW
- (T) — DENOTES TEST PILES

PILE NOTES

- ALL PILES ARE HP12x53 STEEL PILES
- MAX. PILE DESIGN LOAD = 60 TONS
- ESTIMATED PILE TIP ELEVATION EL. 52.00 TO EL. 62.00

Mark	Description	By	Chk'd	Reco.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

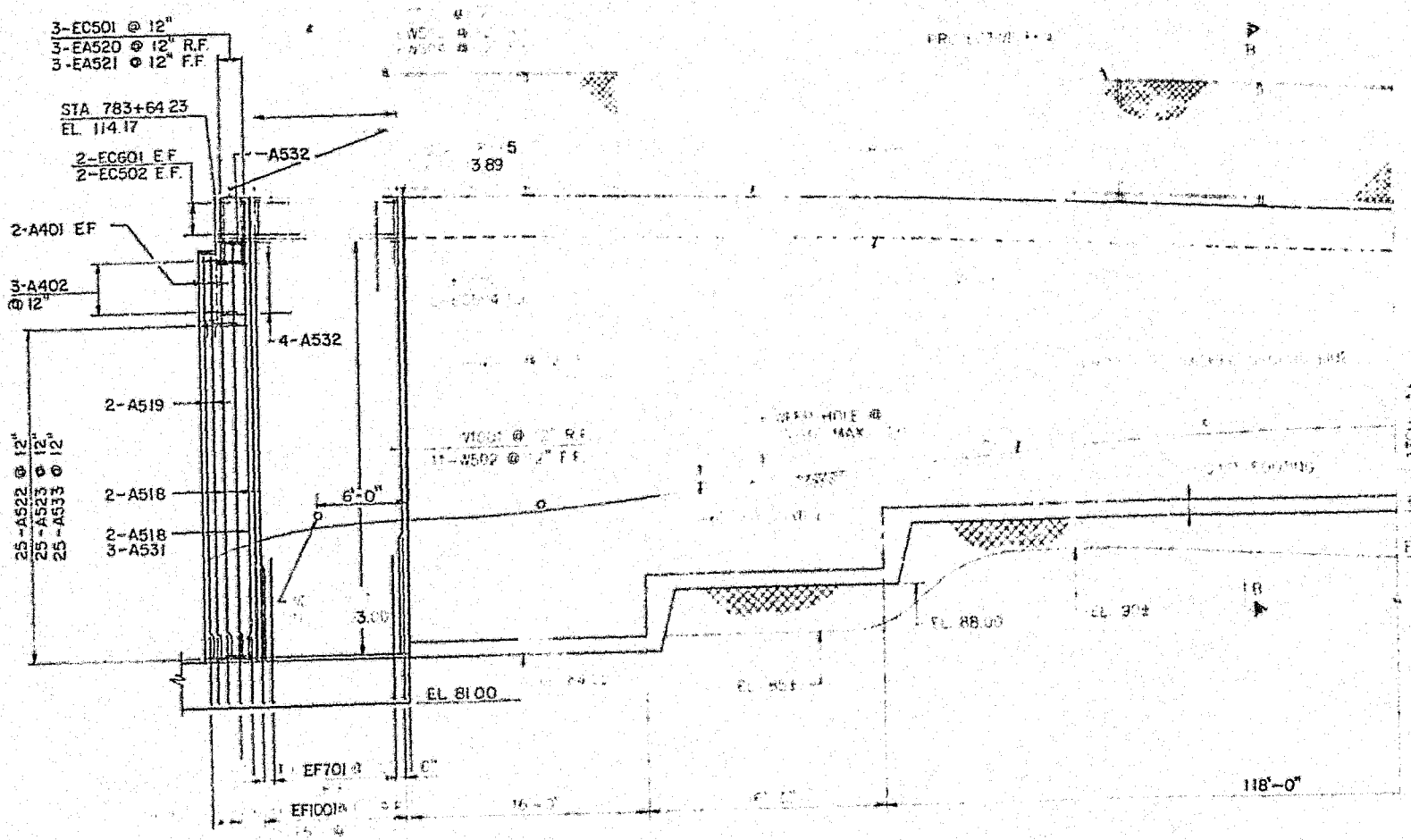
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT 2 FOOTING PLAN & DETAILS

RECOMMENDED 4-26-93

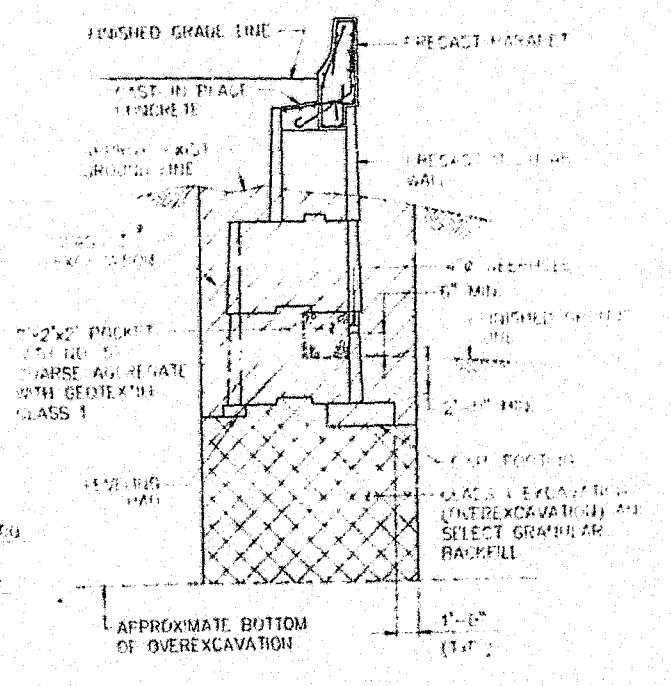
SHEET 10 OF 35

S – 17313A



WINGWALL A ELEVATION

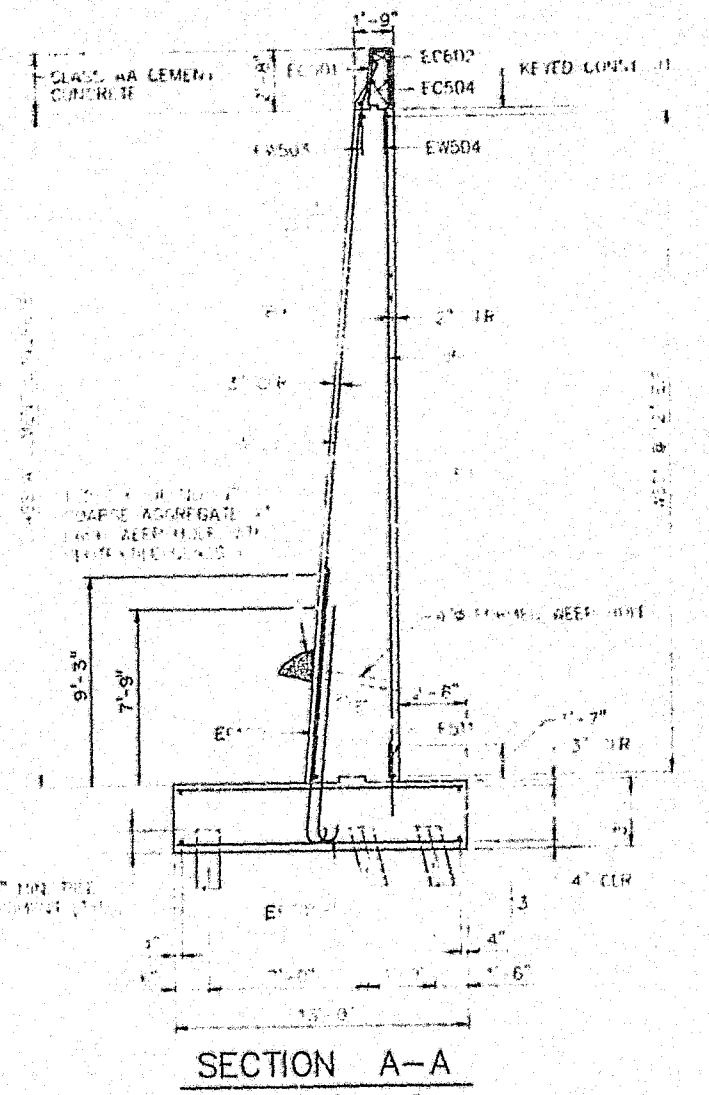
SCALE: 3/16" = 1'-0"



SECTION B–B

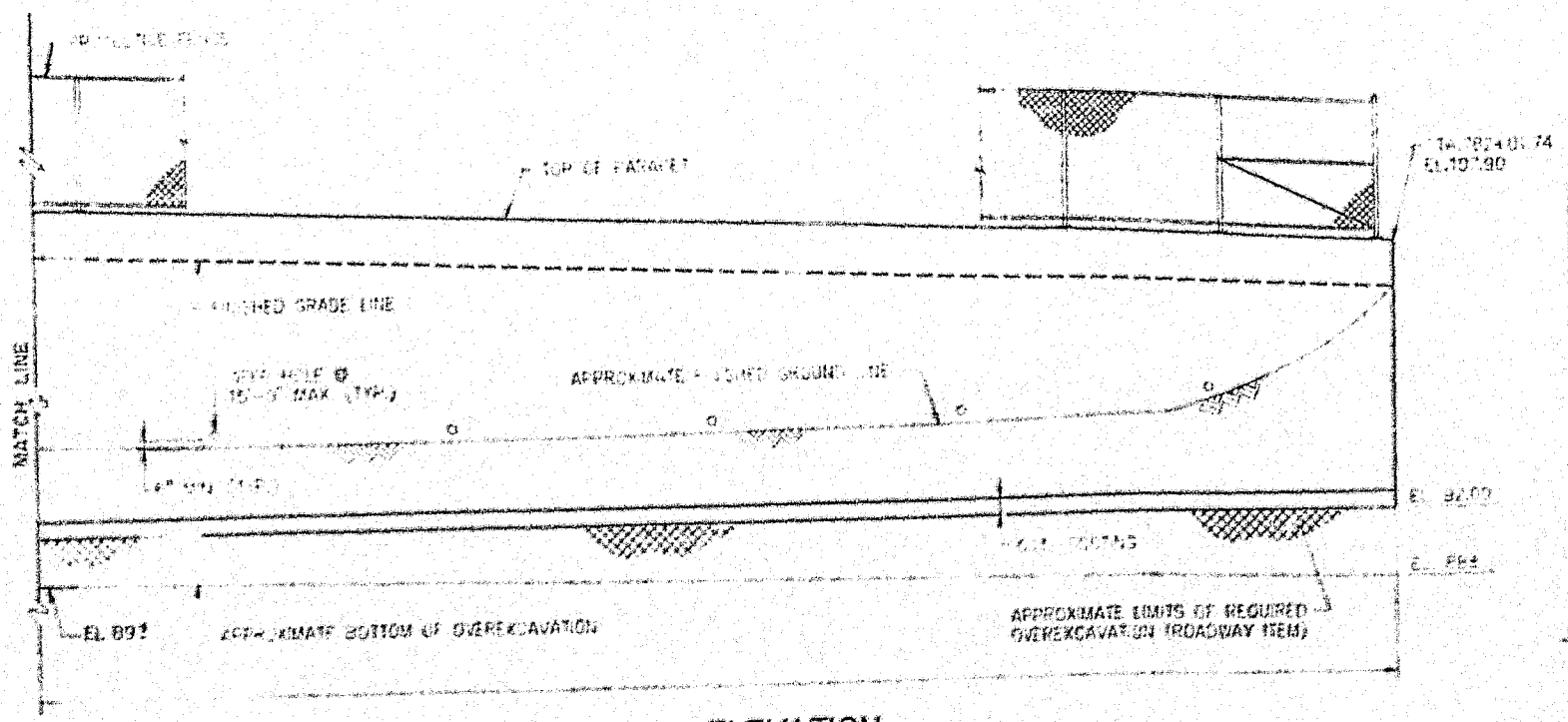
SCALE: 1/4" = 1'-0"

* INCLUDED IN THE



SECTION A–A

SCALE: 1/4" = 1'-0"



WINGWALL A ELEVATION

SCALE: 3/16" = 1'-0"

SUMMARY OF QUANTITES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
8600-0001	WINGWALL	L.S.	1.0
4303-0001	CLASS 1 EXCAVATION SPECIAL	C.Y.	224
4205-0200	SELECTED BORROW EXCAVATION, SPECIAL	C.Y.	224
0208-0001	SPECIAL ROLLING	HOUR	2

FOR INFORMATION ONLY

AREA FACE OF WALL = 2080 S.F.
LENGTH OF PRECAST PARAPET = 150 L.F.
LENGTH OF PROTECTIVE FENCE = 150 L.F.
(INCLUDED IN L.S. PRICE OF WALL)

NOTES

- MATCH LINE SHEET WITH SHEET 9
- REINFORCEMENT SEE SHEET 6
- REBAR SCHEDULE SEE SHEET 15
- ALLOWABLE BEARING PRESSURE = 2.5 TSF

Mark	Description	By	Chk'd.	Recd	Date
	REVISIONS				

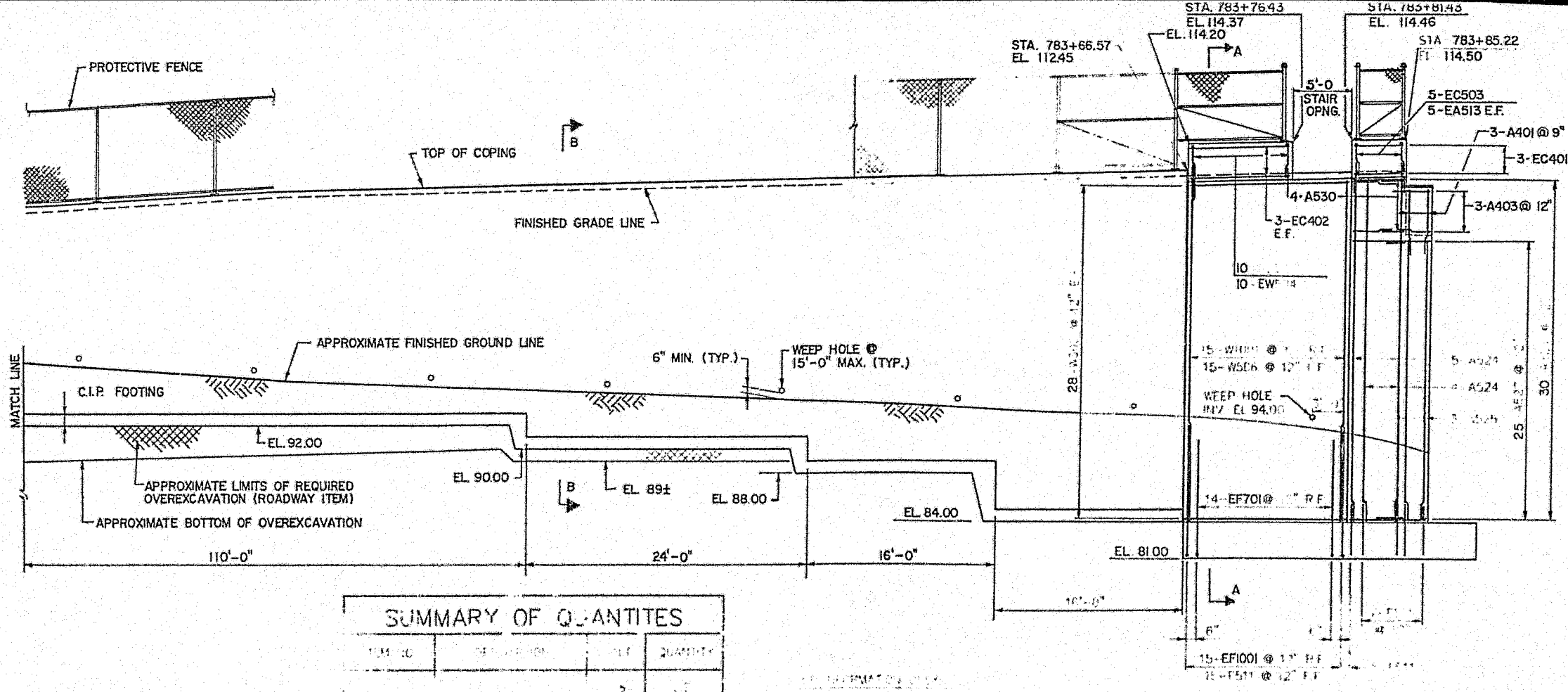
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

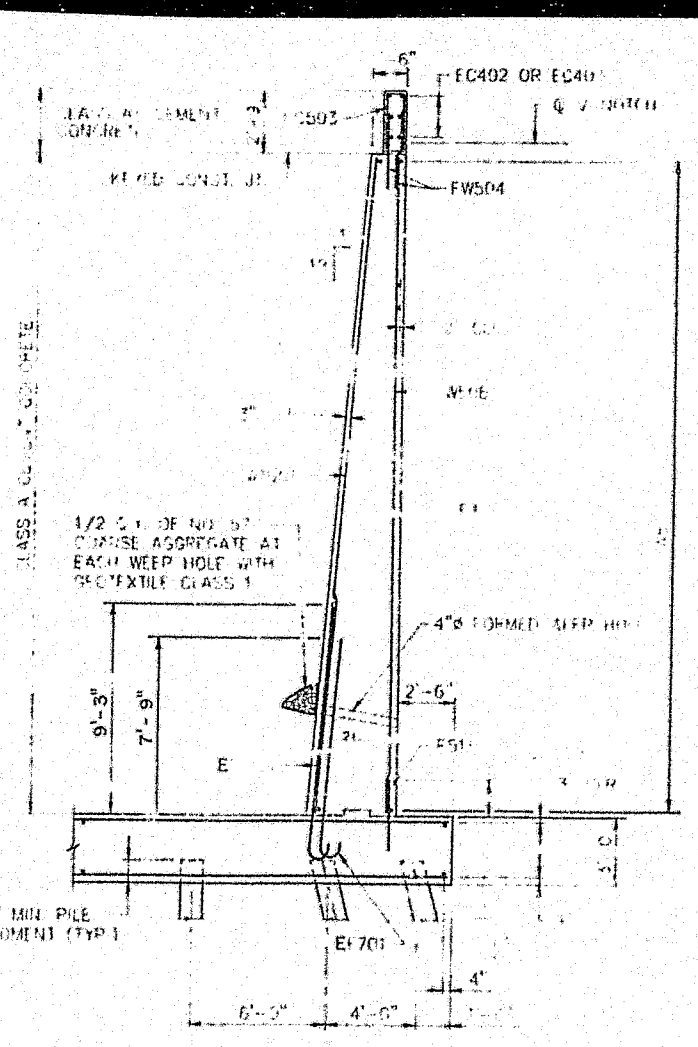
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
WINGWALL A

RECOMMENDED 4-26-93

SHEET 11 OF 35

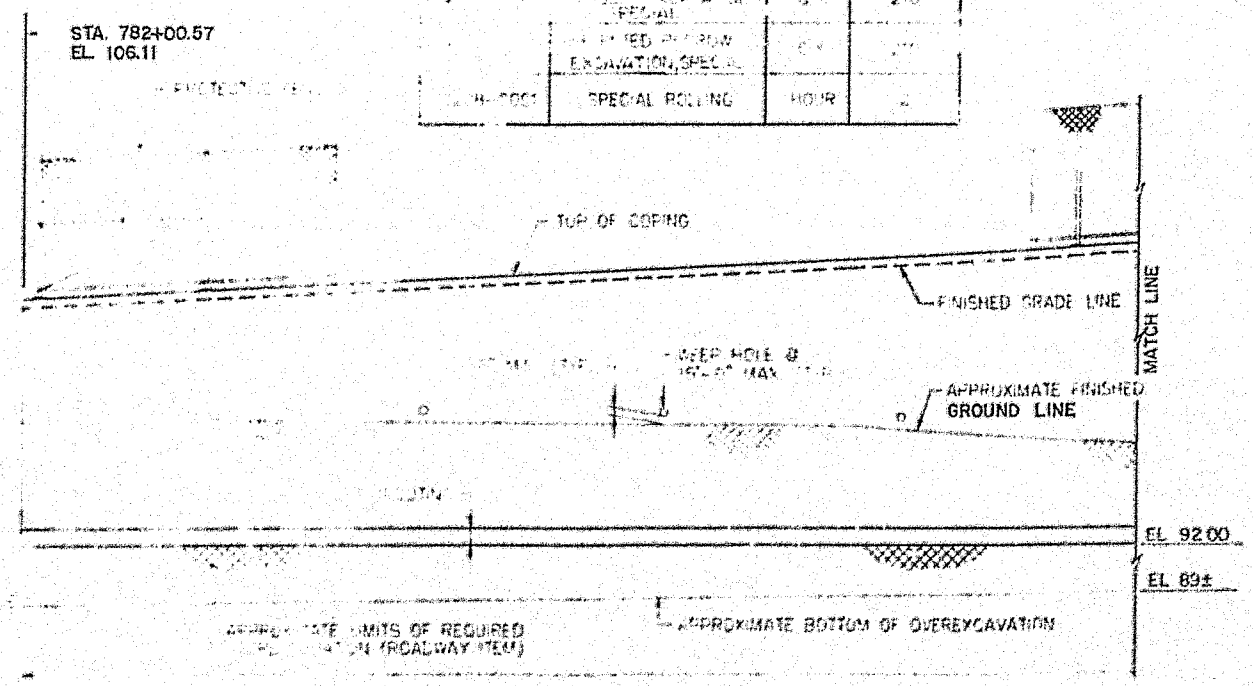




SUMMARY OF QUANTITIES

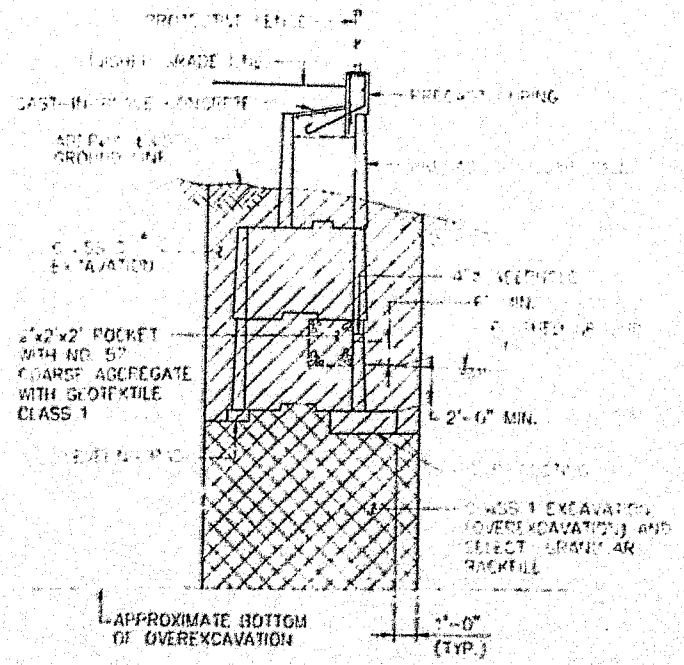
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	EXCAVATION SPECIAL	C.Y.	210
[illegible]	[illegible] EXCAVATION SPECIAL	C.Y.	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible] 001	SPECIAL ROLLING	HOUR	[illegible]

[illegible] PROTECTIVE FENCE [illegible] LF
(INCLUDED IN L.S. PRICE OF WALL)



WINGWALL B ELEVATION

SCALE: 3/16" = 1'-0"



SECTION B–B

SCALE: 1/4" = 1'-0"

* INCLUDED IN THE L.S. PRICE OF WALL

SECTION A–A

SCALE: 1/4" = 1'-0"

NOTES:
- WORK THIS SHEET WITH SHEET 9.
- PROVIDE SMOOTH FINISH TO TOP OF WALL AT STAIR OPENING.
- PARAPET ENDS AT STAIR OPENING SHALL BE TRULY VERTICAL.
- FOR ABUTMENT 1 SEE SHEET 6.
- FOR BAR SCHEDULE SEE SHEET 15.
- ALLOWABLE BEARING PRESSURE = 2.5 TSF.

Mark	Description	By	Chk'd	Reco.	Date
REVISIONS					

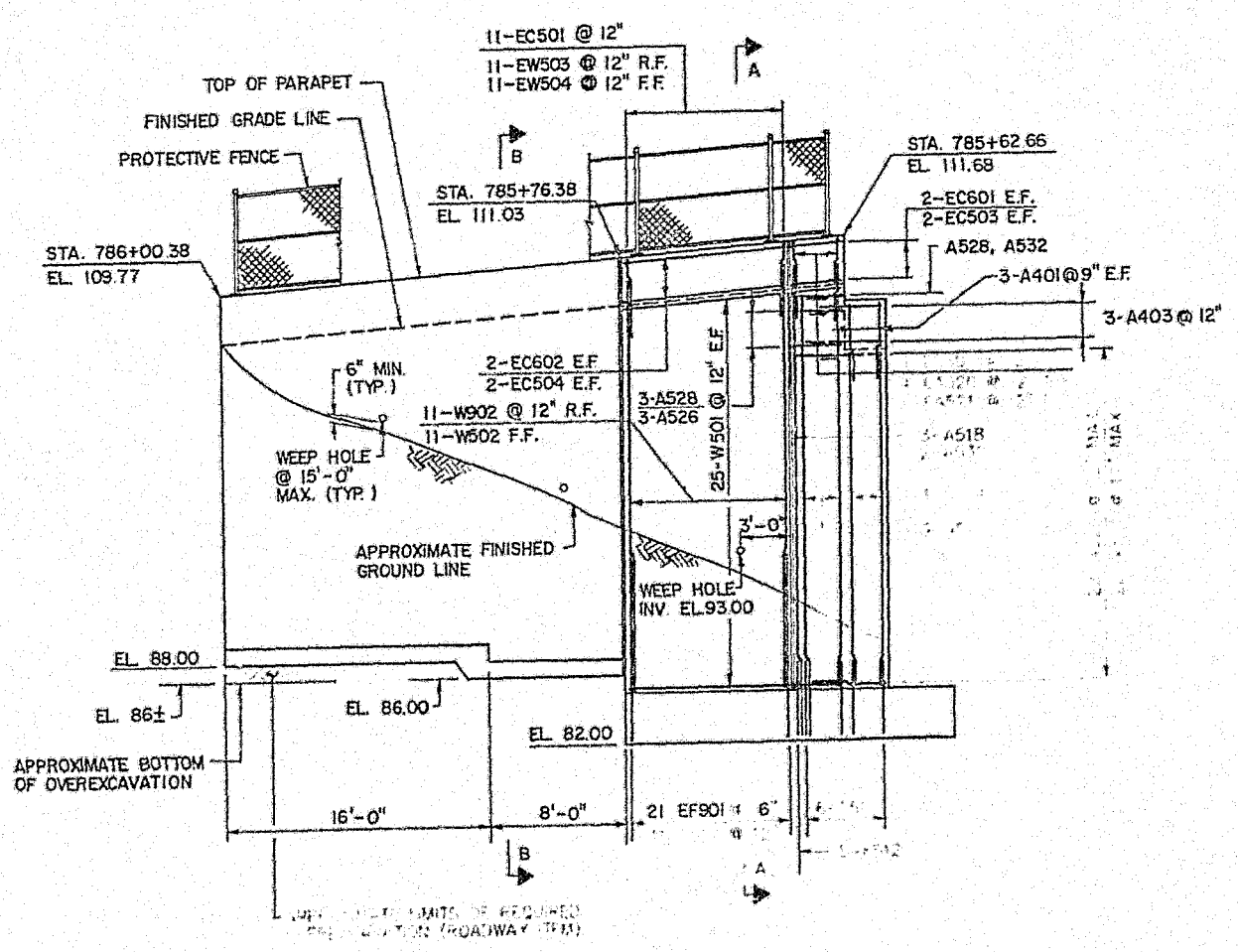
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
WINGWALL B

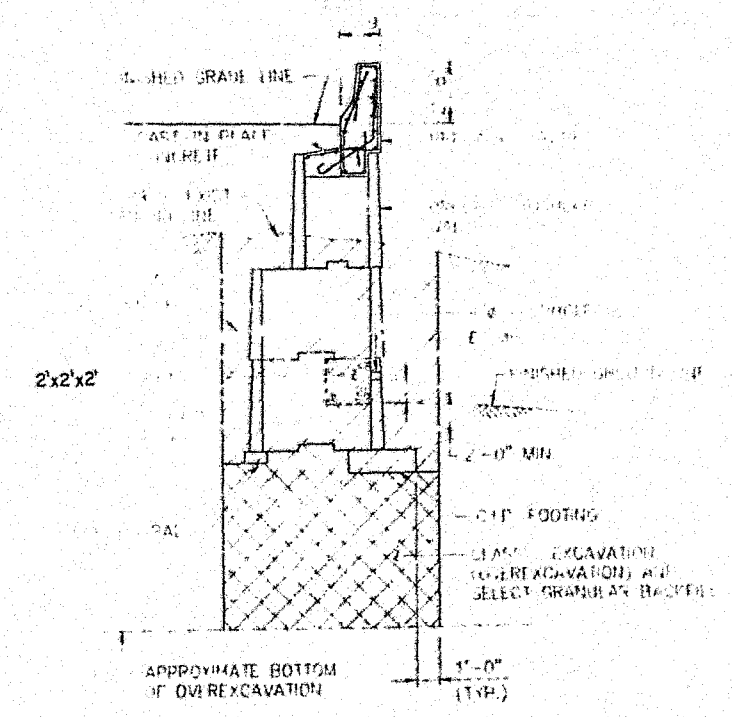
RECOMMENDED 4-26-93

SHEET 12 OF 35



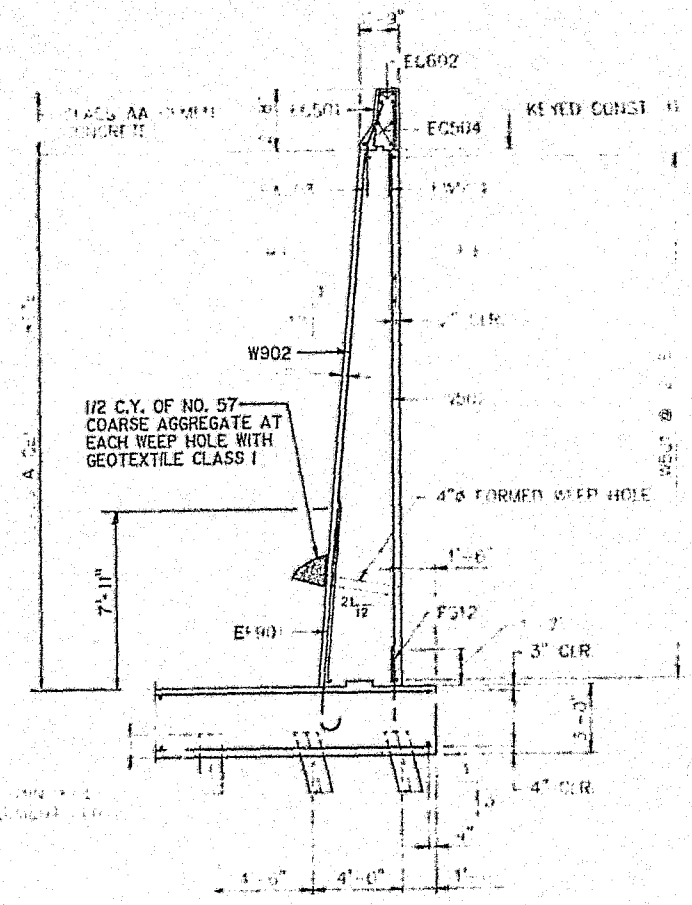
WINGWALL C ELEVATION

SCALE 3/16" = 1'-0"



SECTION B–B

SCALE 1/4" = 1'-0"



SECTION A–A

SCALE 1/4" = 1'-0"

SUMMARY OF QUANTITES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
0000 2750	WINGWALL	L.S.	L.S.
4205-0001	CLASS 1 EXCAVATION, SPECIAL	C.Y.	22
2190-0200	SELECTED BORROW EXCAVATION, SPECIAL	C.Y.	22
2818-0001	SPECIAL ROLLING	HOUR	1

[illegible] ONLY

AREA FACE OF WALL = 470 S.F.
LENGTH OF PRECAST PARAPET = 24 L.F.
LENGTH OF CONCRETE PARAPET = 24 L.F.
(ALONG FACE OF WALL)

NOTES

- WORK THIS SHEET WITH SHEET 10
- FOR ABUTMENT 2 SEE SHEET 7
- FOR BAR SCHEDULE SEE SHEET 16
- ALLOWABLE BEARING PRESSURE = 2.5 TSF

Mark	Description	By	Chk'd.	Recd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

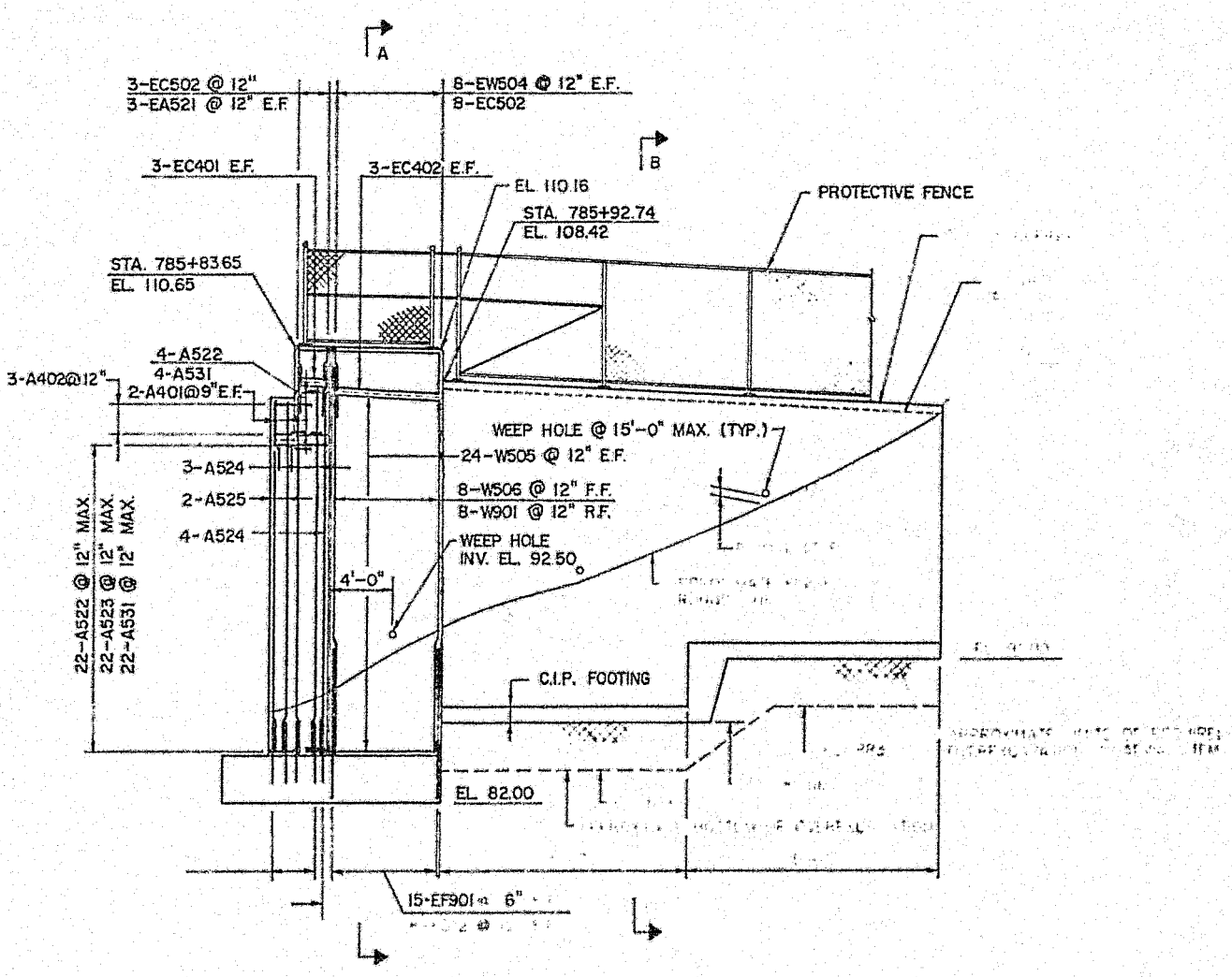
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
WINGWALL C

RECOMMENDED 4-26-93

SHEET 13 OF 35

C 122174



WINGWALL D ELEVATION

SCALE: 1/4" = 1'-0"

SUMMARY OF QUANTITES

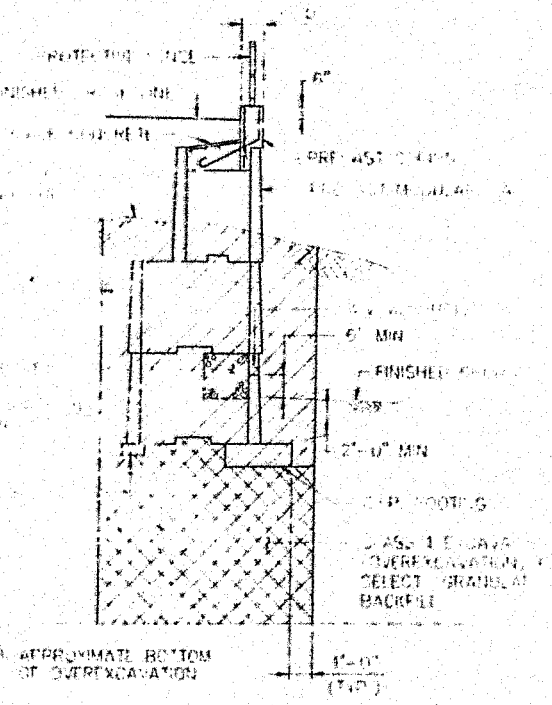
[illegible]	[illegible]	L.S.	L.S.
[illegible]	CLASS A EXCAVATION	C.Y.	53
[illegible]	SELECTED BORROW EXCAVATION, SPECIAL	C.Y.	53
[illegible]	SPECIAL ROLLING	HOUR	1

[illegible]

4-[illegible] = 55 L.F.

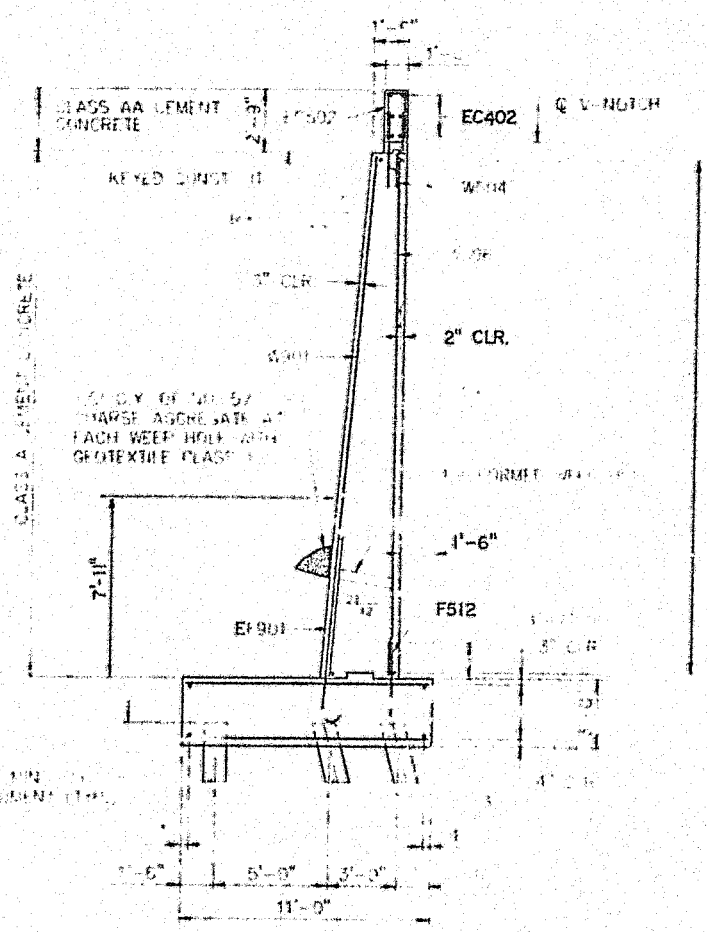
[illegible] PROTECTIVE FENCE = 32 L.F.

