

| | | |
|--|---|--------------------------------|
| 1. <u>REPORT DATE:</u> | : | 2. <u>BUREAU AGENDA NO.</u> |
| August 26, 1992 | : | SEP-92-SC-RS-366 |
| 3. <u>BUREAU:</u> | : | |
| Safety and Compliance | : | |
| 4. <u>SECTION</u> | : | 5. <u>PUBLIC MEETING DATE:</u> |
| Rail Safety | : | September 17, 1992 |
| 6. <u>APPROVED BY:</u> | : | |
| Director: Nicely 3-3846 | : | |
| Supervisor: Hart 7-9732 | : | |
| 7. <u>PERSON IN CHARGE:</u> | : | |
| Wilhelm 7-6805 | : | |
| 8. <u>DOCKET NO.:</u> | : | |
| C-80011839 | : | |
| 9. (a) <u>CAPTION</u> (abbreviate if more than 4 lines) | | |
| (b) Short summary of history & facts, documents & briefs | | |
| (c) Recommendation | | |

(a) Villanova University

v.

National Railroad Passenger Corporation (Amtrak), et al.

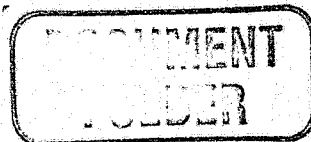
(b) Complaint filed January 31, 1980. Several hearings were held and various orders adopted prior to August, 1990. By letter received August 21, 1990, PennDOT submitted preliminary plans for bridge replacement and requested a field conference to discuss plans. Field conference held September 25, 1990. PennDOT agreed to construct the improvement at its initial cost and expense.

In accordance with numbered Paragraph 2 of the subsequent Commission order adopted April 23, 1992, PennDOT has submitted final construction plans for approval.

(c) The Bureau of Safety and Compliance recommends that the Commission approve the detailed construction plans entitled "Drawings for Construction of State Route 0320 Section 12S in Delaware County", including the Traffic Control, Pavement Marking, Utility Relocation and Structure Plans, consisting of a total of 69 sheets, insofar as they pertain to the crossing involved in the instant proceeding.

| | | |
|----------------|-------------------------|----------------------------|
| 10. MOTION BY: | Commissioner Chm. Rolka | Commissioner Holland - Yes |
| SECONDED: | Commissioner Rhodes | Commissioner |

CONTENT OF MOTION: Staff recommendation adopted.



DOCKETED
NOV 19 1992



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

October 8, 1992

IN REPLY PLEASE
REFER TO OUR FILE

C-80011839

JAMES W PATTERSON ESQUIRE
RUBIN QUINN MOSS HEANEY & PATTERSON
1800 PENN MUTUAL STREET
510 WALNUT STREET
PHILADELPHIA PA 19106

DOCKETED
OCT 19 1992

VILLANOVA UNIVERSITY

v.

NATIONAL RAILROAD PASSENGER CORPORATION, CONSOLIDATED RAIL CORPORATION
SOUTHEASTERN PA TRANSPORTATION AUTHORITY, COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION, COUNTY OF DELAWARE AND RADNOR TOWNSHIP

To Whom It May Concern:

The Commission, at Public Meeting held September 17, 1992 approved PENNDOT'S detailed construction plans entitled "Drawings for Construction of State Route 0320 Section 12S in Delaware County", including the Traffic Control, Pavement Marking, Utility Relocation and Structure Plans, consisting of a total of 69 sheets, insofar as they pertain to the crossing involved in the instant proceeding.

Very truly yours,

John G. Alford, Secretary

JZ
Certified Mail

Copy of Secretarial Letter to all Parties.

**DOCUMENT
FOLDER**

WILLIAM D PICKERING PE CHIEF
RIGHT-OF-WAY AND UTILITY DIVISION
TRANSPORTATION & SAFETY BUILDING
HARRISBURG PA 17120

FRANCIS P CONNORS SOLICITOR
OF DELAWARE COUNTY
107 W 3RD STREET
MEDIA PA 19063

EUGENE H EVANS SOLICITIOR
OF RADNOR TOWNSHIP
131 W MARKET STREET
WEST CHESTER PA 19380

PETER S CRAIG ESQUIRE
400 N CAPITOL STREET NW
WASHINGTON DC 20001
(for Amtrack)

J D COSSEL CHIEF ENGINEER
CONRAIL CORPORATION
15 NORTH 32ND STREET
PHILADLEPHIA PA 19104-2849

JOYCE A LAMONT COUNTY CLERK
DELAWARE COUNTY COMMISSIONERS
GOVERNMENT CENTER BUILDING
MEDIA PA 19063

ROBERT M. CROFFORD MANAGER
TOWNSHIP OF RADNOR
301 IVEN AVENUE
WAYNE PA 19087

DANIEL J WHELAN REGULATORY AND
GOVERNMENT CENTER
BELL OF PA
315 NORTH SECOND STREET
HARRISBURG PA 17101

EUGENE N CIPRIANI SR COUNSEL
SEPTA
SOVEREIGN BUILDING
714 MARKET STREET - 7TH FLOOR
PHILADELPHIA PA 19106-2385



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

October 8, 1992

IN REPLY PLEASE
REFER TO OUR FILE

C-80011839

JAMES W PATTERSON ESQUIRE
RUBIN QUINN MOSS HEANEY & PATTERSON
1800 PENN MUTUAL STREET
510 WALNUT STREET
PHILADELPHIA PA 19106

VILLANOVA UNIVERSITY

V.

NATIONAL RAILROAD PASSENGER CORPORATION, CONSOLIDATED RAIL CORPORATION
SOUTHEASTERN PA TRANSPORTATION AUTHORITY, COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION, COUNTY OF DELAWARE AND RADNOR TOWNSHIP

To Whom It May Concern:

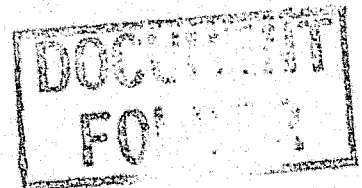
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Very truly yours,

John G. Alford, Secretary

JZ
Certified Mail

Copy of Secretarial Letter to all Parties.



DEPARTMENT OF TRANSPORTATION



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 P.O. 252 MI.
FROM SEG. 0320 OFFSET 0590.5 TO SEG. 0320 OFFSET 1920.5

P.U.C. Application Docket No. CB00011839

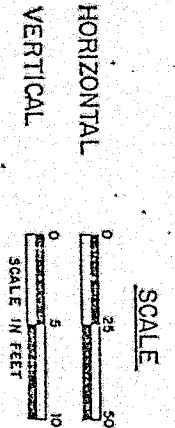
| STATE PROJECT NUMBER | SECTION | DIST |
|----------------------|--------------|-------------|
| SYS | L.R. or W.D. | SPUR PHA |
| C | 0 3 2 1 0 | 7 1 2 S 0 E |

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

ALSO INCLUDED:

- CROSS SECTIONS (UPON REQUEST)
- TRAFFIC CONTROL PLANS
- PAVEMENT MARKING PLAN
- EROSION AND SEDIMENT POLLUTION CONTROL PLANS
- STRUCTURE PLANS S-17313
- UTILITY RELOCATION PLANS

LOCKE
OCT 19 1992



**BUREAU OF
S & C
AUG 10 1992
RAIL SAFETY
DIVISION**

C-80011839

DESIGNATION (URBAN) - MINOR ARTERIAL
DESIGN SPEED - 30 MPH.
PAVEMENT WIDTH - 12' 6" LANES
SHOULDER WIDTH (EFFECTIVE) - 8' LT.
MEDIAN WIDTH, MAXIMUM - NONE
MINIMUM - NONE

TRAFFIC DATA
CURRENT A.D.T. - 12,900 (1991)
DESIGN YEAR A.D.T. - 13,300 (2011)
D.H.V. - 1203
D - 66%
T - 3%

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

Harry D. Taylor
March 9, 1992

CERTIFIED CORRECT PLANS

Approved by *Dr. T. Williams, P.E.* Engineer
Norman R. Ni Secretary of Safety & Compliance
PENNA. PUBLIC UTILITY COMMISSION

ATTEST: *John S. [Signature]* Secretary
SEP 17 1992

**DOCUMENT
FOLDER**

RECOMMENDED BY *[Signature]*
RECOMMENDED BY *[Signature]*
APPROVED BY *[Signature]*
(ON BEHALF OF THE)

NOTE: THE DEPTHS OF MATERIAL SHOWN ARE FOR DESIGN PURPOSES ONLY. ANY RISK OF UNANTICIPATED COSTS ASSOCIATED WITH DIFFERENCES BETWEEN THE LISTED DEPTHS AND THE ACTUAL DEPTHS SHALL BE ACCEPTED BY THE CONTRACTOR.

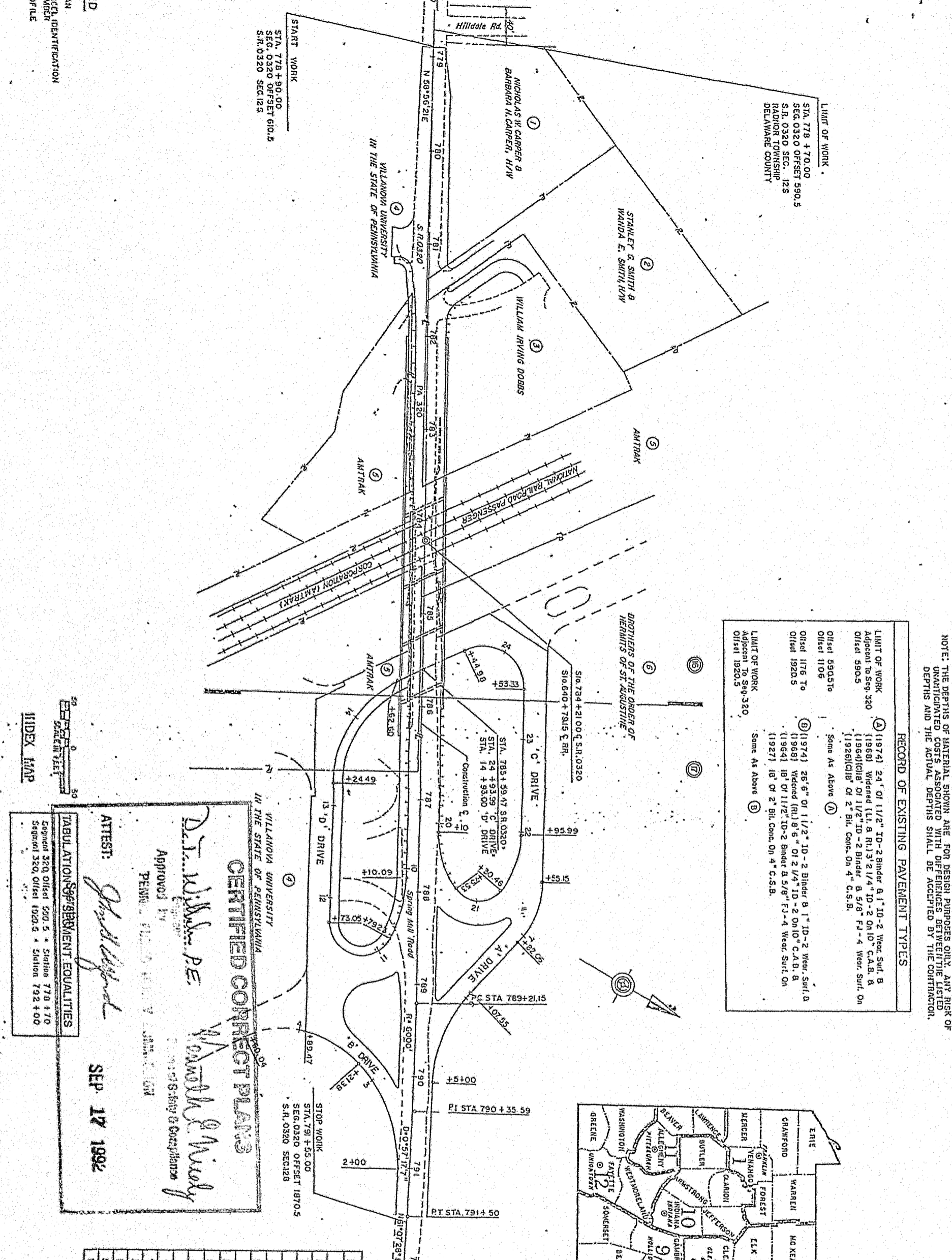
| RECORD OF EXISTING PAVEMENT TYPES | |
|-----------------------------------|---|
| LIMIT OF WORK | (A) (1974) 24' OF 1 1/2" ID-2 Binder & 1" ID-2 Weor. Surf. B |
| Adjacent to Seg. 320 | (1968) Widened (L.I. & R.I.) 3' 2 1/4" ID-2 ON 10" C.A.B. & |
| Offset 590.5 | (1964)(C) 18' OF 1 1/2" ID-2 Binder & 5/8" FJ-4 Weor. Surf. On |
| | (1928)(C) 18' OF 2" Bil. Conc. On 4" C.S.B. |
| Offset 590.5 to | Same As Above (A) |
| Offset 1106 | |
| Offset 1176 To | (B) (1974) 26' 6" OF 1 1/2" ID-2 Binder & 1" ID-2 Weor. Surf. B |
| Offset 1920.5 | (1968) Widened (R.I.) 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 Weor. Surf. On |
| | (1927) 18' OF 2" Bil. Conc. On 4" C.S.B. |
| LIMIT OF WORK | Same As Above (B) |
| Adjacent to Seg. 320 | |
| Offset 1920.5 | |

LAN
INDEX IDENTIFICATION
NUMBER
OFFICE

ND

START WORK
STA. 778 + 90.00
SEG. 0320 OFFSET 610.5
S.R. 0320 SEC. 125

LIMIT OF WORK
STA. 778 + 70.00
SEG. 0320 OFFSET 590.5
S.R. 0320 SEC. 125
RADNOR TOWNSHIP
DELAWARE COUNTY



VILLANOVA UNIVERSITY
IN THE STATE OF PENNSYLVANIA

CERTIFIED CORRECT PLANS

Approved by: *[Signature]* P.E.
Checked by: *[Signature]* P.E.

ATTEST: *[Signature]*

SEP 17 1992

TABULATION SEGMENT EQUALITIES
Segment 320, Offset 590.5 * Station 778 + 70
Segment 320, Offset 1920.5 * Station 792 + 00

| DESCRIPTIONS | SHEET |
|--|---------|
| TITLE SHEET | 1 |
| INDEX MAP | 2 |
| LOCATION MAP | 3 |
| TYPICAL SECTIONS | 4 |
| MISCELLANEOUS DETAILS | 5-7 |
| SUMMARY SHEET | 8, 9 |
| TABULATION OF QUANTITIES | 10-15 |
| DETAIL PLAN SHEETS | 16-17 |
| PROFILES | 18 |
| ACCESS DRIVE GEOMETRY & SPOT ELEVATIONS | 19-20 |
| SUPPLEMENTARY PLANS | SHEETS |
| TRAFFIC CONTROL PLAN | 2 |
| PAVEMENT MARKING PLAN | 1 |
| EROSION & SEDIMENT POLLUTION CONTROL PLANS | 3 |
| STRUCTURE PLANS | S-17313 |
| UTILITY RELOCATION PLANS | 3 |

| DISTRICT | COUNTY | ROUTE | SECTION | DATE | BY |
|----------|----------|-------|---------|---------|----|
| 6-0 | DELAWARE | 0320 | 125 | 2 OF 20 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

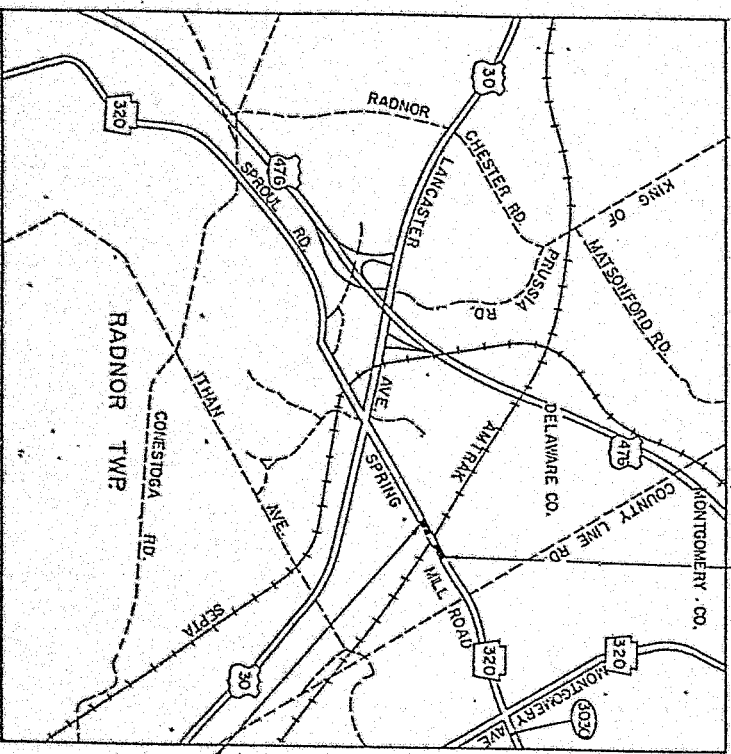
PENNSYLVANIA

LIMIT OF WORK
STA. 792 + 00.00
SEG. 0320 OFFSET 1920.5
S.R. 0320 SEC. 125
RADNOR TOWNSHIP
DELAWARE COUNTY

STOP WORK
STA. 791 + 55.00
SEG. 0320 OFFSET 1870.5
S.R. 0320 SEC. 128

PUBLIC UTILITIES

| | |
|---|---|
| COMMUNICATIONS, INC. ERING INQUIRIES ALEM ROAD S, GA. 30208 | TOWNSHIP OF RADNOR 301 IVEN AVENUE WAYNE, PA. 19087 ATTN: MR. ROBERT CROFFORD TOWNSHIP ENGINEER (215) 688-5600 |
| TELEPHONE COMPANY ERRY ST. 3RD FLOOR DOWN PA. 19406 S. MARGARET NOLAN 78-0271 | PHILADELPHIA SUBURBAN WATER CO. 762 LANCASTER AVENUE BRYN MAWR, PA. 19010 ATTN: MR. THOMAS M. KIELY (215) 525-1400 |
| EASTERN PENNSYLVANIA ORTATION AUTHORITY WYOMING AVENUE ELPHIA PA. 19140 METREPACK HIEF ENGINEER ACILITIES ENGINEERING A CONSTRUCTION DEPT. 0-4137 | CONSOLIDATED RAIL CORPORATION 15 NORTH 32ND STREET ROOM 1200 PHILADELPHIA, PA. 19104-2849 ATTN: MR. J.D. COSSELL HIEF ENGINEER, DESIGN AND CONSTRUCTION (215) 596-3846 |
| ELPHIA ELECTRIC CO. RKET STREET LPHIA, PA. 19101 R. WILLIAM J. HENSIL NEGOTIATOR 41-5393 | AMTRAK 3011 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 |
| A CABLE COMMUNICATIONS LORROAD, BOX 198 H MEETING, PA. 19462 R MICHAEL KANE 8-4888 | LIMIT OF WORK STA. 792 + 00 SEG. 0320 OF S.R. 0320 S.R. 0320 SEC. 125 R/W Radnor Township Delaware County |



0 1/2 1
SCALE IN MILES

LEGEND
PROJECT
STATE HIGHWAY
TOWNSHIP ROAD
TOWNSHIP LINE

GENERAL NOTES (CONT.)
DETAILS, OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

| | | | |
|-------------|---------------|------------|---------------|
| R.C. - 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(6 SHTS) | JULY 26, 1991 | 752 | JAN. 20, 1989 |
| 54(3 SHTS) | JULY 26, 1991 | 757 | JUNE 1, 1991 |
| 58(3 SHTS) | FEB. 24, 1989 | 767 | MAY 3, 1989 |
| 64 | OCT. 12, 1984 | 794 | JAN. 20, 1989 |
| 67(2 SHTS) | MAY 15, 1991 | TC - 77028 | FEB. 1, 1984 |
| 70(4 SHTS) | MAY 15, 1991 | | |
| 100(2 SHTS) | FEB. 24, 1989 | | |
| 23(2 SHTS) | APRIL 1, 1991 | | |

SUMMARY OF PROJECT COORDINATES

| ROUTE | STATION | POINT | COORDINATES | | BEARING |
|-----------|-----------|-----------------|-------------|---------|---------------|
| | | | NORTH | EAST | |
| 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 |
| CONSTR. | 790+35.59 | P.I. | 5031.96 | 5025.01 | N 58°56'21" E |
| | 791+50.00 | P.T. / END STA. | 5087.22 | 5125.22 | N 61°07'28" E |

TABULATION OF OVERALL LENGTH

| | | | |
|-----------|----------------------------|-----------|-----------|
| S.R. 0320 | 778 + 70.00 TO 792 + 00.00 | 1330 L.F. | 0.252 MI. |
| 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 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:

| CLASS | CLASS | CLASS | CLASS | CLASS | CUBIC YDS. OF COMPLETED EMBANKMENT | CUBIC YDS. OF FOREIGN BORROW EXCAVATION | CUBIC YDS. OF WASTE | CUBIC YDS. OF SELECT BORROW EXCAV. STRUC. BACKFILL |
|-------|-------|-------|-------|-------|------------------------------------|---|---------------------|--|
| 1 | 1A | 1B | 2 | 4 | 3300.4 | 1098 | 16526 | 4758 |
| 9690 | | 9 | | | | | | 4290 |
| | | | | | | | | 1170.0 |

Δ INCLUDED IN U.S. STRUCTURE ITEMS

LIST OF EQUALITIES

NONE

LIMIT OF WORK
Sta. 778 + 70
S.R. 0320 Of S.R. 0320
S.R. 0320 Sec. 125 R/W
Radnor Township
Delaware County

FOR DETOUR SEE TRAFFIC CONTROL PLAN AND SPECIAL PROVISIONS

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 125 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 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.

CERTIFIED CORRECT PLANS

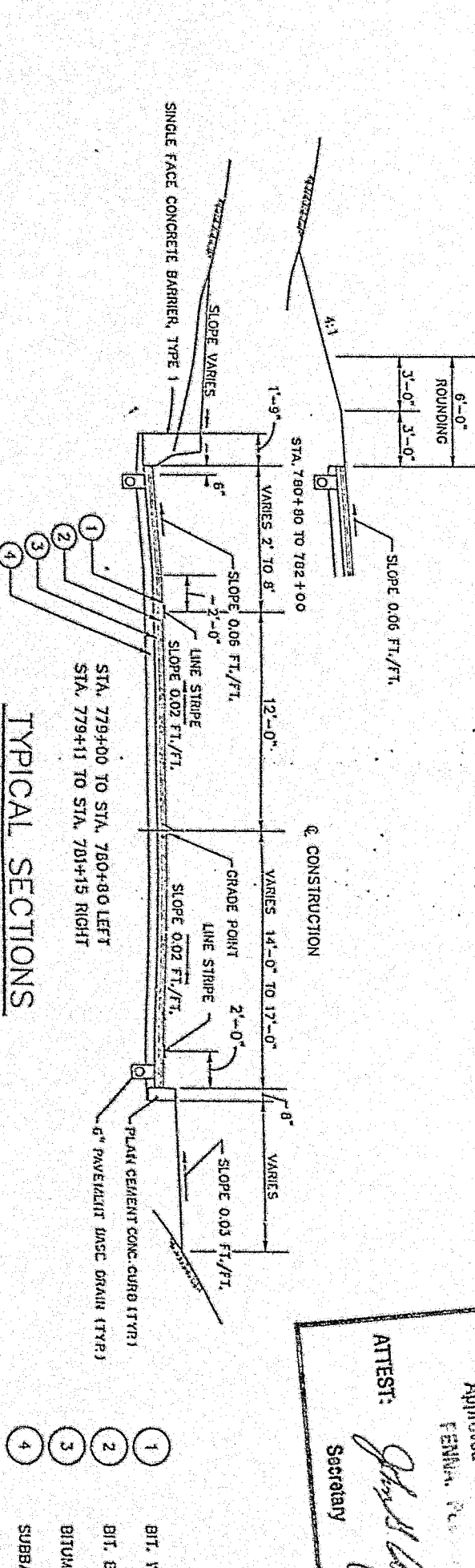
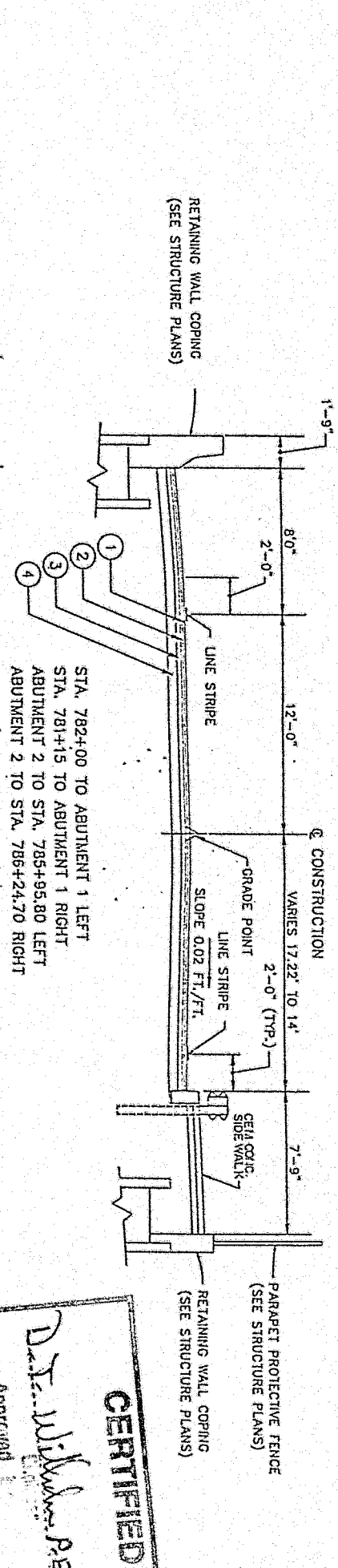
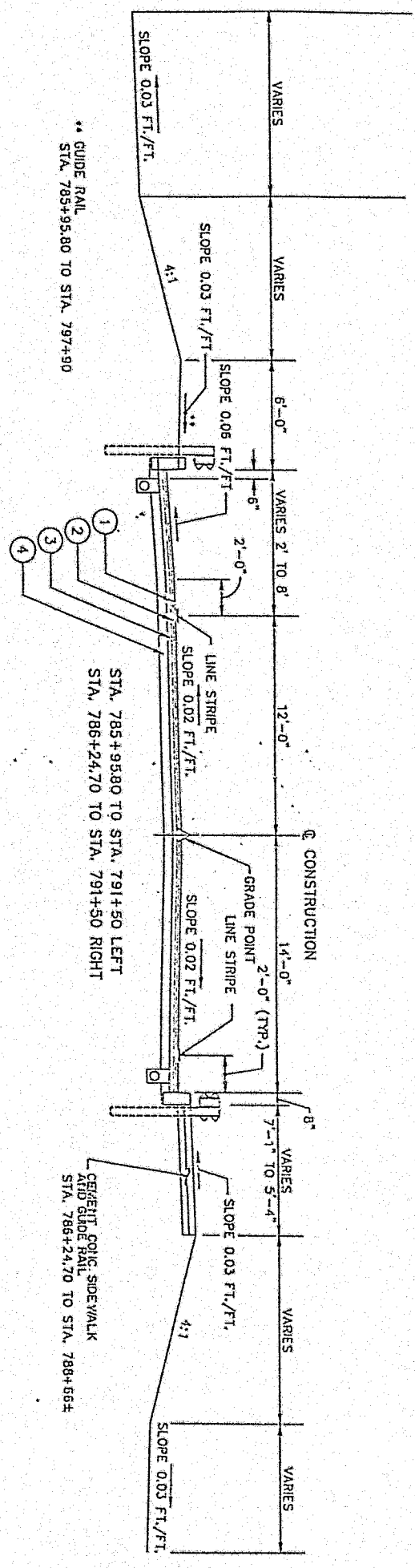
Approved by: *D. J. Whelan, P.E.*
 PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
 Secretary of Safety & Compliance

ATTEST: *John J. Myer*
 Secretary

SEP 17 1992

| | | | |
|-----------------|---------------------------|-------|---------|
| DISTRICT | COUNTY | ROUTE | SECTION |
| 6-0 | DELAWARE | 0320 | 125 |
| REVISION NUMBER | RADNOR TOWNSHIP REVISIONS | | |

| | | | | |
|-----------------|----------|----------|---------|---------|
| PROJECT | COUNTY | A.C.U.E | SECTION | DATE |
| 6-0 | DELAWARE | 0320 | 12S | 4 01 20 |
| RADNOR TOWNSHIP | | REVISION | DATE | BY |
| | | | | |



TYPICAL SECTIONS

CERTIFIED CORRECT PLANS

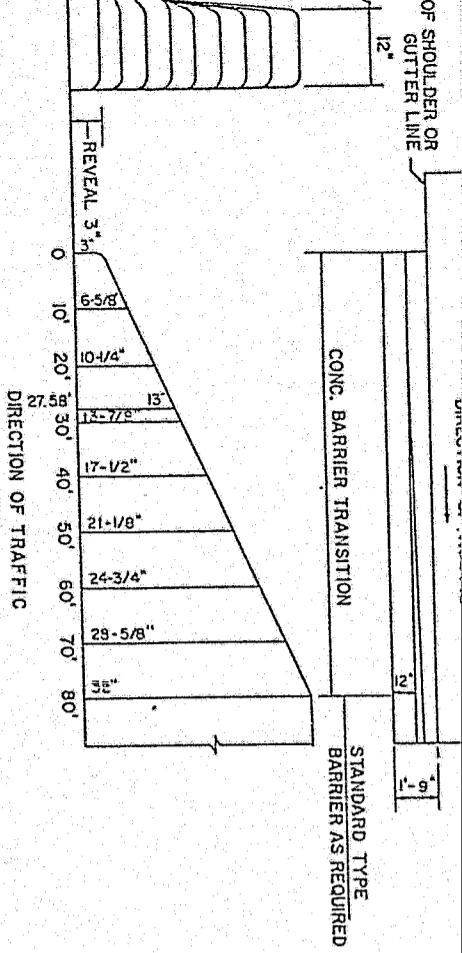
David W. Wilkerson, P.E.
Approved
FERRIS, PAULSON & COMPANY, INC.
Engineers of Safety & Compliance

Thomas J. Mielke
Secretary

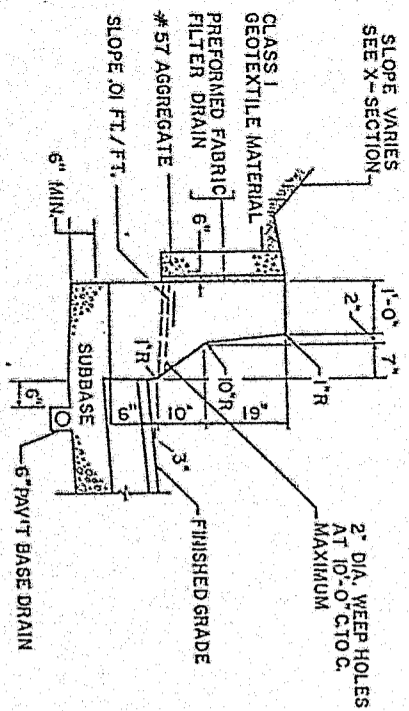
ATTEST: *John J. [Signature]*
Secretary

SEP 17 1992

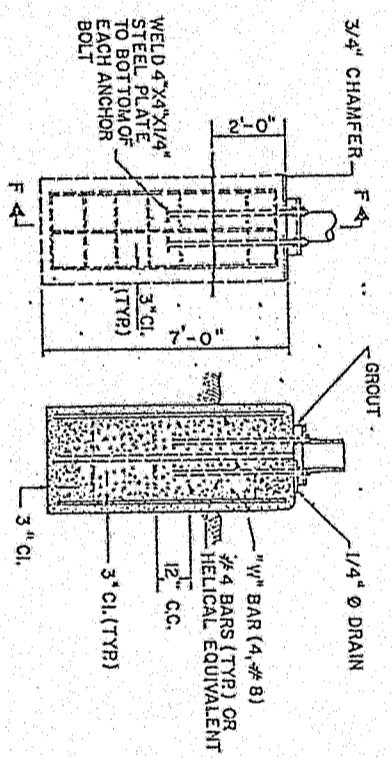
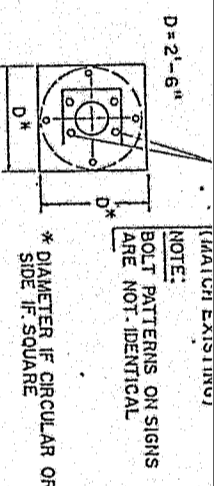
- LEGEND**
- DESCRIPTION
- 1 BIT. WEARING COURSE, 1D-2, 1-1/2" DEPTH, SRL-H
 - 2 BIT. BINDER COURSE, 1D-2, 2" DEPTH
 - 3 BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH
 - 4 SUBBASE, 6" DEPTH (NO. 2A)



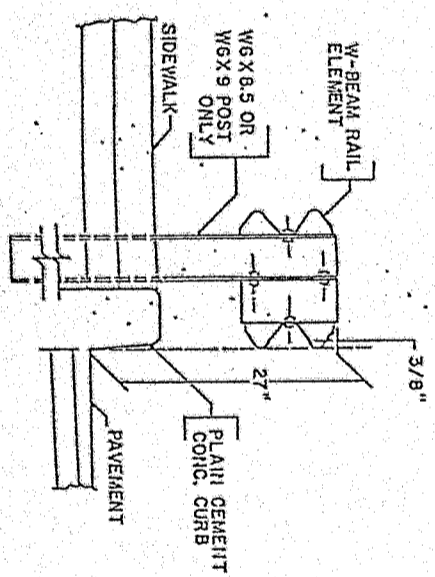
CONCRETE BARRIER - APPROACH END TRANSITION
ITEM NO. 9000-0013



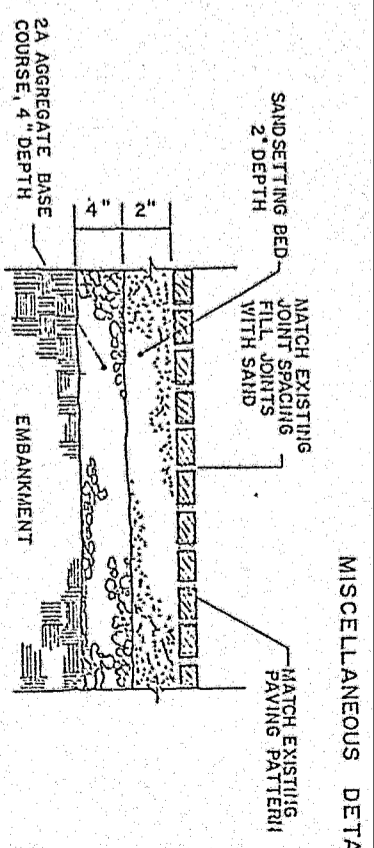
SINGLE FACE CONCRETE BARRIER
TYPE 1
ITEM NO. 9000-0012



SEPTA SIGN FOUNDATION
ITEM NO. 9000-0001



TYPE 2 - SC AND 2S
GUIDE RAIL - SPECIAL
ITEM NOS. 4620 - 1075
4620 - 1100



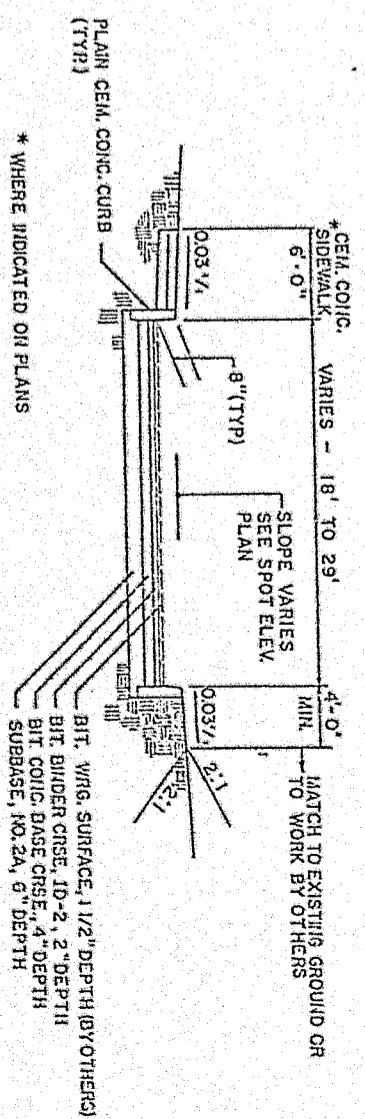
BRICK PAVEMENT, TYPE 1
BRICK PAVEMENT, TYPE 2
ITEM NO. 9000-0003 & 0004

CERTIFIED CORRECT PLANS

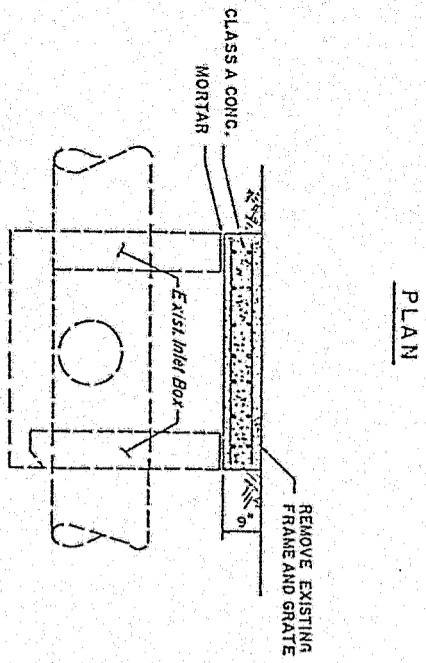
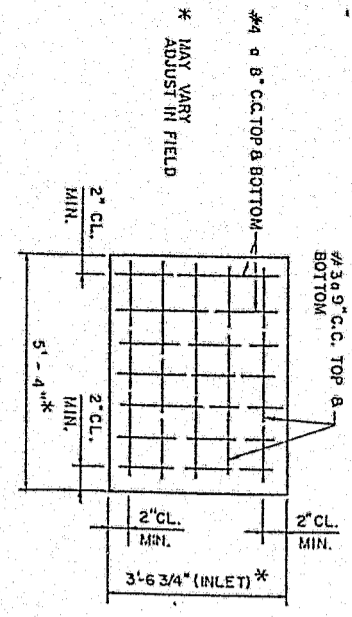
Approved: *Dr. William P. E.*
Eng. in Charge of Construction
Department of Safety & Compliance

ATTEST: *John J. ...*
Secretary

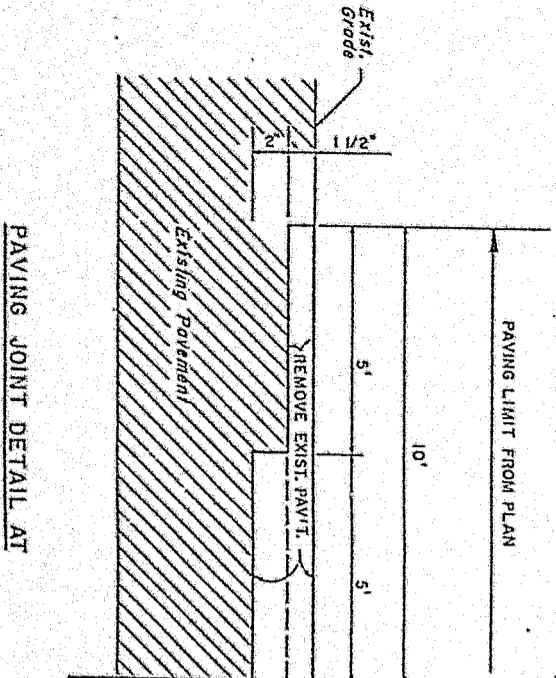
SEP 17 1992



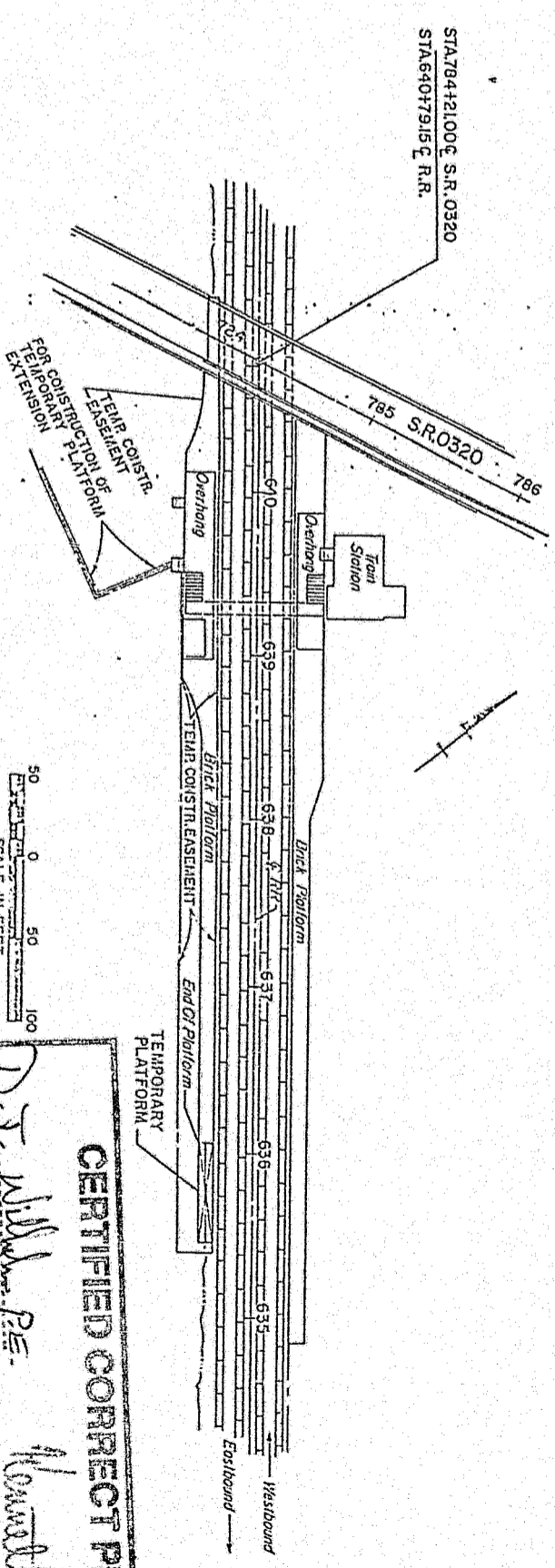
ACCESS DRIVES A, B, C & D
TYPICAL PAVEMENT SECTION



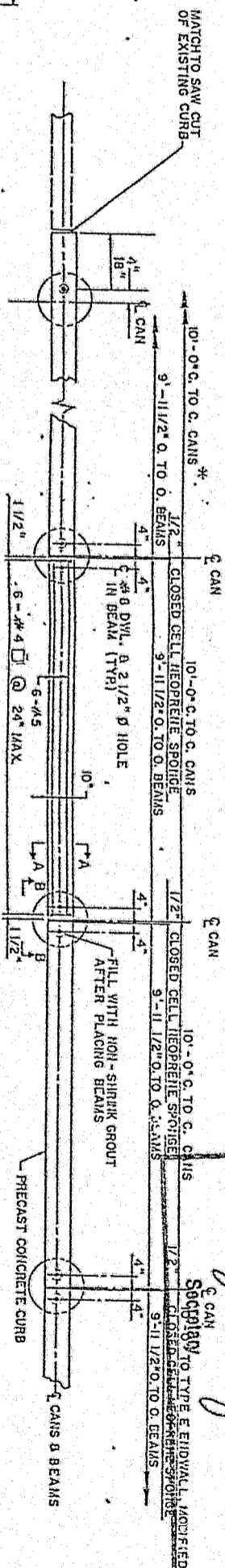
ELEVATION
CAP EXISTING INLET
ITEM 9000-0015



PAVING JOINT DETAIL AT
PAVING LIMITS

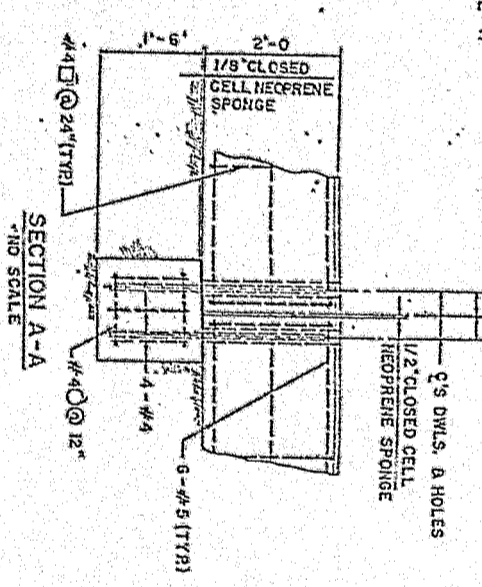


LOCATION FOR TEMPORARY PLATFORM
ITEM 9000 - 0005

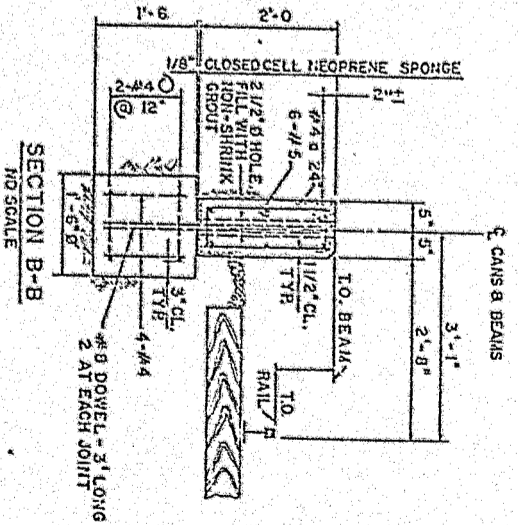


* LAST UNIT LENGTH MAY VARY
TIE TO EXISTING CURB

PLAN
1/10 SCALE



SECTION A-A
1/10 SCALE



SECTION B-B
1/10 SCALE

CERTIFIED CORRECT PLANS

Approved by: *D.T. [Signature]* P.E.
 Penna. Professional Engineer
 State of Safety & Compliance

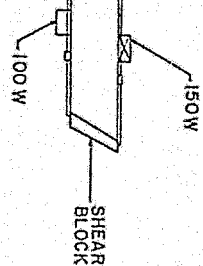
ATTEST: *[Signature]*
 Secretary to the Board

SEP 17 1992

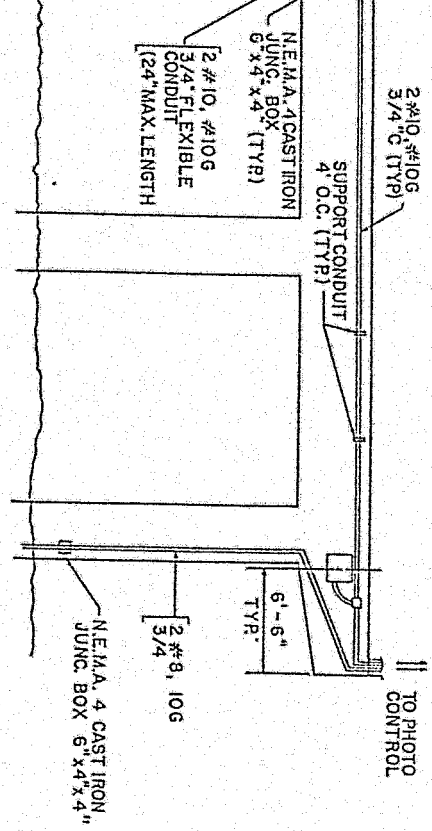
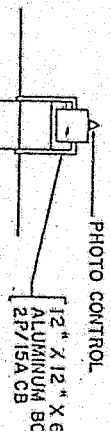
| REVISION NUMBER | DATE | BY |
|-----------------|------|----|
| | | |
| | | |

RADICOR TOWNSHIP

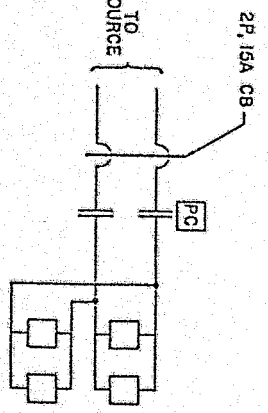
150 W. H.P.S. LUMINAIRE
PIER MOUNTED
↑ TOWARDS NORTH
ABUTMENT
↑ TOWARDS
R.R.



BRIDGE PARAPET



PIER NO. 2
NO SCALE



WIRING SCHEMATIC
NO SCALE

UNDERPASS LIGHTING DETAILS
ITEM NO. 8800-0001

CERTIFIED CORRECT PLAN

D. T. M... P.E.
 Approved
 PENNA. BOARD OF PROFESSIONAL ENGINEERS
 Bureau of Safety & Health

ATTEST: *John D. ...* Secretary
 SEP 17

SUMMARY SHEET
(SHEET 1 OF 2)

DR. J. W. P.E.

Committee Member
Department of Safety & Compliance

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

| QUANTITY | ITEM NUMBER | DESCRIPTION | DESIGN NUMBER | FOR TAB SEE SHEET |
|----------|-------------------------|--|---------------|-------------------|
| | 0201 L.S. | CLEARING AND GRUBBING | | NO TAB |
| | 0203 C.Y. | CLASS 1 EXCAVATION | | 10 |
| | 4203 * 0001 C.Y. | CLASS 1 EXCAVATION, SPECIAL | | 11 |
| | 0203 0004 C.Y. | CLASS 1B EXCAVATION | | 10 |
| | 0204 0130 C.Y. | CLASS 4 EXCAVATION | 12,13,14,15 | |
| | 4205 0100 C.Y. | FOREIGN BORROW EXCAVATION, MODIFIED | | 10 |
| | 4205 * 0200 C.Y. | SELECTED BORROW EXCAVATION, SPECIAL | | 11 |
| | 0208 * 0001 HOURS | SPECIAL ROLLING | | 11 |
| | 0212 0001 L.F. | GEOTEXTILE, CLASS 1 | | 14 |
| | 0212 0003 S.Y. | GEOTEXTILE, CLASS 2, TYPE A | | 15 |
| | 0305 0003 S.Y. | BITUMINOUS CONCRETE BASE COURSE, 4" DEPTH | | 10 |
| | 0350 0106 S.Y. | SUBBASE 6" DEPTH (NO. 2A) | | 10 |
| | 0420 0303 S.Y. | BITUMINOUS WEARING COURSE, 10-2, 1 1/2" DEPTH, SRL - H | | 10 |
| | 0421 0202 S.Y. | BITUMINOUS BINDER COURSE, 10-2, 2" DEPTH | | 10 |
| | 0505 0001 S.Y. | BRIDGE APPROACH SLAB | | 10 |
| | 0601 0022 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 12,13 | |
| | 0601 0022 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II | | 12,13 |
| | 0601 1424 L.F. | 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | 2 | 12,13 |
| | 0601 2734 L.F. | 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE | | 12,13 |
| | 0601 0024 L.F. | 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 12,13 | |
| | 0601 0026 L.F. | 30" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 12,13 | |
| | 0601 0052 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS III | | 12,13 |
| | 0601 1424 L.F. | 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | 3 | 12,13 |
| | 0601 2734 L.F. | 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE | | 12,13 |
| | 0601 0087 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV | | 12,13 |

| QUANTITY | ITEM NUMBER | DESCRIPTION | DESIGN NUMBER | FOR TAB SEE SHEET |
|----------|----------------------|--|---------------|-------------------|
| | 0601 0091 L.F. | 30" REINFORCED CEMENT CONCRETE PIPE, CLASS IV | | 102 |
| | 0601 1430 L.F. | 36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | | 102 |
| | 0601 2759 L.F. | 36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 14 GAGE | | 102 |
| | 0601 0122 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | 27 |
| | 0601 0124 L.F. | 24" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | 41 |
| | 0601 1427 L.F. | 27" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | | 41 |
| | 0601 0128 L.F. | 36" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | 108 |
| | 0601 0126 L.F. | 30" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | 24 |
| | 0601 1430 L.F. | 36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | | 24 |
| | 0601 2777 L.F. | 36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 12 GAGE | | 24 |
| | 0601 0595 L.F. | 24" CORRUGATED POLYETHYLENE (PE) CULVERT PIPE, TYPE S | | 90 |
| | 0601 0783 L.F. | 18" DUCTILE IRON PIPE | | 120 |
| | 0601 1424 L.F. | 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | | 14 |
| | 0601 1424 L.F. | 18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE | | 28 |
| | 0601 2734 L.F. | 18" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3" X 1/2" CORRUGATIONS), 16 GAGE | | 28 |
| | 0601 5400 C.Y. | COARSE AGGREGATE FOR PIPE TRENCH BACKFILL | | 288 |
| | 0601 5403 C.Y. | AGGREGATE FOR BEDDING | | 219 |
| | 0605 1300 EACH | TYPE A MANHOLE | | 8 |
| | 0605 1300 EACH | TYPE C INLET, BICYCLE SAFE GRATE | | 13 |
| | 0605 2070 EACH | TYPE M INLET, BICYCLE SAFE GRATE | | 2 |
| | 0607 0200 V.F. | REBUILT MANHOLE | | 13 |
| | 0608 0001 L.S. | MOBILIZATION | | |
| | 0609 0002 L.S. | INSPECTOR'S FIELD OFFICE AND INSPECTION FACILITIES, TYPE A | | |

| QUANTITY | ITEM NUMBER | DESCRIPTION | DESIGN NUMBER | FOR TAB SEE SHEET |
|----------|--------------------------|---|---------------|-------------------|
| | 0610 7002 L.F. | 6" PAVEMENT B. DRAIN | | 14 |
| | 0610 7002 L.F. | ADDITIONAL COARSE AGGREGATE FOR EXTRA-DEPTH PAVEMENT BASE DRAIN | | 14 |
| | 0615 0022 L.F. | 6" SUBSURFACE DRAIN OUTLETS | | 14 |
| | 0620 0400 EACH | TERMINAL SECTION, SINGLE | | 14 |
| | 0620 0401 EACH | TERMINAL SECTION, DOUBLE | | 14 |
| | 0620 0402 EACH | TERMINAL SECTION, BRIDGE CONNECTION | | 14 |
| | 0962 * 0620 L.F. | 4" WHITE TRAFFIC ZONE PAINT, TYPE II | | 15 |
| | 0962 * 0840 L.F. | 4" YELLOW TRAFFIC ZONE PAINT, TYPE II | | 15 |
| | 0620 1075 L.F. | TYPE 2-S GUIDE RAIL | | 14 |
| | 0620 1075 L.F. | TYPE 2-S GUIDE RAIL, SPECIAL | | 14 |
| | 0620 1100 L.F. | TYPE 2-SC GUIDE RAIL | | 14 |
| | 0620 1100 L.F. | TYPE 2-SC GUIDE RAIL, SPECIAL | | 14 |
| | 0620 1252 EACH | BREAKAWAY CABLE TERMINAL END TREATMENT | | 14 |
| | 0630 0001 L.F. | PLAIN CEMENT CONCRETE CURB | | 10 |
| | 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 |
| | 0694 0010 S.Y. | CURB CUT RAMPS, TYPE 1 SINGLE | | 10 |
| | 0703 0023 C.Y. | NO. 67 COARSE AGGREGATE | | 15 |
| | 0803 0001 C.Y. | PLACING STOCKPILED TOPSOIL | | NO TAB |
| | 0804 0013 L.B. | SEEDING AND SOIL SUPPLEMENTS - FORMULA D | | 15 |
| | 0804 0014 L.B. | SEEDING - FORMULA E | | 15 |
| | * 1694 * 0014 S.Y. | CURB CUT RAMPS, TYPE 3, MODIFIED | | 10 |
| | 0804 0051 ACRE | MOWING | | NO TAB |
| | 0805 0722 T.O.I. | MULCHING - STRAW | | NO TAB |
| | 0809 0019 S.Y. | MULCH CONTROL NETTING | | 15 |

SEP 17 1992

FOR TAB SEE SHEET

SECRETARY

SUMMARY SHEET
(SHEET 2 OF 2)

APPROVED BY
D.T. Wills P.E.
6/23/92

FORWARD BY
Howard R. Wiley
Director of Safety & Compliance

| | | | | | |
|-----------|-----|-------------------|----------|------|---------|
| PROJECT | 6-0 | COUNTY | DELAWARE | DATE | 9 OF 20 |
| REVISIONS | | RAVINDER TOWNSHIP | 0320 | 125 | |

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

| QUANTITY | ITEM NUMBER | DESCRIPTION | DESIGN NUMBER | FOR TAB SHEET | QUANTITY | ITEM NUMBER | DESCRIPTION | DESIGN NUMBER | FOR TAB SHEET |
|----------|--------------------------|--|---------------|---------------|----------|------------------------|--|---------------|---------------|
| 10 | 0810 0002 EACH | SELECTIVE TREE REMOVAL AND TRIMMING | 0001 | NO TAB | 100 | * 9000 0009 L.S. | INSTALLATION OF DELPHIA CABLE COMPANY FACILITY | 0009 | 11 |
| | 0845 0002 PDA | UNFORESEEN WATER POLLUTION CONTROL | | 15 | 100 | * 9000 0013 L.S. | PROTECTION OF COMMUNICATION AND SIGNALIZATION DUCTS AT STRUCTURE S-17313 | | 11 |
| 13 | 0850 0022 S.Y. | ROCK, CLASS R-4 | | 15 | 1 | * 9000 0013 L.F. | SINGLE FACE CONCRETE BARRIER, TYPE 1 | | 14 |
| 1412 | * 9865 * 0002 L.F. | SILT BARRIER FENCE, 36" HEIGHT | | 15 | 1 | * 9000 0015 EACH | APPROACH END TRANSITION (80 FEET) | | 14 |
| | * 0901 * 0001 L.S. | MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION | | NO TAB | 2 | * 9000 0014 EACH | DEWATERING FILTER | | 15 |
| 1 | 0901 0025 TON | CALCIUM CHLORIDE | | NO TAB | 1 | * 9000 0015 EACH | CAP EXISTING INLET | | 12,13 |
| 1 | 1001 0020 G.Y. | CLASS C CEMENT CONCRETE | | 12,13 | 100 | * 9000 0016 L.F. | PLATFORM CURB | | 15 |
| | * 1018 * 0001 L.S. | REMOVAL OF EXISTING BRIDGE | | 10 | 2 | * 9000 0018 EACH | ROCK CONSTRUCTION ENTRANCE | | 15 |
| 100 | * 1019 0010 S.Y. | PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) | | 11 | 1 | * 9000 0019 EACH | RISER PIPE ASSEMBLY, MODIFIED | | 15 |
| 300 | * 1090 0332 L.F. | EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS | | 11 | 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 VIRTRIFIED CLAY PIPE | | 12,13 |
| | | | | | 1 | * 9601 0643 E.A. | 1/32 BEHD, 8" EXTRA STRENGTH VIRTRIFIED 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 0994 FDA | REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO. (NO OUTAGE) | | 11 |
| 146 | * 8040 0001 L.S. | BRIDGE STRUCTURE, AS DESIGNED, S-17313 | | | | | | | |
| | * 1005 0430 L.S. | STEEL BEAM TEST PILES, HP12X53 | | | | | | | |
| | * 1005 1103 L.F. | STEEL BEAM BEARING PILES, HP12X53 | | | | | | | |
| 146 | * 1005 1153 EACH | STEEL BEAM PILE TIP REINFORCEMENT, HP12X53 | | | | | | | |
| B | * 9000 0011 L.S. | REDRIVING STEEL BEAM TEST PILES, HP12X53 | | | | | | | |
| | * 9000 0023 EACH | REDRIVING STEEL BEAM BEARING PILES, HP12X53 | | | | | | | |

DESIGN NUMBER ATTACHED
FOR TAB SHEET
SECRETARY

QUANTITY
SEP 17 1992
OFFICE OF DELPHIA CABLE COMPANY

TABULATION OF DRAINAGE QUANTITIES

(SHEET 1 OF 2)

* SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

| ITEM NUMBER | UNIT | REMARKS | SIDE | STATIONS | ROUTE | TOTALS | |
|-------------|------|--|------|----------|-------|--------|--------|
| | | | | | | QTY | AMOUNT |
| 9000 0017 | EACH | TYPE E ENDWALL, MODIFIED | | | | 1 | |
| 9000 0015 | EACH | CAP EXISTING INLET | | | | 1 | |
| 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 | | | | 1 | |
| 0605 2010 | EACH | TYPE C INLET, BICYCLE SAFE GRATE | | | | 1 | |
| 0605 1300 | EACH | TYPE A MANHOLE | | | | 6 | |
| 0601 * | L.F. | PIPE DESIGN NO. 6 | | | | 41 | |
| 0601 * | L.F. | PIPE DESIGN NO. 5 | | | | 24 | |
| 0601 * | L.F. | PIPE DESIGN NO. 4 | | | | 102 | |
| 0601 * | L.F. | PIPE DESIGN NO. 3 | | | | 51 | |
| 0601 * | L.F. | PIPE DESIGN NO. 2 | | | | 10 | |
| 0601 * | L.F. | PIPE DESIGN NO. 1 | | | | 28 | |
| 0601 5403 | C.Y. | AGGREGATE FOR BEDDING | | | | 3 | |
| 0601 5400 | C.Y. | COARSE AGGREGATE FOR PIPE TRENCH BACKFILL | | | | 7 | |
| 0601 1424 | L.F. | 18" COATED CORR. GALV. STEEL PIPE, TYPE 1, TYPE B (2 2/3x1/2" CORRUGATIONS), 16 GAGE | | | | 14 | |
| 0601 0128 | L.F. | 36" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | | | 98 | |
| 0601 0122 | L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS V | | | | 27 | |
| 0601 0087 | L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV | | | | 247 | |
| 0601 0026 | L.F. | 30" REINFORCED CEMENT CONCRETE PIPE, CLASS II | | | | 118 | |
| 0601 0024 | L.F. | 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II | | | | 81 | |
| 0601 0022 | L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II | | | | 34 | |
| 0204 0150 | C.Y. | CLASS 4 EXCAVATION | | | | 16 | |
| | | | | | | 135 | |
| | | | | | | 29 | |
| | | | | | | 135 | |
| | | | | | | 122 | |
| | | | | | | 20 | |
| | | | | | | 10 | |
| | | | | | | 10 | |
| | | | | | | 10 | |
| | | | | | | 10 | |
| | | | | | | 98 | |
| | | | | | | 207 | |
| | | | | | | 149 | |
| | | | | | | 66 | |
| | | | | | | 300 | |
| | | | | | | 72 | |
| | | | | | | 109 | |
| | | | | | | 120 | |
| | | | | | | 70 | |
| | | | | | | 42 | |
| | | | | | | 84 | |
| | | | | | | 6 | |
| | | | | | | 199 | |
| | | | | | | 18 | |
| | | | | | | 1731.5 | |
| | | | | | | | |

CERTIFIED CORRECT PLANS

Approved by *Dr. William P. E.*

William P. E.