[illegible] WALL



SECTION B–B

SCALE: 1/4" = 1'-0"



SECTION A–A

SCALE: 1/4" = 1'-0"

NOTES:

- WORK THIS SHEET WITH SHEET 10
- FOR ABUTMENT 2 SEE SHEET 7
- FOR BAR SCHEDULE SEE SHEET 16
- ALLOWABLE BEARING PRESSURE = 2.5 TSF

Mark	Description	By	Chk'd.	Reco.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

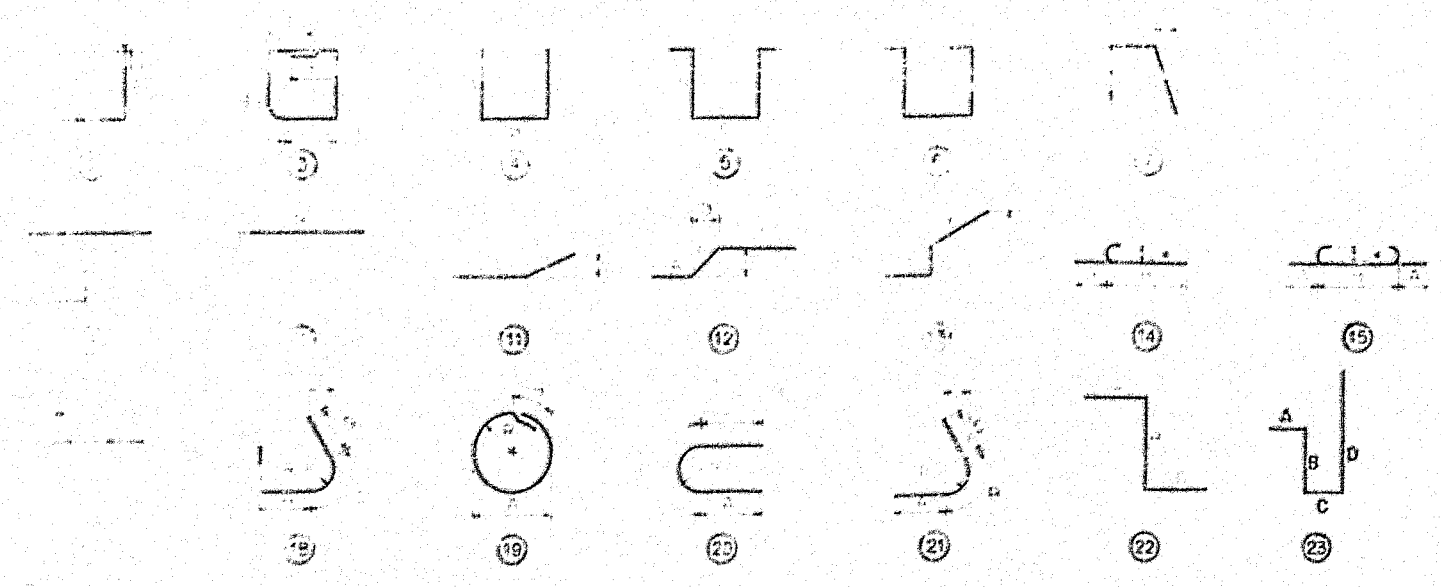
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
WINGWALL D

RECOMMENDED 1-26-93

SHEET 14 OF 35

82	3'-3"	16	0'-6"	2'-5"	0'-4"				
24	45'-3"	STR							
8	55'-0"	STR							
2	53'-4"	STR							
2	6'-2"	7	2'-6"	1'-2"	2'-6"	2'-2 3/4"			
4	25'-3"	STR							
30	2'-0" TO 9'-0"	STR							VARY 2 EACH BY 0'-6"
4	15'-11"	STR							
12	3'-6" TO 13'-0"	STR							VARY 2 EACH BY 1'-10 3/4"
8	5'-6"	STR							
4	6'-4"	STR							
98	2'-10"	STR							
24	10'-3"	14	0'-10"	10'-5					
46	14'-11"	STR							
2	12'-3"	STR							
4	7'-3" TO 8'-0"	STR							VARY 1 EACH BY 0'-3"
4	12'-8"	STR							
7	6'-3"	STR							
4	3'-3" TO 4'-0"	STR							VARY 1 EACH BY 0'-3"
7	9'-6" TO 19'-6"	STR							VARY 1 EACH BY 1'-8"
10	6'-6"	STR							
6	3'-6"	STR							
110	13'-4"	14	1'-5"	11'-11"					
46	14'-11"	STR							
2	12'-3"	STR							
4	7'-3" TO 8'-0"	STR							VARY 1 EACH BY 0'-3"
4	12'-8"	STR							
7	6'-3"	STR							
4	3'-3" TO 4'-0"	STR							VARY 1 EACH BY 0'-3"
7	9'-6" TO 19'-6"	STR							VARY 1 EACH BY 1'-8"
10	6'-6"	STR							
6	3'-6"	STR							
10	4'-6"	STR							
3	5'-8 1/2"	(3)	1'-3"	1'-5 1/2"	6"	2'-6"			
3	7'-0"	(4)	3'-3"	6"	3'-3"				
51	23'-5"	STR							
36	24'-6"	STR							EPOXY COAT 2 BARS ONLY
51	6'-5"	10	3'-0"	3'-5"					
46	4'-0"	STR							
37	5'-0"	8	0'-8"	1'-9"	0'-11"	1'-8"	0'-5 5/8"		
23	8'-9"	7	1'-0"	4'-3"	3'-6"	1'-11 1/2"			
9	5'-9"	8	0'-8"	1'-9"	1'-8"	1'-8"	0'-5 5/8"		
36	26'-10"	STR							EPOXY COAT 2 BARS ONLY
10	25'-0"	STR							
10	26'-10"	STR							
16	3'-0"	STR							
8	1'-6"	STR							
10	3'-6"	STR							
–	–	–							
19	8'-4" TO 8'-9"	(7)	1'-0"	3'-10" TO 4'-3"	3'-6"	1'-11 1/2"			VARY 1 EACH BY 0'-1/8"

	5	9	7'-6" TO 12'-10"	(4)	3'-0" TO 5'-8"	1'-6"	3'-0" TO 5'-8"		VARY A AND C, 1 EACH BY 0'-4"
		4	27'-4"	STR					
		2	23'-5"	STR					
		15	4'-0"						
		15	3'-6"						
		25	4'-6"						
		25	5'-7"						
		9	28'-1"						
		3	24'-1"						
		30	9'-3"						
		25	6'-0"						
	–	–	3'-6"	–					
A529	–	–	–	–					
		4	3'-9"						
		3	26'-0"						
		5	4'-0"		7				
		25	5'-9"						
	–	–	3'-0"	–					
A601	6	12	7'-9"	STR					
A602	6	4	3'-10" TO 5'-8"	STR					VARY 2 EACH BY 1'-10"
A603	6	18	2'-4	(14)	0'-8"	1'-8"			THREAD END 'B' & PROVIDE COUPLER
A604	6	2	9'-6"	STR					
A605	6	18	3'-0"	STR					THREAD ONE END
		43	21'-6"						
		41	12'-10"						
	4	6	3'-8"	STR					
		6	9'-2"	STR					
	–	–	–	–					
		26	5'-5"						
		4	1'-10"						
03		15	5'-11"						
		4	9'-10"						
	–	–	–	–					
		4	4'-4"	STR					
	5	4	7'-8"	STR					
		4	1'-10"						
		4	9'-10"						
		4	4'-9"	STR					
	6	4	7'-8"	STR					
		60	9'-10"						
		11	27'-1"						
		11	4'-0"						
		31	3'-6"						
		56	14'-3"						
		11	27'-3"						
		4	27'-2"						



- [illegible] LENGTHS FROM CENTERLINE
- FOR REINFORCEMENT BAR FABRICATION [illegible] STANDARD DRAWING BC-736
- FIGURES IN CIRCLES SHOW TYPES
- "A" DIMENSION ON 180° HOOKS ARE [illegible] NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 90° HOOKS ARE USED
- REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BENDING AND FABRICATION

Mark	Description	By	[illegible]	Issue	Date

REVISIONS

SR 0320 FORMERLY KNOWN AS LR 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT 1 BAR SCHEDULE

RECOMMENDED 1-26-93

SHEET 15 OF 35

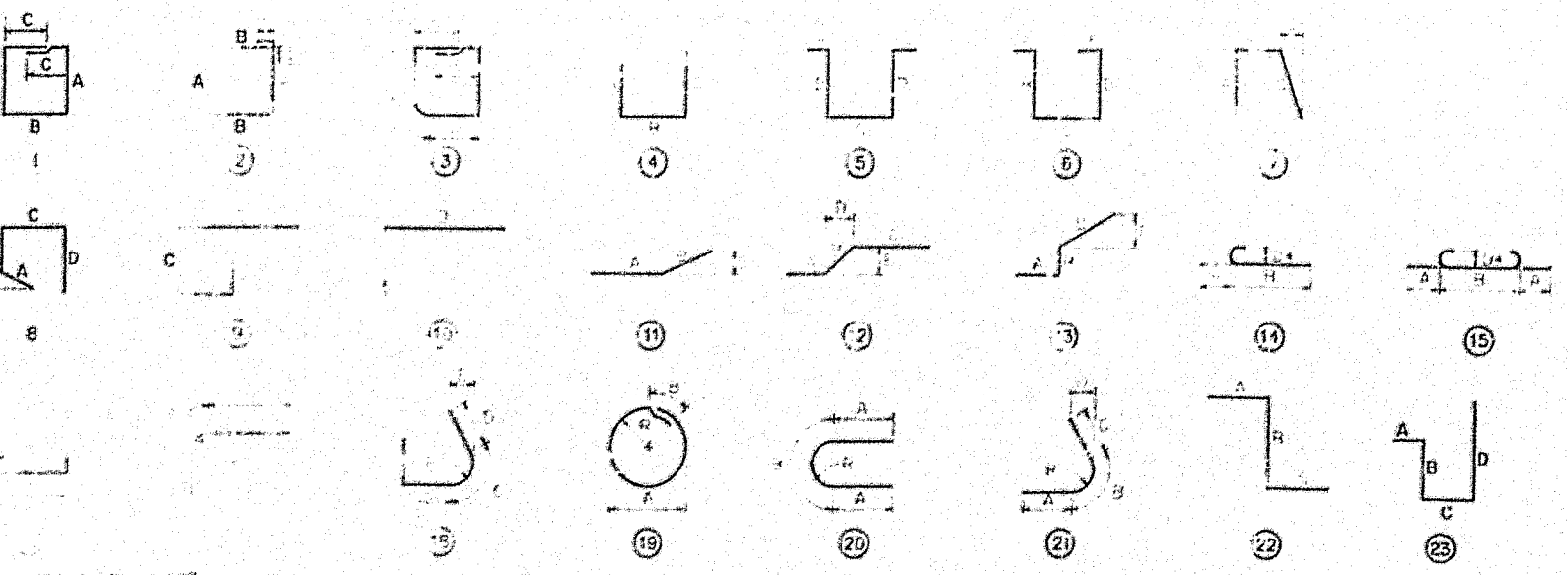
S – 17313A

REINFORCEMENT BAR SCHEDULE

RK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
						ABUTMENT 2					
01	4	61	3'-3"	16	0'-6"	2'-5"	0'-4"				
01	5	2	51'-3"	STR							
02	5	8	52'-7"	STR							
03	5	14	45'-6"	STR							
04	5	4	30'-6"	STR							
05	5	4	19'-1"	STR							
06	5	18	3'-9" TO 7'-9"	STR							VARY 2 EACH BY 0'-6"
07	5	4	13'-5"	STR							
08	5	6	9'-6"	STR							
09	5	14	6'-0"	STR							
10	—	—	—	—							
11	5	2	6'-2"	7	2'-6"	1'-2"	2'-6"	2'-2 3/4"			
12	5	89	2'-10"	STR							
01	8	46	9'-5"	14	0'-11"	8'-6"					
1	9	82	12'-11"	14	1'-3"	11'-8"					
2	9	66	12'-5"	STR							
3	9	18	11'-5"	STR							
4	9	14	3'-0" TO 8'-0"	STR							VARY 1 EACH BY 0'-10"
5	9	8	3'-6"	STR							
6	9	16	5'-6"	STR							
7	9	12	10'-8"	STR							
8	9	8	5'-6" TO 11'-6"	STR							VARY 1 EACH BY 2'-0"
9	9	4	13'-9"	STR							
0	9	8	2'-6" TO 5'-6"	STR							VARY 1 EACH BY 1'-0"
1	9	8	6'-6"	STR							
01	4	10	4'-6"	STR							
02	4	3	5'-8 1/2"	23	1'-3	1'-5 1/2"	6"	2'-6			
03	4	3	7'-0"	4	3'-3"	6"	3'-3"				
1	5	50	19'-4"	STR							
2	5	32	28'-6"	STR							EPOXY COAT 3 BARS ONLY
3	5	50	6'-5"	10	3'-0"	3'-5"					
4	5	47	4'-0"	STR							
5	5	38	5'-0"	8	0'-8"	1'-9"	0'-11"	1'-8"	0'-5 5/8"		
6	5	21	11'-4"	7	1'-0"	6'-10"	3'-6"	1'-11 1/2"			
7	5	9	5'-9"	8	0'-8"	1'-9"	1'-8"	1'-8"	0'-5 5/8"		
8	5	32	21'-9"	STR							EPOXY COAT 3 BARS ONLY
9	5	10	26'-6"	STR							
0	5	10	21'-9	STR							
1	5	8	3'-0"	STR							
2	5	8	1'-6"	STR							
3	5	19	11'-4" to 10'-9"	7	1'-0"	6'-10"to6'-3"	3'-6"	1'-11 1/2"			VARY 1 EACH BY 0'-0 3/8"

REINFORCEMENT BAR SCHEDULE

MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
EA514	5	8	3'-6"	STR							
EA515	-	-	-	-							
A516	5	18	3'-0"	STR							
A517	5	9	7'-6" TO 12'-10"	4	3'-0"TO5'-8"	1'-6"	3'-0"TO5'-8"				VARY A AND C. 1 EACH BY 0'-4"
A518	5	6	23'-9"	STR							
A519	5	3	20'-6"	STR							
EA520	5	16	4'-0"	11	2'-0"	2'-0"	0'-11 1/4"				
EA521	5	22	3'-6"	STR							
A522	5	26	4'-7"	7	2'-0"	0'-10"	1'-9"	0'-9 1/2"			
A523	5	22	4'-6"	11	2'-3"	2'-3"	2'-0"				
A524	5	7	23'-0"	STR							
A525	5	2	20'-0"	STR							
A526	5	25	7'-11"	7	3'-0"	3'-2"	1'-9"	0'-9 1/2"			
A527	5	22	6'-9"	7	4'-6"	0'-3"	2'-0"	1'-9 1/2"			
A528	5	4	4'-2"	7	1'-6"	1'-2"	1'-6"	1'-4 1/8"			
A529	—	—	—	—							
A530	5	2	22'-5"	STR							
A531	5	26	4'-0"	10	2'-0"	2'-0"					
A532	5	1	7'-0"	4	3'-0"	1'-6"	2'-6"				
A601	6	12	7'-9"	STR							
A602	6	4	3'-10" TO 5'-8"	STR							VARY 2 EACH BY 1'-10"
A603	6	18	2'-4"	14	0'-8"	1'-8"					THREAD END 'B' & PROVIDE COUPLER
A604	6	2	9'-6	STR							
A605	6	18	3'-0"	STR							THREAD ONE END
A801	8	46	12'-5"	STR							
A901	9	46	18'-0"	STR							
EC401	4	6	1'-11"	STR							
EC402	4	6	6'-11"	STR							
EC501	5	27	5'-5"	(7)	2'-3 1/2"	0'-9"	2'-4 1/2"	0'-3"			
EC502	5	11	4'-11"	(4)	2'-1"	0'-9"	2'-1"				
EC503	5	4	3'-0"	STR							
EC504	5	4	9'-8"	STR							
EC505	—	—	—	—							
EC506	5	4	4'-4"	STR							
EC507	5	4	7'-8"	STR							
EC601	6	4	3'-0"	STR							
EC602	6	4	9'-8"	STR							
EC603	6	4	4'-9"	STR							
EC604	6	4	7'-8	STR							
W501	5	50	9'-8"	STR							
W502	5	11	23'-0"	STR							
EW503	5	11	4'-0"	(11)	2'-0"	2'-0"	0'-11 1/4"				
EW504	5	27	3'-6"	STR							
W505	5	48	6'-11"	STR							
W506	5	8	22'-6"	STR							
W901	9	8	22'-6"	STR							
W902	9	11	23'-0"	STR							



- E PREFIX DENOTES EPOXY COATED BARS.
- FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-756
- FIGURES IN CIRCLES SHOW TYPES.
- "A" DIMENSION ON 180° HOOKS ARE SHOWN ONLY WHERE NECESSARY TO ACHIEVE HOOK SIZE, OTHERWISE STANDARD HOOKS ARE USED.
- REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BIDDING AND FABRICATION.

Mark	Description	By	Ck'd	Recd	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

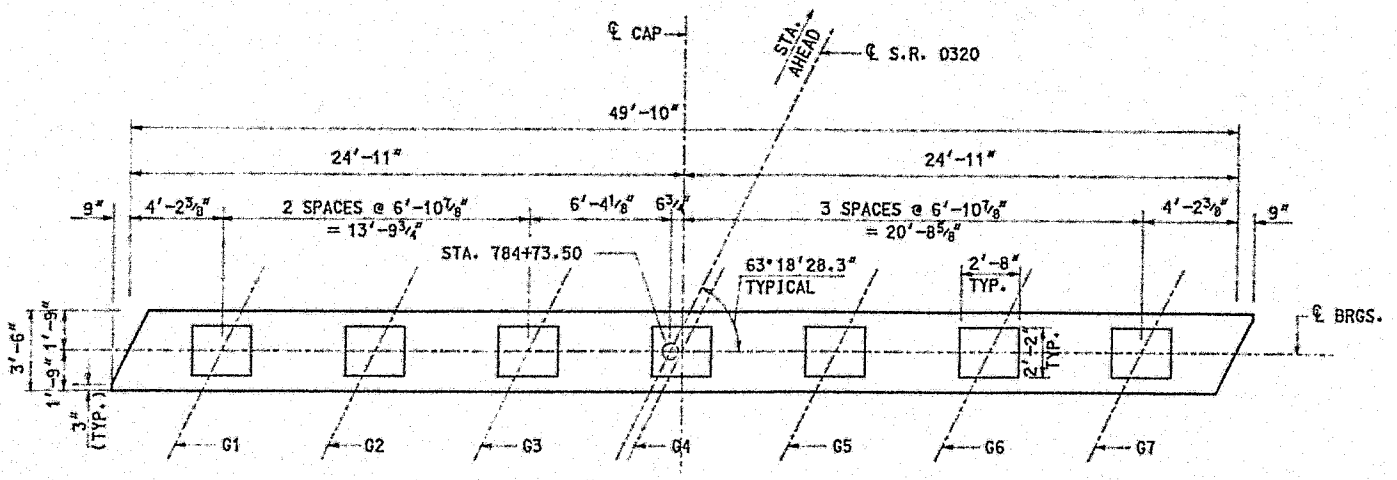
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
ABUTMENT 2 BAR SCHEDULE

RECOMMENDED A-2693

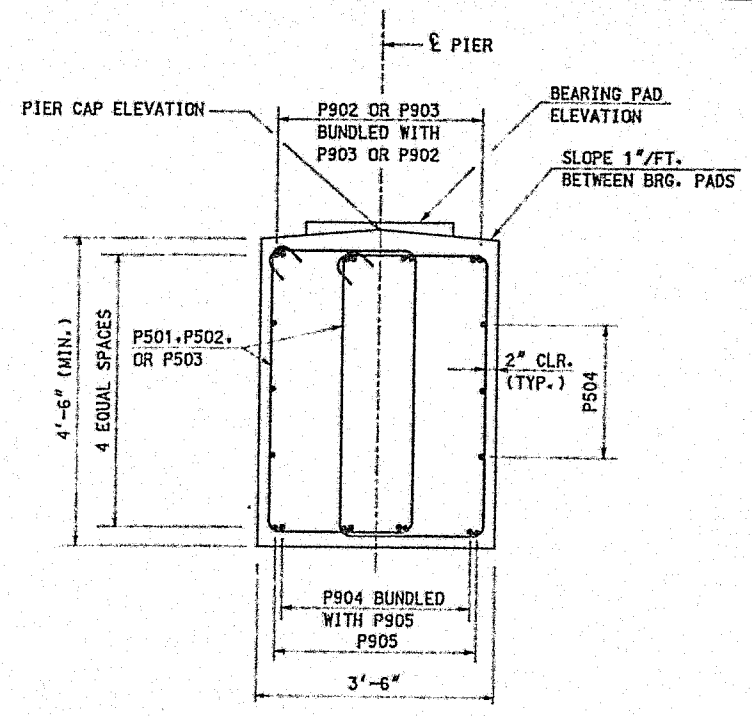
SHEET 16 OF 35

S-17313A



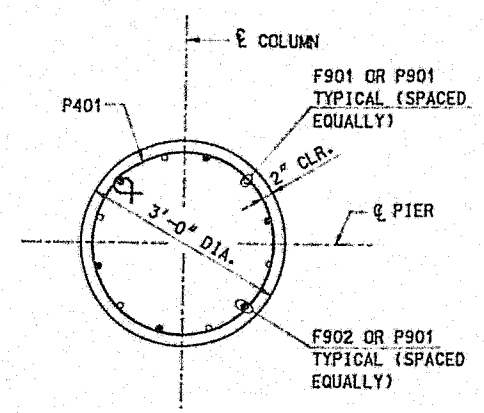
PLAN

SCALE: 1/4" = 1'-0"



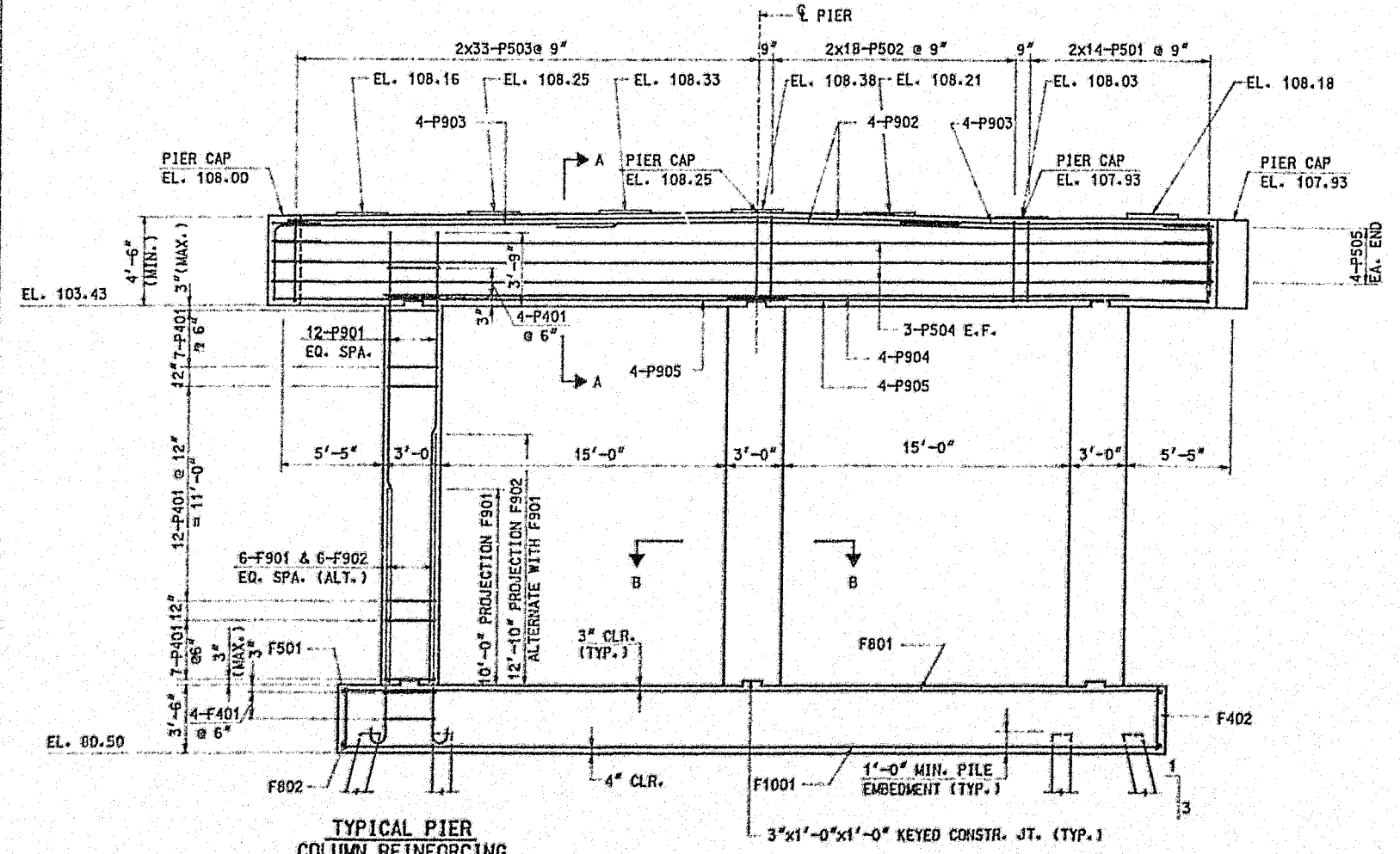
SECTION A-A

SCALE: 3/4" = 1'-0"



SECTION B-B

SCALE: 3/4" = 1'-0"



TYPICAL PIER COLUMN REINFORCING

ELEVATION AT ℄ PIER

SCALE: 1/4" = 1'-0"

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

FOR FOOTING DETAILS & REBAR SCHEDULE, SEE SHEET 18

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

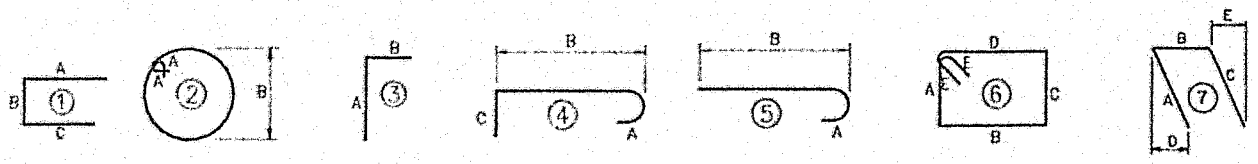
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
PIER

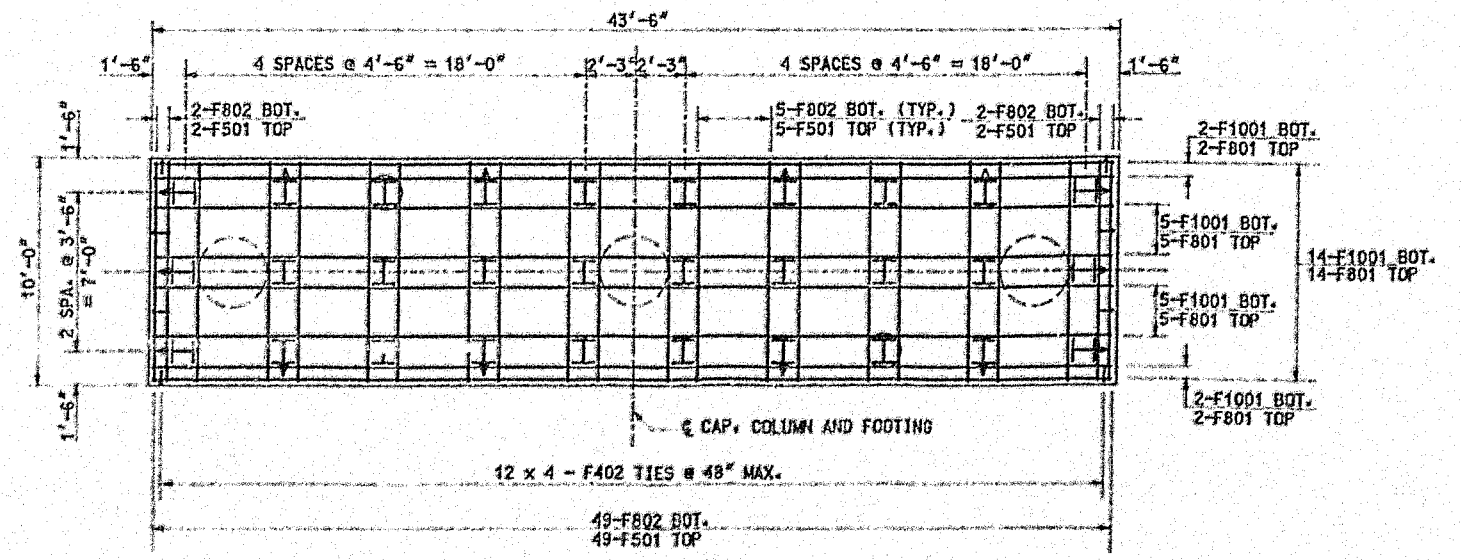
RECOMMENDED 4-26-93

SHEET 17 OF 35

PIER REINFORCEMENT BAR SCHEDULE

MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	R	K	REMARKS
F401	4	9'-6"	12	2	7½"	2'-8"							
F402	4	3'-11"	48	4	6"	2'-11"	6"						
F501	5	9'-6"	49	STR									
F801	8	43'-0"	14	STR									
F802	8	9'-6"	49	STR									
F901	9	13'-9"	18	5	1'-3"	12'-6"							
F902	9	16'-7"	18	5	1'-3"	15'-4"							
F1001	10	43'-0"	14	STR									
P401	4	9'-6"	90	2	7½"	2'-8"							
P501	5	13'-7"	28	6	4'-2"	2'-2"	4'-2"	2'-2"	5½"				
P502	5	13'-7" TO 14'-5"	36	6	4'-2" TO 4'-7"	2'-2"	4'-2" TO 4'-7"	2'-2"	5½"				VARY 2 EACH BY ¼"
P503	5	13'-7" TO 14'-5"	66	6	4'-2" TO 4'-7"	2'-2"	4'-2" TO 4'-7"	2'-2"	5½"				VARY 2 EACH BY ⅛"
P504	5	49'-6"	6	STR									
P505	5	9'-5"	8	7	3'-0"	3'-5"	3'-0"	1'-4"	1'-4"				
P901	9	23'-2"	36	STR									
P902	9	35'-1"	8	STR									
P903	9	21'-4"	8	3	4'-2"	17'-2"							
P904	9	39'-0"	4	STR									
P905	9	26'-3"	8	STR									





FOOTING PLAN – PIER

SCALE: ¼" = 1'-0"

PILE NOTES:

ALL PILES ARE 12x53 STEEL PILES
MAX. PILE DESIGN LOAD = 60 TONS PER PILE
ESTIMATED PILE TIP ELEVATION 66.00 – PIER

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.

FIGURES IN CIRCLES SHOW TYPES.

ALL REINFORCEMENT SHALL BE GRADE 60 STEEL

"E" PREFIX DENOTES EPOXY COATING

ALL DIMENSIONS ARE OUT TO OUT EXCEPT DIMENSIONS "A", ON STANDARD 180° AND 135° HOOKS, AND "R" WHICH IS SHOWN TO THE INSIDE OF THE BAR

LEGEND

- DENOTES VERTICAL PILES
- DENOTES BATTERED PILES 1 TO 3 DIRECTION OF ARROW
- DENOTES TEST PILES

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

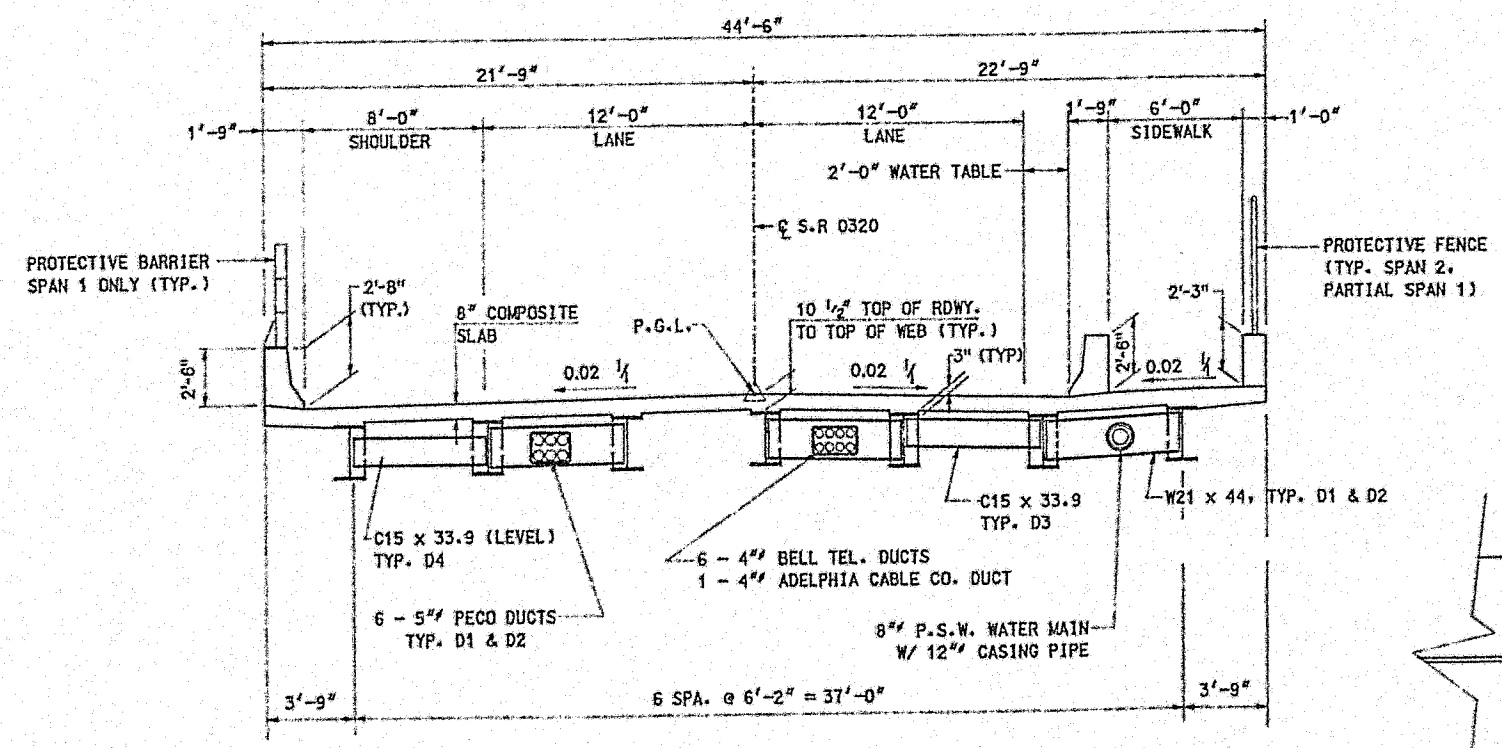
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
PIER REINFORCEMENT SCHEDULE

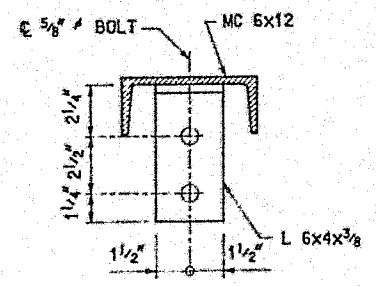
RECOMMENDED 4-26-93

SHEET 18 OF 35



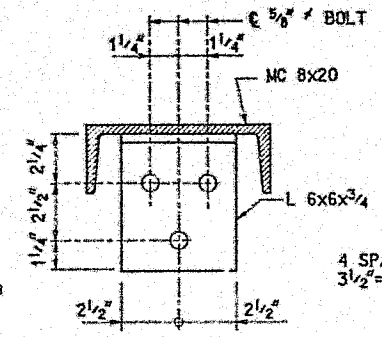
TYPICAL SECTION

SCALE: 1/4" = 1'-0"



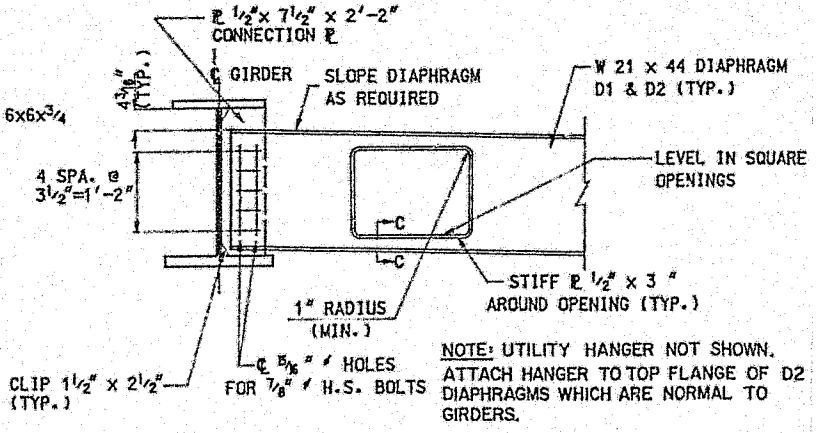
SECTION A-A

SCALE: 3" = 1'-0"



SECTION B-B

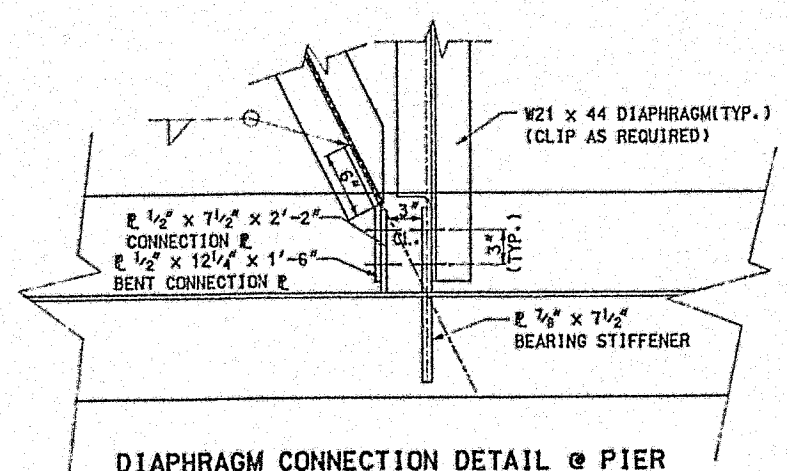
SCALE: 3" = 1'-0"



NOTE: UTILITY HANGER NOT SHOWN. ATTACH HANGER TO TOP FLANGE OF D2 DIAPHRAGMS WHICH ARE NORMAL TO GIRDERS.

TYPICAL DIAPHRAGM AT UTILITIES

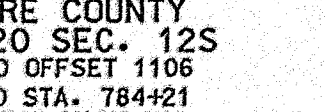
SCALE: 3/4" = 1'-0"



DIAPHRAGM CONNECTION DETAIL @ PIER

SCALE: 1 1/2" = 1'-0"

NOTE: CONNECTION AT GIRDER G7 SHOWN, GIRDER G1 SIMILAR



SECTION C-C

SCALE: 6" = 1'-0"

UTILITY NOTES:

EXPANSION COUPLINGS REQUIRED AT EACH END OF BRIDGE

STAGGER ADJACENT COUPLINGS BY 2'-0" MINIMUM

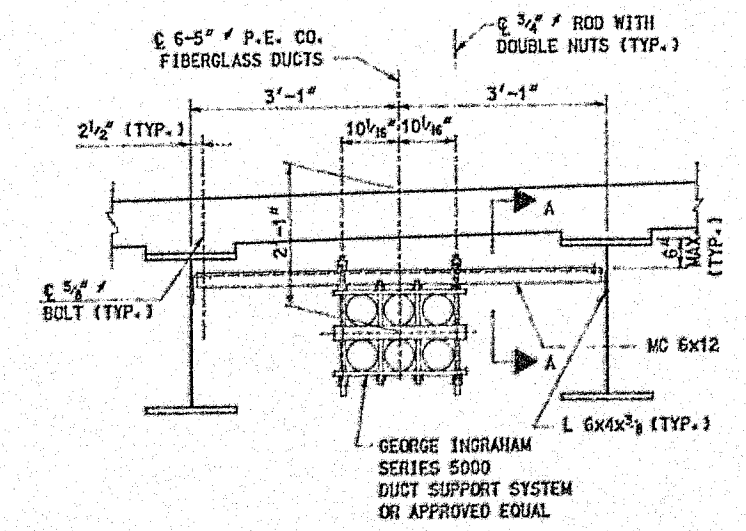
PROVIDE DOUBLE NUTS AT TOP AND BOTTOM OF HANGER RODS

THREADED RODS, WASHERS, AND NUTS ARE TO BE HOT-DIPPED GALVANIZED

NOTES:

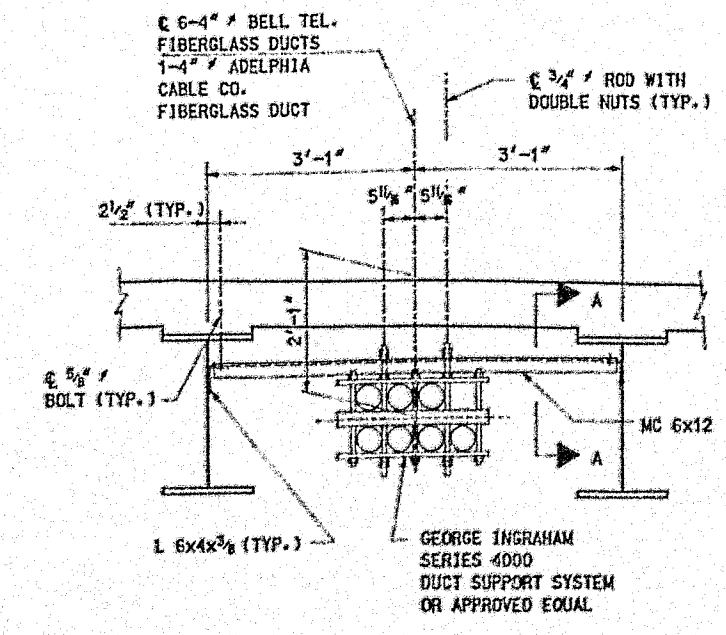
FOR GENERAL NOTES, SEE SHEET NO. 2

DETAIL DIAPHRAGM TYPE D3 AS AN END DIAPHRAGM, AND DIAPHRAGM TYPE D4 AS AN INTERMEDIATE DIAPHRAGM IN ACCORDANCE WITH BC-754, SHEET 2 OF 2



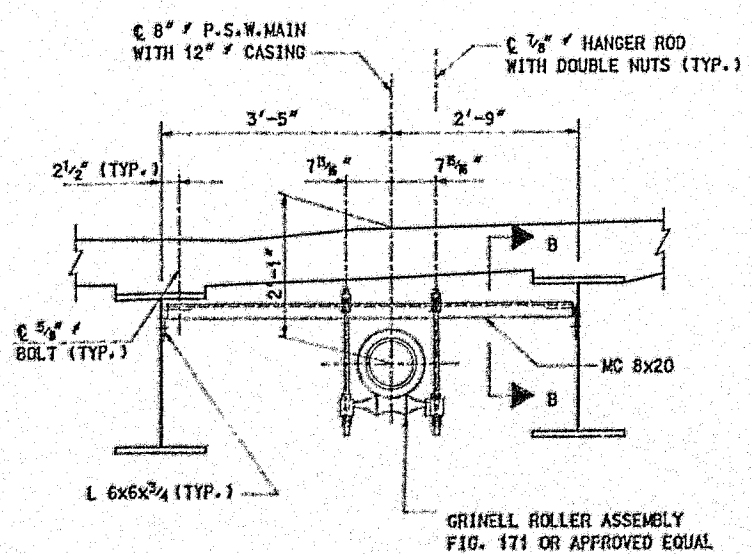
P.E. UTILITY SUPPORT (U1)

SCALE: 3/4" = 1'-0"



BELL TEL. & ADELPHIA CABLE CO. UTILITY SUPPORT (U1)

SCALE: 3/4" = 1'-0"



P.S.W. UTILITY SUPPORT (U2)

SCALE: 3/4" = 1'-0"

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

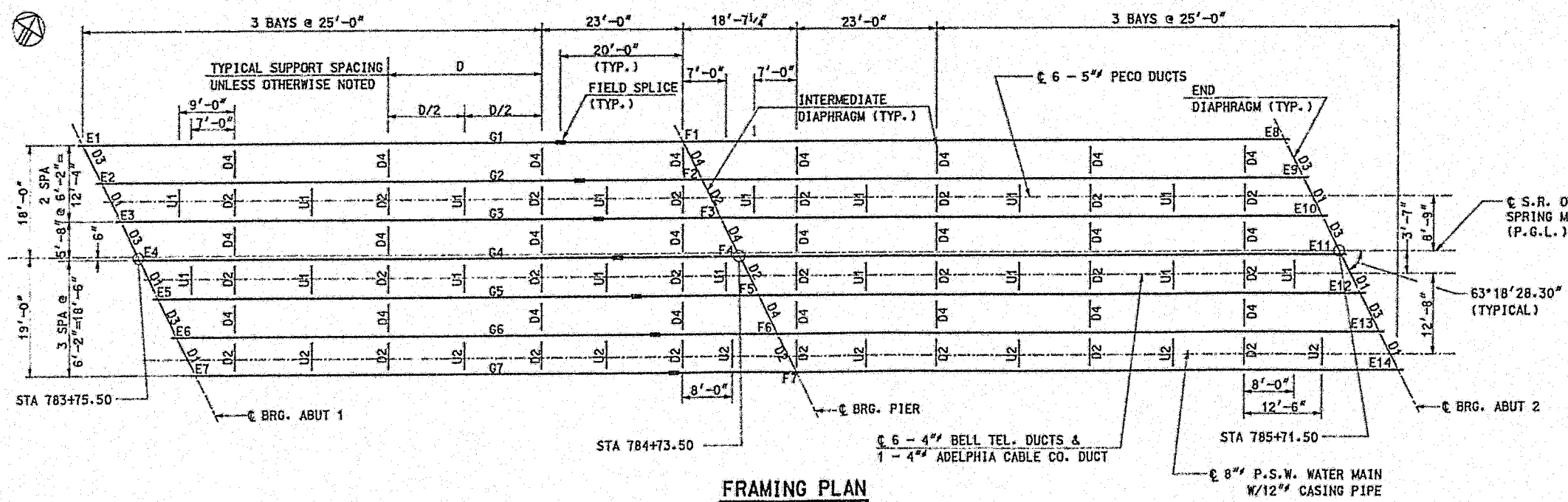
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
TYPICAL SECTION

RECOMMENDED 4-26-93

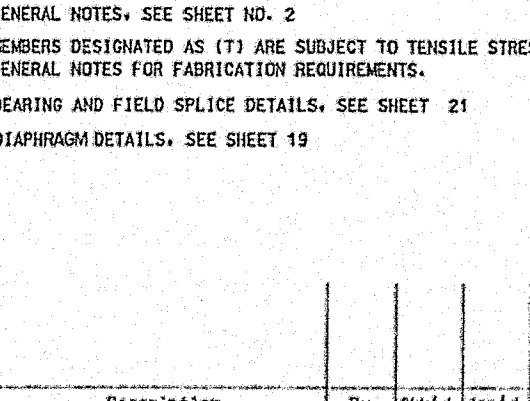
SHEET 19 OF 35

S -17313A



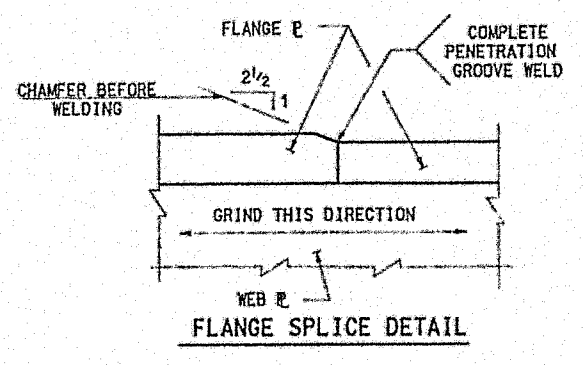
FRAMING PLAN

SCALE: $\frac{3}{32}$" = 1'-0"

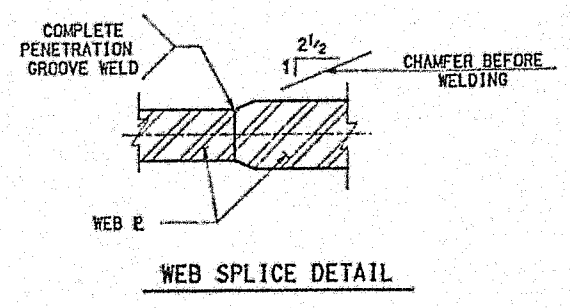


SHEAR CONNECTOR DETAILS

NOT TO SCALE



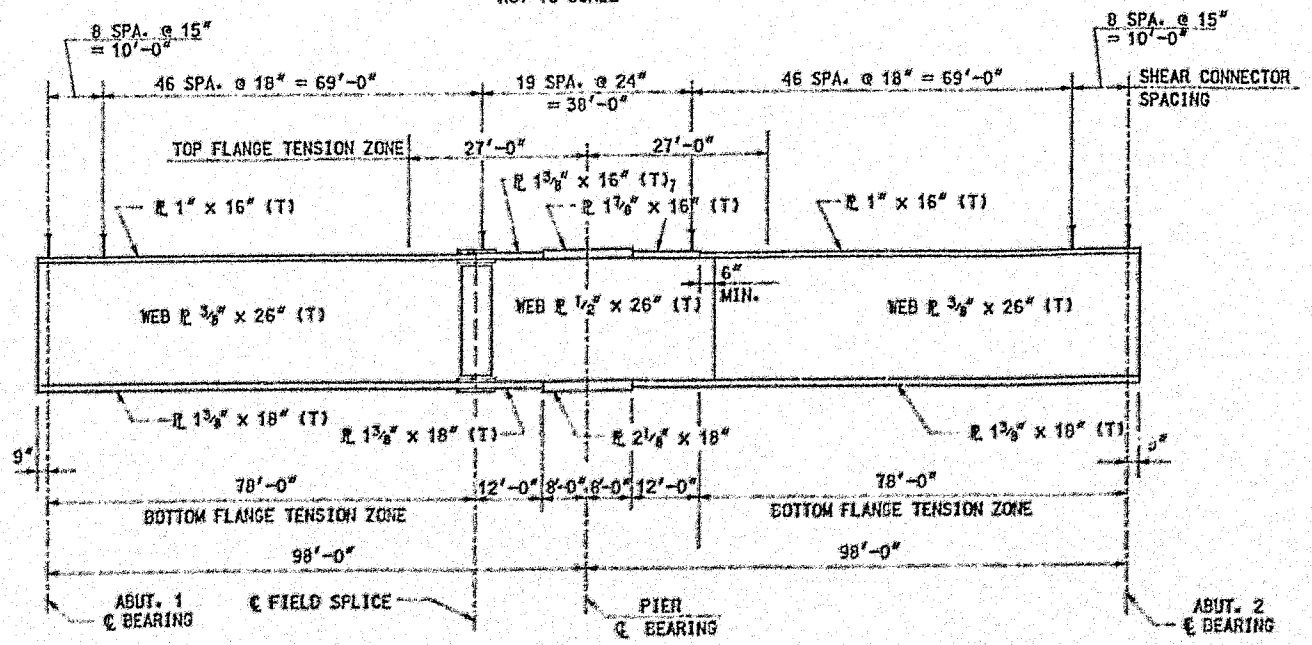
FLANGE SPLICE DETAIL



WEB SPLICE DETAIL

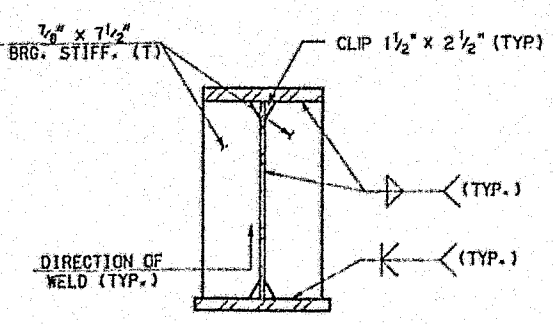
WELDED SPLICE DETAIL

NOT TO SCALE



GIRDER ELEVATION

NOT TO SCALE



BEARING STIFFENER

NOT TO SCALE

TYPICAL @ PIER & ABUTMENTS

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

ALL MEMBERS DESIGNATED AS (T) ARE SUBJECT TO TENSILE STRESS. SEE GENERAL NOTES FOR FABRICATION REQUIREMENTS.

FOR BEARING AND FIELD SPLICE DETAILS, SEE SHEET 21

FOR DIAPHRAGM DETAILS, SEE SHEET 19

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

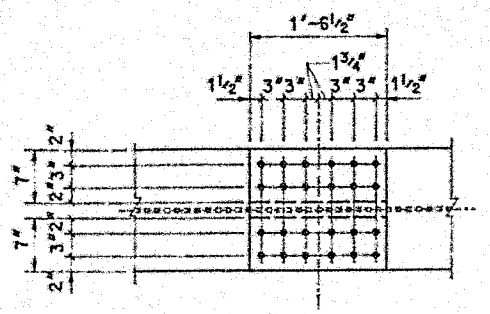
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
FRAMING PLAN AND DETAILS

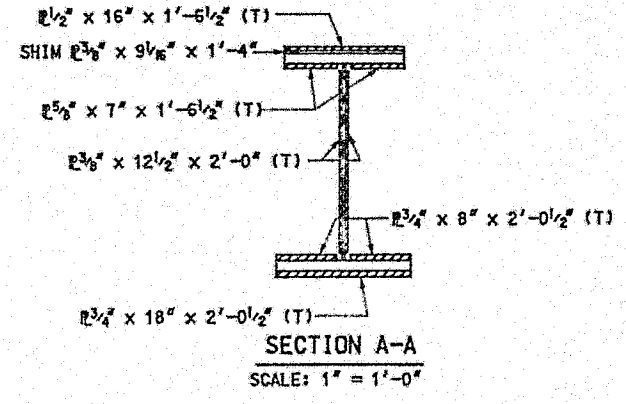
RECOMMENDED 4.26.93

SHEET 20 OF 35

C-17313A

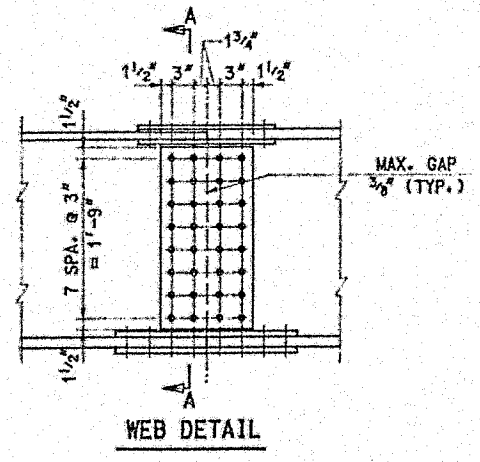


TOP FLANGE



SECTION A-A

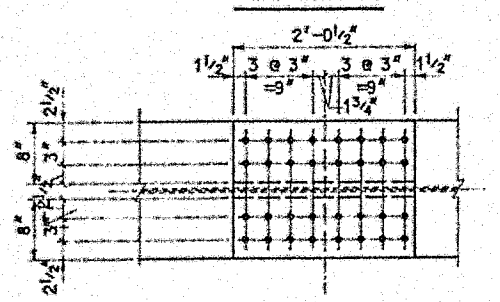
SCALE: 1" = 1'-0"



WEB DETAIL

BRG	SLOPE (%)	BRG	SLOPE (%)	BRG	SLOPE (%)
E1	+1.93	E8	-4.51	F1	-1.29
E2	+1.83	E9	-4.61	F2	-1.39
E3	+1.73	E10	-4.71	F3	-1.49
E4	+1.63	E11	-4.81	F4	-1.59
E5	+1.52	E12	-4.91	F5	-1.69
E6	+1.42	E13	-5.01	F6	-1.80
E7	+1.32	E14	-5.12	F7	-1.90

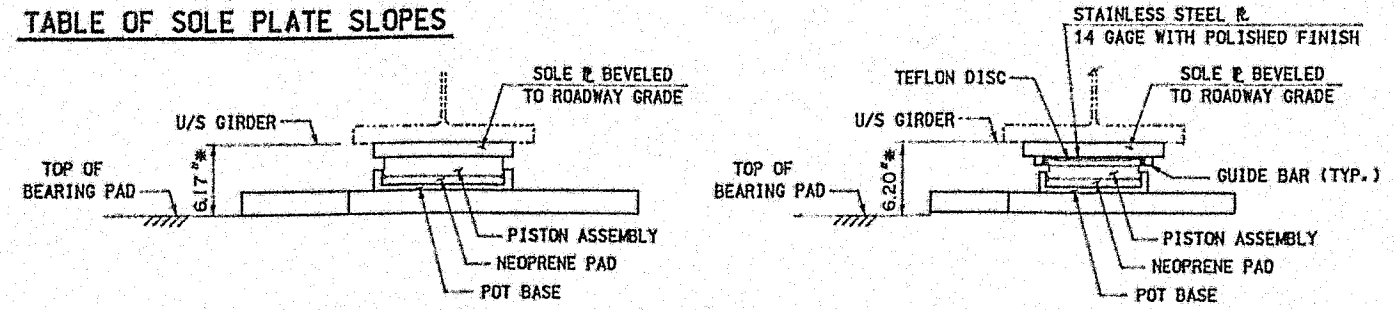
TABLE OF SOLE PLATE SLOPES



BOTTOM FLANGE

FIELD SPLICE DETAIL

SCALE: 1" = 1'-0"



SECTION B-B

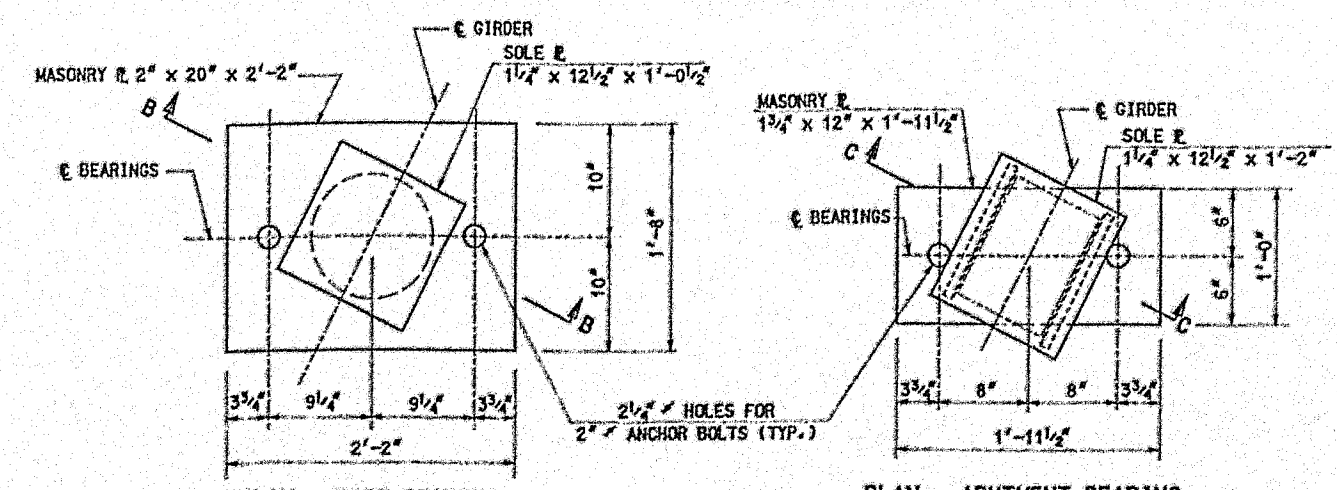
SECTION C-C

* DIMENSION GIVEN AT ℄ BEARINGS; MAY CHANGE BASED ON ACTUAL BEARING USED.

BEARING DESIGNATION	LOC.	QTY.	SERVICE LOAD REACTIONS(kips) VERTICAL MAX.	VERTICAL MIN.	HORIZONTAL LONG.	HORIZONTAL TRANS.	LONGITUDINAL MOVEMENT(IN.) EXPAN.	LONGITUDINAL MOVEMENT(IN.) CONTR.
E1,E2,E6,E7 E8,E9,E13,E14	ABUT.	8	97.7	39.6	25.6	11.6	0.32	0.60
E3,E4,E5 E10,E11,E12	ABUT.	6				146.1		
F1,F2 F6,F7	PIER	4	249.5	159.2	21.3	23.1		
F3,F4,F5	PIER	3			126.9	102.9		

MAX. ALLOW. COEFFICIENT OF FRICTION FOR EXP. BEARINGS = 4% @ MAX. REACTION
MINIMUM ROTATIONAL CAPACITY OF BEARINGS = .02 RADIANS

BEARING DATA

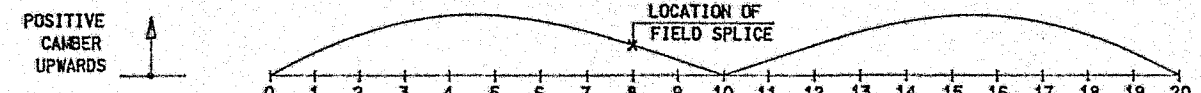


PLAN - PIER BEARING

PLAN - ABUTMENT BEARING

BEARING DETAILS

SCALE: 1½" = 1'-0"



CAMBER DIAGRAM

CAMBER TABLE GIRDERS 1, 6 & 7 (INCHES)

	0	1	2	3	4	5	6	7	FIELD SPLICE	8	9	10	11	12	13	14	15	16	17	18	19	20
STEEL	0.000	0.291	0.533	0.693	0.752	0.710	0.581	0.396	0.202	0.202	0.056	0.000	0.056	0.202	0.396	0.581	0.710	0.752	0.693	0.533	0.291	0.000
DECK	0.000	0.900	1.649	2.142	2.325	2.193	1.791	1.218	0.619	0.619	0.171	0.000	0.171	0.619	1.218	1.791	2.193	2.325	2.142	1.649	0.900	0.000
SLD	0.000	0.139	0.255	0.333	0.363	0.345	0.286	0.198	0.103	0.103	0.029	0.000	0.029	0.103	0.198	0.286	0.345	0.363	0.333	0.255	0.139	0.000
VC	0.000	1.703	3.028	3.974	4.542	4.731	4.542	3.974	3.028	3.028	1.703	0.000	1.703	3.028	3.974	4.542	4.731	4.542	3.974	3.028	1.703	0.000
TOTAL	0.000	3.033	5.466	7.142	7.982	7.979	7.200	5.786	3.952	3.952	1.959	0.000	1.959	3.952	5.786	7.200	7.979	7.982	7.142	5.466	3.033	0.000

CAMBER TABLE GIRDIRDERS 2-5 (INCHES)

	0	1	2	3	4	5	6	7	FIELD SPLICE	8	9	10	11	12	13	14	15	16	17	18	19	20
STEEL	0.000	0.228	0.418	0.543	0.589	0.556	0.455	0.310	0.159	0.159	0.044	0.000	0.044	0.159	0.310	0.455	0.556	0.589	0.543	0.418	0.228	0.000
DECK	0.000	0.900	1.649	2.142	2.325	2.193	1.791	1.218	0.619	0.619	0.171	0.000	0.171	0.619	1.218	1.791	2.193	2.325	2.142	1.649	0.900	0.000
SDL	0.000	0.139	0.255	0.333	0.363	0.345	0.286	0.198	0.103	0.103	0.029	0.000	0.029	0.103	0.198	0.286	0.345	0.363	0.333	0.255	0.139	0.000
VC	0.000	1.703	3.028	3.974	4.542	4.731	4.542	3.974	3.028	3.028	1.703	0.000	1.703	3.028	3.974	4.542	4.731	4.542	3.974	3.028	1.703	0.000
TOTAL	0.000	2.970	5.350	6.992	7.820	7.826	7.075	5.701	3.909	3.909	1.947	0.000	1.947	3.909	5.701	7.075	7.826	7.820	6.992	5.350	2.970	0.000

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

ALL MEMBERS DESIGNATED AS (T) ARE SUBJECT TO TENSILE STRESS. SEE GENERAL NOTES FOR FABRICATION REQUIREMENTS.

FOR ANCHOR BOLT DETAILS, SEE ABUTMENT DETAILS, SHEET 8

Mark	Description	By	Chk'd.	App'd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

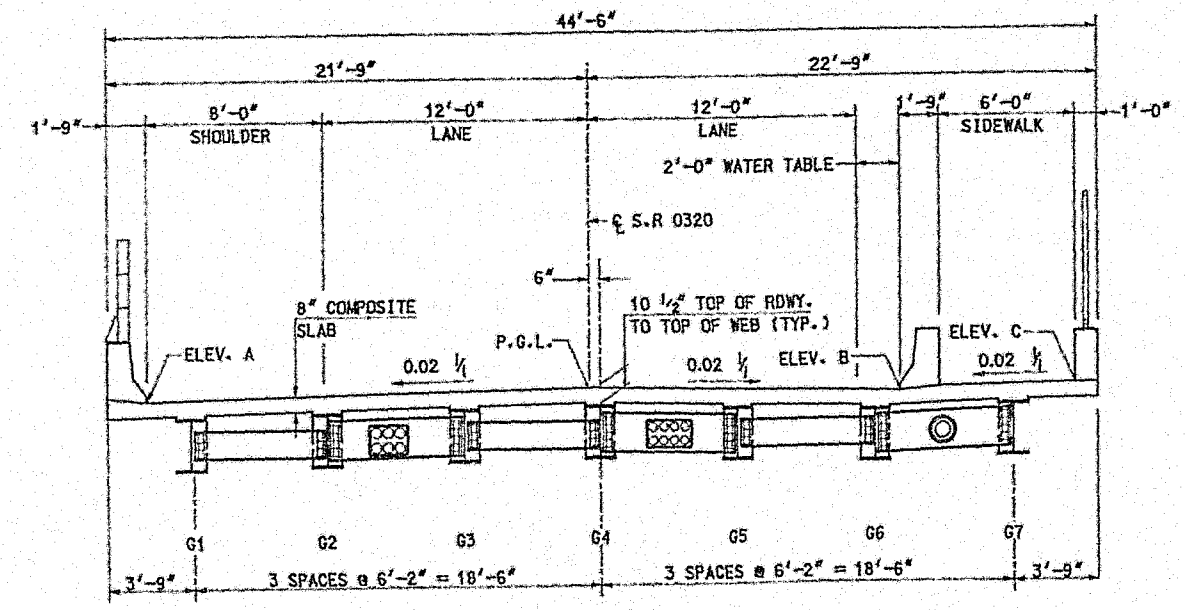
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
STEEL DETAILS

RECOMMENDED 4-26-93

SHEET 21 OF 35

S-17313A



TYPICAL SECTION

SCALE: 1/4" = 1'-0"

DECK ELEVATIONS @ 10' INTERVALS				
STATION	P.G.L. ELEVATION	ELEV. A	ELEV. B	ELEV. C
783 + 50	111.58	111.18	111.30	111.59
783 + 60	111.81	111.41	111.53	111.82
783 + 70	112.01	111.61	111.73	112.01
783 + 80	112.17	111.77	111.89	112.18
783 + 90	112.31	111.91	112.03	112.31
784 + 00	112.40	112.00	112.12	112.41
784 + 10	112.47	112.07	112.19	112.48
784 + 20	112.51	112.11	112.23	112.51
784 + 30	112.51	112.11	112.23	112.51
784 + 40	112.47	112.07	112.19	112.48
784 + 50	112.41	112.01	112.13	112.42
784 + 60	112.31	111.91	112.03	112.32
784 + 70	112.18	111.78	111.90	112.19
784 + 80	112.02	111.62	111.74	112.02
784 + 90	111.82	111.42	111.54	111.83
785 + 00	111.59	111.19	111.31	111.60
785 + 10	111.33	110.93	111.05	111.34
785 + 20	111.04	110.64	110.76	111.04
705 + 30	110.71	110.31	110.43	110.72
785 + 40	110.35	109.95	110.07	110.36
785 + 50	109.96	109.56	109.68	109.96
785 + 60	109.53	109.13	109.25	109.54
785 + 70	109.07	108.67	108.79	109.08
785 + 80	108.58	108.18	108.30	108.59
785 + 90	108.05	107.65	107.77	108.06

DECK ELEVATIONS @ ℄ BEAM & ℄ BEARINGS			
BEAM NO.	ABUTMENT 1	PIER	ABUTMENT 2
G1	111.58	111.90	109.06
G2	111.76	111.98	109.04
G3	111.94	112.06	109.02
G4	112.10	112.11	108.98
G5	112.02	111.94	108.70
G6	111.94	111.76	108.43
G7	112.20	111.91	108.48

NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

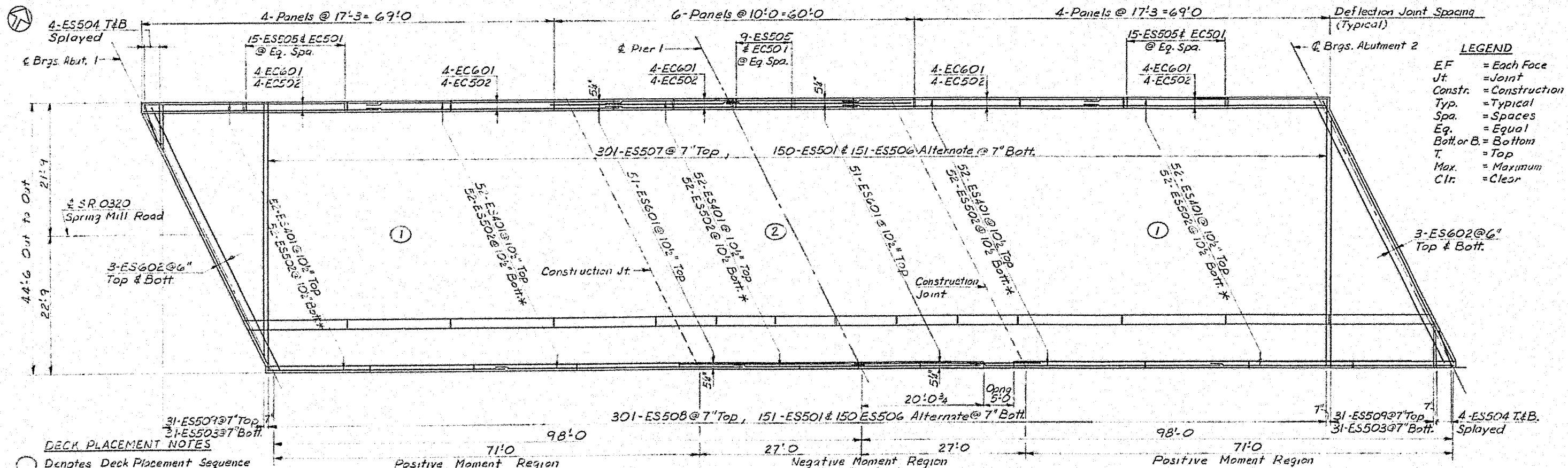
Mark	Description	By	Chk'd.	App'd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
DECK ELEVATIONS

RECOMMENDED 4-26-93



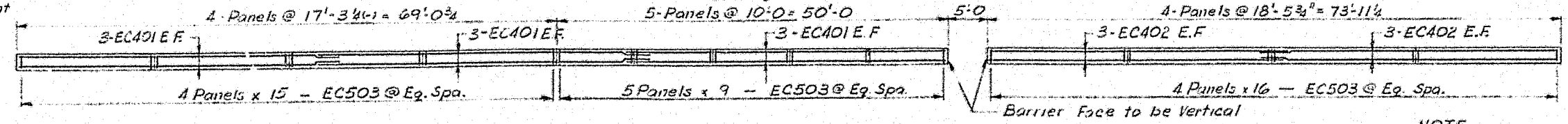
SLAB PLAN

Scale : 1/8" = 1'-0

DECK PLACEMENT NOTES

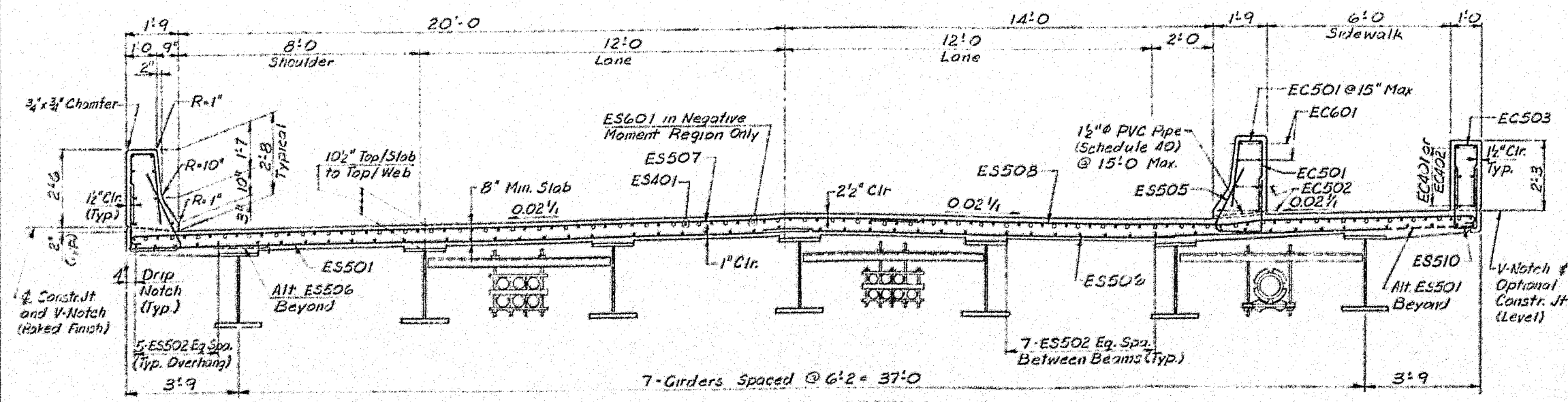
(1) Denotes Deck Placement Sequence Place Parapets / Barriers in Positive Moment Region, Then Negative Moment Region. Unless Continuous Placement Can Be Maintained.

* For Spacing Of Bottom Mat Reinf. Between Beams, See Typical Section



SIDEWALK BARRIER ELEVATION

Scale · 1/8" = 1'-0



TYPICAL SECTION

Scale · 1/2" = 1'-0

NOTE

- For General Notes See Sheet 2
- For Bar Schedule See Sheet 24
- For Additional Reinforcing at Abutment See Sheet 25

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

S.R. PREVIOUSLY KNOWN AS L.R.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
DECK SLAB

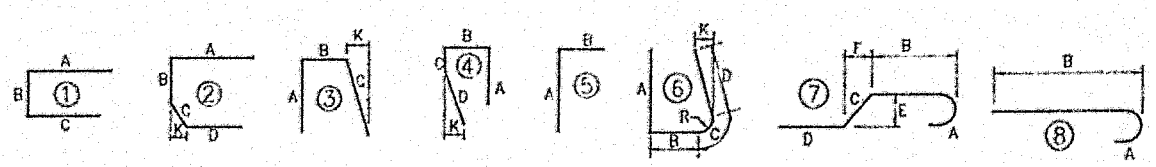
RECOMMENDED 4-26-93

SHEET 23 OF 35

S - 173134

DECK REINFORCEMENT BAR SCHEDULE

MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	R	K	REMARKS
ES401	4	41'-0"	260	STR									
ES402	4	4'-0"	84	4	1'-3"	6"	1'-2"	1'-1"					
ES501	5	23'-0"	301	STR									
ES502	5	41'-3"	260	STR									
ES503	5	42'-3" TO 7'-7"	62	STR									
ES504	5	4'-10"	16	STR									
ES505	5	6'-11"	348	6	2'-6"	1'-4"	7"	2'-6"				1'-2"	
ES506	5	19'-10"	301	STR									
ES507	5	26'-7"	301	8	7"	26'-0"							
ES508	5	20'-5"	301	7	7"	7'-0"	1'-0"	11'-10"	2"	1'-0"			
ES509	5	42'-10" TO 8'-2"	62	8	7"	42'-3" TO 7'-7"							
ES510	5	4'-9"	169	1	2'-0"	9"	2'-0"						
ES601	6	31'-0"	102	STR									
ES602	6	48'-4"	12	STR									
ES603	6	6'-0"	24	STR									
EC401	4	41'-6"	18	STR									
EC402	4	38'-3"	12	STR									
EC501	5	5'-5"	348	3	2'-3½"	9"	2'-4½"						
EC502	5	42'-7"	40	STR									
EC503	5	4'-9"	169	1	2'-0"	9"	2'-0"						
EC6012	6	43'-5"	40	STR									



NOTES:

FOR GENERAL NOTES, SEE SHEET NO. 2

FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.

FIGURES IN CIRCLES SHOW TYPES.

ALL REINFORCEMENT SHALL BE GRADE 60 STEEL

"E" PREFIX DENOTES EPOXY COATING

ALL DIMENSIONS ARE OUT TO OUT EXCEPT DIMENSIONS "A", ON STANDARD 180° HOOKS, AND "R" WHICH IS SHOWN TO THE INSIDE OF THE BAR

REINFORCEMENT BAR SCHEDULE IS FOR INFORMATION ONLY. VERIFY IT PRIOR TO BIDDING AND FABRICATION.