Survey of Safety & Compliance

| | | | | |
|-----------------|------|-------|-----------|--------------|
| PROJECT | DATE | SCALE | SHEET NO. | TOTAL SHEETS |
| G-0 DELAWARE | 0320 | 12S | 12S | 12 OF 20 |
| RADNOR TOWNSHIP | | | | |
| DATE | BY | | | |

TABULATION OF DRAINAGE QUANTITIES

(SHEET 2 OF 2)

* SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

| ITEM NUMBER | REMARKS | UNIT | SIDE | STATIONS | ROUTE |
|-------------------|--|--------|----------|------------------|-----------|
| 9000 0017 EACH | TYPE E ENDWALL, MODIFIED | 1 | | | |
| 9000 0015 EACH | CAP EXISTING INLET | 1 | | | |
| 1001 0020 C.Y. | CLASS C CEMENT CONCRETE | 1 | | | |
| 0607 0200 V.F. | REBUILT MANHOLE | 1 | | | |
| 0601 0763 L.F. | 18" DUCTILE IRON PIPE | 60 | | | |
| 9601 0643 EACH | 1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE | 60 | | | |
| 9601 0642 L.F. | 8" EXTRA STRENGTH VITRIFIED CLAY PIPE | 12 | | | |
| 0605 2070 EACH | TYPE M INLET, BICYCLE SAFE GRATE | 50 | | | |
| 0605 2010 EACH | TYPE C INLET, BICYCLE SAFE GRATE | 1 | | | |
| 0605 1300 EACH | TYPE A MANHOLE | 2 | | | |
| 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 | 41 | | | |
| 0601 * L.F. | PIPE DESIGN NO. 1 | 5 | | | |
| 0601 5403 C.Y. | AGGREGATE FOR BEDDING | 7 | | | |
| 0601 5400 C.Y. | COARSE AGGREGATE FOR PIPE TRENCH BACKFILL | 7 | | | |
| 0601 1424 L.F. | 18" COATED CORR. GALV. STEEL PIPE, TYPE 1, TYPE B (2 2/3x1/2" CORRUGATIONS), 16 GAGE | 1 | | | |
| 0601 0128 L.F. | 36" REINFORCED CEMENT CONCRETE PIPE, CLASS V | 10 | | | |
| 0601 0122 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS V | 5 | | | |
| 0601 0087 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV | 7 | | | |
| 0601 0026 L.F. | 30" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 1 | | | |
| 0601 0024 L.F. | 24" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 3 | | | |
| 0601 0022 L.F. | 18" REINFORCED CEMENT CONCRETE PIPE, CLASS II | 3 | | | |
| 0204 0150 C.Y. | CLASS 4 EXCAVATION | 4 | | | |
| | ITEM NUMBER | | | | |
| | UNIT | | | | |
| | REMARKS | | | | |
| | SIDE | | | | |
| | STATIONS | | | | |
| | ROUTE | | | | |
| | BACKFILL INLET | | LT. | 786+82± | SR 0320 |
| | PIPE UNDER PLATFORM | | LT. | 785+91± | SR 0320 |
| | PIPE UNDER PLATFORM | | LT TO RT | 783+78 TO 784+05 | SR 0320 |
| | PIPE UNDER PLATFORM | | LT TO RT | 783+82 TO 784+09 | SR 0320 |
| | MEET EXISTING PIPE | | R | 6+05 | 'A' DRIVE |
| | MEET EXISTING PIPE | | R | 6+05 TO 6+50 | 'A' DRIVE |
| | LOW POINT INLET | | LT. | 788+46 | SR 0320 |
| | EXTRA DRAINAGE  | | RT. | 787+01 TO 787+11 | SR 0320 |
| | SHEET TOTALS | 160 | | | |
| | TOTALS | 1891.5 | | | |

CERTIFIED CORRECT PLANS

D.T. Wilkins P.E.

Thomas E. Nield

Approved by: Pursuant of Safety & Compliance

TABULATION OF GUIDE RAIL

| ITEM NUMBER | UNIT | REMARKS | SIDE | STATIONS | ROUTE |
|-------------------|-------|--|------|------------------|-----------|
| 9620 0001 EACH | 1 | APPROACH END TRANSITION WITH INLET PLACEMENT | | | |
| 9000 0013 EA. | 1 | APPROACH END TRANSITION (80 FEET) | | | |
| 9000 0012 L.F. | 100 | SINGLE FACE CONCRETE BARRIER, TYPE 1 | | | |
| 4620 1100 L.F. | 12.5 | TYPE 2-SC GUIDERAIL, SPECIAL | | | |
| 4620 1075 L.F. | 262.5 | TYPE 2-S GUIDERAIL, SPECIAL | | | |
| 0620 1252 EACH | 1 | BREAKAWAY CABLE TERMINAL END TREATMENT | | | |
| 0620 1100 L.F. | 12.5 | TYPE 2-SC GUIDE RAIL | | | |
| 0620 1075 L.F. | 50 | TYPE 2-S GUIDE RAIL | | | |
| 0620 0402 EACH | 2 | TERMINAL SECTION, BRIDGE CONNECTION | | | |
| 0620 0401 EACH | 1 | TERMINAL SECTION, DOUBLE | | | |
| 0620 0400 EACH | 1 | TERMINAL SECTION, SINGLE | | | |
| | | BURY END FULL HEIGHT | | | |
| | | RADIUS | LT. | 779+00 TO 780+80 | S.R. 0320 |
| | | RADIUS | RT. | 781+16 TO 783+82 | S.R. 0320 |
| | | RADIUS | LT. | 781+60 TO 781+93 | S.R. 0320 |
| | | RADIUS | LT. | 786+00 TO 787+00 | S.R. 0320 |
| | | RADIUS | RT. | 785+88 TO 788+66 | S.R. 0320 |
| | | TOTALS | | | |
| | | SHEET TOTALS | | | |

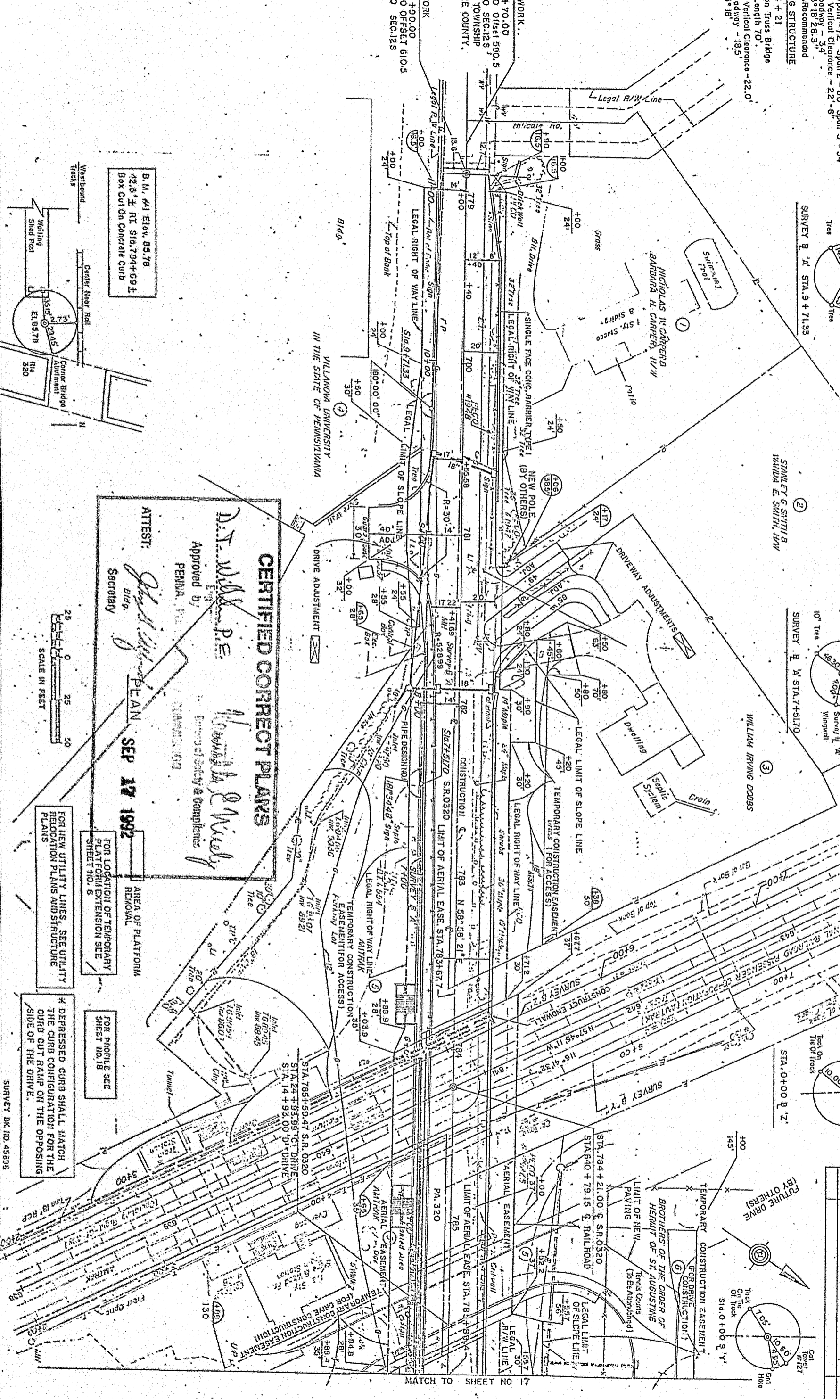
TABULATION OF PAVEMENT BASE DRAIN

| ITEM NUMBER | UNIT | REMARKS | SIDE | STATIONS | ROUTE |
|-------------------|------|---|------|------------------------|-----------|
| 0615 0022 L.F. | 16 | 6" SUSSURFACE DRAIN OUTLETS | | | |
| 0610 7400 C.Y. | 0.8 | ADDITIONAL COARSE AGGREGATE FOR EXTRA DEPTH PAVEMENT BASE DRAIN | | | |
| 0610 7002 L.F. | 1626 | 6" PAVEMENT BASE DRAIN | | | |
| 0212 0001 L.F. | 1626 | GEOTEXTILE, CLASS 1 | | | |
| 0204 0150 C.Y. | 0.8 | CLASS 4 EXCAVATION | | | |
| | | CONNECT TO INLET | LT. | 778+90 TO 780+48.81 | ROUTE 320 |
| | | CONNECT TO INLET | RT. | 778+90 TO 780+51 | |
| | | EXTRA DEPTH, CONNECT TO INLET | LT. | 780+48.81 TO 780+61 | |
| | | EXTRA DEPTH, CONNECT TO INLET | RT. | 780+55 TO 780+77.21 | |
| | | EXTRA DEPTH | LT. | 780+65 TO 780+77.21 | |
| | | | LT. | 780+77.21 TO 781+90 | |
| | | | RT. | 780+77.21 TO 781+88 | |
| | | CONNECT TO INLET | LT. | 786+08 TO 787+31 | |
| | | | RT. | 786+24.7 TO 787+94 | |
| | | EXTRA DEPTH, CONNECT TO INLET | RT. | 787+94 TO 788+16 | |
| | | | LT. | 787+35 TO 787+94 | |
| | | EXTRA DEPTH, CONNECT TO INLET | LT. | 787+94 TO 788+16.32 | |
| | | EXTRA DEPTH, CONNECT TO INLET | RT. | 788+20 TO 788+22.22 | |
| | | EXTRA DEPTH, CONNECT TO INLET | RT. | 788+22.22 TO 788+91.1 | |
| | | EXTRA DEPTH, CONNECT TO INLET | LT. | 788+20.22 TO 788+22.22 | |
| | | | LT. | 788+22.22 TO 791+80 | |
| | | CONNECT TO MANHOLE | RT. | 788+97 TO 789+10 | |
| | | | RT. | 789+10 TO 791+44 | |
| | | TOTALS | | | |
| | | SHEET TOTALS | | | |

CERTIFIED CORRECT PLANS

Dr. [Signature] P.E.
[Signature]
[Signature]

Division of Safety & Control



SURVEY B 1/4 STA. 9 + 71.33

STANLEY G. SMITH & BROTHERS
HANNA E. SMITH, P.E.

SURVEY B 1/4 STA. 7 + 51.70

WILLIAM IRVING DOBBS

STA. 0+00 B 1/4

STA. 784 + 21.00 C.S.R. 0320

STA. 640 + 79.15 C.RAILROAD

PA. 320

CERTIFIED CORRECT PLANS

Approved by: *D.T. WILKINS, P.E.*
 Secretary: *William H. WIELY*
 PENNA. BOARD OF SURVEYORS
 Department of Safety & Compliance
 COMMERCIAL BUILDING

ATTEST: *John J. ...*
 Secretary

PLAN SEP 17 1992

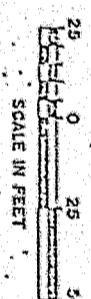
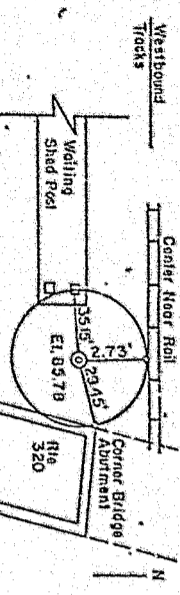
AREA OF PLATFORM REMOVAL

FOR PROFILE SEE SHEET NO. 18

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

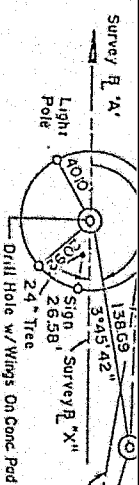
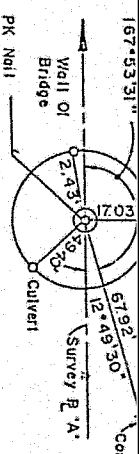
* DEPRESSED CURB SHALL MATCH THE CURB CONFIGURATION FOR THE CURB CUT RAMP ON THE OPPOSING SIDE OF THE DRIVE.

B.M. #41 Elev. 85.78
 42.5' ± RT. Sta. 794+69 ±
 Box Cut On Concrete Curb



MATCH TO SHEET NO 17

SURVEY BK. NO. 45835



SURVEY P 'A' STA. 3+63.86

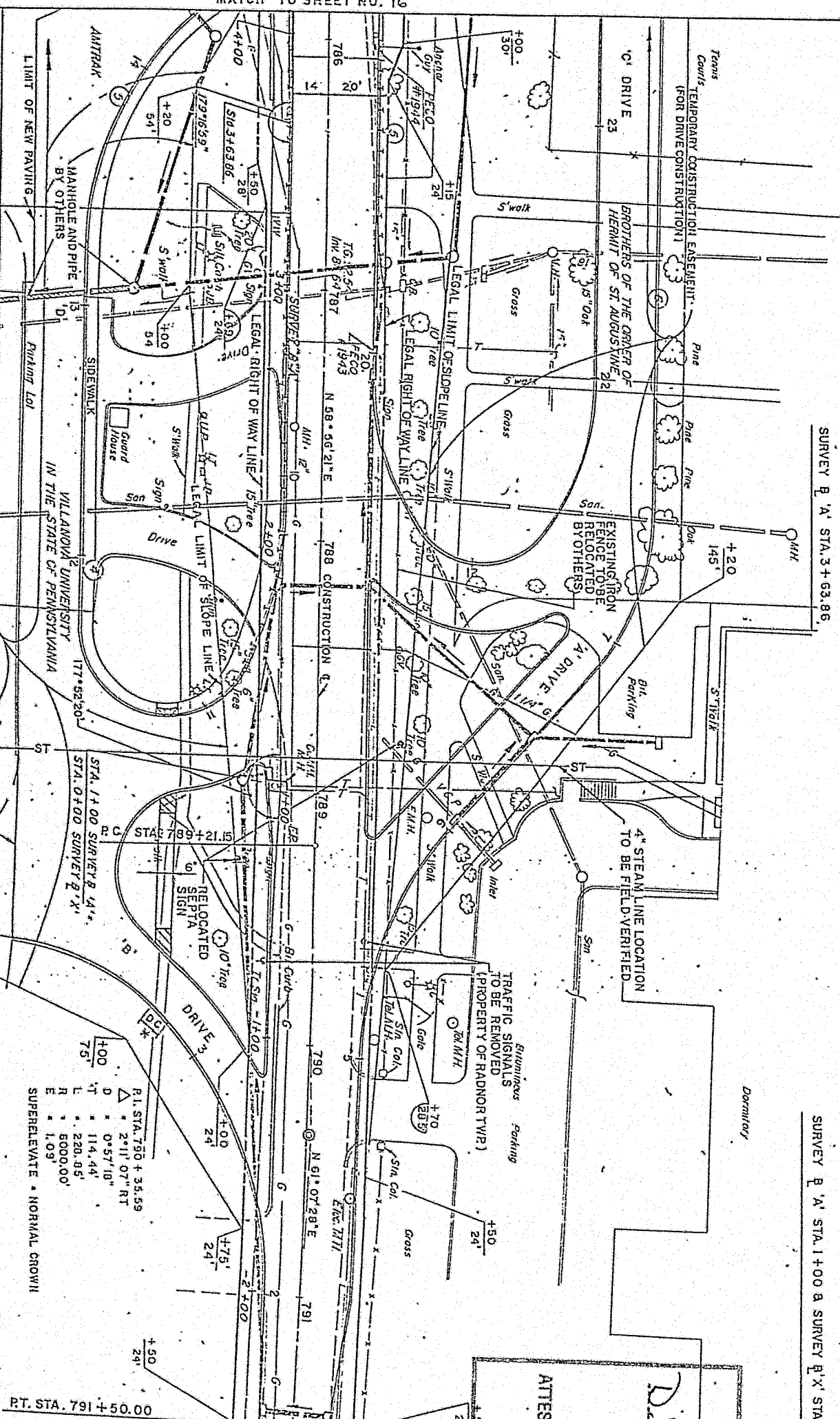
SURVEY P 'A' STA. 1+00 & SURVEY P 'X' STA. 0+00

CERTIFIED CORRECT PLANS

D. F. WILLY, P.E.
 Approved Engineer
 PENN. COMMISSION
 Director of Safety & Compliance

ATTEST: *[Signature]*
 Secretary
 SEP 17 1992

LIMIT OF WORK
 STA. 792+00
 SEG. 0320 OFFSET 1920.5
 S.R. 0320 SEC. 125
 RADNOR TOWNSHIP
 DELAWARE COUNTY

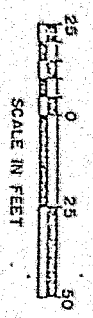


| | | |
|-----------------------|---|-------------|
| R.I. STA. 790 + 35.59 | D | 0°57'18" |
| | T | 2°11'07" RT |
| | E | 114.44' |
| | F | 220.85' |
| | G | 8000.00' |
| | H | 1.09' |
| | E | 1.09' |

SUPERELEVATE * NORMAL CROWN

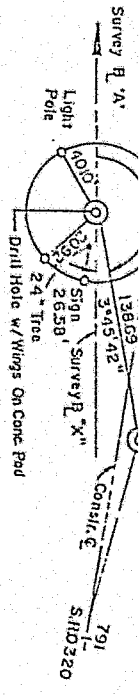
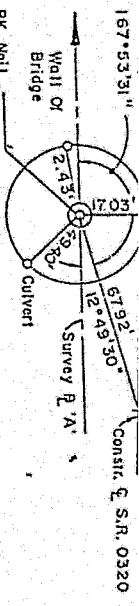
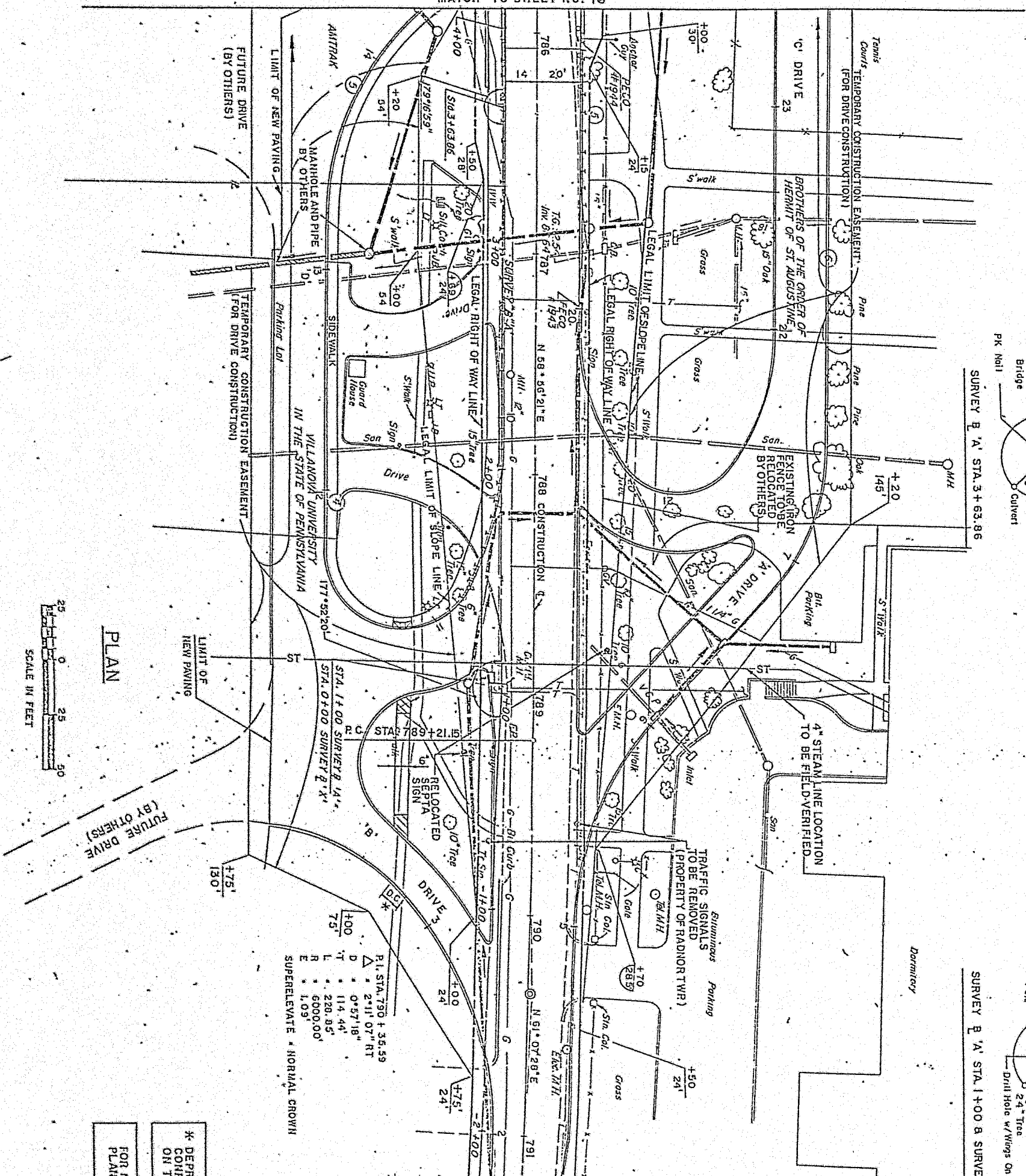
STOP WORK
 STA. 791 + 50.00
 SEG. 0320 OFFSET 1870.5
 S.R. 0320 SEC. 125

PLAN

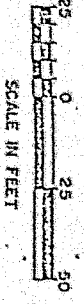


* DEPRESSED CURB SHALL MATCH THE CURB CONFIGURATION FOR THE CURB CUT RAMP ON THE OPPOSING SIDE OF THE DRIVE.
 FOR NEW UTILITY LINES SEE UTILITY RELOCATION PLANS AND STRUCTURE PLANS

FOR I&P PROFILE SEE SHEET NO. 18
 FOR PAVT CONTROL OF DRIVES A, B, C & D SEE SHEET NO. 20
 FOR GEOMETRY OF DRIVES A, B, C & D SEE SHEET NO. 19



PLAN



* 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 1/8\"/>

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

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

RT. STA. 791 + 50.00

STOP WORK
STA. 791 + 50.00
SEC. 0320 OFFSET 1870.5
S.R. 0320 SEC. 125

RI. STA. 790 + 35.59
D * 2°11'07\"/>

SUPERELEVATE * NORMAL CROWN

CERTIFIED CORRECT PLANS

D. I. Wilkins, P.E.
Approved
PENNSYLVANIA CIVIL ENGINEERING BOARD

James E. Muelly
Secretary
Bureau of Safety & Compliance
PENNSYLVANIA CIVIL ENGINEERING BOARD

ATTEST: *[Signature]*
Secretary

STA. 792 + 00
SEC. 0320 OFFSET 1920.5
S.R. 0320 SEC. 125
RADNOR TOWNSHIP
DELAWARE COUNTY

SEP 17 1992

LIMIT OF WORK
 STA. 778 + 7.0 OFFSET 590.5
 S.R. 0320 SEC. 12S R/W
 RADNOR TOWNSHIP
 DELAWARE COUNTY

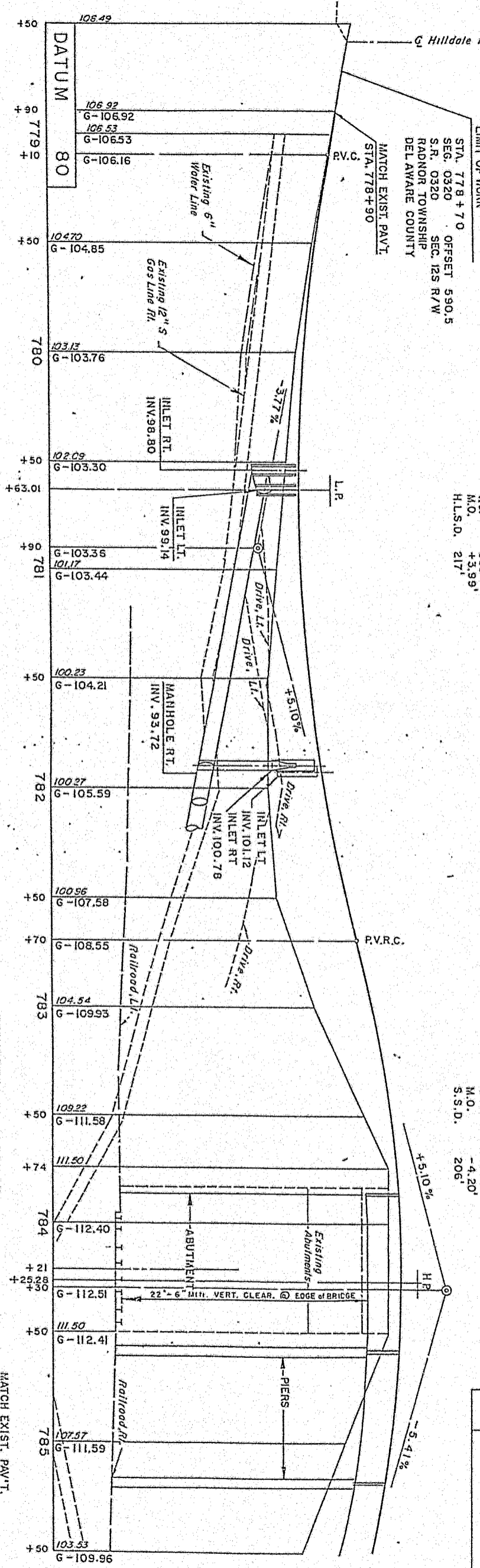
M.O. +3.99'
 H.L.S.D. 217'

M.O. -4.20'
 S.S.D. 206'

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

P.V.R.C.

H.P.



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

P.V.I. STA. 788+20
 ELEV. 55.61
 V.C. 460'
 M.O. +6.56'
 H.L.S.D. 216'

CERTIFIED CORRECT PLANS

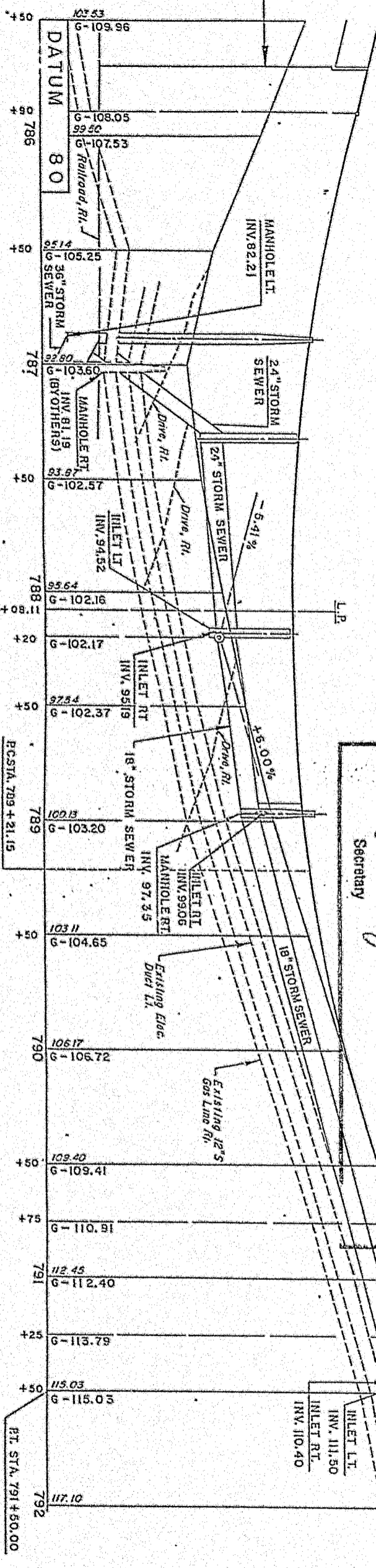
D. T. Williams, P.E.
 Approved
 PENNSYLVANIA ENGINEERING COMMISSION
 Department of Safety & Compliance

ATTEST:
[Signature]
 Secretary

SEP 17 1992

REPLACEMENT OF EXISTING PAVEMENT

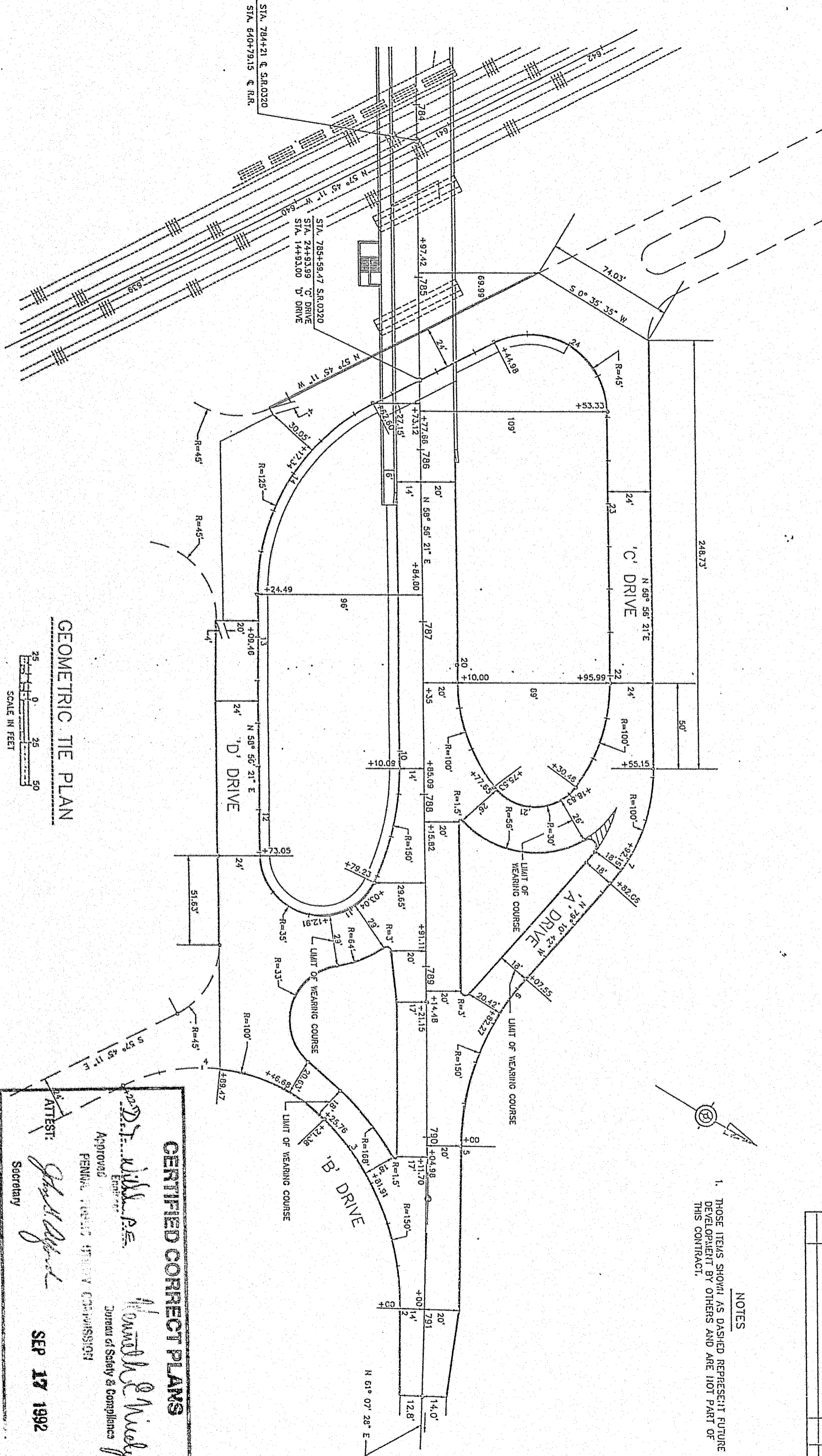
LIMIT OF WORK
 STA. 792+00
 SEG. 0320 OFFSET 1920.5
 S.R. 0320 SEC. 12S R/W
 RADNOR TOWNSHIP
 DELAWARE COUNTY



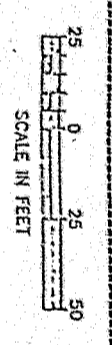
LIMIT OF WORK
 STA. 791+50.00

| | | |
|------|----------|----|
| DATE | REVISION | BY |
| | | |
| | | |

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



GEOMETRIC TIE PLAN



CERTIFIED CORRECT PLANS

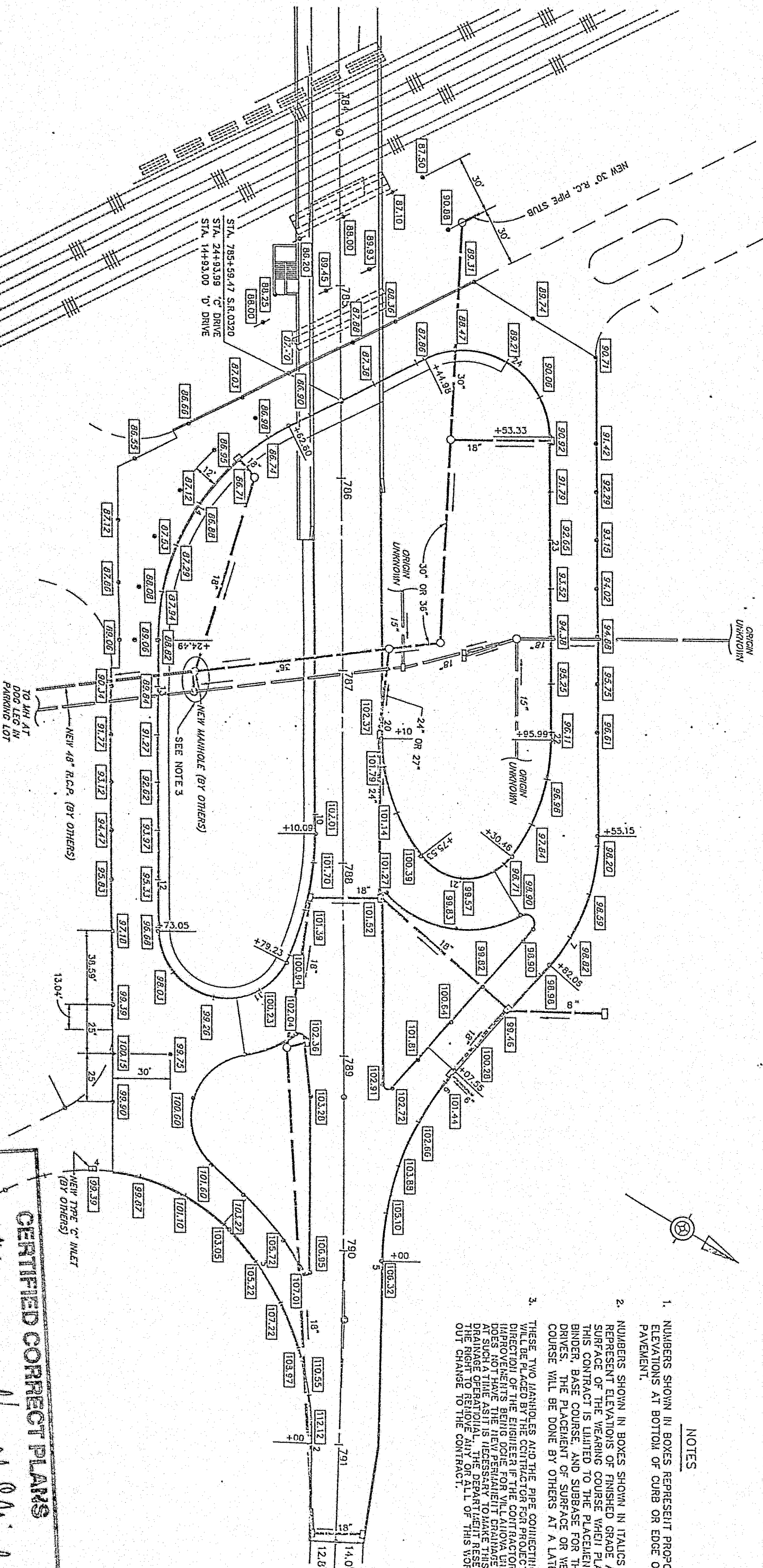
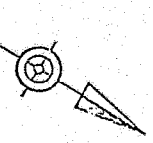
Approved: *William P.E.*
 PENNSYLVANIA STREET COMMISSION
 Bureau of Safety & Compliance
 Secretary: *John J. [Signature]*

ATTEST: *[Signature]*
 SEP 17 1992

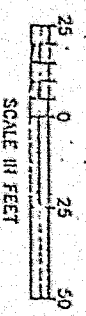
| | |
|----------------|-----------------|
| PROJECT NUMBER | 6-0 |
| DATE | DELAYARE |
| REVISION | 0320 |
| DATE | 12S |
| BY | 20 CI |
| | RAONCH TOWNSHIP |

NOTES

1. NUMBERS SHOWN IN BOXES REPRESENT PROPOSED ELEVATIONS AT BOTTOM OF CURB OR EDGE OF PAVEMENT.
2. NUMBERS 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 PROJECT AT THE DIRECTION OF THE ENGINEER IF THE CONTRACTOR FOR THE IMPROVEMENTS BEING DONE FOR WILLOW UNIVERSITY DOES NOT HAVE THE NEW PERMANENT DRAINAGE INSTALLED AT SUCH A TIME AS IT IS NECESSARY TO MAKE THIS PROJECTS DRAINAGE OPERATIONAL. THE DEPARTMENT RESERVES THE RIGHT TO REMOVE ANY OR ALL OF THIS WORK WITH-OUT CHANGE TO THE CONTRACT.



SPOT ELEVATION PLAN



CERTIFIED CORRECT PLANS

Howard M. Wiedy
 PE
 Council of Safety & Compliance

Approved by:
 PENNA. ROAD & STREET COMMISSION

ATTYST: *John R. [Signature]*

Secretary

SEP 17 1992

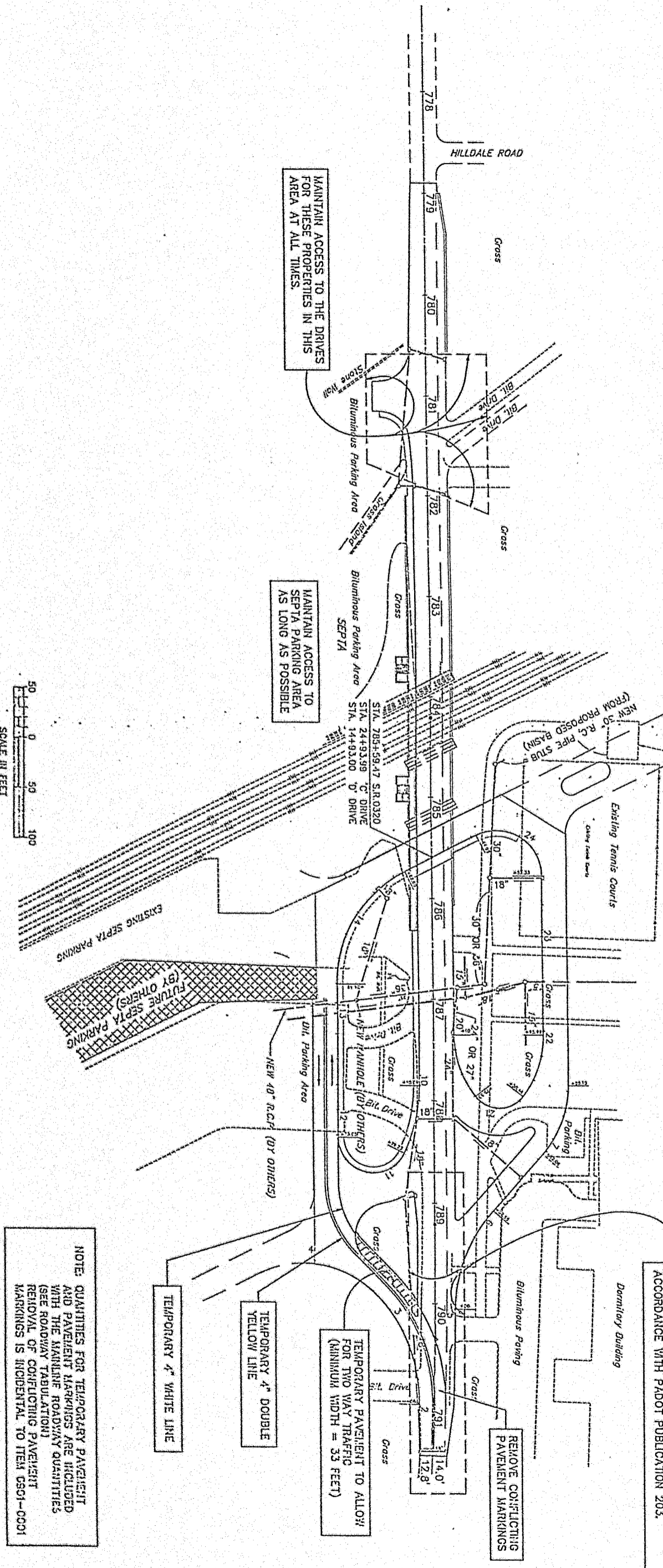
TABLATION OF EXISTING SIGNS
(FOR INFORMATION ONLY)

| KEY | ITEM | DESCRIPTION | SIZE | UNIT | QUAN. | KEY | ITEM | DESCRIPTION | SIZE | UNIT | QUAN. |
|------------|--------|------------------------------|---------|------|-------|-------------------|---------|---|------------------|------|-------|
| C | G20-BL | DETOUR ON LEFT ARROW | 48"x18" | EACH | 1 | A | R11-2 | ROAD CLOSED | 48"x36" | EACH | 1 |
| B | G20-GR | DETOUR ON RIGHT ARROW | 48"x18" | EACH | 1 | B,C,N,Y | R11-3 | ROAD CLOSED, YIELD(S) AHEAD, LOCAL TRAFFIC ONLY | 60"x20" | EACH | 4 |
| H0 | G20-7 | VOID DETOUR | 24"x18" | EACH | 2 | B,C,N,Y | R11-3-1 | BRIDGE OUT | 48"x12" | EACH | 4 |
| D-1-10-V-2 | M1-6 | 30° IN REVERSE | 30"x24" | EACH | 20 | T,X,Y-2 | W20-2 | DETOUR | 36"x33" | EACH | 3 |
| D-1-10-V-1 | M3-1 | "RIGHT" | 24"x12" | EACH | 9 | Y-1 | W20-2 | DETOUR | 48"x19" | EACH | 1 |
| D-1-10-V-1 | M3-3 | "LEFT" | 24"x12" | EACH | 10 | Q,R,S | W20-3 | ROAD CLOSED ** FT. | 36"x28" | EACH | 3 |
| D-1-10-V-1 | M4-8 | DETOUR | 24"x12" | EACH | 14 | S | W20-1-1 | "50°" | (SEE ITEM W20-3) | 1 | |
| D-1-10-V-1 | M5-11 | RIGHT ANGLE LEFT TURN ARROW | 21"x15" | EACH | 2 | R | W20-1-2 | "100°" | (SEE ITEM W20-3) | 1 | |
| D-1-10-V-1 | M5-18 | RIGHT ANGLE RIGHT TURN ARROW | 21"x15" | EACH | 2 | Q | W20-1-3 | "150°" | (SEE ITEM W20-3) | 1 | |
| F-1-L-1 | M5-20 | 45 DEGREE RIGHT TURN ARROW | 21"x15" | EACH | 2 | T,X,Y-1,Y-2 | W20-1-5 | "AHEAD" | (SEE ITEM W20-2) | 4 | |
| D,E,J,K | M6-1 | SIDE POSITIONAL ARROW | 21"x15" | EACH | 4 | A-G,O-V,H,Y-1,Y-2 | U211 | UNIT | N/A | EACH | 13 |
| F,L | M3-2B | 45 DEGREE RIGHT ARROW | 21"x15" | EACH | 2 | A-C,W,Y | | TYPE III BARRICADE | N/A | EACH | 5 |
| G,H | M6-5 | STRAIGHT AHEAD ARROW | 21"x15" | EACH | 2 | | | | (SEE ITEM R11-3) | | |

CERTIFIED CORRECT PLANS
 Approved by: *D.J. [Signature]* P.E.
 Engineer
 PENNA PUBLIC UTILITY COMMISSION
 Bureau of Safety & Compliance
Howard E. Nisley
 ATTEST: *[Signature]* Secretary
 SEP 17 1992

TRAFFIC CONTROL PLAN

| DISTRICT | COUNTY | ROUTE | SECTION | SHEET |
|-----------------|----------|-------|---------|--------|
| 6-0 | DELAWARE | Q320 | 12S | 2 OF 2 |
| RADNOR TOWNSHIP | | | | |
| APPROVER | DESIGNER | DATE | BY | |



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

MAINTAIN ACCESS TO SEPTA PARKING AREA AS LONG AS POSSIBLE.

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 PA001 PUBLICATION 203.

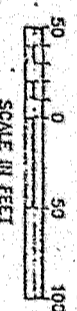
TEMPORARY 4" DOUBLE YELLOW LINE

TEMPORARY 4" WHITE LINE

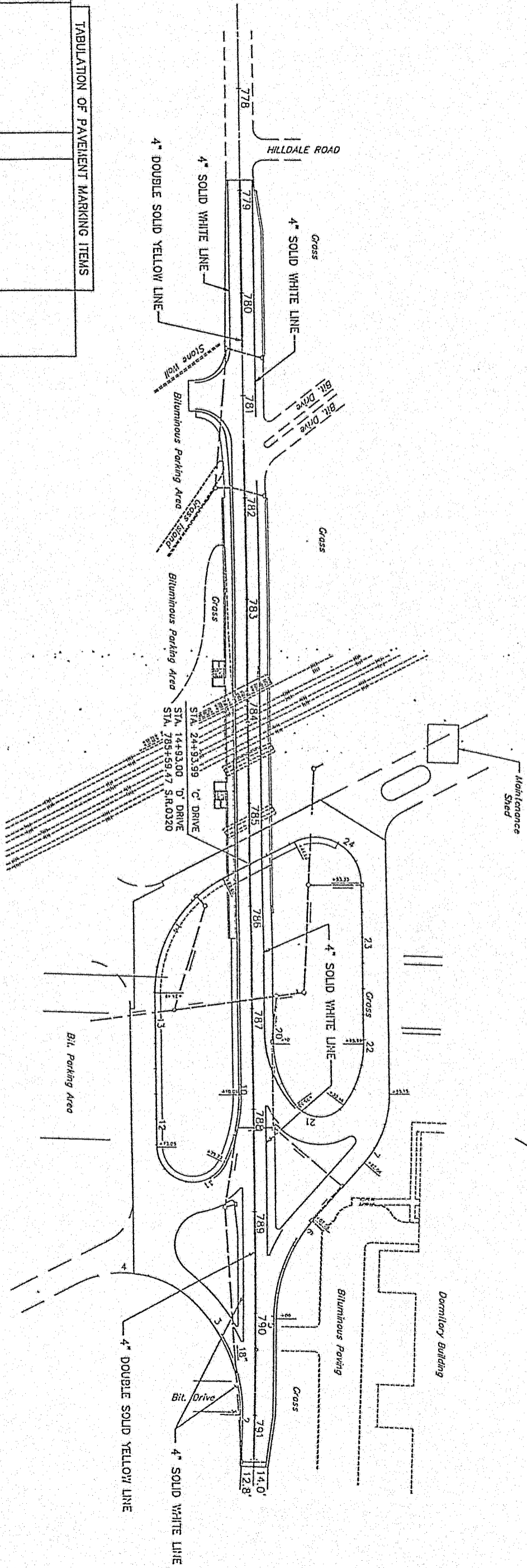
TEMPORARY PAVEMENT TO ALLOW FOR TWO WAY TRAFFIC (MINIMUM WIDTH = 33 FEET)

REMOVE COLLECTING PAVEMENT MARKINGS

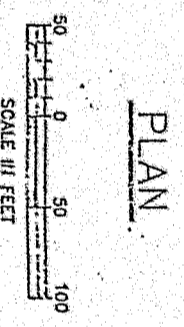
NOTE: QUANTITIES FOR TEMPORARY PAVEMENT AND PAVEMENT MARKINGS ARE INCLUDED WITH THE MAINLINE ROADWAY QUANTITIES (SEE ROADWAY TABULATION). REMOVAL OF COLLECTING PAVEMENT MARKINGS IS INCIDENTAL TO ITEM CSC1-CC01



PAVEMENT MARKING PLAN



| ITEM NUMBER | REMARKS | SIDE | STATIONS | ROUTE |
|-----------------------|---------------------------------------|------|------------------|-----------|
| 0852 06-10 L.F. | 4" YELLOW TRAFFIC ZONE PAINT, TYPE II | | | |
| 0852 06-10 L.F. | 4" WHITE TRAFFIC ZONE PAINT, TYPE II | | | |
| 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 |
| 166 | LANE EDGE | RT. | 778+90 TO 780+56 | S.R. 0320 |
| 843 | 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 | C. | 778+90 TO 791+50 | S.R. 0320 |



CERTIFIED CORRECT PLANS

D. J. [Signature]
 Approved by
 ENGINEER
 PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

Thomas S. [Signature]
 Director of Safety & Compliance

ATTEST: *[Signature]*
 Secretary

SEP 17 1992

| | | | | | |
|-----|-----------------|------|-----|------|-----|
| 6-0 | DELAWARE | 0320 | 125 | 1 | 3 |
| | RADNOR TOWNSHIP | | | | |
| | PROJECT | | | DATE | SIT |

EROSION AND SEDIMENT
POLLUTION CONTROL PLAN

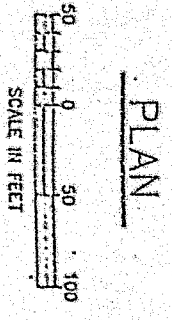
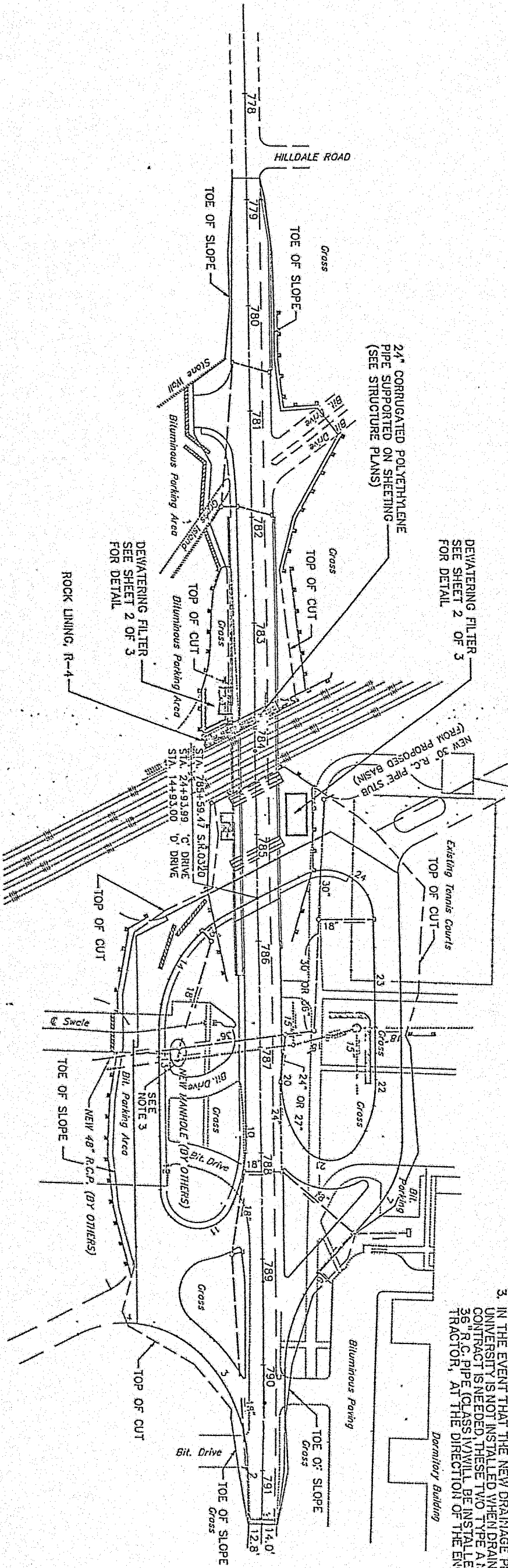
NOTES

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 CONTROL 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.

CERTIFIED CORRECT PLANS

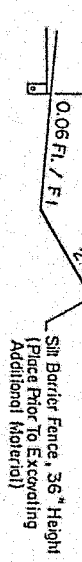
Approved by *D. J. Willy* P.E. *Howard S. Nisely*
 ENGINEER
 PENNA. FIELD OFFICE / COMMISSION
 Bureau of Safety & Compliance

ATTEST: *John D. Spink* Secretary
 SEP 17 1992

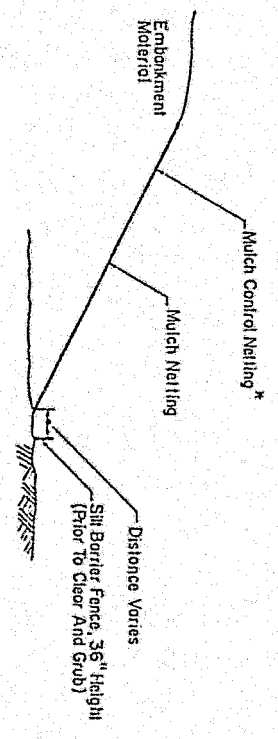


LEGEND

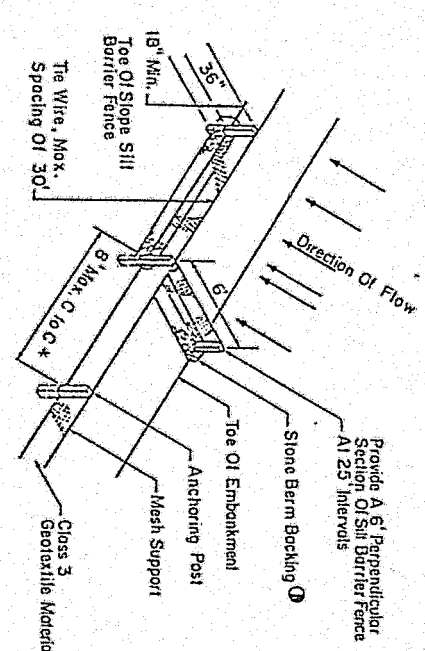
| SYMBOL | DESCRIPTION |
|--------|--|
| | ROCK LINING AT PIPE OUTLET, (10'x10') |
| | ASHTO NO. 67 STONE BERM |
| | 36" WIRE MESH REINFORCED SILT FENCE WITH 6" PERPENDICULAR INTERRUPTS @ 25' |
| | RISER PIPE ASSEMBLY, MODIFIED |
| | EARTH RETENTION BERM |



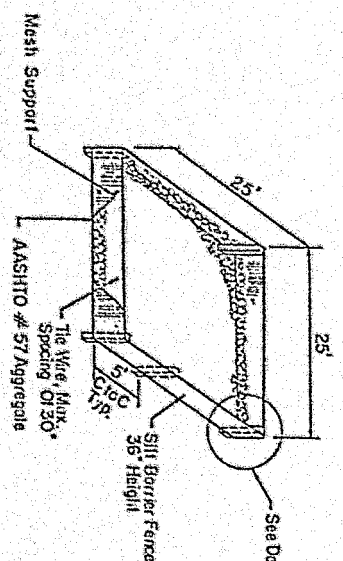
CUT SLOPE STABILIZATION



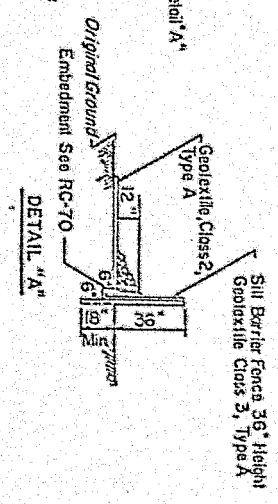
FILL SLOPE STABILIZATION



SILT BARRIER FENCE



DEWATERING FILTER
ITEM NO. 9000-0014



* Mesh Support Required
* Back Perpendicular Section And 8' Of Stream Run With An 8' Berm Of AASHTO # 57 To Prevent Blowout. Use 0.2 Cubic Yards Per Interceptor.

GENERAL NOTES

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

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

1. THE SPECIAL PROVISIONS OF THIS CONTRACT
2. PADOT PUBLICATION 408, ENTITLED SPECIFICATIONS
3. PADOT PUBLICATION 35, APPROVED CONSTRUCTION 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 MAINTENANCE EXCEPT FOR PERIODIC MOWING IS ANTICIPATED. UPON ACCEPTANCE BY THE OWNER, THE MAINTENANCE 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 MAINTENANCE.

INSPECT ALL FACILITIES AT THE END OF EACH STORAGE 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 SEEDDED.

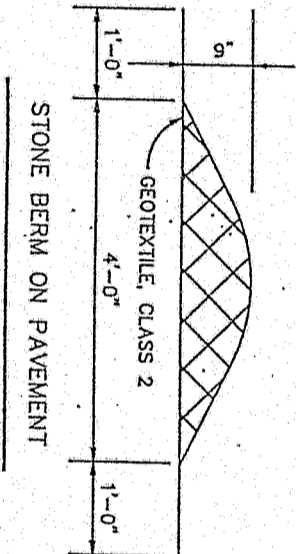
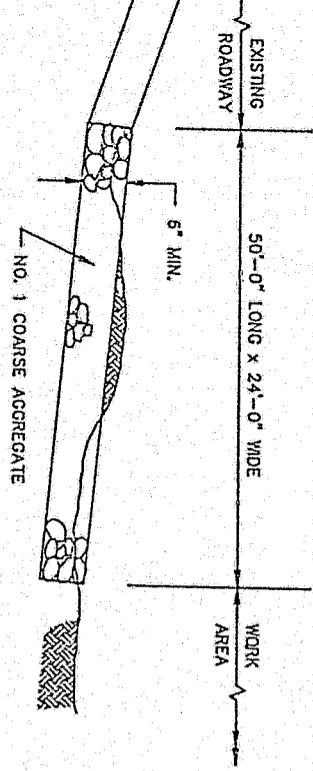
ANY SILT, SEDIMENT AND MUD LEAVING THE SITE MUST BE CONSTRUCTED AS DAMAGE TO NEIGHBORING PROPERTY AND IT WILL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN UP THE SEDIMENT AND RESTORE THE PROPERTY TO ITS ORIGINAL CONDITION, TO THE SATISFACTION OF THE NEIGHBORING PROPERTY OWNER, UPON OBTAINING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

CERTIFIED CORRECT PLANS

DT
W. J. P. E.
W. J. P. E.

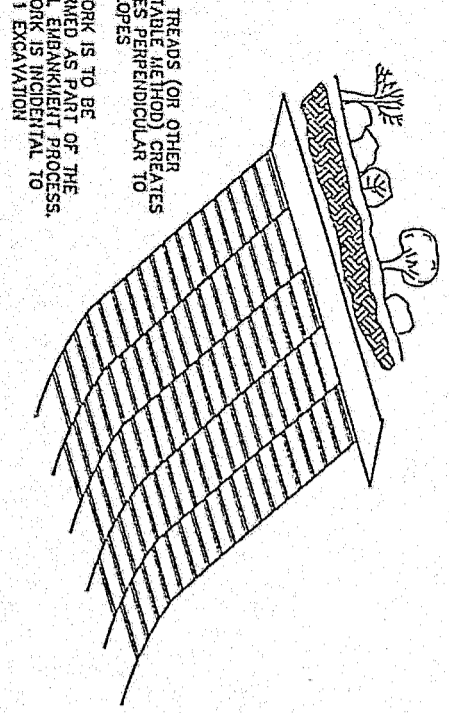
EROSION AND SEDIMENT
POLLUTION CONTROL PLAN
DETAILS



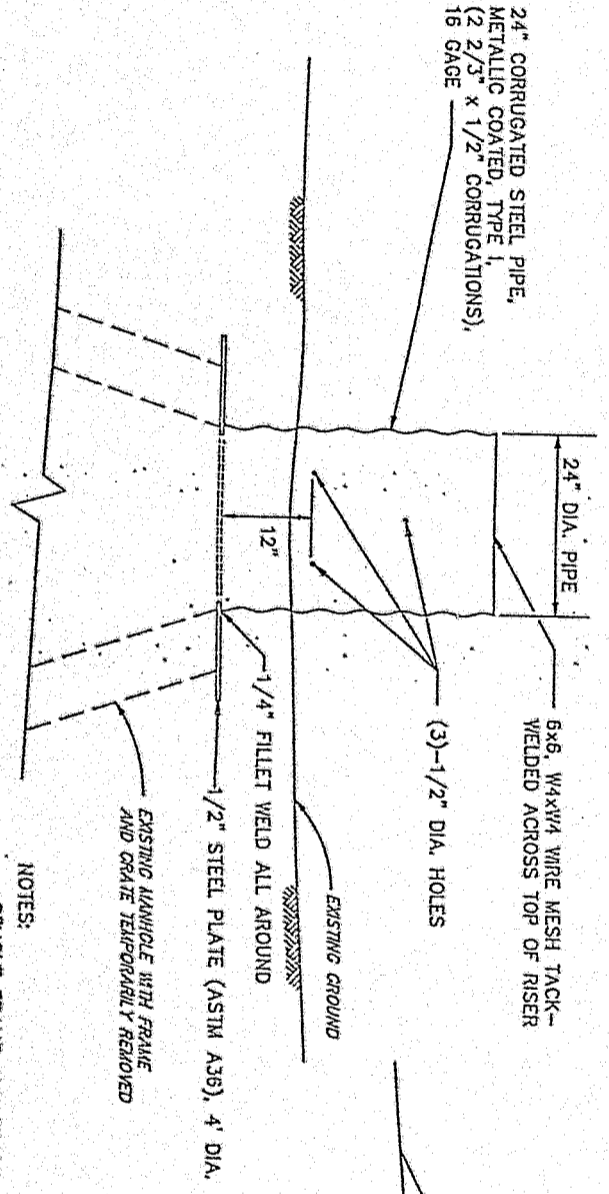
ROCK CONSTRUCTION ENTRANCE
ITEM NO. 9000-0018

PROFILE

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

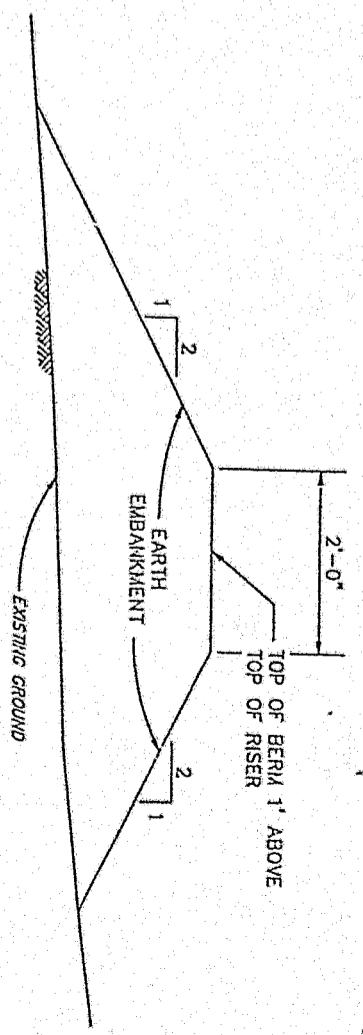


SLOPE TRACKING



RISER PIPE ASSEMBLY, MODIFIED
ITEM NO. 9000-0019

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



CERTIFIED CORRECT PLANS

Approved by *D. J. Williams, P.E.*
Engineer
PENNSYLVANIA PUBLIC UTILITY COMMISSION
Division of Safety & Compliance

Attested by *John A. [Signature]*
Secretary

SEP 17 1992

RISER AND BERM DETAILS
(FOR SPECIAL SEDIMENT POND)

NOTES

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.

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.

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.

NO CONDUIT TURNING RADIUS OR STUB UP RADIUS SHALL BE LESS THAN 36 INCHES.

ALL CONDUIT STUB UPS AND DEAD ENDS SHALL BE FITTED WITH A MECHANICAL PLUG CORRESPONDING IN SIZE TO THE PIPE DIAMETER.

6. THE CONTRACTOR 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+80 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. 8900-0001 '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+00E TO SUPPLY SERVICE TO THE SOUTH TRAIN STATION.

CERTIFIED CORRECT PLANS

D. J. Wilk P.E.
Approved by
PENNA. PUBLIC UTILITY COMMISSION
Bureau of Safety & Compliance

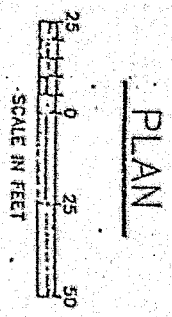
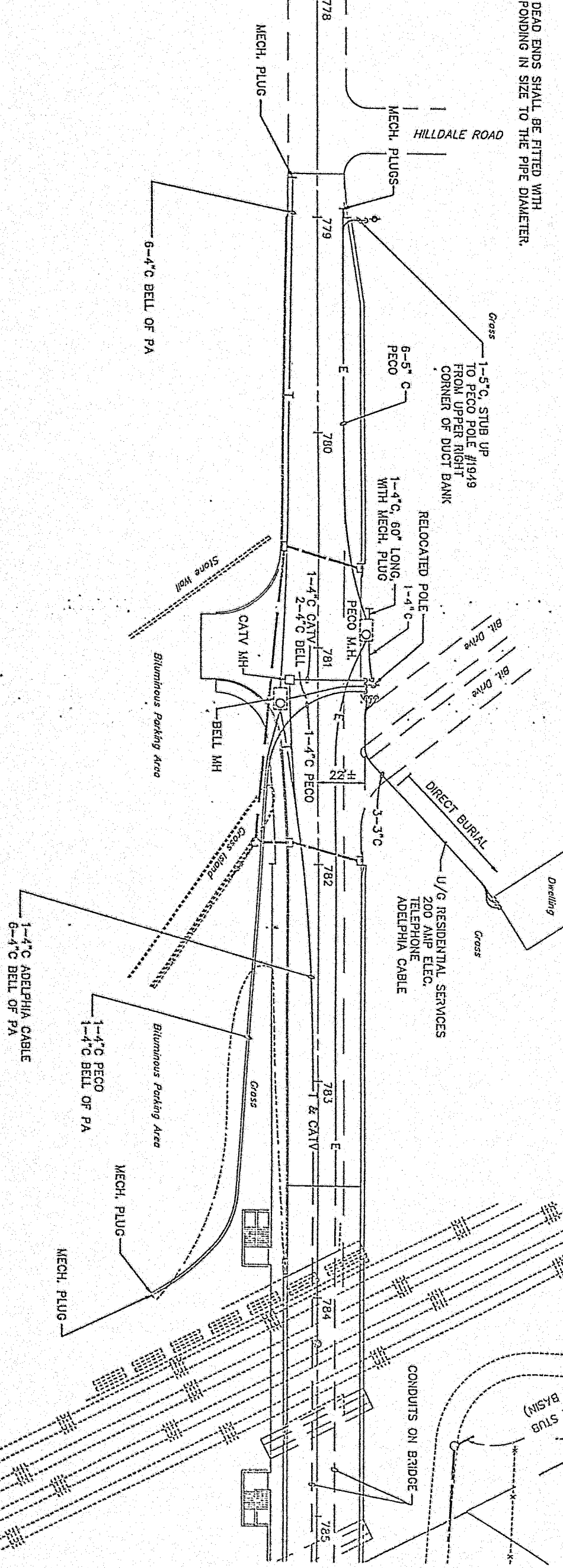
Howard E. Miley
Secretary

ATTEST:
[Signature]
Secretary

SEP 17 1992

UTILITY RELOCATION PLANS

| | | | | |
|----------|----------|----------|-----------|--------|
| Contract | Quantity | Height | Structure | Scale |
| 6-0 | DELAWARE | 0320 | 12S | 1 OF 3 |
| Revision | Number | Revision | Date | By |
| | | | | |



SEE SHEET 15 OF 20 OF THE CONSTRUCTION PLANS FOR OTHER FEATURES OF CONSTRUCTION

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

| | | | | | | | | | |
|-----------|-----|----------|-----------------|-------|------|-----|-----|------|--------|
| Sheet No. | 6-0 | County | DELAWARE | Block | 0320 | Lot | 12S | Page | 2 OF 3 |
| Revision | | Township | RAVING TOWNSHIP | Date | | | | | |

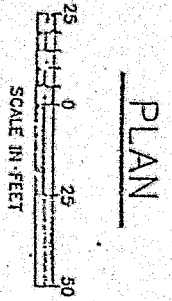
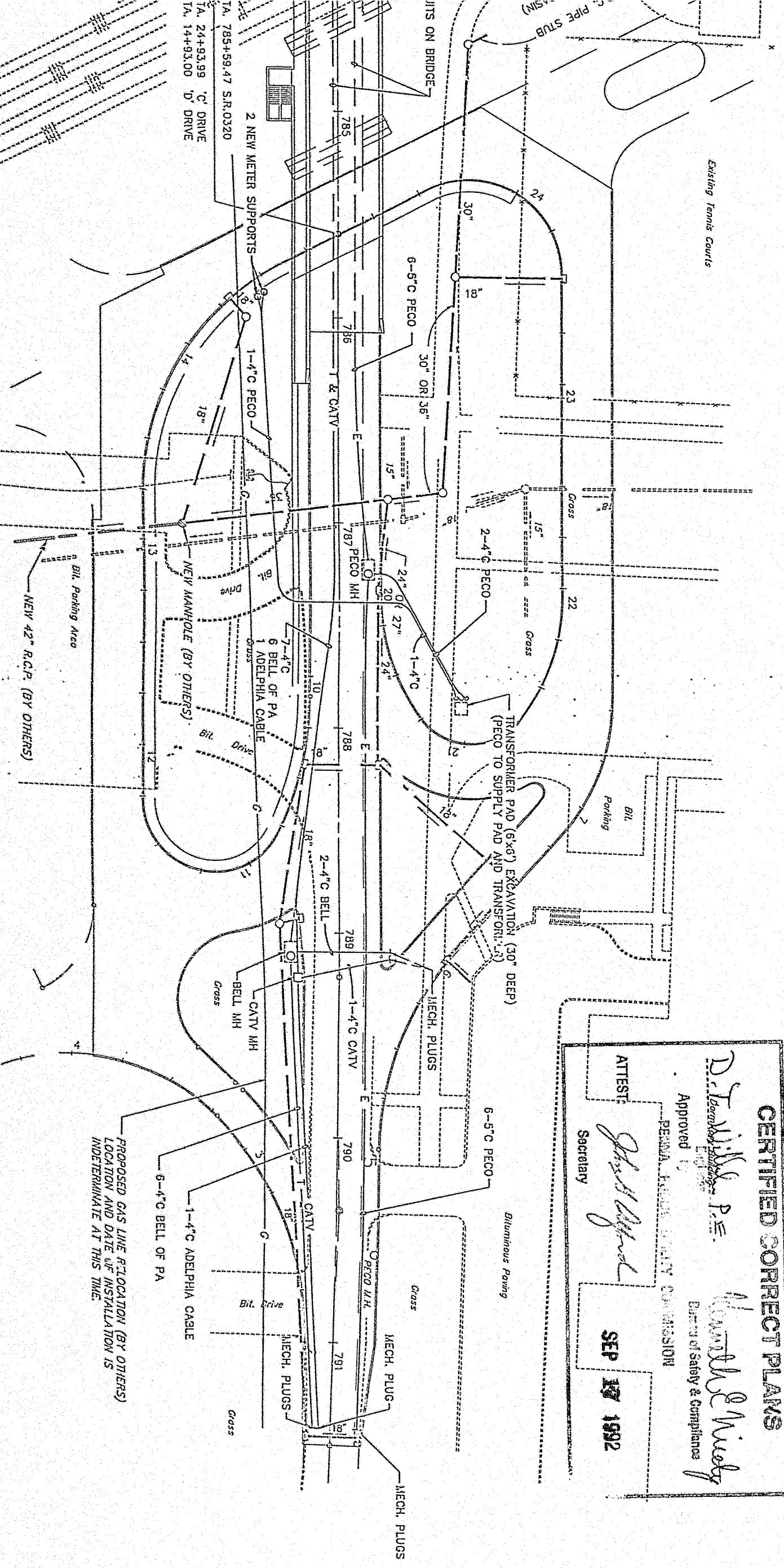
UTILITY RELOCATION PLANS

CERTIFIED CORRECT PLANS

D. J. Williams, P.E.
 Approved by
 PENNSYLVANIA PUBLIC UTILITY COMMISSION
 Director of Safety & Compliance
Michael J. Niely

ATTEST: *John H. [Signature]*
 Secretary

SEP 17 1992



PLAN

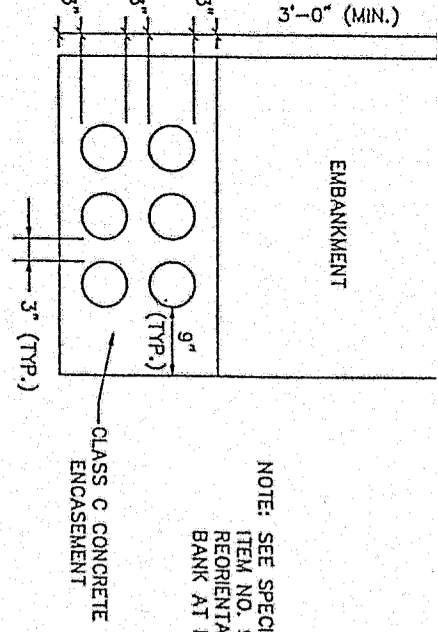
SEE SHEET 17 OF 20 OF THE CONSTRUCTION PLANS FOR OTHER FEATURES OF CONSTRUCTION

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

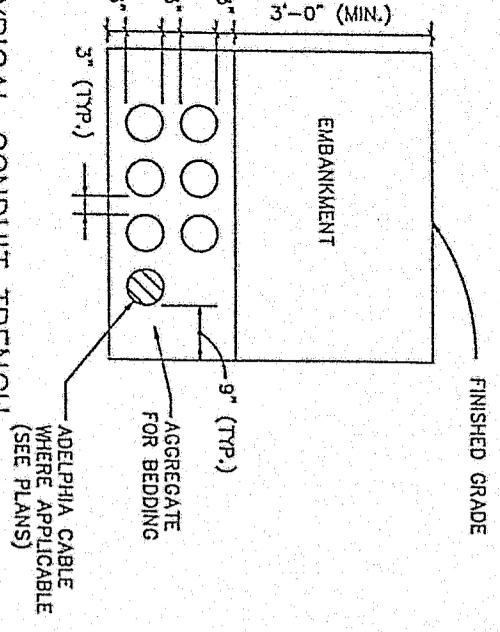
PROPOSED GAS LINE RELOCATION (BY OTHERS) LOCATION AND DATE OF INSTALLATION IS INDETERMINATE AT THIS TIME.

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

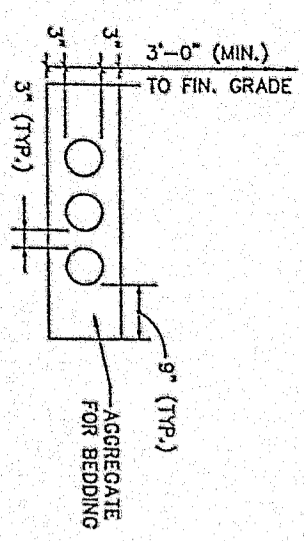
SECRETARY
TABULATION OF UTILITY QUANTITIES
(FOR INFORMATION ONLY)



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

| AFFECTED UTILITY | QUANTITIES | | | | | | | | | | | | | 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. | C.Y. | | | | | C.Y. | C.Y. | C.Y. |
| PECO | 6 | 1 | | | | | | | | | 1170 | 5 | | 31 | | 49 | 86 | LT. | 778+96 TO 780+86 | S.R. 320 |
| PECO | | 1 | | | | | | | | 1530 | 25 | | | 41 | 1 | 81 | 150 | LT. | 780+91 TO 783+48 | S.R. 320 |
| PECO | | | | | | | | | | 678 | | | | 18 | | 41 | 75 | LT. | 786+07 TO 787+23 | S.R. 320 |
| BELL | | 6 | | | | | | | | | 1434 | | | | 40 | 79 | 124 | RT. | 778+82 TO 781+20 | S.R. 320 |
| BELL | | | | | | | | | | | 1320 | | | | 38 | 102 | 138 | RT. | 781+25 TO 783+49 | S.R. 320 |
| BELL | | | | | | | | | | | 1776 | | | | 51 | 108 | 179 | RT. | 786+07 TO 789+08 | S.R. 320 |
| BELL | | 6 | | | | | | | | | 1440 | | | | 42 | 82 | 129 | RT. | 789+13 TO 791+50 | S.R. 320 |
| ADELPHIA | | 1 | | | | | | | | | 44 | | | | 3 | 9 | 13 | LT. & RT. | 789+13 TO 789+23 | S.R. 320 |
| ADELPHIA | | | | | | | | | | | 235 | | | | 4 | 16 | 25 | RT. | 781+17 TO 783+48 | S.R. 320 |
| ADELPHIA | | | | | | | | | | | 315 | | | | 3 | 7 | 10 | RT. | 786+07 TO 789+21 | S.R. 320 |
| ADELPHIA | | 1 | | | | | | | | | 230 | | | | 13 | 47 | 65 | RT. | 789+23 TO 791+50 | S.R. 320 |
| PECO | 6 | | | | | | | | | | 2550 | | | 5 | 68 | 128 | 209 | LT. | 787+28 TO 791+50 | S.R. 320 |
| ADELPHIA | | 1 | | | | | | | | | 36 | | | | 2 | 7 | 9 | LT. & RT. | 781+15 TO 781+15 | S.R. 320 |
| ADELPHIA | | 1 | | | | | | | | | 160 | | | | 5 | 18 | 30 | LT. | 787+25 TO 787+85 | S.R. 320 |
| PECO | | 2 | | | | | | | | | 90 | | | | 3 | 10 | 14 | LT. & RT. | 789+08 TO 789+08 | S.R. 320 |
| BELL | | 2 | | | | | | | | | | | | | | | | | | |
| PECO | | | | | | | | | | | | | | | | | | | | |
| PECO | | | | | | | | | | | | | | | | | | | | |
| PECO, BELL, & ADELPHIA | | | | | | | | | | | 150 | | | | 5 | 30 | 35 | LT. | 781+18 TO 782+15 | S.R. 320 |
| PECO & BELL | | | | | | | | | | | 150 | | | | 24 | 79 | 106 | RT. & LT. | 781+17 TO 783+58 | S.R. 320 |
| PECO | | | | | | | | | | | 335 | | | | 10 | 50 | 67 | RT. & LT. | 785+87 TO 787+85 | S.R. 320 |



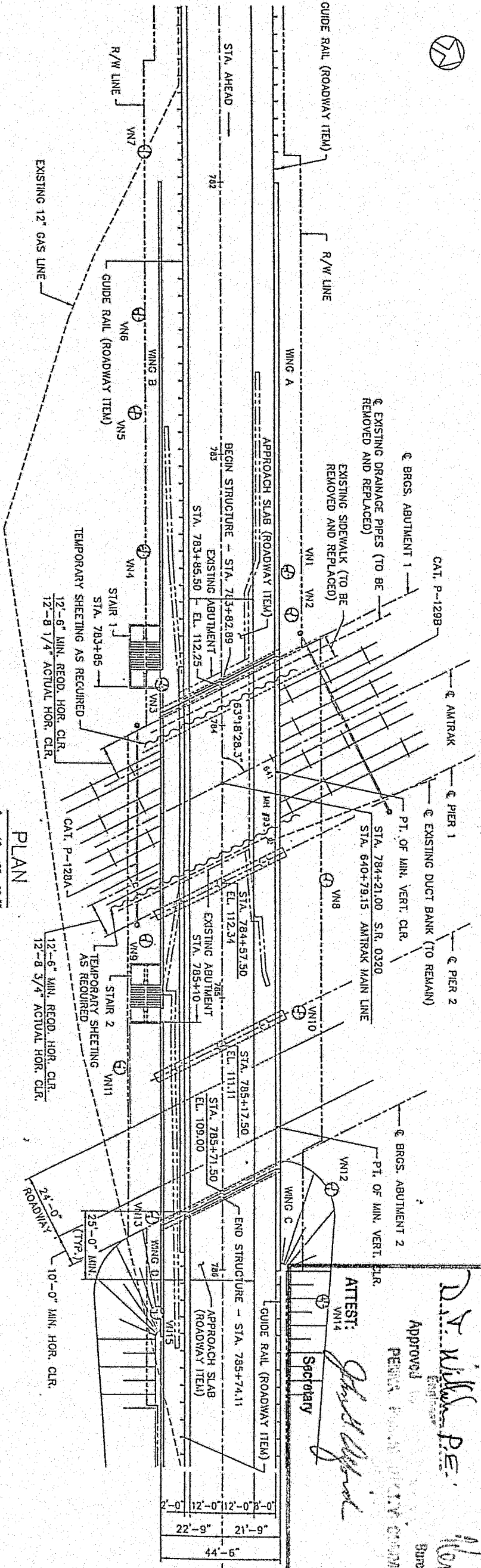
CERTIFIED CONNECT PLANS

D.V. Wilson, P.E.
 Approved
 Bureau of Safety & Compliance

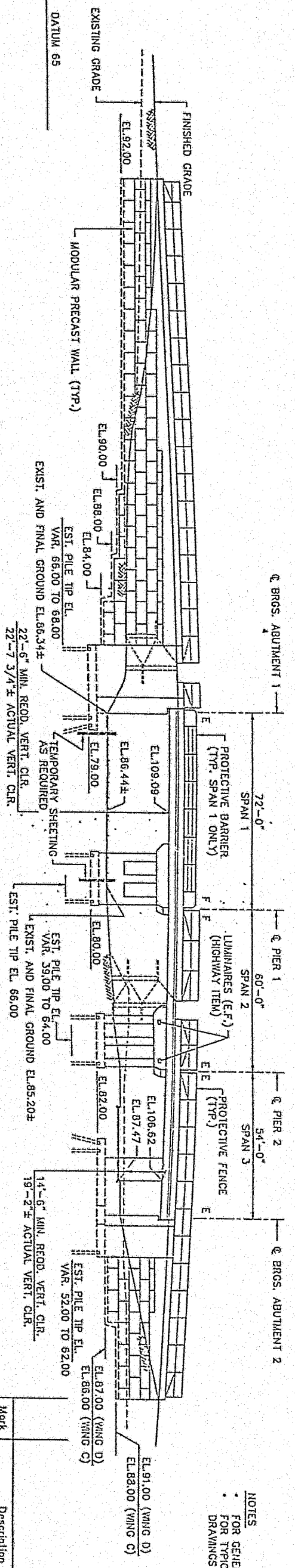
PERMISSIVE DIVISION COMMISSION

ATTEST:
[Signature]
 Secretary

SEP 17 1992



PLAN



ELEVATION

VERTICAL CURVE DATA

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. = 286'

BRIDGE RATING *

| LOAD TYPE | H | HS | ML | P |
|--------------------------|---------------|---------------|---------------|---------------|
| INVENTORY RATING | 29 TONS | 53 TONS | 42 TONS | 63 TONS |
| OPERATING RATING | 47 TONS | 88 TONS | 70 TONS | 104 TONS |
| ULTIMATE MOMENT CAPACITY | 1153 FT.-KIPS | 1153 FT.-KIPS | 1153 FT.-KIPS | 1153 FT.-KIPS |
| ULTIMATE SHEAR CAPACITY | 201 KIPS | 201 KIPS | 201 KIPS | 201 KIPS |

PREPARED BY
 URBAN ENGINEERS, INC.
 300 N. THIRD STREET
 PHILA., PA. 19106

SUPPLEMENTAL DRAWINGS

| DESCRIPTION | DWG. NO. | APP. DATE |
|---|----------|-----------|
| UTILITY ATTACHMENTS AND SUPPORT DETAILS | BC-794 | 1-20-89 |
| NEOPRENE STRIP SEAL DASH | BC-767 | 5-3-89 |
| PILE TIP REINFORCEMENTS AND SPLICES | BC-757 | 6-1-91 |
| CONCRETE DECK SLAB DETAILS | BC-752 | 1-20-89 |
| BRIDGE PARAPET TO GUIDEWALL TRANSITION | BC-739 | 9-3-91 |
| REINFORCEMENT BAR FABRICATION DETAILS | BC-736 | 6-1-91 |
| WALL CONCRET. & EXPANSION JOINT DETAILS | BC-735 | 1-20-89 |
| THREADED INSERT ANCHOR ASSEMBLY | BC-734 | 11-15-89 |
| PERMANENT METAL DECK FORMS | BC-732 | 1-20-89 |
| PROTECTIVE BARRIER | BC-711 | 11-15-89 |
| RAILING ANCHOR SYSTEM | BC-701 | 11-15-89 |
| BRIDGE APPROACH SLAB | BC-574 | 3-2-81 |
| BACKFILL AT STRUCTURES | RC-12 | 6-30-90 |
| CLASSIFICATION OF EARTHWORK FOR STRUCT. | RC-11 | 6-30-90 |

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
 GENERAL PLAN AND ELEVATION

RECOMMENDED
 DISTRICT BRIDGE ENGINEER

SHEET 1 OF 30
 S-17313

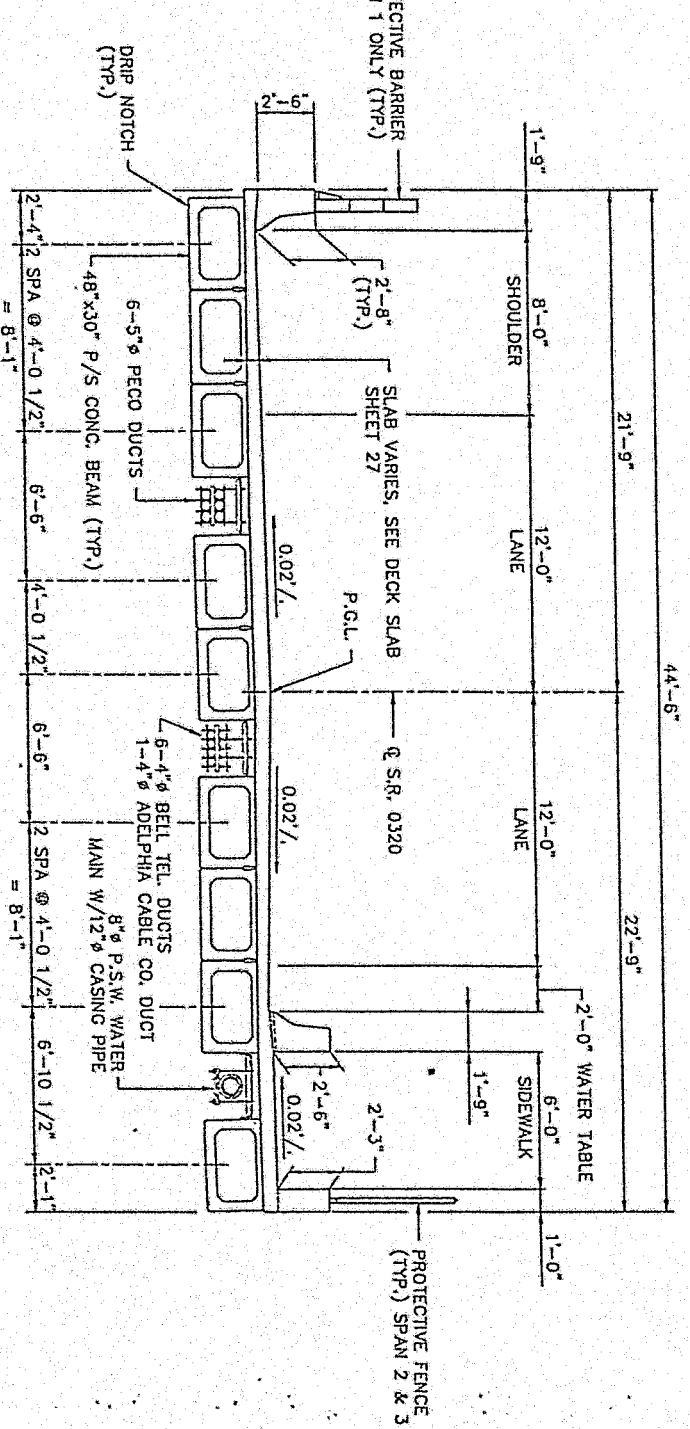
NOTES

- FOR GENERAL NOTES SEE SHEET 3
- FOR TYPICAL SECTION AND INDEX OF DRAWINGS SEE SHEET 2

REVISIONS

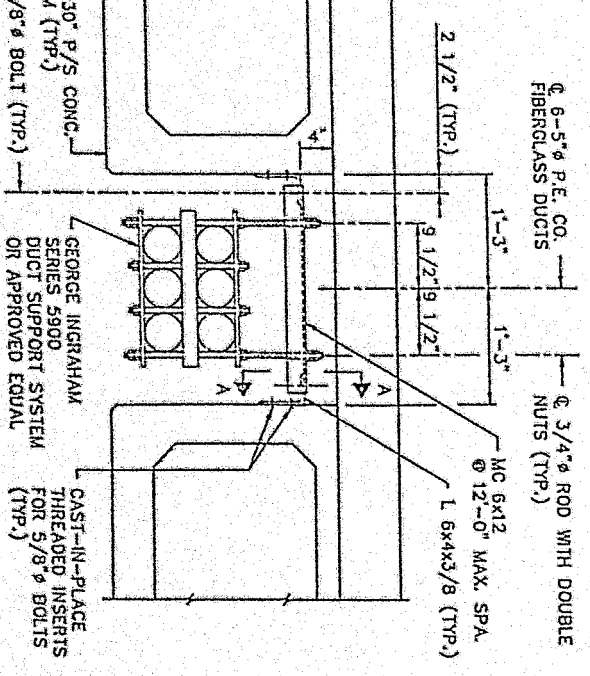
| Mark | Description | By | Chk'd. | Recd. | Date |
|------|-------------|----|--------|-------|------|
| | | | | | |

P.U.C. DOCKET NO. C80011839
 S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225



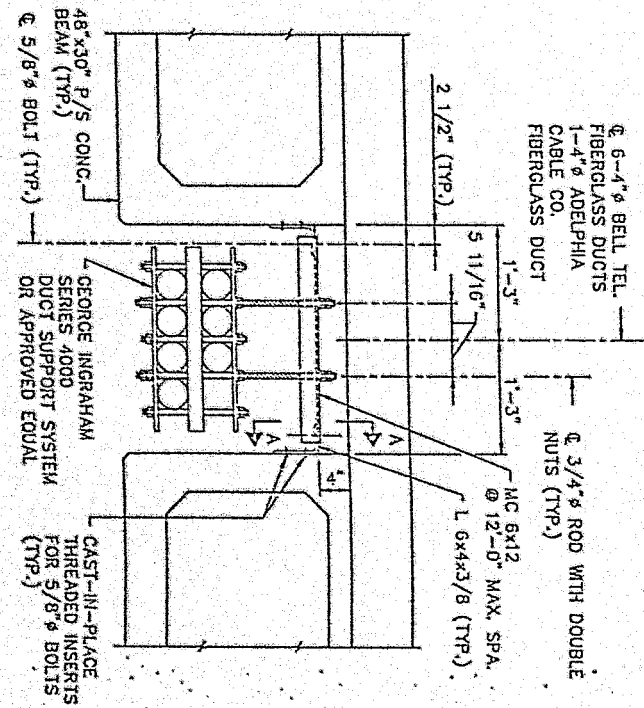
TYPICAL SECTION

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



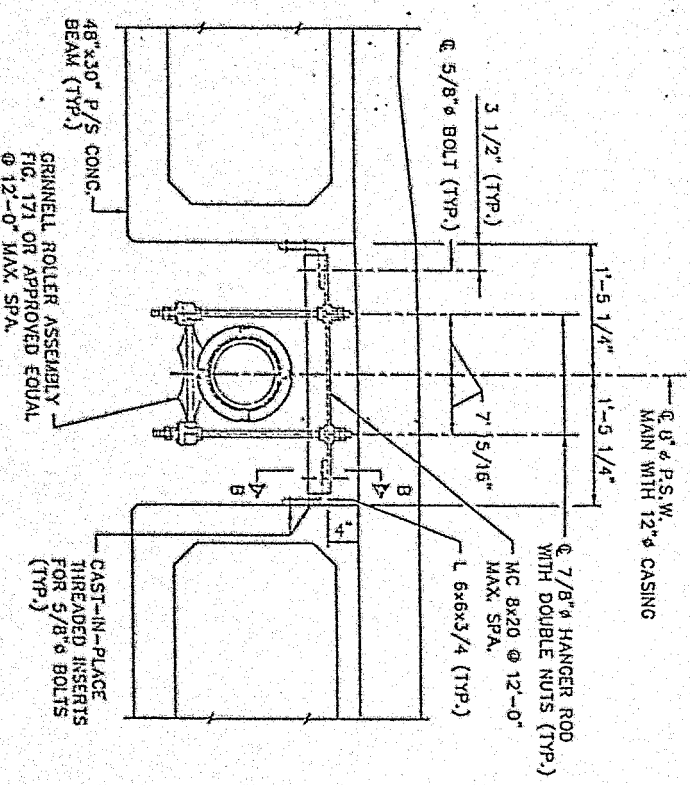
P.E. CO. UTILITY SUPPORT

SCALE: 1" = 1'-0"



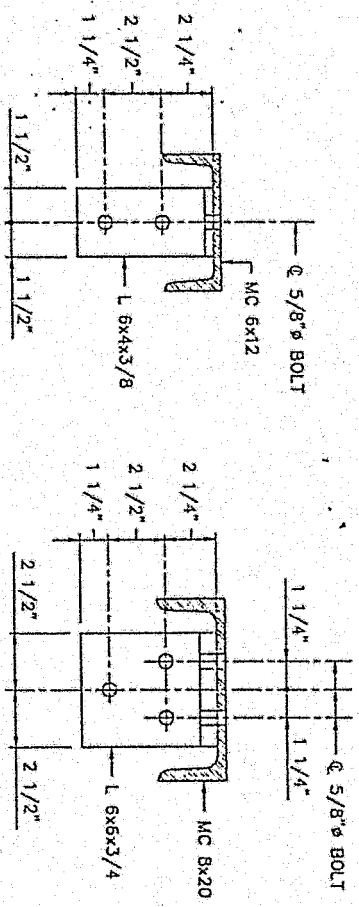
BELL TEL. & ADELPHIA CABLE CO. UTILITY SUPPORT

SCALE: 1" = 1'-0"



P.S.W. UTILITY SUPPORT

SCALE: 1" = 1'-0"



SECTION A-A CERTIFIED CORRECT PLANS

SCALE: 3" = 1'-0"

SCALE: 3" = 1'-0"

UTILITY NOTES

- EXPANSION JOINTS REQUIRED AT EACH END OF BRIDGE.
- SEE FRAMING PLAN SHEET 27 FOR DETAILS OF BRIDGE.
- STAGGER COUPLINGS BOTH HORIZONTALLY AND VERTICALLY BY 2'-0" MINIMUM.
- PROVIDE DOUBLE NUTS AT TOP AND BOTTOM OF HANGER RODS.
- THREADED ROSS WASHERS AND NUTS ARE TO BE HOT-DIPPED GALVANIZED.
- FOR DETAILS AT ABUTMENTS SEE SHEET 9.

SEP 17 1992

Approved by
PENNA. STATE UTILITY COMMISSION
Secretary
Department of Safety & Compliance

| DWG. NO. | TITLE |
|----------|-----------------------------------|
| 1 | GENERAL PLAN AND ELEVATION |
| 2 | TYPICAL SECTION |
| 3 | GENERAL NOTES |
| 4 | QUANTITIES 1 |
| 5 | QUANTITIES 2 |
| 6 | STAKE-OUT PLAN |
| 7 | ABUTMENT 1 |
| 8 | ABUTMENT 2 |
| 9 | ABUTMENT DETAILS |
| 10 | ABUTMENT 1 FOOTING PLAN & DETAILS |
| 11 | ABUTMENT 2 FOOTING PLAN & DETAILS |
| 12 | WINGWALL A |
| 13 | WINGWALL B |
| 14 | WINGWALL C |
| 15 | WINGWALL D |
| 16 | ABUTMENT 1 BAR SCHEDULE |
| 17 | ABUTMENT 2 BAR SCHEDULE |
| 18 | PIER 1 |
| 19 | PIER 2 |
| 20 | PIER 1 AND PIER 2 FOOTING |
| 21 | PIER BAR SCHEDULE |
| 22 | FRAMING PLAN |
| 23 | BEAM DETAILS 1 |
| 24 | BEAM DETAILS 2 |
| 25 | BEAM DETAILS 3 |
| 26 | DIAPHRAGM DETAILS |
| 27 | DECK SLAB |
| 28 | DECK SLAB BAR SCHEDULE |
| 29 | DECK ELEVATIONS |
| 30 | STAIR 1 AND STAIR 2 |
| 31 | STAIR BAR SCHEDULE |
| 32 | CELLANEONS DETAILS |
| 33 | TEST BORINGS 1 |
| 34 | TEST BORINGS 2 |
| 35 | TEST BORINGS 3 |
| 36 | TEST BORINGS 4 |
| 37 | TEST BORINGS 5 |
| 38 | TEST BORINGS 6 |
| 39 | TEST BORINGS 7 |
| 40 | TEST BORINGS 8 |

NOTE
FOR PLAN AND ELEVATION SEE SHEET 1.

| Mark | Description | By | Chk'd. | Rec'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
SEC. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
TYPICAL SECTION

3 SPAN CONTINUOUS BOX BEAM BRIDGE
TYPICAL SECTION

RECOMMENDED

3-19-92

SHEET 2 OF 40

S-17313

GENERAL NOTES

- PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH SPECIFICATIONS, PUBLICATION 408/90 AND CONTRACT SPECIAL PROVISIONS.
- DESIGN SPECIFICATIONS:
 - A. DESIGN DIVISION 1 OF AASHTO, STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1989, (INCLUDING 1990 INTERIM), AND AS SUPPLEMENTED BY DESIGN MANUAL, PART 4, (NOVEMBER 1988).
 - B. LIVE LOAD DISTRIBUTION TO GIRDERS IS BASED UPON AASHTO METHOD, DESIGN IS IN ACCORDANCE WITH STRENGTH DESIGN METHOD (LOAD FACTOR DESIGN).
 - C. DESIGN LIVE LOADS:
 - A. HS25 LOADING OR 125 PERCENT OF THE ALTERNATE MILITARY LOADING, OR P-82 (204 K PERMIT LOAD) WITH AASHTO GROUP 1B LOADING.
 - B. FATIGUE DESIGN IS BASED ON THE FOLLOWING:
 - (ONE DIRECTIONAL)
 - TRUCK LOADING 500,000 CYCLES
 - LANE LOADING 100,000 CYCLES
 - MAXIMUM ALLOWABLE TENSILE STRESS IN PRECOMPRESSED CONCRETE: ADIT < 2500 (1990)
 - 3 x $\sqrt{f_c}$
- DEAD LOADS:
 - A. INCLUDES 30 POUNDS PER SQUARE FOOT FOR FUTURE WEARING SURFACE ON THE DECK SLAB.
 - B. INCLUDES 15 POUNDS (WEIGHT OF FORMS PLUS WEIGHT OF CONCRETE IN VALLEYS OF FORMS) PER SQUARE FOOT OF DECK AREA FORMED USING PERMANENT METAL DECK FORMS.
- PROVIDE 2-INCH CONCRETE COVER ON REINFORCEMENT BARS EXCEPT AS NOTED.
- USE CLASS AAA CEMENT CONCRETE IN DECK SLAB AND SIDEWALK.
- USE CLASS AA CEMENT CONCRETE IN CURBS, PARAPETS, SIDEWALK BARRIER, STAIRS, DIAPHRAGMS, SHEAR BLOCKS, ABUTMENT BACKWALLS, U-WINGS ABOVE BRIDGE SEATS, AND CHEEKWALLS.
- IF CONCRETE DIAPHRAGMS ARE POURED MONOLITHICALLY WITH THE DECK, CLASS AAA CEMENT CONCRETE MAY BE USED FOR THE DIAPHRAGMS AT NO ADDITIONAL COST TO THE DEPARTMENT.
- USE CLASS A CEMENT CONCRETE IN PIERS, ABUTMENTS BELOW BRIDGE SEAT, PEDESTALS, WINGWALLS AND FOOTINGS.
- PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT (A615), RAIL STEEL (A616), OR AXLE STEEL (A617). DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED.
- EPOXY-COAT ALL REINFORCING BARS IN THE DECK SLAB, PARAPETS, ABUTMENT BACKWALLS, U-WINGS ABOVE THE CONSTRUCTION JOINT, STIRRUPS PROTRUDING FROM DIAPHRAGMS AND PRESTRESSED BEAMS INTO THE DECK SLAB, AND ABUTMENT SEAT BARS WHERE EXPANSION DAMS ARE USED. ALSO EPOXY-COAT SUBSTRUCTURE REINFORCEMENT BARS AS INDICATED.
- RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS EXCEPT AS INDICATED.
- 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, CONCRETE SHEAR BLOCKS, AND BACKWALL CONCRETE AFTER BEAMS ARE SET IN POSITION.
- CHAMFER EXPOSED CONCRETE EDGES 1 INCH BY 1 INCH EXCEPT AS NOTED.
- ALL DIMENSIONS SHOWN ARE HORIZONTAL EXCEPT AS NOTED.
- USE EITHER PERMANENT METAL FORMS OR REMOVABLE FORMS TO CONSTRUCT THE DECK SLAB.
- DECK SLAB THICKNESS INCLUDES 1/2-INCH INTEGRAL WEARING SURFACE.
- SUPERSTRUCTURE DIMENSIONS SHOWN ARE FOR A NORMAL TEMPERATURE OF 68 DEGREES F.

PILE DRIVING NOTES

- PROVIDE MINIMUM LAP AND EMBEDMENT LENGTH OF 30 DIAMETERS OR IN ACCORDANCE WITH AASHTO (1989), WHICHEVER IS GREATER, UNLESS OTHERWISE NOTED.
- SPREAD FOOTINGS MAY BE ORDERED BY THE ENGINEER TO BE AT ANY ELEVATION OR OF ANY DIMENSIONS NECESSARY TO PROVIDE A PROPER FOUNDATION.
- COORDINATE THE REQUIREMENTS FOR PROTECTION AND/OR RELOCATION OF UTILITIES WITH THE OWNER PRIOR TO STARTING WORK.
- 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 DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REMISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE, AND LOCATION OF ANY UTILITY.
- DRIVE TEST PILES AT SUBSTRUCTURE LOCATIONS BEFORE BEARING PILES ARE DRIVEN.
- DRIVE TEST PILES TO ABSOLUTE REFUSAL AT OR BELOW THE ESTIMATED TIP ELEVATIONS SHOWN ON DRAWINGS FOR THE RELATED BEARING PILES UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE ENGINEER WILL VERIFY THE CAPABILITY OF HAMMER SELECTED BY THE CONTRACTOR FROM THE TEST PILE DRIVING RESULTS.
- REDRIVE TEST PILES AND BEARING PILES AS SPECIFIED IN SPECIAL PROVISION FOR REDRIVING STEEL BEAM PILES HP 12 x 53.
- DRIVE BEARING PILES TO ABSOLUTE REFUSAL INTO STRATUM DEFINED BY TIP ELEVATIONS DETERMINED BY THE ENGINEER FROM TEST PILE DRIVING AND REDRIVING RESULTS. THE ENGINEER WILL DECIDE THE ACCEPTABILITY OF THE BEARING PILES WHICH ATTAIN ABSOLUTE REFUSAL ABOVE THE PREDETERMINED TIP ELEVATIONS.
- DESIGN LOAD 60 TONS/PILE.