Mark	Description	By	Chk'd.	App'd.	Date
	REVISIONS				

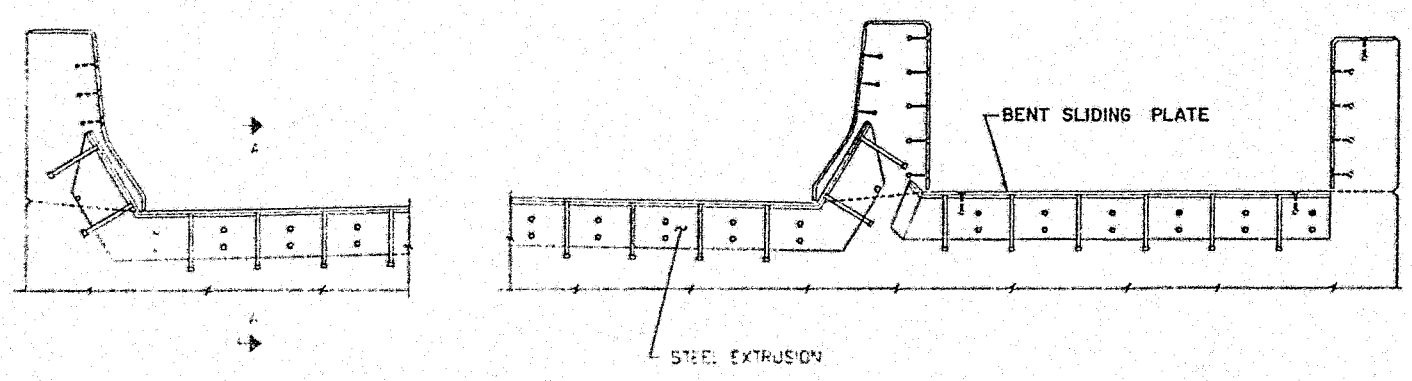
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAINLINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
REINFORCEMENT SCHEDULE

RECOMMENDED 4-26-93

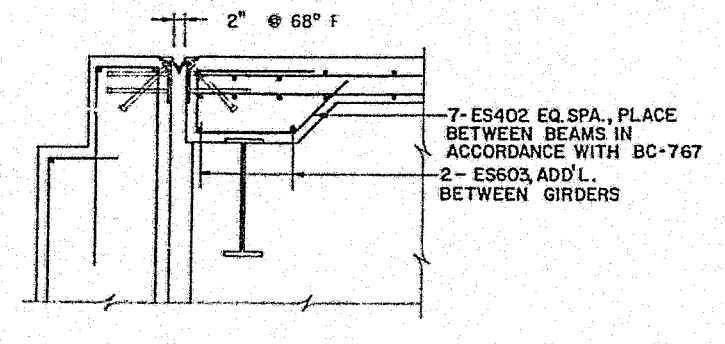
SHEET 24 OF 35



NEOPRENE STRIP SEAL EXPANSION JOINT ELEVATION

SCALE: 3/4"=1'-0"

TABLE (INSTALLATION DIMENSION "A" @ VARIOUS TEMPERATURES)													
LOCATION	TEMPERATURE (°F)												
	-10	0	10	20	30	40	50	60	70	80	90	100	110
ABUTMENTS	2.60	2.52	2.44	2.37	2.29	2.21	2.14	2.06	1.98	1.91	1.83	1.76	1.68



SECTION A-A

SCALE: 3/4"=1'-0"

FOR SLAB REINF. SEE SHEET 24
FOR DIAPH. REINF. SEE SHEET 19
PROVIDE 3" MOVEMENT CLASSIFICATION STRIP SEAL

Mark	Description	By	Chk'd	Reco	Date
	REVISIONS				

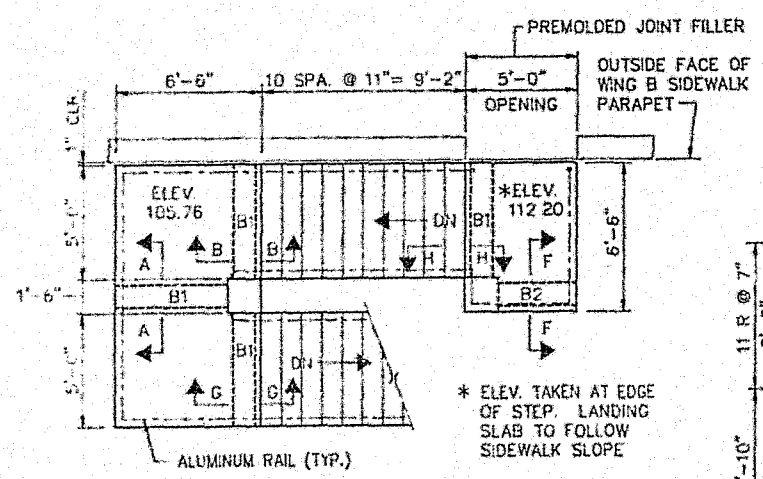
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
MISCELLANEOUS DETAILS

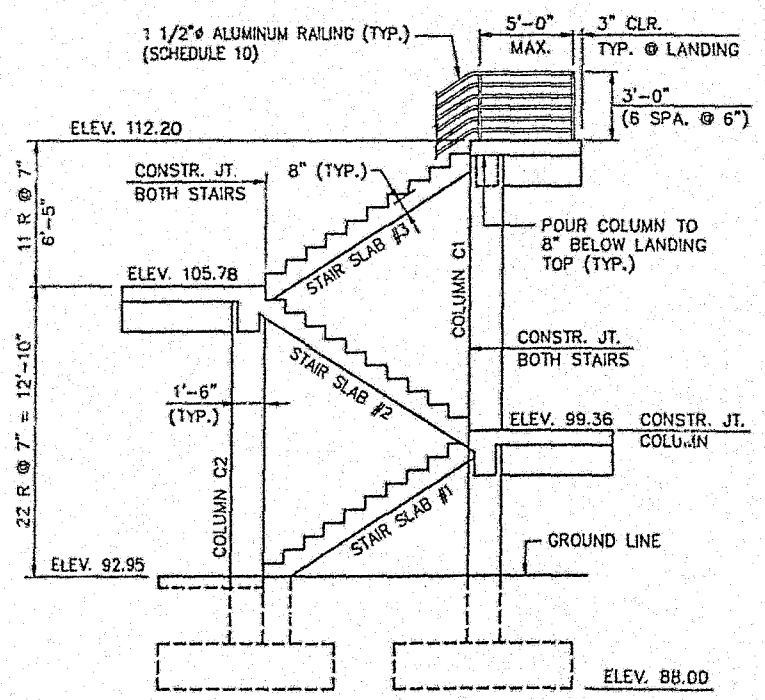
RECOMMENDED 4-16-93

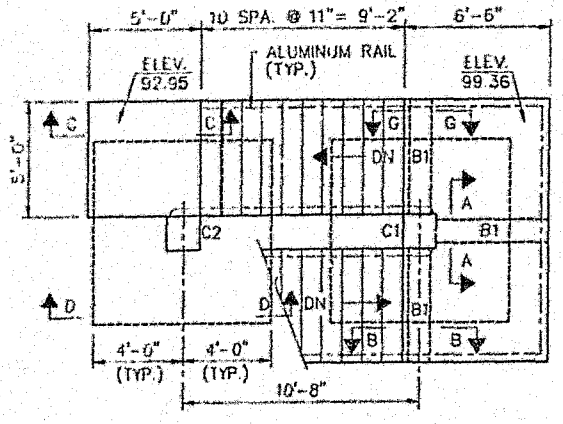
SHEET 25 OF 35



ELEVATION — STAIR 1

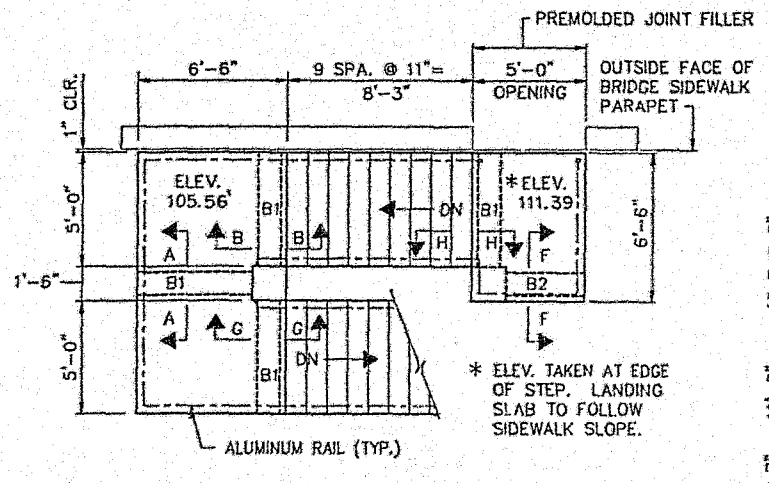
SCALE: 1/4" = 1'-0"

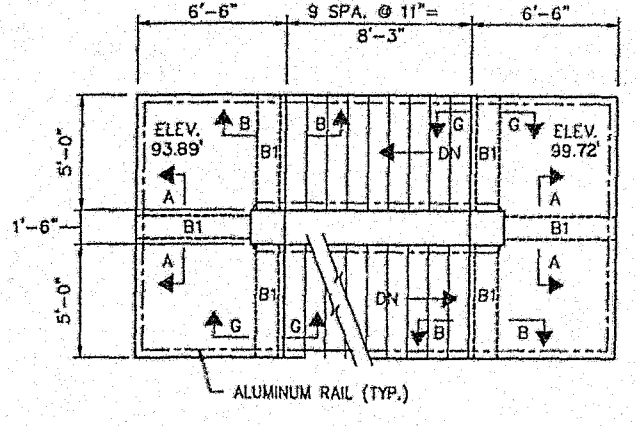




PLAN — STAIR 1

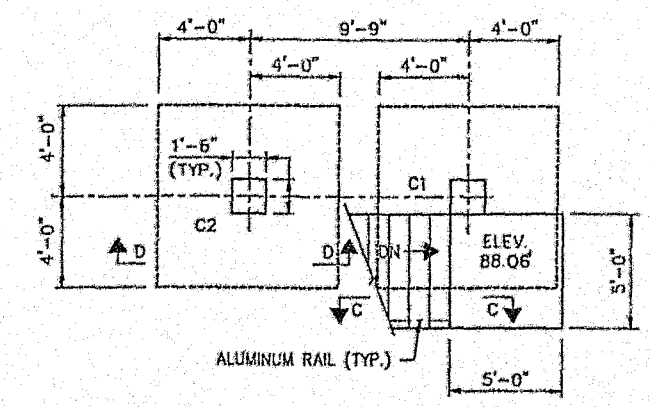
SCALE: 1/4" = 1'-0"

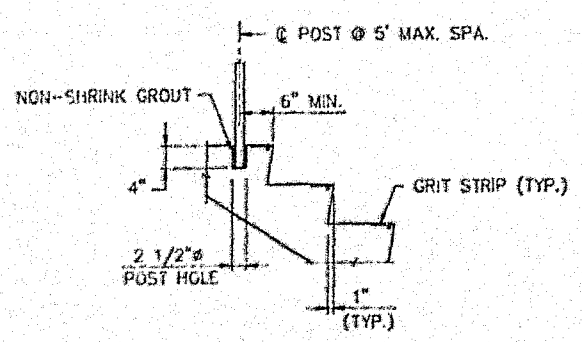




PLAN — STAIR 2

SCALE: 1/4" = 1'-0"



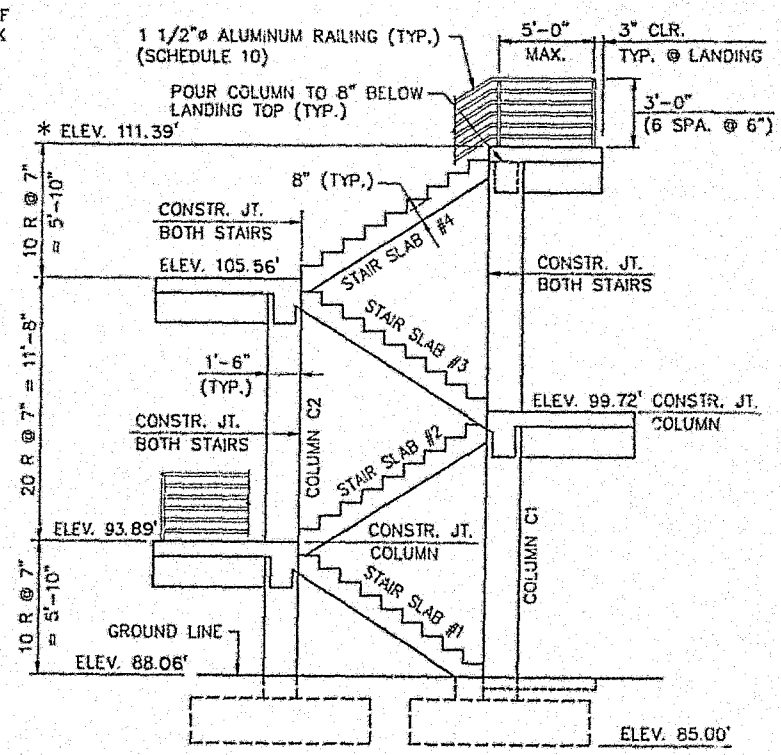


STEP DETAIL

SCALE: 3/4" = 1'-0"

LEGEND

ELEV.	=	ELEVATION
JT.	=	JOINT
CONSTR.	=	CONSTRUCTION
TYP.	=	TYPICAL
SPA.	=	SPACES
R	=	RISERS
DN	=	DOWN



ELEVATION — STAIR 2

SCALE: 1/4" = 1'-0"

NOTES

- FOR GENERAL PLAN SEE SHEET 1
- FOR GENERAL NOTES SEE SHEET 2
- WORK THIS SHEET WITH SHEET 27
- FOR BAR SCHEDULE SEE SHEET 28

Mark	Description	By	Chk'd.	Reco.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

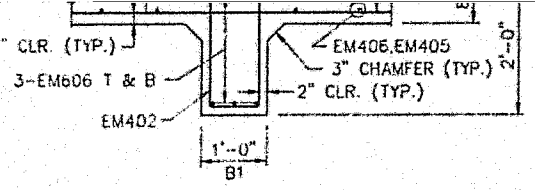
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE

STAIR 1 AND STAIR 2

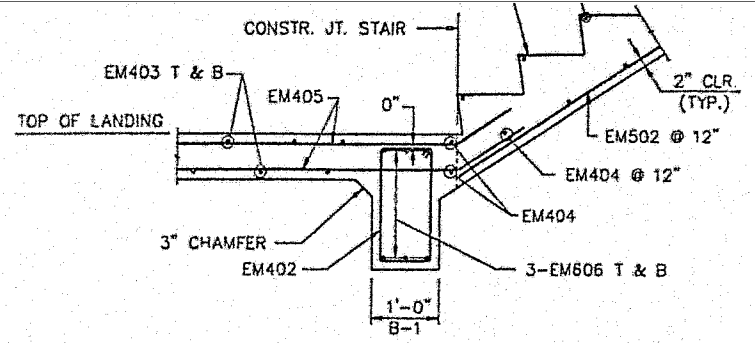
RECOMMENDED 4-26-93

SHEET 26 OF 35

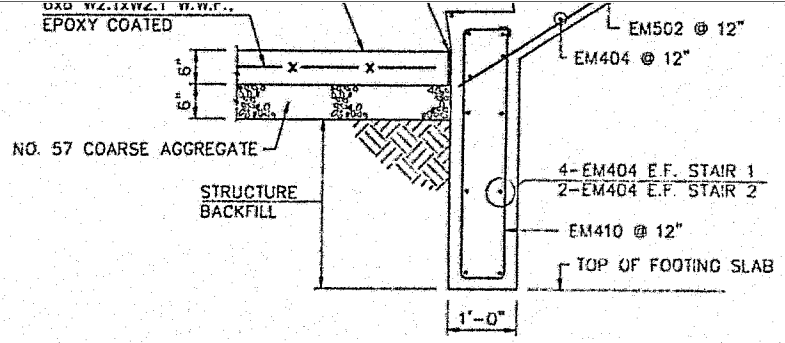
S — 17313A



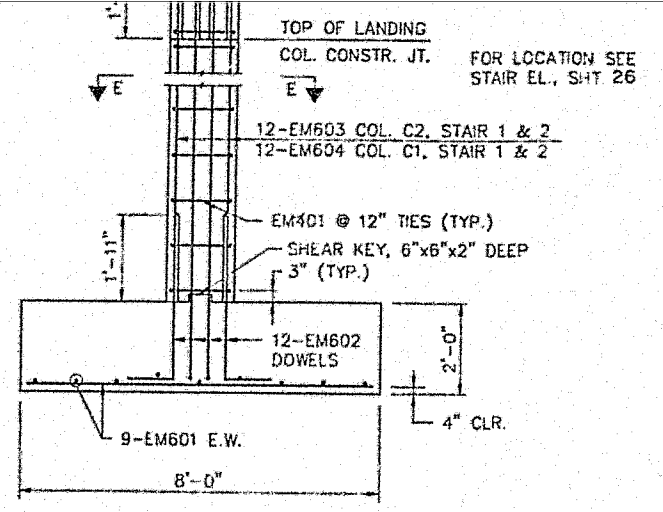
SECTION A–A
SCALE: 3/4" = 1'-0"



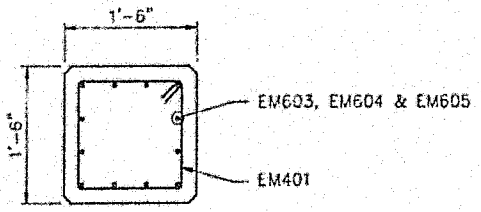
SECTION B–B
SCALE: 3/4" = 1'-0"



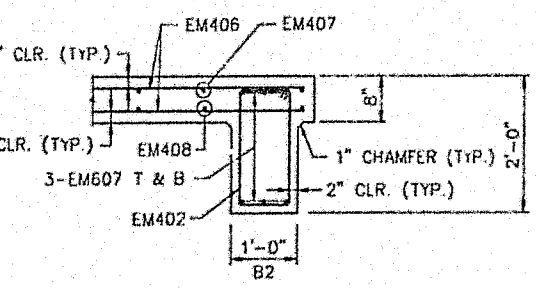
SECTION C–C
SCALE: 3/4" = 1'-0"



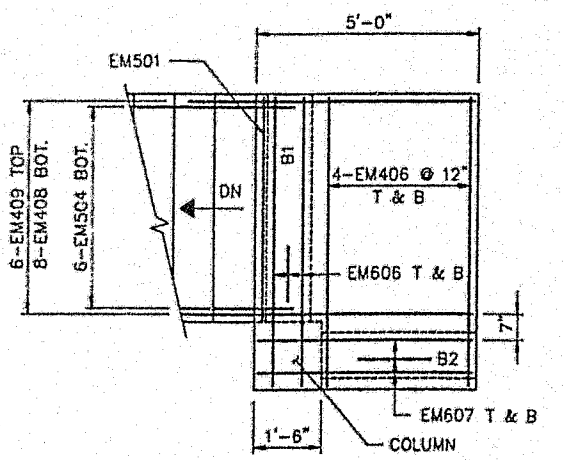
SECTION D–D
SCALE: 1/2" = 1'-0"



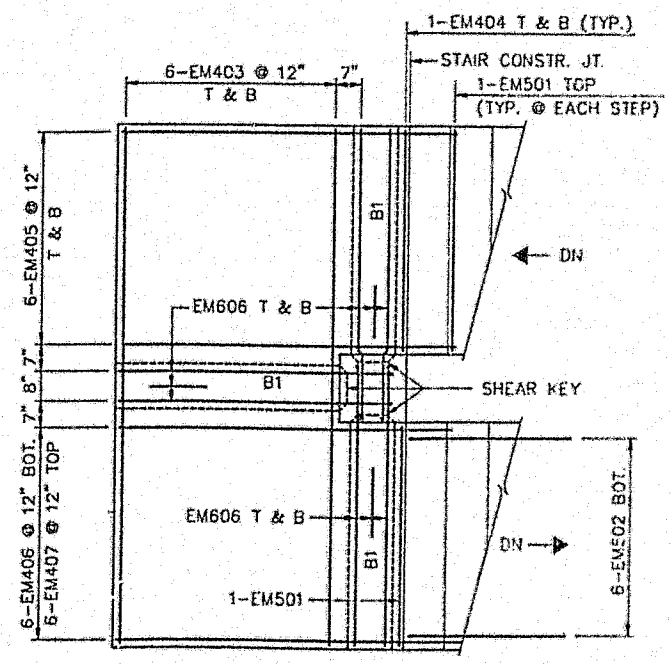
SECTION E–E
SCALE: 1" = 1'-0"



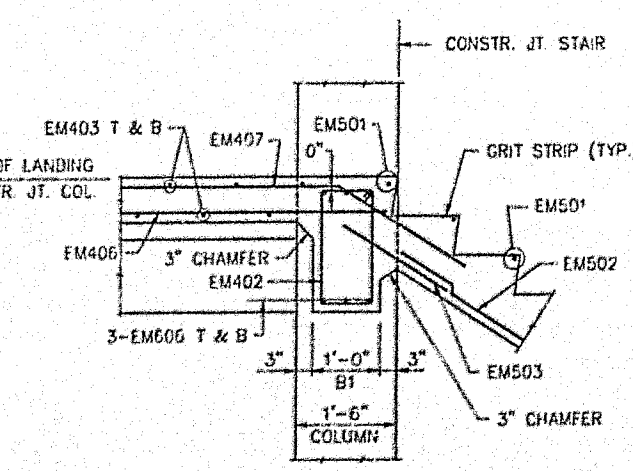
SECTION F–F
SCALE: 3/4" = 1'-0"



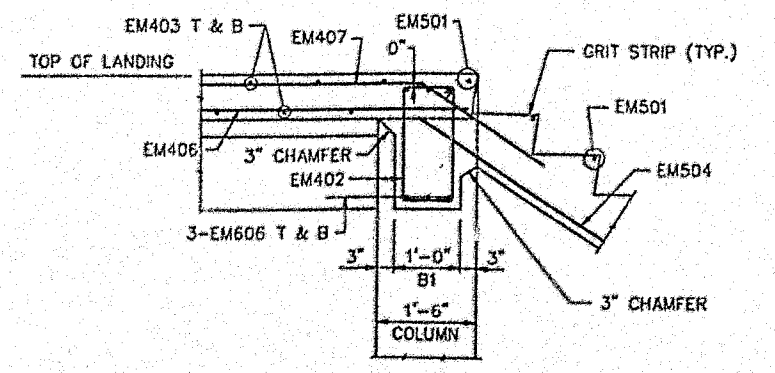
SLAB PLAN
TOP OF STAIR
SCALE: 1/2" = 1'-0"



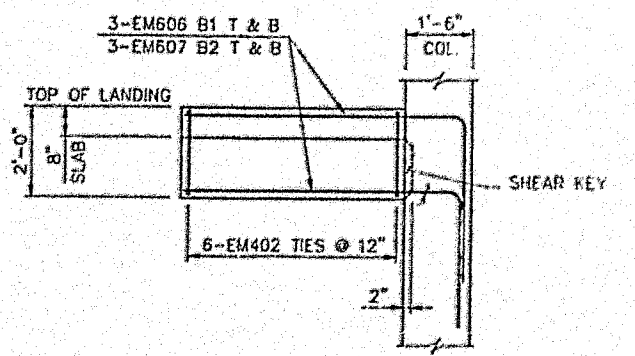
SLAB PLAN
@ INTERMEDIATE LANDINGS
SCALE: 1/2" = 1'-0"



SECTION G–G
SCALE: 3/4" = 1'-0"



SECTION H–H
SCALE: 3/4" = 1'-0"



BEAM ELEVATION
B1 OR B2
SCALE: 1/2" = 1'-0"

LEGEND

T	=	TOP
B	=	BOTTOM
JT.	=	JOINT
CONSTR.	=	CONSTRUCTION
TYP.	=	TYPICAL
SPA.	=	SPACES
COL.	=	COLUMN
E.W.	=	EACH WAY
CLR.	=	CLEAR

NOTES
- FOR GENERAL NOTES SEE SHEET 2
- WORK THIS SHEET WITH SHEET 26
- FOR BAR SCHEDULE SEE SHEET 28

Mark	Description	By	Chk'd.	Reco	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE

STAIR DETAILS

RECOMMENDED 4-26-93

SHEET 27 OF 36

S – 17313A

REINFORCEMENT BAR SCHEDULE

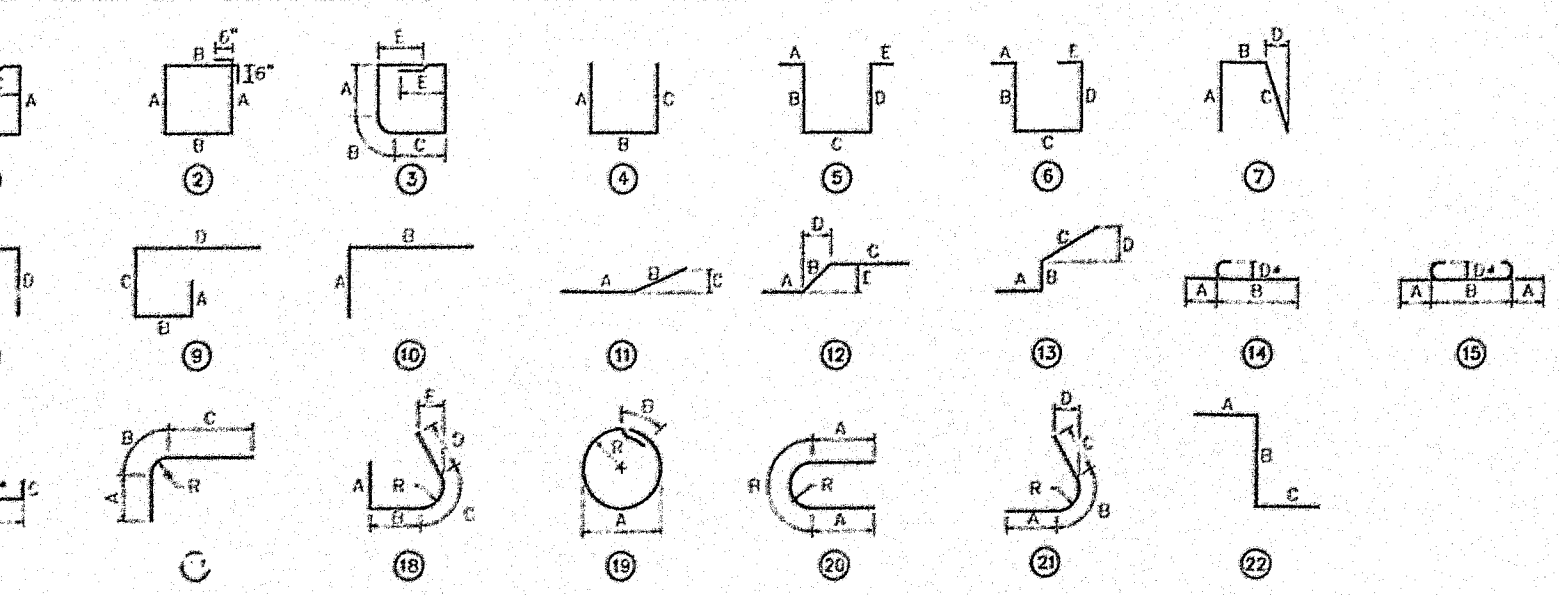
STAIR 1

ZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
		FOOTING								
6	36	7'-8"	STR							
6	24	4'-7"	(10)	1'-0"	3'-7"					
		COLUMN C1								
4	24	5'-8"	(2)	1'-2"	1'-2"					
6	12	11'-1"	STR							
E	12	12'-6"	STR							
		COLUMN C2								
	17	5'-8"	(2)	1'-2"	1'-2"					
	12	15'-5"	STR							
		BEAM B1								
4	42	5'-8"	(2)	1'-8"	0'-8"					
5	42	9'-2"	(10)	6'-2"	3'-0"					
		BEAM B2								
4	4	5'-8"	(2)	1'-8"	0'-8"					
5	6	7'-8"	(10)	4'-8"	3'-0"					
		SLAB LANDING								
4	24	11'-2"	STR							
4	4	4'-8"	STR							
4	24	7'-5"	(11)	6'-2"	1'-3"	0'-8"				
4	12	6'-2"	STR							
4	12	7'-10"	(11)	5'-4"	2'-6"	1'-4"				
		SLAB LANDING @ EL. 112.18								
4	8	6'-2"	STR							
4	6	4'-8"	STR							
4	6	6'-4"	(11)	3'-10"	2'-6"	1'-4"				
		STAIR SLAB #1								
4	16	4'-8"	STR							
4	6	8'-8"	(2)	3'-2"	0'-8"					
5	11	4'-8"	STR							
5	6	10'-6"	STR							
5	6	3'-0"	STR							
		STAIR SLAB #2								
4	12	4'-8"	STR							
5	11	4'-8"	STR							
5	6	10'-6"	STR							
5	6	3'-0"	STR							
		STAIR SLAB #3								
4	12	4'-8"	STR							
5	11	4'-8"	STR							
5	6	11'-11"	STR							

REINFORCEMENT BAR SCHEDULE

STAIR 2

MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
			FOOTING								
EM601	6	36	7'-8"	STR							
EM602	6	24	4'-7"	(10)	1'-0"	3'-7"					
			COLUMN C1								
EM401	4	26	5'-8"	(2)	1'-2"	1'-2"					
EM604	6	12	14'-7"	STR							
EM605	6	12	11'-4"	STR							
			COLUMN C2								
EM401	4	21	5'-8"	(2)	1'-2"	1'-2"					
EM603	6	12	8'-9"	STR							
EM605	6	12	11'-4"	STR							
			BEAM B1								
EM402	4	60	5'-8"	(2)	1'-8"	0'-8"					
EM606	6	60	9'-2"	(10)	6'-2"	3'-0"					
			BEAM B2								
EM402	4	4	5'-8"	(2)	1'-8"	0'-8"					
EM607	6	6	7'-8"	(10)	4'-8"	3'-0"					
			SLAB LANDING								
EM403	4	36	11'-2"	STR							
EM404	4	6	4'-8"	STR							
EM405	4	36	7'-5"	(11)	6'-2"	1'-3"	0'-8"				
EM406	4	18	6'-2"	STR							
EM407	4	18	7'-10"	(11)	5'-4"	2'-6"	1'-4"				
			SLAB LANDING @ EL. 111.46								
EM406	4	8	6'-2"	STR							
EM408	4	6	4'-8"	STR							
EM409	4	6	6'-4"	(11)	3'-10"	2'-6"	1'-4"				
			STAIR SLAB #1								
EM404	4	15	4'-8"	STR							
EM410	4	6	5'-0"	(2)	1'-4"	0'-8"					
EM501	5	10	4'-8"	STR							
EM502	5	6	9'-5"	STR							
EM503	5	6	3'-0"	STR							
			STAIR SLAB #2								
EM404	4	11	4'-8"	STR							
EM501	5	10	4'-8"	STR							
EM502	5	6	9'-5"	STR							
EM503	5	6	3'-0"	STR							
			STAIR SLAB #3								
EM404	4	11	4'-8"	STR							
EM501	5	10	4'-8"	STR							
EM502	5	6	9'-5"	STR							
EM503	5	6	3'-0"	STR							
			STAIR SLAB #4								
EM404	4	11	4'-8"	STR							
EM501	5	10	4'-8"	STR							
EM504	5	6	10'-10"	STR							



- FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.
- FIGURES IN CIRCLES SHOW TYPES
- "R" DIMENSION ON 180° HOOKS ARE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE USED
- REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY VERIFY PRIOR TO BIDDING AND FABRICATION
- ALL REINFORCEMENT BARS ARE EPOXY COATED

Mark	Description	By	Chk'd	Recd	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2 SPAN CONTINUOUS STEEL GIRDER BRIDGE
STAIR REINFORCEMENT SCHEDULE

RECOMMENDED 4-26-93

SHEET 28 OF 35

BORING NO. VN-3

STA. 783+85
OFFSET FROM ℄ 22.1' RT

SURFACE EL. 90.81' (CASING DEPTH 22.50')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
1.5	S1	2-2-3	14	1.00	ml / A-4	TOPSOIL SILT WITH TRACE OF MICACEOUS SAND (ml), BROWN, MOIST, SOFT TO MEDIUM, HOMOGENEOUS	
3.0	S2	2-2-2	18				
4.5	S3	3-3-3	11	3.00	ml / A-4	CLAYEY SILT WITH TRACE OF SAND (ml), GRAY BROWN, MOIST, MEDIUM, HOMOGENEOUS	
6.0	S4	4-6-9	13	1.00			
7.5	S5	10-11-12	13	1.50	ml / A-4	MICACEOUS SANDY SILT (ml), DARK BROWN, MOIST, VERY STIFF	
9.0	S6	9-9-11	11	1.75			
10.5	S7	5-9-16	18	1.75	sm / A-2	SILTY MICACEOUS SAND (sm), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	
12.0	S8	15-17-13	15	2.25			
13.5	S9	17-19-22	17	3.00			
15.0	S10	12-29-43	15	4.50			
16.5	S11	42-45-48	14	4.50			
18.0	S12	32-56-95	15	4.50			
19.5	S13	25-50-56	16	4.50			
21.0	S14	20-37-100	15	4.50			
22.5	S15	30-53 100/.42-50/.08	18	4.50			
24.0	R1	0% RQD	29% REC.			MICA SCHIST, GRAY, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED RD 25°-35°, CLOSELY SPACED FRACTURES RD 150°	
25.5	R2	0% RQD	20% REC.			MICA SCHIST, GRAY WITH BROWN STAINS AT FRACTURE SURFACE, SOFT TO MEDIUM, HIGHLY WEATHERED, VERY THINLY BEDDED RD 25°, CLOSELY SPACED FRACTURES RD 130°-150°	
30.5	R3	19% RQD	69% REC.			MICA SCHIST, GRAY, MEDIUM TO HARD, MODERATELY TO SLIGHTLY WEATHERED TO FRESH, THINLY BEDDED RD 30°-45°, CLOSE TO MEDIUM FRACTURE SPACING RD 135°-150°	
37.5	R4	30% RQD	77% REC.				

BOT./FTG. EL. 81
EL 81.59 20 HRS.
EL 79.19 0 HRS.
EL 68.4
EL 65.00

END OF BORING 42.50'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

BORING NO. VN-2

STA. 783+59
OFFSET FROM ℄ 26.4' LT

SURFACE EL. 91.67' (CASING DEPTH 20.83')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
1.5	S1	1-2-3	8		ml / A-4	TOPSOIL	
3.0	S2	2-2-2	10	1.25		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM STIFF, HOMOGENEOUS	
4.5	S3	2-4-7	9	1.75			
6.0	S4	2-4-5	16				
7.5	S5	6-6-6	15	1.00	sm / A-2	SILTY MICACEOUS SAND (sm), BROWN, MOIST, MEDIUM DENSE TO VERY DENSE	
9.0	S6	6-6-7	14	1.25			
10.5	S7	9-11-12	18	1.75			
12.0	S8	7-9-10	14	1.75			
13.5	S9	12-19-23	14	2.50			
15.0	S10	11-21-35	18	2.50			
16.5	S11	13-16-43	15	3.75			
18.0	S12	32-40-43	18	4.50			
19.5	S13	23-34-40	16	4.50			
20.83	S14	42-130-200/4	12	4.50			
24.0	R1	0 % RQD	16% REC.			MICA SCHIST, GRAY, BROWN (BLACK AT FRACTURE SURFACE), SOFT, HIGHLY WEATHERED, BEDDING AND JOINTS - LOW RECOVERY, CANNOT BE ASSESSED	
31.0	R2	0% RQD	31% REC.			MICA SCHIST, DARK BROWN, SOFT TO MEDIUM, HIGHLY WEATHERED, THINLY BEDDED RD 45°, CLOSELY SPACED FRACTURES RD 150°	
36.0	R3	17% RQD	50% REC.			MICA SCHIST, GRAY, MEDIUM TO HARD, HIGHLY TO MODERATELY WEATHERED, HIGHLY TO WIDELY BEDDED RD 30°-40°, CLOSE TO MEDIUM FRACTURE SPACING RD 150°-180°, TRACE OF QUARTZ 37'-39' FRACTURE WITH RD 90°	
41.0	R4	28% RQD	60% REC.				

BOT./FTG. EL. 81
EL 82.17 48 HRS.
EL 79.17 0 HRS.
EL 71±
EL 68.10

END OF BORING 41.00'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

BORING NO. VN-1

STA. 783+43
OFFSET FROM ℄ 25' LT

SURFACE EL. 96.19' (CASING DEPTH 29.58')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
1.5	S1	1-1-1	7		ml / A-4	TOPSOIL	
3.0	S2	1-2-2	8			SILT WITH TRACE OF FINE MICACEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
4.5	S3	9-5-5	10	1.25			
6.0	S4	3-4-4	18	1.50			
7.5	S5	5-5-4	6		ml / A-4	SILT WITH TRACE OF CLAY AND FINE MICACEOUS SAND (ml), BROWN, MOIST, STIFF	
9.0	S6	6-3-9	6				
10.5	S7	3-5-7	17	2.00	ml / A-4	SILT WITH SOME MICACEOUS SAND (ml), BROWN, MOIST, STIFF	
12.0	S8	6-7-6	11				
13.5	S9	6-7-7	12				
15.0	S10	3-4-4	15	1.50			
16.5	S11	4-6-6	15				
18.0	S12	7-9-10	16	3.00	sm / A-2	SILTY MICACEOUS SAND (sm), ORANGISH BROWN, MOIST, MEDIUM DENSE TO DENSE	
19.5	S13	4-6-10	12	2.50			
21.0	S14	3-6-25	18				
22.5	S15	15-11-12	11	2.00			
24.0	S16	7-16-18	13	3.25			
25.5	S17	5-9-23	14	3.50			
27.0	S18	15-28-23	14	4.50	ml / A-4	CLAYEY SILT (ml), BROWN, MOIST, HARD	
28.5	S19	24-45-52	16	4.50			
29.58	S20	52-80-50/1	9				
32.0	R1	0% RQD	79% REC.			MICA SCHIST, GRAYISH BROWN, SOFT TO MEDIUM, HIGHLY WEATHERED, VERY THINLY BEDDED RD 15°-35°, CLOSE FRACTURE SPACING RD 145°-170°	
	R2	25% RQD	70% REC.			MICA SCHIST, BROWNISH GRAY, MEDIUM TO HARD, MODERATELY WEATHERED, THINLY BEDDED RD 15°-45°, CLOSE TO WIDE FRACTURE SPACING RD 120°-170	

BOT./FTG. EL 88
EL 81.59 20 HRS.
EL 79.19 0 HRS.
EL 67.4

END OF BORING 39.58'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05)

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAS BEEN VERIFIED

LEGEND

- ▽ EL 79.19 / 0 HRS. — INDICATES GROUND WATER ELEVATION HOURS AT BORING COMPLETION
- ▽ EL 66.00 — ESTIMATED PILE TIP ELEVATION
- EL 87± — APPROX. TOP OF ROCK

NOTES

* FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29

Mark	Description	By	Ck'd	Reco.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
TEST BORINGS

4-2693

SHEET 29 OF

S - 173

WING B

BORING NO. VN-4

STA. 783+36
OFFSET FROM ℄ 28.8' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 94.10'						(CASING DEPTH 16.00')	
	S1	1-2-3	7			TOPSOIL, BLACK, DRY, TRACE OF SAND	
2.0					ml / A-4	CLAYEY SILT (ml), BROWN, MOIST, VERY STIFF	
3.5	S2	8-9-10	8				
5.0	S3	8-10-12	10				
6.5	S4	5-7-12	18				BOT./FTG. EL.90
8.0	S5	18-25-26	9				▽ EL 86.10 0 HRS.
9.5	S6	8-11-14	12		sm / A-2	MICACEOUS SILTY SAND (sm), BROWN, MOIST, MEDIUM DENSE TO VERY DENSE	
11.0	S7	20-40-60	12				
12.5	S8	40-55-70	16				▽ EL 82.10 24 HRS
14.0	S9	3-130-145	16		ml / A-4	SILT (ml), BROWN, WET, SOFT	
15.5	S10	97-122-212	13		sm / A-2	MEDIUM TO FINE SAND (sm), GRAY, MOIST, VERY DENSE	EL.78±
15.8	S11	162/31	3.5				
18.8	R1	0% RQD	19% REC			MICA SCHIST, DARK GRAY, MEDIUM TO HARD, HIGHLY TO SLIGHTLY WEATHERED, THINLY BEDDED RD 20°-45°, CLOSELY SPACED FRACTURES RD 135°-175°	
	R2	0% RQD	42% REC				
23.8	R3	1% RQD	32% REC				
28.8	R4	9% RQD	26% REC.				

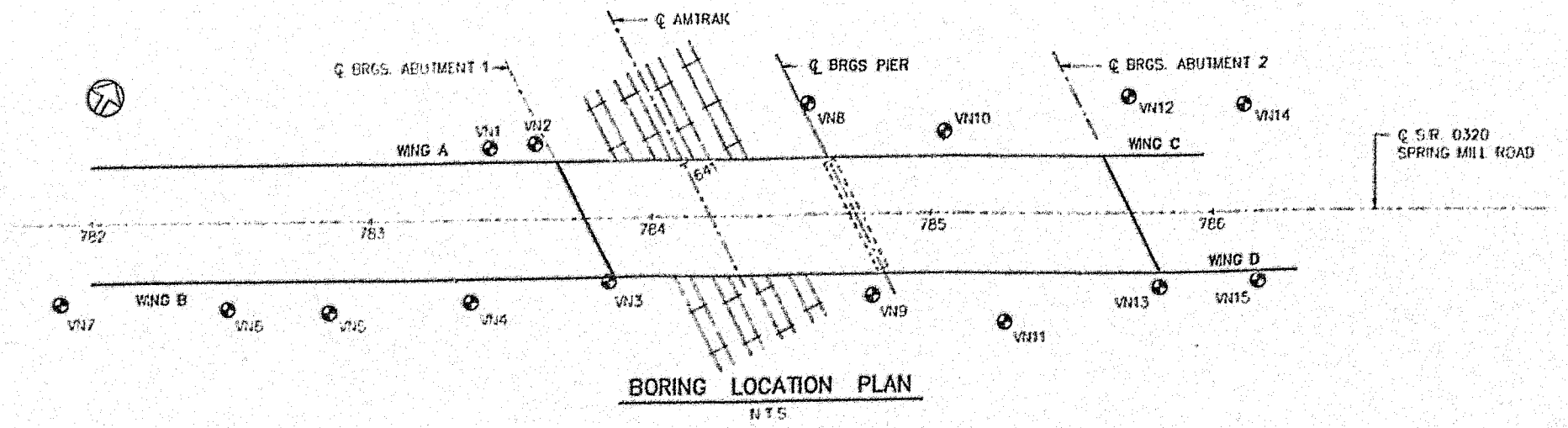
END OF BORING 35.80'

BORING NO. VN-5

STA. 782+85
OFFSET FROM ℄ 31.9' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 95.81'						(CASING DEPTH 25.00')	
	S1	2-3-3	14			TOPSOIL, GRASS, ROOTS	
1.5					ml / A-4	SILT WITH LITTLE CLAY (ml), DARK BROWN, MOIST, MEDIUM, BRICK FRAGMENTS (FILL)	
3.0	S2	7-3-2	6				▽ EL 92.81 0 HRS.
4.5	S3	7-4-4	5				
6.0	S4	2-2-6	11	1.00	ml / A-4	SILT WITH TRACE OF FINE SAND (ml), BROWN, WET, MEDIUM TO STIFF	
7.5	S5	6-8-12	15	2.50	ml / A-4	MICACEOUS SANDY SILT (ml), MOTTLED BROWN, MOIST, VERY STIFF TO HARD, HOMOGENEOUS	BOT./FTG EL.92
9.0	S6	9-10-10	16				▽ EL 86.81 24 HRS.
10.5	S7	6-7-10	13				
12.0	S8	13-19-22	15	3.25			
13.5	S9	18-20-24	12	3.25			
15.0	S10	5-6-11	18	1.50	ml / A-4	MICACEOUS SANDY SILT (ml), MOTTLED BROWN-WHITE-GRAY, MOIST, STIFF TO VERY STIFF, HETEROGENEOUS	
16.5	S11	5-7-11	18	1.50			
18.0	S12	7-12-13	16	2.00			
19.5	S13	12-13-17	16	2.00			
21.0	S14	8-10-9	18	2.00			
22.5	S15	8-5-6	14				
24.0	S16	11-15-20	16	3.00			
25.0	S17	38-100/4"-50/0"	11				EL.71±
	R1	0% RQD	53% REC.			MICA SCHIST, GRAY, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED RD 25°, CLOSELY SPACED FRACTURES RD 150°-160°	
28.0	R2	20% RQD	75% REC.			MICA SCHIST, GRAY, WITH MINERAL GRAINS, SOFT TO HARD, HIGHLY TO MODERATELY WEATHERED, THINLY BEDDED RD 25°-45°, MEDIUM TO WIDELY SPACED FRACTURES RD 135°-180°	
34.0	R3	26% RQD	56% REC.				

END OF BORING 40.00'



BORING LOCATION PLAN
N.T.S.

GENERAL NOTES

- BORINGS DRILLED BY SITE ENGINEERS, INC.
- DRILLER: S. POPELACK / B. DUFFY
- INSPECTOR: R. McINTYRE, II
- GEOTECHNICAL ENGINEER: L. GUPTA
- WORK START ON APRIL 2, 1991.
- WORK END ON MAY 16, 1991.
- EQUIPMENT USED: TRUCK MOUNTED CME 656
  SKID RIG CME 450
- STANDARD SOIL BORING AND SAMPLING:
  DRILLING METHOD ..... HOLLOW STEM AUGER
  CONTINUOUS SPLIT-BARREL SAMPLING.
  SIZE OF SAMPLING SPOON ..... 2 INCHES O.D.
  CASING SIZE.....4.0"
  WEIGHT OF HAMMER ON SPOON ..... 140 POUNDS.
  DROP OF HAMMER ON SPOON ..... 30 INCHES.
- ROCK DRILLING AND CORING:
  DRILLING METHOD ..... DIAMOND CORE DRILLING
  CORE BARREL WITH DIAMOND BIT
  SIZE OF CORE ..... 2 INCHES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

LPG

NOTES

- FOR LEGEND SEE SHEET 28

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

Mark	Description	By	Chk'd	Recd	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
TEST BORINGS

4-2693

SHEET 30 OF 35

S - 17313A

WING B

). VN-7

DESCRIPTION	REMARKS
(CASING DEPTH 31.54')	
PAVEMENT	
SILT, DARK BROWN, DRY, MEDIUM DENSE (FILL)	
SILT (sm), DARK BROWN, DRY, MEDIUM DENSE	
T (cl-ml), BROWN, MOIST, VERY STIFF	
SANDY SILT (ml), DARK BROWN TO ORANGISH IST, STIFF TO HARD	EL 85.16 0 HRS EL 81.16 24 HRS
E QUARTZ PIECES	EL 67±
RY	
T, GRAY, HARD, SLIGHTLY WEATHERED, THINLY 10°-45°, MEDIUM SPACED FRACTURES 70°	
OF BORING 46.50'	

BORING NO. VN-6

STA. 782+49
OFFSET FROM ℄ 30.3' RT

SURFACE EL. 97.93' (CASING DEPTH 25.00')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR RQD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
1.5	S1	2-3	5			TOPSOIL, GRASS, ROOTS	
3.0	S2	3-3-4	15			SANDSTONE, FILLER BLOCK	
4.5	S3	6-6-8	7	1.50	ml A-4	SILT WITH TRACE OF CLAY AND SAND (ml), BROWN, MOIST, STIFF	
6.0	S4	4-10-17	10				
7.5	S5	11-17-12	11		ml A-4	MICACEOUS FINE SANDY SILT (ml), BROWN, MOIST, STIFF	
9.0	S6	11-13-18	12	2.00			BOT./TIG. EL.92
10.5	S7	6-11-11	13	1.75			
12.0	S8	11-13-15	13		sm A-2	MICACEOUS FINE SAND WITH TRACE OF SILT (sm), ORANGE, WHITE, BROWN, MOIST, MEDIUM DENSE TO VERY DENSE	
13.5	S9	17-21-21	11	2.00			
15.0	S10	15-13-18	12				EL.81.93 18 HRS.
16.5	S11	4-10-10	12				EL 80.93 0 HRS.
18.0	S12	11-14-21	12	3.00			
19.5	S13	13-16-26	16	2.50			
21.0	S14	9-6-10	14				
22.5	S15	18-42-43	16				
24.0	S16	30-32-40	16				
25.0	S17	14-65-50/.08	12				EL 73±
	R1	0% RQD	0% REC.			DECOMPOSED MICA SCHIST, BROWN AND GRAY NO RECOVERY	
28.0	R2	0% RQD	0% REC				
33.0	S18	55/33-50/.08	3				
	R3	0% RQD	0% REC.				
38.0	S19	60/5-50/.08	6				
	R4	0% RQD	0% REC.				
43.0	R5	0% RQD	0% REC				
48.0	R6	7% RQD	40% REC.			MICA SCHIST, GRAYISH, SOFT TO HARD, MODERATE TO SLIGHTLY WEATHERED, VERY THINLY BEDDED RD 20°-30°, VERY CLOSELY TO MEDIUM FRACTURE SPACING RD 110°-160°	

END OF BORING 53.00'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

NOTES

- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29
- FOR LEGEND SEE SHEET 28

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

Mark	Description	By	Chk'd.	Reco.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
TEST BORINGS

1-26-93

SHEET 31 OF 35

S - 17313A

PIER

BORING NO. VN-8

STA. 784+56
OFFSET FROM ℄ 39' LT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR RQD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
						SURFACE EL. 94.58' (CASING DEPTH 25.60')	
1.5	S1	1-2-2	11		FILL	TOPSOIL SAND, BLACK, MOIST, LOOSE (FILL)	
3.0	S2	2-3-7	14	1.25	ml / A-4	SILT WITH SOME MICACEOUS SAND, TRACE ROOTS (ml), BROWN, MOIST, MEDIUM TO STIFF	
4.5	S3	4-5-7	12	1.25			
6.0	S4	4-8-6	14				
7.5	S5	5-6-7	16	1.00			
9.0	S6	6-6-8	13	2.00	ml-cl / A-4 A-6	CLAYEY SILT (ml-cl), BROWNISH GRAY, MOIST, STIFF	
10.5	S7	12-16-20	12				BOT./FTG. EL 80.5
12.0	S8	19-24-34	13	4.00			▽ EL 82.08 41 HRS
13.5	S9	22-24-28	12	4.25	ml / A-4	MICACEOUS SANDY SILT (ml), RED, ORANGE, BROWN, WET, VERY STIFF	
15.0	S10	6-13-19	14	4.00			
16.5	S11	11-15-11	17	3.50	sm / A-2	SILTY MICACEOUS SAND (sm), RE, ORANGE, BROWN, DENSE TO VERY DENSE	
18.0	S12	10-18-21	14	4.50			
19.5	S13	10-24-32	12	4.50			▽ EL 74.58 0 HRS
21.0	S14	13-23-32	15				
22.5	S15	7-9-22	14				
24.0	S16	4-42-65	13			DECOMPOSED MICA SCHIST	
25.5	S17	11-42-100/5	14				EL.69± (ESTIMATED) ▽ EL.67.00
28.0	R1	0% RQD	7% REC			MICA SCHIST, GRAVEL SIZE PIECES, OTHER INFORMATION N/A	
30.0	R2	0% RQD	0% REC.			NO RECOVERY	SOFT MATERIAL BROWN CUTTINGS (GRITTY)
35.0	S18	200/ 42-50/ 08	6			DECOMPOSED MICA SCHIST	
35.5	R3	0% RQD	30% REC.			MICA SCHIST, BROWNISH GRAY, HARD, SLIGHTLY TO MODERATELY WEATHERED, VERY THINLY BEDDED RD 40°, VERY CLOSELY TO CLOSELY SPACED FRACTURES RD 140°	
40.0	R4	0% RQD	33% REC.			MICA SCHIST, GRAY, HARD, SLIGHTLY WEATHERED, VERY THINLY BEDDED RD 40°, CLOSELY SPACED FRACTURES RD 140°	
45.0	R5	0% RQD	37% REC.				

END OF BORING 50.00'

BORING NO. VN-9

STA. 784+79
OFFSET FROM ℄ 28.2' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR RQD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
						SURFACE EL. 86.08' (CASING DEPTH 18.58')	
1.5	S1	1-2-3	16	2.00		SAND FILL, BLACK, MOIST	
3.0	S2	4-7-9	14	2.50	ml-cl / A-4 A-6	CLAYEY SILT WITH SOME FINE SAND (ml-cl), BROWN, GRAY, MOIST, VERY STIFF	
4.5	S3	10-12-16	16	2.50			BOT./FTG. EL 80.5
6.0	S4	3-5-4	15	1.00			▽ EL 79.58 0 HRS. AND 25 HRS.
7.5	S5	3-4-5	6		ml / A-4	MICACEOUS SILT WITH SOME FINE SAND (ml), BROWN, GRAY, MOIST STIFF	
9.0	S6	6-6-9	14				
10.5	S7	4-4-6	17		sm / A-2	MICACEOUS MEDIUM TO FINE SAND WITH SOME SILT (sm), BROWN, GRAY, MOIST, MEDIUM DENSE	
12.0	S8	5-8-14	15				
13.5	S9	6-9-15	13		sm / A-2	MICACEOUS SILTY FINE SAND (sm), RED, BROWN, GRAY, MOIST, MEDIUM DENSE TO DENSE	
15.0	S10	13-13-21	17				
16.5	S11	6-32-43	14				
18.0	S12	23-40-75	15		sm / A-2	MICACEOUS SILTY SAND (sm), RED, BROWN, GRAY, MOIST, VERY DENSE (DECOMPOSED MICA SCHIST)	EL 68± (ESTIMATED) ▽ EL 66.00
18.58	S13	115-50/ 08	6				
19.0	R1	0% RQD	21% REC.			MICA SCHIST, BROWN, SOFT, HIGHLY WEATHERED, LOW RECOVERY, OTHER INFORMATION CANNOT BE OBTAINED	
21.5	R2	0% RQD	15% REC				
28.5	R3	75% RQD	35% REC.			MICA SCHIST, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED RD 45°, VERY CLOSE TO MEDIUM FRACTURE SPACING RD 110°-140°	
38.5	R4	0% RQD	13% REC				

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR RQD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
						CONTINUED	
43.5	R5	0% RQD	8% REC.				
48.5	R6	0% RQD	50% REC.				
53.5	R7	23% RQD	78% REC.			MICA SCHIST, GRAY, HARD TO VERY HARD, SLIGHTLY WEATHERED TO FRESH, VERY THINLY BEDDED RD 15°-25°, VERY CLOSE TO WIDE FRACTURE SPACING RD 110°-180°	

END OF BORING 58.50'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

Mark	Description	By	Chk'd.	Recd.
	REVISIONS			

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED

NOTES

- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29
- FOR LEGEND SEE SHEET 28

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRID

TEST BORINGS

42693

SHEET 32 O

BORING NO. VN-10

STA. 785+05
OFFSET FROM ℄ 28.8' LT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 99.11'						(CASING DEPTH 32.70')	
1.5	S1	2-1-2	2		sm / A-2	SAND, ASH AND STONE FILL (sm), BLACK, DRY TO MOIST, VERY LOOSE	
3.0	S2	2-2-3	4				
4.5	S3	3-1-4	5				
6.0	S4	11-13-6	9				
7.5	S5	5-2-5	8				
9.0	S6	8-15-8	8		sm / A-2	CONCRETE, STONE, SAND FILL (sm), BLACK, DRY TO MOIST	
10.5	S7	11-11-17	4				
12.0	S8	17-15-15	2				
13.5	S9	9-9-7	3		ml / A-4	SILT WITH SOME MICACEOUS SAND, TRACE OF CLAY (ml), BROWN, MOIST, VERY STIFF	BOT./FTG. EL.82
15.0	S10	18-35-12	9				EL.83.11 ▽ 0 HRS.
16.5	S11	11-12-16	9		ml / A-4	SILT WITH SOME CLAY, TRACE OF SAND (ml), GRAY, MOIST, VERY STIFF	
18.0	S12	11-11-18	16	3.00			EL.82.51 ▽ 64 HRS.
19.5	S13	5-9-11	12	2.25	ml / A-4	SILT WITH SOME CLAY, TRACE OF FINE SAND (ml), BROWN, MOIST, WET, STIFF	
21.0	S14	44-13-9	13		cl-ml / A-6 A-4	CLAYEY SILT WITH TRACE OF FINE SAND (cl-ml), BROWN, WET, STIFF	
22.5	S15	5-5-9	3				
24.0	S16	3-4-8	12				
25.5	S17	38-23-20	10		sm / A-2	SILTY SAND (sm), GRAY, BLACK, ORANGE, BROWN, MOIST, VERY DENSE, LAYERED (DECOMPOSED MICA SCHIST)	
27.0	S18	14-24-30	13	4.50			
28.5	S19	9-18-32	9				
30.0	S20	42-20-18	10				
31.5	S21	11-19-34	13				
32.58	S22	40-50/.08	7				EL.66± (CASING) ▽ EL.64.00
35.0	R1	0% ROD	23% REC.			MICA SCHIST AND QUARTZ, GRAY, BROWN, SOFT, HIGHLY WEATHERED, GRAVEL SIZE PIECES	
	R2	0% ROD	0% REC.			NO RECOVERY	
42.0	R3	0% ROD	0% REC.			MICA SCHIST AND QUARTZ, GRAY, SOFT, HIGHLY WEATHERED, GRAVEL SIZE PIECES	
52.0	R4	15% ROD	75% REC.			MICA SCHIST, GRAY, MEDIUM TO HARD, MODERATE TO SLIGHTLY WEATHERED, VERY WIDELY TO OPEN BEDDED RD 25°-35°, CLOSE TO MEDIUM FRACTURE SPACING RD 150°-180°	

END OF BORING 57.00'

BORING NO. VN-11

STA. 785+26
OFFSET FROM ℄ 37.8' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 87.25'						(CASING DEPTH 46.08')	
1.5	S1	1-2-5	13			TOPSOIL, FILL	BOT./FTG. EL.82
3.0	S2	3-3-4	11		ml / A-4	CLAYEY SILT WITH TRACE OF SAND (ml), BROWN, MOIST, MEDIUM	
4.5	S3	3-3-5	16				
6.0	S4	5-9-12	17	4.00	cl-ml / A-4 A-6	CLAYEY SILT WITH TRACE OF MICACEOUS SAND (cl-ml), GRAY, MOIST, VERY STIFF	
7.5	S5	13-14-17	16	4.00			EL.77.65 ▽ 0 HRS.
9.0	S6	5-8-7	15				
10.5	S7	6-6-6	5				EL.76.75 ▽ 14 HRS
12.0	S8	4-4-5	3				
13.5	S9	2-4-5	14				
15.0	S10	4-7-9	18	1.50	ml / A-4	MICACEOUS SANDY SILT (ml), ORANGISH BROWN, MOIST, STIFF TO VERY STIFF	
16.5	S11	3-6-7	15				
18.0	S12	5-7-7	17				
19.5	S13	7-7-10	18				
21.0	S14	5-8-9	11				
22.5	S15	9-9-19	15				
24.0	S16	11-19-20	12				
25.5	S17	8-11-11	12				
27.0	S18	11-12-22	14				
28.5	S19	5-10-17	8				
30.0	S20	5-7-9	13				
31.5	S21	5-7-7	12.5		ml-cl / A-4 A-6	MICACEOUS CLAYEY SILT (ml-cl), REDDISH BROWN, MOIST, STIFF, HOMOGENEOUS	
33.0	S22	5-6-6	16	1.50			
34.5	S23	3-5-5	13				
36.0	S24	3-4-6	13				
37.5	S25	6-10-15	17				
39.0	S26	9-15-13	14				
40.5	S27	10-20-25	15	4.00	cl-ml / A-6 A-4	MICACEOUS SANDY SILT (cl-ml), ORANGISH BROWN, MOIST, VERY STIFF	
42.0	S28	12-24-45	17	4.50			
43.5	S29	17-25-38	14				
45.0	S30	26-36-54	16		ml / A-4	MICACEOUS SANDY SILT (ml), ORANGISH BROWN, MOIST, HARD, HOMOGENEOUS	
46.5	S31	47-124-50/.08	12				

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
CONTINUED							
46.5	R1	0% ROD	13% REC.			MICA SCHIST, GRAY, SOFT, HIGHLY WEATHERED BEDDING AND FRACTURE INFORMATION NOT AVAILABLE	EL.41± (CASING) ▽ EL 39.00
49.0	R2	11% ROD	40% REC.			MICA SCHIST AND GNEISS, BROWN AND GRAY, SOFT TO MEDIUM, HIGHLY TO MODERATELY WEATHERED, VERY THINLY TO THINLY BEDDED RD 30°, VERY CLOSELY TO CLOSELY SPACED FRACTURE RD 150°	
56.0	R3	0% ROD	27% REC.				
61.0	R4	56% ROD	100% REC.			GNEISS, GRAY, HARD, SLIGHTLY WEATHERED, THINLY BEDDED RD 10°-40°, CLOSELY SPACED FRACTURES RD 135°-170°	

END OF BORING 66.00'

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

LRG

Mark	Description	By	Chk'd	Recd.	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

NOTES

- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29
- FOR LEGEND SEE SHEET 28

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE

TEST BORINGS

4-26-93

SHEET 33 OF 35

S - 17313A

ABUTMENT 2

BORING NO. VN-12

STA. 785+70
OFFSET FROM ℄ 40.7' LT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 95.18'						(CASING DEPTH 29.58)	
						TOPSOIL	
1.5	S1	4-6-7	6		sm / A-2	SILTY SAND (sm), DARK BROWN, MOIST, MEDIUM DENSE, HOMOGENEOUS	
3.0	S2	7-10-7	8				
4.5	S3	11-10-12	11				
6.0	S4	4-5-8	16		mi / A-4	SILT WITH SAND (mi), BROWN, MOIST, MEDIUM TO VERY STIFF, HOMOGENEOUS	
7.5	S5	8-10-11	6				BOT./FTG. EL 82
9.0	S6	6-4-3	3				
10.5	S7	3-4-5	18	2.75			EL 86.18 94 HRS.
12.0	S8	7-14-20	16	4.00	cl-mi / A-6 A-4	CLAYEY SILT WITH SAND WITH TRACE OF MICA FLAKES (mi-cl), GRAY, MOIST, STIFF	
13.5	S9	20-22-27	16	3.50		CLAYEY SILT WITH TRACE OF MICA FLAKES (mi-cl), BROWN AND GRAY, MOIST, VERY STIFF	
15.0	S10	7-9-12	6	2.00			EL 80.18 0 HRS.
16.5	S11	4-6-8	18	2.50	sm / A-2	SANDY SILT (sm), ORANGISH, MOIST, VERY STIFF TO HARD	
18.0	S12	6-8-9	16	1.50			
19.5	S13	6-10-11	16	2.75			
21.0	S14	8-10-13	13	3.00			
22.5	S15	10-13-18	11	3.00			
24.0	S16	13-19-20	12	2.75			
25.5	S17	10-11-18	16	2.50			
27.0	S18	11-20-30	11	4.50			
28.5	S19	30-54-70	12		cl-mi / A-6 A-4	MICACEOUS CLAYEY SILT (cl-mi), ORANGISH BROWN, MOIST, HARD	EL 65±
29.58	S20	51-130-50/.08	13				
	R1	0% ROD	21% REC.			GRAVEL SIZE MICA SCHIST RECOVERED	
32.0	R2	0% ROD	0% REC			GRAY CUTTINGS, NO VOIDS NO RECOVERY	EL 62.00
37.0	S21	41-105-50/.04	11		sm / A-2	COARSE SAND (sm), WHITE, GRAY, MOIST, HARD (DECOMPOSED)	
37.92	R3	0% ROD	48% REC.			MICA SCHIST WITH LAYERS OF GNEISS, GRAY AND GREEN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED RD 10°-40°, VERY CLOSELY SPACED FRACTURES RD 135°-160°	
43.0	R4	0% ROD	50% REC				
48.0	R5	36% ROD	67% REC			MICA SCHIST GNEISS, GRAY, HARD TO VERY HARD, MODERATELY TO SLIGHTLY WEATHERED, THINLY BEDDED RD 10°-45°, WIDELY SPACED FRACTURES RD 150°-160°	

END OF BORING 53.00'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

BORING NO. VN-13

STA. 785+81
OFFSET FROM ℄ 25.9' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
SURFACE EL. 90.16'						(CASING DEPTH 36.00')	
						TOPSOIL, BLACK	
1.5	S1	4-4-4	4		mi / A-4	SANDY SILT (mi), DARK BROWN, MOIST, MEDIUM TO STIFF	
3.0	S2	2-3-4	13				
4.5	S3	5-5-6	15				BOT./FTG. EL.82
6.0	S4	3-4-4	8				
7.5	S5	5-10-14	12		mi-cl / A-4 A-6	CLAYEY SILT WITH TRACE OF SAND (mi-cl), GRAY, MOIST, STIFF TO VERY STIFF	
9.0	S6	11-13-21	18				
10.5	S7	7-9-11	18	3.00			EL 79.16 0 HRS
12.0	S8	9-9-11	13				
13.5	S9	8-10-11	15	1.50	mi / A-4	MICACEOUS SANDY SILT WITH CLAY (mi), ORANGISH BROWN, MOIST, STIFF TO VERY STIFF	EL 78.16 21 HRS
15.0	S10	6-6-6	17	1.00			
16.5	S11	6-8-13	15				
18.0	S12	7-10-11	15	1.50			
19.5	S13	4-5-9	15	1.75			
21.0	S14	4-6-12	16				
22.5	S15	7-13-21	17				
24.0	S16	3-3-6	18	1.00			
25.5	S17	10-17-24	18	1.50			
27.0	S18	9-12-23	16	1.75			
28.5	S19	18-23-23	14	2.00			
30.0	S20	13-20-23	16	2.00			
31.5	S21	15-20-30	18	2.25			
33.0	S22	18-23-11	18	2.50			
34.5	S23	25-18-22	11	2.50			
35.9	S24	87-158-50/5	17	4.50			EL 54±
	R1	0% ROD	0% REC.			NO RECOVERY	EL 52.00
39.0	R2	0% ROD	42% REC			MICA SCHIST, GRAY, SOFT TO MEDIUM, HIGHLY WEATHERED, VERY THINLY BEDDED RD 5°-20°, EXTREMELY CLOSE TO CLOSE FRACTURE SPACING RD 150°-160°	
44.0	R3	0% ROD	18% REC				

BORING NO. VN-13 (CONTINUED)

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
CONTINUED							
49.0	R4	0% ROD	20% REC.			GNEISS, GRAY WITH WHITE SEAMS, MEDIUM TO HARD, MODERATELY WEATHERED, VERY THINLY BEDDED RD 10°-30°, VERYCLOSE FRACTURE SPACING RD 150°-180	
54.0	R5	0%	77% REC.				

END OF BORING 59.00'

NOTES

- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29
- FOR LEGEND SEE SHEET 28

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

LPG

Mark	Description	By	Chk'd	Reco.
REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDG
TEST BORINGS

42693

SHEET 34 OF

S - 173

BORING NO. W-10

STA. 786+16
OFFSET FROM ℄ 24.1' RT

SURFACE EL. 92.96' (CASING DEPTH 30.00')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
						BITUMINOUS PAVEMENT	
1.5	S1	2-3-5	4		sm / A-2	SAND, GRAVEL, ASH (sm), BLACK, MOIST (FILL)	
3.0	S2	6-4-6	14				BOT./FTG. EL.91
4.5	S3	5-6-11	16		ml / A-4	SILT WITH TRACE OF GRAVEL (ml), GRAY, MOIST, STIFF	
6.0	S4	4-7-5	7				
7.5	S5	4-4-5	11	1.00			
9.0	S6	10-6-4	8	1.50			
10.5	S7	3-3-7	16	4.25	ml / A-4	SILT (ml), GRAY, MOIST TO WET	
12.0	S8	13-20-21	16	4.50			▽ EL 80.96 0 HRS.
13.5	S9	17-15-16	12				▽ 78.16 13 HRS.
15.0	S10	5-7-11	17	2.00	ml / A-4	MICACEOUS SANDY SILT (ml), BROWN, MOIST, VERY STIFF	
16.5	S11	4-11-12	10	2.25			
18.0	S12	16-17-21	17	2.25			
19.5	S13	15-24-17	10	3.00			
21.0	S14	7-14-16	15	2.50			
22.5	S15	16-21-34	15				
24.0	S16	18-24-28	11				
25.5	S17	11-16-19	15	4.00			
27.0	S18	16-21-24	12	3.00			
28.5	S19	10-24-32	12	4.50			
30.0	S20	32-85-200/5	15	4.50			EL 63±
33.0	R1	0% RQD	19% REC.			MICA SCHIST, GRAY/BROWN WITH TRACE OF QUARTZ, SOFT, HIGHLY WEATHERED, BEDDING AND FRACTURE INFORMATION NOT AVAILABLE	
38.0	R2	0% RQD	27% REC.				
43.0	R3	0% RQD	26% REC.			MICA SCHIST, GREEN/GRAY, MEDIUM HARDNESS, HIGHLY WEATHERED, VERY THINLY BEDDED RD 25°-40°, CLOSELY SPACED FRACTURES RD 140°-155°	
48.0	R4	0% RQD	32% REC.				

END OF BORING 48.00'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 25 TSF

BORING NO. W-11

STA. 785+00
OFFSET FROM ℄ 37.4' LT

SURFACE EL. 94.78' (CASING DEPTH 25.00')

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS / AASHTO	DESCRIPTION	REMARKS
						TOPSOIL	
1.5	S1	3-6-9	12		ml / A-4	CLAYEY SILT WITH TRACE OF FINE SAND (ml), DARK BROWN, MOIST, STIFF, HOMOGENEOUS	
3.0	S2	4-3-3	10				BOT./FTG. EL 89±
4.5	S3	4-4-5	14				▽ EL 86.78 16 HRS.
6.0	S4	3-4-6	15	1.50			
7.5	S5	5-6-5	11				
9.0	S6	6-7-8	11		cl / A-6	SILTY CLAY (cl), BROWNISH GRAY, MOIST, VERY STIFF, HOMOGENEOUS	
10.5	S7	8-11-15	18	3.25			▽ EL 82.78 0 HRS.
12.0	S8	13-16-19	9	4.25			
13.5	S9	18-21-24	9				
15.0	S10	14-19-22	11	3.75	ml / A-4	MICACEOUS SANDY SILT (ml), ORANGISH BROWN, MOIST, VERY STIFF, HOMOGENEOUS	
16.5	S11	7-8-9	13	3.25			
18.0	S12	10-13-17	13	2.75			
19.5	S13	13-19-21	13	2.75			
21.0	S14	9-11-14	16				
22.5	S15	11-19-22	12		ml / A-4	MICACEOUS SILTY CLAY, SOME SAND (ml), ORANGE, RED, BROWN, MOIST, HARD	
24.0	S16	22-40-62	14	4.50			EL 70±
25.0	S17	30-250/6	12	4.50			▽ EL 67.00
	R1	0% RQD	0% REC.			NO RECOVERY	
28.0	S18	175-50/0.8	6			SANDY DECOMPOSED MICA SCHIST, GRAY, HARD	
28.58	R2	14% RQD	70% REC.			GNEISS WITH SEAMS OF MICA SCHIST, GRAY, BANDS OF WHITE, MEDIUM TO VERY HARD, MODERATELY WEATHERED, VERY THINLY BEDDED RD 10°-40°, VERY CLOSELY TO CLOSELY SPACED FRACTURES RD 135°-170°	
32.0	R3	0% RQD	70% REC.				

END OF BORING 38.00'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

NOTES

- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 29
- FOR LEGEND SEE SHEET 28

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 408, SECTION 102.05).

THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

LPG

Mark	Description	By	Chk'd	Reco.	Dat
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
2-SPAN CONTINUOUS STEEL GIRDER BRIDGE
TEST BORINGS

4-24-93

SHEET 35 OF
S – 173

RECEIVED
FEB 16 1983

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17120

Public Meeting held December 17, 1982

RECEIVED
DEC 23 11 9 39
DOCUMENT
DEC 28 1994

Commissioners Present:

Susan M. Shanaman, Chairman
Michael Johnson, dissenting
James H. Cawley
Linda C. Taliaferro
Clifford L. Jones

Villanova University
v.
National Railroad Passenger Corporation (AMTRAK), Consolidated Rail Corporation (Conrail), Southeastern Pennsylvania Transportation Authority (SEPTA), Pennsylvania Department of Transportation (PennDOT), County of Delaware and Radnor Township.

C-80011839

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 3
P.U.C. NO. C-80011839
DATE OF HEARING 12/08/94
R.C.

OPINION AND ORDER

DOCUMENT FOLDER

BY THE COMMISSION:

This matter comes before us on Exceptions filed by the Pennsylvania Department of Transportation (PennDOT) to the Initial Decision of Administrative Law Judge (ALJ) Martin R. Fountain dated October 13, 1982. PennDOT takes exception only to the rejection by the ALJ of its recommendation that the ALJ provide for inspection of a bridge associated with this proceeding.

As the ALJ observes, at page 9 of the Initial Decision, this complaint relates centrally to pedestrians crossing the tracks at Villanova University. One route the pedestrians take is over the bridge in question, which carries Spring Mill Road over the tracks. The pedestrians appear to present no danger to the bridge but the bridge is approximately 100 years old and might present a danger to the pedestrians. The bridge is used jointly by pedestrians and by motor vehicles.

We agree with PennDOT that an in-depth inspection of the bridge, to determine its load-carrying capabilities, is necessary and that the railroad is best able to make such an inspection at this time. We also note that PennDOT is willing to provide laboratory services and traffic control.

The ALJ stated that an inspection of the bridge would be desirable but stopped short of ordering such an inspection. Initial

9. That the Pennsylvania Department of Transportation bear all of the costs incurred by it in furnishing material and performing work in accordance with the previous orders of the Commission issued in this proceeding.

10. That the record in the above-captioned proceeding docketed at C-80011839 is to remain open.

BY THE COMMISSION,

Jerry Rich
Secretary

(SEAL)

ORDER ADOPTED: December 17, 1982

ORDER ENTERED: FEB 7 1983

RECEIVED
Passenger
BUREAU OF
JAN 17 1986
GRADE CROSSING
HARRISBURG, PA

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17120

Public Meeting held January 10, 1986

Commissioners Present:

Linda C. Taliaferro, Chairman
Frank Fischl
Bill Shane

RECEIVED
DEC 29 11 9:39
INFO. CONTROL DIV.
P.U.C.

Ratification of emergency order in re:

Villanova University
v.
National Railroad Passenger Corporation (Amtrak), Consolidated Rail Corporation (Conrail), Southeastern Pennsylvania Transportation Authority (SEPTA), Pennsylvania Department of Transportation (PennDOT), County of Delaware and Radnor Township.

C-80011839

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 4
P.U.C. NO. C-80011839
DATE OF HEARING 12/08/94
R.C.

O R D E R

BY THE COMMISSION:

This matter comes before the Commission upon its own motion. By emergency order issued November 15, 1985, Chairman Linda C. Taliaferro ordered:

"1. That Pennsylvania Department of Transportation, at its initial cost and expense, immediately erect and maintain signs at appropriate locations at the bridge and on the approaches thereto, posting the subject bridge for a maximum weight limit of fifteen (15) tons.

2. That Pennsylvania Department of Transportation, at its initial cost and expense, immediately and simultaneously furnish all material and do all work necessary to establish, mark and maintain a suitable detour for all vehicles weighing in excess of fifteen (15) tons.

3. That National Railroad Passenger Corporation, at its initial cost and expense, furnish all material and do all work necessary to make any repairs required to the structure to ensure the safety of the bridge for the posted load limit of fifteen (15) tons.

4. That a copy of this order be served on the Commissioners of the Pennsylvania State Police."

Upon review of the circumstances surrounding the issuance of the emergency order, we conclude that it is in the public interest to make such action; THEREFORE,

IT IS ORDERED: That the emergency order issued November 15, 1985 at C-80011839, be and is hereby ratified.

BY THE COMMISSION,

Jerry Rich
Secretary

(SEAL)

ORDER ADOPTED: January 10, 1986

ORDER ENTERED: JAN 15 1986

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held June 27, 1991

RECEIVED
1991 DEC 23 AM 9:39
INFO. CONTROL DIV.
U.S.

Commissioners Present:

William H. Smith, Chairman
Joseph Rhodes, Jr., Vice-Chairman
Wendell F. Holland, Commissioner
David W. Rolka, Commissioner

Villanova University
v.
National Railroad Passenger Corporation (Amtrak), Consolidated Rail Corporation (Conrail), Southeastern Pennsylvania Transportation Authority (SEPTA), Pennsylvania Department of Transportation (PennDOT), County of Delaware and Radnor Township.

C-80011839

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 5
P.U.C. NO. C-80011839
DATE OF HEARING 12/08/94

O R D E R

BY THE COMMISSION:

This matter comes before the Commission upon its own motion. By Emergency Order issued June 19, 1991, Chairman Smith ordered:

"1. That the action taken by Radnor Township and Pennsylvania Department of Transportation to close the bridge carrying Spring Mill Road (S.R. 0320) over and above the tracks of National Railroad Passenger Corporation in Radnor Township, Delaware County to vehicular traffic be and is hereby affirmed.

DOCUMENT
FOLDER

"2. That Pennsylvania Department of Transportation, at its initial cost and expense, immediately erect and maintain adequate barricades at appropriate locations at the subject bridge.

DEC 23 1994

"3. That Pennsylvania Department of Transportation, at its initial cost and expense, immediately furnish all material and do all work necessary to install appropriate signs at each adjacent public highway intersection, with the information "BRIDGE CLOSED AHEAD" shown thereon.

"4. That Pennsylvania Department of Transportation, at its initial cost and expense, immediately furnish all material and do all work necessary to establish, mark and maintain a suitable detour route for all vehicles.

"5. That Pennsylvania Department of Transportation notify the Pennsylvania Public Utility Commission in writing within five (5) days after it has complied with the requirements of this order.

"6. That in all respects not inconsistent herewith, all previous orders of this Commission pertaining to the subject crossing shall remain in full force and effect.

"7. That pursuant to 52 Pa. Code §3.3, a copy of this order be served upon all Commissioners, the Director of Operations, and the Secretary in addition to all parties of record and the Commissioner of the Pennsylvania State Police."

Upon review of the circumstances surrounding the issuance of the Emergency Order, we conclude that it is in the public interest to make such action the action of the full Commission; THEREFORE,

IT IS ORDERED: That the Emergency Order issued June 19, 1991, be and is hereby ratified.

BY THE COMMISSION,

Jerry Rich
Secretary

(SEAL)

ORDER ADOPTED: June 27, 1991

ORDER ENTERED: JUL 01 1991

F-4646

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held April 25, 1992

Commissioners Present:

David W. Rolka, Chairman
Joseph Rhodes, Jr., Vice-Chairman
Wendell F. Holland, Commissioner

RECEIVED
U.S.D.O.T.
FEDERAL RAILROAD ADMIN.
1992 APR 29 AM 9:33

DOCUMENT
FOLDER

RECEIVED
NOV 28 1994
UTILITY UNIT

C-800118391

DOCKETED
DEC 28 1994

- Document ID:
- Federal ID:
- Sub Organization:
- Serial Number:
- Sub Number:
- Adjustment Number:

Villanova University

v.

National Railroad Passenger Corporation (Amtrak), Consolidated Rail Corporation (Conrail), Southeastern Pennsylvania Transportation Authority (SEPTA), Pennsylvania Department of Transportation (PennDOT), County of Delaware and Radnor Township.

ORDER

BY THE COMMISSION:

On January 31, 1980, Villanova University filed the instant complaint alleging inadequate and dangerous facilities for pedestrian movement across the lines of track in the vicinity of the crossing (AAR 531 297 Y) where Spring Mill Road (S.R. 0320) crosses over and above four tracks of National Railroad Passenger Corporation (Amtrak), adjacent to Villanova University, in Radnor Township, Delaware County.

Southeastern Pennsylvania Transportation Authority (SEPTA) leases trackage rights and operates the Villanova Passenger Station and parking facilities adjacent to the crossing.

Following several public hearings, the Commission adopted an order on December 17, 1982 which, among other things, directed Pennsylvania Department of Transportation (PennDOT) to annually inform the Commission of progress made toward replacement of the bridge at the subject crossing.

On August 20, 1990, PennDOT submitted preliminary plans for bridge replacement and approach roadway reconstruction and requested that a meeting be held to discuss these plans. Accordingly, a field investigation and conference was arranged by a Commission staff engineer and held on September 25, 1990 at the site of the crossing. Representatives of the following entities were in attendance:

Villanova University
Pennsylvania Department of Transportation

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 6
P.U.C. NO. C-800118391
DATE OF HEARING 12-08-94 RC

National Railroad Passenger Corporation
Southeastern Pennsylvania Transportation Authority
Philadelphia Electric Company
Radnor Township

Consolidated Rail Corporation, Delaware County, Bell Telephone Company, Philadelphia Suburban Water Company and AT&T Communications were notified of the time and place of the conference but did not attend.

The existing bridge at the subject crossing is a two-lane, single span, steel pony truss with a span length of 70 feet. Clear roadway width is 18.5 feet. The structure was closed to all vehicular traffic on June 14, 1991 after being struck and extensively damaged by a passing vehicle. The closing was affirmed by Emergency Order issued June 19, 1991 under the instant proceeding. The bridge was posted for 5 tons prior to the accident.

According to the preliminary plans, the new bridge will be constructed at essentially the same location as the existing. The proposed structure is a three-span, prestressed concrete, adjacent box beam superstructure, with reinforced concrete deck slab, supported by reinforced concrete abutments and piers. Span lengths are 72 feet, 60 feet and 54 feet. All four tracks pass beneath the 72 foot span.

The proposed bridge cross-section will measure 34 feet between concrete safety parapets to accommodate two traffic lanes and an 8 foot shoulder along the west side. There will be a 5 foot sidewalk along the east side of the bridge resulting in an overall deck width of 43.5 feet out to out of parapets. The exterior parapets will have solid aluminum protective barriers over the railroad tracks and protective fence along the remaining length of the structure. Stairways will lead from the new sidewalk to the passenger platforms below on each side of the tracks.

The proposed vertical alignment on the bridge is a 320 foot crest vertical curve with an ascending grade of 5.10% on the south, descending at a 5.41% grade on the north. Proprietary retaining walls will be placed at the corners of the bridge to retain the approach fill. Proposed minimum horizontal and vertical clearances at the tracks exceed the Commission's minimum requirements.

The railroad's electric traction catenaries are currently attached to the existing bridge. These catenaries will be independently supported upon completion of the new structure.

At the field conference, PennDOT stated that the project is authorized under the "Billion Dollar Bridge Program" and that federal funds will be used to cover a portion of the costs. Estimated construction cost is $4,000,000. PennDOT agrees to construct the improvement, with the exception of non-carrier utility relocation, at its initial cost and expense. PennDOT also agrees to assume the costs of alteration as required and performed by the railroad to its own facilities and the costs of railroad watchmen and flagmen.

Philadelphia Electric Company agrees to relocate its gas and electric facilities located in public right-of-way, within the Commission's jurisdictional limits, at its initial cost and expense, pending final allocation of those costs after formal hearing. Bell Telephone Company and Philadelphia Suburban Water Company did not attend the field conference. By letter dated September 6, 1990, AT&T notified the Commission that it has no facilities in the area of the crossing.

PennDOT will continue to maintain the detour established when the crossing was closed, until the new crossing is opened to traffic. In addition, PennDOT will acquire all property required to permit construction, except railroad property. It requests that the Commission appropriate the necessary railroad property. PennDOT will initially bear all property damage costs.

Amtrak and SEPTA agree to maintain all railroad owned and operated facilities in the future, including maintenance of the pedestrian tunnel adjacent to the crossing as assigned to Amtrak by the prior Commission order adopted December 17, 1982. PennDOT agrees to initially assume maintenance responsibility for the approach roadways and the entire substructure and superstructure of the new bridge, including the sidewalk and the stairways to the passenger platforms, pending allocation of that responsibility after formal hearing.

The Commission has tentatively established jurisdiction over the entire project between Limit of Authorization Stations 778+90 and 790+50.

The applicant has certified that a copy of the preliminary plans has been submitted to each party in interest. None of the parties has advised this Commission in writing, or the staff engineer at the field conference, that it objects to the issuance of an order, prior to hearing, approving the alteration of the crossing.

Upon full consideration of the matters involved, we determine that it is not necessary to schedule a hearing in this proceeding at this time and that issuance of an order without hearing is proper, since PennDOT has agreed to construct the improvement at its initial cost and expense and none of the other parties has expressed any objection to the proposed project.

We also determine that alteration or relocation of non-carrier public utility company facilities should be made by the respective companies at their initial cost and expense, and that a hearing be scheduled following completion of construction to consider the allocation of costs and expenses incident thereto.

The record having been certified to this Commission, we issue this order pursuant to Section 335(a) of the Public Utility Code, 66 Pa. C.S. §335, and find that the alteration of the crossing is necessary and proper for the service, accommodation, convenience and safety of the public; THEREFORE,

IT IS ORDERED:

1. That the rail-highway crossing (AAR 531 297 Y) where Spring Mill Road (S.R. 0320) crosses above the tracks of National Railroad Passenger Corporation in Radnor Township, Delaware County be reconstructed generally in accordance with the right-of-way plan submitted by Pennsylvania Department of Transportation on March 5, 1992, said plan entitled "Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W in Delaware County", composed of 12 sheets, which plan is made part hereof and is hereby approved except insofar as it may relate to the division of work, deletion of work, or the allocation of costs and expenses incident to construction of the proposed crossing improvement project.