CERTIFIED CORRECT PLANS

Approved by *[Signature]* P.E.
 Penna. Board of Professional Engineers
 Bureau of Safety & Compliance

ATTEST: *[Signature]* Secretary

SEP 17 1992

| Mark | Description | By | CHK'D | Rec'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 MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 GENERAL NOTES

TABULATION OF BRIDGE BID ITEMS AND APPROXIMATE QUANTITIES

| QUANTITY | UNITS | ITEM NUMBER | DESCRIPTION | ABUT. 1 | PIER 1 | PIER 2 | ABUT. 2 | SUPERSTR. | DECK | STAIRS |
|--------------------|---------|-------------|--|---------|---------|---------|---------|-----------|--------|--------|
| QUANTITY EITHER LS | LS | 8040-0001 | BRIDGE STRUCTURE, AS DESIGNED, S-17313 | | | | | | | |
| | CY. | * | CLASS 3 EXCAVATION, SPECIAL | 630 | 120 | 150 | 420 | | | 60 |
| | LF. | * | GEOTEXTILE, CLASS 1 | 36 | | | 36 | | | |
| | CY. | * | NO. 57 COARSE AGGREGATE | 3 | | | 3 | | | 1 |
| | CY. | * | SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL | 440 | 50 | 20 | 320 | | | 10 |
| | CY. | * | CLASS AAA CEMENT CONCRETE | | | | | | 200 | |
| | CY. | * | CLASS AA CEMENT CONCRETE | 18 | 1 | 1 | 18 | 80 | | 40 |
| | CY. | * | CLASS A CEMENT CONCRETE | 370 | 140 | 100 | 260 | | | 20 |
| | LB. | * | REINFORCEMENT BARS, EPOXY COATED | 3,000 | | | 3,000 | 10,000 | 48,500 | 7,500 |
| | LB. | * | REINFORCEMENT BARS | 37,000 | 27,000 | 23,000 | 22,000 | 500 | | |
| | LF. | * | PROTECTIVE BARRIER | | | | | 144 | | |
| | LF. | * | PARAPET PROTECTIVE FENCE, VINYL COATED STEEL | 32 | | | 23 | 225 | | |
| | SY. | * | PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) | | | | | 300 | 830 | |
| | LF. | * | NEOPRENE STRIP SEAL DAM, 2" MOVEMENT | 48 | | | 48 | | | |
| | LF. | * | 1,680 PRESTRESSED CONCRETE ADJACENT BOX BEAMS, 48"x30" | | | | | 1,680 | | |
| | EA. | * | 18 DOWEL HOLES, 22" DEPTH | | 18 | | | | | |
| | EA. | * | 73 STAIR GRIT STRIPS | | | | | | | 73 |
| | LF. | * | 320 1 1/2" DIAMETER ALUMINUM HANDRAIL (SCHEDULE 10) | | | | | | | 320 |
| | LF. | * | 25 1 1/2" DIAMETER PVC PIPE (SCHEDULE 40) | | | | | 25 | | |
| AND LS. | LS. | 1005-0450 | STEEL BEAM TEST PILES, HP12x53 | 2 @ 16' | 2 @ 17' | 2 @ 40' | 2 @ 28' | | | |
| AND 3030 | LF. | 1005-1103 | STEEL BEAM BEARING PILES, HP12x53 | 680 | 440 | 910 | 1,000 | | | |
| AND 146 | EA. | 1005-1153 | STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 | 52 | 28 | 28 | 38 | | | |
| AND B | EA. | 9000-0011 | REDRIVING STEEL BEAM TEST PILES, HP12x53 | 2 | 2 | 2 | 2 | | | |
| AND 146 | EA. | 9000-0023 | REDRIVING STEEL BEAM BEARING PILES, HP12x53 | 52 | 28 | 28 | 38 | | | |
| OR LS. | LS. | 8100-0001 | STEEL BRIDGE STRUCTURE | | | | | | | |
| AND - | LF. | 1005-0451 | STEEL BEAM TEST PILES HP12x53 | | | | | | | |
| AND - | LF. | 1005-1103 | STEEL BEAM BEARING PILES, HP12x53 | | | | | | | |
| AND - | EA. | 1005-1153 | STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 | | | | | | | |
| AND - | EA. | 9000-0037 | REDRIVING STEEL BEAM TEST PILES, HP12x53 | | | | | | | |
| AND - | EA. | 9000-0039 | REDRIVING STEEL BEAM BEARING PILES, HP12x53 | | | | | | | |
| OR LS. | LS. | 8000-0001 | PRESTRESSED CONCRETE BRIDGE STRUCTURE | | | | | | | |
| AND - | LF. | 1005-0452 | STEEL BEAM TEST PILES, HP12x53 | | | | | | | |
| AND - | LF. | 1005-1103 | STEEL BEAM BEARING PILES, HP12x53 | | | | | | | |
| AND - | EA. | 1005-1153 | STEEL BEAM PILE TIP REINFORCEMENT, HP12x53 | | | | | | | |
| AND - | EA. | 9000-0038 | REDRIVING STEEL BEAM TEST PILES, HP12x53 | | | | | | | |
| AND - | EA. | 9000-0040 | REDRIVING STEEL BEAM BEARING PILES, HP12x53 | | | | | | | |
| EMER LS. | LS. | 8642-0001 | WINGWALLS, PRECAST MODULAR, S-17313, (APPROXIMATELY 7,030 S.F.) | | | | | | | |
| OR LS. | LS. | 8610-0001 | WINGWALLS, CAST IN PLACE, S-17313, (APPROXIMATELY 7,030 S.F.) | | | | | | | |
| LS. | LS. | 1018-0001 | REMOVAL OF EXISTING BRIDGE | | | | | | | |
| LS. | LS. | 9000-0006 | INSTALLATION OF PHILA. SUBURBAN WATER CO. FACILITY | | | | | | | |
| LS. | LS. | 9000-0007 | INSTALLATION OF PHILA. ELECTRIC CO. FACILITY | | | | | | | |
| LS. | LS. | 9000-0008 | INSTALLATION OF BELL TELEPHONE CO. FACILITY | | | | | | | |
| LS. | LS. | 9000-0009 | INSTALLATION OF ADELPHI CABLE CO. FACILITY | | | | | | | |
| LS. | LS. | 9000-0010 | PROTECTION OF COMMUNICATION & SIGNALIZATION DUCTS AT STRUCTURE S-17313 | | | | | | | |
| PDA | PDA | 9999-9994 | REINFORCEMENT 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 | | 60 | 130 | | | |
| 509 | C.Y. | 4203-0001 | CLASS 1 EXCAVATION, SPECIAL | 434 | | | 75 | | | |
| 509 | C.Y. | 4205-0200 | SELECTED BORROW EXCAVATION, SPECIAL | 434 | | | 75 | | | |
| 5 | HP12x53 | 0208-0001 | SPECIAL ROLLING | 4 | | | 2 | | | |

* SUB-ITEMS INCLUDED IN ITEM 8040-0001 FOR INFORMATION ONLY

CERTIFIED CORRECT PLANS

Approved by: *D. J. [Signature]*
 PENNINA REGIONAL ENGINEERING CORPORATION
 Bureau of Safety & Design/Procs

ATTEST: *[Signature]* Secretary

SEP 17 1992

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

| Mark | Description | By | Chk'd | Reco. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

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
 QUANTITIES
 RECOMMENDED 3-19-92
 SHEET 4 OF 75
 S-17313

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. | 1380 |
| CONCRETE INSERTS, WASHERS AND 5/8" DIA. BOLTS | CONTRACTOR | CONTRACTOR | EA. | 96 |
| 5/8" DIA. BOLTS WITH WASHERS AND NUTS | CONTRACTOR | CONTRACTOR | EA. | 64 |
| OPENING THROUGH BACKWALL, | CONTRACTOR | CONTRACTOR | EA. | 2 |
| 8" DIA. STEEL WATER MAIN | CONTRACTOR | CONTRACTOR | L.F. | 206 |
| 12" DIA. STEEL CASING PIPE | CONTRACTOR | CONTRACTOR | L.F. | 122 |
| ZIPPER-TYPE CASING SEALS | CONTRACTOR | CONTRACTOR | EA. | 2 |
| 8"x12" CARRIER TO CASING INSULATORS | CONTRACTOR | CONTRACTOR | EA. | 24 |

TOTAL WEIGHT OF FACILITY = 19,760 LBS
EMPTY WEIGHT OF FACILITY = 15,710 LBS

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

| MATERIAL | FURNISHED BY | INSTALLED BY | UNIT | AMOUNT |
|---|--------------|--------------|------|--------|
| P.P. CO. FACILITY (FOR FUTURE USE) | | | | |
| 5" DIA. FRE DUCT | CONTRACTOR | CONTRACTOR | L.F. | 1080 |
| 5" DIA. PVC DUCT | CONTRACTOR | CONTRACTOR | L.F. | 480 ** |
| 3 x 2 DUCT HANGER ASSEMBLY | CONTRACTOR | CONTRACTOR | EA. | 16 |
| FABRICATED STRUCTURAL STEEL (PAINTED) | CONTRACTOR | CONTRACTOR | LBS. | 620 |
| FRE EXPANSION JOINTS | CONTRACTOR | CONTRACTOR | EA. | 12 |
| 5" DIA. STOP RINGS | CONTRACTOR | CONTRACTOR | EA. | 12 |
| CONCRETE INSERTS, WASHERS AND 5/8" DIA. BOLTS | CONTRACTOR | CONTRACTOR | EA. | 64 |
| 5/8" DIA. BOLTS WITH WASHERS AND NUTS | CONTRACTOR | CONTRACTOR | EA. | 32 |
| 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 = 13,210 LBS
EMPTY WEIGHT OF FACILITY = 2,050 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. | 1080 |
| 4" DIA. PVC DUCT | CONTRACTOR | CONTRACTOR | L.F. | 480 ** |
| 4 x 2 DUCT HANGER ASSEMBLY * | CONTRACTOR | CONTRACTOR | EA. | 12 |
| FABRICATED STRUCTURAL STEEL (PAINTED) * | CONTRACTOR | CONTRACTOR | LBS. | 530 |
| FRE EXPANSION JOINTS | CONTRACTOR | CONTRACTOR | EA. | 12 |
| 4" DIA. STOP RINGS | CONTRACTOR | CONTRACTOR | EA. | 12 |
| CONCRETE INSERTS, WASHERS AND 5/8" DIA. BOLTS * | CONTRACTOR | CONTRACTOR | EA. | 54 |
| 5/8" DIA. BOLTS WITH WASHERS AND NUTS * | CONTRACTOR | CONTRACTOR | EA. | 27 |
| 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 = 12,860 LBS
EMPTY WEIGHT OF FACILITY = 1,700 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. | 180 |
| 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. | 90 |
| FRE EXPANSION JOINTS | CONTRACTOR | CONTRACTOR | EA. | 2 |
| 4" DIA. STOP RINGS | CONTRACTOR | CONTRACTOR | EA. | 2 |
| CONCRETE INSERTS, WASHERS AND 5/8" DIA. BOLTS * | CONTRACTOR | CONTRACTOR | EA. | 10 |
| 5/8" DIA. BOLTS WITH WASHERS AND NUTS * | CONTRACTOR | CONTRACTOR | EA. | 5 |
| 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 = 2,190 LBS
EMPTY WEIGHT OF FACILITY = 330 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

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
QUANTITIES 2

RECOMMENDED 3-19-92

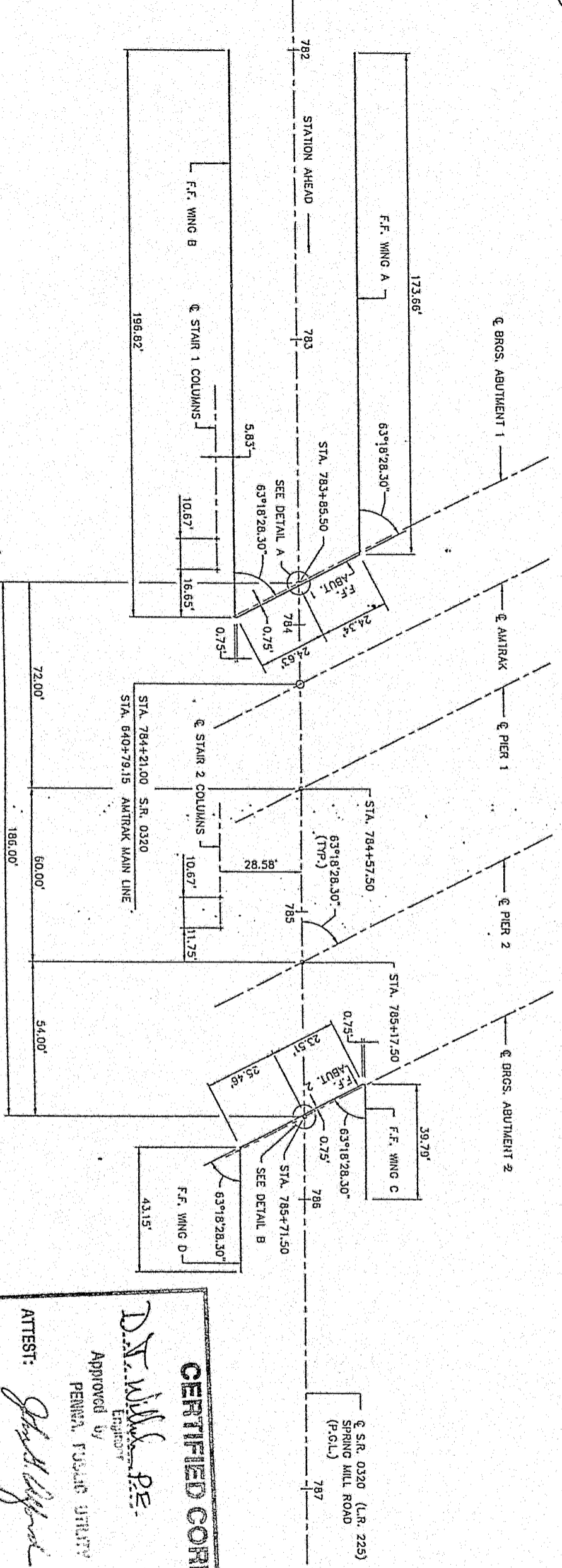
SHEET 5 OF 40
S-17313

| Mark | Description | By | Chk'd. | Recd. | Date |
|------|-------------|----|--------|-------|------|
| | REVISIONS | | | | |

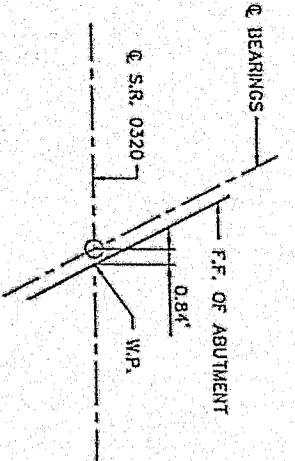
SEP 17 1992

Approved by: PENNA. FEDERAL OFFICE OF TRANSPORTATION
Bureau of Safety & Compliance

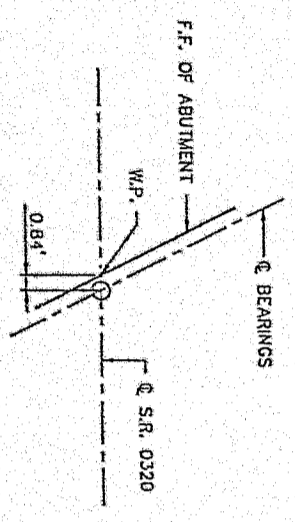
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STAKE - OUT PLAN
SCALE: 1" = 20'



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

CERTIFIED CORRECT PLANS

Approved by *D. J. Wilk, P.E.* Engineer
PENNA. ROAD & BRIDGE COMMISSION
Bureau of Safety & Compliance

ATTEST: *John A. [Signature]* Secretary
SEP 17 1992

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

| Mark | Description | By | Chk'd. | Recd. | Date |
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REVISIONS

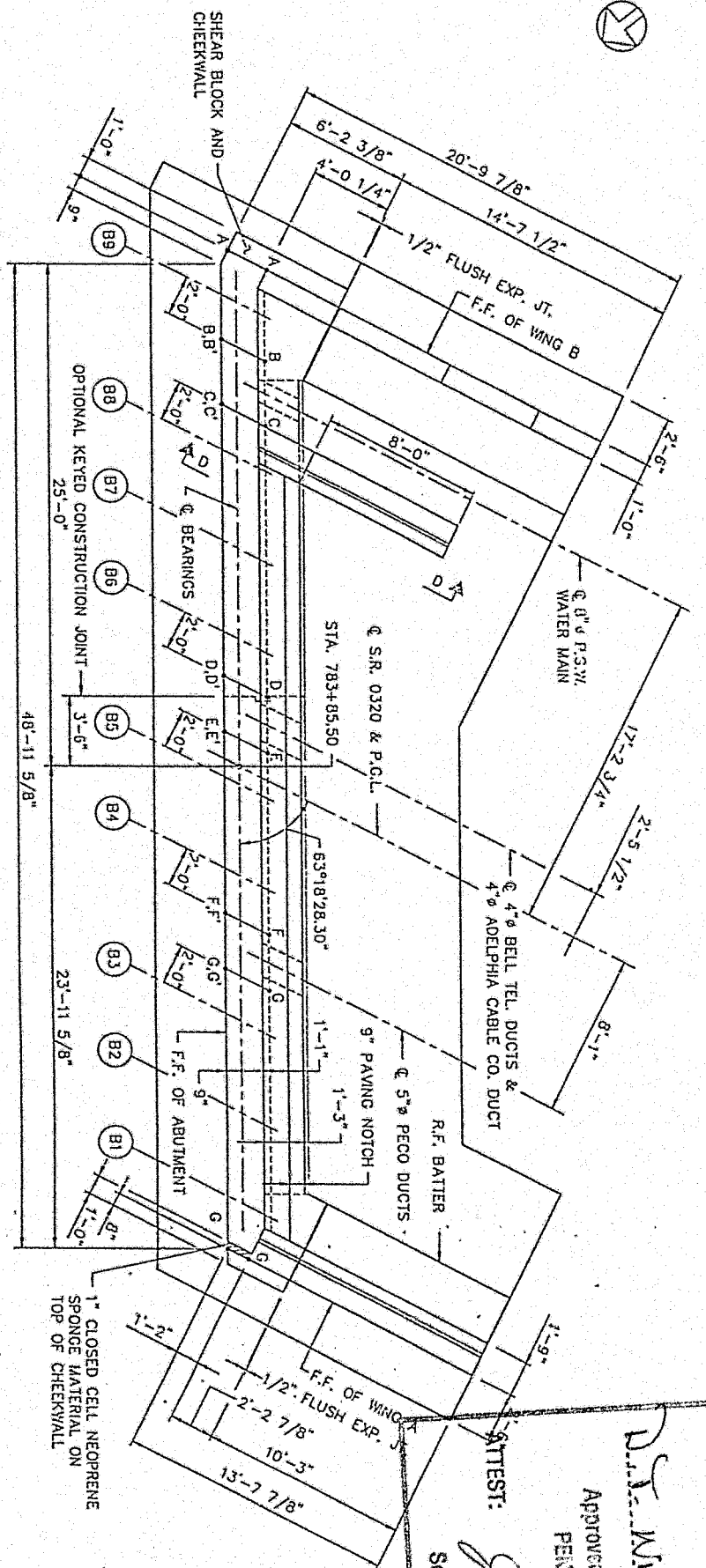
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

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

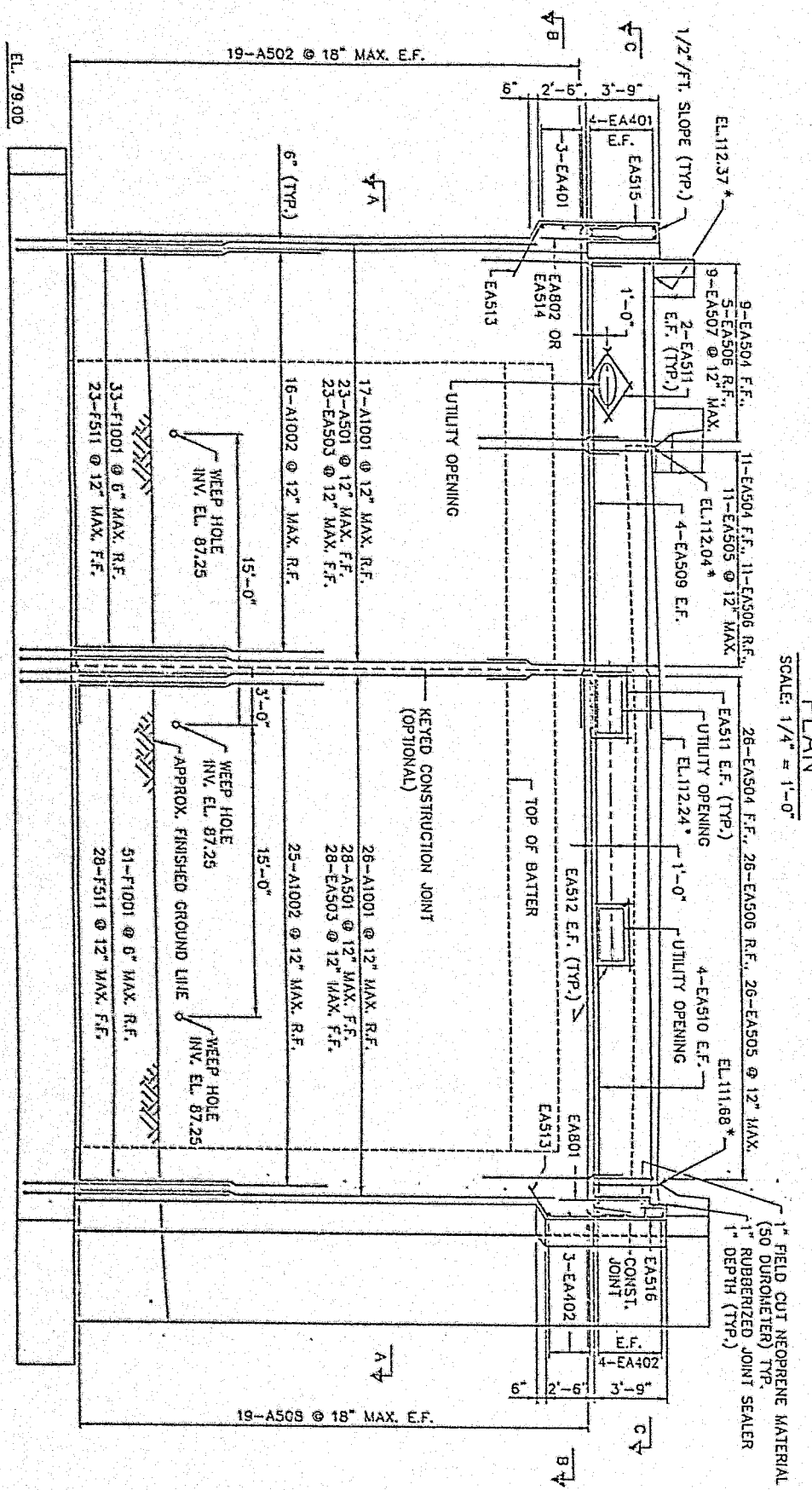
3 SPAN CONTINUOUS BOX BEAM BRIDGE
STAKE - OUT PLAN

RECOMMENDED 3-19-92

SHEET 6 OF 40
S - 17313



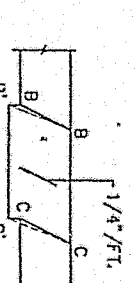
PLAN
SCALE: 1/4" = 1'-0"



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

Approved by *Donald J. Wiley*
 Secretary
 SEP 17 1996
 Office of Safety & Compliance
 CLASS AA CONCRETE

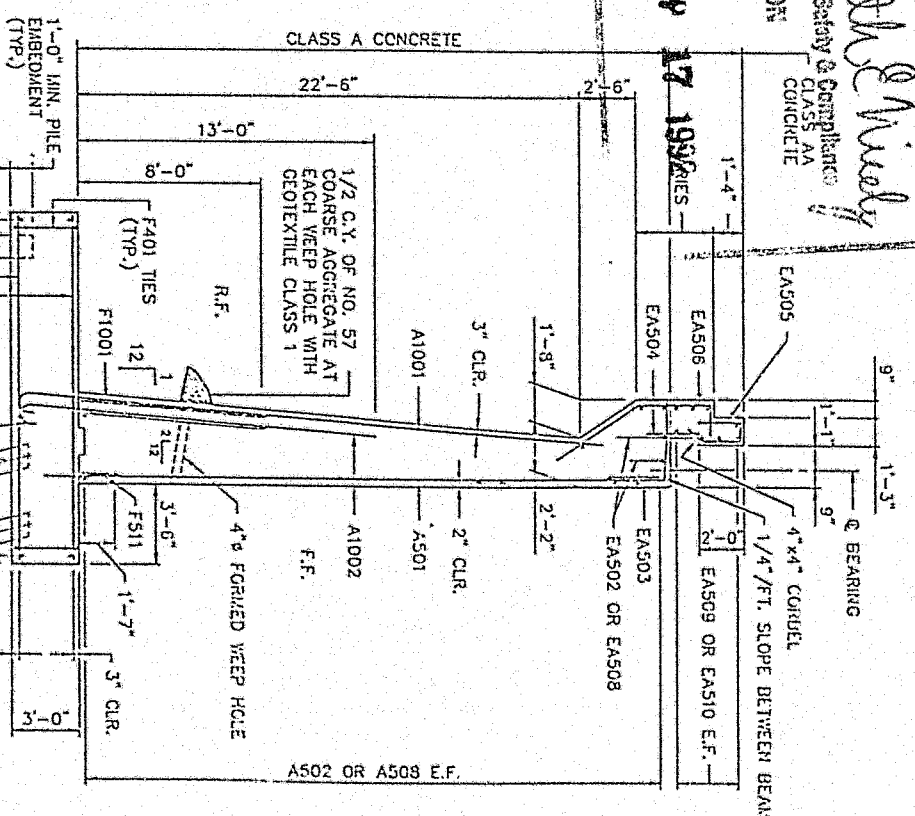
LEGEND
 F.F. = FRONT FACE
 R.F. = REAR FACE
 E.F. = EACH FACE
 TYP. = TYPICAL
 BOT. = BOTTOM
 MAX. = MAXIMUM



TYP. ELEVATION LOCATION BETWEEN BEAMS

| BEAM SEAT ELEVATION | |
|---------------------|--------|
| A | 108.95 |
| B | 108.87 |
| B' | 108.82 |
| C | 108.68 |
| C' | 108.63 |
| D | 108.75 |
| D' | 108.70 |
| E | 108.73 |
| E' | 108.68 |
| F | 108.61 |
| F' | 108.56 |
| G | 108.48 |
| G' | 108.43 |

- NOTES
- FOR GENERAL NOTES SEE SHEET 3
 - FOR BAR SCHEDULE SEE SHEET 10
 - CUT AND PLACE BACKWALL REINFORCEMENT TO ACCOMMODATE UTILITY OPENINGS.
 - FOR SECTION A-A, B-B AND C-C SEE SHEET 10
 - FOR UTILITY OPENING DETAILS SEE SHEET 9
 - FOR SECTION D-D SEE SHEET 9
 - TOP OF BACKWALL ELEVATIONS ARE AT FRONT FACE
 - FOR PS.W.C.O. PIPE SLEEVE DETAIL, SEE BC-794



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

| Mark | Description | By | CHK'd | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

REVISIONS

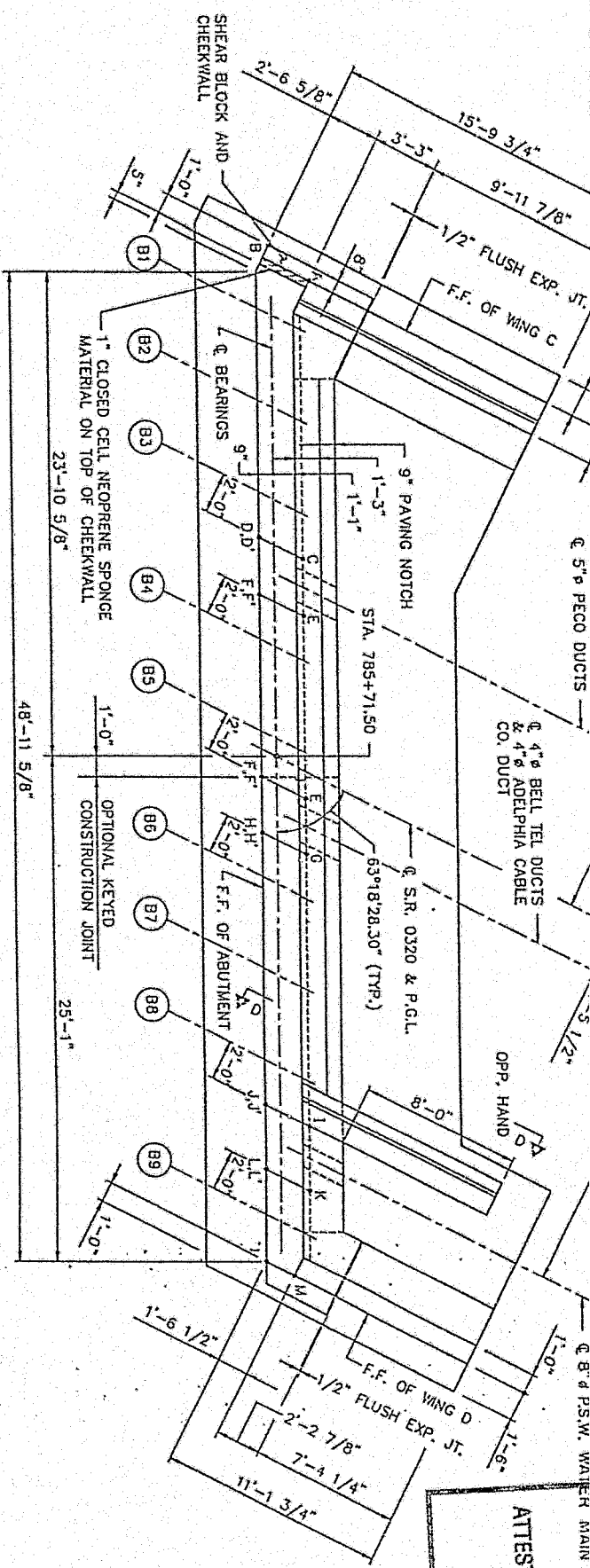
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 ABUTMENT 1

RECOMMENDED 3-10-92
 SHEET 7 OF 12
 S-1731

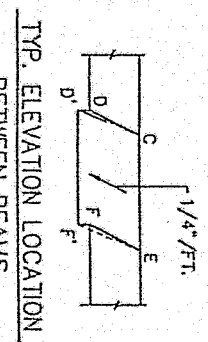


PLAN
SCALE: 1/4" = 1'-0"

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

ATTEST:
 Secretary

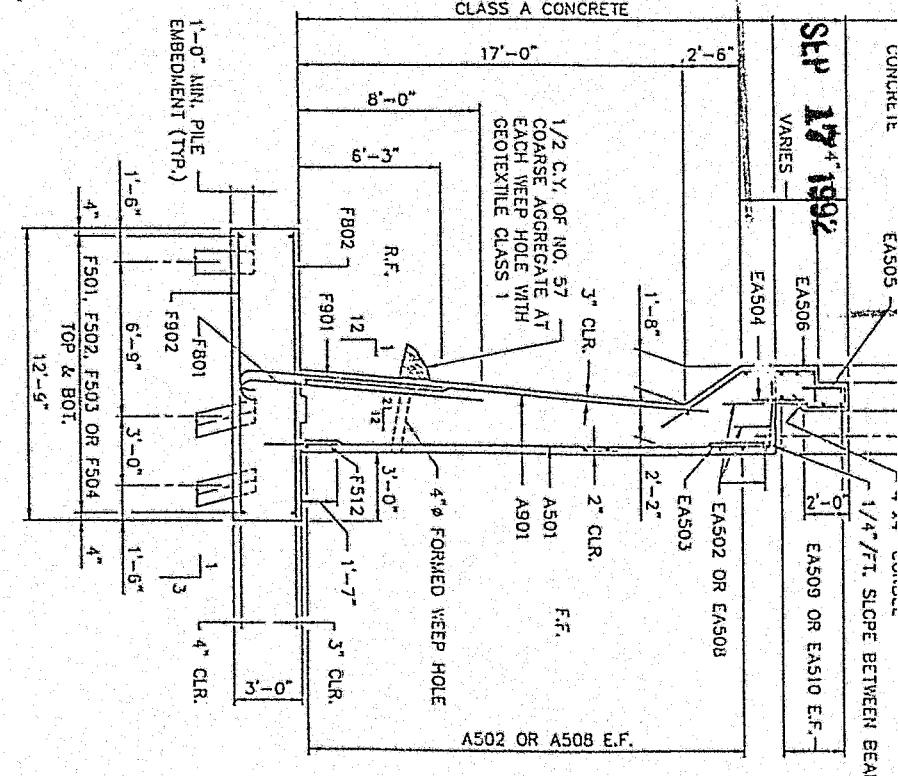
SEP 17 1992



TYP. ELEVATION LOCATION BETWEEN BEAMS

| BEAM SEAT ELEVATIONS | |
|----------------------|--------|
| A | 105.82 |
| B | 105.91 |
| C | 105.59 |
| D | 105.68 |
| E | 105.65 |
| F | 105.62 |
| G | 105.57 |
| H | 105.43 |
| I | 105.53 |
| J | 105.48 |
| K | 105.13 |
| L | 105.23 |
| M | 105.18 |
| N | 105.04 |
| | 105.14 |
| | 105.09 |
| | 105.06 |
| | 105.15 |

NOTES
 * FOR GENERAL NOTES SEE SHEET 3
 * FOR BAR SCHEDULE SEE SHEET 17
 * CUT AND PLACE BACKWALL REINFORCEMENT TO ACCOMMODATE AND PLACE UTILITY OPENINGS FOR SECTION A-A, B-B AND C-C SEE SHEET 11
 * FOR UTILITY OPENING DETAILS SEE SHEET 9
 * FOR SECTION D-D SEE SHEET 9
 * FOR R.S.M./CO. PIPE SLEEVE DETAIL SEE BC-794



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

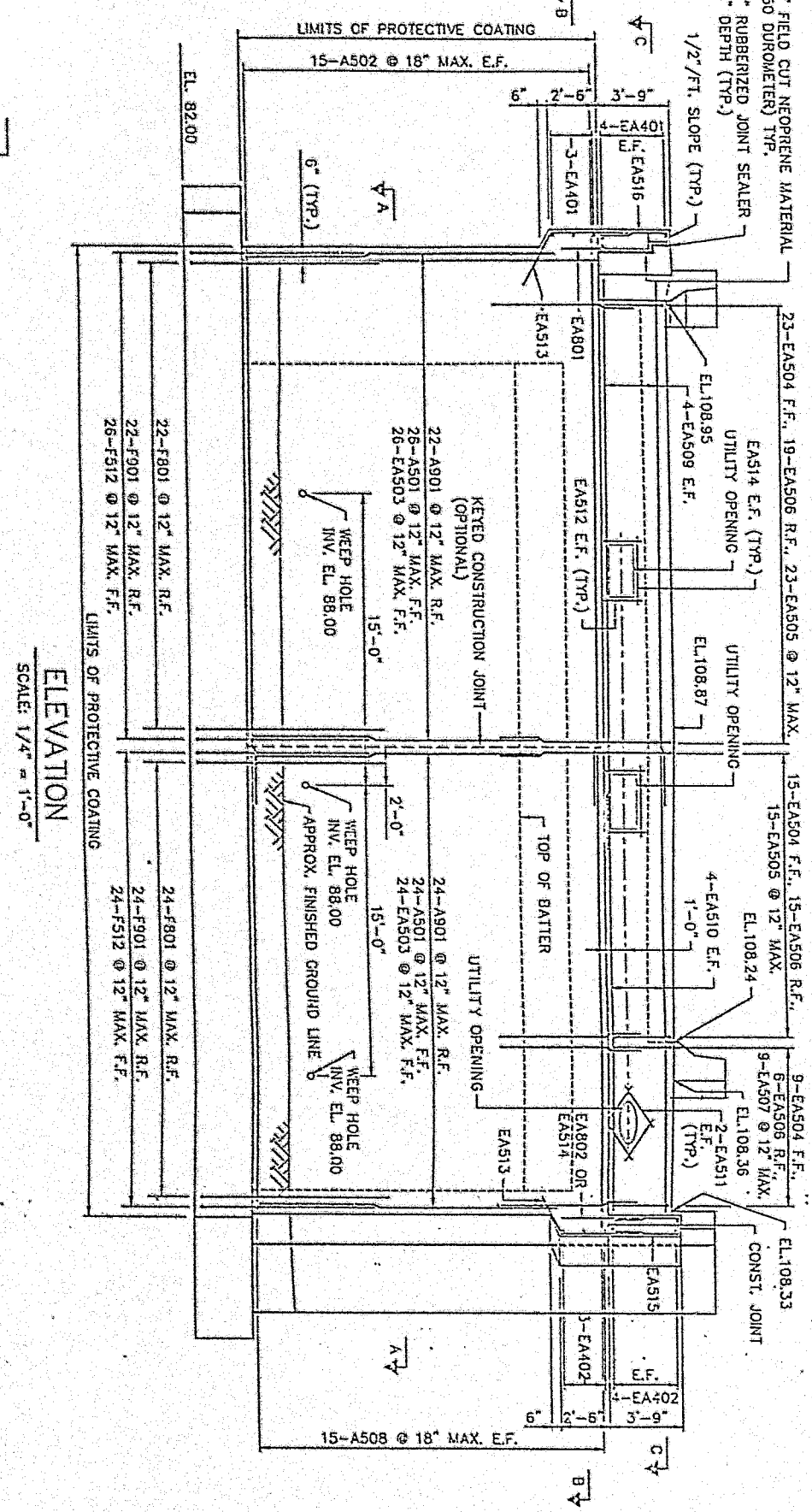
| Mark | Description | By | Chk'd. | Reco. | Date |
|------|-------------|----|--------|-------|------|
| | REVISIONS | | | | |

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

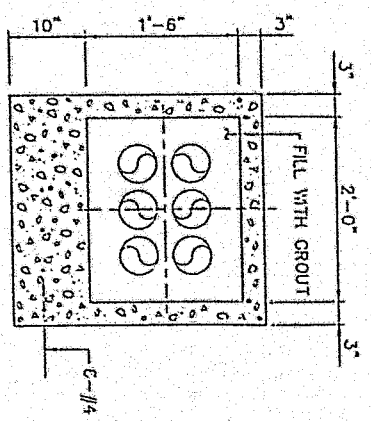
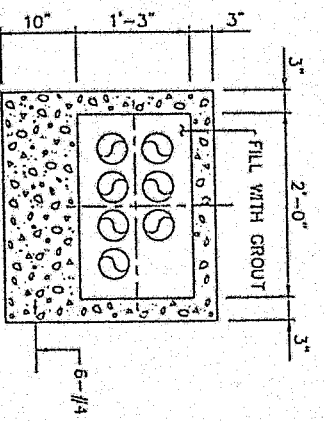
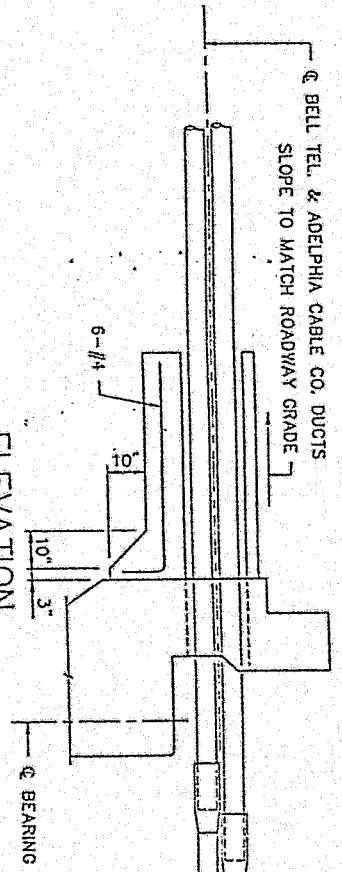
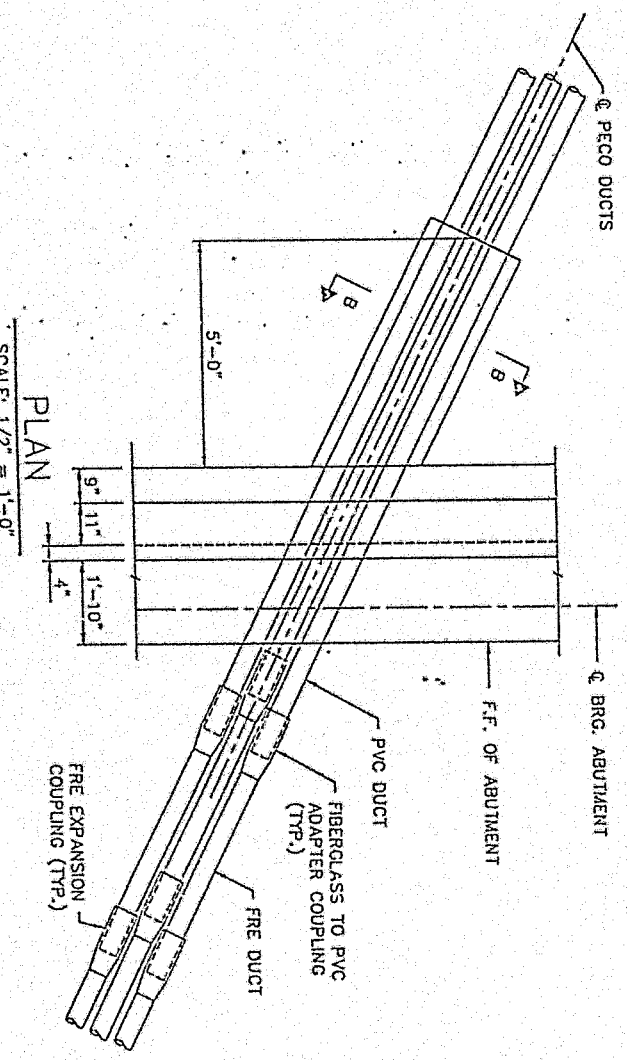
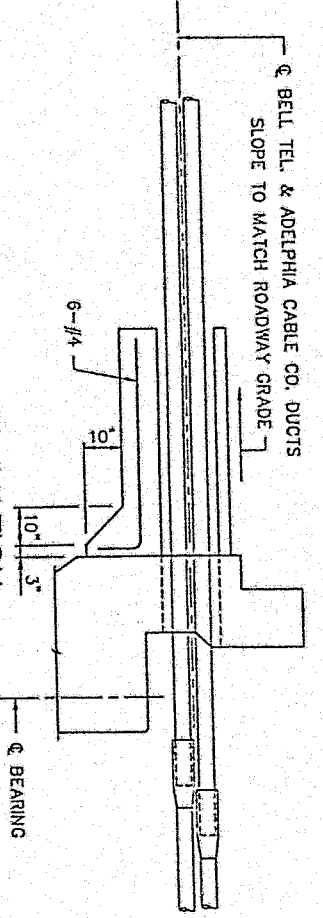
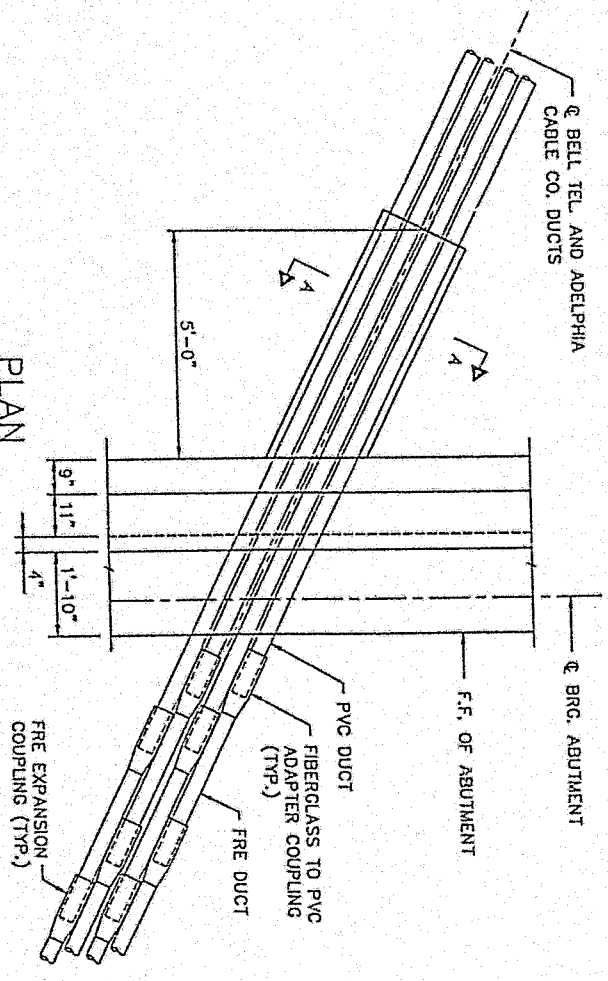
DELAWARE COUNTY
 SEC. 12S
 S.R. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 ABUTMENT 2

RECOMMENDED 3-19-92
 SHEET 8 OF 20
 S-17313

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

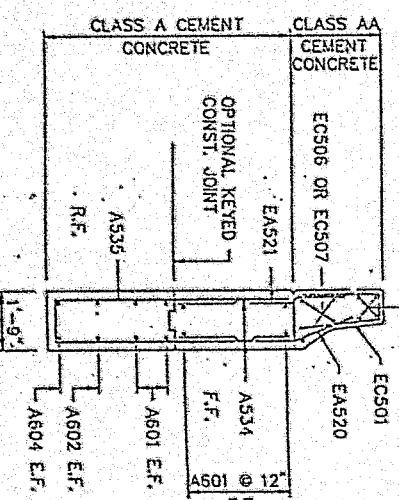
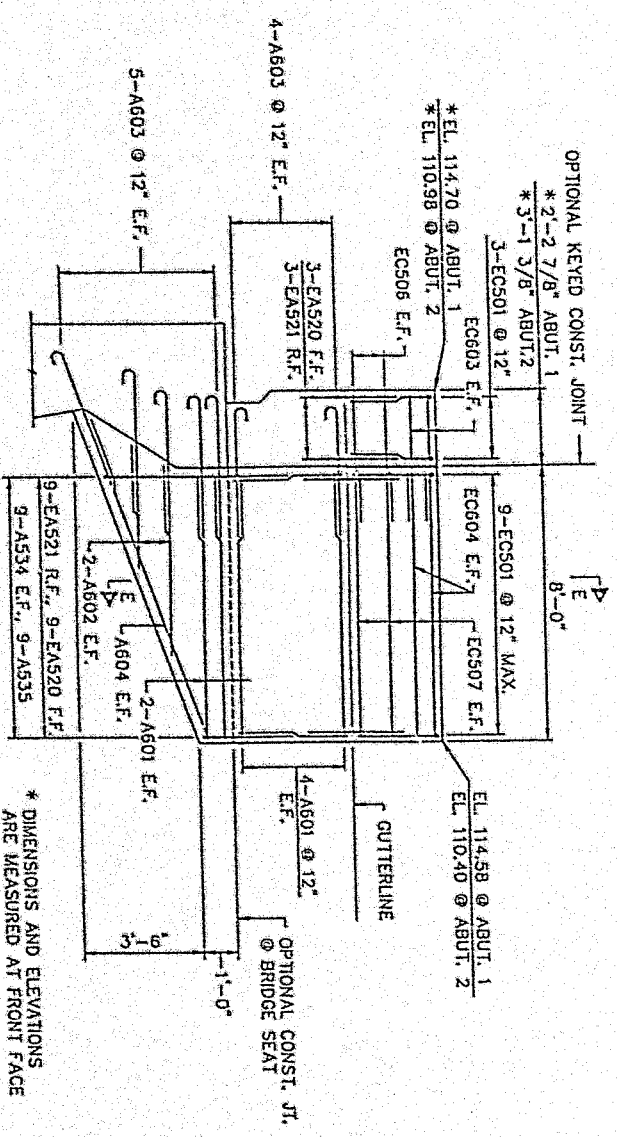


K05



BELL TEL. & ADELPHIA CABLE CO.
DUCTS AT ABUTMENTS

PECO DUCTS AT ABUTMENT



CERTIFIED CORRECT PLANS

Approved by
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
Director of Safety & Compliance
SEP 12 1992

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
ABUTMENT DETAILS

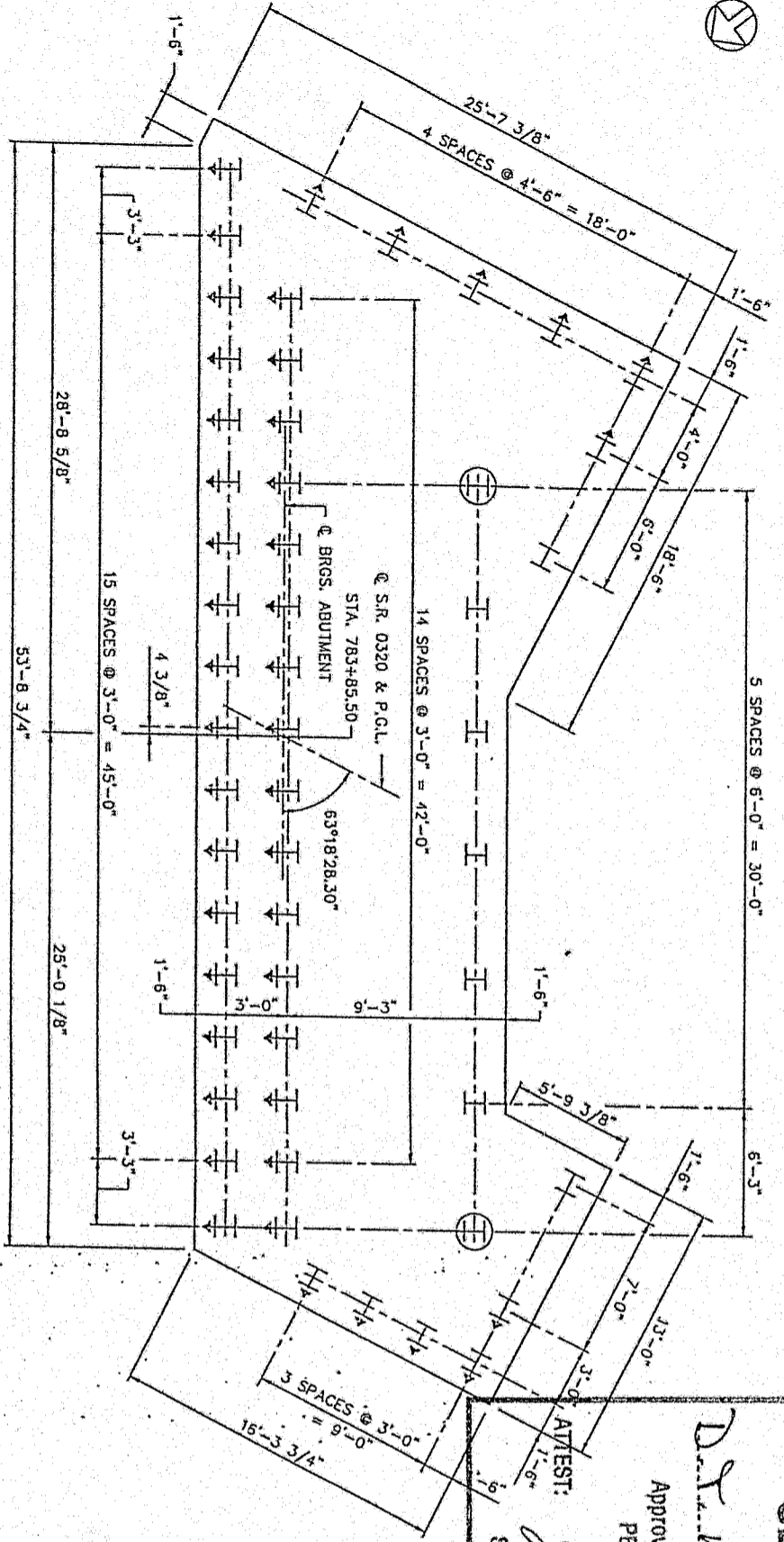
| Mark | Description | By | Chk'd | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | REVISIONS | | | | |

NOTES
FOR ABUTMENT 1 SEE SHEET 7
FOR ABUTMENT 2 SEE SHEET 8
FOR UTILITY SUPPORT DETAILS AND
ADDITIONAL NOTES SEE SHEET 2
EXTEND ALL DUCTS A MINIMUM
OF 2'-0" BEYOND END OF
APPROACH SLAB.

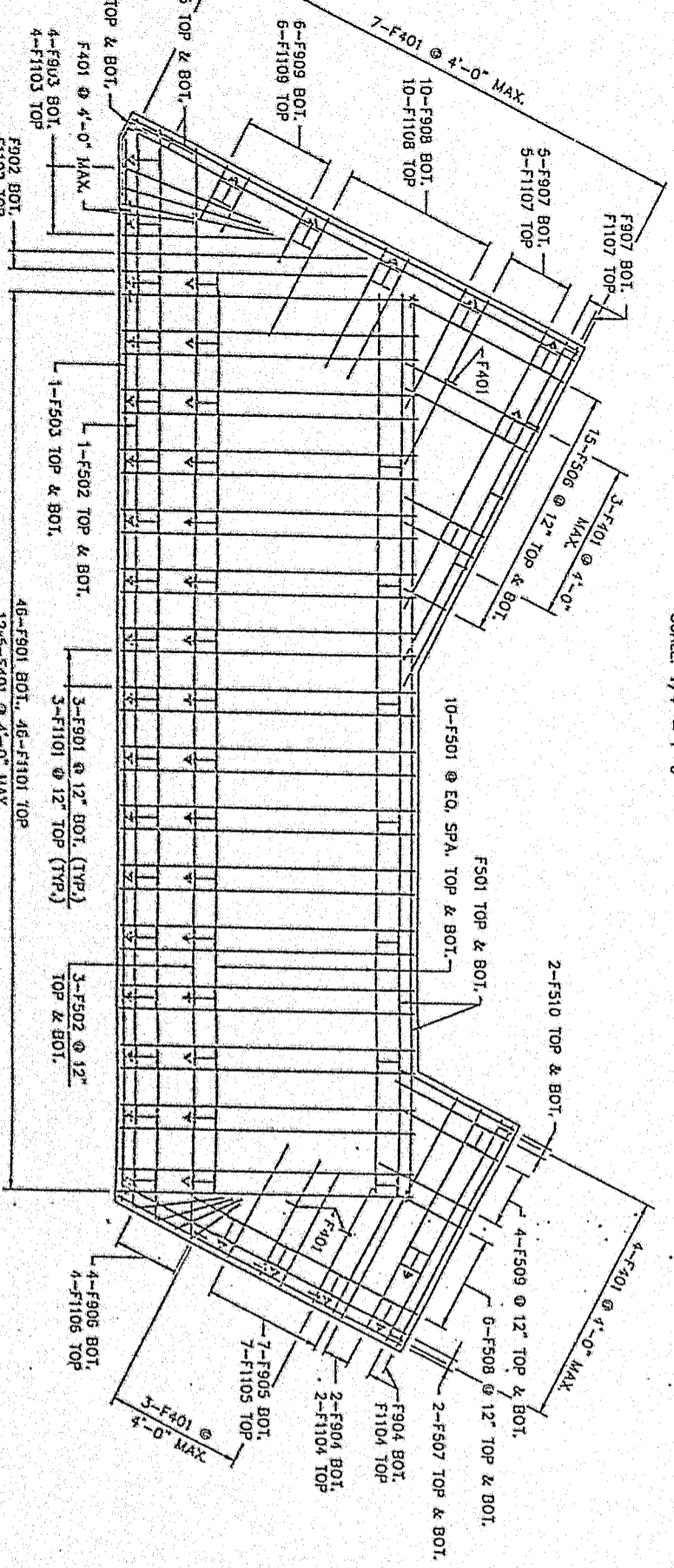
* DIMENSIONS AND ELEVATIONS
ARE MEASURED AT FRONT FACE

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

RECOMMENDED 3-19-92 SHEET 9 OF 40 S - 17313



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

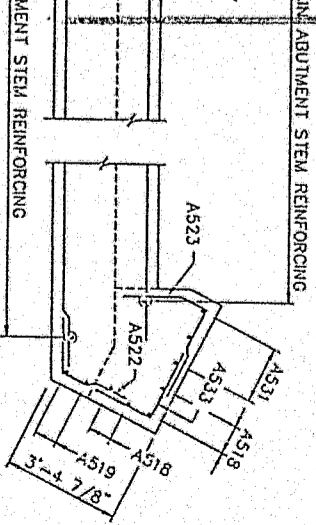


REINFORCEMENT PLACEMENT PLAN
SCALE: 1/4" = 1'-0"

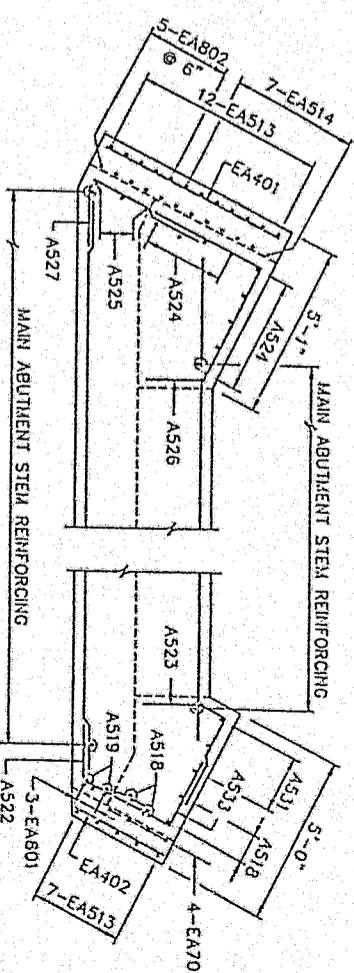
CERTIFIED CORRECT PLANS

Dr. Michael P.E.
Approved by
PENNA. PROFESSIONAL ENGINEERING BOARD
Secretary

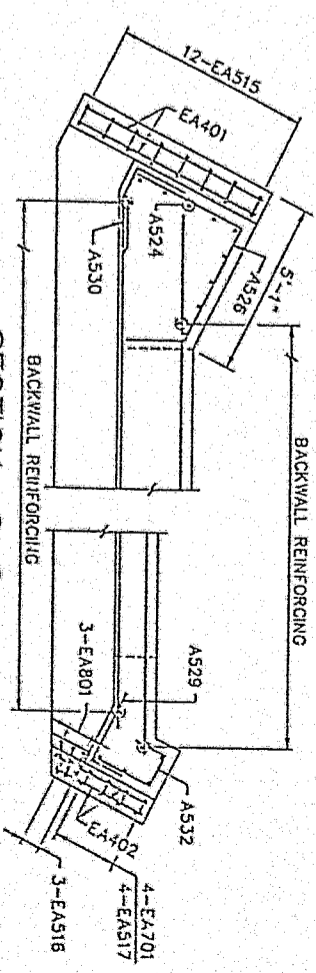
Buyer of State & Commonwealth
SEP 17 1992
MAIN ABUTMENT STEM REINFORCING



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



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



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

- NOTES**
- WORK THIS SHEET WITH SHEETS 7, 12 AND 13
 - FOR BAR SCHEDULE SEE SHEET 16

- LEGEND**
- ⊥ DENOTES VERTICAL PILES
 - ⊥ DENOTES BATTERED PILES 1 TO 3
 - DENOTES DIRECTION OF ARROW
 - ⊕ DENOTES TEST PILES

- PILE NOTES**
- ALL PILES ARE HP12x53 STEEL PILES
 - MAX. PILE DESIGN LOAD = 60 TONS
 - ESTIMATED PILE TIP ELEVATION = EL. 66.00 TO EL. 68.00

| Mark | Description | By | Chkd. | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |
| | | | | | |

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

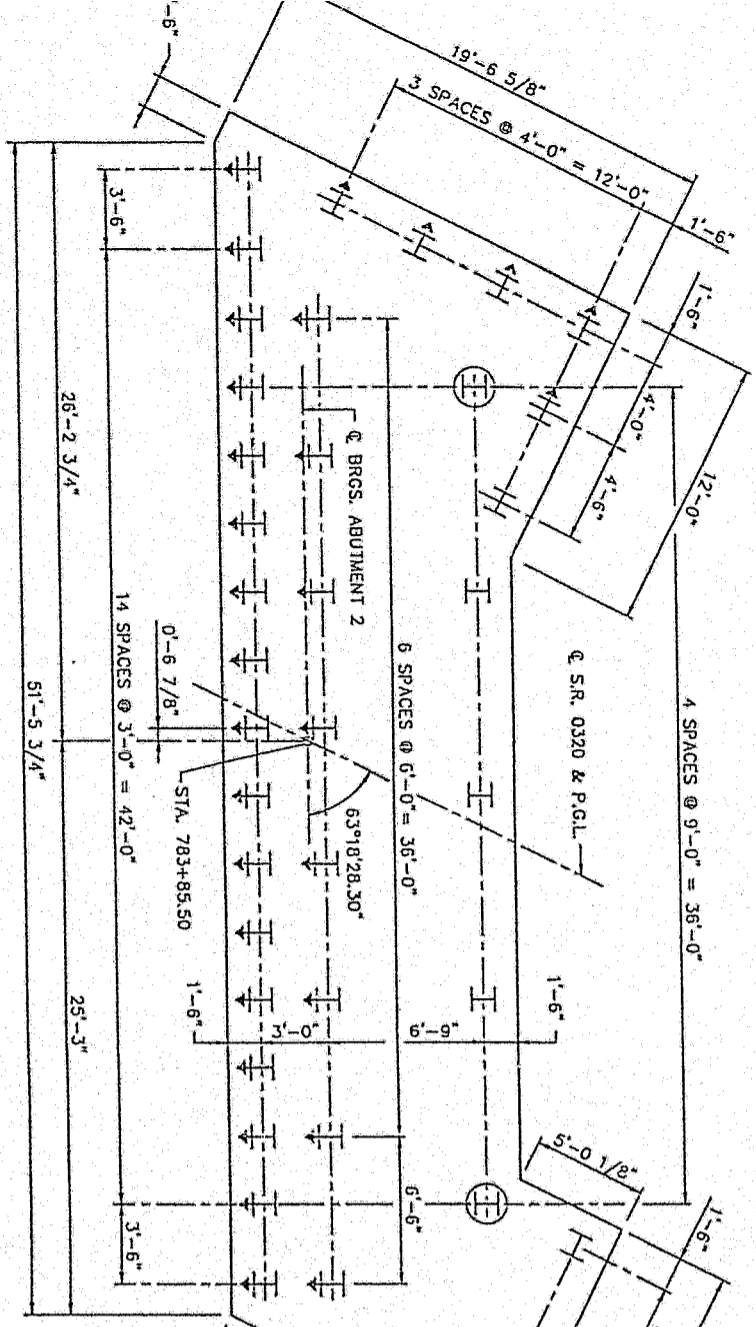
DELAWARE COUNTY
S.R. 0320 SEC. 12S

SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER ANTRAK MAIN LINE

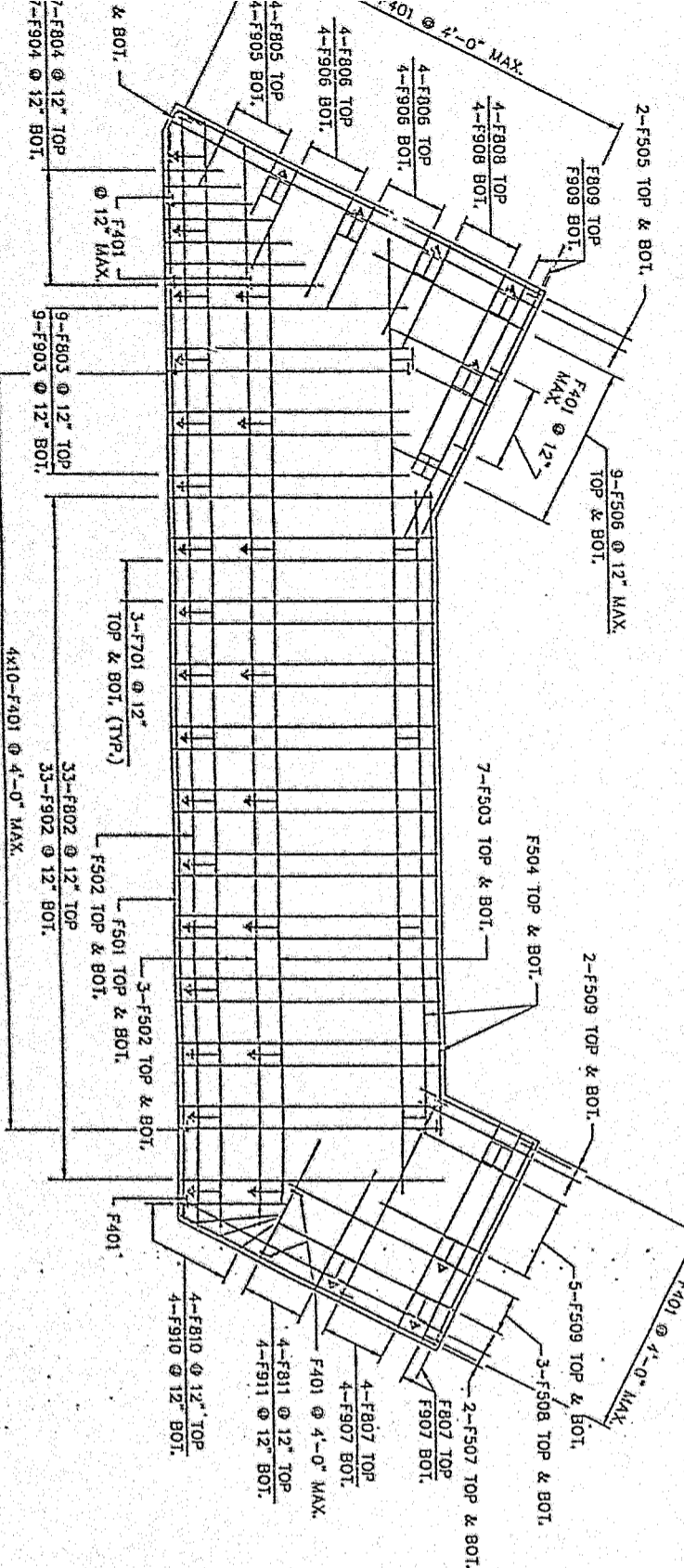
3 SPAN CONTINUOUS BOX BEAM BRIDGE
ABUTMENT 1 FOOTING PLAN & DETAILS

RECOMMENDED 3-16-92 SHEET 10 OF 40

S - 17313



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

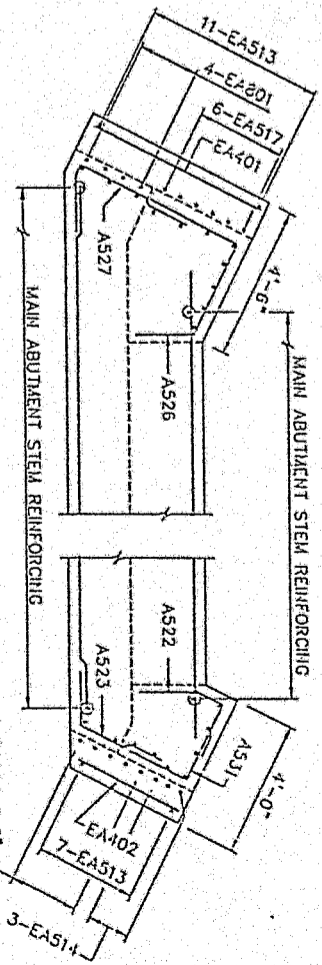


REINFORCEMENT PLACEMENT PLAN
SCALE: 1/4" = 1'-0"