2. That Pennsylvania Department of Transportation, at its initial cost and expense, and prior to the start of construction, prepare and submit to this Commission for approval and to all parties of record for examination, complete detailed construction plans for the work proposed to be performed within the limits of this Commission's jurisdiction.

3. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated for the purpose of the improvement in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 3 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

ALL THOSE CERTAIN TRACTS OF LAND situated in the Township of Radnor, Delaware County, bounded and described as follows, to wit:

TRACT NO. 1
(Required Right-of-Way)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southerly AMTRAK right-of-way line and the northerly legal right-of-way line for State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+56; thence in a northeasterly direction along the right-of-way line of AMTRAK to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northeasterly direction along the required right-of-way line of State Route 0320 to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.2; thence in a southeasterly direction along the aerial easement line to a point distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a southwesterly direction along the legal right-of-way line of State Route 0320 to a point and place of beginning and containing four hundred ten (410) square feet more or less.

TRACT NO. 2
(Required Right-of-Way)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the required right-of-way line for State Route 0320 and the southerly temporary construction easement line for Amtrak distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence northwesterly along the projected temporary construction easement line to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+73; thence northeasterly along the legal right-of-way of State Route 0320 to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320

at or about Station 783+96; thence southeasterly along required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence southwesterly along the required right-of-way line to a point distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing southwesterly along the required right-of-way line to a point and place of beginning and containing two hundred and thirty-two (232) square feet more or less.

TRACT NO. 3
(Aerial Easement)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly legal right-of-way line for State Route 0320 and the southerly required aerial easement line of State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a northwesterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence in a northeasterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+62; thence in a southeasterly direction along the AMTRAK northern right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing two thousand two hundred twenty-one (2221) square feet more or less.

TRACT NO. 4
(Aerial Easement)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly legal right-of-way line of State Route 0320 and the required aerial easement line of State Route 0320 distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+96; thence in a northeasterly direction along the legal right-of-way line of State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction along the temporary construction easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+52.3; thence in a southwesterly direction along the required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence in a northwesterly direction along the required

aerial easement line to a point and place of beginning and containing two thousand one hundred and ninety-eight (2198) square feet more or less.

TRACT NO. 5
(Retainment of Aerial Easement, Conveyance of Surface Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southern legal right-of-way line of State Route 0320 and the southern aerial easement line of State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+57; thence in a northwesterly direction along the aerial easement line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northeasterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+25; thence in a southeasterly direction along the temporary construction easement line to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+34.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing one thousand two hundred and thirteen (1213) square feet more or less.

TRACT NO. 6
(Retainment of Aerial Easement, Conveyance of Surface Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southern aerial easement line of State Route 0320 and the northern legal right-of-way line of State Route 0320 distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+41.5; thence in a northeasterly direction along the legal right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the AMTRAK right-of-way line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+80; thence in a southwesterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northwesterly direction along the aerial easement line to a point and place of beginning and containing five hundred three (503) square feet more or less.

The above six (6) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of

deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

4. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated temporarily, for use during the construction period only, in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 4 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania, said temporary appropriation shall terminate upon completion of the construction of the improvement and its opening to public use.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

TEMPORARY CONSTRUCTION EASEMENT NO. 1

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly required legal right-of-way line of S.R. 0320 and the line for the Temporary Construction Easement distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+03.9; thence continuing in a northeasterly direction along the required aerial easement line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+12.5; thence in a southeasterly direction along the front of the AMTRAK/SEPTA platform for the eastbound trains to a point distant four hundred and ninety-seven (497) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southwesterly direction to a point distant five hundred and ten (510) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+20; thence in a northwesterly direction along the AMTRAK property line (projected as necessary) to a point and place of beginning and containing fifteen thousand and seventy-three (15,073) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 2

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the temporary construction easement line and AMTRAK property line distant one hundred and thirty (130) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 786+70.5; thence in a southwesterly direction to a point distant one hundred and thirty (130) feet southeasterly and measured at right angles from State Route 0320 at or about Station 785+88; thence in a

northwesterly direction to a point of intersection with the existing right-of-way line for State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+34.5; thence in a northeasterly direction along the existing right-of-way line for State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction to a point distant ninety-seven (97) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+80; thence in a northeasterly direction along the temporary construction easement line to a point and place of beginning containing two thousand one hundred and ninety-four (2194) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 4

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly required right-of-way line for State Route 0320 and the AMTRAK right-of-way line distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northwesterly direction along the right-of-way line of AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+36.4; thence in a northeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+61; thence in a southeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence continuing in a southeasterly direction along the Required Aerial Easement line to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.3; thence in a southwesterly direction along the required right-of-way line for State Route 0320 to a point and place of beginning and containing four hundred and fifty (450) square feet more or less.

The above three (3) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

5. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to demolish the existing bridge and construct the new bridge and roadway approaches generally in accordance with the approved detailed construction plans and this order.

6. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to maintain the detours and traffic controls, previously established, to properly accommodate highway traffic during the time the crossing improvement is being constructed.

7. That National Railroad Passenger Corporation, at the sole cost and expense of Pennsylvania Department of Transportation, furnish all material and perform all work required to alter or relocate its facilities which may be required as incidental to the construction of the crossing, including alteration of the electric traction catenaries; furnish construction engineering and inspection services required as a result of the construction of the crossing; and furnish and maintain flagmen and watchmen, when necessary, to protect railroad operations during the time the crossing is being constructed above and adjacent to its tracks.

8. That any relocation of, changes in or removal of any adjacent structures, equipment or other facilities of any non-carrier public utility company located within the limits of public right-of-way, within the limits of this Commission's jurisdiction, which may be required as incidental to the execution of the crossing project, be made by said public utility company at its initial cost and expense, and in such manner as will not interfere with the construction of the crossing.

9. That any relocation of, changes in or removal of any adjacent structures, equipment or other facilities of any non-carrier public utility company located beyond the limits of public right-of-way, within the limits of this Commission's jurisdiction, which may be required as incidental to the execution of the crossing project, be made by said public utility company in such manner as will not interfere with the construction of the crossing.

10. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to effect the vacation, relocation, removal or demolition of any non-utility structures, including occupied dwellings, located upon property required for the construction of the crossing in accordance with this order.

11. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to complete the remainder of the crossing improvement project, including construction of access roads necessary to maintain access to the railroad station parking areas, extension of passenger platforms to compensate for area lost to bridge construction and any other ancillary features of the project, generally in accordance with the approved plans and this order.

12. That Pennsylvania Department of Transportation, at least ten (10) days prior to the start of work, notify all parties in interest of the actual date on which work will begin.

13. That all non-carrier public utility companies affected hereby cooperate with Pennsylvania Department of Transportation and with each other so that the requirements of each of the named parties will be provided for and accommodated insofar as possible.

14. That National Railroad Passenger Corporation and Southeastern Pennsylvania Transportation Authority each cooperate with the Pennsylvania Department of Transportation and conduct their operations in the vicinity of the crossing in a safe manner and under control during the time the project is being constructed.

15. That Pennsylvania Department of Transportation cooperate with the railroad companies so that during construction of the improvement, the operations and facilities of the railroad companies will not be endangered or unnecessarily impeded.

16. That Pennsylvania Department of Transportation cooperate with Villanova University so that during construction of the project, pedestrian traffic will not be endangered or unnecessarily inconvenienced.

17. That construction of the crossing be completed in a manner satisfactory to this Commission on or before December 31, 1994, and that on or before said date, Pennsylvania Department of Transportation report to this Commission the date of actual completion of the work; and at the earliest practicable time subsequent to said date of completion, each party that performed work at its initial cost and expense submit to this Commission a detailed statement of the actual costs incurred by it in furnishing material and performing work in compliance with this order.

18. That Pennsylvania Department of Transportation, at its initial cost and expense, pay all compensation for damages due to the owners of property taken, injured or destroyed by reason of the construction of the crossing in accordance with this order.

19. That upon completion of construction of the proposed project, each non-carrier public utility company furnish all material and perform all work necessary thereafter to maintain its respective facilities, existing or altered, located within the limits of the improvement.

20. That upon completion of construction of the proposed project, National Railroad Passenger Corporation furnish all material and perform all work necessary thereafter to maintain its tracks, catenaries, station, platforms and other railroad facilities, existing or altered, located within the limits of the improvement, and to maintain the pedestrian tunnel in a safe and satisfactory condition.

21. That upon completion of the construction of the crossing improvement project, Pennsylvania Department of Transportation, at its

initial cost and expense, furnish all material and perform all work required thereafter to maintain the remainder of the improvement, including the entire substructure and superstructure of the bridge, the highway approaches thereto, and the proprietary retaining walls constructed at each corner of the bridge, the stairways leading from the bridge deck to the railroad passenger platforms below, and any other ancillary features of the improvement constructed in accordance with the provisions of this order.

22. That upon completion of the work herein ordered, this proceeding be scheduled for hearing at a time and place to be designated by this Commission, for the purpose of taking testimony upon the final allocation of costs and expenses incident to the construction of the improvement, the final allocation of responsibility for future maintenance, the final allocation of costs incurred by the non-carrier public utility companies and any other matters relevant to this proceeding.

23. That this order, insofar as it imposes certain costs initially upon the parties herein, is without prejudice to their right to recover part or all of such costs in accordance with any lawful agreement between parties.

24. That in all respects not inconsistent herewith, the previous order of this Commission adopted December 17, 1982 shall remain in full force and effect.

BY THE COMMISSION,

John G. Alford
Secretary

(SEAL)

ORDER ADOPTED: April 23, 1992

ORDER ENTERED: APR 29 1992

CURRENT ITEM INFORMATION LISTING
CONTRACT: 063189 SR (SEC): 0320 (12S)
REPORT DATE: 1994-11-28

DOCUMENT FOLDER

ITEM #/ TYPE	IFC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
0201-0001 01 CLEARING AND GRUBBING		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$30,000.00	$30,000.00
0203-0001 01 CLASS 1 EXCAVATION		7697.000	7822.290	0.000	125.290	0.000	125.290	7822.290	$10.90	$85,262.96
0203-0004 01 CLASS 1B EXCAVATION		9.000	17.090	0.000	8.090	0.000	8.090	17.090	$50.00	$854.50
0204-0150 01 CLASS 4 EXCAVATION		2194.000	1710.110	0.000	122.000	605.890	-483.890	1710.110	$15.00	$25,651.65
0208-0001 02 SPECIAL ROLLING		6.000	6.000	0.000	0.000	0.000	0.000	6.000	$315.00	$1,890.00
0212-0001 01 GEOTEXTILE, CLASS 1		1626.000	2093.530	0.000	467.530	0.000	467.530	2093.530	$1.05	$2,198.21
0212-0002 01 GEOTEXTILE, CLASS 2, TYPE A		13.000	57.000	0.000	44.000	0.000	44.000	57.000	$5.50	$317.90
0212-0006 01 GEOTEXTILE, CLASS 3, TYPE B		70.000	0.000	0.000	0.000	70.000	-70.000	0.000	$5.70	$0.00
0305-0003 01 BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH		8294.000	8927.470	0.000	633.470	0.000	633.470	8927.470	$6.60	$58,921.30
0350-0106 01 SUBBASE 6" DEPTH (NO. 2A)		8426.000	9150.310	0.000	724.310	0.000	724.310	9150.310	$5.65	$51,699.25
0420-0303 01 BITUMINOUS WEARING COURSE, ID-2, 1 1/2" DEPTH, SRL - H		5111.000	5163.850	0.000	52.850	0.000	52.850	5163.850	$2.95	$15,233.36
0421-0202 01 BITUMINOUS BINDER COURSE, ID-2, 2" DEPTH		8181.000	8927.470	0.000	746.470	0.000	746.470	8927.470	$3.70	$33,031.64
0505-0001 01 BRIDGE APPROACH SLAB		258.000	171.400	0.000	0.000	86.600	-86.600	171.400	$110.00	$18,854.00
0601-0022 01 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II		379.000	398.800	0.000	19.800	0.000	19.800	398.800	$29.00	$11,565.20
0601-0024 01 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II		81.000	81.500	0.000	0.500	0.000	0.500	81.500	$45.00	$3,667.50
0601-0036 01 36" REINFORCED CEMENT CONCRETE PIPE, CLASS III		126.000	118.400	0.000	0.000	7.600	-7.600	118.400	$44.00	$5,209.60

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 7
P.U.C. NO. C-80011834
DATE OF HEARING 12-08-94 RC

RECEIVED
NOV 28 1994
UTILITY UNIT

DEC 23 1994

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
0601-0087 01		247.000	249.600	0.000	2.600	0.000	2.600	249.600	$28.00	$6,988.80
18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV										
0601-0122 01		27.000	22.600	0.000	0.000	4.400	-4.400	22.600	$34.00	$768.40
18" REINFORCED CEMENT CONCRETE PIPE, CLASS V										
0601-0128 01		128.000	115.600	0.000	0.000	12.400	-12.400	115.600	$93.00	$10,750.80
36" REINFORCED CEMENT CONCRETE PIPE, CLASS V										
0601-0595 01		90.000	0.000	0.000	0.000	90.000	-90.000	0.000	$54.00	$0.00
24" CORRUGATED POLY- ETHYLENE (PE) CULVERT PIPE, TYPE S										
0601-0763 01		120.000	0.000	0.000	0.000	120.000	-120.000	0.000	$53.00	$0.00
18" DUCTILE IRON PIPE										
0601-1424 01		263.000	219.700	0.000	0.000	43.300	-43.300	219.700	$33.00	$7,250.10
18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3" X										
0601-1427 01		58.000	49.700	0.000	0.000	17.300	-17.300	49.700	$75.00	$3,652.50
27" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3" X										
0601-1430 01		114.000	108.800	0.000	0.000	5.200	-5.200	108.800	$63.00	$6,854.40
36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3" X										
0601-5490 01		288.000	348.560	0.000	60.560	0.000	60.560	348.560	$31.00	$10,805.36
COARSE AGGREGATE FOR PIPE TRENCH BACKFILL										
0601-5403 01		231.000	225.830	0.000	33.610	38.780	-5.170	225.830	$36.00	$8,129.88
AGGREGATE FOR BEDDING										
0665-1300 01		8.000	6.000	0.000	0.000	2.000	-2.000	6.000	$2,200.00	$13,200.00
TYPE A MANHOLE										
0665-2010 01		14.000	13.000	0.000	0.000	1.000	-1.000	13.000	$1,300.00	$16,900.00
TYPE C INLET, BICYCLE SAFE GRATE										
0665-2070 01		2.000	2.000	0.000	0.000	0.000	0.000	2.000	$1,200.00	$2,400.00
TYPE M INLET, BICYCLE SAFE GRATE										
0807-0200 01		13.000	17.000	0.000	4.000	0.000	4.000	17.000	$275.00	$4,675.00
REBUILT MANHOLE										
0808-0001 01		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$98,000.00	$98,000.00
MOBILIZATION										
0809-0002 68		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$13,000.00	$13,000.00
INSPECTOR'S FIELD OFFICE AND INSPECTION FACILITIES, TYPE A										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
0610-7002 01		1626.000	2093.500	0.000	467.500	0.000	467.500	2093.500	$5.90	$12,351.65
6" PAVEMENT BASE DRAIN										
0610-7400 01		1.000	0.800	0.000	0.000	0.200	-0.200	0.800	$21.00	$16.80
ADDITIONAL COARSE AGGREGATE FOR EXTRA DEPTH PAVEMENT BASE										
0615-0022 01		16.000	0.000	0.000	0.000	16.000	-16.000	0.000	$4.50	$0.00
6" SUBSURFACE DRAIN OUTLETS										
0620-0400 01		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$31.00	$31.00
TERMINAL SECTION, SINGLE										
0620-0401 01		2.000	2.000	0.000	0.000	0.000	0.000	2.000	$51.00	$102.00
TERMINAL SECTION, DOUBLE										
0620-0402 01		6.000	6.000	0.000	0.000	0.000	0.000	6.000	$82.00	$492.00
TERMINAL SECTION, BRIDGE CONNECTION										
0620-1075 01		75.000	75.000	0.000	0.000	0.000	0.000	75.000	$12.00	$900.00
TYPE 2-S GUIDE RAIL										
0620-1100 01		25.000	25.000	0.000	0.000	0.000	0.000	25.000	$17.00	$425.00
TYPE 2-SC GUIDE RAIL										
0620-1252 01		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$1,150.00	$1,150.00
BREAKAWAY CABLE TERMINAL END TREATMENT										
0630-0001 01		3377.000	3833.840	0.000	456.840	0.000	456.840	3833.840	$12.00	$46,006.08
PLAIN CEMENT CONCRETE CURB										
0676-0001 01		957.000	819.660	0.000	0.000	137.340	-137.340	819.660	$33.00	$27,048.78
CEMENT CONCRETE SIDEWALK										
0686-0004 08		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$6,000.00	$6,000.00
ENGINEERING STAKEOUTS, MODIFIED										
0688-0021 08		1.000	1.000	0.000	0.000	0.000	0.000	1.000	$5,500.00	$5,500.00
MICROCOMPUTER WITH BATTERY BACKUP SYSTEM, TYPE C										
0694-0010 01		18.000	5.670	0.000	0.000	12.330	-12.330	5.670	$57.00	$323.19
CURB CUT RAMPS, TYPE 1 SINGLE										
0703-0020 01		28.000	0.000	0.000	0.000	28.000	-28.000	0.000	$34.00	$0.00
NO. 1 COARSE AGGREGATE										
0703-0023 01		35.000	0.000	0.000	0.000	35.000	-35.000	0.000	$44.00	$0.00
NO. 67 COARSE AGGREGATE										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
0703-0025	01	16.000	53.420	0.000	38.000	0.580	37.420	53.420	$36.00	$1,923.12
NO. 57 COARSE AGGREGATE										
0803-0001	01	1065.000	1065.000	0.000	0.000	0.000	0.000	1065.000	$25.00	$26,625.00
PLACING STOCKPILED TOPSOIL										
0804-0013	01	290.000	290.000	0.000	0.000	0.000	0.000	290.000	$10.50	$3,045.00
SEEDING AND SOIL SUPPLE- MENTS - FORMULA D										
0804-0014	01	88.000	0.000	0.000	0.000	88.000	-88.000	0.000	$1.10	$0.00
SEEDING - FORMULA E										
0804-0051	01	2.000	0.000	0.000	0.000	2.000	-2.000	0.000	$55.00	$0.00
MOWING										
0805-0022	01	5.000	6.580	0.000	1.580	0.000	1.580	6.580	$520.00	$3,421.60
MULCHING - STRAW										
0806-0019	01	6895.000	6818.760	0.000	0.000	2076.240	-2076.240	6818.760	$0.65	$4,432.19
MULCH CONTROL NETTING										
0810-0002	01	10.000	15.000	0.000	5.000	0.000	5.000	15.000	$580.00	$8,700.00
SELECTIVE TREE REMOVAL AND TRIMMING										
0845-0002	01	1.000	0.000	0.000	0.000	1.000	-1.000	0.000	$5,000.00	$0.00
UNFORESEEN WATER POLLUTION CONTROL										
0850-0022	01	13.000	0.000	0.000	0.000	13.000	-13.000	0.000	$40.00	$0.00
ROCK, CLASS R-4										
0901-0001	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$20,000.00	$20,000.00
MAINTENANCE AND PROTEC- TION OF TRAFFIC DURING CONSTRUCTION										
0901-0025	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$630.00	$630.00
CALCIUM CHLORIDE										
0962-0620	01	2017.000	2960.000	0.000	943.000	0.000	943.000	2960.000	$0.25	$740.00
4" WHITE TRAFFIC ZONE PAINT, TYPE II										
0962-0640	01	2520.000	3142.000	0.000	622.000	0.000	622.000	3142.000	$0.25	$785.50
4" YELLOW TRAFFIC ZONE PAINT, TYPE II										
1001-0020	01	1.000	10.190	0.000	9.190	0.000	9.190	10.190	$190.00	$1,936.10
CLASS C CEMENT CONCRETE										
1001-0020	02	0.000	0.000	0.000	9.190	9.190	0.000	0.000	$190.00	$0.00
CLASS C CEMENT CONCRETE										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063169 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
1005-0451	02	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$25,000.00	$25,000.00
STEEL BEAM TEST PILES, HP12X53										
1005-1103	02	2725.000	3171.200	0.000	446.200	0.000	446.200	3171.200	$31.00	$98,307.20
STEEL BEAM BEARING PILES, HP12X53										
1005-1153	02	118.000	116.000	0.000	0.000	2.000	-2.000	116.000	$69.00	$8,004.00
STEEL BEAM PILE TIP REINFORCEMENT, HP 12X53										
1018-0001	02	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$94,000.00	$94,000.00
REMOVAL OF EXISTING BRIDGE										
1019-0010	02	100.000	897.700	0.000	797.700	0.000	797.700	897.700	$1.10	$987.47
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED										
1090-0332	02	300.000	0.000	0.000	0.000	300.000	-300.000	0.000	$25.00	$0.00
EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS										
4203-0001	02	509.000	458.300	0.000	0.000	50.700	-50.700	458.300	$17.25	$7,905.68
CLASS 1 EXCAVATION										
4205-0100	01	7118.000	7011.560	0.000	0.000	106.440	-106.440	7011.560	$10.60	$70,115.60
FOREIGN BORROW EXCAVATION										
4205-0200	02	509.000	458.300	0.000	0.000	50.700	-50.700	458.300	$25.00	$11,457.50
SELECTED BORROW EXCAVATION										
4620-1075	01	519.000	517.000	0.000	0.000	2.000	-2.000	517.000	$14.00	$7,238.00
TYPE 2-S GUIDE RAIL										
4620-1100	01	25.000	25.000	0.000	0.000	0.000	0.000	25.000	$21.00	$525.00
TYPE 2-SC GUIDE RAIL										
4694-0014	01	11.000	0.000	0.000	0.000	11.000	-11.000	0.000	$57.00	$0.00
CURB CUT RAMPS, TYPE 3										
8100-0001	02	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$1,130,000.00	$1,130,000.00
STEEL BRIDGE STRUCTURE										
8600-0001	02	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$311,077.50	$311,077.50
WINGWALLS, S-17313										
8800-0001	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$9,720.40	$9,720.40
UNDERPASS LIGHTING										
9000-0001	01	2.000	2.000	0.000	0.000	0.000	0.000	2.000	$550.00	$1,100.00
REMOVE AND RELOCATE EXISTING SEPTA SIGNS										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 863189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
9000-0002	01	98.000	0.000	0.000	0.000	98.000	-98.000	0.000	$15.00	$0.00
REMOVAL OF EXISTING BRICK PLATFORM										
9000-0003	01	49.000	0.000	0.000	0.000	49.000	-49.000	0.000	$136.00	$0.00
BRICK PAVEMENT, TYPE 1										
9000-0004	01	49.000	0.000	0.000	0.000	49.000	-49.000	0.000	$136.00	$0.00
BRICK PAVEMENT, TYPE 2										
9000-0005	01	1.000	0.000	0.000	0.000	1.000	-1.000	0.000	$8,300.00	$0.00
TEMPORARY PLATFORM EXTENSION										
9000-0006	04	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$40,143.00	$40,143.00
INSTALLATION OF PHILADELPHIA SUBURBAN WATER COMPANY FACILITY										
9000-0007	05	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$21,472.00	$21,472.00
INSTALLATION OF PHILADELPHIA ELECTRIC COMPANY FACILITY										
9000-0008	06	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$18,294.00	$18,294.00
INSTALLATION OF BELL TELEPHONE COMPANY FACILITY										
9000-0009	07	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$3,495.00	$3,495.00
INSTALLATION OF ADELPHIA CABLE COMPANY FACILITY										
9000-0010	03	1.000	0.000	0.000	0.000	1.000	-1.000	0.000	$1.00	$0.00
PROTECTION OF COMMUNICATION AND SIGNALIZATION DUCTS AT										
9000-0012	01	160.000	104.200	0.000	4.200	0.000	4.200	104.200	$57.00	$5,939.40
SINGLE FACE CONCRETE BARRIER, TYPE 1										
9000-0013	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$6,300.00	$6,300.00
APPROACH END TRANSITION (89 FEET)										
9000-0014	01	2.000	2.000	0.000	0.000	0.000	0.000	2.000	$520.00	$1,040.00
DEWATERING FILTER										
9000-0015	01	1.000	0.000	0.000	0.000	1.000	-1.000	0.000	$650.00	$0.00
CAP EXISTING INLET										
9000-0016	01	100.000	0.000	0.000	0.000	100.000	-100.000	0.000	$90.00	$0.00
PLATFORM CURB										
9000-0017	01	1.000	0.000	0.000	0.000	1.000	-1.000	0.000	$2,600.00	$0.00
TYPE E ENDWALL, MODIFIED										
9000-0018	01	2.000	1.000	0.000	0.000	1.000	-1.000	1.000	$870.00	$870.00
ROCK CONSTRUCTION ENTRANCE										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES: ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER: ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
9000-0019	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$720.00	$720.00
RISER PIPE ASSEMBLY, MODIFIED										
9000-0022	03	2.000	2.000	0.000	0.000	0.000	0.000	2.000	$1,000.00	$2,000.00
METER SUPPORT										
9000-0024	02	210.000	0.000	0.000	0.000	210.000	-210.000	0.000	$10.00	$0.00
PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES										
9000-0025	01	2660.000	575.000	0.000	0.000	2085.000	-2085.000	575.000	$3.00	$1,725.00
TEMPORARY PROTECTIVE FENCE FOR EXISTING PLANT MATERIAL, SPECIAL										
9000-0031	03	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$6,000.00	$6,000.00
UTILITY SERVICE REPLACEMENTS (PRIVATE RESIDENCE)										
9000-0032	03	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$11,000.00	$11,000.00
UTILITY SERVICE REPLACEMENTS (TO SOUTH TRAIN STATION)										
9000-0033	03	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$4,000.00	$4,000.00
UTILITY SERVICE REPLACEMENTS (TO NORTH TRAIN STATION)										
9000-0034	05	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$78,014.00	$78,014.00
NEW UNDERGROUND UTILITIES FOR PHILADELPHIA ELECTRIC COMPANY										
9000-0035	06	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$45,778.00	$45,778.00
NEW UNDERGROUND UTILITIES FOR BELL TELEPHONE COMPANY OF PA										
9000-0036	07	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$8,583.00	$8,583.00
NEW UNDERGROUND UTILITIES FOR ADELPHIA CABLE COMMUNICATIONS										
9000-0037	02	6.000	6.000	0.000	0.000	0.000	0.000	6.000	$1,000.00	$6,000.00
REDRIVING STEEL BEAM TEST PILES, HP 12X53										
9000-0039	02	118.000	11.000	0.000	0.000	107.000	-107.000	11.000	$50.00	$550.00
REDRIVING STEEL BEAM BEARING PILES, HP12X53										
9601-0642	01	62.000	70.500	0.000	8.500	0.000	8.500	70.500	$42.00	$2,961.00
8" EXTRA STRENGTH VITRIFIED CLAY PIPE										
9601-0643	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$182.00	$182.00
1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE										
9620-0001	01	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$920.00	$920.00
APPROACH END TRANSITION WITH INLET PLACEMENT										
9620-0002	01	3.000	3.000	0.000	0.000	0.000	0.000	3.000	$950.00	$2,850.00
APPROACH END TRANSITION WITHOUT INLET PLACEMENT										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
9865-0002 01		1412.000	1491.000	0.000	69.000	0.000	69.000	1481.000	$4.00	$5,924.00
SILT BARRIER FENCE, 3" HEIGHT										
9990-0101E 03		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$8,311.91	$8,311.91
EXTEND ELECTRIC SERVICES TO TRAIN STATIONS										
9990-0201E 01		0.000	665.000	0.000	665.000	0.000	665.000	665.000	$11.52	$6,969.60
WATER SERVICE TO SEPTA ST ATION										
9990-0301E 02		0.000	16081.100	0.000	16081.100	0.000	16081.100	16081.100	$1.47	$23,639.22
ANTI-GRAFFITI COATING (AG REED PRICE)										
9990-0302I 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$691.83	$691.83
ERECTING OF "OPERATION JU MP START" SIGNS										
9990-0401I 68		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$1,674.99	$1,674.99
RELOCATE INSPECTORS AND CONTRACTORS FACILITIES										
9990-0501I 69		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$5,976.99	$5,976.99
ERECTING CATENARY TOWERS FOR AMTRAK										
9990-0601E 01		0.000	14929.000	0.000	14929.000	0.000	14929.000	14929.000	$0.07	$1,111.54
APPROACH SLABS REBAR..... EPOXY COATED										
9990-0602I 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$2,868.31	$2,868.31
BID-ID-2 W/C HAND PAVING UNDER BRIDGE ..... (FINAL FORCED ACCT.)										
9990-0603I 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$11,918.02	$11,918.02
EXC & PLACING RIP-RAP UNDER BRIDGE FINAL FORCE ACCT.										
9990-0701E 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$51,000.00	$51,000.00
SIDEWALK & STAIR LIGHTING AGREED PRICE										
9990-0901E 01		0.000	1229.000	0.000	1229.000	0.000	1229.000	1229.000	$25.00	$30,725.00
TOPSOIL FURNISHED AND PLACED										
9990-1001D 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	$3,733.38	$3,733.38
PRICE ADJUSTMENT OF BIT. MATERIAL										
9990-1101P 01		0.000	1.000	0.000	1.000	0.000	1.000	1.000	-$85.10	-$85.10
REBATE DUE TO BINDER FAIL URE										
9990-1201E 68		0.000	76.000	0.000	76.000	0.000	76.000	76.000	$24.83	$1,887.08
MAINTAINING FIELD OFFICE TRAILER FOR EXTRA WORK										
9990-1401B 02		0.000	1.000	0.000	1.000	0.000	1.000	1.000	-$5,000.00	-$5,000.00
REBATE-ALTERNATE DESIGN BRIDGE....										

CURRENT ITEM INFORMATION LISTING

CONTRACT: 063189 SR (SEC): 0320 (12S)

REPORT DATE: 1994-11-28

ITEM #/ TYPE	FC	QUANTITIES ORIGINAL	CURRENT	AVAILABLE	ADJUSTED BY WORK ORDER ADDED	DEDUCTED	NET CHANGE	USED	UNIT PRICE	USED $ TOTAL
9999-1402R	03	0.000	1.000	0.000	1.000	0.000	1.000	1.000	-$47,965.65	-$47,965.65
REDUCTION OF LUMP SUM ITE M 9999-9994 (PECO REIMBUR SEMENT)										
9999-9994	03	1.000	1.000	0.000	0.000	0.000	0.000	1.000	$50,000.00	$50,000.00
REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC COMPANY (NO OUTAGE)										

TOTAL # OF ITEMS => 130

CURRENT CONTRACT $ TOTAL => $2,917,283.18

C-84 (5-89)

021328
INVOICE NUMBER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

INVOICE

DEPARTMENT AGREEMENT No.:	S.R./L.R./W.O. No.	ORGANIZATION:
063427	0320-12S	0600
PAYOR AND ADDRESS:	**BILLING ORGANIZATION:**	**BILLING No.:**
Ms. Vicki Templin Bell Atlantic-Pennsylvania, Inc. 2580 General Armistead Avenue Norristown, PA 19403	Pennsylvania Department of Transportation 200 Radnor-Chester Road St. Davids, PA 19087	1
		FINAL BILLING? [X] YES [ ] NO
		INVOICE DATE: August 2, 1994

ITEM No.	ITEM AND DESCRIPTION	AMOUNT
	For the installation of Bell Atlantic-Pennsylvania Inc.'s facilities on SR 0320 (Spring Mill Road) over AMTRAK's mainline Structure #17313 Delaware County PMS #063C812 SEN C 0320 07 12S 0630 362 PA. DEPT. OF TRANSPORTATION EXHIBIT NO. 98 P.U.C. NO. C-800118 39 DATE OF HEARING 12-08-94 RC	$ 64,071.00

THIS INVOICE IS PAYABLE WITHIN 30 DAYS FROM INVOICE DATE.

TOTAL: $ 64,071.00

PAY THIS AMOUNT

PAYABLE BY CHECK OR MONEY ORDER TO:
PA. DEPT. OF TRANSPORTATION

DEC 2 8 1994

DOCUMENT FOLDER

NOTE: PLEASE INDICATE THE DEPARTMENT AGREEMENT No. AND THIS INVOICE No. ON YOUR CHECK OR MONEY ORDER.

MAIL PAYMENT TO:
PA. DEPT. OF TRANSPORTATION
OFFICE OF THE COMPTROLLER
P.O. BOX 3025
HARRISBURG, PA. 17105

DIRECT TELEPHONE INQUIRIES TO:
(610) 768-3050
Oversia Barkley

X _____ SIGNATURE OF APPROVING AUTHORITY _____ TITLE _____ DATE

DISTRICT COPY

D-401
(03-90)

BRIDGE
(04-22-90)

AGREEMENT FOR INSTALLATION OF UTILITY FACILITY ON STRUCTURE

THIS AGREEMENT, numbered 063425 in COMMONWEALTH files, made and entered into this TWENTY day of FEBRUARY, by and between the COMMONWEALTH of Pennsylvania, acting through the Department of Transportation, hereinafter called COMMONWEALTH;

A
N
D

Philadelphia Electric Company, (Electric Division)with its principal place of business located at 2301 Market Street, Philadelphia, Pennsylvania, hereinafter called UTILITY;

W I T N E S S E T H :

WHEREAS, the Secretary of Transportation, in pursuance of authority in him by law vested, is about to undertake a highway construction project on State Route 0320, Section 12S, in Delaware County, which will include the construction of S-17313, a 3-span continuous Boxbeam Bridge between Stations 783+82.89 and 785+74.11, in the Township of Radnor, over AMTRAK.

WHEREAS, UTILITY has requested COMMONWEALTH to include within said improvement and construction project on the aforementioned structure, the construction and installation of certain utility facilities as hereinafter set forth; and,

WHEREAS, COMMONWEALTH is willing to include within said improvement and construction project the requested utility facilities on the aforementioned structure, subject to the terms of conditions of COMMONWEALTH'S bridge occupancy license or permit issued to UTILITY therefor and to reimbursement by UTILITY to COMMONWEALTH of the construction and installation costs for same, in accordance with the terms, conditions, and provisions of this Agreement.

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 109
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94 RC

DEC 2 6 1994

DOCUMENT FOLDER

NOW, THEREFORE:

In consideration of the foregoing premises and the mutual covenants hereinafter contained and with intent to be legally bound hereby, the parties agree as follows:

FIRST - In the structure design, the COMMONWEALTH shall provide for the attachments of the UTILITY facility or encasement of such facility between beams or in other such structure components.

SECOND - In providing for UTILITY facility attachments, additional engineering is required to determine the structural requirements of the supporting members resulting from the additional loads due to UTILITY attachment. COMMONWEALTH shall analyze the effect on structural members and provide a solution to accommodate these effects. UTILITY shall reimburse COMMONWEALTH for the actual costs of this additional engineering.

THIRD - In providing for UTILITY facility attachments, additional structural requirements will be imposed on the supporting members resulting from the additional loads due to UTILITY attachment. COMMONWEALTH shall provide and install those materials required to increase the structural capacity to accommodate UTILITY attachment. UTILITY shall reimburse the COMMONWEALTH the actual cost for the additional structural capacity determined on the basis of the applicable bid price of materials received from the COMMONWEALTH's successful bidder within 60 days after receipt of notification of satisfactory completion of the work described hereafter. When structural items are bid in a manner that unit price cannot be identified, UTILITY agrees to pay the COMMONWEALTH the estimated cost of the structural items.

FOURTH - COMMONWEALTH shall, subject to reimbursement as hereinafter provided, include, within its construction contract for the aforesaid construction and improvement project, the installation of conduit and hanger assemblies to be constructed and installed on said structure, as indicated on Structure Drawings S-17313, and in accordance with the specifications associated with Pay Items 9000-0007 and 9000-0034. Said plans and specifications are incorporated herein by reference and made a part hereof as it physically attached hereto and being in the possession of the parties.

Upon completion of the work to the satisfaction of the COMMONWEALTH and the UTILITY, the UTILITY shall reimburse the COMMONWEALTH the sum of 99,486.00 dollars for such work within 60 days after receipt of proper billing.

The cost of any changes or field modifications required by the UTILITY which are beyond the scope of this Agreement shall be reimbursed to the COMMONWEALTH within 60 days after receipt of proper billing from the COMMONWEALTH for the actual cost to COMMONWEALTH of all such extra work performed by the COMMONWEALTH's contractor, in accordance with

appropriate sections of COMMONWEALTH's Specifications, Publication 408, as amended and supplemented, covering Additional Work, Extra Work, and Extra Work on a Force Account Basis.

FIFTH - In cases where the UTILITY has structure attachment work to be constructed and/or installed on COMMONWEALTH's structure by either the UTILITY's contractor or the UTILITY's own forces in conjunction with the COMMONWEALTH's said construction and improvement project, if requested by COMMONWEALTH, UTILITY shall furnish COMMONWEALTH with a bond with good and sufficient surety in a sum equal to the established cost of the construction of said structure attachment work. Said bond shall be conditioned for prompt performance of the work of construction and installation required therefor within fourteen (14) calendar days after receipt by UTILITY of notice to proceed from COMMONWEALTH's contractor. In this connection, it is understood and agreed that UTILITY shall be granted a reasonable extension of time for delays in the work caused by conditions beyond UTILITY's control.

SIXTH - Where the UTILITY performs structure attachment work by either its own contractor or its own forces as provided above, it shall cooperate with COMMONWEALTH's contractor in such a manner as not to interfere with or hinder the progress of the performance of COMMONWEALTH contractor's work on COMMONWEALTH's said construction and improvement project and, in this connection, UTILITY shall indemnify and save harmless the COMMONWEALTH, the Department of Transportation and all of their officers, agents, and employees from all suits, actions, or claims of any character, name, and description, brought for or on account of any injuries of damages received or sustained by any person, persons, during the performance of the work on the aforesaid construction and improvement project by or from UTILITY, its contractor, their officers, agents, and employees, whether the same be due to the use of defective materials, defective workmanship, neglect in safeguarding the work or by or on account of any act, omission, neglect, or misconduct of UTILITY, its contractor, their officers, agents, and employees during the performance of said work and during the effective period of this Agreement.

SEVENTH - Where the COMMONWEALTH performs structure attachment by either its own contractor or its own forces as provided above, the COMMONWEALTH agrees to pay for any loss, liability, or expense, including attorneys fees, which arises out of or relates to the COMMONWEALTH's acts or omissions with respect to such work, where a final determination of liability on the part of the COMMONWEALTH is established by a court of law or where settlement has been agreed to by the COMMONWEALTH. This provision shall not be construed to limit the COMMONWEALTH's rights, obligations, liabilities, claims, or defenses which arise as a matter of law or pursuant to any other provision of this Agreement. This provision shall not be construed to limit the sovereign immunity of the COMMONWEALTH.

EIGHTH - UTILITY agrees to be bound by the Act of May 20, 1937, P.L. 728, as amended (72 P.S. Section 4651-1 et seq), which provides in substance that the Board of Claims shall have jurisdiction of

claims against the COMMONWEALTH arising from contracts and the power to order interpleader or impleader of other parties, when necessary for a complete determination of any claims or counterclaims in which the COMMONWEALTH is a party.

NINTH - It is agreed by the parties hereto that, upon completion of said improvement and construction project, the aforesaid UTILITY facilities affecting the section of state highway so improved shall be subject to the terms and conditions of the COMMONWEALTH's structure occupancy license or permit issued to UTILITY therefor and that UTILITY shall maintain and keep in good repair said facilities constructed under the terms of this Agreement in accordance with applicable state laws, except as otherwise provided hereafter.

(a) Notwithstanding anything contained herein to the contrary, in the event the Pennsylvania Public Utility Commission assumes jurisdiction of the structure under the Public Utility Code of 1978, Act of July 1, 1978, P.L. 598, as amended, the parties hereto agree to be bound by any orders of the Commission or decisions of an appropriate tribunal after appeal from such orders.

If the said Commission assumes jurisdiction of the structure, this Agreement shall not be placed into evidence or the record of the Commission unless mutually agreed by the parties hereto.

If the said Commission assumes jurisdiction of the structure, this Agreement is not to be construed to mean or imply that the UTILITY agrees to pay for the work described herein at its initial cost and expense.

If the said Commission assumes jurisdiction of the structure and directs UTILITY to bear the cost for the work described herein at its initial cost and expense, such payment of the initial cost shall not be interpreted to mean the parties have mutually agreed upon the proportion of the costs UTILITY shall bear and has paid for so as to prevent the said Commission from allocating costs under Section 2704(a) of the Public Utility Code, supra.

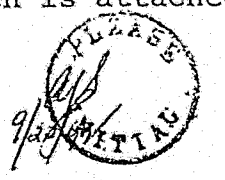
It is further understood and agreed that in the event the said Commission assumes jurisdiction of the structure, UTILITY is not required to apply for or obtain a bridge occupancy license or permit. However, in order for the COMMONWEALTH to maintain good and proper records of attachments to all structures in the COMMONWEALTH, UTILITY agrees to furnish a detailed plan of the proposed facility to the COMMONWEALTH and COMMONWEALTH shall issue to the UTILITY a bridge occupancy license or permit consistent with the terms of the Commission's Order. After the facility is installed, the UTILITY agrees to furnish an as-built plan to the COMMONWEALTH.

(b) In the event that the UTILITY withdraws its request to attach at a time prior to awarding of the contract for construction, then in that case the UTILITY shall be responsible only for additional engineering costs and any engineering costs to modify the structure plan to eliminate the UTILITY attachment.

attributable to UTILITY's withdrawal and incurred by COMMONWEALTH, including cost of labor and materials employed in the installation of the UTILITY's facilities up to the time of withdrawal and any additional engineering costs to modify the structure plan to eliminate the UTILITY attachment. UTILITY shall also be responsible for the cost of materials ordered by the contractor for installation of the UTILITY's facilities prior to UTILITY's withdrawal if the order for said materials cannot be cancelled and if the materials cannot be used elsewhere in the project.

(d) In the event COMMONWEALTH decides not to construct the project, upon notification in writing to UTILITY of such elimination, this Agreement shall terminate and neither party shall be responsible to the other for any costs. Further, in the event the project is not let for construction within one year from the date of this Agreement and construction costs have increased, COMMONWEALTH shall have the option to renegotiate the costs to be paid by UTILITY set forth herein. At that time, the UTILITY shall have the right to withdraw its request to attach, whereupon UTILITY shall be responsible for engineering costs above unless, however, UTILITY can show the said delay has caused UTILITY to find other means to provide its service. This Agreement shall thereupon terminate and UTILITY shall not be responsible to the COMMONWEALTH for any costs. In the event, however, that the UTILITY elects not to withdraw its request to attach and the parties cannot agree upon a renegotiated sum, then the UTILITY agrees to pay COMMONWEALTH the actual costs of construction and installation of UTILITY's facilities in accordance with appropriate sections of COMMONWEALTH's Specifications, Publication 408, as amended and supplemented, covering Additional Work, Extra Work, and Extra Work on a Force Account Basis.

TENTH - COMPANY covenents and agrees to comply to a directive entitled "Contractor Integrity Provisions for Commonwealth Contracts" dated December 20, 1991 a copy of which is attached hereto and incorporated herein as Exhibit "A".



IN WITNESS WHEREOF, the COMMONWEALTH and the UTILITY have caused this Agreement to be duly executed, ensealed and attested by their proper officials, pursuant to due and legal action authorizing the same to be done, the day and year first above written.

PHILADELPHIA ELECTRIC COMPANY

ATTEST:

L. J. Bunderla
Signature Date

SECRETARY
Title

(Corporate Seal)

R. J. Sobieski
Signature Date

VICE PRESIDENT
Title

APPROVED
LAW
ENGINEER
FORM

ATTEST:

Suzanne M. Miller 12-7-92
Signature Date

Executive Secretary
Title

(Seal)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

Signature Date 12/7/92

Deputy Secretary of Transportation
Title

PRELIMINARY APPROVAL

BY: J. Hunsberger 12-2-92
Signature Date

ASSISTANT COUNSEL
Title

APPROVED AS TO LEGALITY AND FORM

BY: Signature Date 12/4/92

CHIEF COUNSEL
Title

for

BY: John M. Hall
Signature Date

DEPUTY ATTORNEY GENERAL
Title

APPROVAL FOR
OFFICE OF THE BUDGET

BY: W. H. Bertie 12/4/92
Signature Date

COMPTROLLER
Title

RECORDED NO. 93435
CERTIFIED FUNDS AVAILABLE UNDER
ACTIVITY PROGRAM
[illegible]

Assistant Comptroller 3/5/93

EXHIBIT A

CONTRACTOR INTEGRITY PROVISIONS

1. Definitions.

a. Confidential information means information that is not public knowledge, or available to the public on request, disclosure of which would give an unfair, unethical, or illegal advantage to another desiring to contract with the Commonwealth.

b. Consent means written permission signed by a duly authorized officer or employe of the Commonwealth, provided that where the material facts have been disclosed, in writing, by prequalification, bid, proposal, or contractual terms, the Commonwealth shall be deemed to have consented by virtue of execution of this agreement.

c. Contractor means the individual or entity that has entered into this agreement with the Commonwealth, including directors, officers, partners, managers, key employes, and owners of more than a five percent interest.

d. Financial interest means:

(1) Ownership of more than a five percent interest in any business; or

(2) holding a position as an officer, director, trustee, partner, employe, or the like, or holding any position of management.

e. Gratuity means any payment of more than nominal monetary value in the form of cash, travel, entertainment, gifts, meals, lodging, loans, subscriptions, advances, deposits of money, services, employment, or contracts of any kind.

2. The contractor shall maintain the highest standards of integrity in the performance of this agreement and shall take no action in violation of state or federal laws, regulations, or other requirements that govern contracting with the Commonwealth.

3. The contractor shall not disclose to others any confidential information gained by virtue of this agreement.

4. The contractor shall not, in connection with this or any other agreement with the Commonwealth, directly or indirectly, offer, confer, or agree to confer any pecuniary benefit on anyone as consideration for the decision, opinion, recommendation, vote, other exercise of discretion, or violation of a known legal duty by any officer or employe of the Commonwealth.

5. The contractor shall not, in connection with this or any other agreement with the Commonwealth, directly or indirectly, offer, give, or agree or promise to give to anyone any gratuity for the benefit of or at the direction or request of any officer or employe of the Commonwealth.

6. Except with the consent of the Commonwealth, neither the contractor nor anyone in privity with him or her shall accept or agree to accept from, or give or agree to give to, any person, any gratuity from any person in connection with the performance of work under this agreement except as provided therein.

7. Except with the consent of the Commonwealth, the contractor shall not have a financial interest in any other contractor, subcontractor, or supplier providing services, labor, or material on this project.

8. The contractor, upon being informed that any violation of these provisions has occurred or may occur, shall immediately notify the Commonwealth in writing.

9. The contractor, by execution of this agreement and by the submission of any bills or invoices for payment pursuant thereto, certifies and represents that he or she has not violated any of these provisions.

10. The contractor, upon the inquiry or request of the Inspector General of the Commonwealth or any of that official's agents or representatives, shall provide, or if appropriate, make promptly available for inspection or copying, any information of any type or form deemed relevant by the Inspector General to the contractor's integrity or responsibility, as those terms are defined by the Commonwealth's statutes, regulations, or management directives. Such information may include, but shall not be limited to, the contractor's business or financial records, documents or files of any type or form which refer to or concern this agreement. Such information shall be retained by the contractor for a period of three years beyond the termination of the contract unless otherwise provided by law.

11. For violation of any of the above provisions, the Commonwealth may terminate this and any other agreement with the contractor, claim liquidated damages in an amount equal to the value of anything received in breach of these provisions, claim damages for all expenses incurred in obtaining another contractor to complete performance hereunder, and debar and suspend the contractor from doing business with the Commonwealth. These rights and remedies are cumulative, and the use or nonuse of any one shall not preclude the use of all or any other. These rights and remedies are in addition to those the Commonwealth may have under law, statute, regulation, or otherwise.

COUNTY: DELAWARE UTILITY: PHILA. ELECTRIC CO. (E)

S.R : 0320-125

L.R. :

STRUCTURE: S-17313

ATTACHMENT "A"

AGREEMENT FOR INSTALLATION OF UTILITY ON STRUCTURE
"DEVELOPMENT OF COSTS"

Materials & Costs

1.	1080 L.F. - 5" ø FRE DUCT	$ 7,950.53
2.	480 L.F. - 5" ø PVC DUCT	$ 2158.27
3.	16 EA. - 3X2 DUCT HANGER ASSEMBLY	$ 1385.01
4.	620 LBS - FABRICATED STRUCTURAL STEEL (PAINTED)	$ 1550.00
5.	12 EA. - 5" ø FRE EXPANSION JOINTS	$ 483.02
6.	12 EA. - 5" ø STOP RINGS	$ 130.15
7.	64 EA. - CONC. INSERTS, WASHERS, AND 5/8" ø BOLTS	$ 556.80
8.	32 EA. - 5/8" ø BOLTS WITH WASHERS AND NUTS	$ 129.92
9.	2 EA. - OPENING THRU BACKWALL	$ 300.00
10.	12 EA. - 5" ø FRE TO PVC ADAPTORS	$ 341.74

Sub Total $ —

Miscellaneous Material & Construction Costs
Costs of material stated above X twenty percent

— Sub Total $ —

Insurance & Tax Costs
Cost for the following will also be included exclusive of the twenty percent as herein before noted at the percentages shown.

Social Security Tax	7.50 %
Unemployment Tax	5.00 %
Workman's Compensation Insurance	5.00 %
Contractor's Public Liability Insurance	5.00 %
Total	22.50 %

Sub Total $ —

Prepared By

Date

Total $

Cost shown in Agreement $

COUNTY: DELAWARE

UTILITY: PHILA. ELECTRIC CO. (E)

S.R : 0320-125

L.R. :

STRUCTURE: S-17313

ATTACHMENT "A"

AGREEMENT FOR INSTALLATION OF UTILITY ON STRUCTURE
"DEVELOPMENT OF COSTS"

Materials & Costs

1.	1C.Y. - CLASS A CEMENT CONCRETE	$ 82.18
2.	5928 L.F. - UNDER GROUND 5"Ø PVC PIPE INCLUDING INSTALLATION	$ 37,858.58
3.	30 L.F. - UNDERGROUND 4"Ø PVC PIPE INCLUDING INSTALLATION	$ 169.85
4.	163-C.Y - CLASS C CEMENT CONCRETE	$ 11,277.64
5.	2 EA. - MANHOLES	$ 5440.40
6.		$.
7.		$.
8.		$.
9.		$.
10.		$.

Sub Total $ 69,814.39

Miscellaneous Material & Construction Costs
Costs of material stated above X twenty percent

Sub Total $ 13,962.88

Insurance & Tax Costs
Cost for the following will also be included exclusive of the twenty percent as herein before noted at the percentages shown.

Social Security Tax	7.50	%
Unemployment Tax	5.00	%
Workman's Compensation Insurance	5.00	%
Contractor's Public Liability Insurance	5.00	%
Total	22.50	%

Sub Total $ 15,709.24

Prepared By GW

Date 4/10/92

Total $ 99485.51

Cost shown in Agreement $ 99,486.00

C-84 (5-89)

021329
INVOICE NUMBER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

INVOICE

DEPARTMENT AGREEMENT No.:	S.R./L.R./W.O. No.	ORGANIZATION:
063425	0320-12S	0600

PAYOR AND ADDRESS:	BILLING ORGANIZATION:	BILLING No.:
MR WILLIAM HENSIL PECO ENERGY COMPANY 2301 MARKET STREET PHILADELPHIA PA 19101	Pennsylvania Department of Transportation 200 Radnor-Chester Road St. Davids, PA 19087	1 FINAL BILLING? [X] YES [ ] NO INVOICE DATE: August 2, 1994

ITEM No.	ITEM AND DESCRIPTION	AMOUNT
	For the installation of PECO Energy Company's facilities on SR 0320 (Spring Mill Road) over AMTRAK's mainline. Structure #17313 Delaware County PMS #063C812 SPN C 0320 07 12S 0630 362 PA. DEPT. OF TRANSPORTATION EXHIBIT NO. M10 P.U.C. NO. C-80011839 DATE OF HEARING 12-08-94 RC	$ 99,486.00

RECEIVED
DEC 20 PM 9:40
P.U.C.
MFO. CONTROL DIV.

THIS INVOICE IS PAYABLE WITHIN 30 DAYS FROM INVOICE DATE.

TOTAL: $ 99,486.00

PAY THIS AMOUNT

DEC 2 8 1994

DOCUMENT FOLDER

PAYABLE BY CHECK OR MONEY ORDER TO:
PA. DEPT. OF TRANSPORTATION

NOTE: PLEASE INDICATE THE DEPARTMENT AGREEMENT No. AND THIS INVOICE No. ON YOUR CHECK OR MONEY ORDER.

MAIL PAYMENT TO:
PA. DEPT. OF TRANSPORTATION
OFFICE OF THE COMPTROLLER
P.O. BOX 3025
HARRISBURG, PA. 17105

DIRECT TELEPHONE INQUIRIES TO:
(610) 768-3050
Oversia Barkley

X _____ SIGNATURE OF APPROVING AUTHORITY _____ TITLE _____ DATE

DISTRICT COPY

C-84 (5-89)

021327
INVOICE NUMBER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

INVOICE

DEPARTMENT AGREEMENT No.:	S.R./L.R./W.O. No.	ORGANIZATION:
063426	0320-12S	0600
MAYOR AND ADDRESS:	**BILLING ORGANIZATION:**	**BILLING No.:**
Mr Thomas M Kiely Philadelphia Suburban Water Co 762 Lancaster Avenue Bryn Mawr PA 19010	Pennsylvania Department of Transportation 200 Radnor Chester Road St. Davids, PA 19087	1
		FINAL BILLING? ☒ YES ☐ NO
		INVOICE DATE: August 2, 1994

ITEM No.	ITEM AND DESCRIPTION	AMOUNT
	For the installation of Philadelphia Suburban Water Company's facilities on SR 0320 (Spring Mill Road) over AMTRAK's mainline. Structure #17313 Delaware County PMS #063C812 SPN C 0320 07 12S 0630 362	$ 40,143.00

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 13 11
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94 RC

RECEIVED
DEC 29 10 9:40
P.U.C. SECRETARY'S BUREAU

THIS INVOICE IS PAYABLE WITHIN 30 DAYS FROM INVOICE DATE.	TOTAL: $ 40,143.00

DOCUMENT FOLDER

PAY THIS AMOUNT

PAYABLE BY CHECK OR MONEY ORDER TO:
PA. DEPT. OF TRANSPORTATION

➡ NOTE: PLEASE INDICATE THE DEPARTMENT AGREEMENT No. AND THIS INVOICE No. ON YOUR CHECK OR MONEY ORDER.

MAIL PAYMENT TO:
PA. DEPT. OF TRANSPORTATION
OFFICE OF THE COMPTROLLER
P.O. BOX 3025
HARRISBURG, PA. 17105

DIRECT TELEPHONE INQUIRIES TO:
(610) 768-3050
Oversia Barkley

X _____ SIGNATURE OF APPROVING AUTHORITY _____ TITLE _____ DATE

DISTRICT COPY

C-84 (5-89)

021326
INVOICE NUMBER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

INVOICE

DEPARTMENT AGREEMENT No.:	S.R./L.R./W.O. No.	ORGANIZATION:
063428	0320-12S	0600
MAYOR AND ADDRESS: Adelphia Cable Communications 1 Apollo Road Box 198 Plymouth Meeting PA 19462 Attn: Mr. Joe Ruff	**BILLING ORGANIZATION:** Pennsylvania Department of Transportation 200 Radnor-Chester Road St. Davids, PA 19087	**BILLING No.:** 1 **FINAL BILLING?** [X] YES [ ] NO **INVOICE DATE:** August 2, 1994

ITEM No.	ITEM AND DESCRIPTION	AMOUNT
	For the installation of Adelphia Cable Communication's facilities on SR 0320 (Spring Mill Road) over AMTRAK's main line structure #17313. Delaware County PMS #063C812 SPN C 0320 07 12S 0630 362 PA. DEPT. OF TRANSPORTATION EXHIBIT NO. 15 12 P.U.C. NO. C-80011839 DATE OF HEARING 12-08-94 RC	$ 11,988.00

THIS INVOICE IS PAYABLE WITHIN 30 DAYS FROM INVOICE DATE.

TOTAL: $ 11,988.00

PAY THIS AMOUNT

PAYABLE BY CHECK OR MONEY ORDER TO:
PA. DEPT. OF TRANSPORTATION

DOCUMENT FOLDER

DOCKETED

NOTE: PLEASE INDICATE THE DEPARTMENT AGREEMENT No. AND THIS INVOICE No. ON YOUR CHECK OR MONEY ORDER.

MAIL PAYMENT TO:
PA. DEPT. OF TRANSPORTATION
OFFICE OF THE COMPTROLLER
P.O. BOX 3025
HARRISBURG, PA. 17105

DIRECT TELEPHONE INQUIRIES TO:
(610) 768-3050
Oversia Barkley

X _____ SIGNATURE OF APPROVING AUTHORITY _____ TITLE _____ DATE

DISTRICT COPY

RR PENG F 063423

23-1642972

AGREEMENT

THIS AGREEMENT made this 14 day of Aug, A.D. 1992, by and between the Commonwealth of Pennsylvania, acting through the SECRETARY of Transportation, hereinafter called Commonwealth

and

Southeastern Pennsylvania Transportation Authority an Authority with its principal offices located at 200 West Wyoming Avenue, Philadelphia, Pa. 19140, hereinafter called Railroad.

RECEIVED DEC 28 11 9 40 BUREAU OF RAIL FREIGHT, PORT & WATERWAYS GEN. COUNSEL DIV.

RECEIVED APR 20 1992

DOCUMENT FOLDER

RECEIVED AUG 19 1992

W I T N E S S T H

WHEREAS, Commonwealth proposes to reconstruct Spring Mill Road, State Route 0320, Section 12S, in Delaware County, hereinafter referred to as the Project; and,

WHEREAS, the Project is eligible for financing with Federal Highway funds, under Federal Project Number W36-G300-001; and,

WHEREAS, the Pennsylvania Public Utility Commission (P.U.C.) has exclusive jurisdiction over all Rail-Highway Crossings in the Commonwealth of which this project will be subject to a future order; and,

WHEREAS, the tracks of Railroad are located below the grade of the highway; and,

WHEREAS, Commonwealth has Authorized Railroad to proceed with the preliminary engineering on October 7, 1987.

This authorization shall include transportation and labor for field engineering, protection, meetings, review of plans and specifications, preparation of plans and specifications if required, bridge inspection, and preparation of estimates and other related preparatory work in advance of physical construction operations.

WHEREAS, Commonwealth has agreed to initially reimburse Railroad for its actual costs of preliminary engineering for the aforesaid project; and,

WHEREAS, the Parties have agreed to more fully set forth in detail the work, material and labor for the preliminary engineering to be performed by Railroad, and the costs thereof, estimated to be $ 5,000.00.

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 16 13
P.U.C. NO. C-800111839
DATE OF HEARING 12-08-94 RC

Approved as to form and legality.

John AF Hall
Deputy Attorney General

N O W T H E R E F O R E :

For and in consideration of the premises, the mutual covenants hereinafter contained and with the intent to be legally bound hereby, the parties agree as follows:

1. Railroad agrees to perform preliminary engineering so as to enable Commonwealth to complete design on the project and with accordance with Commonwealth's design schedule.

2. Railroad agrees to or have its Consultant cooperate with Commonwealth or its Consultant so as to coordinate and not delay the completion of the improvement project. Commonwealth agrees to provide Railroad with a minimum of thirty days review period from the date of receiving the submission.

3. Commonwealth agrees, subject to provisions of paragraph eight (8) hereinafter set forth initially to reimburse Railroad for its actual costs directly involved in the project for an estimated sum of $ 5,000.00, further described on Exhibit A. It is understood and agreed that Railroad may bill the Commonwealth no more frequently than sixty (60) days or upon incurring Five Thousand ($5,000.00) Dollars additional costs, whichever first occurs for any and all actual and approved costs within the scope of the said project. Upon receipt of such verification and confirmation, Commonwealth will promptly pay Railroad the entire amount of such periodic billings.

4. Commonwealth's reimbursement to Railroad as aforesaid shall be in accordance with the provisions of Volume 1, Chapter 4, Section 3 & Volume 6, chapter 6, Section 2, Sub-Section 1 of the Federal Highway Administration's (FHWA) Federal Aid Highway Program Manual (FHPM) and any supplements and amendments thereto, Commonwealth will reimburse Railroad without delay all the actual cost of the aforesaid work, upon receipt by Commonwealth of Railroad billing and confirmation thereof by Commonwealth which may include, but not be limited to time sheets, material invoices and equipment records of Railroad and/or others to substantiate the billing.

5. That materials furnished and work performed under this agreement will be subject at all times to the inspection and approval of Commonwealth, P.U.C. and the FHWA and/or their duly authorized representatives.

6. Attached hereto by reference and made a part hereof are the Commonwealth's Non-Discrimination Clause Form CC4297A and the Federal Non-Discrimination and Equal Employment Opportunity Clauses, Form CC4297 (1-76) which Railroad hereby adopts and agrees to by execution of this agreement.

7. The parties agree they will testify in any proceeding before the P.U.C. in accordance with the terms of this Agreement and will submit this agreement to the P.U.C. with the request it be incorporated into any order issued by P.U.C.

8. It is understood and agreed the said improvement project will be within the exclusive jurisdiction of the P.U.C., should there be any conflict between this agreement and any order of the P.U.C., the parties agree to be bound by the lawful orders of the P.U.C. on matters within its jurisdiction or the final determination by any proper Court on an appeal from said order or orders. In the event the P.U.C.'s order or final determination on appeal from said order as aforesaid directs Railroad to bear its own costs for the said preliminary engineering work for which Commonwealth initially reimbursed the Railroad, Railroad agrees to promptly return such reimbursement to the Commonwealth. Further, if sums initially paid to Railroad exceed the actual cost for the Railroad's said preliminary engineering, Railroad agrees to properly return all excess payments to Commonwealth.

9. This project is subject to and contingent upon the approval for eligibility of Federal Funds by the FHWA and failure to obtain such approval shall relieve the parties of their obligations under this agreement.

10. It is further agreed that if, for any reason, the highway construction project referred to herein shall be cancelled, abandoned, or revised, in such a manner that the work described in this Agreement should be no longer required, in the opinion of the Secretary of Transportation, then in such event, the only amount which will be payable to the Railroad will be the actual and related indirect costs of the work actually completed at the time of notification by the Commonwealth of the said cancellation, abandonment or revision, plus any additional expenses incurred by the Railroad in restoring its system to normal operation conditions.

IN WITNESS WHEREOF, the parties have caused these presents to be executed, attested and ensealed by their proper officials, pursuant to due and legal action authorizing the same to be done, the day and year first above written.

ATTEST

Anne M Golden 3-20-92
Date

NOTARIAL SEAL
ANNE M. GOLDEN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires Sept. 12, 1994

Title
(Seal)

Southeastern Pennsylvania
Transportation Authority

by [signature] 3-20-92
Signature Date

CHIEF ENGINEER
Title

ATTEST:

Susan H Lachuk
Signature Date

Secretary
Title
(Seal)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

by [signature] 7/6/92
Signature Date

Deputy Secretary of
Transportation

APPROVED AS TO LEGALITY
AND FORM

by [signature] 7-6-92
Signature Date
Chief Counsel

APPROVED FOR:
Office of
Budget and Administration
by [signature] 8/14/92
Signature Date

Comptroller
Title

Encumbrance Document
Fed ID 231642972
Doc ID # 047
Sub Orgn 0600
Serial # 063423
Sub # 000

PRELIMINARILY APPROVED

by [signature] 6/29/92
Signature Date

DBSS. Counsel
Title

Recorded No. 063423
Certified Funds Available
Under Activity Program 352

Symbol 010-008-289.92-2
Amount $ 5000.00
by [signature] 8/14/92
Signature Date

ASSISTANT COMPTROLLER
Title

Approved as to form and legality.

[signature]
Deputy Attorney General

Southeastern Pennsylvania
Transportation Authority

200 W. Wyoming Avenue
Philadelphia, PA 19140-1597

(215) 580-4000

July 6, 1990

FFS-JBO
Delaware County
S.R. 320 Section 125
Spring Mill Road/Villanova
Radnor Township

Commonwealth of Pennsylvania
Department of Transportation
200 Radnor Chester Road
St. Davids, Pennsylvania 19087

Attention: Mr. James B. Ottinger

Dear Mr. Ottinger:

In reply to your June 5, 1990 letter we have estimated the cost SEPTA will incur for the preliminary engineering for the above mentioned project. In our telephone conversation of July 1, 1990 you had indicated that SEPTA will have to attend approximately 6 meetings and will review the engineering drawings approximately 5 times. Based on this information we have estimated that the cost SEPTA will incur for the preliminary engineering phase of this project will be $5,000.00.

If you have any questions please contact me at (215)-580-4247.

Very truly yours,

Thomas M. Permoda
Civil Engineer II - SEPTA

TP:cal

Received on 7/9/90

(PENGAGRA)

AGREEMENT

063236

THIS AGREEMENT made this 4th day of November, A.D. 1988, by and between the Commonwealth of Pennsylvania, acting through the SECRETARY of Transportation, hereinafter called Commonwealth

and

National Railroad Passenger Corporation
a private Corporation with its Prinicipal Offices Located at 400 North Capitol Street, N.W., Washington, D.C. 20001 hereinafter called Railroad.

DOCUMENT FOLDER

RECEIVED
DEC 29 11 9 10
INFO. RESOURCE DIV.

W I T N E S S E T H :

WHEREAS, Commonwealth proposes to reconstruct Spring Mill Road State Route S. R. 0320, Section 12S, in Delaware County, hereinafter referred to as the Project; and,

WHEREAS, the Project is eligible for financing with Federal Highway Funds, under Federal Project number W36G300001; and,

WHEREAS, the Pennsylvania Public Utility Commission (P. U. C.) has exclusive jurisdiction over all Rail-Highway Crossing in the Commonwealth of which this project will be subject to a future order; and,

WHEREAS, the tracks of Railroad are located below the grade of the highway; and,

WHEREAS, Commonwealth has Authorized Railroad to proceed with the preliminary engineering on October 7, 1987.

This authorization shall include transportation and labor for field engineering, meetings, review of plans and specifications, preparation of plans and specifications if required, protection services for core boring, survey work and bridge inspection, and preparation of estimates and other related preparatory work in advance of physical construction operation; and

WHEREAS, Commonwealth has agreed to intially reimburse Railroad for its actual costs of preliminary engineering for the aforesaid project; and,

DOCKETED
DEC 28 1988

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. IT 14
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94 RCI

WHEREAS, the Parties desire to more fully set forth in detail the work, material and labor for the preliminary engineering to be performed by Railroad, and the costs thereof, estimated to cost $ 31,845.00.

N O W T H E R E F O R E:

For and in consideration of the premises, the mutual covenants hereinafter contained and with the intent to be legally bound hereby, the parties agree as follows:

1. Railroad agrees to perform preliminary engineering so as to enable Commonwealth to complete design on the project and with accordance with Commonwealth's design schedule.

2. Railroad agrees to or have its Consultant cooperate with Commonwealth or its Consultant so as to coordinate and not delay the design of the improvement project.

2a. Commonwealth agrees to provide Railroad with a minimum of 30 days review period from the date of receiving the submission.

3. Commonwealth agrees, subject to provisions of paragraph 8 hereinafter set forth initially to reimburse Railroad for its actual costs directly involved in the project for an estimated sum of $ 31,845.00, further described on Exhibit "A". It is understood and agreed that Railroad may bill the Commonwealth no more frequently than sixty (60) days or upon incurring Five Thousand ($5,000.00) Dollars additional costs, whichever first occurs for any and all actual and approved costs within the scope of the said project. Upon receipt of such billing and after verification and confirmation, Commonwealth will promptly pay Railroad the entire amount of such periodic billings.

4. Commonwealth's reimbursement to Railroad as aforesaid shall be in accordance with the provisions of Volume 1, Chapter 4, Section 3 & Volume 6, Chapter 6, Section 2, Sub-Section 1 of the Federal Highway Administration's (FHWA) Federal Aid Highway Program Manual (FHPM) and any supplements and amendments thereto, Commonwealth will reimburse Railroad without delay all the actual cost of the aforesaid work, upon receipt by Commonwealth of Railroad billing and confirmation thereof by Commonwealth which may include, but not be limited to time sheets, material invoices and equipment records of Railroad and/or others to substantiate the billing.

5. That materials furnished and work performed under this agreement will be subject at all times to the inspection and approval of Commonwealth, the P.U.C. and the FHWA and/or their duly authorized representatives.

6. Attached hereto and made a part hereof are Exhibit "B" Commonwealth's Non-Discrimination Clause Form CC4297A (3-76) and Exhibit "C", the Federal Non-Discrimination and Equal Employment Opportunity Clauses, Form CC4297 (1-76), which Railroad hereby adopts and agrees to by execution of this agreement.

7. The parties agree they will testify in any proceeding before the P.U.C. in accordance with the terms of this Agreement and will submit this agreement to the P.U.C. with the request it be incorporated into any order issued by P.U.C.

8. It is understood and agreed the said improvement project will be within the exclusive jurisdiction of the P.U.C.; should there be any conflict between this agreement and any other of the P.U.C., the parties agree to be bound by the lawful orders of the P.U.C. on matters within its jurisdiction or the final determination by any proper Court on an appeal from said order or orders. In the event the P.U.C.'s order or final determination on appeal from said order as aforesaid directs Railroad to bear its own costs for the said preliminary engineering work for which Commonwealth initially reimbursed the Railroad, Railroad agrees to promptly return such reimbursement to the Commonwealth. Further, if sums initially paid to Railroad exceed the actual cost for the Railroad's preliminary engineering. Railroad agrees to promptly return all excess payments to Commonwealth.

9. This project is subject to and contingent upon the approval for eligibility of Federal Funds by the FHWA and failure to obtain such approval shall relieve the parties of their obligations under this agreement.

10. It is further agreed that if, for any reason, the highway construction project referred to herein shall be cancelled, abandoned, or revised, in such a manner that the work described in this Agreement should be no longer required, in the opinion of the Secretarty of Transportation, then in such event, the only amount which will be payable to the Railroad will be the actual and related indirect cost of the work actually completed at the time of notification by the Commonwealth of the said cancellation, abandoment or revision, plus any additional expenses incurred by the Railroad in restoring its system to normal operating conditions.

11. Notwithstanding any provision in the said agreement to the contrary, Railroad shall have the right to contest in any court of competent jurisdiction the power of the Pennsylvania Public Utility Commission to assess any and all costs against Railroad pertaining to highway bridges crossing over Railroads right-of-way within the Commonwealth of Pennsylvania and nothing in the said agreement shall be constructed to deny or diminish in any way the power of said court to enforce its judgement in any manner provided by law.

IN WITNESS WHEREOF, the parties have caused these presents to be executed, attested and ensealed by their proper officials, pursuant to due and legal action authorizing the same to be done, the day and year first above written.

ATTEST:

Susan H. Loebsack 10/11/88
Signature Date

Secretary
Title
(Seal)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

by John J. Logue 10/11/88
Signature Date

Deputy Secretary of
Transportation

ATTEST:

Madeleine Olivier 9/9/88
Signature Date

Asst. Corporate Secretary
Title
(Seal)

National Railroad Passenger Corporation

by G. Ellis 8/25/88
Signature Date

ASST. VICE PRESIDENT - VICE PRESIDENT
Title

APPROVED
AS TO FORM
Alice 9/14
AGC-PHILA.

APPROVED

Solicitor

Controller, where applicable

PRELIMINARILY APPROVED

by
Signature Date

Title

Recorded No.
Certified Funds Available
Under Activity Program

Symbol
Amount $

APPROVED AS TO LEGALITY AND FORM

by Gregory L. Dutton 10-24-88
Signature Date
Chief Counsel

by
Signature Date

Title

APPROVED FOR:
Office of
Budget and Administration

by
Signature Date 1988

Comptroller
Title

EXHIBIT "A"

O.H. BRIDGE NO. 12.02, SPRING MILL ROAD
S. R. 320, VILLANOVA, PA

PRELIMINARY ENGINEERING ESTIMATE

DESIGN AND CONSTRUCTION			
Site Inspection	2 Mandays	@ $350	$ 700
Meetings and Plan Reviews	8 Mandays	@ $325	$2,600
Force Account Estimate Preparation	1 Manday	@ $300	$ 300
COMMUNICATIONS AND SIGNALS			
Site Inspection	1 Manday	@ $350	$ 350
Meetings and Plan Reviews	2 Mandays	@ $325	$ 650
MAINTENANCE OF WAY			
Site Inspection	2 Mandays	@ $350	$ 700
Meetings and Plan Reviews	6 Mandays	@ $325	$1,950
Force Account Estimate Preparation	1 Manday	@ $300	$ 300
Protection	20 Mandays	@ $350	$7,000
ELECTRIC TRACTION			
Site Inspection	1 Manday	@ $350	$ 350
Meetings and Plan Reviews	4 Mandays	@ $325	$1,300
Subtotal			$16,200
Contingency @ 10%			$1,620
Total			$ 17,820

National Railroad Passenger Corporation
Office of the Chief Engineer
Date: September 22, 1987
By: J. P. Mesure

EXHIBIT "A1"

FORCE ACCOUNT ESTIMATE

PROJECT TITLE: O.H. Br. 12.02, Spring Mill Road
Villanova, Pa.
Entry Permit E-47-P1141

NATIONAL RAILROAD PASSENGER CORPORATION
OFFICE OF THE CHIEF ENGINEER
DATE: April 7, 1988
BY: J.P. Mesure

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED AMOUNT
1.	Inspector	5	MD	1,750.
2.	Flagman	20	MD	7,000.
3.	Class "A" Men (2)	10	MD	3,500.
	Subtotal			12,250.
	Contingency (10%)			1,225.
	Accounting			550.
	TOTAL			$14,025.

The nondiscrimination clause to be incorporated into every contractual agreement or other arrangement shall be in the following form:

NONDISCRIMINATION CLAUSE

During the term of this contract, Contractor agrees as follows:

1. Contractor shall not discriminate against any employe, applicant for employment, independent contractor, or any other person because of race, color, religious creed, ancestry, national origin, age, or sex. Contractor shall take affirmative action to insure that applicants are employed, and that employes or agents are treated during employment, without regard to their race, color, religious creed, ancestry, national origin, age, or sex. Such affirmative action shall include, but is not limited to: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training. Contractor shall post in conspicuous places, available to employes, agents, applicants for employment, and other persons, a notice to be provided by the contracting agency setting forth the provisions of this nondiscrimination clause.

2. Contractor shall, in advertisements or requests for employment placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age, or sex.

3. Contractor shall send each labor union or workers' representative with which it has a collective bargaining agreement or other contract or understanding, a notice advising said labor union or workers' representative of its commitment to this nondiscrimination clause. Similar notice shall be sent to every other source of recruitment regularly utilized by Contractor.

4. It shall be no defense to a finding of noncompliance with this nondiscrimination clause that Contractor had delegated some of its employment practices to any union, training program, or other source of recruitment which prevents it from meeting its obligations. However, if the evidence indicates that the Contractor was not on notice of the third-party discrimination or made a good faith effort to correct it, such factor shall be considered in mitigation in determining appropriate sanctions.

5. Where the practices of a union or any training program or other source of recruitment will result in the exclusion of minority group persons, so that Contractor will be unable to meet its obligations under this nondiscrimination clause, Contractor shall then employ and fill vacancies through other nondiscriminatory employment procedures.

6. Contractor shall comply with all state and federal laws prohibiting discrimination in hiring or employment opportunities. In the event of Contractor's noncompliance with the nondiscrimination clause of this contract or with any such laws, this contract may be terminated or suspended, in whole or in part, and Contractor may be declared temporarily ineligible for further Commonwealth contracts, and other sanctions may be imposed and remedies invoked.

7. Contractor shall furnish all necessary employment documents and records to, and permit access to its books, records, and accounts by, the contracting agency and the Office of Administration, Bureau of Affirmative Action, for purposes of investigation to ascertain compliance with the provisions of this clause. If Contractor does not possess documents or records reflecting the necessary information requested, it shall furnish such information on reporting forms supplied by the contracting agency or the Bureau of Affirmative Action.

8. Contractor shall actively recruit minority subcontractors or subcontractors with substantial minority representation among their employes.

9. Contractor shall include the provisions of this nondiscrimination clause in every subcontract, so that such provisions will be binding upon each Subcontractor.

10. Contractor obligations under this clause are limited to the Contractor's facilities within Pennsylvania or, where the contract is for purchase of goods manufactured outside of Pennsylvania, the facilities at which such goods are actually produced.

CC-4297 (1-76)

EXHIBIT "C"

FEDERAL NONDISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY CLAUSES
(All Federal Aid Contracts) *

1. Selection of Labor.

During the performance of this contract, the contractor shall not discriminate against labor from any other State, possession or territory of the United States

2. Employment Practices

During the performance of this contract, the contractor agrees as follows

a. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contract will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State highway department setting forth the provisions of this nondiscrimination clause.

b. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

c. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State highway department advising the said labor union or workers' representative of the contractors commitments under section 2 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations (41 CFR, Part 60) and relevant orders of the Secretary of Labor.

e. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the Federal Highway Administration and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

f. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or part and the contractor may be declared ineligible for further Government contracts or Federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

g. The contractor will include the provisions of Section 2 in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the State highway department or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: *Provided, however,* that in the event a contractor becomes involved in, or in threatened with litigation with a subcontractor or vendor as a result of such direction by the Federal Highway Administration, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

3. **Selection of Subcontractors, Procurement of Materials, and Leasing of Equipment:**

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

a. Compliance With Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations) which are herein incorporated by reference and made a part of this contract.

b. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment

**Not to be used if otherwise included in Construction or Appalachian Contract Provisio--*

(over)

52 09 00 53

063421
RR CONS A
02-29-92

AGREEMENT

THIS AGREEMENT made this 17 day of Aug, A.D. 1992, by and between the Commonwealth of Pennsylvania, acting through the SECRETARY of Transportation, hereinafter called Commonwealth

and

National Railroad Passenger Corporation
a District of Columbia Corporation with its principal offices located at 60 Massachusetts Avenue, N.E., Washington, D.C., 20002 hereinafter called Railroad.

RECEIVED
AUG 27 9:40
INFO. SYSTEMS & CONTROL DIV.

DOCUMENT FOLDER

RECEIVED APR 16 1992

RECEIVED AUG 27 1992

W I T N E S S E T H:

WHEREAS, Commonwealth proposes to reconstruct Spring Mill Road, State Route 0320, Section 12S, in Delaware County, hereinafter referred to as the Project; and,

WHEREAS, the Project is eligible for financing with Federal Highway funds, under Federal Project Number W36-G300-001; and,

WHEREAS, the tracks of Railroad are located below the grade of the highway; and,

WHEREAS, Commonwealth authorized Railroad to proceed with the preliminary engineering on October 7, 1987, and subsequently entered into an agreement dated November 4, 1988, Agreement Number 063236, providing for reimbursement for costs; or in the event only bridge inspection is required, without any preliminary engineering, Railroad has been authorized to provide protective services; and,

WHEREAS, Commonwealth has agreed to reimburse Railroad for its actual costs of construction and/or protective services for the Project; and,

WHEREAS, the Parties have agreed to more fully set forth in detail the work, material and labor for the construction and/or protective services to be performed by Railroad, and the costs thereof, estimated to be $1,381,188.00, further described on Exhibit "A".

DOCKET
DEC 28 1994

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 1815
P.U.C. NO. C-80011839
DATE OF HEARING 12-08-94 RC

N O W T H E R E F O R E :

For and in consideration of the premises, the mutual covenants hereinafter contained and with the intent to be legally bound hereby, the parties agree as follows:

1. Railroad agrees to perform construction and/or provide protective services to (i) enable Commonwealth to complete the Project, and (ii) not unreasonably delay Commonwealth's construction schedule, a copy of which schedule is attached hereto as Exhibit "B".

2. Railroad and Commonwealth agree to or have their Contractors cooperate so as to coordinate their respective schedules in an effort to not delay the completion of the Project.

3. Commonwealth agrees, subject to provisions of paragraph eight (8) hereinafter set forth initially to reimburse Railroad for its actual costs directly involved in the Project, which railroad estimates at $_____.__, further described on Exhibit A. It is understood and agreed that Railroad may bill the Commonwealth no more frequently than sixty (60) days or upon incurring Five Thousand ($5,000.00) Dollars additional costs, whichever first occurs for any and all actual and approved costs within the scope of the Project. Upon receipt of such verification and confirmation, Commonwealth will promptly pay Railroad the entire amount of such periodic billings.

4. Commonwealth's reimbursement to Railroad as aforesaid shall be in accordance with the provisions of Volume 1, Chapter 4, Section 3 & Volume 6, chapter 6, Section 2, Sub-Section 1 of the Federal Highway Administration's (FHWA) Federal Aid Highway Program Manual (FHPM) and any supplements and amendments thereto. Commonwealth will reimburse Railroad without delay all the actual cost of the aforesaid work, upon receipt by Commonwealth of Railroad billing and confirmation thereof by Commonwealth which may include, but not be limited to time sheets, material invoices and equipment records of Railroad and/or others to substantiate the billing.