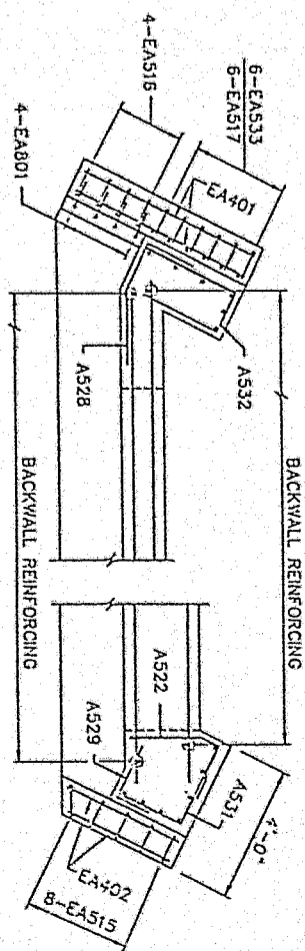
Approved by
[Signature] P.E.
 PENNA. PUBLIC SAFETY
 Director of Safety & Compliance
 ATTEST:
[Signature]
 Secretary

SEP 17 1992

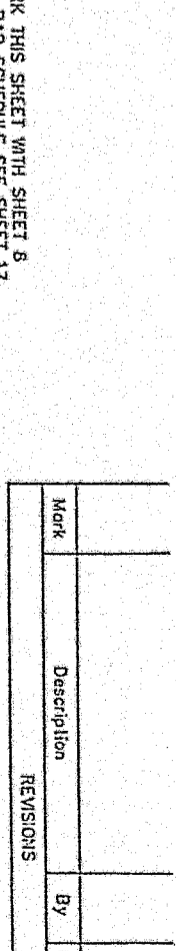
SECTION A-A
SCALE: 3/8" = 1'-0"



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



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



- NOTES**
- WORK THIS SHEET WITH SHEET 8
 - FOR BAR SCHEDULE SEE SHEET 17

- LEGEND**
- ⊥ DENOTES VERTICAL PILES
 - ↕ DENOTES BATTERED PILES 1 TO 3
 - ↔ DENOTES BATTERED PILES 4 TO 6
 - ⊕ 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

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEG. 0320 OFFSET 1108
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE

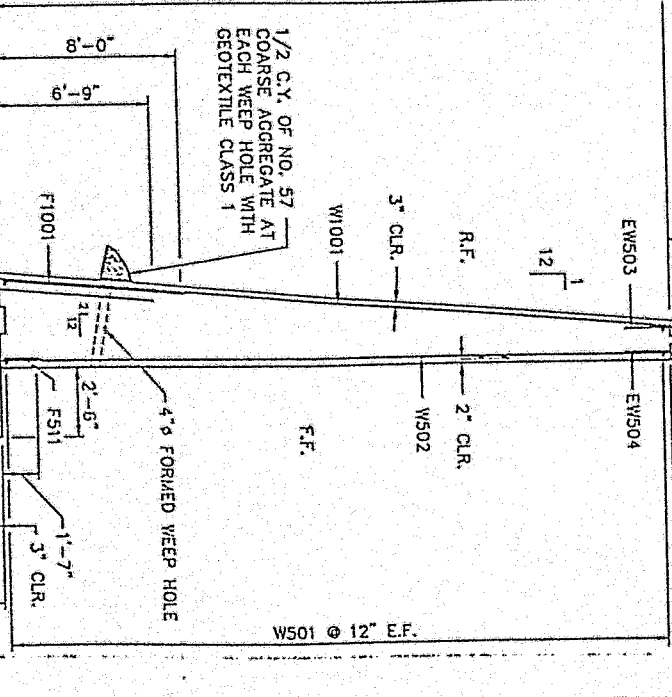
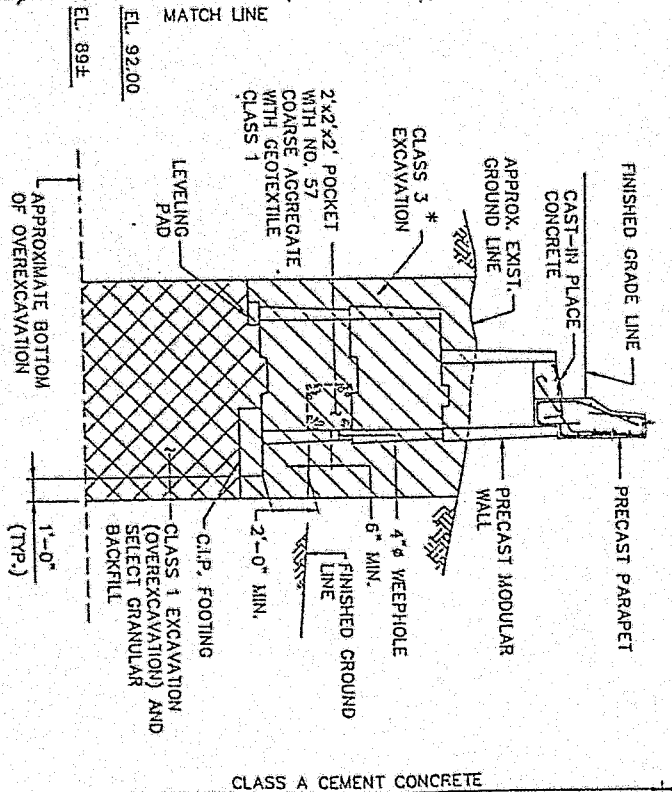
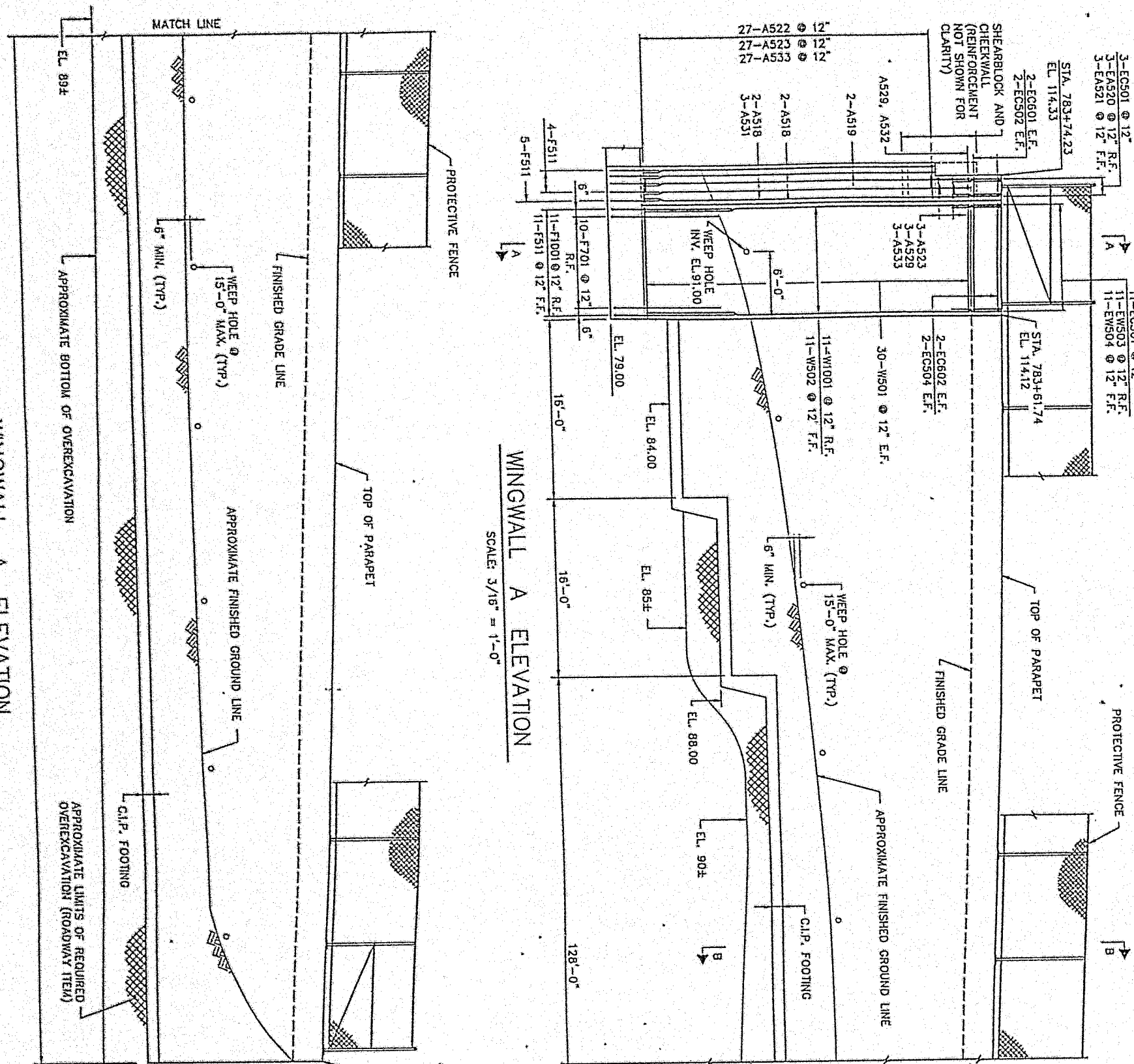
3 SPAN CONTINUOUS BOX BEAM BRIDGE
 ABUTMENT 2 FOOTING PLAN & DETAILS

RECOMMENDED 3-14-92

SHEET 11 OF 40
 S - 17313

| Work | Description | By | Chk'd. | Reco. | Date |
|-----------|-------------|----|--------|-------|------|
| REVISIONS | | | | | |
| | | | | | |

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



CERTIFIED CORRECT PLANS
 SCALE: 1/4" = 1'-0"
 * INCLUDED IN THE L.S. PRICE OF WALL
 APPROVED BY: *[Signature]*
 PENNA. REGISTERED PROFESSIONAL ENGINEER
 SEP 17 1992
 Bureau of Safety & Compliance

ATTEST: *[Signature]* Secretary

STA. 782+01.74
EL. 897.90

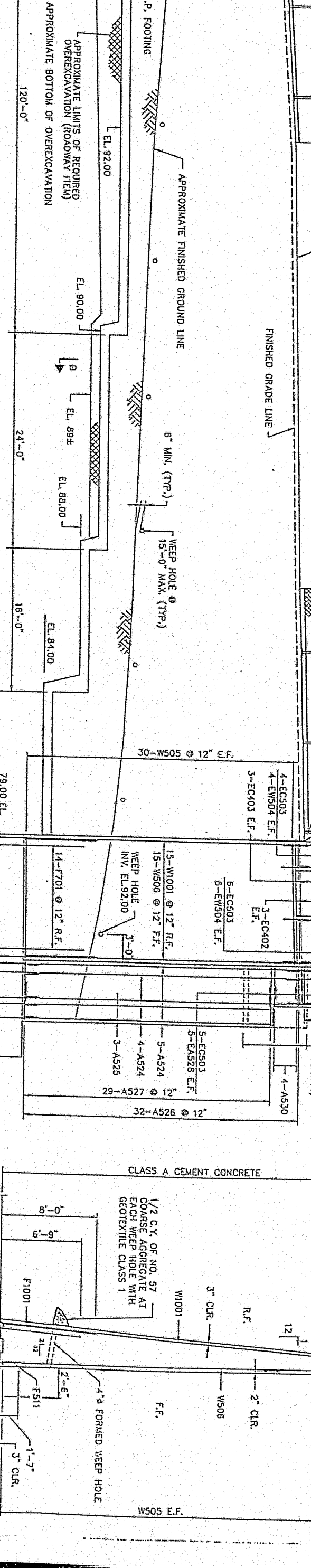
| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|-----------|-------------------------------------|------|----------|
| 0600-0001 | WINGWALL | L.S. | L.S. |
| 4203-0001 | CLASS 1 EXCAVATION SPECIAL | C.Y. | 224 |
| 4205-0200 | SELECTED BORROW EXCAVATION, SPECIAL | C.Y. | 224 |
| 0208-0001 | SPECIAL ROLLING | HOUR | 2 |

FOR INFORMATION ONLY:
 AREA FACE OF WALL = 2700 S.F.
 LENGTH OF PRECAST PARAPET = 160 L.F.
 LENGTH OF PROTECTIVE FENCE = 160 L.F.
 (INCLUDED IN L.S. PRICE OF WALL)

NOTES:
 * WORK THIS SHEET WITH SHEET 10
 * FOR ABUTMENT 1 SEE SHEET 7
 * FOR BAR SCHEDULE SEE SHEET 16
 * ALLOWABLE BEARING PRESSURE = 2.5 TSF

| Mark | Description | By | Chk'd | Reco. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY SEC. 12S
 S.R. 0320 OFFSET 1106
 SEG. 0320 STA. 784+21
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 WINGWALL A
 RECOMMENDED 3-19-92
 SHEET 12 OF 40
 S-17313



| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|-----------|-------------------------------------|-------|----------|
| 8600-0001 | WINGWALL | L.S. | L.S. |
| 4203-0001 | CLASS 1 EXCAVATION SPECIAL | C.Y. | 210 |
| 4205-0200 | SELECTED BORROW EXCAVATION, SPECIAL | C.Y. | 210 |
| 0208-0001 | SPECIAL ROLLING | HOURL | 2 |

FOR INFORMATION ONLY:
 AREA FACE OF WALL = 3300 S.F.
 LENGTH OF PRECAST COPING = 176 L.F.
 (INCLUDED IN L.S. PRICE OF WALL)

CERTIFIED CORRECT PLANS
 Approved by *[Signature]*
 Engineer
 Secretary

NOTES
 WORK THIS SHEET WITH SHEET 10.
 PROVIDE SMOOTH FINISH TO TOP OF WALL AT STAIR OPENING.
 PARAPET ENDS AT STAIR OPENING SHALL BE TRULY VERTICAL.
 FOR PARAPET SEE SHEET 7.
 FOR RAIL SIDE SEE SHEET 16.
 ALL OTHER BILLING REQUIRE = 2.5 TSF.

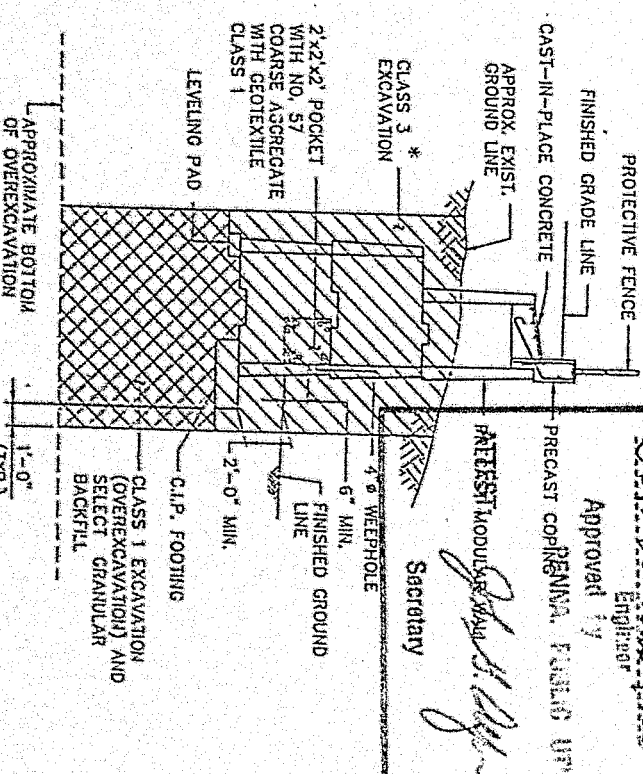
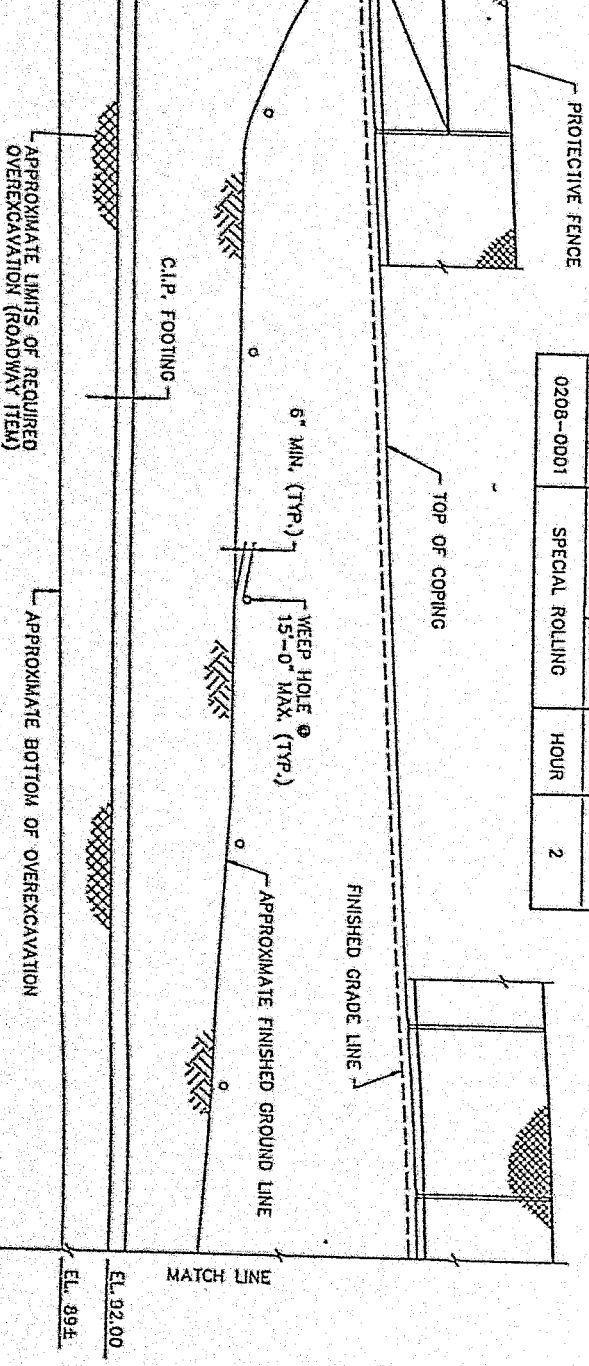
| Work | Description | By | Chk'd. | Reco. | Date |
|------|-------------|----|--------|-------|------|
| | | | | | |

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 3-19-92
 SHEET 13 OF 40

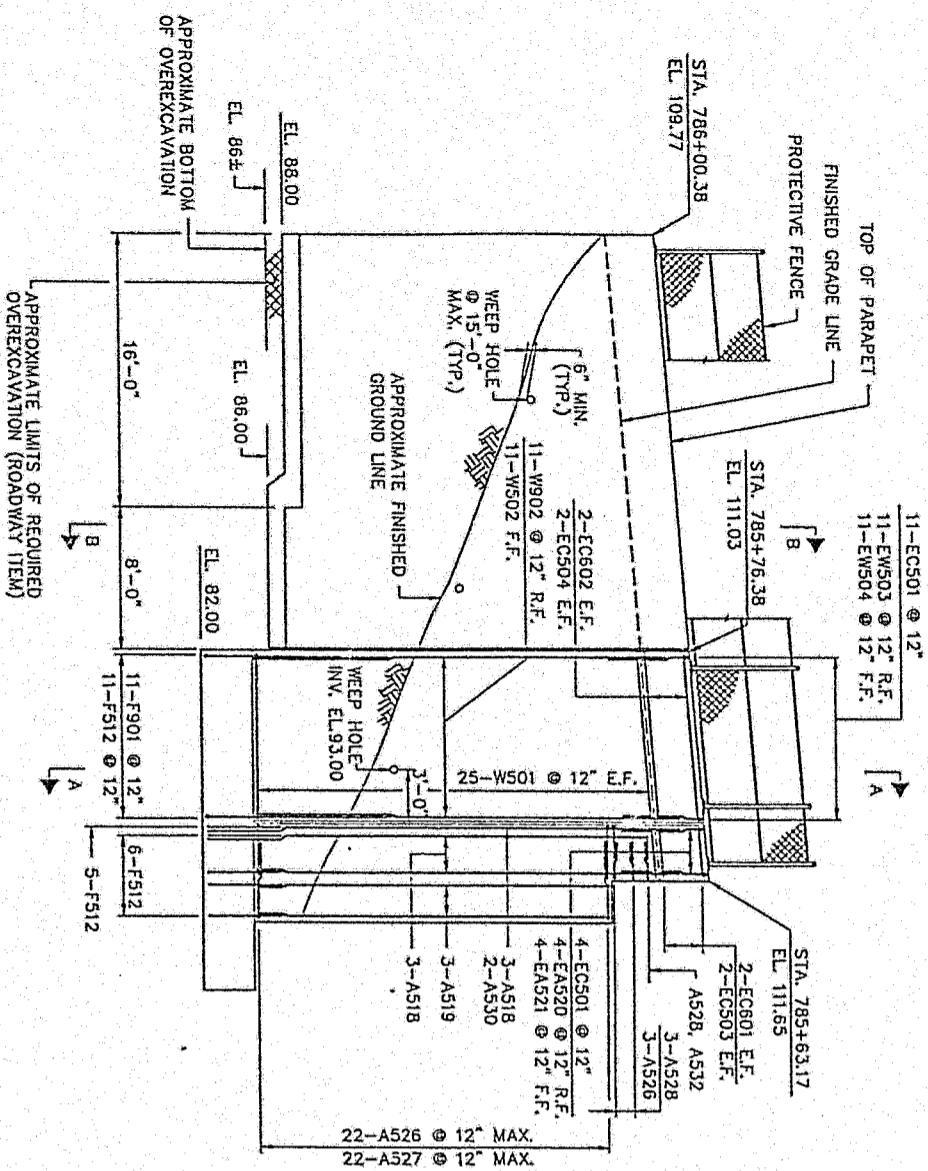


WINGWALL B ELEVATION

SCALE: 3/16" = 1'-0"

SECTION B-B

SCALE: 1/4" = 1'-0"
 * INCLUDED IN THE L.S. PRICE OF WALL



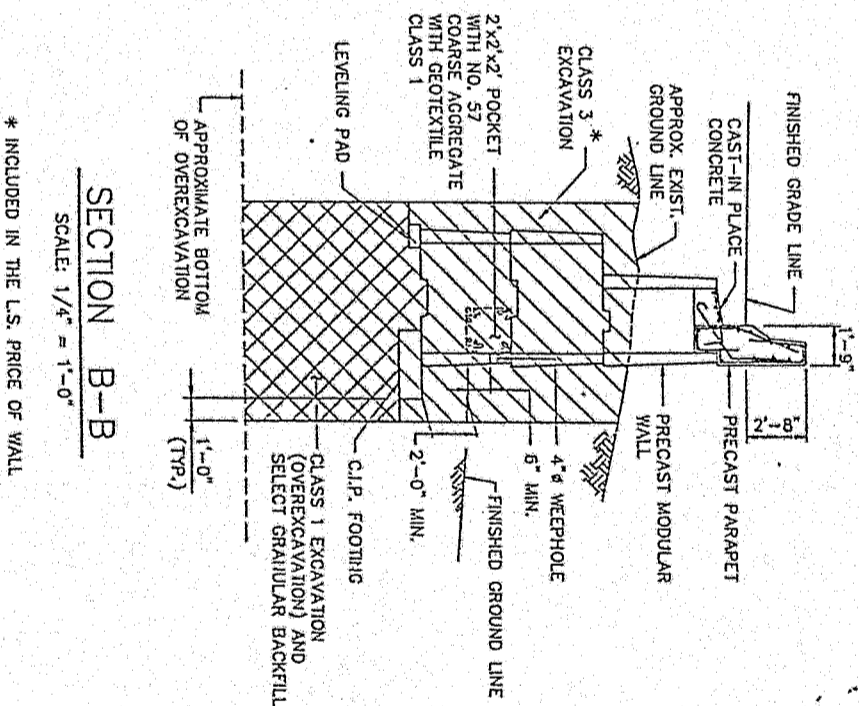
WINGWALL C ELEVATION
SCALE 3/16" = 1'-0"

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|-----------|-------------------------------------|------|----------|
| 8600-0001 | WINGWALL | L.S. | L.S. |
| 4203-0001 | CLASS 1 EXCAVATION SPECIAL | C.Y. | 22 |
| 4205-0200 | SELECTED BORROW EXCAVATION, SPECIAL | C.Y. | 22 |
| 0208-0001 | SPECIAL ROLLING | HOUR | 1 |

FOR INFORMATION ONLY:

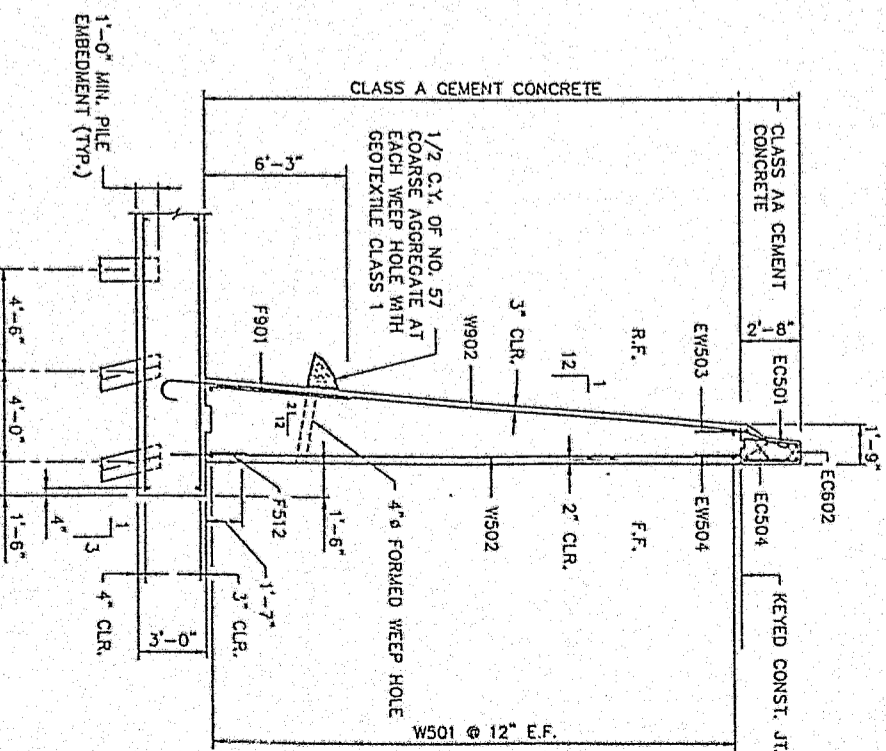
AREA FACE OF WALL = 470 S.F.
LENGTH OF PRECAST PARAPET = 24 L.F.
LENGTH OF PROTECTIVE PARAPET = 24 L.F.
(INCLUDED IN L.S. PRICE OF WALL.)

4-1051



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

* INCLUDED IN THE L.S. PRICE OF WALL



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

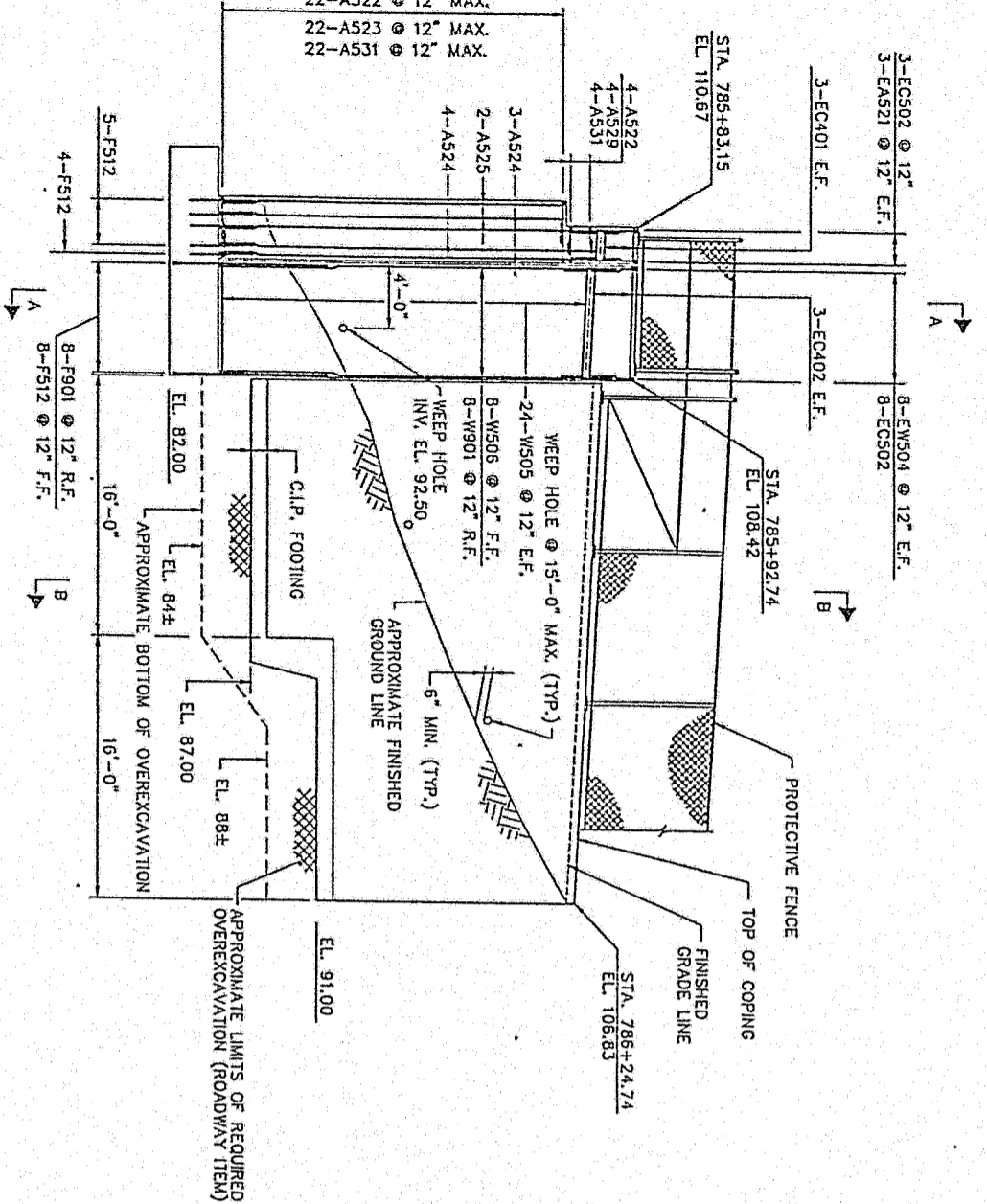
CERTIFIED CORRECT PLANS
Approved: *Howard E. Mundy* P.E.
Engineer
Penn. Public Utility Commission
Bureau of Safety & Compliance
ATTEST: *John J. [Signature]*
Secretary
SEP 17 1992

- NOTES:
- WORK THIS SHEET WITH SHEET 11
 - FOR ABUTMENT 2 SEE SHEET 8
 - FOR BAR SCHEDULE SEE SHEET 17
 - ALLOWABLE BEARING PRESSURE = 2.5 TSF

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
DELAWARE COUNTY
SEC. 125
S.R. 0320
SEC. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
WINGWALL C
RECOMMENDED 3-19-92

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

| Mark | Description | By | Chk'd. | Reco. | Date |
|------|-------------|----|--------|-------|------|
| | | | | | |

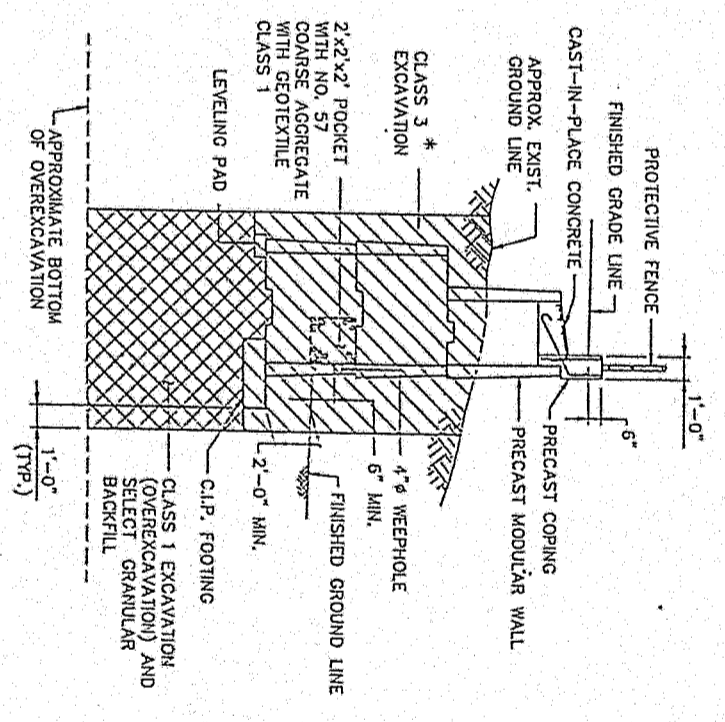


WINGWALL D ELEVATION

SCALE: 3/16" = 1'-0"

| SUMMARY OF QUANTITIES | | | | |
|-----------------------|-------------------------------------|-------|----------|--|
| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | |
| 8600-0001 | WINGWALL | L.S. | L.S. | |
| 4203-0001 | CLASS 1 EXCAVATION, SPECIAL | C.Y. | 53 | |
| 4205-0200 | SELECTED BORROW EXCAVATION, SPECIAL | C.Y. | 53 | |
| 0208-0001 | SPECIAL ROLLING | HOURL | 1 | |

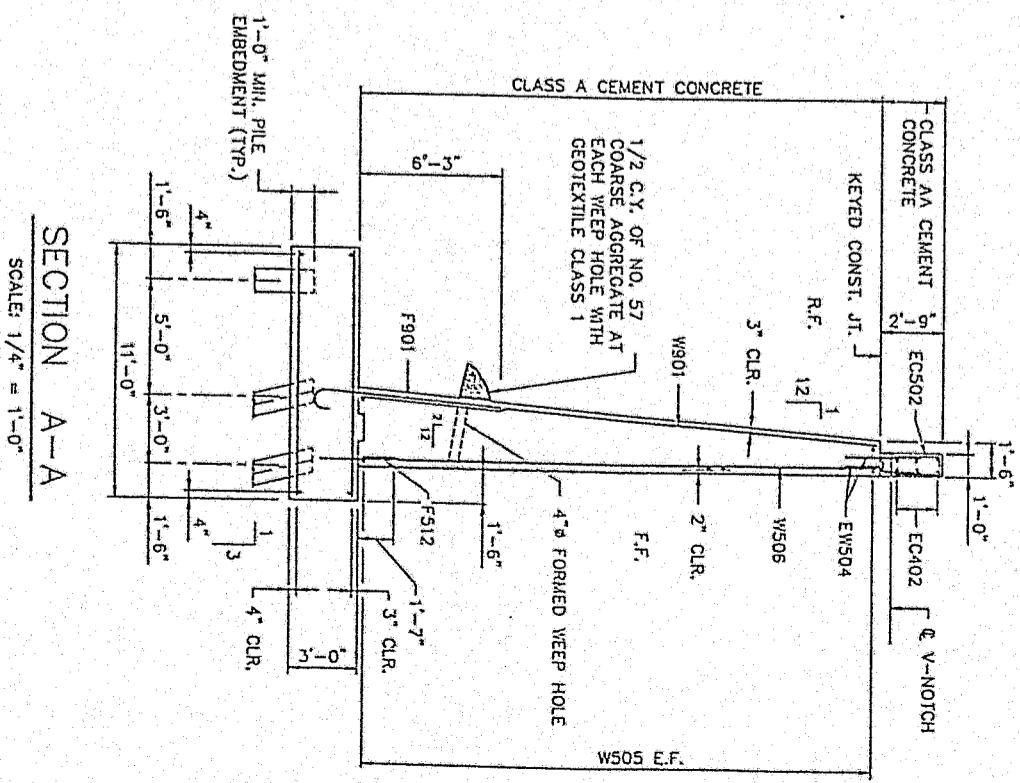
FOR INFORMATION ONLY:
 AREA FACE OF WALL = 560 S.F.
 LENGTH OF PRECAST COPING = 32 L.F.
 LENGTH OF PROTECTIVE FENCE = 32 L.F.
 (INCLUDED IN L.S. PRICE OF WALL)



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 11
 - FOR ABUTMENT 2 SEE SHEET 8
 - FOR BAR SCHEDULE SEE SHEET 17
 - 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 D

RECOMMENDED 3-19-92 SHEET 15 OF 40
 S-17313

CERTIFIED CORRECT PLANS

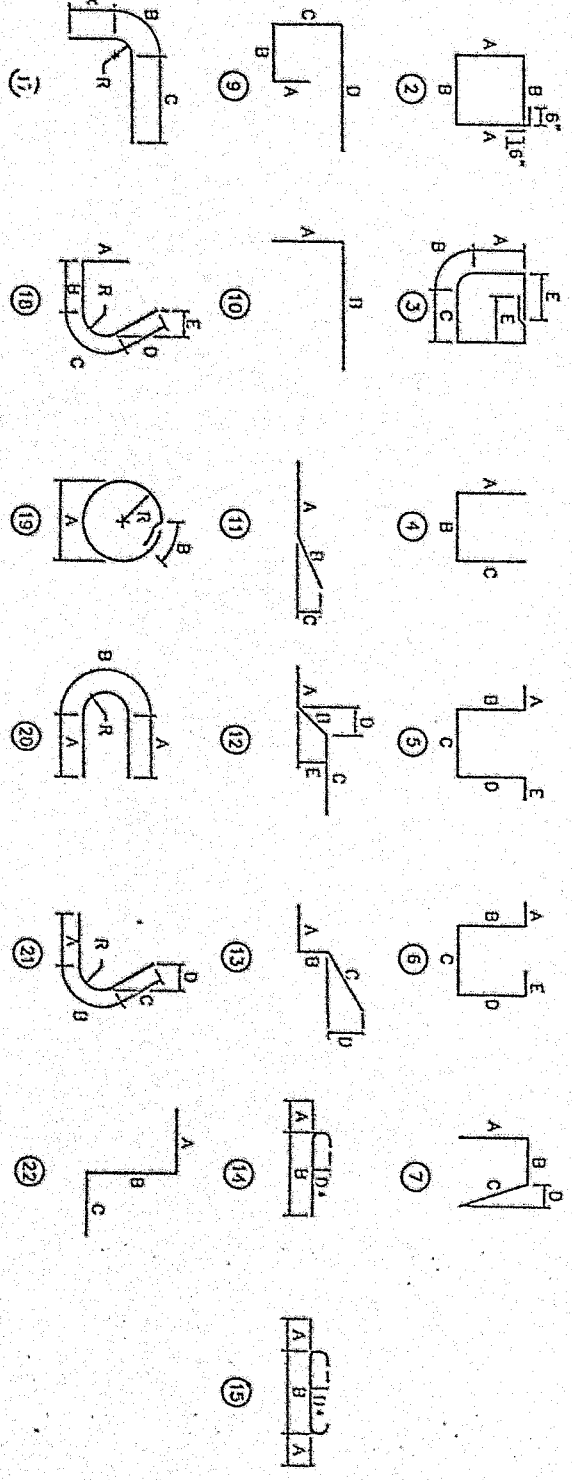
Approved by *[Signature]* P.E.
 Engineer
 PENNA. DEPT. OF TRANSPORTATION
 Bureau of Safety & Compliance

Attested: *[Signature]* Secretary

SEP 17 1992

| NUMBER | LENGTH | TYPE | A | B | ABUTMENT 1 | C | D | E | R | REMARKS |
|--------|-----------------|------|--------|--------|------------|---|-----------|---|---|---------------------------|
| 82 | 3'-3" | (10) | 0'-6" | 2'-5" | 0'-4" | | | | | |
| 24 | 43'-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 | 8'-4" | STR | | | | | | | | |
| 98 | 2'-10" | STR | | | | | | | | |
| 24 | 10'-3" | (11) | 0'-10" | 9'-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 | | | | | | | | |
| 4 | 6'-3" | STR | | | | | | | | VARY 1 EACH BY 0'-3" |
| 7 | 3'-3" TO 4'-0" | STR | | | | | | | | VARY 1 EACH BY 0'-3" |
| 10 | 6'-6" | STR | | | | | | | | VARY 1 EACH BY 1'-8" |
| 6 | 3'-6" | STR | | | | | | | | |
| 4 | 12'-1" | (12) | 1'-5" | 10'-8" | | | | | | |
| 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 | | | | | | | | VARY 1 EACH BY 0'-3" |
| 7 | 6'-3" | STR | | | | | | | | VARY 1 EACH BY 1'-8" |
| 11 | 5'-9" | STR | | | | | | | | |
| 11 | 2'-9" | STR | | | | | | | | |
| 51 | 26'-3" | STR | | | | | | | | |
| 40 | 24'-6" | STR | | | | | | | | |
| 46 | 2'-6" | (13) | 3'-0" | 3'-5" | | | | | | EPOXY COAT 2 BARS ONLY |
| 37 | 5'-0" | STR | | | | | | | | |
| 42 | 7'-6" | (8) | 0'-8" | 1'-9" | 0'-11" | | 0'-5 5/8" | | | |
| 9 | 5'-9" | (8) | 0'-8" | 1'-9" | 1'-11 1/2" | | 0'-5 5/8" | | | |
| 40 | 20'-10" | STR | | | | | | | | EPOXY COAT 2 BARS ONLY |
| 8 | 25'-0" | STR | | | | | | | | |
| 16 | 26'-10" | STR | | | | | | | | |
| 8 | 3'-0" | STR | | | | | | | | |
| 19 | 1'-6" | STR | | | | | | | | |
| 7 | 5'-6" | (14) | 4'-0" | 1'-6" | 1'-3" | | | | | |
| 12 | 7'-7" | (14) | 3'-6" | 0'-7" | 3'-6" | | | | | |

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------|------|--------|------------------|------|----------------|------------|----------------|-----------|---|---|-------------------------------|
| EA516 | 5 | 6 | 3'-7" | (4) | 1'-9" | 0'-4" | 3'-6" | | | | |
| EA517 | 5 | 4 | 4'-0" | (10) | 0'-5" | 3'-7" | | | | | |
| EA518 | 5 | 4 | 29'-6" | STR | | | | | | | |
| EA519 | 5 | 2 | 26'-3" | STR | | | | | | | |
| EA520 | 5 | 15 | 4'-0" | (11) | 2'-0" | 0'-11 1/4" | | | | | |
| EA521 | 5 | 15 | 3'-6" | STR | | | | | | | |
| EA522 | 5 | 27 | 4'-6" | (1) | 2'-3" | 2'-0" | | | | | |
| EA523 | 5 | 30 | 5'-7" | (7) | 3'-0" | 0'-10" | 1'-9" | | | | |
| EA524 | 5 | 9 | 30'-0" | STR | | | | | | | |
| EA525 | 5 | 3 | 26'-9" | STR | | | | | | | |
| EA526 | 5 | 32 | 9'-3" | (7) | 3'-9" | 3'-9" | 1'-9" | 0'-9 1/2" | | | |
| EA527 | 5 | 29 | 6'-0" | (7) | 3'-6" | 0'-6" | 2'-0" | 1'-9 1/2" | | | |
| EA528 | 5 | 10 | 3'-6" | STR | | | | | | | |
| EA529 | 5 | 4 | 3'-0" | (10) | 1'-0" | 2'-0" | | | | | |
| EA530 | 5 | 4 | 28'-0" | STR | | | | | | | |
| EA531 | 5 | 3 | 4'-5" | (7) | 1'-6" | 0'-9" | 1'-6" | 1'-4 1/8" | | | |
| EA532 | 5 | 1 | 4'-3" | (4) | 1'-10" | 1'-5" | 1'-0" | | | | |
| EA533 | 5 | 30 | 5'-9" | (10) | 2'-9" | 3'-0" | | | | | |
| EA534 | 5 | 18 | 3'-0" | STR | | | | | | | |
| EA535 | 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" |
| EA601 | 6 | 12 | 7'-9" | STR | | | | | | | |
| EA602 | 6 | 4 | 3'-10" TO 5'-8" | STR | | | | | | | VARY 2 EACH BY 1'-10" |
| EA603 | 6 | 18 | 4'-11" | (4) | 0'-8" | 4'-3" | | | | | |
| EA604 | 6 | 2 | 9'-6" | STR | | | | | | | |
| EA701 | 7 | 4 | 5'-10" | STR | | | | | | | |
| EA801 | 8 | 3 | 5'-11" | (10) | 0'-7" | 5'-4" | | | | | |
| EA802 | 8 | 5 | 6'-0" | STR | | | | | | | |
| A1001 | 10 | 43 | 24'-6" | STR | | | | | | | |
| A1002 | 10 | 41 | 12'-10" | STR | | | | | | | |
| EG401 | 4 | 6 | 3'-8" | STR | | | | | | | |
| EG402 | 4 | 6 | 6'-0" | STR | | | | | | | |
| EG403 | 4 | 6 | 3'-1" | STR | | | | | | | |
| EG501 | 5 | 26 | 5'-5" | (7) | 2'-3 1/2" | 0'-9" | 2'-4 1/2" | 0'-3" | | | |
| EG502 | 5 | 4 | 1'-10" | STR | | | | | | | |
| EG503 | 5 | 15 | 5'-11" | (4) | 2'-7" | 0'-9" | 2'-7" | | | | |
| EG504 | 5 | 4 | 9'-10" | STR | | | | | | | |
| EG505 | - | - | - | - | | | | | | | |
| EG506 | 5 | 4 | 4'-4" | STR | | | | | | | |
| EG507 | 5 | 4 | 7'-8" | STR | | | | | | | |
| EG601 | 6 | 4 | 1'-10" | STR | | | | | | | |
| EG602 | 6 | 4 | 9'-10" | STR | | | | | | | |
| EG603 | 6 | 4 | 4'-9" | STR | | | | | | | |
| EG604 | 6 | 4 | 7'-8" | STR | | | | | | | |
| W501 | 5 | 60 | 9'-10" | STR | | | | | | | |
| W502 | 5 | 11 | 29'-3" | STR | | | | | | | |
| W503 | 5 | 11 | 4'-0" | (11) | 2'-0" | 2'-0" | 0'-11 1/4" | | | | |
| W504 | 5 | 31 | 3'-6" | STR | | | | | | | |
| W505 | 5 | 60 | 14'-3" | STR | | | | | | | |
| W506 | 5 | 15 | 29'-4" | STR | | | | | | | |
| W1001 | 10 | 26 | 29'-6" | STR | | | | | | | |



* E PREFIX DENOTES EPOXY COATED BARS.
 * FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.
 * FIGURES IN CIRCLES SHOW TYPES.
 * ** DIMENSION ON THE SLOPE, AND SHOW THE HOOK NECESSARY TO RESIST HOOK SIZE, OTHERWISE SLOPE HOOKS ARE USED.
 * REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BIDDING AND FABRICATION.

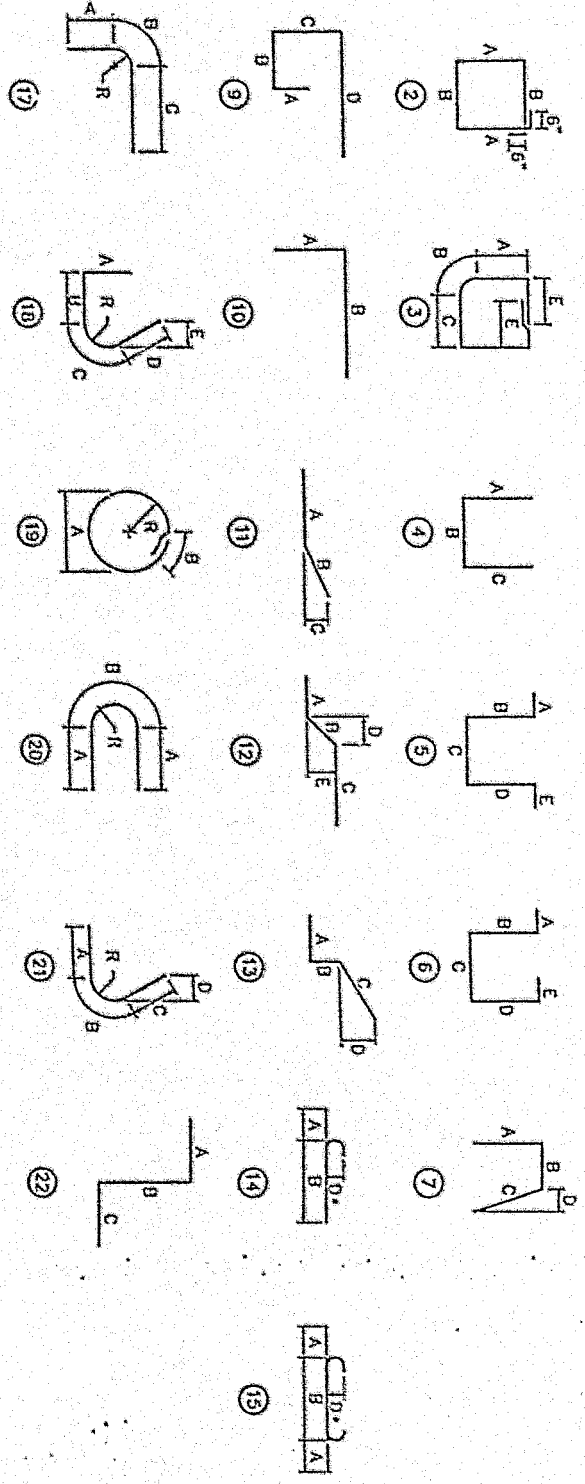
CERTIFIED CORRECT PLANS
 APPROVED BY: *[Signature]* P.E.
 SECRETARY: *[Signature]*
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY
 S.R. 0320 - SEG. 42S
 SEG. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 ABUTMENT 1 BAR SCHEDULE
 RECOMMENDED 3-19-92
 SHEET 10 OF 40
 S-17313

REINFORCEMENT BAR SCHEDULE

| NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|--------|-----------------|------|--------|--------|------------|-----------|---|---|------------------------|
| 61 | 3'-3" | (10) | 0'-6" | 2'-5" | 0'-4" | | | | |
| 2 | 51'-3" | S1R | | | | | | | |
| 8 | 52'-7" | S1R | | | | | | | |
| 14 | 45'-6" | S1R | | | | | | | |
| 4 | 30'-6" | S1R | | | | | | | |
| 4 | 19'-1" | S1R | | | | | | | |
| 18 | 3'-9" TO 7'-9" | S1R | | | | | | | VARY 2 EACH BY 0'-6" |
| 4 | 13'-5" | S1R | | | | | | | |
| 6 | 9'-6" | S1R | | | | | | | |
| 14 | 6'-0" | S1R | | | | | | | |
| 2 | 6'-2" | (7) | 2'-6" | 1'-2" | 2'-6" | 2'-2 3/4" | | | |
| 89 | 2'-10" | S1R | | | | | | | |
| 46 | 11'-7" | (4) | 0'-11" | 10'-8" | | | | | |
| 33 | 12'-5" | S1R | | | | | | | |
| 9 | 11'-5" | S1R | | | | | | | VARY 1 EACH BY 0'-10" |
| 7 | 3'-0" TO 8'-0" | S1R | | | | | | | |
| 4 | 3'-6" | S1R | | | | | | | |
| 8 | 5'-6" | S1R | | | | | | | VARY 1 EACH BY 2'-0" |
| 6 | 10'-8" | S1R | | | | | | | |
| 4 | 5'-6" TO 11'-6" | S1R | | | | | | | VARY 1 EACH BY 1'-0" |
| 2 | 13'-9" | S1R | | | | | | | |
| 4 | 11'-6" | S1R | | | | | | | VARY 1 EACH BY 0'-10" |
| 7 | 3'-0" TO 8'-0" | S1R | | | | | | | |
| 4 | 3'-6" | S1R | | | | | | | |
| 8 | 10'-8" | S1R | | | | | | | VARY 1 EACH BY 2'-0" |
| 6 | 3'-6" | S1R | | | | | | | |
| 4 | 10'-8" | S1R | | | | | | | VARY 1 EACH BY 2'-0" |
| 4 | 5'-6" TO 11'-6" | S1R | | | | | | | VARY 1 EACH BY 1'-0" |
| 2 | 13'-9" | S1R | | | | | | | |
| 4 | 2'-6" TO 5'-6" | S1R | | | | | | | VARY 1 EACH BY 1'-0" |
| 4 | 6'-6" | S1R | | | | | | | |
| 11 | 5'-5" | S1R | | | | | | | |
| 11 | 3'-4" | S1R | | | | | | | |
| 50 | 19'-6" | S1R | | | | | | | EPOXY COAT 3 BARS ONLY |
| 32 | 26'-6" | S1R | | | | | | | |
| 50 | 6'-5" | (10) | 3'-0" | 3'-5" | | | | | |
| 47 | 2'-6" | S1R | | | | | | | |
| 38 | 5'-0" | (8) | 0'-8" | 1'-9" | 0'-11" | 0'-5 5/8" | | | |
| 40 | 7'-6" | (7) | 1'-0" | 3'-0" | 1'-11 1/2" | | | | |
| 40 | 5'-9" | (8) | 0'-8" | 1'-9" | 1'-8" | | | | |
| 32 | 23'-9" | S1R | | | | | | | EPOXY COAT 3 BARS ONLY |
| 8 | 24'-6" | S1R | | | | | | | |
| 8 | 23'-9" | S1R | | | | | | | |
| 8 | 3'-0" | S1R | | | | | | | |
| 8 | 1'-6" | S1R | | | | | | | |
| 18 | 5'-6" | (10) | 4'-0" | 1'-6" | 1'-3" | | | | |

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------|------|--------|------------------|------|----------------|--------|----------------|---|---|---|-------------------------------|
| EA514 | 5 | 11 | 3'-6" | S1R | | | | | | | |
| EA515 | 5 | 8 | 7'-7" | (4) | 3'-6" | 0'-7" | 3'-6" | | | | |
| EA516 | 5 | 4 | 5'-7" | (4) | 1'-9" | 0'-4" | 3'-6" | | | | |
| EA517 | 5 | 6 | 5'-0" | S1R | | | | | | | |
| EA518 | 5 | 6 | 23'-9" | S1R | | | | | | | |
| EA519 | 5 | 3 | 20'-6" | S1R | | | | | | | |
| EA520 | 5 | 3 | 4'-0" | S1R | | | | | | | |
| EA521 | 5 | 16 | 3'-6" | (1) | 2'-0" | 2'-0" | 0'-11 1/4" | | | | |
| EA522 | 5 | 26 | 4'-7" | (7) | 2'-0" | 0'-10" | 1'-9" | | | | |
| EA523 | 5 | 22 | 4'-6" | (1) | 2'-3" | 2'-3" | 2'-0" | | | | |
| EA524 | 5 | 7 | 23'-0" | S1R | | | | | | | |
| AS24 | 5 | 2 | 20'-0" | S1R | | | | | | | |
| AS26 | 5 | 25 | 7'-11" | (7) | 3'-0" | 3'-2" | 1'-9" | | | | |
| AS27 | 5 | 22 | 6'-9" | (7) | 4'-6" | 0'-3" | 2'-0" | | | | |
| AS28 | 5 | 4 | 4'-6" | (7) | 1'-6" | 1'-6" | 1'-6" | | | | |
| AS29 | 5 | 4 | 3'-0" | (10) | 1'-0" | 2'-0" | 1'-4 1/8" | | | | |
| AS30 | 5 | 2 | 22'-5" | S1R | | | | | | | |
| AS31 | 5 | 26 | 4'-0" | (10) | 2'-0" | 2'-0" | 0'-9 1/2" | | | | |
| AS32 | 5 | 1 | 7'-0" | (4) | 3'-0" | 1'-6" | 1'-9 1/2" | | | | |
| EA533 | 5 | 6 | 4'-0" | (10) | 0'-5" | 3'-7" | 2'-6" | | | | |
| AS34 | 5 | 18 | 3'-0" | S1R | | | | | | | |
| AS35 | 5 | 9 | 7'-6" TO 12'-10" | (4) | 3'-0" TO 5'-6" | 1'-6" | 3'-0" TO 5'-8" | | | | VARY 1 AND C. 1 EACH BY 0'-4" |
| A601 | 6 | 12 | 7'-9" | S1R | | | | | | | |
| A602 | 6 | 4 | 3'-10" TO 5'-8" | S1R | | | | | | | VARY 2 EACH BY 1'-10" |
| A603 | 6 | 18 | 4'-11" | (9) | 0'-8" | 4'-3" | | | | | |
| A604 | 6 | 2 | 9'-6" | S1R | | | | | | | |
| EA801 | 8 | 4 | 5'-11" | (10) | 0'-7" | 5'-4" | | | | | |
| EA802 | 8 | 5 | 6'-0" | S1R | | | | | | | |
| A901 | 9 | 46 | 18'-0" | S1R | | | | | | | |
| EC401 | 4 | 6 | 1'-11" | S1R | | | | | | | |
| EC402 | 4 | 6 | 6'-11" | (7) | 2'-3 1/2" | 0'-9" | 2'-4 1/2" | | | | |
| EC501 | 5 | 22 | 5'-5" | (7) | 2'-1" | 0'-9" | 2'-1" | | | | |
| EC502 | 5 | 11 | 4'-11" | (4) | | | | | | | |
| EC503 | 5 | 4 | 3'-0" | S1R | | | | | | | |
| EC504 | 5 | 4 | 9'-8" | S1R | | | | | | | |
| EC505 | 5 | 4 | 9'-8" | S1R | | | | | | | |
| EC506 | 5 | 4 | 4'-4" | S1R | | | | | | | |
| EC507 | 5 | 4 | 7'-8" | S1R | | | | | | | |
| EC601 | 6 | 4 | 3'-0" | S1R | | | | | | | |
| EC602 | 6 | 4 | 9'-8" | S1R | | | | | | | |
| EC603 | 6 | 4 | 4'-9" | S1R | | | | | | | |
| EC604 | 6 | 4 | 7'-8" | S1R | | | | | | | |
| WS01 | 50 | 50 | 9'-8" | S1R | | | | | | | |
| WS02 | 5 | 11 | 23'-0" | S1R | | | | | | | |
| EW503 | 5 | 11 | 4'-0" | (1) | 2'-0" | 2'-0" | 0'-11 1/4" | | | | |
| EW504 | 5 | 27 | 3'-6" | S1R | | | | | | | |
| WS05 | 5 | 46 | 6'-11" | S1R | | | | | | | |
| WS06 | 5 | 8 | 22'-6" | S1R | | | | | | | |
| WS07 | 5 | 8 | 22'-6" | S1R | | | | | | | |
| WS08 | 5 | 8 | 22'-6" | S1R | | | | | | | |
| WS09 | 9 | 8 | 23'-0" | S1R | | | | | | | |
| WS10 | 9 | 11 | 23'-0" | S1R | | | | | | | |

REINFORCEMENT BAR SCHEDULE



- * E PREFIX DENOTES EPOXY COATED BARS.
- * FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.
- * FIGURES IN CIRCLES SHOW TYPES.
- * DIMENSION ON 180° HOOKS ARE SHOWN ON NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE HOOKS ARE USED.
- * REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BUILDING AND FABRICATION.

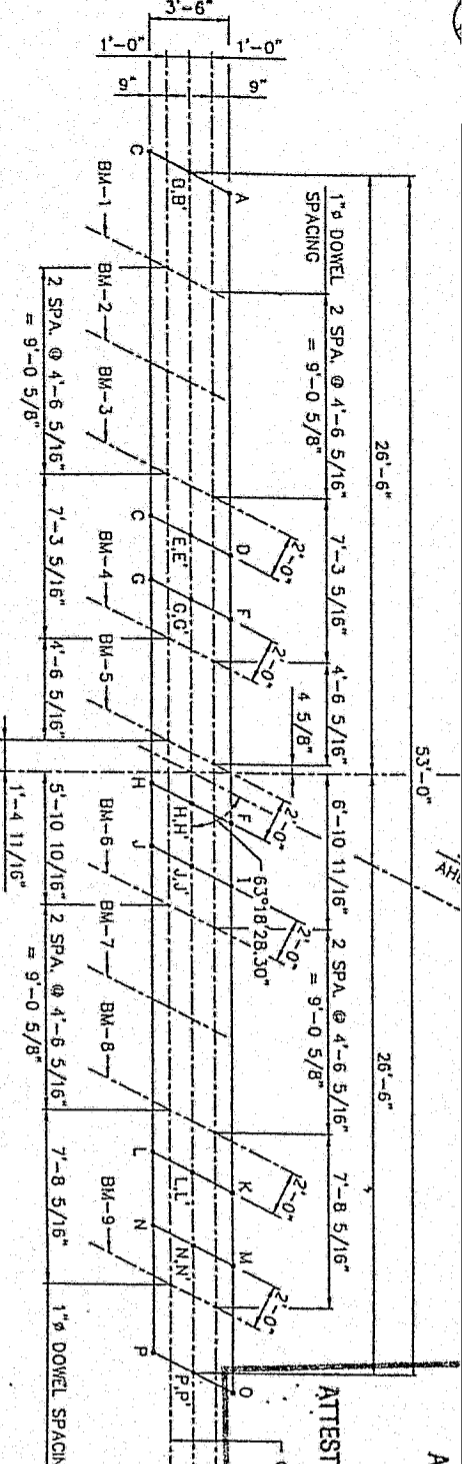
CERTIFIED CORRECT PLANS

D.T. Williams PE
 Engineer

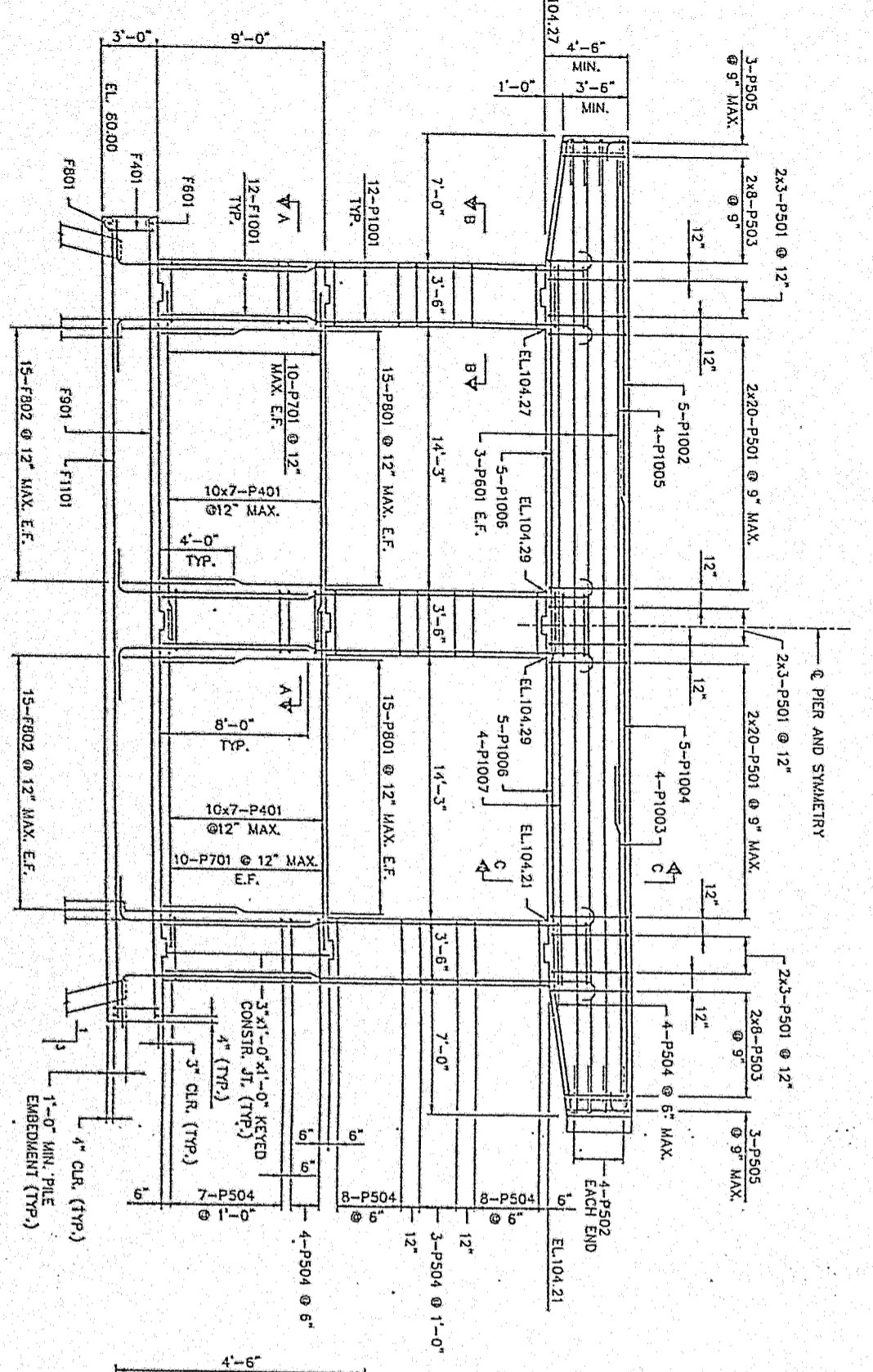
Howard S. Wisely
 Bureau of Safety & Compliance

| 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
 OVER AMTRAK MAIN LINE
 S.R. 0320 STA. 784+21
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 ABUTMENT 2 BAR SCHEDULE
 RECOMMENDED 3-19-92
 SHEET 17 OF 49
 S - 17313

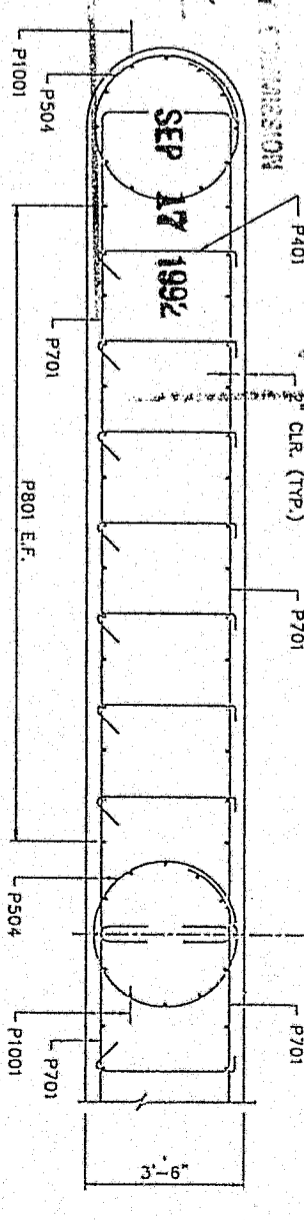


PLAN
SCALE: 1/4" = 1'-0"

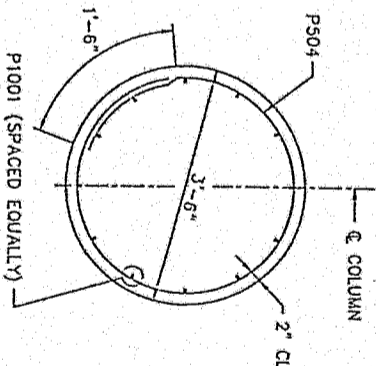


ELEVATION AT PIER
SCALE: 1/4" = 1'-0"

Approved by
PENNSYLVANIA
Secretary



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



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

| Point | Elevation |
|-------|-----------|
| A | 108.96 |
| B | 108.77 |
| B' | 109.00 |
| C | 108.76 |
| D | 108.84 |
| E | 108.77 |
| E' | 108.88 |
| F | 108.93 |
| G | 108.77 |
| G' | 108.97 |
| H | 108.89 |
| H' | 108.97 |
| I | 108.91 |
| J | 108.78 |
| J' | 108.95 |
| K | 108.72 |
| L | 108.71 |
| L' | 108.76 |
| M | 108.85 |
| N | 108.73 |
| N' | 108.90 |
| O | 108.89 |
| P | 108.83 |
| P' | 108.94 |

LEGEND
 EL. = ELEVATION
 J.T. = JOINT
 CONSTR. = CONSTRUCTION
 TYP. = TYPICAL
 MAX. = MAXIMUM
 MIN. = MINIMUM
 E.F. = EACH FACE
 SPA. = SPACES

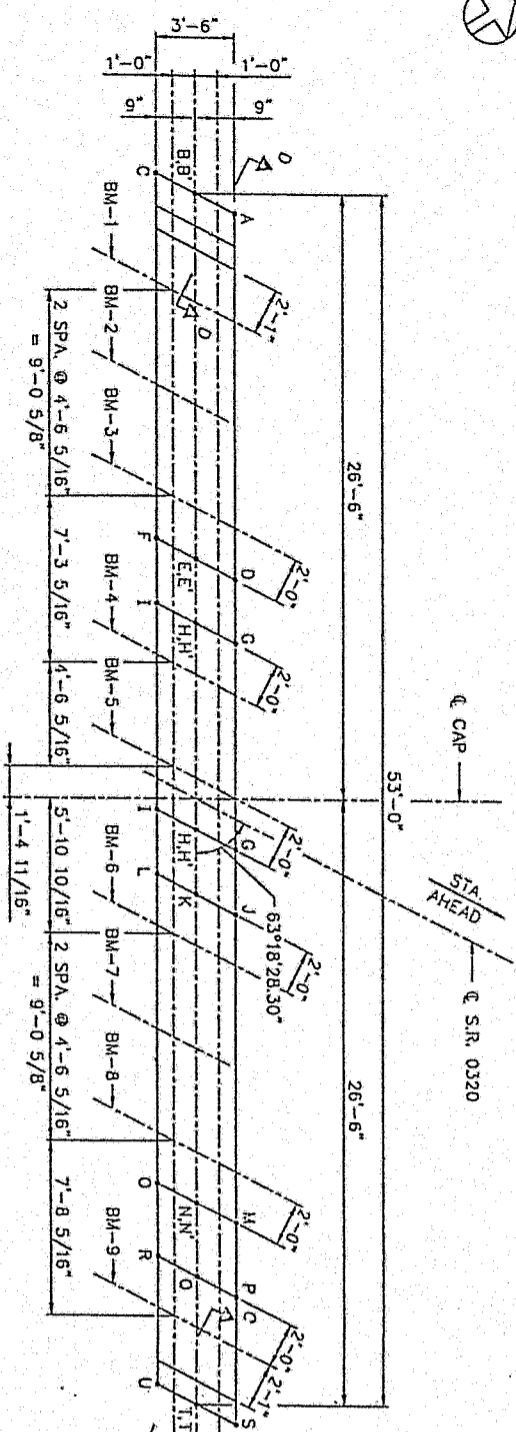
NOTES
 * FOR GENERAL NOTES SEE SHEET 3
 * FOR BAR SCHEDULE SEE SHEET 21

| Mark | Description | By | Chk'd | Reco. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

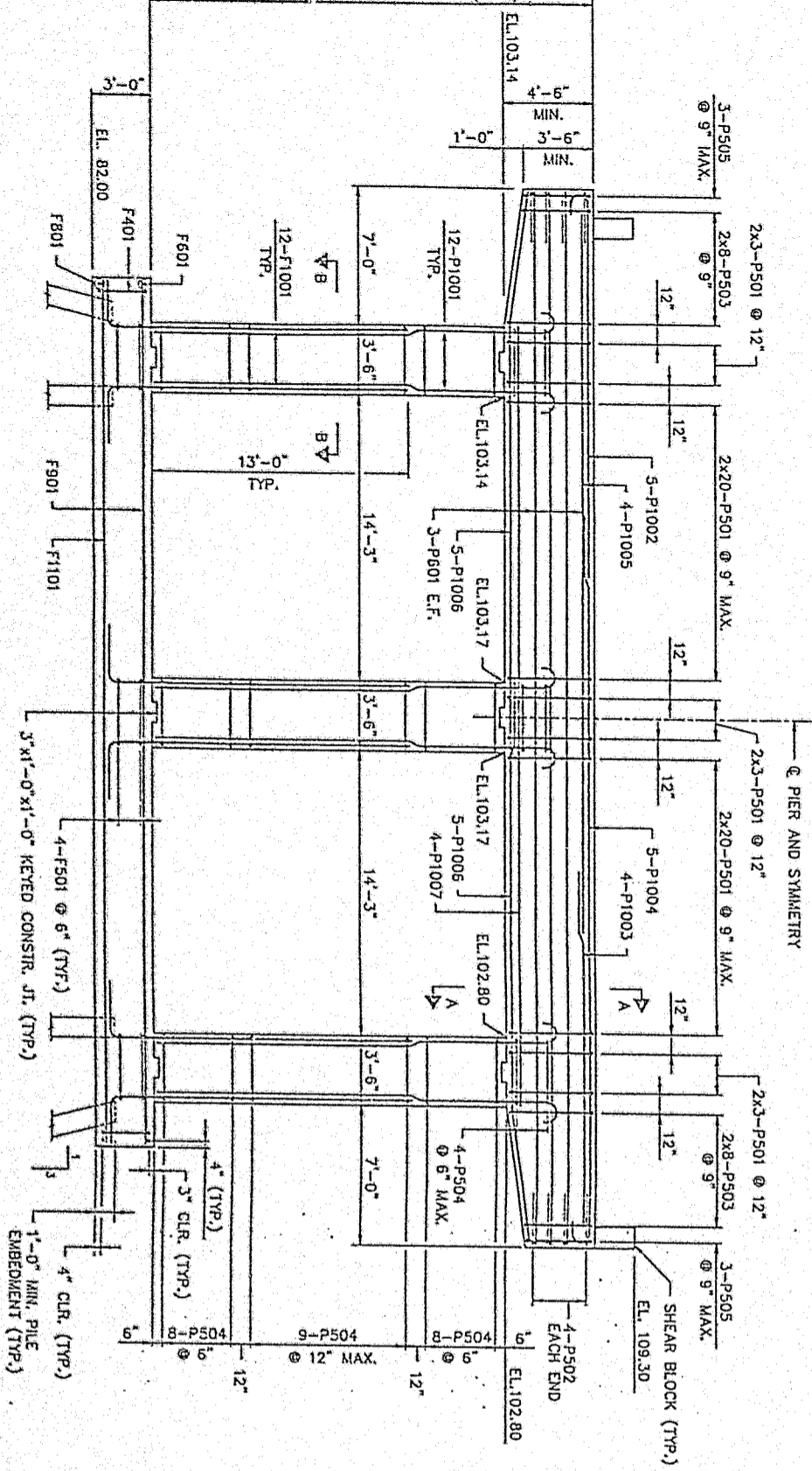
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEC. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 PIER 1

RECOMMENDED 3-19-92
 SHEET 18 OF 40
 S-17313

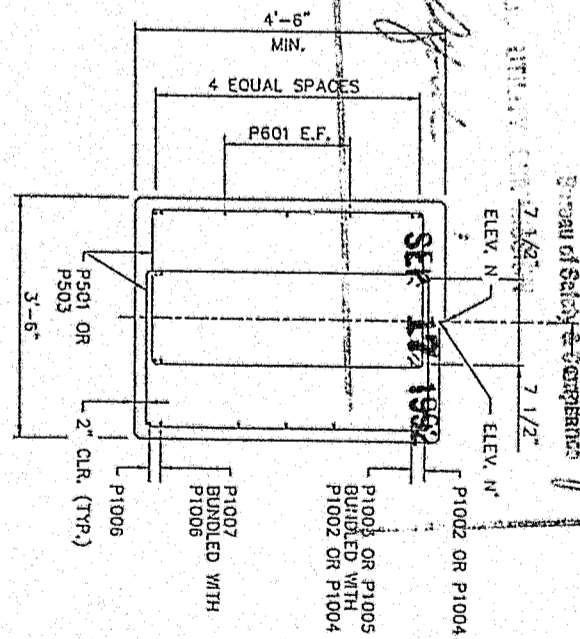


PLAN
SCALE: 1/4" = 1'-0"

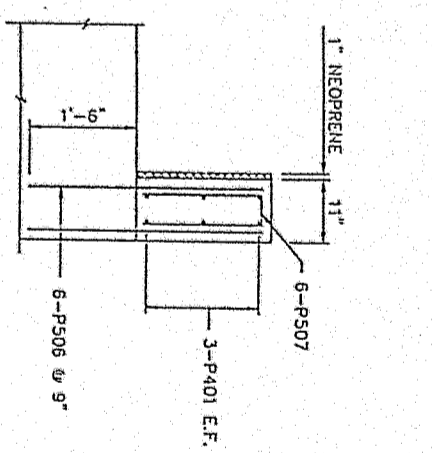


ELEVATION AT C PIER
SCALE: 1/4" = 1'-0"

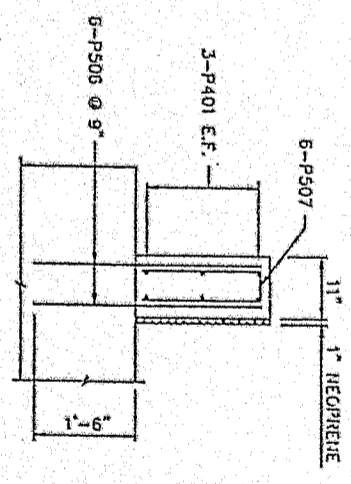
Approved by: *[Signature]*
 PENNA. DEPT. OF TRANSPORTATION
 Bureau of Safety & Compliance
 ELEV. N' 7 1/2"
 ELEV. N' 7 1/2"
 ATTEST: *[Signature]*
 Secretary



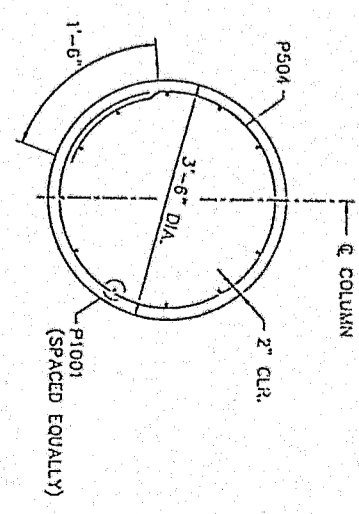
SECTION A-A
SCALE: 3/4" = 1'-0"



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



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



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

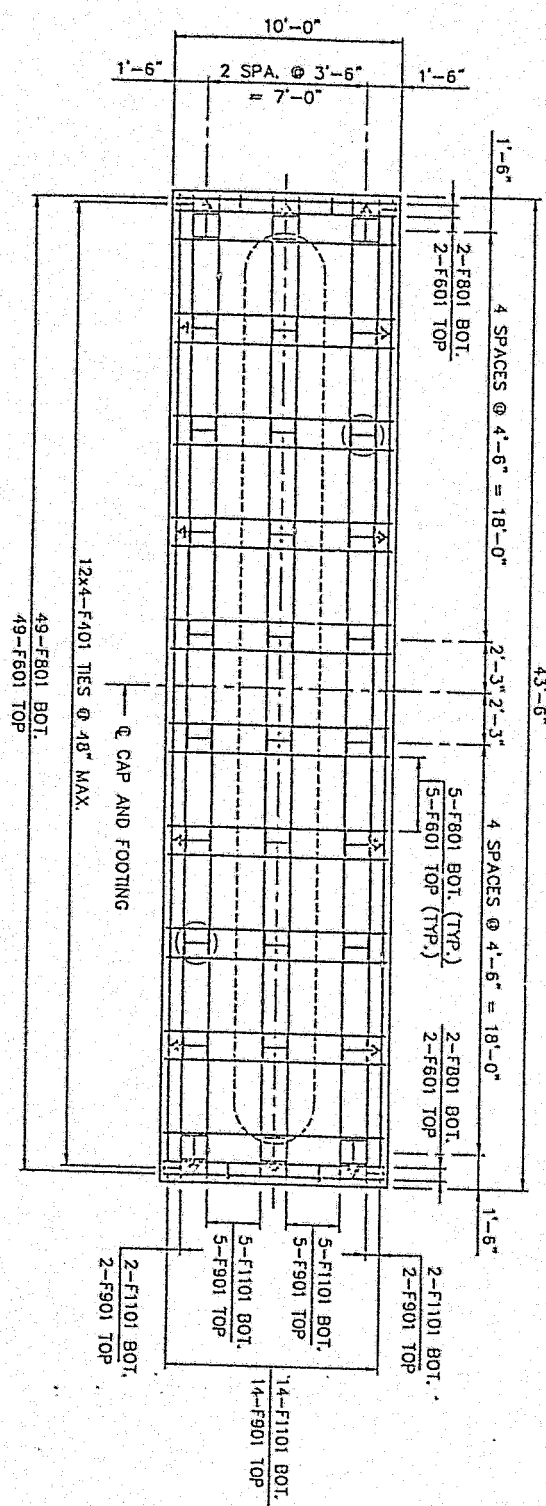
| Point | Elevation | Point | Elevation |
|-------|-----------|-------|-----------|
| A | 107.89 | K | 107.67 |
| B | 107.96 | L | 107.71 |
| B' | 107.87 | M | 107.30 |
| C | 107.91 | N | 107.37 |
| D | 107.64 | N' | 107.48 |
| E | 107.71 | O | 107.52 |
| E' | 107.75 | P | 107.39 |
| F | 107.79 | Q | 107.47 |
| G | 107.67 | R | 107.52 |
| H | 107.74 | S | 107.38 |
| H' | 107.76 | T | 107.46 |
| I | 107.80 | T' | 107.50 |
| J | 107.60 | U | 107.55 |

- LEGEND**
- EL. = ELEVATION
 - JT. = JOINT
 - CONSTR. = CONSTRUCTION
 - TYP. = TYPICAL
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - E.F. = EACH FACE
- NOTES**
- 1-13 GENERAL NOTES SEE SHEET 3
 - FOR BAR SCHEDULE SEE SHEET 21

| Mark | Description | By | Chk'd. | Recd. | Date |
|-----------|-------------|----|--------|-------|------|
| REVISIONS | | | | | |

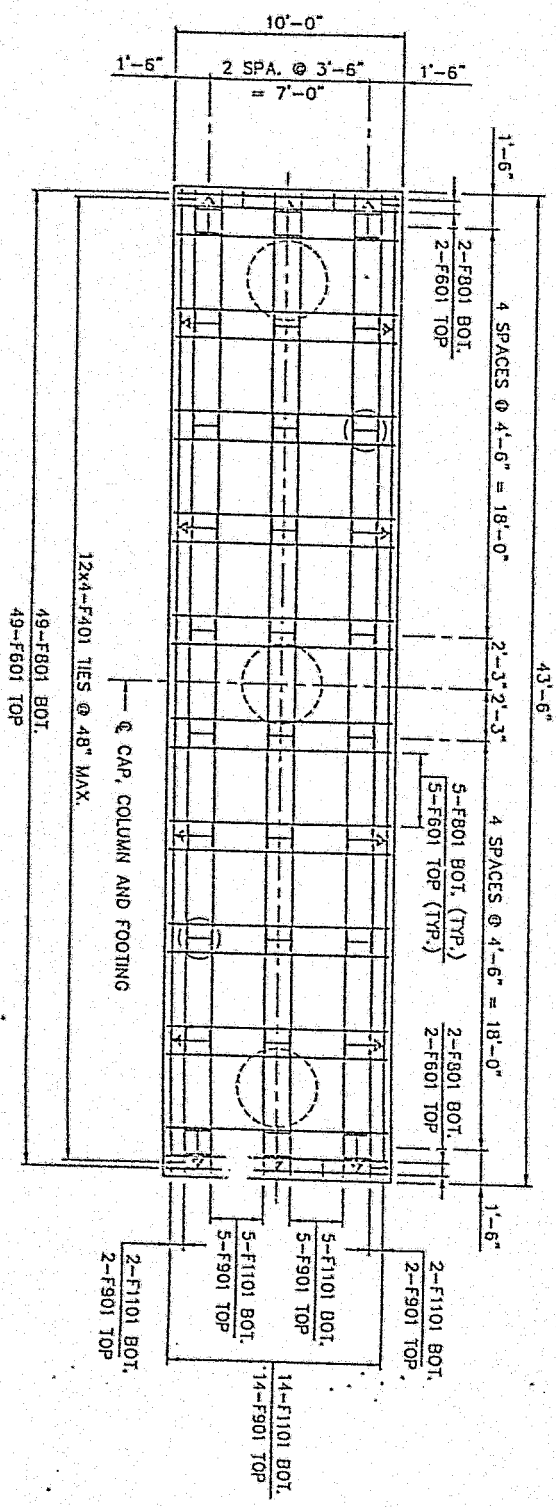
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEG. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 PIER 2

RECOMMENDED 3-19-92 SHEET 19 OF 49
 S-17313



FOOTING PLAN - PIER 1

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



FOOTING PLAN - PIER 2

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

- LEGEND**
- ⊥ DENOTES VERTICAL PILES
 - ⊥ DENOTES BATTERED PILES 1 TO 3
 - DIRECTION OF ARROW
 - ⊕ DENOTES TEST PILES

PILE NOTES

- ALL PILES ARE HP12x53 STEEL PILES
- MAX. PILE DESIGN LOAD = 60 TONS PER PILE
- ESTIMATED PILE TIP ELEVATION 65.00 - PIER 1
- ESTIMATED PILE TIP ELEVATION 39.00 TO 64.00 - PIER 2

CERTIFIED CORRECT PLANS

Approved by *D.T. Williams, P.E.*
Engineer
 PENNVA. REG. NO. 11111

Attested by *John H. Williams*
Secretary

SEP 17 1992

Newton & Nisely
Engineers & Compliance

- NOTES**
- FOR GENERAL NOTES SEE SHEET 3
 - FOR BAR SCHEDULE SEE SHEET 21

| Mark | Description | By | Ch'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

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 OVER AMTRAK MAIN LINE
 PIER 1 AND 2 FOOTING PLAN

RECOMMENDED 3-19-92

SHEET 20 OF 40

REINFORCEMENT BAR SCHEDULE

REINFORCEMENT BAR SCHEDULE

PIER 1

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------|------|--------|------------------|------|----------------|---------|-------|---|---|---|---------------------------|
| F401 | 4 | 48 | 3'-5" | (10) | 0'-6" | 2'-5" | 0'-6" | | | | |
| F501 | 5 | 12 | 9'-11" | (9) | 3'-2" | 1'-6" | | | | | |
| F601 | 6 | 49 | 9'-8" | STR | | | | | | | |
| F801 | 8 | 49 | 9'-8" | STR | | | | | | | |
| F901 | 9 | 14 | 43'-2" | STR | | | | | | | |
| F1001 | 10 | 36 | 17'-0" | (10) | 1'-10" | 15'-2" | | | | | |
| F1101 | 11 | 14 | 43'-2" | STR | | | | | | | |
| P401 | 4 | 12 | 3'-7" | STR | | | | | | | |
| P501 | 5 | 98 | 14'-0" | (2) | 4'-2" | 2'-4" | | | | | |
| P502 | 5 | 8 | 8'-5" | (2) | 2'-6" | 3'-5" | | | | | |
| P503 | 5 | 32 | 12'-3" TO 14'-0" | (2) | 3-3/2" TO 4-2" | 2'-4" | | | | | VARY A, 4 EA. BY 0-1 1/2" |
| P504 | 5 | 87 | 9'-11" | (9) | 3'-2" | 1'-6" | | | | | |
| P505 | 5 | 6 | 9'-2" TO 9'-4" | (4) | 3'-0" | 3'-0" | | | | | VARY B, 2 EA. BY 0-1" |
| P506 | 5 | 24 | 3'-6" | STR | | | | | | | |
| P507 | 5 | 12 | 4'-3" | (4) | 1'-9" | 0'-9" | | | | | |
| P601 | 6 | 6 | 52'-8" | STR | | | | | | | |
| P1001 | 10 | 36 | 21'-3" | (4) | 1'-5" | 19'-10" | | | | | |
| P1002 | 10 | 5 | 20'-8" | (4) | 1'-5" | 19'-3" | | | | | |
| P1003 | 10 | 4 | 19'-3" | STR | | | | | | | |
| P1004 | 10 | 5 | 38'-4" | (4) | 1'-5" | 36'-11" | | | | | |
| P1005 | 10 | 4 | 36'-11" | STR | | | | | | | |
| P1006 | 10 | 10 | 28'-1" | (1) | 21'-3" | 6'-10" | | | | | |
| P1007 | 10 | 8 | 39'-0" | STR | | | | | | | |

PIER 2

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------|------|--------|------------------|------|----------------|---------|-------|---|---|---|---------------------------|
| F401 | 4 | 48 | 3'-5" | (10) | 0'-6" | 2'-5" | 0'-6" | | | | |
| F501 | 5 | 12 | 9'-11" | (9) | 3'-2" | 1'-6" | | | | | |
| F601 | 6 | 49 | 9'-8" | STR | | | | | | | |
| F801 | 8 | 49 | 9'-8" | STR | | | | | | | |
| F901 | 9 | 14 | 43'-2" | STR | | | | | | | |
| F1001 | 10 | 36 | 17'-0" | (10) | 1'-10" | 15'-2" | | | | | |
| F1101 | 11 | 14 | 43'-2" | STR | | | | | | | |
| P401 | 4 | 12 | 3'-7" | STR | | | | | | | |
| P501 | 5 | 98 | 14'-0" | (2) | 4'-2" | 2'-4" | | | | | |
| P502 | 5 | 8 | 8'-5" | (2) | 2'-6" | 3'-5" | | | | | |
| P503 | 5 | 32 | 12'-3" TO 14'-0" | (2) | 3-3/2" TO 4-2" | 2'-4" | | | | | VARY A, 4 EA. BY 0-1 1/2" |
| P504 | 5 | 87 | 9'-11" | (9) | 3'-2" | 1'-6" | | | | | |
| P505 | 5 | 6 | 9'-2" TO 9'-4" | (4) | 3'-0" | 3'-0" | | | | | VARY B, 2 EA. BY 0-1" |
| P506 | 5 | 24 | 3'-6" | STR | | | | | | | |
| P507 | 5 | 12 | 4'-3" | (4) | 1'-9" | 0'-9" | | | | | |
| P601 | 6 | 6 | 52'-8" | STR | | | | | | | |
| P1001 | 10 | 36 | 21'-3" | (4) | 1'-5" | 19'-10" | | | | | |
| P1002 | 10 | 5 | 20'-8" | (4) | 1'-5" | 19'-3" | | | | | |
| P1003 | 10 | 4 | 19'-3" | STR | | | | | | | |
| P1004 | 10 | 5 | 38'-4" | (4) | 1'-5" | 36'-11" | | | | | |
| P1005 | 10 | 4 | 36'-11" | STR | | | | | | | |
| P1006 | 10 | 10 | 28'-1" | (1) | 21'-3" | 6'-10" | | | | | |
| P1007 | 10 | 8 | 39'-0" | STR | | | | | | | |

CERTIFIED CORRECT PLANS

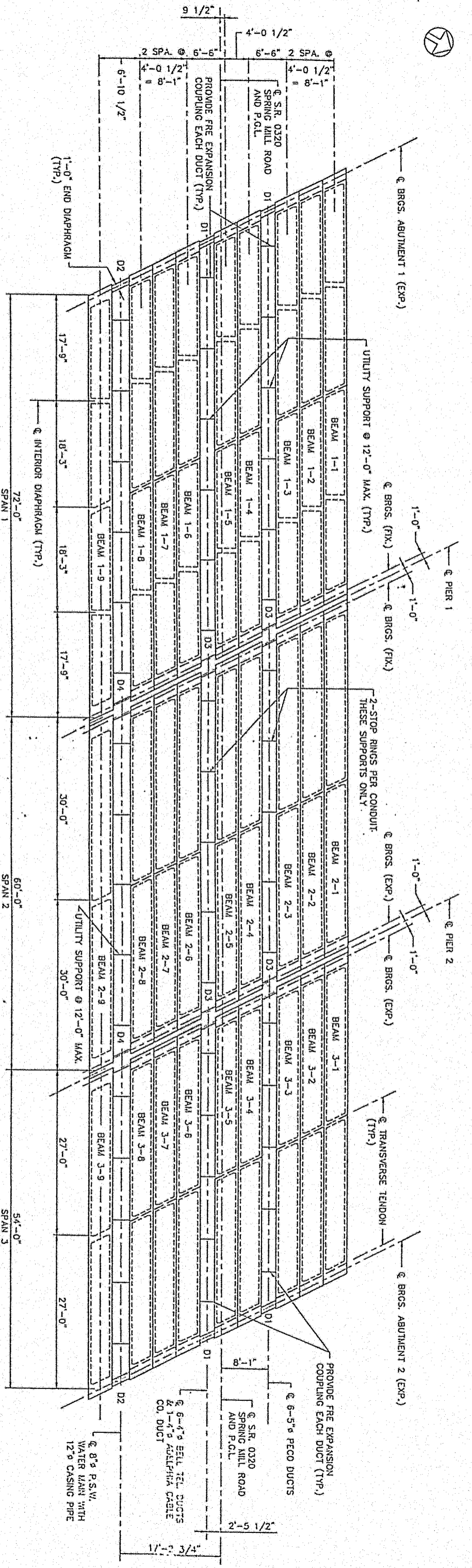
Approved by: *D. J. Wilkerson P.E.*
 Secretary of Safety & Compliance

- * E PREFIX DENOTES EPOXY COATED BARS.
- * FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO PENNA. DEPARTMENT OF TRANSPORTATION S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
- * FIGURES IN CIRCLES SHOW TYPES.
- * "A" DIMENSION ON 180° HOOKS ARE SHOWN ONLY NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE HOOKS ARE USED.
- * REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BIDDING AND FABRICATION.

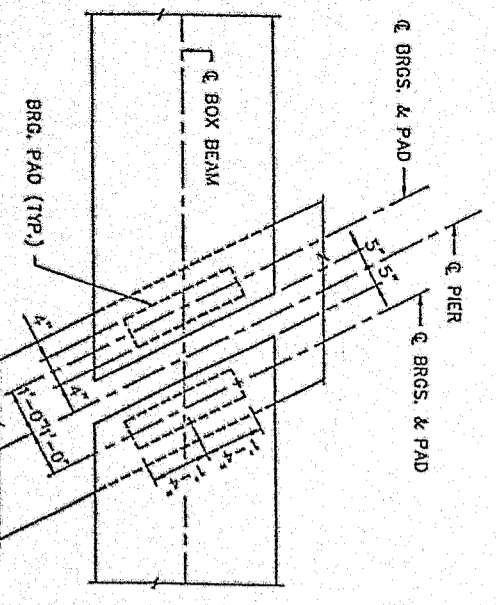
| Mark | Description | By | Chk'd. | Recd. | Date |
|------|-------------|----|--------|-------|------|
| | REVISIONS | | | | |

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEC. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 PIER 1 AND 2 BAR SCHEDULE

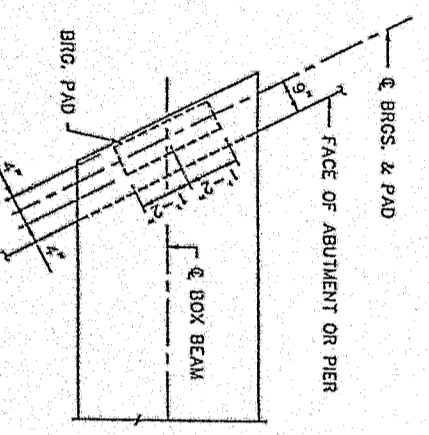
RECOMMENDED 3-19-02
 SHEET 21 OF 49
 S-17313



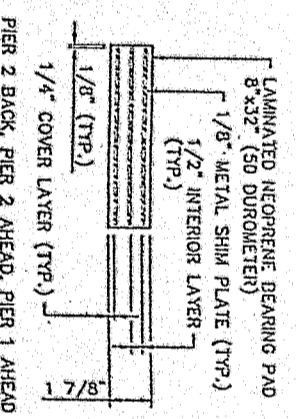
FRAMING PLAN
SCALE 1/8" = 1'-0"



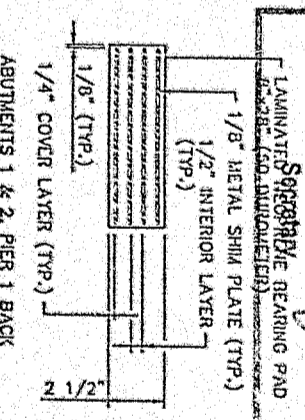
TYP. PLAN @ PIER 1 AHEAD
AND PIER 2
SCALE 1/2" = 1'-0"



TYP. PLAN @ ABUTMENTS
AND PIER 1 BACK
SCALE 1/2" = 1'-0"



TYP. BRG. PAD SECTION
SCALE 3" = 1'-0"



TYP. BRG. PAD SECTION
SCALE 3" = 1'-0"

CERTIFIED CORRECT PLANS

Approved by
[Signature] PE
Engr 305
Bureau of Safety & Compliance

ATTEST:
[Signature]

SEP 17 1992

NOTED FOR REVIEW BY
[Signature]

NOTES SEE SHEET 3

| REVISIONS | Description | By | Chkd. | Date |
|-----------|-------------|----|-------|------|
| | | | | |
| | | | | |

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

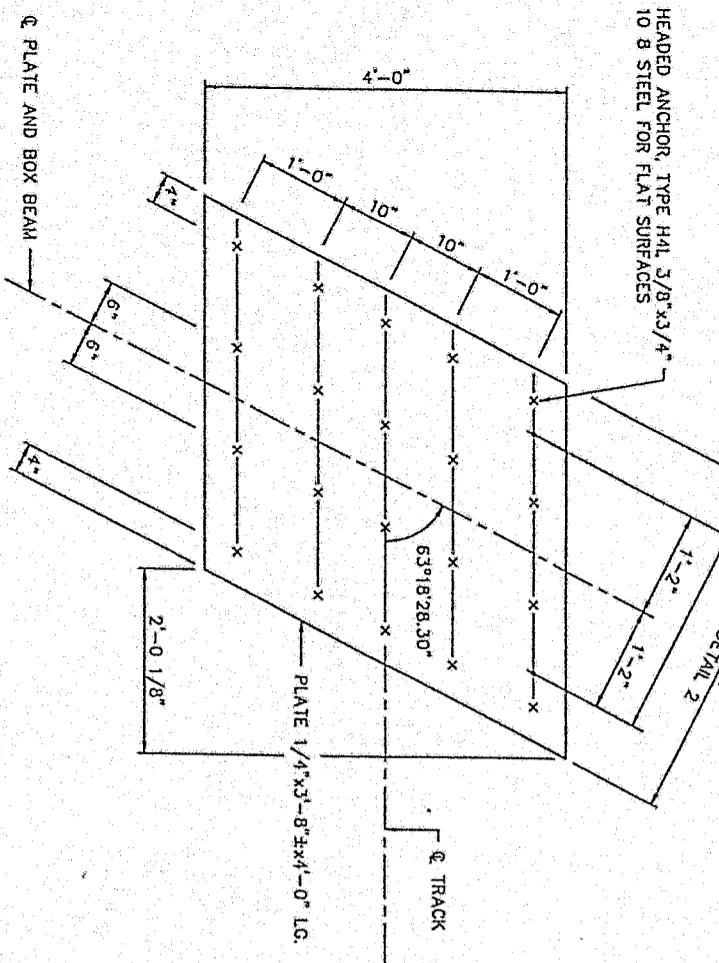
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEC. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER ANTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
FRAMING PLAN

RECOMMENDED 3-19-92 SHEET 22 OF 40

S-17313

HEADED ANCHOR, TYPE H-1, 3/8"x3/4"
10 B STEEL FOR FLAT SURFACES



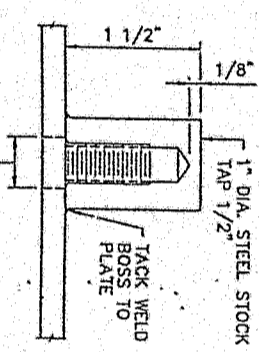
BOX BEAM GROUNDING PLATE

SCALE: 1" = 1'-0"

TYPICAL SECTION

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

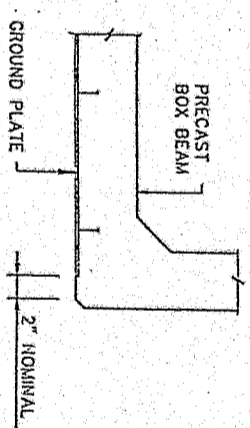
- FABRICATION NOTES**
- CONTRACTOR TO FABRICATE BOX BEAM GROUND PLATE AND CAST-IN-PLACE INTEGRAL WITH THE BOX BEAMS.
 - ADJUST WIDTH OF GROUND PLATE TO ALLOW 2" NOMINAL DISTANCE BETWEEN PLATE AND THE CHAMFER OF THE BOX BEAM - SEE DETAIL 2.



DETAIL 1

N.T.S.

THREADED BOSS FOR MOUNTING GROUND CLAMP

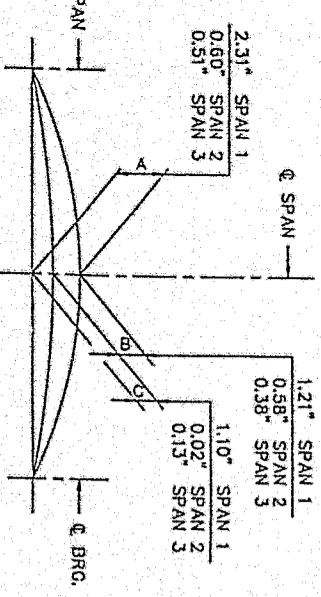


DETAIL 2

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

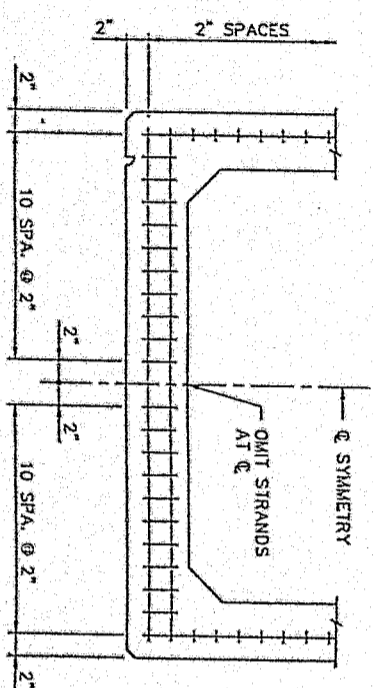
PART SECTION SEE NOTE 2

GROUNDING DETAILS



BEAM CAMBER DESIGN

ESTIMATED PRESTRESS CAMBER LESS DEFLECTION DUE TO DEAD LOAD OF BEAM TIMES CREEP FACTOR OF 1.6, DEFLECTION DUE TO DEAD LOAD OF SLAB AND SUPERIMPOSED DEAD LOAD, NET FINAL CAMBER (A-B).



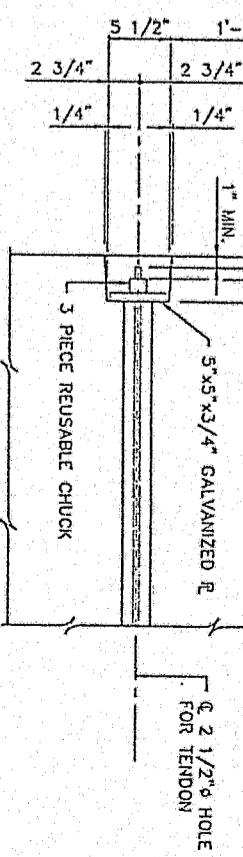
TYPICAL STRAND GRID

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

PRESTRESSING DATA

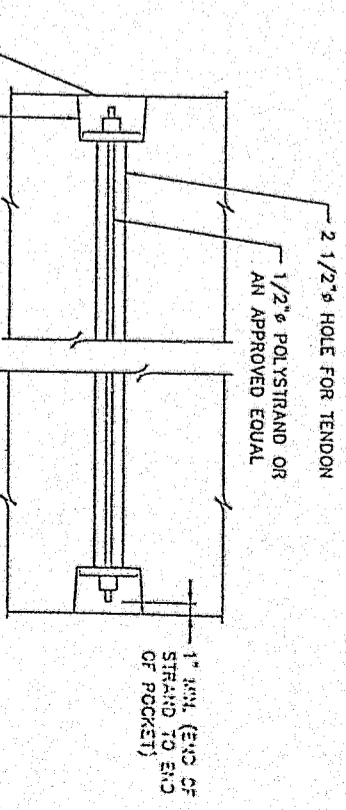
PRESTRESSED BEAM SIZE = 30"x4'-0" WIDE
 = 30"x4'-0" WIDE
 = 30"x4'-0" WIDE
 INITIAL PRESTRESSING FORCE PER BEAM (P_i) = 1157 K
 INITIAL PRESTRESSING FORCE PER BEAM (P_i) = 752 K
 INITIAL PRESTRESSING FORCE PER BEAM (P_i) = 636 K
 CONCRETE STRENGTH AT STRAND RELEASE (f_{ci}) = 6200 PSI
 CONCRETE STRENGTH AT 28 DAYS (f_c) = 7250 PSI
 USE LOW RELAXATION 270 ksi, 1/2" STRANDS

CAST GROUND PLATE FLUSH WITH BOTTOM OF BEAM



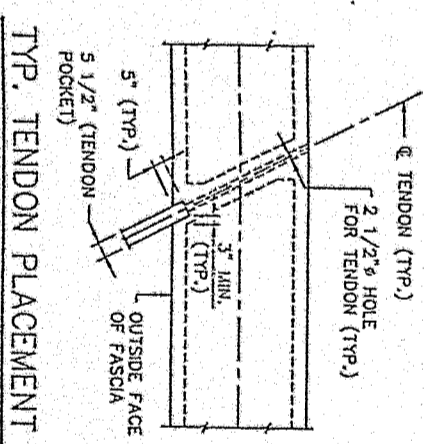
TYPICAL SECTION OF TENDON POCKET

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



TYPICAL SECTION OF TENDON PLACEMENT

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



TYP. TENDON PLACEMENT

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

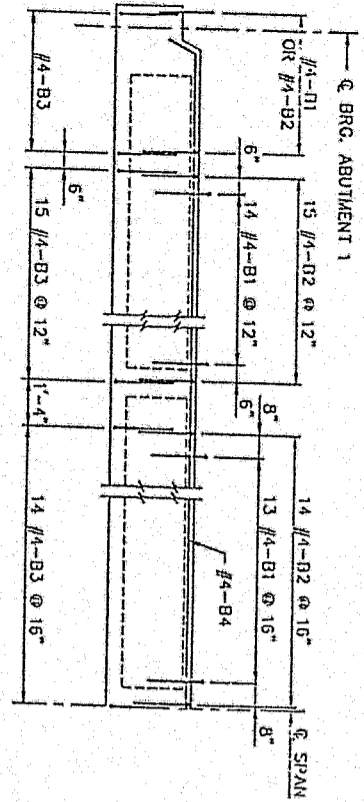
| C.G. STRANDS | | | GRADE PT. FROM & BEARING |
|--------------|---------|---------|--------------------------|
| SPAN 1 | 6.50 IN | 4.00 IN | 17'-9" |
| SPAN 2 | 6.00 IN | 6.00 IN | - |
| SPAN 3 | 5.45 IN | 5.45 IN | - |

CERTIFIED CORRECT PLANS

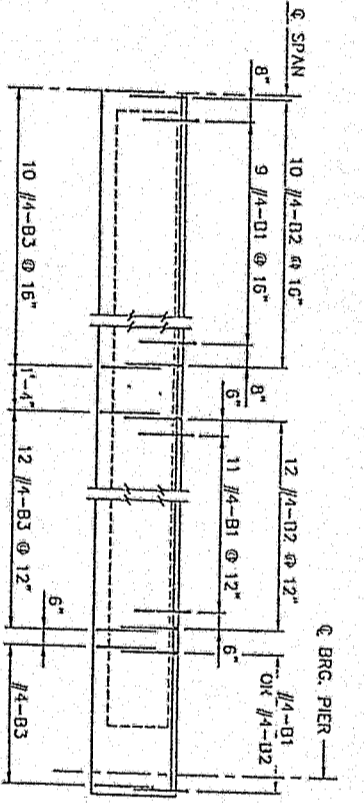
FOR GENERAL NOTES SEE SHEET 3
 WORK THIS SHEET WITH SHEET 2 AND SHEET 4
 APPROVED: *[Signature]*
 DELAWARE COUNTY DEPARTMENT OF TRANSPORTATION
 S.R. 0320 PREVIOUSLY KNOWN AS LR. 225

ATTEST: *[Signature]*
 SECRETARY
 DELAWARE COUNTY DEPARTMENT OF TRANSPORTATION
 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
 BEAM DETAILS 1

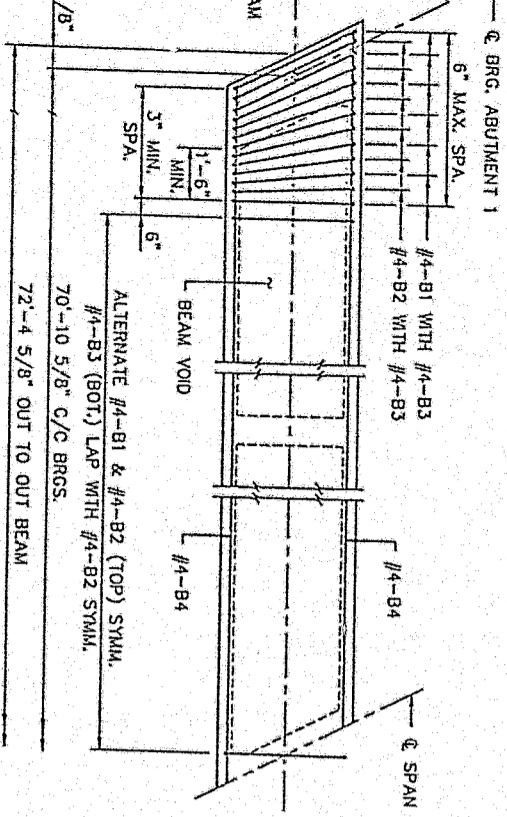
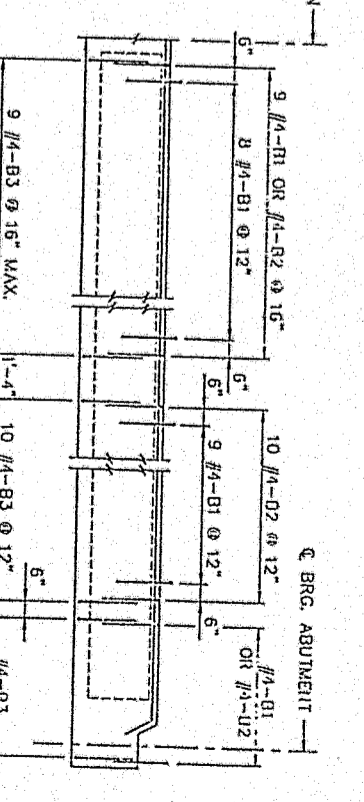
RECOMMENDED 3-19-92
 SHEET 23 OF 49
 S-17313



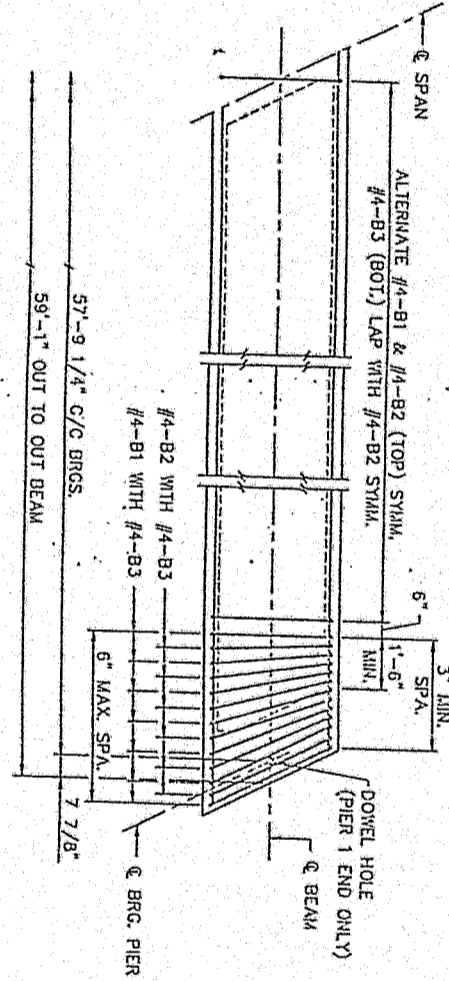
BEAM ELEVATION
SCALE: 3/8" = 1'-0"



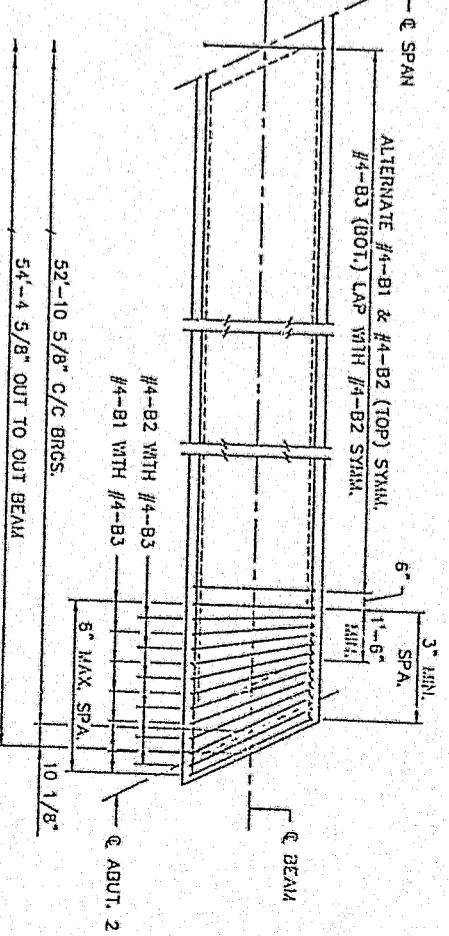
BEAM ELEVATION
SCALE: 3/8" = 1'-0"