5. That materials furnished and work performed under this Agreement will be subject at all times to the inspection and approval of Commonwealth, Pennsylvania Public Utility Commission (P.U.C.) and the FHWA and/or their duly authorized representatives.

6. Attached hereto by reference and made a part hereof are the Commonwealth's Non-Discrimination Clause Form CC4297A and the Federal Non-Discrimination and Equal Employment Opportunity Clauses, Form CC4297 (1-76) which Railroad hereby adopts and agrees to by execution of this Agreement.

7. The parties agree they will testify in any proceeding before the P.U.C. in accordance with the terms of this Agreement and will submit this Agreement to the P.U.C. with the request it be incorporated into any order issued by P.U.C.

8. Should there be any conflict between this Agreement and any order of the P.U.C., the parties agree to be bound by the lawful orders of the P.U.C. on matters within its jurisdiction or the final determination by any proper Court on an appeal from said order or orders. In the event the P.U.C.'s order or final determination on

appeal from said order as aforesaid directs Railroad to bear its own costs for the said construction and/or protective service work for which Commonwealth initially reimbursed the Railroad, Railroad agrees to promptly return such reimbursement to the Commonwealth. Further, if sums initially paid to Railroad exceed the actual cost for the Railroad's said construction and/or protective services, Railroad agrees to promptly return all excess payments to Commonwealth.

9. This Project is subject to and contingent upon the approval for eligibility of Federal Funds by the FHWA and failure to obtain such approval shall relieve the parties of their obligations under this Agreement.

10. It is further agreed that if, for any reason, the Project referred to herein shall be cancelled, abandoned, or revised, in such a manner that the work described in this Agreement should be no longer required, in the opinion of the Secretary of Transportation, then in such event, the only amount which will be payable to the Railroad will be the actual and related indirect costs of the work actually completed at the time of notification by the Commonwealth of the said cancellation, abandonment or revision, plus any additional expenses incurred by the Railroad in restoring its system to normal operation conditions.

11. Commonwealth shall require that when work is being done on, over, under or immediately adjacent to Railroad right of way by other than Railroad forces, all operations affecting Railroad property, facilities or the safe and uninterrupted operation of its trains shall be carried on in accordance with Railroad requirements as established by Railroad, to insure safe operation of trains, avoidance of delays to trains and safety of all concerned.

Commonwealth shall require any contractor engaged in work on the Project, before the contractor begins work on the Project, to provide and maintain in force during the course of the Project, at no cost to Railroad, Workmen's Compensation Insurance, Public Liability and Property Damage Insurance, Automobile Liability Insurance and Railroad Protective Liability Insurance in amounts required by Railroad as outlined in Railroad's current insurance requirements covering all the contractor's operations in any way connected with the Project, and to furnish evidence of such policies to both the Commonwealth and Railroad.

In addition to any other forms of insurance or bonds required under the terms of the Project, the contractor shall be required to carry insurance of the kinds and amounts as specified by Commonwealth and approved by Railroad.

12. Notwithstanding any provision in this Agreement to the contrary, Railroad shall have the right to contest in any court of competent jurisdiction the power of the Pennsylvania Public Utility Commission to assess any and all costs against Railroad pertaining to highway bridges crossing over Railroad's right of way within the Commonwealth of Pennsylvania and nothing in this Agreement shall be construed to deny or diminish in any way the power of said court to enforce its judgement in any manner provided by law.

13. Railroad covenants and agrees that it will not expend any funds appropriated by Congress to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following: the awarding of any Federal contract, the making of any Federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant,loan or cooperative agreement.

The Interim Final Rule, entitled New Restrictions on Lobbying, issued by OMB and the Department of Transportation (55 Fed. Reg. 6735, February 26, 1990, codified at 49 CFR Part 20) to implement the provisions of Section 319 of Public Law 101-121 (31 U.S.C. 1352) is hereby incorporated by reference and Railroad covenants and agrees to comply with all the provisions thereof, including any amendments to the Interim Final Rule which may hereafter be issued.

Pursuant to the Notice published by the OMB entitled "Governmentwide Guidance for New Restrictions on Lobbying" (55 Fed. Reg. 24540, June 15, 1990), any certification or statement, including the covenant stated above, concerning the expenditure of reimbursed funds shall apply only to the expenditure of such funds which are the subject of this Agreement.

IN WITNESS WHEREOF, the parties have caused these presents to be executed, attested and ensealed by their proper officials, pursuant to due and legal action authorizing the same to be done, the day and year first above written.

ATTEST

Jane E. Boss 4/3/92
Date

Asst. Corporate Secy
Title
(Corporate Seal)

NATIONAL RAILROAD PASSENGER CORPORATION

by H Ellis 3/30/92
Signature Date

EXECUTIVE VICE PRESIDENT
~~CHIEF ENGINEER~~
Title

ITEM APPROVED
20 Mar 92
J Blatt

ATTEST:

Signature Date

Title
(Seal)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

by
Signature Date

Deputy Secretary of Transportation

APPROVED AS TO LEGALITY AND FORM

by Gregory L. Dunlap 7-6-92
Signature Date
for Chief Counsel

APPROVED FOR:
Office of Budget and Administration
by [signature] 8/17/92
Signature Date

Comptroller
Title

PRELIMINARILY APPROVED

by Trent Hargrove 6/29/92
Signature Date

Asst. Counsel
Title

Recorded No. 063424
Certified Funds Available
Under Activity Program 350

Symbol 010-008-289.922
Amount $ 1,381,188.00
by Lynda A. Boyer 8/14/92
Signature Date

for ASSISTANT CONTROLLER
Title

Encumbrance Document
Fed ID 52090053
Doc ID # 047
Sub Orgn 0600
Serial # 063424
Sub # 000

Approved as to form and legality

John F Hall
Deputy Attorney General

Delaware County
S.R. 0320, Section 12S
Spring Mill Road Road

CONSTRUCTION SCHEDULE

Letting Date	June 15, 1992
Contractor Notice to Proceed	October 1, 1992
Physical Work Complete	September 30, 1992

NOTE: The dates shown are as of February 29, 1992 and are subject to change. The Railroad will be advised quarterly of any revisions to the schedule.

EXHIBIT "B"

FORCE ACCOUNT ESTIMATE

VILLANOVA,PA.
OH.BRIDGE NO.12.02
SPRING MILL ROAD
PROPOSED BRIDGE REPLACEMENT

NATIONAL RAILROAD PASSENGER CORPORATION
OFFICE OF THE CHIEF ENGINEER
DATE : MARCH 20,1992
BY : JOSEPH F. MCCULLOUGH

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED AMOUNT
1.	CONSTRUCTION:			
	Resident Engineer	175	M/D	61250
	Plan review	10	M/D	4000
	Bridge & Building Inspector	100	M/D	37500
2.	PROTECTION:			
	Foreman	240	M/D	108000
	Flagman	240	M/D	84000
	Class "A" Linemen	280	M/D	98000
	C&S Maintainer	60	M/D	22500
3.	ELECTRIC TRACTION DEPT. LABOR:			
	Install new foundations	360	M/D	129600
	Install new catenary structure	135	M/D	48600
	Install misc. structural steel	135	M/D	48600
	Catenary modifications	270	M/D	97200
	Temporary and permanent bonding and grounding	315	M/D	113400
	Preparation and clean-up	90	M/D	32400
	Material procurement	60	M/D	21600
4.	MATERIAL:			
	Foundations		L.S.	8000
	Catenary		L.S.	13000
	Bonding		L.S.	6500
	Structural steel(inc.fabrication)		L.S.	55000
	Catenary steel attachments,pipes, hardware,etc.		L.S.	6500
	Material handling		L.S.	20625
5.	EQUIPMENT:			
	Hi-rail platform truck	30	DAYS	7500
	HI-rail auger truck	115	DAYS	28750
	Wire train	30	DAYS	150000
	Welder truck	20	DAYS	1500
	Concrete pumper	1	DAYS	1500
	Crane	3	DAYS	12000
	Pick-up trucks (2 ea.)	350	DAYS	26250
	Sedan	175	DAYS	5250
6.	ACCOUNTING:	24	M/D	6600
		SUBTOTAL:		$1,255,625
		CONTINGENCY:	10%	$125,563
				$1,381,188

S-2 (3-89)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

Office of Chief Counsel
513 Transportation and Safety Building
Harrisburg, PA 17120
(717) 787-5473 (Ext. 530)
Fax No. (717) 772-2741

IN REPLY REFER TO

January 27, 1995

RECEIVED
95 FEB -1 AM 8:20
P.U.C.
INFO. CONTROL DIV.

John G. Alford, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

RE: C-80011839

Dear Secretary Alford:

Enclosed for filing on behalf of the Department of Transportation please find Late Filed Exhibits 16 and 17. I am serving a copy of each document on the Administrative Law Judge as well as the parties that appeared at the December 8, 1994, hearing.

Very Truly Yours,

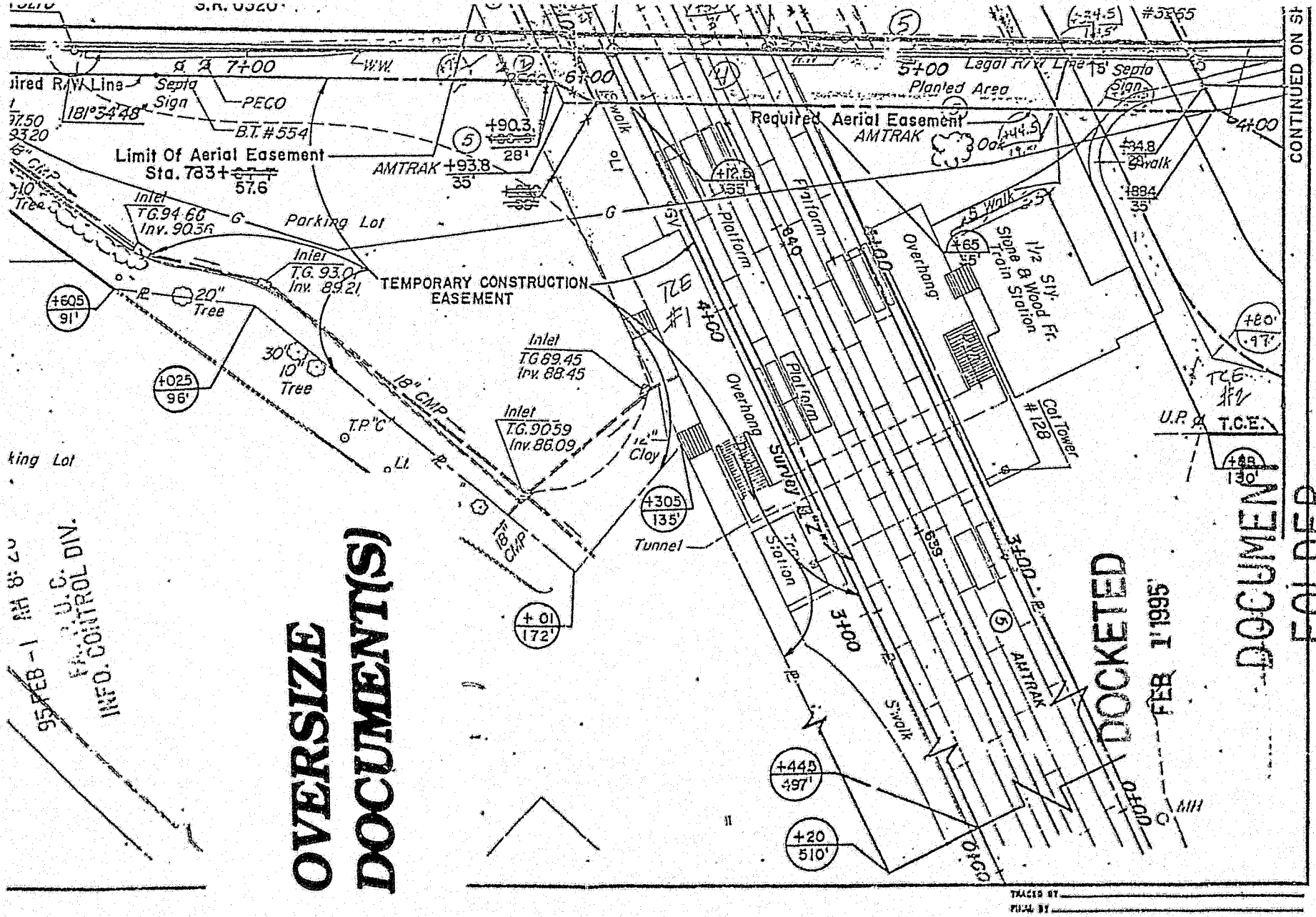
Gina M. D'Alfonso

Gina M. D'Alfonso
Assistant Counsel in Charge

220/GMD

cc: The Honorable Herbert Smolen
Dennis Moore, Esquire
Scott K. Wasserkrug, Esquire
Thomas G. Jackson, Esquire
William D. Pickering, P.E., Chief, Right of Way & Utilities Division
Daniel C. DeMaria, District Railroad Coordinator, District 6-0

DOCUMENT
FOLDER



OVERSIZE DOCUMENT(S)
DOCUMENT FOLDER
95 FEB -1 AM 8:
P.U.C.
INFO. CONTROL DIV.
DOCKETED
FEB 1 1995

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 16
P.U.C. NO. C-80011839
DATE OF HEARING 12/8/94

RECEIVED
95 FEB -1 PM 8:20
P.U.C.
INFO. CONTROL DIV.

TRACT NO. 1 (REVISED)
(Required Right-of-Way)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southerly AMTRAK right-of-way line and the northerly legal right-of-way line for State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+56; thence in a northeasterly direction along the right-of-way line of AMTRAK to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northeasterly direction along the required right-of-way line of State Route 0320 to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+61.1; thence in a southeasterly direction along the aerial easement line to a point distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+69.7 thence in a southwesterly direction along the legal right-of-way line of State Route 0320 to a point and place of beginning and containing two-hundred thirty-six (236) square feet more or less.

DOCKETED
FEB 1 1995

DOCUMENT
FOLDER

PA. DEPT. OF TRANSPORTATION
EXHIBIT NO. 17
P.U.C. NO. C-800 11839
DATE OF HEARING 12/8/94

TRACT NO. 2 (REVISED)
(Required Right-of-Way)

Begnning at a point on the southerly side of State Route 0320, said point being the intersection of the required right-of-way line for State Route 0320 and the southerly temporary construction easement line for AMTRAK distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence northwesterly along the projected required right-of-way line to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+73; thence northeasterly along the legal right-of-way of State Route 0320 to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+86.2; thence southeasterly along required aerial easement line to a point distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+90.3; thence continuing southwesterly along the temporary construction easement line to a point and place of beginning and containing one-hundred and six (106) square feet more or less.

TRACT NO. 3 (REVISED)
(Aerial Easement)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly legal right-of-way line for State Route 0320 and the southerly required aerial easement line of State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+69.7; thence in a northwesterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+57.6; thence in a northeasterly direction along the reqired aerial easement line to a point distant thirt-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+62; thence in a southeasterly direction along the AMTRAK northern right-of-way line to a point distant thirteen and one-half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing two thousand four hundred sixty (2460) square feet more or less.

TRACT NO. 4 (REVISED)
(Aerial Easement)

Beginning at a point on the southerely side of State Route 0320, said point being the intersection of the southerly legal right-of-way line of State Route 0320 and the required aerial easement line of State Route 0320 distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+86.2; thence in a northeasterly direction along the legal right-of-way line of State Route 0320 to a point distant nineteen and one-half (19.5) feet southeasterly and measured at right angles from the right-if-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction along the temporary construction easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+52.3; thence in a southwesterly direction along the required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+93.8; thence in a northwesterly direction along the required aerial easement line to a point and place of beginning and containing two thousand four hundred and sixteen (2416) square feet more or less.

TRACT NO. 5

(Retainment of Aerial Easement, Conveyance of Surface Easement to AMTRAK Excluding Pier Footing Area)

Beginning at a point onthe southerly side of State Route 0320, said point being the intersection of the southern legal right-of-way line of State Route 0320 and the southern aerial easement line of State Route 0320 distant nineteen and one-half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+57; thence in a northwesterly direction along the aerial easement line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northeasterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+25; thence in a southeasterly direction along the temporary construction easement line to a point distant nineteen and one-half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+34.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing one thousand two hundred and thirteen (1213) square feet more or less.

TRACT NO. 6 (Added)

(Retainment of Aerial Easement, Conveyance of Surface Surface Easement to AMTRAK Excluding Abutment Footing Area)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northern legal Right-of-Way line of State Route 0320 and the northern aerial easement line of State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the Right-of-Way cemterline of State Route 0320 at or about Station 783+69.7; thence in a northeasterly direction along the aerial easement line to a point thirteen (13) feet northwesterly and measured at right angles from the Right-of-Way centerline of State Route 0320 at or about Station 783+80; thence in a southeasterly direction along the existing aerial easement line to a point distant twenty (20) feet southeasterly and measured at right angles from the Right-of-Way centerline of State Route 0320 at or about Station 783+96; thence in a southwesterly direction along the aerial easement line to a point distant twenty (20) feet southeasternly and measured at right angles from the Right-of-Way centerline of State Route 0320 at or about Station 783+86.2; thence in a southwesterly direction along the legal Right-of-Way line for State Route 0320 to a point and place of beginning and containing three hundred and fifteen (315) square feet more or less.

TRACT NO. 9
(Retainment of Aerial Easement, Conveyance of Surface Easement to AMTRAK Excluding Pier Footing Area)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southern aerial easement line of State Route 0320 and the northern legal right-of-way line of State Route 0320 distant thirteen and one-half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+41.5; thence in a northeasterly direction along the legal right-of-way line to a point distant thirteen and one-half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the AMTRAK right-of-way line to a point distant three (3 feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 704+00; thence in a southwesterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northwesterly direction along the aerial easement line to a point and place of beginning and containing five hundred three (503) square feet more or less.

The above seven (7) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 123 R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of deeds, etc., in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992, and re-recorded in Volume 17, Page 432 on February 2, 1993, are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

TEMPORARY CONSTRUCTION EASEMENT NO. 1

(REVISED)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly required legal right-of-way line of S.R. 0320 and the line for the Temporary Construction Easement distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant twenty-eight (28) feet and measured at right aangles from the right-of-way centerline of State Route 0320 at or about Station 90.3; thence in a southeasterly direction along the required aerial easement line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 783+93.8; thence continuing in a northeasterly direction along the required aerial easement line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+12.5; thence in a southeasterly direction along the front of the AMTRAK/SEPTA platform for the eastbound trains to a point distant four hundred and ninety-seven (497) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southwesterly direction to a point distant five hundred and ten (510) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+20; thence in a northwesterly direction along the AMTRAK property line (projected as necessary) to a point and place of beginning and containing ten thousand two hundred and seventy (10,270) square feet more or less

TEMPORARY CONSTRUCTION EASEMENT NO. 2

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the temporary construction easement line and AMTRAK property line distant one hundred and thirty (130) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 786+70.5; thence in a southwesterly direction to a point distant one hundred and thirty (130) feet southeasterly and measured at right angles from State 0320 at or about Station 785+88; thence in a northwesterly direction to a point of intersection with the existing right-of-way line for State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+34.5; thence in a northeasterly direction along the existing right-of-way line for State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction to a point distant ninety-seven (97) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+80; thence in a northeasterly direction along the temporary construction easement line to a point and place of beginning containing two thousand one hundred and ninety-four (2194) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 4
(REVISED)

Beginning at a point on the northerly side of State Route 0320, said point being the interesection of the northerly required right-of-way line for State Route 0320 and the AMTRAK right-of-way line distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northwesterly direction along the right-of-way line of AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+36.4; thence in a northeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+51; thence in a southeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+61.1; thence in a southwesterly point and place of beginning and containing two hundred and thirty-six (236) square feet more or less.

The above three (3) tracts of land shown on the Department Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of deeds, etc. in Delaware County, in Volume 17, Page 243, on January 17, 1992, and rerecorded in Volume 17, Page 432 on February 2, 1993, are portions of real estate which become legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

NATIONAL RAILROAD PASSENGER CORPORATION
400 NORTH CAPITOL STREET N. W.
WASHINGTON, D.C. 20001

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

FORCE ACCOUNT AND MATERIAL ACQUISITION COSTS ASSOCIATED WITH OH BRIDGE NO. 12.02 RECONSTRUCTION PROJECT, LOCATED IN VILLANOVA, PA. REFER: AGREEMENT NO. 063424, DATED AUGUST 17, 1992.

	LABOR			
DEPARTMENT	EXEMPT (001)	STRAIGHT TIME (010)	OVERTIME (014)	TOTAL
E. T.	$ -	$ 1,640.20	$ 344.63	$ 1,984.83
TRACK	-	485.86	-	485.86
ENGINEERING	820.44	-	-	820.44
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
TOTAL LABOR	$ 820.44	$ 2,126.06	$ 344.63	$ 3,291.13

EXEMPT STRAIGHT TIME @ 43.52% OF 001 LABOR	$ 357.06	
STRAIGHT TIME @ 47.38% OF 010 LABOR	1,007.33	
OVERTIME @ 25.40% OF 014 LABOR	87.54	
VAC.& PD. HOL.@ 16.14% OF 001 LABOR	132.42	
VAC.& PD. HOL.@ 16.12% OF 010/014 LABOR	398.27	
FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR)	526.58	
TOTAL EMPLOYEE BENEFITS		2,509.20
MATERIAL		
MATERIAL	$ -	
MATERIAL HANDLING ADDITIVE @ 8.84%		
TOTAL MATERIAL COSTS		-
EQUIPMENT		-
MISCELLANEOUS		-
OVERHEAD LABOR ADDITIVE		
E. T. @ 55.00% OF LABOR	$ 1,091.65	
TRACK @ 75.25% OF LABOR	365.60	
ENGINEERING @ 30.77% OF LABOR	252.45	
-	-	
-	-	
-	-	
-	-	
TOTAL OVERHEAD ADDITIVE		1,709.70
BILL SUB-TOTAL		$ 7,510.03
GENERAL & ADMINISTRATIVE ADDITIVE @ 7.36% OF SUB-TOTAL		552.74
TOTAL		$ 8,062.77 *

*This total represents an Amtrak Maintenance of Way Accounting Department estimate of 1993 costs that remain unbilled.

AMTRAK EXHIBIT NO. 1

EXHIBIT C-80011839 12-8-94 RC

Pennsylvania Public Utility Commission Hearing
Docket No. C-80011839 December 8, 1994

RECEIVED
DEC 28 9:38
PA P.U.C.
SECRETARY'S BUREAU
MAIL DIV.

1. Q. What is your name and address:

A. Giuseppe Termine, 2301 Market St. (N3-1), Philadelphia, Pennsylvania, 19101

2. Q. By whom are you employed?

A. PECO Energy Company

3. Q. In what capacity?

A. Engineer, Distribution Project Branch, Engineering and Design Division, Transmission and Distribution Services Department.

4. Q. In the course of your duties in that capacity, have you had the occasion to familiarize yourself with the project by the Pennsylvania Department of Transportation (PennDOT) for the reconstruction of the Spring Mill Road bridge over AMTRAK?

A. Yes I have.

5. Q. Are you authorized to testify on behalf of the PECO Energy Company in this proceeding?

A. Yes I am.

6. Q. (25) Submit into the record a detailed plan indicating specific location of the facilities prior to the start of the crossing improvement and as altered or relocated to accommodate the project, noting the type and size of each involved facility.

A. Submitted into record are PECO Energy Delaware County drawings 504-0532-1, Exhibit 1 and 504-0532-2, Exhibit 2.

7. Q. (26) Identify when prior existing facilities were installed and under what provision or authority; state the anticipated service life of the prior existing facilities when they were installed; state the expected life of the altered or relocated facilities and give comparisons of prior existing facilities vs. altered or relocated facilities as to specific increases or decreases in capacity of each.

EXHIBIT 1
PECO Statement
C-80011839
12-8-94 ICE

DOCUMENT
FOLDER

DOCKETED
DEC 28 1994

A. The facilities existing prior to the reconstruction of the bridge included:

- 8 wood poles installed between 1961 and 1979 under permit in the public right-of-way, each with an expected service life of 40 years. Five of the wood poles were permanently removed from service. Three of the remaining wood poles were replaced and relocated.

  The following table shows the expected remaining service life of each pole at the time of the relocation in 1993.

Quantity	Year Installed	Expected Remaining Service Life (Yrs)
2	1961	18
3	1963	20
1	1964	20
1	1970	24
1	1979	30

- Aerial wire installed in 1961 and 1963 with an expected service life of 40 years. At the time of relocation in 1993, the aerial wire installed in 1961 and 1963 had an expected remaining service life of 21 and 22 years respectively.

- 3 direct buried ducts and 1 manhole installed under permit in the public right-of-way in 1970 with an expected life of 50 years. At the time of relocation in 1993, the expected remaining service life was 27 years.

- 1 three conductor underground cable installed in 1970 with an expected life of 55 years. At the time of the relocation in 1993, the three conductor cable had an expected remaining service life of 43 years.

- Cathodic protection wire installed in 1970 with an expected service life of 55 years. At the time of relocation in 1993, the expected remaining service life was 43 years.

The expected service life of the relocated facilities at the time of installation in 1993 is the following: ducts - 50 years, underground cable - 55 years, wood poles and wire - 40 years.

All facilities were functionally replaced with no increase of capacity except for a portion of the duct bank which was increased from three to six ducts.

8. Q. (27) Submit into the record a detailed, itemized summary of all cost and expenses incurred, for which it is seeking reimbursement, in furnishing material and performing work in accordance with the Commission orders adopted April 23, 1992, and submit testimony explaining in full the summary of all costs.

A. Submitted into record is a detailed itemized summary of PECO Energy costs and expenses for furnishing material and performing work in order to accommodate the project in accordance with the Commission Docket No. C-80011839 (Exhibit 3 sheets 1, 2 and 3). The total cost to PECO Energy was $99,302.06.

9. Q. (28) State whether PECO Energy's relocated facilities were placed in public or private right-of-way and state what benefits or costs incurred to it by such placement.

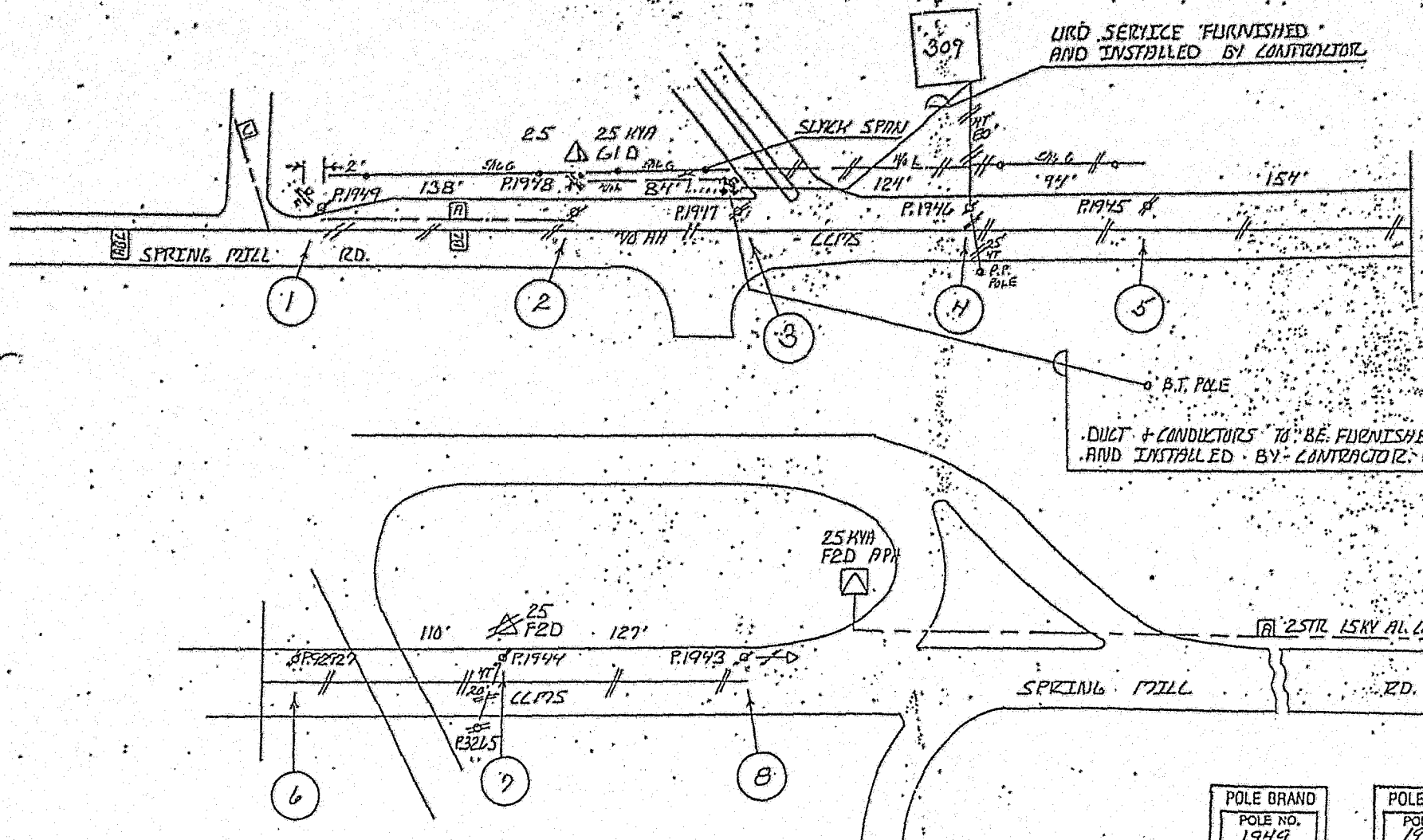
A. The relocated facilities were placed in public right-of-way. All costs were incurred solely as a result of the reconstruction without any benefit to the PECO Energy system or our customers.

10. Q. (29) State which items of cost incurred, if any, PECO Energy agrees to bear and which party or parties it suggest should bear the remaining items of costs.

A. PECO Energy agrees to bear the cost associated with that portion of the new 6 duct bank shown from point 3 to point 9A on PECO Energy drawing 504-0532-2 (Exhibit 2). However, PECO Energy agrees to bear no items of cost incurred for the remaining work associated with the reconstruction of the Spring Mill Road Bridge based on the fact, but for the bridge reconstruction, all prior existing facilities would have remained in service. Except for the aforementioned portion of the 6 duct bank, the remaining cost will be incurred solely as a result of the reconstruction without any benefit or betterment of the PECO Energy system or our customers. PECO Energy suggests that others bear all items of cost incurred.

EXHIBIT 1

EXHIBIT
PECO 1
C-8001839
12-8-94 KC



LOC 1 DEADEND EXISTING 3 PH PRIMARY. (B & C PHASES ONLY)
A PH. TO EXTEND TO LOC. 2. REMOVE B&C BETWN. LOC. 1 & 2.

LOC. 2 DEADEND A PH. REMOVE 3 PH OPEN WIRE BETWN. LOC. 2 & 3.

LOC. 3 ESTABLISH 2 SECONDARY SERVICE T.P.

LOC. 3-8 REMOVE ALL P.E.CO. FACILITIES INCLUDING CATHODIC PROTECTION WIRE, BETWN LOC. 3 AND 8.

DOCUMENT POCKET
FOLDER
DEC 2 2004

SUB-2 IS THE UNDERGROUND & SPLICING PORTION

POLE BRAND	POLE BRAND	POLE BRAND
POLE NO. 1949	POLE NO. 1948	POLE NO. 1947
35/45	35/45	40/40
61	61	99

ALL POLE LOCATIONS ARE TO BE STAKED BY CONTRACTOR.

REVISED SKETCH

REVISED SKETCH

REQ 140170
400561

P. 550565 - WAP N/A B.M. 140

ACT 287-USER	TELEPHONE NO.	PERMIT NO.	FACILITIES YES	FACILITIES NO	NOTIFIED

PHILADELPHIA ELECTRIC CO.
DELAWARE DIVISION

P.E.CO.
SPRING MILL RD. BRIDGE
RADNOR TWP 334

DRAWN BY	DATE	SCALE
P.E.	11-12-92	1"=50'

C. A. JOB NO. 504-0532-1

EXHIBIT 2

EXHIBIT
PECO a
C-800 11839
12-8-94 RC

NEW PE.CO MANHOLE
M.H. 239611

309

CONTRACTOR TO FURNISH & INSTALL PVC DUCT AND CONDUCTORS FROM CUST. METER SOCKET TO POLE 1947. PECO TO EXTEND SERVICE UP THE POLE AND MAKE TAPS.

HALL DALE RD.

SPRING MILL RD

P.1949

P.1948

35'

825'

P.E.CO. 6 DUCT BANK

BRIDGE ABUTMENT

AMTRAK WEST SIDE STATION SERV.

B.T. POLE

TRANSFORMER SET-BACK TO BE A MAX. 10' FROM FACE/CURB

CONTRACTOR TO REMOVE EXISTING MANHOLE

P.E.CO TO SLEEVE EXISTING DUCT BANK TO NEW DUCT BANK USING DUCT 1-2-3.

BRIDGE ABUTMENT

CONTRACTOR TO INSTALL 1 4" PVC DUCT

APH 25 KVA F2:D

P.E.CO 6 DUCT BANK

NEW P.E.CO MANHOLE M.H. 239613

WORK LIMIT STA. 792

P.1943

45'

130'

M.H.683

3-1X500 MCM 15 KV CA.

1-1X2 STR. 15 KV CONC. CA.

65'

110'

300'

70'

265'

2 METER PEDESTAL. P.E.CO TO INSTALL 2-4/0 1-3/0 600 V CA.

CABLE FROM T.P. 1936 TO M.H. 682 WILL BE DE-ENERGIZED AND STAY IN PLACE. THE 'A' PHASE CABLE WILL BE ENERGIZED THROUGH A FUSED CUTOUT.

P.1936

M.H. 682

3-1X500 MCM 15 KV CA.

205'

SPRING MILL RD

COUNTY LINE RD

DOCUMENT FOLDER

DOCKETED
DEC 28 1994

SUB-1 IS THE AERIAL PORTION.

L-L
3-1" H.W.F.D.
LOOKING WEST

D-D
6.5" PVC
LOOKING EAST

CONSTRUCTION NOTES

LOC. 1-2-3 PECO TO REMOVE 3-1X500 MCM 15 KV CA. (805 FT.)
LOC. 1-7-4 PECO TO INSTALL 1-1X2 STR 15 KV CONC. CA. FROM LOC. 1 TO LOC H. (A PHASE)
LOC. 7-8 CONTRACTOR TO INSTALL PRE-CAST 6X12X8 PRE-CAST MANHOLES.
LOC. 9-9A CONTRACTOR TO INSTALL A CONTINUOUS DUCT BANK WITH DUCT ENTERING MANHOLES AT LOCATIONS 9 AND 8.
LOC 2 P.E.CO TO ABANDON MANHOLE AND DUCT EXTENDING OUT TO LOC 9 AND LOC 3.
LOC H-5 P.E.CO. TO INSTALL H/O SERVICE FROM TRANSF. LOC H TO METER PEDESTAL.
LOC. 6 P.E.CO. TO ESTABLISH AN AERIAL SERVICE T.P. WITH CONTRACTOR FURNISHED CONDUCTORS.
LOC. 10 PECO TO SLEEVE EXISTING 3 DUCT BANK TO NEW DUCT BANK USING DUCTS 1-2-3.

REVISED SKETCH

REVISED SKETCH

REQ 140170
40D561

POLS 5505LS NAP NIA B.M. 147

ACT 287-USER	TELEPHONE NO.	PERMIT NO.	FACILITIES YES	FACILITIES NO	NOTIFIED

PHILADELPHIA ELECTRIC CO.
DELAWARE DIVISION

PECO.
SPRING MILL RD. BRIDGE
RADNOR TWP. 334

DRAWN BY	DATE	SCALE
P.E.	11-12-92	1"=50'

C. A. JOB NO. 507-0532-2

EXHIBIT 3 Sheet 1

EXHIBIT
PECO 3
C-80011839
12-8-94 RC

D-4181-B (1-92)

SUMMARY OF BILLING FOR UTILITY RELOCATION

County Delaware

S.R. & Sec. S.P. 320

Agreement No. C-80011839

Fed. Proj. No. _____

Utility PECO ENERGY

Address 2301 Market St., Philadelphia, PA 19101

Invoice may be Audited at (address) Same as above

Date of First Billed Expense (including Preliminary Engineering) _____

Date of Actual Construction Start by the Utility 1st Quarter '93

Date of Last Billed Expense (including accounting) _____

A. PRELIMINARY ENGINEERING (Performed by _____)

1. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
2. Supplies			
3. Transportation			
4. TOTAL			N/A

B. RIGHT OF WAY ACQUISITION

1. Property Costs			
2. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
3. Supplies			
4. Transportation			
5. TOTAL			N/A

DOCUMENT FOLDER

C. TEMPORARY CONSTRUCTION

1. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
(c) Contract (Performed by _____)			
2. Material			
(a) New Material			
(b) Handling (_____ Percentage Used)			
(c) Depreciation			
(d) Salvage			
3. Equipment			
(a) Company Owned			
(b) Rented (Owned _____)			
4. TOTAL			N/A

DOCKETED
DEC 28 1994

(Carry TOTALS for A, B and C forward to Page 3)

D-4181-B (1-92)

Accumulative TOTAL from Page 1 _____

D. PERMANENT CONSTRUCTION			
1. Labor			
(a) Salaries and Wages	16,097.86		
(b) Labor Surcharge (_____ Percentage Used)	3,312.94	72,673.24	
(c) Contract (Performed by _____)	9,912.44		
(d) Incorporated in Highway Contract	43,350.00		
2. Material			
(a) New Material	4,901.71		
(b) Handling (_____ Percent Used)		4,901.71	
3. Equipment			
(a) Utility Owned	5,011.47		
(b) Rented (Owner _____)		5,011.47	
4. TOTAL			82,586.42
E. REMOVAL COSTS			
1. Labor			
(a) Salaries and Wages	11,982.38		
(b) Labor Surcharge (_____ Percentage Used)	2,729.52	14,711.90	
2. Supplies			
3. Transportation		2,003.74	
4. TOTAL			16,715.64
F. CONSTRUCTION ENGINEERING AND INSPECTION			
1. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
2. Supplies			
3. Transportation			
4. TOTAL			N/A
G. CONNECTING COSTS (Connecting Proposed to present Facilities)			
1. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
2. Supplies			
3. Transportation			
4. TOTAL			N/A
H. ACCOUNTING (Including Preparation of Estimate and Billing)			
1. Labor			
(a) Salaries and Wages			
(b) Labor Surcharge (_____ Percentage Used)			
2. Supplies			
3. Transportation			
4. TOTAL			N/A
I. ADMINISTRATION, INDIRECT OVERHEAD, SUPERVISION (_____ Percentage Used)			N/A
J. TOTAL CONSTRUCTION COST			99,302.06

(Carry TOTALS for A, B and C forward to Page 4)

Accumulative TOTAL from Page 2 99,302.06

K. LESS CREDITS

1. Betterment _____
2. Salvage _____
3. Expired Service Life _____
4. TOTAL 0.00

L. TOTAL NET COST 99,302.06

M. UTILITY SHARE OF ITEM L _____% $ _____

N. STATE SHARE OF ITEM L _____% $ _____

O. SACRIFICED LIFE (VALUE OF FACILITIES REMOVED FROM PRIVATE RIGHT OF WAY AND NOT FUNCTIONALLY REPLACED. TOTALLY REIMBURSABLE; DO NOT PRORATE) $ 0.00

P. LESS THE AMOUNT OF PREVIOUS PAYMENTS $ 0.00

Q. TOTAL AMOUNT OF REIMBURSEMENT (Total of N and O, Less P) $ _____

I hereby certify that to the best of my knowledge and belief this bill is true and correct and that all costs included herein are properly chargeable to the State as a result of adjusting our facilities to conform to the above-named highway project as shown by this Utility's Plan and Highway Plan and Estimate, and in accordance with the terms of the approved agreement on file with the Commonwealth of Pennsylvania, Department of Transportation.

I further certify that all work billed hereon has been completed in accordance with the Department's Design Manual Part 5, Title 23, Code of Federal Regulations Chapter 1, Part 645, Subpart A, and in accordance with work order accounting procedure prescribed by the applicable Federal or State Regulatory Board, and that no collusion exists or has existed between members or employees of this firm and other persons, firms or corporation in order to establish an unjust basis for any part of the costs covered by this invoice.

Giuseppe Termine, Engineer 12/6/94

(Name and Title) Date

(Use supplemental sheets to describe the scope of work performed, to explain any unusual charges and to provide the required information on contracts, credits, materials, sacrificed life, etc.)