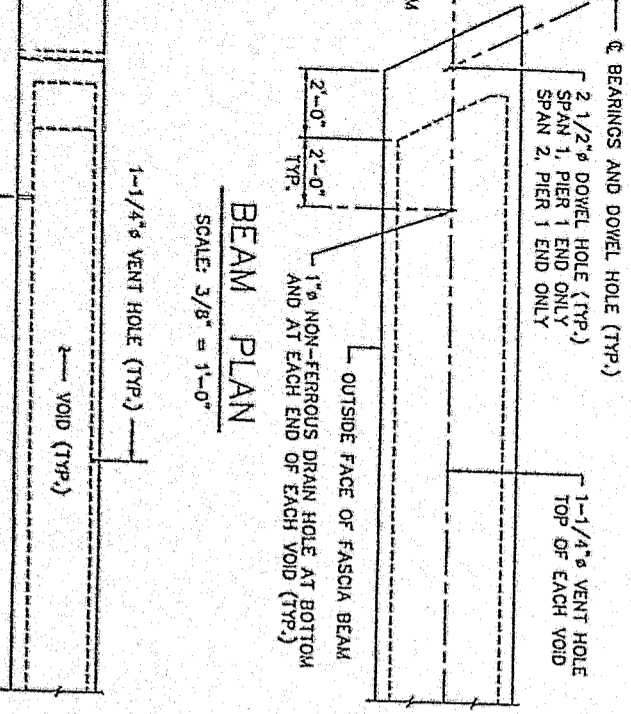
SPAN 1



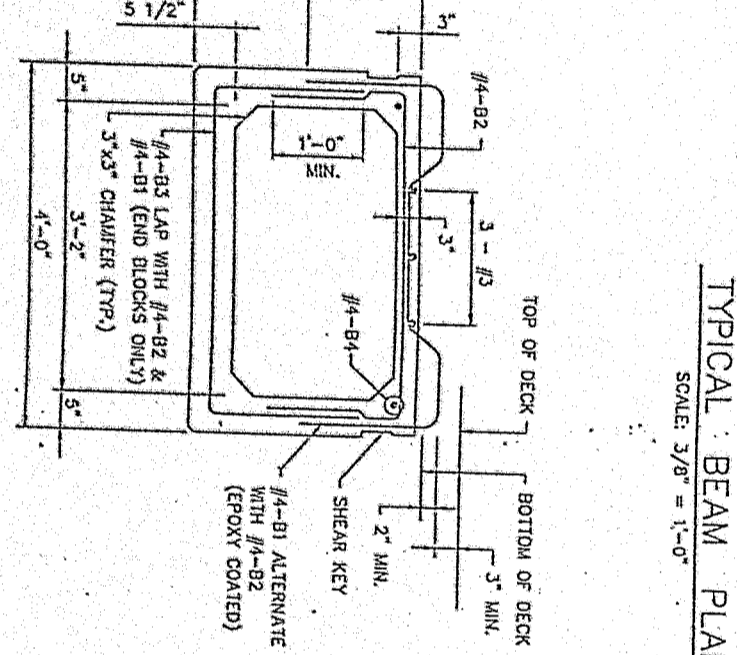
SPAN 2



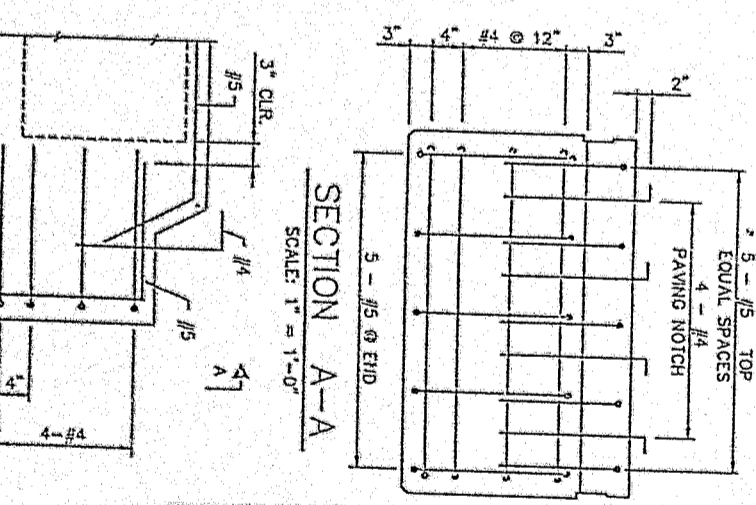
SPAN 3



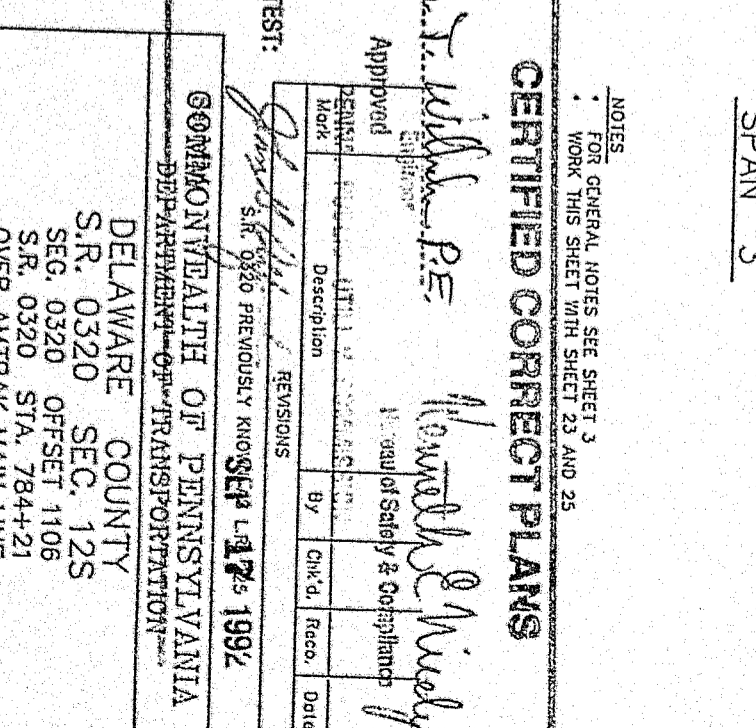
BEAM PLAN
SCALE: 3/8" = 1'-0"



TYPICAL BEAM SECTION
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"



BEAM END DETAIL
AT ABUTMENT ONLY
SCALE: 1" = 1'-0"

CERTIFIED CORRECT PLANS

NOTES:
* FOR GENERAL NOTES SEE SHEET 3
* WORK THIS SHEET WITH SHEET 23 AND 25

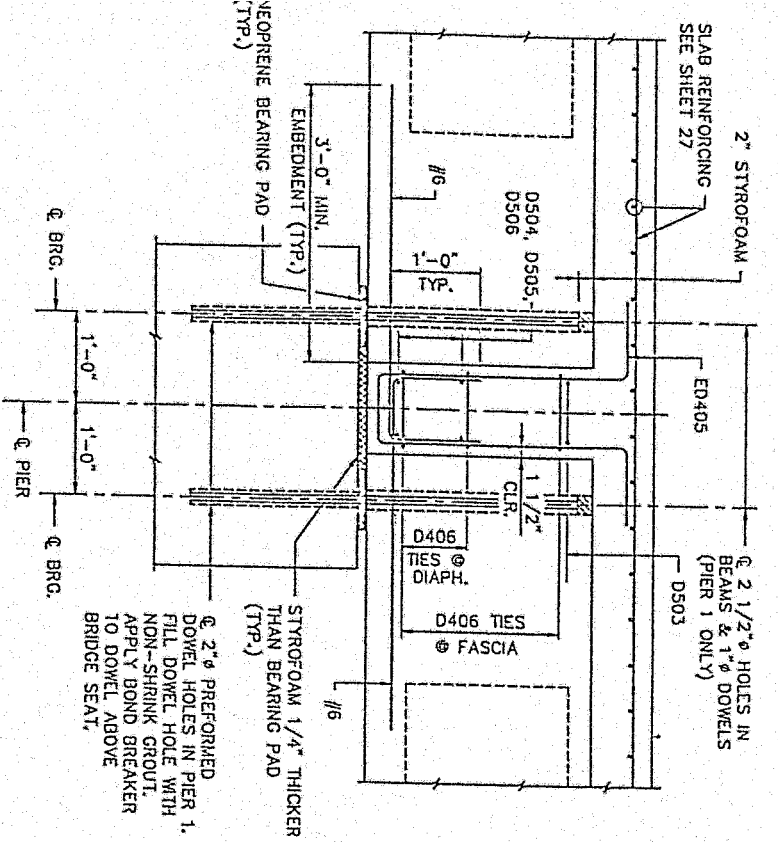
Approved: *A.T. Wilkins, P.E.*
Checked: *Howell & Miley*
Description: *REVISIONS*
By: *[Signature]* Date: *[Signature]*

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
SEPT 17 1992

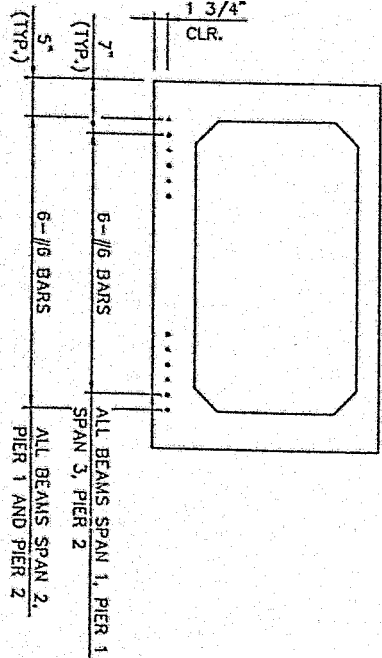
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE
BEAM DETAILS 2

RECOMMENDED 3-19-92
SHEET 24 OF 40
S-17313



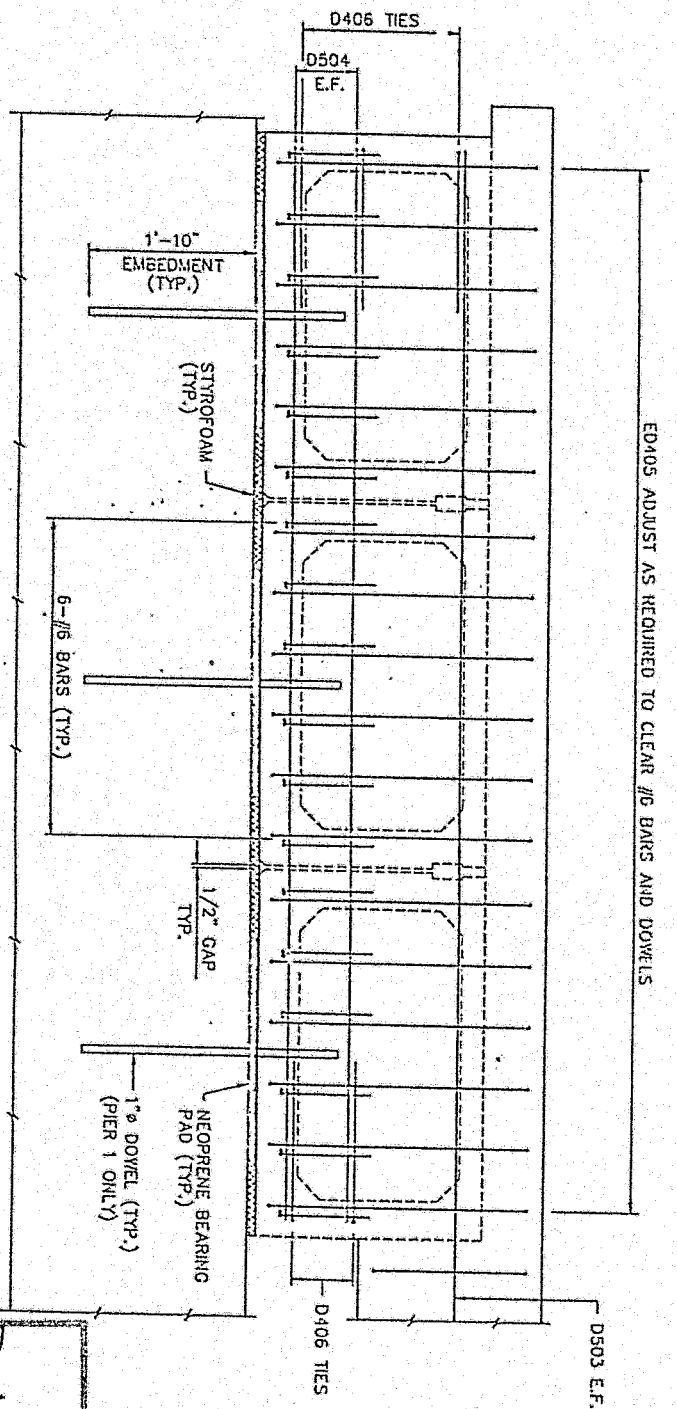
SECTION AT PIER
SCALE: 1" = 1'-0"



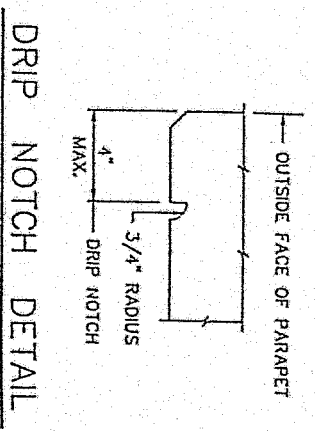
TYPICAL BEAM SECTION
SCALE: 1" = 1'-0"

POSITIVE MOMENT CONNECTION

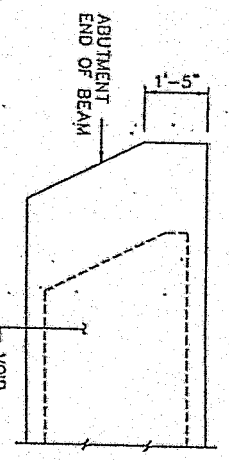
K05



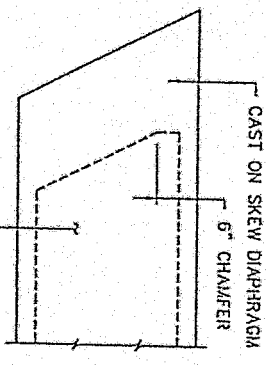
ELEVATION AT PIER
SCALE: 1" = 1'-0"



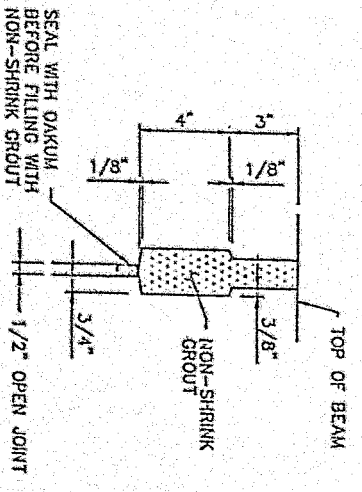
DRIP NOTCH DETAIL
SCALE: 3" = 1'-0"



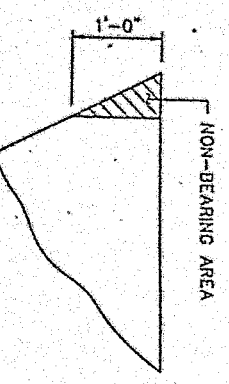
BEAM BEVEL PLAN
BEAMS 1-1 AND 3-9
SCALE: 1/2" = 1'-0"



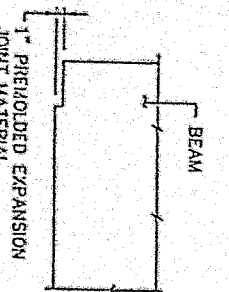
CHAMFER DETAIL FOR BEAM DIAPHRAGM
SCALE: 1/2" = 1'-0"



SHEAR KEY DETAIL
SCALE: 3" = 1'-0"

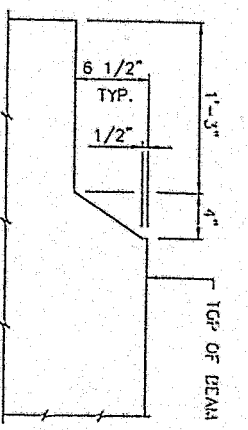


PLAN
SCALE: 1" = 1'-0"



ELEVATION
SCALE: 1" = 1'-0"

TYPICAL BEAM CORNER DAP



BEAM NOTCH DETAIL AT ABUTMENTS
SCALE: 1 1/2" = 1'-0"

CERTIFIED CORRECT PLANS

Approved: *[Signature]* P.E. *[Signature]*
 Engineer
 PENN. DEPARTMENT OF TRANSPORTATION
 Bureau of Safety & Compliance

ATTEST: *[Signature]*
 Secretary

SEP 17 1992

- NOTES:
- FOR GENERAL NOTES SEE SHEET 3
 - WORK THIS SHEET WITH SHEET 23 AND 24
 - FOR BAR SCHEDULE SEE SHEET 28

| Mark | Description | By | Chk'd. | Recd. | Date |
|------|-------------|----|--------|-------|------|
| | | | | | |

REVISIONS

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

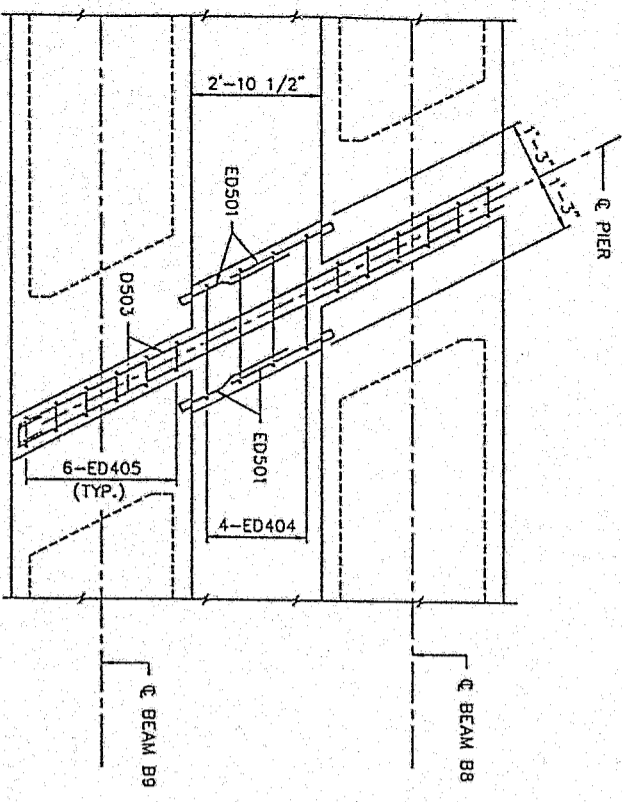
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 BEAM DETAILS 3

RECOMMENDED 3-19-92 SHEET 25 OF 49

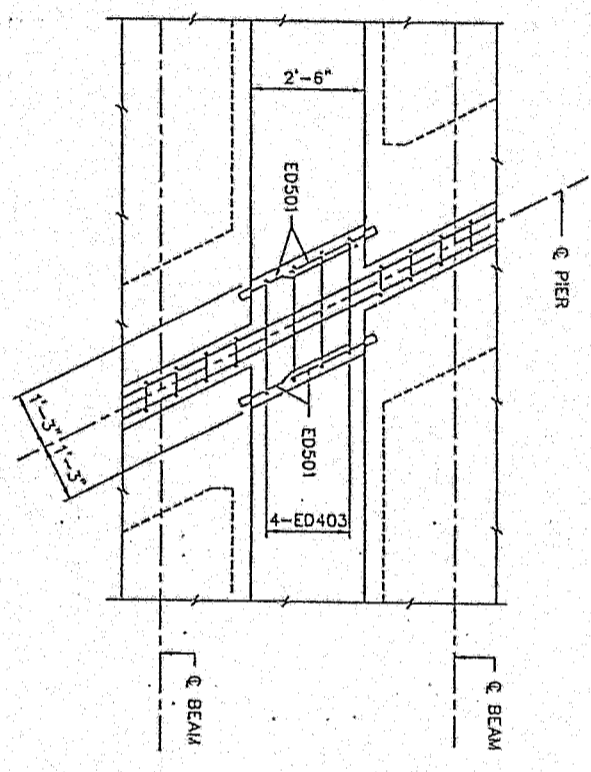
S-17313



NOTE: FOR REINFORCEMENT NOT NOTED SEE SHEET 25

PIER DIAPHRAGM DETAIL - D4

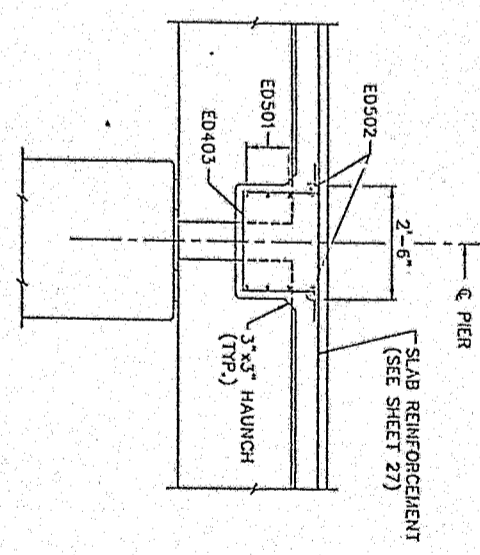
SCALE: 1/2" = 1'-0"



NOTE: FOR REINFORCEMENT NOT NOTED SEE SHEET 25

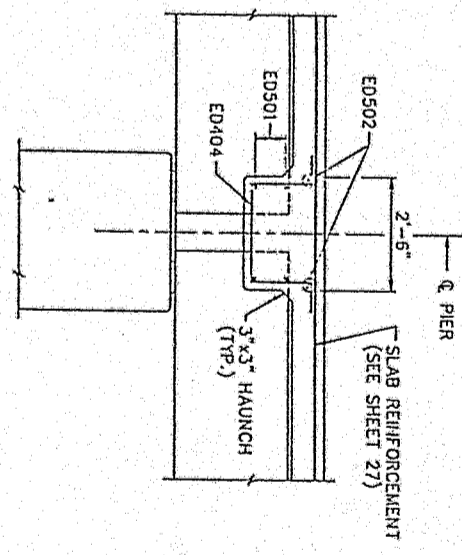
PIER DIAPHRAGM DETAIL - D3

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



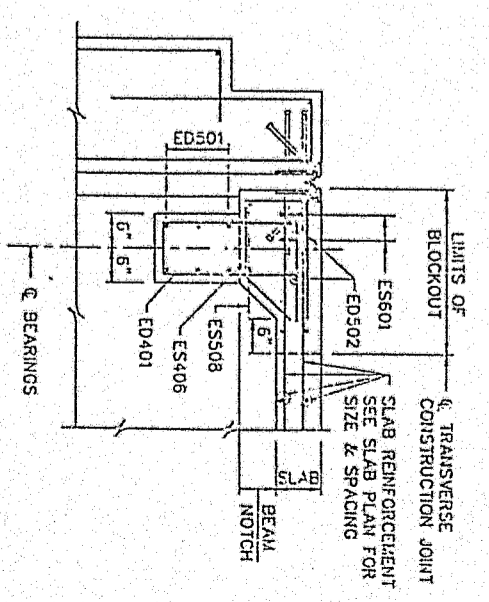
PIER DIAPHRAGM SECTION - D3

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



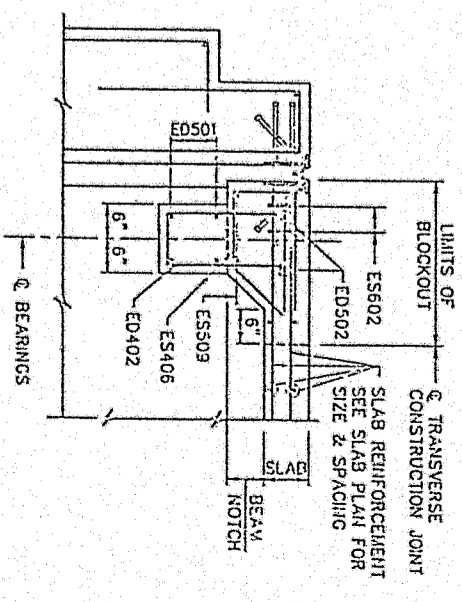
PIER DIAPHRAGM SECTION - D4

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



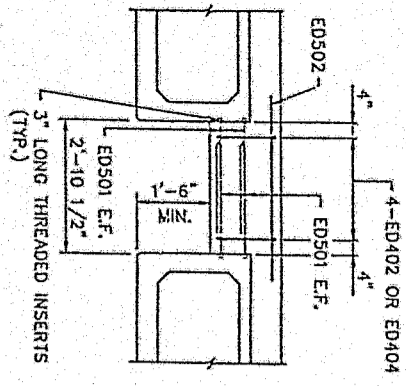
END DIAPHRAGM SECTION - D1

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



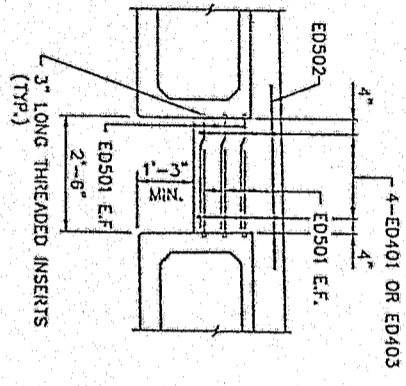
END DIAPHRAGM SECTION - D2

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



TYPICAL ELEVATION DIAPHRAGM D-2 AND D-4

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



TYPICAL ELEVATION DIAPHRAGM D-1 AND D-3

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

CERTIFIED CORRECT PLANS

Approved: *[Signature]* P.E.
 PENNA. PUBLIC ENGINEER
 Bureau of Safety & Compliance

ATTEST: *[Signature]*
 Secretary

FOR GENERAL NOTES SEE SHEET 17
 FOR BAR SCHEDULE SEE SHEET 28
 FOR FRAMING PLAN SEE SHEET 22

MAY 17 1994

LEGEND

| | | |
|------|---|-----------|
| E.F. | = | EACH FACE |
| TYP. | = | TYPICAL |
| MIN. | = | MINIMUM |

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
 DIAPHRAGM DETAILS

REVISIONS

| Mark | Description | By | Chk'd | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

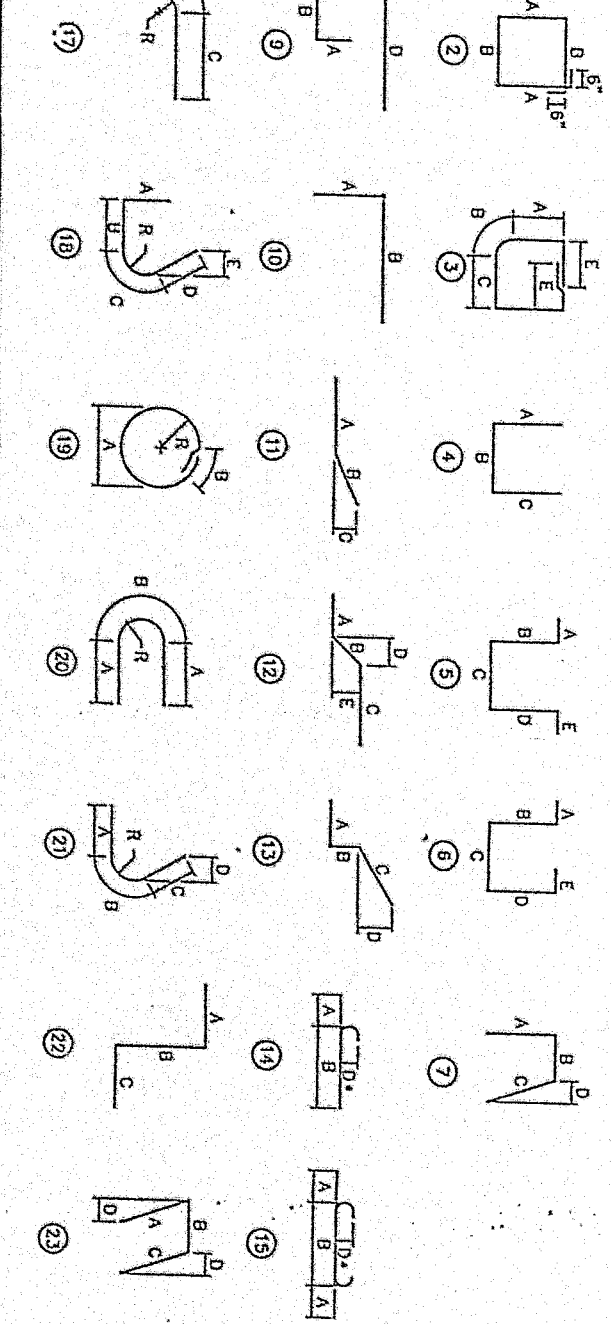
S.R. 0320 PREVIOUSLY KNOWN AS LR. 225

RECOMMENDED 3-19-92

SHEET 26 OF 49

| LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------------------|---------|-------------------|-----------|------------|---|-------|---|----------------------------|
| 29'-9" | SIR | | | | | | | |
| 23'-0" | SIR | | | | | | | |
| 7'-0" | SIR | | | | | | | |
| 43'-3" | SIR | | | | | | | |
| 40'-0" | SIR | | | | | | | |
| 4'-6 1/2" | (B) SIR | 1'-0" | 1'-2 1/2" | 0'-8" | | 0'-9" | | |
| 37'-4" | (1) SIR | 21'-7" | 15'-9" | 0'-7 1/2" | | 1'-2" | | |
| 6'-11 1/2" | (2) SIR | 2'-6" | 1'-4" | 0'-7 1/2" | | 0'-3" | | |
| 8'-11" | (4) SIR | 0'-7" | 8'-4" | | | | | |
| 22'-9" TO 37'-4" | (1) SIR | 1'-2" TO 15'-9" | 21'-7" | 0'-10 3/8" | | | | VARY A 1 EACH BY 1'-0 1/2" |
| 2'-11" TO 21'-7" | (1) SIR | 0" TO 19'-2" | 15'-9" | 0'-7 1/2" | | | | VARY 1 EACH BY 1'-4" |
| 16'-3" TO 34'-11" | (1) SIR | 2'-11" TO 14'-11" | 17'-8" | 0'-7 1/2" | | | | VARY 1 EACH BY 1'-4" |
| 40'-0" | (1) SIR | 22'-4" | | | | | | |
| 9'-4" | (1) SIR | 22'-4" | 17'-8" | 0'-7 1/2" | | | | |
| 40'-0" | (1) SIR | 22'-4" | 17'-8" | 0'-7 1/2" | | | | |
| 9'-4" | (1) SIR | | | | | | | |
| 32'-9" | SIR | | | | | | | |
| 44'-6" | SIR | | | | | | | |
| 37'-8" | SIR | | | | | | | |
| 5'-5" | (2) SIR | 2'-3 1/2" | 0'-9" | 2'-4 1/2" | | 0'-3" | | |
| 40'-3" | (4) SIR | 2'-0" | 0'-9" | 2'-0" | | | | |
| 4'-9" | (4) SIR | | | | | | | |
| 41'-0" | SIR | | | | | | | |

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS |
|-------|------|--------|------------|---------|-------|-----------|-------|-----------|-------|---|---------------------|
| ED401 | 4 | 16 | 4'-11" | (6) SIR | 0'-8" | 1'-5" | 0'-9" | 1'-5" | 0'-8" | | |
| ED402 | 4 | 8 | 4'-5" | (6) SIR | 0'-8" | 1'-2" | 0'-9" | 1'-2" | 0'-8" | | |
| ED403 | 4 | 16 | 6'-8" | (5) SIR | 0'-8" | 1'-5" | 2'-0" | 1'-5" | 0'-8" | | |
| ED404 | 4 | 8 | 6'-2" | (5) SIR | 0'-8" | 1'-5" | 2'-6" | 1'-2" | 0'-8" | | |
| ED405 | 4 | 108 | 7'-0" | (5) SIR | 0'-8" | 2'-6" | 0'-8" | 1'-2" | 0'-8" | | |
| ED406 | 4 | 36 | 2'-11 1/2" | (3) SIR | 1'-3" | 0'-5 1/2" | 1'-3" | 0'-6 3/4" | 0'-8" | | |
| ED501 | 5 | 128 | 2'-5" | SIR | | | | | | | |
| ED502 | 5 | 24 | 5'-0" | SIR | | | | | | | |
| ED503 | 5 | 4 | 29'-9" | SIR | | | | | | | 3" THREADED ONE END |
| ED504 | 5 | 16 | 13'-2" | SIR | | | | | | | |
| ED505 | 5 | 8 | 8'-8" | SIR | | | | | | | |
| ED506 | 5 | 8 | 4'-2" | SIR | | | | | | | |



CERTIFIED CORRECT PLANS

D. J. ... P.E.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY 1994

SEC. 0320 OFFSET-4106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE
DECK SLAB BAR SCHEDULE

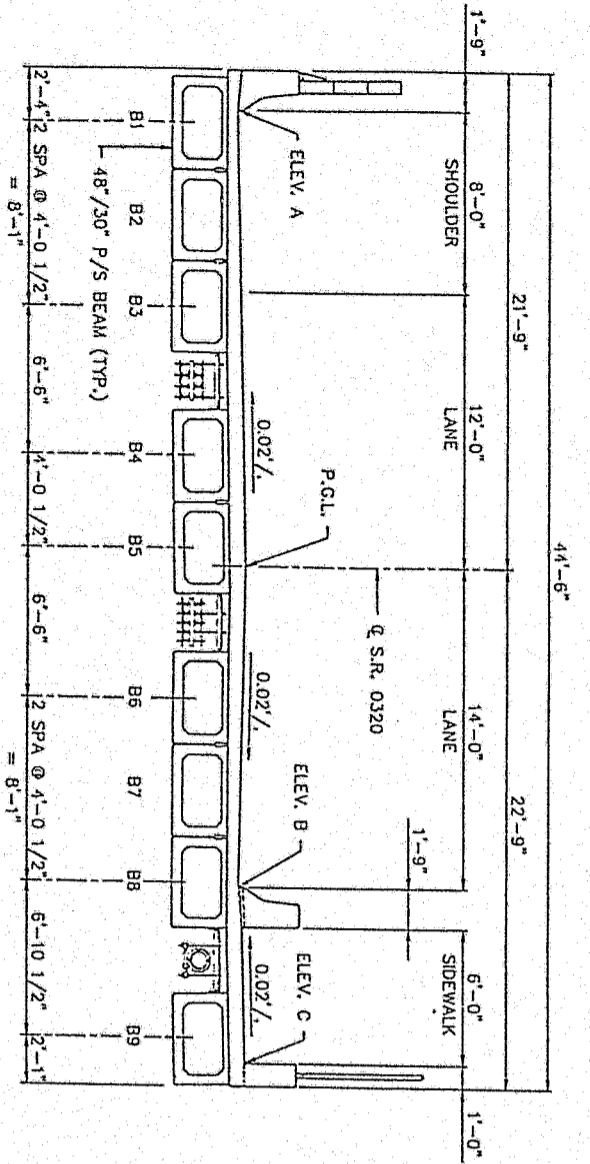
RECOMMENDED 3-19-92

SHEET 28 OF 49

S - 17313

- E PREFIX DENOTES EPOXY COATED BARS.
- FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.
- FIGURES IN CIRCLES SHOW TYPES.
- 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 INFORMATION ONLY. VERIFY PRIOR TO ORDERING AND FABRICATION.

| Mark | Description | By | Chk'd | Reco | Date |
|------|-------------|----|-------|------|------|
| | REVISIONS | | | | |



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

| 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 | 112.02 |
| 783 + 80 | 112.17 | 111.77 | 111.89 | 112.18 |
| 783 + 90 | 112.31 | 111.91 | 112.03 | 112.32 |
| 784 + 00 | 112.41 | 112.01 | 112.13 | 112.42 |
| 784 + 10 | 112.47 | 112.07 | 112.19 | 112.48 |
| 784 + 20 | 112.51 | 112.11 | 112.23 | 112.52 |
| 784 + 30 | 112.51 | 112.11 | 112.23 | 112.52 |
| 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 | 112.03 |
| 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 | 111.05 |
| 785 + 30 | 110.71 | 110.31 | 110.43 | 110.72 |
| 785 + 40 | 110.35 | 109.95 | 110.07 | 110.36 |
| 785 + 50 | 109.95 | 109.55 | 109.67 | 109.96 |
| 785 + 60 | 109.53 | 109.13 | 109.25 | 109.54 |
| 785 + 70 | 109.14 | 108.67 | 108.79 | 109.08 |
| 785 + 80 | 108.60 | 108.18 | 108.30 | 108.59 |
| 785 + 90 | 108.05 | 107.65 | 107.77 | 108.06 |

| BEAM NO. | ABUTMENT 1 | PIER 1 | | PIER 2 | | ABUTMENT 2 |
|----------|------------|--------|--------|--------|--------|------------|
| | | BACK | AHEAD | BACK | AHEAD | |
| B1 | 111.72 | 112.05 | 112.03 | 111.04 | 110.98 | 109.07 |
| B2 | 111.83 | 112.11 | 112.10 | 111.06 | 111.00 | 109.05 |
| B3 | 111.94 | 112.18 | 112.16 | 111.08 | 111.01 | 109.04 |
| B4 | 112.12 | 112.26 | 112.25 | 111.12 | 111.05 | 109.01 |
| B5 | 112.23 | 112.34 | 112.32 | 111.14 | 111.07 | 109.00 |
| B6 | 112.18 | 112.21 | 112.19 | 110.95 | 110.88 | 108.75 |
| B7 | 112.12 | 112.11 | 112.08 | 110.81 | 110.73 | 108.57 |
| B8 | 112.05 | 111.99 | 111.97 | 110.65 | 110.58 | 108.38 |
| B9 | 112.38 | 112.24 | 112.21 | 110.83 | 110.75 | 108.49 |

CERTIFIED CORRECT PLANS

Approved by: *D. T. [Signature]* P.E.
 Secretary: *[Signature]*

SEP 17 1992

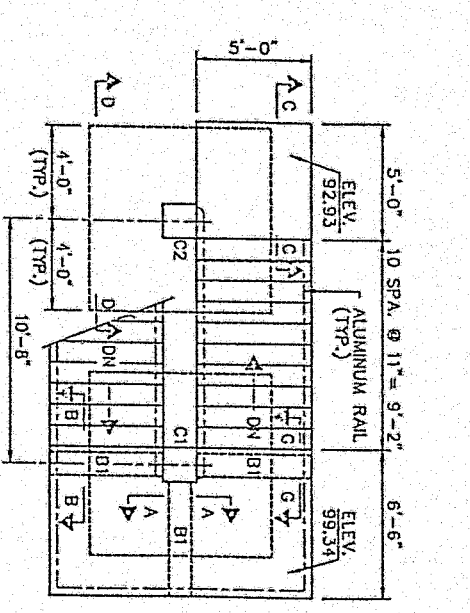
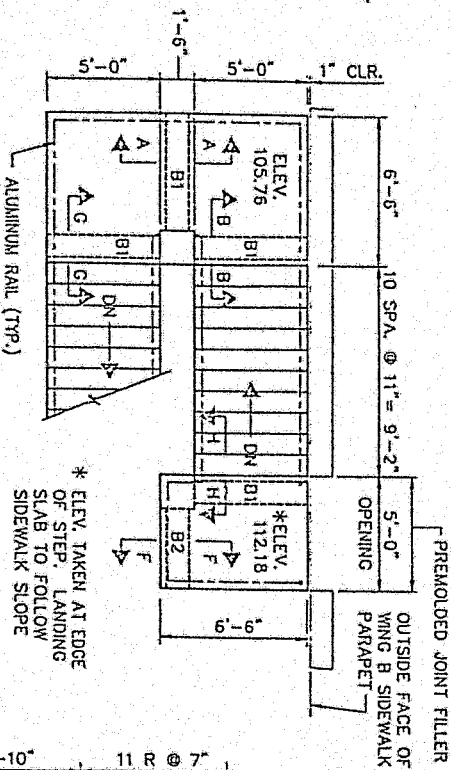
| Mark | Description | By | Chk'd. | Rec'd. | Dt |
|------|-------------|----|--------|--------|----|
| | | | | | |
| | | | | | |

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

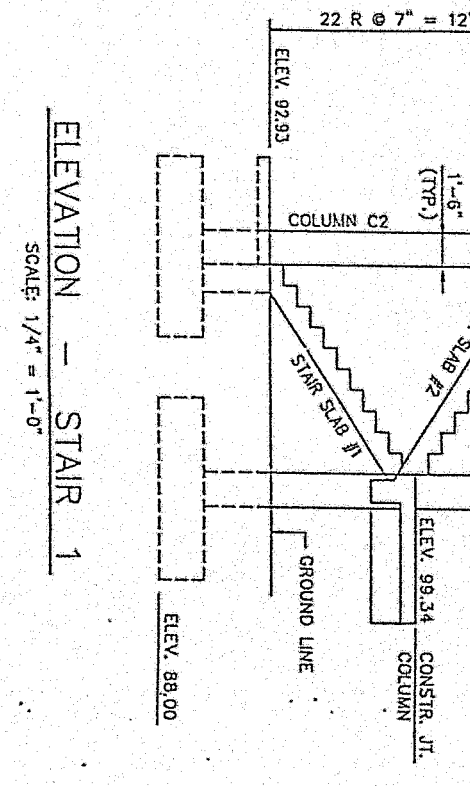
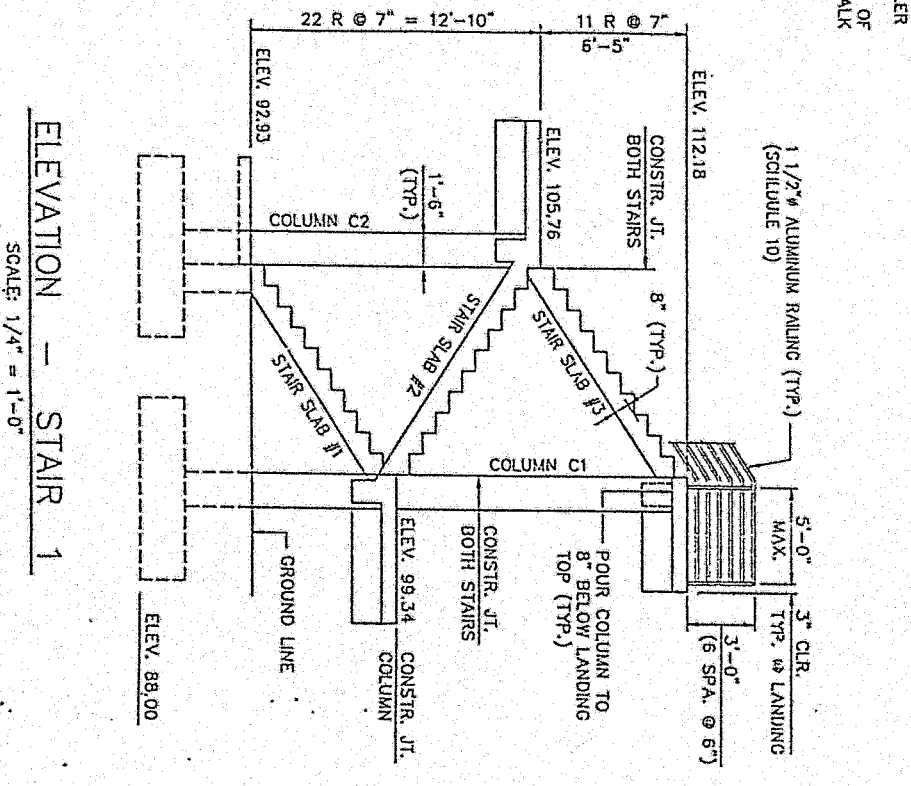
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

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
 DECK ELEVATIONS

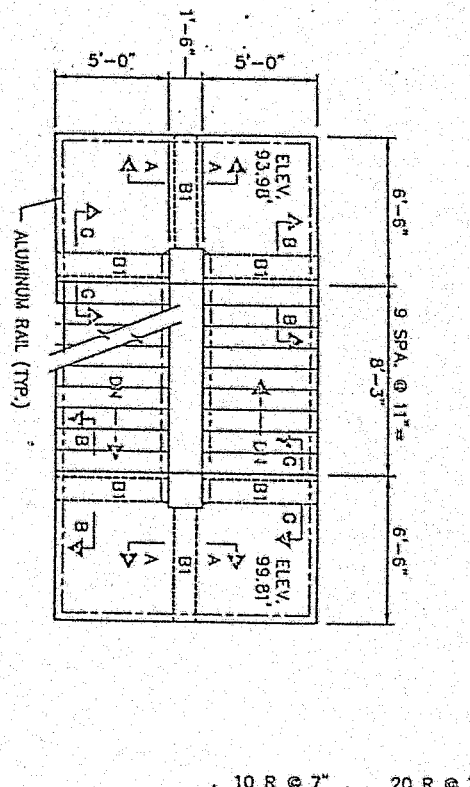
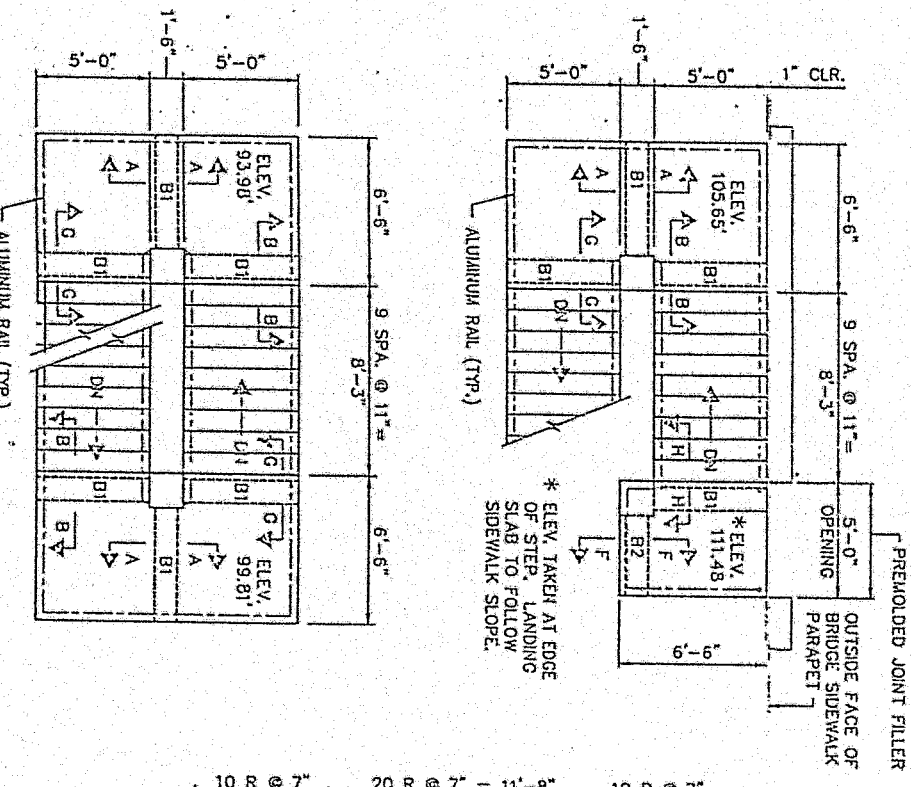
RECOMMENDED 3-19-92



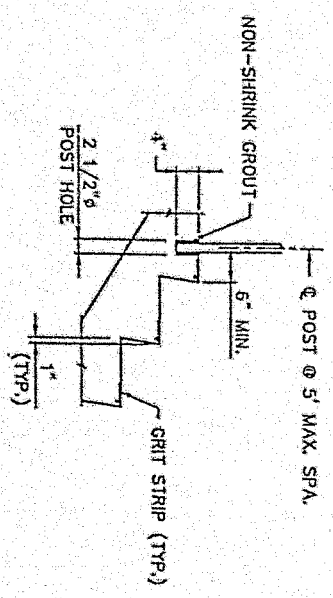
PLAN - STAIR 1
SCALE: 1/4" = 1'-0"



ELEVATION - STAIR 2
SCALE: 1/4" = 1'-0"



ELEVATION - STAIR 2
SCALE: 1/4" = 1'-0"



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

CERTIFIED CORRECT PLANS
 Approved: *[Signature]* PE
 Penn State
 Department of Safety & Compliance
 Attest: *[Signature]* Secretary
 SEP 17 1992

PLAN - STAIR 2
SCALE: 1/4" = 1'-0"

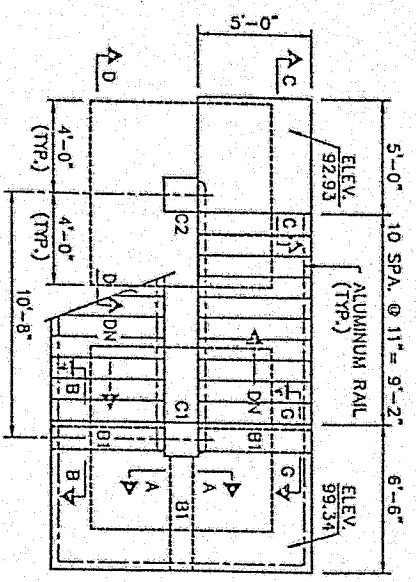
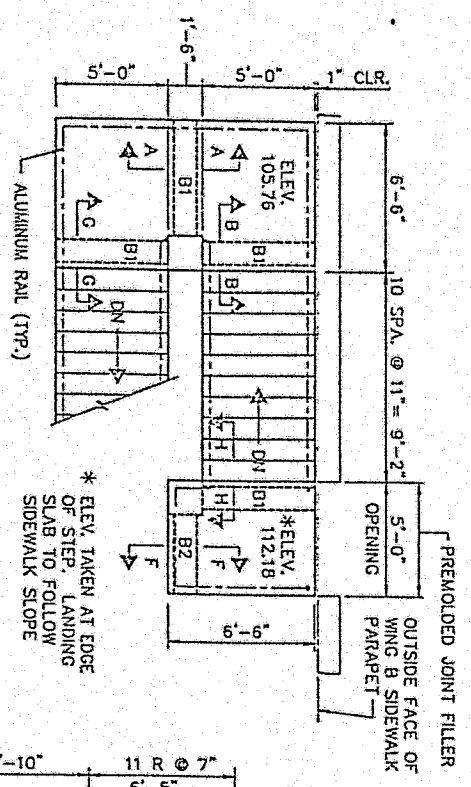
- LEGEND:
- ELEV. = ELEVATION
 - JT. = JOINT
 - CONSTR. = CONSTRUCTION
 - TYP. = TYPICAL
 - SP.A. = SPACES
 - R = RISERS
 - DN = DOWN

- NOTES:
- FOR GENERAL PLAN SEE SHEET 1
 - FOR GENERAL NOTES SEE SHEET 3
 - WORK THIS SHEET WITH SHEET 31
 - FOR BAR SCHEDULE SEE SHEET 32

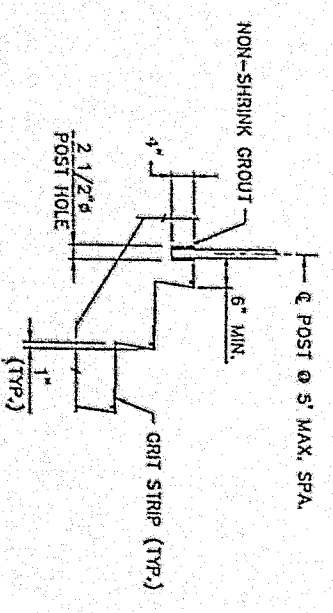
| Mark | Description | By | Chk'd | Rec'd | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

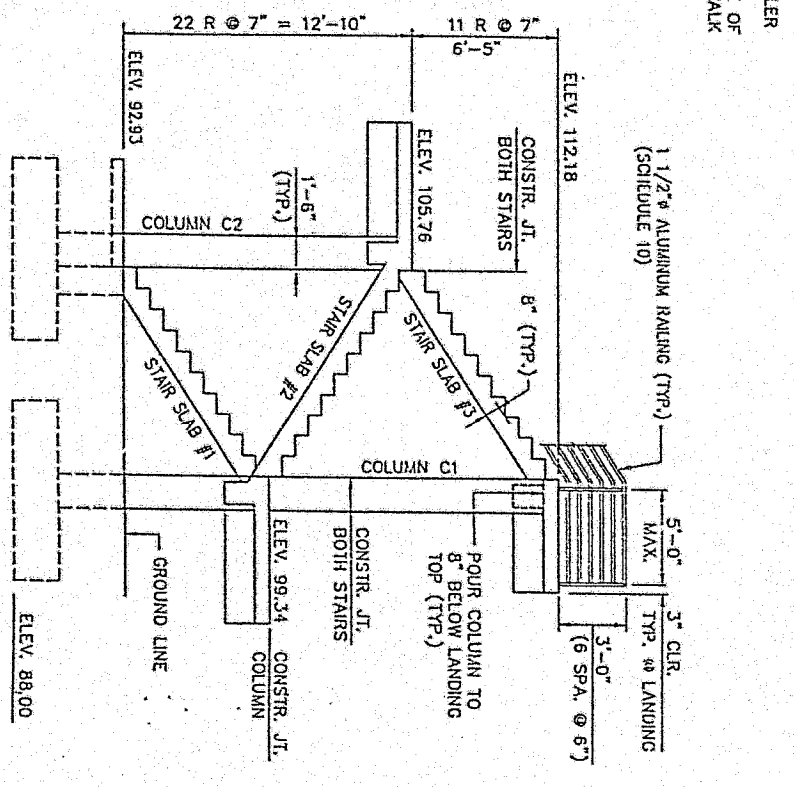
DELAWARE COUNTY
 S.R. 0320 SEC. 125
 SEC. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 STAIR 1 AND STAIR 2



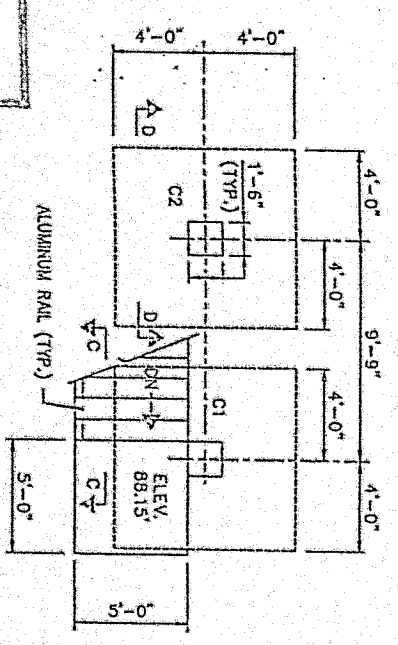
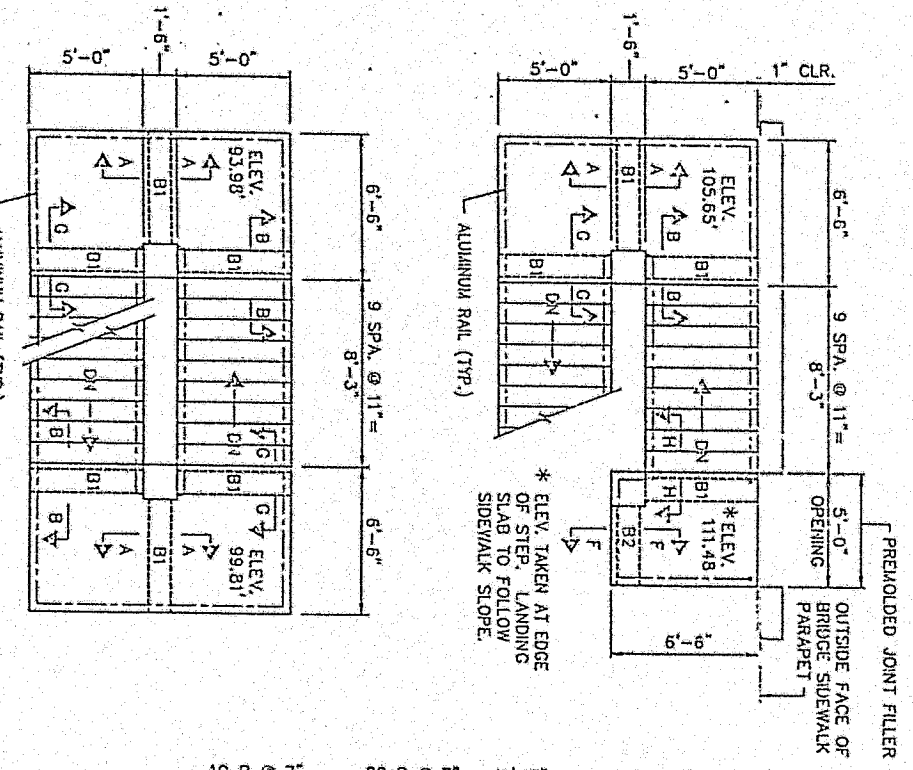
PLAN - STAIR 1
SCALE: 1/4" = 1'-0"



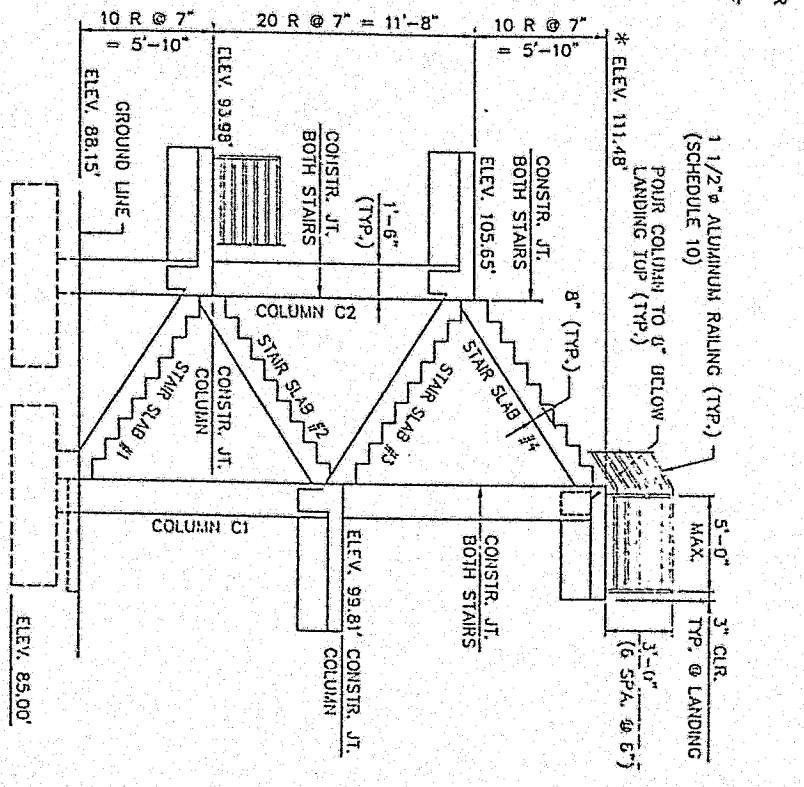
STEP DETAIL
SCALE: 3/4" = 1'-0"



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



PLAN - STAIR 2
SCALE: 1/4" = 1'-0"



ELEVATION - STAIR 2
SCALE: 1/4" = 1'-0"

- NOTES
- FOR GENERAL PLAN SEE SHEET 1
 - FOR GENERAL NOTES SEE SHEET 3
 - WORK THIS SHEET WITH SHEET 31
 - FOR BAR SCHEDULE SEE SHEET 32

| 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 1108
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
STAIR 1 AND STAIR 2

RECOMMENDED 3-19-92 SHEET 30 OF 40

CERTIFIED CORRECT PLANS

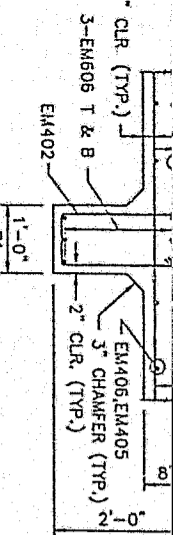
Approved by: *Dr. William P.E.*
Engineer

Approved by: *Thomas M. Secretary*
Secretary

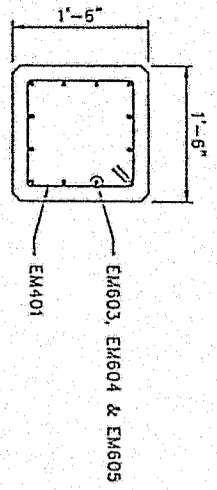
SEP 17 1992

LEGEND

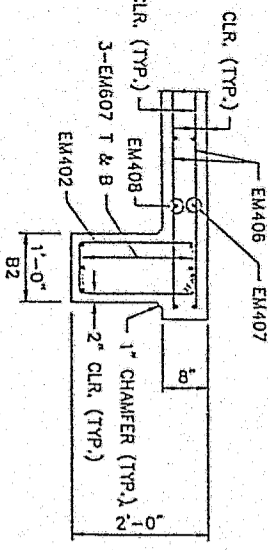
| | | |
|-------------|---|--------------------|
| ELEV. | = | ELEVATION |
| JT. | = | JOINT |
| CONSTR. | = | CONSTRUCTION |
| CONSTR. JT. | = | CONSTRUCTION JOINT |
| CONSTR. JT. | = | CONSTRUCTION JOINT |
| SPA. | = | TYPICAL SPACES |
| R | = | RISERS |
| DN | = | DOWN |



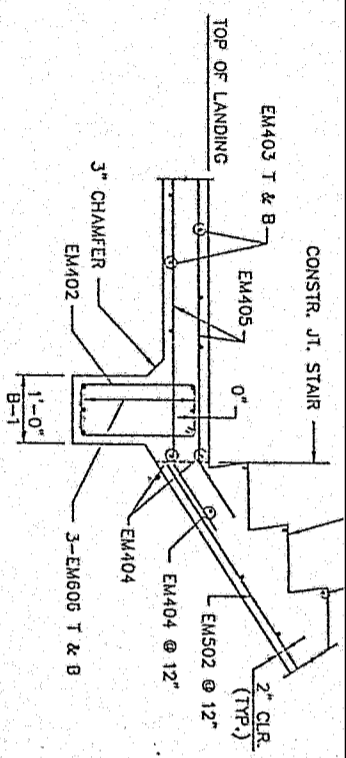
SECTION A-A
SCALE: 3/4" = 1'-0"



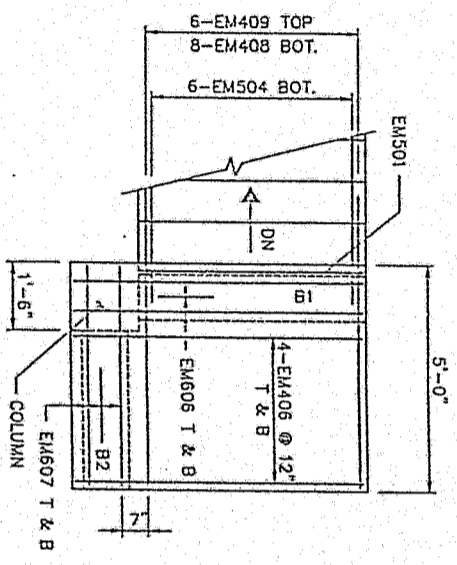
SECTION E-E
SCALE: 1" = 1'-0"



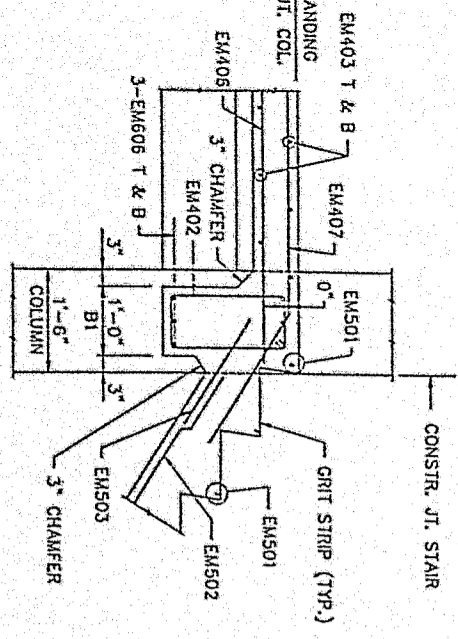
SECTION F-F
SCALE: 3/4" = 1'-0"



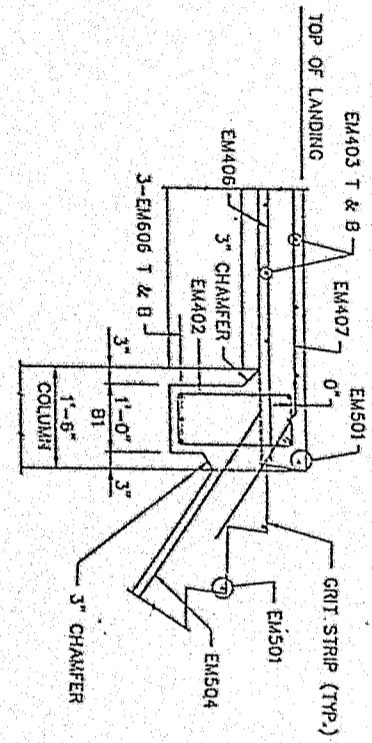
SECTION B-B
SCALE: 3/4" = 1'-0"



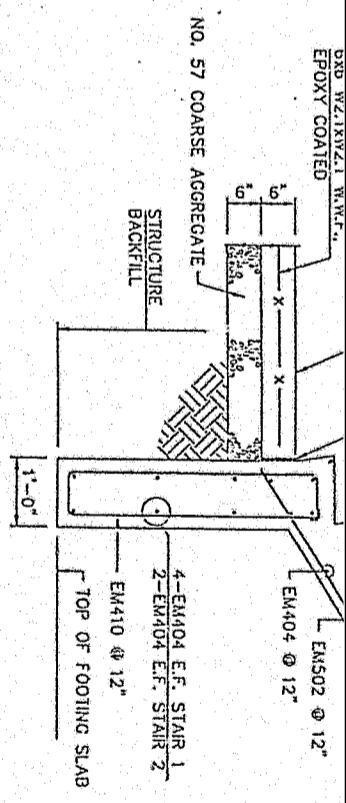
SLAB PLAN
TOP OF STAIR
SCALE: 1/2" = 1'-0"



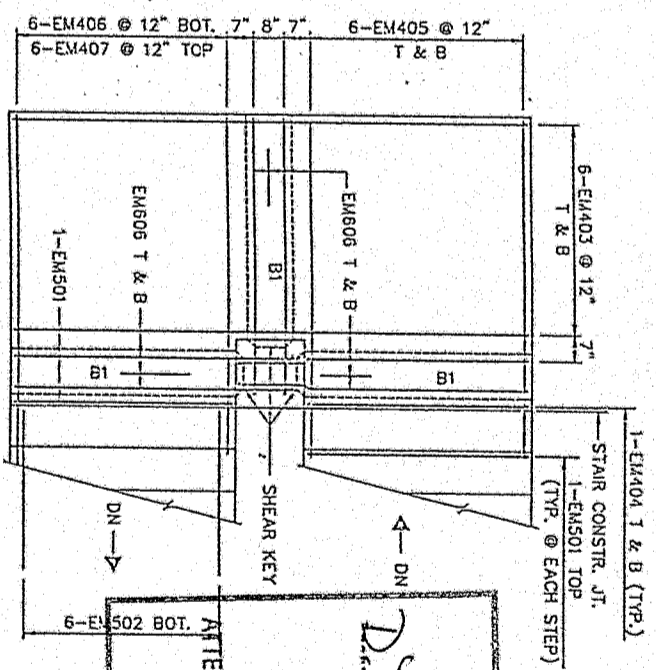
SECTION G-G
SCALE: 3/4" = 1'-0"



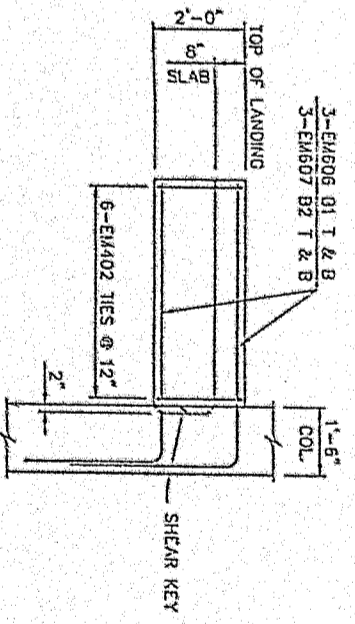
SECTION H-H
SCALE: 3/4" = 1'-0"



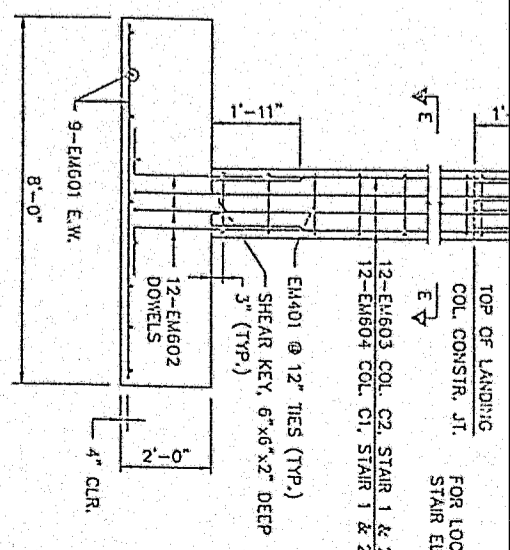
SECTION C-C
SCALE: 3/4" = 1'-0"



SLAB PLAN
@ INTERMEDIATE LANDINGS
SCALE: 1/2" = 1'-0"



BEAM ELEVATION
B1 OR B2
SCALE: 1/2" = 1'-0"



SECTION D-D

CERTIFIED CORRECT PLANS

Approved: *[Signature]*
 PE: *[Signature]*
 Engineer

ATTEST: *[Signature]*
 Secretary

SEP 17 1992

FOR GENERAL NOTES SEE SHEET 3
 WORK THIS SHEET WITH SHEET 30
 FOR BAR SCHEDULE SEE SHEET 32

| Mark | Description | By | Chk'd | Reca. | Date |
|------|-------------|----|-------|-------|------|
| | REVISIONS | | | | |

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

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
 S.R. 0320 SEC. 12S

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 STAIR DETAILS

RECOMMENDED 3-19-92
 SHEET 31 OF 41
 S-1731

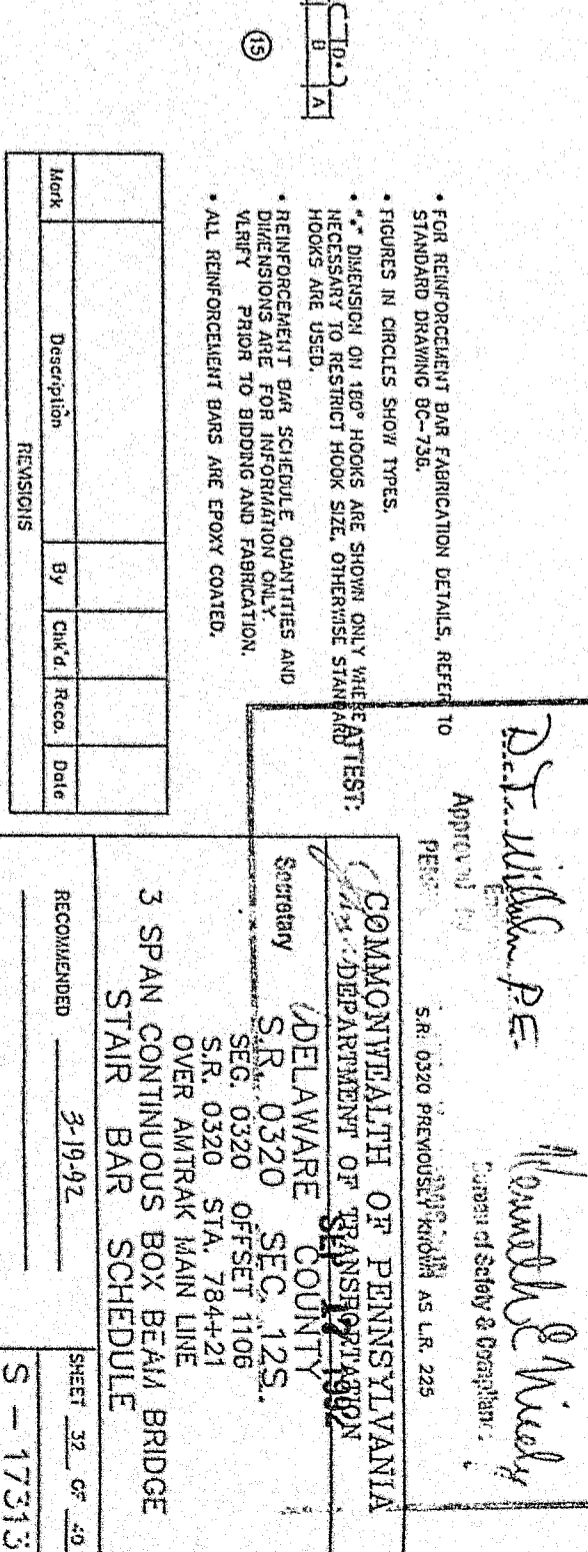
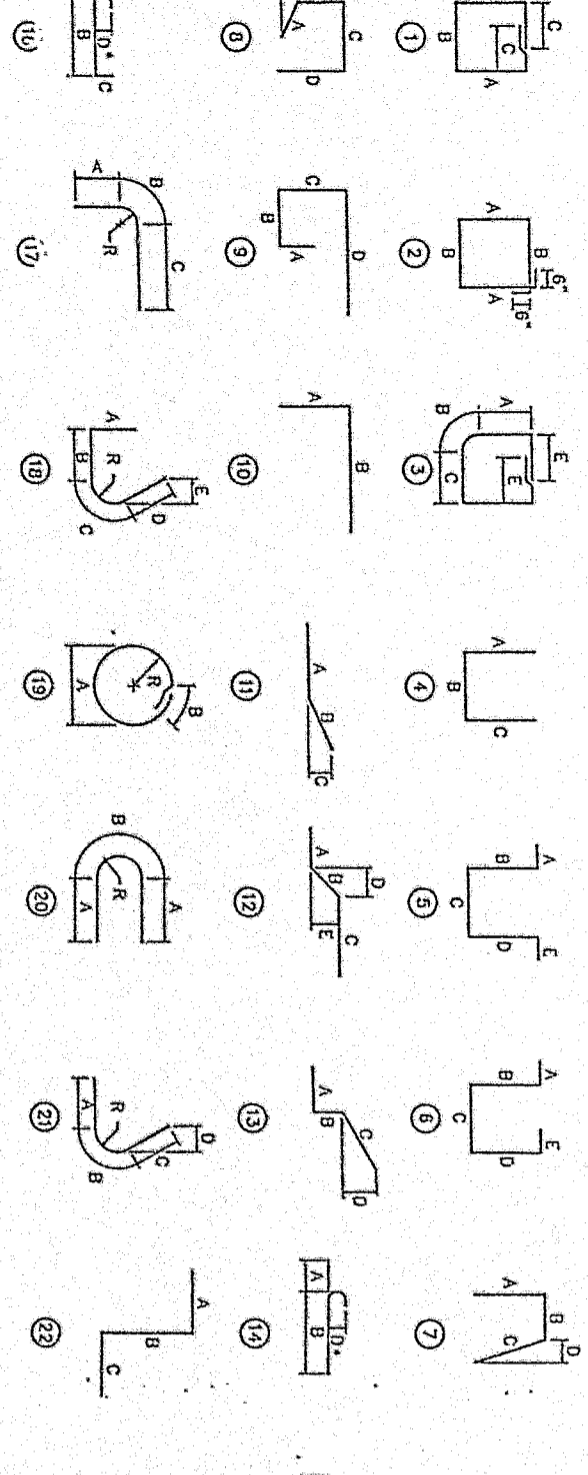
REINFORCEMENT BAR SCHEDULE

REINFORCEMENT BAR SCHEDULE

REINFORCEMENT BAR SCHEDULE

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS | |
|------|------|--------|--------|------|---------------------------|---|---|---|---|---|---------|--|
| | | | | | STAIR 1 | | | | | | | |
| | | | | | FOOTING | | | | | | | |
| | | | | | COLUMN C1 | | | | | | | |
| | | | | | COLUMN C2 | | | | | | | |
| | | | | | BEAM B1 | | | | | | | |
| | | | | | BEAM B2 | | | | | | | |
| | | | | | SLAB LANDING | | | | | | | |
| | | | | | SLAB LANDING @ EL. 112.18 | | | | | | | |
| | | | | | STAIR SLAB #1 | | | | | | | |
| | | | | | STAIR SLAB #2 | | | | | | | |
| | | | | | STAIR SLAB #3 | | | | | | | |

| MARK | SIZE | NUMBER | LENGTH | TYPE | A | B | C | D | E | R | REMARKS | |
|------|------|--------|--------|------|---------------------------|---|---|---|---|---|---------|--|
| | | | | | STAIR 2 | | | | | | | |
| | | | | | FOOTING | | | | | | | |
| | | | | | COLUMN C1 | | | | | | | |
| | | | | | COLUMN C2 | | | | | | | |
| | | | | | BEAM B1 | | | | | | | |
| | | | | | BEAM B2 | | | | | | | |
| | | | | | SLAB LANDING | | | | | | | |
| | | | | | SLAB LANDING @ EL. 111.48 | | | | | | | |
| | | | | | STAIR SLAB #1 | | | | | | | |
| | | | | | STAIR SLAB #2 | | | | | | | |
| | | | | | STAIR SLAB #3 | | | | | | | |
| | | | | | STAIR SLAB #4 | | | | | | | |



| Mark | Description | By | Chk'd | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | REVISIONS | | | | |

- * ALL REINFORCEMENT BARS ARE EPOXY COATED.
- * REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BIDDING AND FABRICATION.
- * HOOKS ARE USED.
- * NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE USED.
- * DIMENSION ON 180° HOOKS ARE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE USED.
- * FIGURES IN CIRCLES SHOW TYPES.
- * FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736.
- * S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

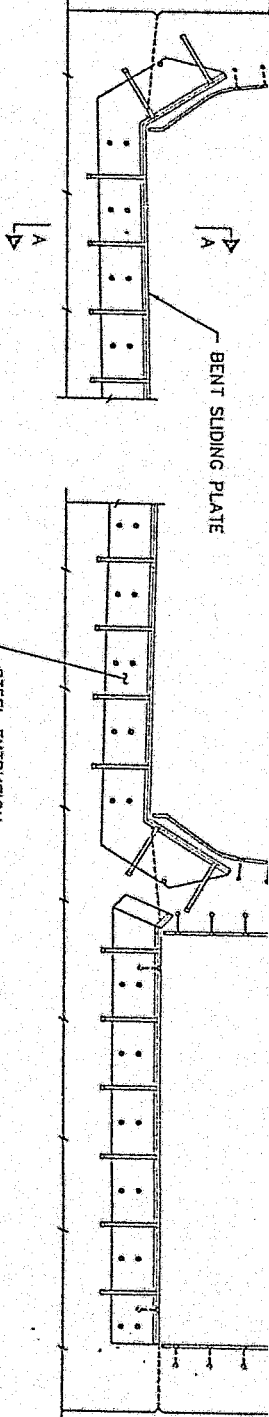
CERTIFIED CORRECT PLANS

D.T. Williams PE
Thomas J. Nieldy

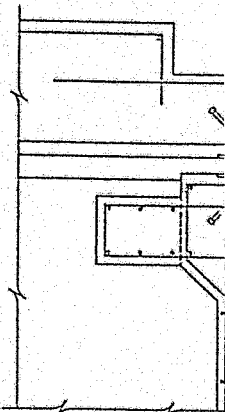
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY
 S.R. 0320 SEC. 12S.
 SEC. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONTINUOUS BOX BEAM BRIDGE
 STAIR BAR SCHEDULE

RECOMMENDED 3-19-92

SHEET 32 OF 40
 S - 17313



NEOPRENE STRIP SEAL EXPANSION JOINT ELEVATION
SCALE: 3/4"=1'-0"



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

FOR SLAB REINF. SEE SHEET 27
FOR DIAPH. REINF. SEE SHEET 26
PROVIDE 2" MOVEMENT CLASSIFICATION STRIP SEAL

CERTIFIED CORRECT PLANS

D. F. Williams, P.E. *Rowan E. Nively*
 Approved by Bureau of Safety & Compliance
 PENNA. HOUSE OF REPRESENTATIVES

ATTEST: *[Signature]* SEP 17 1992
 Secretary

| 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
3 SPAN CONTINUOUS BOX BEAM BRIDGE
MISCELLANEOUS DETAILS

RECOMMENDED 3-19-92 SHEET 33 OF 40

| 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. 90.81' (CASING DEPTH 22.50') | | | | | | | | |
| 1.5 | S1 | 2-2-3 | 14 | 1.00 | ml | | SILT WITH TRACE OF MUCROCEOUS SAND (fm), BROWN, MOSTLY SOFT TO MEDIUM, HOMOGENEOUS | |
| 3.0 | S2 | 2-2-2 | 18 | | ml | A-4 | CLAYEY SILT WITH TRACE OF SAND (fm), GRAY BROWN, MOSTLY MEDIUM HOMOGENEOUS | |
| 4.5 | S3 | 3-3-3 | 11 | 3.00 | ml | | CLAYEY SILT WITH TRACE OF SAND (fm), GRAY BROWN, MOSTLY MEDIUM HOMOGENEOUS | BOI/716, EL. 87.9, 20 HRS. |
| 6.0 | S4 | 4-6-9 | 13 | 1.00 | ml | A-4 | MUCROCEOUS SANDY SILT (fm), DARK BROWN, MOSTLY VERY STIFF | |
| 7.5 | S5 | 10-11-12 | 13 | 1.50 | ml | | MUCROCEOUS SANDY SILT (fm), DARK BROWN, MOSTLY VERY STIFF | EL. 87.9, 20 HRS. |
| 9.0 | S6 | 9-9-11 | 11 | 1.75 | ml | A-4 | MUCROCEOUS SANDY SILT (fm), DARK BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 10.5 | S7 | 5-9-16 | 18 | 1.75 | ml | A-2 | SILT WITH MUCROCEOUS SAND (fm), DARK BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 12.0 | S8 | 15-17-13 | 15 | 2.25 | ml | | SILT WITH MUCROCEOUS SAND (fm), DARK BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 13.5 | S9 | 17-19-22 | 17 | 3.00 | ml | | SILT WITH MUCROCEOUS SAND (fm), DARK BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 15.0 | S10 | 12-29-43 | 15 | 4.50 | ml | | MUCROCEOUS SAND (fm), BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 16.5 | S11 | 42-45-48 | 14 | 4.50 | ml | | MUCROCEOUS SAND (fm), BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 18.0 | S12 | 32-58-99 | 15 | 4.50 | ml | | MUCROCEOUS SAND (fm), BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 19.5 | S13 | 25-50-58 | 16 | 4.50 | ml | | MUCROCEOUS SAND (fm), BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 21.0 | S14 | 20-37-100 | 15 | 4.50 | ml | | MUCROCEOUS SAND (fm), BROWN, MOSTLY MEDIUM TO VERY DENSE, HOMOGENEOUS | EL. 87.9, 20 HRS. |
| 22.5 | R1 | 0% ROD | 292 | REC. | | | MICA SCHIST, GRAY, MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 35-35°, CLOSELY SPACED FRACTURES NO 150° | EL. 87.9, 20 HRS. |
| 24.0 | R2 | 0% ROD | 202 | REC. | | | MICA SCHIST, GRAY WITH BROWN STAINS AT FRACTURE SURFACE, MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 35-35°, CLOSELY SPACED FRACTURES NO 150° | EL. 87.9, 20 HRS. |
| 28.5 | R2 | 0% ROD | 202 | REC. | | | MICA SCHIST, GRAY WITH BROWN STAINS AT FRACTURE SURFACE, MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 35-35°, CLOSELY SPACED FRACTURES NO 150° | EL. 87.9, 20 HRS. |
| 30.5 | R3 | 19% ROD | 692 | REC. | | | MICA SCHIST, GRAY WITH BROWN STAINS AT FRACTURE SURFACE, MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 35-35°, CLOSELY SPACED FRACTURES NO 150° | EL. 87.9, 20 HRS. |
| 37.5 | R4 | 30% ROD | 772 | REC. | | | MICA SCHIST, GRAY WITH BROWN STAINS AT FRACTURE SURFACE, MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 35-35°, CLOSELY SPACED FRACTURES NO 150° | EL. 87.9, 20 HRS. |

END OF BORING 42.50'

60 TON CAPACITY HP12A53 WITH TIP REINFORCEMENT

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.

| 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. 91.67' (CASING DEPTH 20.83') | | | | | | | | |
| 1.5 | S1 | 1-2-3 | 8 | 1.25 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 3.0 | S2 | 2-2-2 | 10 | 1.75 | ml | A-4 | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 4.5 | S3 | 2-4-7 | 9 | 1.75 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 6.0 | S4 | 2-4-5 | 16 | | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 7.5 | S5 | 6-6-6 | 15 | 1.00 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 9.0 | S6 | 6-6-7 | 14 | 1.25 | ml | A-2 | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 10.5 | S7 | 9-11-12 | 18 | 1.75 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 12.0 | S8 | 7-9-10 | 14 | 1.75 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 13.5 | S9 | 12-19-23 | 14 | 2.50 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 15.0 | S10 | 11-21-35 | 18 | 2.50 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 16.5 | S11 | 13-16-43 | 13 | 3.75 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 18.0 | S12 | 32-40-43 | 18 | 4.50 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 19.5 | S13 | 23-34-40 | 16 | 4.50 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 20.83 | R1 | 0% ROD | 12 | 4.50 | ml | | SILT WITH TRACE OF SAND AND TRACE OF FINE MICA FRINGLES (fm), MOTTLED BROWN, MOSTLY MEDIUM STIFF, HOMOGENEOUS | |
| 24.0 | R2 | 0% ROD | 31% REC. | | | | MICA SCHIST, GRAY BROWN (BLACK AT FRACTURE SURFACE), MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 45°, CLOSELY SPACED FRACTURES NO 150° | EL. 91.67, 40 HRS. |
| 29.83 | R1 | 0% ROD | 16% REC. | | | | MICA SCHIST, GRAY BROWN (BLACK AT FRACTURE SURFACE), MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 45°, CLOSELY SPACED FRACTURES NO 150° | EL. 91.67, 40 HRS. |
| 31.0 | R3 | 17% ROD | 50% REC. | | | | MICA SCHIST, GRAY BROWN (BLACK AT FRACTURE SURFACE), MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 45°, CLOSELY SPACED FRACTURES NO 150° | EL. 91.67, 40 HRS. |
| 36.0 | R4 | 28% ROD | 60% REC. | | | | MICA SCHIST, GRAY BROWN (BLACK AT FRACTURE SURFACE), MEDIUM TO HARD, HOORFACILLY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 45°, CLOSELY SPACED FRACTURES NO 150° | EL. 91.67, 40 HRS. |

END OF BORING 41.00'

60 TON CAPACITY HP12A53 WITH TIP REINFORCEMENT

LEGEND

INDICATES GROUND WATER ELEVATION HOURS AT BORING COMPLETION

NOTES

FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35

CERTIFIED CORRECT PLANS

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

DEPARTMENT OF PENNSYLVANIA

DELAWARE COUNTY

S.R. 0320 SEC. 125

SEG. 0320 OFFSET 1106

S.R. 0320 STA. 784+21

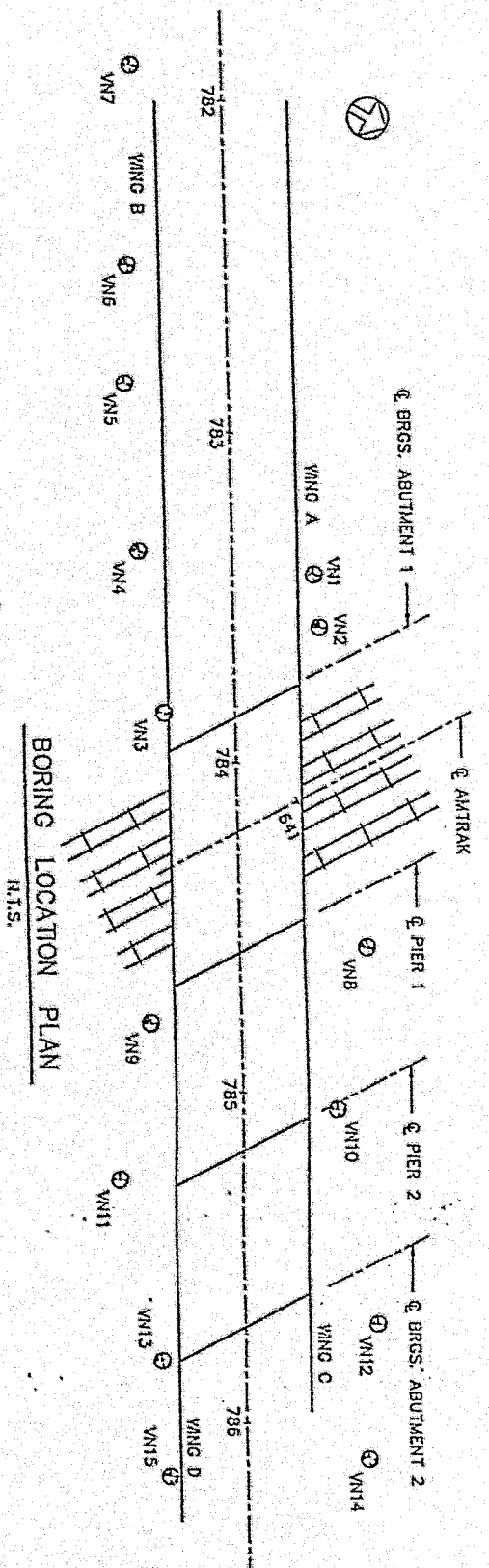
SEP 17 1992

TEST BORINGS

| Mark | Description | By | Chkd | Recd | Date |
|------|-------------|----|------|------|------|
| | | | | | |

| 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') | | | | | | | | |
| 2.0 | S1 | 1-2-3 | 7 | | ml | | TOPSOIL, BLACK, DRY, TRACE OF SAND | |
| 3.5 | S2 | 8-9-10 | 8 | | ml | | CLAYTY SILT (ml), BROWN, MOST, VERY STIFF | EL. 94.10 24 HRS |
| 5.0 | S3 | 8-10-12 | 10 | | ml | A-4 | SILT WITH TRACE OF FINE SAND (ml), BROWN, VET, MEDIUM TO STIFF | BOI / TIC EL. 90 |
| 6.5 | S4 | 5-7-12 | 18 | | ml | | MACROGEOUS SANDY SILT (ml), LIGHT BROWN, MOST, VERY STIFF TO HARD, HOMOGENEOUS | BOI / TIC EL. 80 |
| 8.0 | S5 | 18-25-28 | 9 | | ml | | | EL. 80 0 HRS |
| 9.5 | S6 | 8-11-14 | 12 | | ml | | MACROGEOUS SILTY SAND (ml), BROWN, MOST, MEDIUM DENSE TO VERY DENSE | |
| 11.0 | S7 | 20-40-60 | 12 | | ml | A-3 | | |
| 12.5 | S8 | 40-55-70 | 16 | | ml | | | EL. 78 24 HRS |
| 14.0 | S9 | 3-130-145 | 16 | | ml | A-4 | SILT (ml), BROWN, VET, SORT | |
| 15.5 | S10 | 97-122-212 | 13 | | ml | | MEDIUM TO FINE SAND (ml), GRAY, MOST, VERY DENSE | EL. 78 24 HRS |
| 15.8 | S11 | 162/31 | 3.5 | | ml | A-2 | | |
| 18.8 | R1 | 0% ROD | 19% REC. | | | | MICA SPINSL, DARK GRAY, MEDIUM TO HARD, HIGHLY TO SLIGHTLY WEATHERED, MILDLY ILLODED SPACED FRACTURES RD 135-113' | |
| 23.8 | R2 | 0% ROD | 41% REC. | | | | | |
| 23.8 | R3 | 1% ROD | 32% REC. | | | | | |
| 28.8 | R4 | 9% ROD | 26% REC. | | | | | |
| END OF BORING 35.80' | | | | | | | | |

| 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') | | | | | | | | |
| 1.5 | S1 | 2-3-3 | 14 | | ml | | TOPSOIL, GRAY, ROOTS | |
| 3.0 | S2 | 7-3-2 | 6 | | ml | | SILT WITH LITTLE CLAY (ml), DARK BROWN, MOST, MEDIUM BRICK FRAGMENTS (ml) | EL. 95.81 0 HRS |
| 4.5 | S3 | 7-4-4 | 5 | | ml | A-4 | | |
| 6.0 | S4 | 2-2-6 | 11 | 1.00 | ml | | SILT WITH TRACE OF FINE SAND (ml), BROWN, VET, MEDIUM TO STIFF | BOI / TIC EL. 82 |
| 7.5 | S5 | 8-8-12 | 15 | 2.50 | ml | | MACROGEOUS SANDY SILT (ml), LIGHT BROWN, MOST, VERY STIFF TO HARD, HOMOGENEOUS | |
| 9.0 | S6 | 9-10-10 | 16 | | ml | A-4 | | EL. 81 24 HRS |
| 10.5 | S7 | 6-7-10 | 13 | | ml | | | |
| 12.0 | S8 | 13-19-22 | 15 | 3.25 | ml | | | |
| 13.5 | S9 | 18-20-24 | 12 | 3.25 | ml | | | |
| 15.0 | S10 | 5-6-11 | 18 | 1.50 | ml | | | |
| 16.5 | S11 | 5-7-11 | 18 | 1.50 | ml | A-4 | MACROGEOUS SANDY SILT (ml), LIGHT BROWN, MOST, MEDIUM TO STIFF TO VERY STIFF, HOMOGENEOUS | |
| 18.0 | S12 | 7-12-13 | 16 | 2.00 | ml | | | |
| 19.5 | S13 | 12-13-17 | 16 | 2.00 | ml | | | |
| 21.0 | S14 | 8-10-9 | 18 | 2.00 | ml | | | |
| 22.5 | S15 | 8-5-6 | 14 | | ml | | | |
| 24.0 | S16 | 11-15-20 | 16 | 3.00 | ml | | | |
| 25.0 | S17 | 38-100/1-50/08 | 11 | | ml | | | EL. 78 24 HRS |
| 26.0 | R1 | 0% ROD | 53% REC. | | | | MICA SPINSL, GRAY, SOFT, HIGHLY WEATHERED, VERY FINELY ILLODED RD 25' CLOSELY SPACED FRACTURES | |
| 28.0 | R2 | 20% ROD | 75% REC. | | | | MICA SPINSL, GRAY, VERY LIGHT GRAY, SOFT TO HARD, MEDIUM TO SLIGHTLY WEATHERED, MILDLY ILLODED RD 25'-100' TO TIGHTLY SPACED FRACTURES | |
| 34.0 | R3 | 24% ROD | 56% REC. | | | | | |
| END OF BORING 40.00' | | | | | | | | |



CERTIFIED CORRECT PLANS

DELAWARE COUNTY
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
S.R. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
3 SPAN CONT. ADJACENT BOX BEAM BRIDGE TEST BORINGS

SEP 17 1992

ATTEST: *[Signature]*
Secretary

| REVISIONS | Description | By | Chk'd | Reco. | Date |
|-----------|-------------|----|-------|-------|------|
| | | | | | |

- 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 936 SKID RIG CME 450
 - STANDARD SOIL BORING AND SAMPLING: DRILLING METHOD HOLLOW STEEL 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.
- [Signature]*
- NOTES**
- FOR LEGEND SEE SHEET 34
 - MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF
- 3-19-92
- S - 17313

| DEPTH (FT.) | SAMPLE NO. OR RUN NO. | BLOWS/0.5 FT ON SOIL SAMPLER OR ROD | RECOVERY (IN.) | POCKET PENT. (TSF) | USCS | | DESCRIPTION | REMARKS |
|--|-----------------------|-------------------------------------|----------------|--------------------|--------|--|--|--------------|
| | | | | | AASHTO | | | |
| SURFACE EL. 98.16' (CASING DEPTH 31.54') | | | | | | | | |
| 2.0 | S1 | 6-8-8 | 7 | | | | CONTINUOUS PAVEMENT | |
| 3.5 | S2 | 10-10-10 | 9 | | | | SAND, SOME SILT, DARK BROWN, DRY, MEDIUM DENSE (REL) | |
| 5.0 | S3 | 5-3-9 | 12 | | | | SAND, SOME SILT (sm), DARK BROWN, DRY, MEDIUM DENSE | |
| 6.5 | S4 | 10-9-10 | 13 | | | | CLAYEY SILT (cl-m), BROWN, MOST, VERY STIFF | |
| 8.0 | S5 | 12-12-13 | 14.5 | | | | | |
| 9.5 | S6 | 4-7-11 | 12 | | | | | |
| 11.0 | S7 | 4-5-6 | 18 | | | | | |
| 12.5 | S8 | 6-8-14 | 14 | | | | | |
| 14.0 | S9 | 10-10-11 | 18 | | | | | |
| 15.5 | S10 | 7-8-12 | 11 | | | | | |
| 17.0 | S11 | 6-13-13 | 15 | | | | | |
| 18.5 | S12 | 13-13-14 | 10 | | | | | |
| 20.0 | S13 | 6-8-13 | 16 | | | | | |
| 21.5 | S14 | 26-24-26 | 17 | | | | | |
| 23.0 | S15 | 15-16-24 | 13.5 | | | | | |
| 24.5 | S16 | 16-24-28 | 16 | | | | | |
| 26.0 | S17 | 17-25-26 | 10 | | | | | |
| 27.5 | S18 | 50-70-120 | 10 | | | | | |
| 29.0 | S19 | 66-80-78 | 7 | | | | | |
| 30.5 | S20 | 16-23-30 | 16 | | | | | |
| 31.5 | S21 | 15-120-50/04 | 13 | | | | | |
| 34.5 | R1 | 0% ROD | 14% REC. | | | | | |
| | R2 | 0% ROD | 0% REC. | | | | | |
| 41.5 | R3 | 25% ROD | 60% REC. | | | | | |
| GRAVEL SIZE QUANTZ PIECES NO RECOVERY MICA SPHSL, GRAY, HARD, SLIGHTLY WEATHERED, FINELY DIVIDED AND 10"-15", MEDIUM SPACED FRACTURES TO 130"-170" END OF BORING 46.50' | | | | | | | | EL. 97.8 |

| DEPTH (FT.) | SAMPLE NO. OR RUN NO. | BLOWS/0.5 FT ON SOIL SAMPLER OR ROD | RECOVERY (IN.) | POCKET PENT. (TSF) | USCS | | DESCRIPTION | REMARKS |
|--|-----------------------|-------------------------------------|----------------|--------------------|--------|--|---|--------------|
| | | | | | AASHTO | | | |
| SURFACE EL. 97.93' (CASING DEPTH 25.00') | | | | | | | | |
| 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 | | | | SILT WITH TRACE OF CLAY AND SAND (ml), BROWN, MOST, STIFF | |
| 6.0 | S4 | 4-10-17 | 10 | | | | | |
| 7.5 | S5 | 11-17-12 | 11 | | | | | |
| 9.0 | S6 | 11-13-18 | 12 | | | | | |
| 10.5 | S7 | 6-11-11 | 13 | | | | | |
| 12.0 | S8 | 11-13-15 | 13 | | | | | |
| 13.5 | S9 | 17-21-21 | 11 | | | | | |
| 15.0 | S10 | 16-13-18 | 12 | | | | | |
| 16.5 | S11 | 4-10-10 | 12 | | | | | |
| 18.0 | S12 | 11-14-21 | 12 | | | | | |
| 19.5 | S13 | 13-16-26 | 16 | | | | | |
| 21.0 | S14 | 9-6-10 | 14 | | | | | |
| 22.5 | S15 | 18-42-43 | 16 | | | | | |
| 24.0 | S16 | 30-32-40 | 16 | | | | | |
| 25.0 | S17 | 14-55-50/08 | 12 | | | | | |
| 28.0 | R1 | 0% ROD | 0% REC. | | | | | |
| 33.0 | R2 | 0% ROD | 0% REC. | | | | | |
| 33.0 | S18 | 55/33-50/08 | 3 | | | | | |
| 30.0 | R3 | 0% ROD | 0% REC. | | | | | |
| 43.0 | R4 | 60/5-50/08 | 6 | | | | | |
| 48.0 | R5 | 0% ROD | 0% REC. | | | | | |
| 48.0 | R6 | 7% ROD | 40% REC. | | | | | |
| DECOMPOSED MICA SCHST, BROWN AND GRAY NO RECOVERY MICA SPHSL, GRAY, HARD, SLIGHTLY WEATHERED TO SLIGHTLY WEATHERED, VERY FINELY DIVIDED TO 20"-30", MAY OCCASIONALLY TO MEDIUM FRACTURE SPACING TO 110"-160" END OF BORING 53.00' | | | | | | | | EL. 97.3 |

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

CERTIFIED CORRECT PLANS

Approved: *D. J. [Signature]*
 PENN. ENGINEER
 State of Pa. License No. [Number]

[Signature]
 State of Pa. License No. [Number]

ATTEST:

[Signature]
 NOTES

SEP 17 1992

- FOR GENERAL NOTES AND BORING LOCATION PLAN
- SEE SHEET 35
- FOR LEGEND SEE SHEET 34.

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT AND IS NOT A PART OF THE CONTRACT DRAWINGS (SEE PUBLICATION 402, SECTION 102.05). THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

176

| Mark | Description | By | Chkd. | Reco. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEC. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONT. ADJACENT BOX BEAM BRIDGE
 TEST BORINGS

3-19-92

SHEET 26 OF 40
 S-17313

| 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 | | ml | | SAND, BLACK, MOST, LOOSE (FILL) | |
| 3.0 | S2 | 2-3-7 | 14 | 1.25 | ml | | SILT WITH SOME MUCOUS SAND, TRACE ROOTS (ml), BROWN, MOST, MEDIUM TO STIFF | |
| 4.5 | S3 | 4-5-7 | 12 | 1.25 | A-4 | | | |
| 6.0 | S4 | 4-8-6 | 14 | | | | | |
| 7.5 | S5 | 5-6-7 | 16 | 1.00 | | | | |
| 9.0 | S6 | 6-8-8 | 13 | 2.00 | ml-d | | CLAYEY SILT (ml-d), BROWNISH GRAY, MOST, STIFF | |
| 10.5 | S7 | 12-16-20 | 12 | | A-4 | | | |
| 12.0 | S8 | 19-24-34 | 13 | 4.00 | A-6 | | | |
| 13.5 | S9 | 22-21-28 | 12 | 4.25 | ml | | MUCOUS SANDY SILT (ml), RED, ORANGE, BROWN, M.L., VERY STIFF | |
| 15.0 | S10 | 6-13-19 | 14 | 4.00 | A-4 | | | |
| 16.5 | S11 | 11-15-11 | 17 | 3.50 | sm | | SILTY MUCOUS SAND (sm), RED, ORANGE, BROWN, DENSE TO VERY DENSE | |
| 18.0 | S12 | 10-18-21 | 14 | 4.50 | A-2 | | | |
| 19.5 | S13 | 10-24-32 | 12 | 4.30 | | | | |
| 21.0 | S14 | 13-23-32 | 15 | | | | | |
| 22.5 | S15 | 7-9-22 | 14 | | | | | |
| 24.0 | S16 | 4-4-65 | 13 | | | | DECOMPOSED MICA SCHIST | |
| 25.5 | S17 | 11-42-10/5 | 14 | | | | MICA SCHIST, GRAVEL SIZE PIECES, OTHER INFORMATION N/A | |
| 28.0 | R2 | 0% RQD | 0% | | | | NO RECOVERY | |
| 35.0 | S18 | ZOO/42-50/08 | 6 | | | | DECOMPOSED MICA SCHIST | |
| 35.5 | R3 | 0% RQD | 30% | | | | MICA SCHIST, BROWNISH GRAY, HARD, SUFFICIENTLY TO IDENTIFY WEATHERED, VERY HEAVY BEDDED RD 40", VERY CLOSELY TO CLOSELY SPACED FRACTURES RD 140" | |
| 40.0 | R4 | 0% RQD | 33% | | | | MICA SCHIST, GRAY, HARD, SUFFICIENTLY WEATHERED, VERY HEAVY BEDDED RD 40", CLOSELY SPACED FRACTURES RD 140" | |
| 45.0 | R5 | 0% RQD | 37% | | | | | |

END OF BORING 50.00'

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.

| 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 | ml-d | | SAND FILL, BLACK, MOST | |
| 3.0 | S2 | 4-7-9 | 14 | 2.50 | ml | | CLAYEY SILT WITH SOME FINE SAND (ml-d), BROWN, GRAY, MOST, VERY STIFF | |
| 4.5 | S3 | 10-12-16 | 16 | 2.50 | A-4 | | | |
| 6.0 | S4 | 3-5-4 | 15 | 1.00 | | | MUCOUS SILT WITH SOME FINE SAND (ml), BROWN, GRAY, MOST STIFF | |
| 7.5 | S5 | 3-4-5 | 6 | | A-4 | | | |
| 9.0 | S6 | 6-8-9 | 14 | | | | MUCOUS MEDIUM TO FINE SAND WITH SOME SILT (sm), BROWN, GRAY, MOST, MEDIUM DENSE | |
| 10.5 | S7 | 4-4-6 | 17 | | A-2 | | | |
| 12.0 | S8 | 5-8-14 | 15 | | | | | |
| 13.5 | S9 | 6-9-15 | 13 | | sm | | MUCOUS SILTY FINE SAND (sm), RED, BROWN, GRAY, MOST, MEDIUM DENSE TO DENSE | |
| 15.0 | S10 | 13-13-21 | 17 | | A-2 | | | |
| 16.5 | S11 | 6-3-43 | 14 | | sm | | MUCOUS SILTY SAND (sm), RED, BROWN, GRAY, MOST, VERY DENSE (DECOMPOSED MICA SCHIST) | |
| 18.0 | S12 | 23-40-75 | 13 | | | | | |
| 19.5 | S13 | 115-60/08 | 6 | | A-2 | | | |
| 21.5 | R2 | 0% RQD | 21% | | | | MICA SCHIST, BROWN, SOFT, HEAVILY WEATHERED, LOW RECOVERY, OTHER INFORMATION CANNOT BE OBTAINED | |
| 28.5 | R3 | 7.5% RQD | 35% | | | | MICA SCHIST, BROWN, SOFT, HEAVILY WEATHERED, VERY HEAVY BEDDED RD 45", VERY CLOSE TO MEDIUM FRACTURE SPACING RD 110"-140" | |
| 30.5 | R4 | 0% RQD | 33% | | | | | |

NOTES

FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35 FOR LEGEND SEE SHEET 34

| 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% | | | | | |
| 45.5 | R6 | 0% RQD | 50% | | | | | |
| 53.5 | R7 | 23% RQD | 70% | | | | MICA SCHIST, GRAY, HARD TO VERY HARD, SUFFICIENTLY WEATHERED TO IDENTIFY, VERY HEAVY BEDDED RD 15"-29", VERY CLOSE TO VIDE FRACTURE SPACING RD 110"-160" | |

CERTIFIED CORRECT PLANS

Approved by: *[Signature]* PE
 Approved by: *[Signature]* Eng 11067
 Approved by: *[Signature]* PERM
 Approved by: *[Signature]* Secretary

ATTEST: *[Signature]* Secretary

60 TON CAPACITY HP12X53 WITH TIP REINFORCEMENT
SEP 17 1992

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

| Work | Description | By | Chk'd | Reco. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

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 CONT. ADJACENT BOX BEAM BRIDGE
 TEST BORINGS

| 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 | | SAND, ASH AND STONE FILL (sm), BLACK, DRY TO MOIST, VERY LOOSE | |
| 3.0 | S2 | 2-3-3 | 4 | | A-2 | | | |
| 4.5 | S3 | 3-1-4 | 5 | | | | | |
| 6.0 | S4 | 11-13-6 | 9 | | | | | |
| 7.5 | S5 | 5-2-5 | 8 | | | | | |
| 9.0 | S6 | 0-15-0 | 3 | | sm | | CONCRETE, STONE SAND FILL (sm), BLACK, DRY TO MOIST | |
| 10.5 | S7 | 11-11-17 | 4 | | A-2 | | | |
| 12.0 | S8 | 17-15-15 | 2 | | | | | |
| 13.5 | S9 | 9-9-7 | 3 | | ml | | SILT WITH SOME MICACIOUS SAND, TRACE OF CLAY (ml), BROWN, MOIST, VERY STIFF | DOT/7TC EL.87 EL.82 |
| 15.0 | S10 | 18-35-12 | 9 | | A-4 | | | |
| 16.5 | S11 | 11-12-16 | 9 | | ml | | SILT WITH SOME CLAY, TRACE OF SAND (ml), GRAY, MOIST, VERY STIFF | DOT/7TC EL.81 EL.75 0 HRS. |
| 18.0 | S12 | 11-11-10 | 16 | 3.00 | A-4 | | | |
| 19.5 | S13 | 5-9-11 | 12 | 2.25 | ml | | SILT WITH SOME CLAY, TRACE OF FINE SAND (ml), BROWN, MOIST, VET. STIFF | |
| 21.0 | S14 | 4-13-9 | 13 | | d-m | | CLAYEY SILT WITH TRACE OF FINE SAND (d-m), BROWN, VET. STIFF | |
| 22.5 | S15 | 5-5-9 | 3 | | A-6 | | | |
| 24.0 | S16 | 3-4-8 | 12 | | A-4 | | | |
| 25.5 | S17 | 3-8-23-20 | 10 | | sm | | SILT SAND (sm), GRAY, BLACK, GRAY, BROWN, MOIST, VERY STIFF, LAYERED (decomposed mica schists) | |
| 27.0 | S18 | 1-4-24-30 | 13 | 4.50 | | | | |
| 28.5 | S19 | 9-18-32 | 9 | | A-2 | | | |
| 30.0 | S20 | 4-2-20-18 | 10 | | | | | |
| 31.5 | S21 | 11-19-34 | 13 | | | | | |
| 32.5 | S22 | 4-0-50/30 | 7 | | | | | EL.82 EL.81 EL.80 |
| 33.0 | S23 | 0-0-ROD | | | | | NO RECOVERY | EL.80 |
| 42.0 | S3 | 0-0-ROD | | | | | NO RECOVERY | EL.80 |
| 92.0 | R4 | 15-2 ROD | 75-2 REC. | | | | MICA SCHIST AND QUARTZ, GRAY, SOFT, HIGHLY WEATHERED, GRAVEL SIZE PIECES | |

END OF BORING 57.00'

NOTES

FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35
FOR LEGEND SEE SHEET 34

31K, AP

| 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 | | ml | | TOPSOIL FILL | DOT/7TC EL.87 EL.82 |
| 3.0 | S2 | 3-3-4 | 11 | | 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 | ml-d | | CLAYEY SILT WITH TRACE OF MICACIOUS SAND (ml-d), GRAY, MOIST, VERY STIFF | EL.77.6 0 HRS. |
| 7.5 | S5 | 13-14-17 | 16 | 4.00 | A-6 | | | |
| 9.0 | S6 | 5-0-7 | 15 | | | | | EL.77.6 0 HRS. |
| 10.5 | S7 | 6-6-6 | 5 | | | | | EL.77.6 0 HRS. |
| 12.0 | S8 | 4-4-5 | 3 | | | | | EL.77.6 0 HRS. |
| 13.5 | S9 | 2-4-5 | 14 | | | | | EL.77.6 0 HRS. |
| 15.0 | S10 | 4-7-9 | 18 | 1.50 | ml | | MICACIOUS SANDY SILT (ml), GRAYISH BROWN, MOIST, STIFF TO VERY STIFF | |
| 16.5 | S11 | 3-6-7 | 15 | | A-4 | | | |
| 18.0 | S12 | 5-7-7 | 17 | | | | | |
| 19.5 | S13 | 7-7-10 | 18 | | | | | |
| 21.0 | S14 | 5-8-9 | 11 | | | | | |
| 22.5 | S15 | 9-0-19 | 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 | 9 | | | | | |
| 30.0 | S20 | 5-7-9 | 13 | | | | | |
| 31.5 | S21 | 5-7-7 | 12.5 | | ml-d | | MICACIOUS CLAYEY SILT (ml-d), REDDISH BROWN, MOIST, STIFF, HOMOGENEOUS | |
| 33.0 | S22 | 5-0-6 | 16 | 1.50 | A-4 | | | |
| 34.5 | S23 | 3-5-5 | 13 | | A-6 | | | |
| 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 | d-m | | MICACIOUS SANDY SILT (d-m), GRAYISH BROWN, MOIST, VERY STIFF | |
| 42.0 | S28 | 12-24-45 | 17 | 4.50 | A-6 | | | |
| 43.5 | S29 | 17-25-38 | 14 | | A-4 | | | |
| 45.0 | S30 | 28-30-54 | 16 | | | | | |
| 46.5 | S31 | 47-12-50/30 | 13 | | ml | | MICACIOUS SANDY SILT (ml), GRAYISH BROWN, MOIST, HAND, HOMOGENEOUS | |

60 TON CAPACITY HP12.5S WITH TIP REINFORCEMENT

| 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 | | | | | | | | |
| 48.5 | R1 | 0-0-ROD | 17-2 REC. | | | | | EL.112 EL.103 EL.103 |
| 49.0 | R2 | 11-2 ROD | 40-2 REC. | | | | MICA SCHIST, GRAY, SOFT, HIGHLY WEATHERED, EUCROTIC AND FRACTURE INFORMATION NOT AVAILABLE | |
| 58.0 | R3 | 0-0-ROD | 27-2 REC. | | | | | |
| 61.0 | R4 | 5-6-2 ROD | 100-2 REC. | | | | MICA SCHIST AND QUARTZ, GRAY, SOFT, HIGHLY WEATHERED, TRILLY BEDDED TO THICKLY BEDDED TO THINLY BEDDED, VERY CLOSELY SPACED FRACTURES TO CLOSELY SPACED FRACTURE NO 150' | |

CERTIFIED CORRECT PLANS

END OF BORING 66.00'

Approved by: *D.S. Williams, P.E.*
Engineer

Attest: *[Signature]*
Secretary

SEP 17 1992

THIS SHEET AND DRAWINGS FOR THE CONSTRUCTION OF THE DEPARTMENT AND STATE OF PENNSYLVANIA ARE PART OF THE CONTRACT DRAWINGS (SEE SPECIFICATION 100.10, SECTION 102.05). THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

| Mark | Description | By | Chk'd | Recd. | Date |
|------|-------------|----|-------|-------|------|
| | | | | | |

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 AIRTRAK MAIN LINE
3 SPAN CONT. ADJACENT BOX BEAM BRIDGE
TEST BORINGS

SHEET 38 OF 40
S-17313

| 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. 95.18' (CASING DEPTH 29.58') | | | | | | | | |
| 1.5 | S1 | 4-6-7 | 6 | | sm | | TOP SOIL | |
| 3.0 | S2 | 7-10-7 | 8 | | sm | | SILT SAND (sm), DARK BROWN, MOST MEDIUM DENSE, HOMOGENEOUS | |
| 4.5 | S3 | 11-10-12 | 11 | | A-2 | | SILT WITH SAND (ml) BROWN, MOST MEDIUM TO VERY SILTY, HOMOGENEOUS | |
| 6.0 | S4 | 4-5-8 | 16 | | ml | | | |
| 7.5 | S5 | 8-10-11 | 6 | | A-4 | | | |
| 9.0 | S6 | 6-4-3 | 3 | | | | | |
| 10.5 | S7 | 3-4-5 | 18 | 2.75 | | | | |
| 12.0 | S8 | 7-14-20 | 16 | 4.00 | d-mil | | CLAYEY SILT WITH SAND WITH TRACE OF MICA FLAKES (m-d), GRAY, MOST SILTY | |
| 13.5 | S9 | 20-22-27 | 16 | 3.50 | A-6 | | CLAYEY SILT WITH TRACE OF MICA FLAKES (m-d), BROWN AND GRAY, MOST, VERY SILTY | |
| 15.0 | S10 | 7-9-12 | 6 | 2.00 | A-4 | | | |
| 16.5 | S11 | 4-6-8 | 18 | 2.50 | sm | | SANDY SILT (sm), GRAYISH, MOST, KEY SILTY TO HARD | |
| 18.0 | S12 | 6-8-9 | 16 | 1.50 | A-2 | | | |
| 19.5 | S13 | 6-10-11 | 15 | 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 | 11-20-20 | 11 | 4.50 | | | | |
| 28.5 | S19 | 20-24-70 | 12 | | d-mil | | MACROUS CLAYEY SILT (d-mil) GRAYISH BROWN, MOST, HARD | |
| 29.58 | S20 | 51-130-50/08 | 13 | | A-4 | | GRAVEL SIZE MICA SCURST RECOVERED | |
| 32.0 | R2 | 0% RQD | 0% | | | | GRAY CUTTINGS, NO VOIDS NO RECOVERY | |
| 37.0 | S21 | 41-105-50/04 | 11 | | sm | | CONCRETE SAID (sm), WHITE, GRAY, MOST, HARD (COMPOSED) | |
| 37.92 | R3 | 0% RQD | 0% | | A-2 | | MICA SCURST WITH LAYERS OF GRICES, GRAY AND GREEN, SOFT, HIGHLY WEATHERED, VERY THIN, RECORDED TO 10"-10" VERY CLOSELY SPACED FRACTURES TO 135'-100" | |
| 43.0 | R4 | 0% RQD | 0% | | | | | |
| 48.0 | R5 | 50% RQD | 87% | | | | MICA SCURST GRICES, GRAY, HARD TO VERY HARD, APPROXIMATELY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 10"-15", TIGHTLY SPACED FRACTURES TO 150'-100" | |

| 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. 90.16' (CASING DEPTH 36.00') | | | | | | | | |
| 1.5 | S1 | 4-4-4 | 4 | | ml | | TOP SOIL, BLACK | |
| 3.0 | S2 | 2-3-4 | 13 | | ml | | SANDY SILT (ml) DARK BROWN, MOST, MEDIUM TO SILTY | |
| 4.5 | S3 | 5-5-6 | 15 | | A-4 | | | |
| 6.0 | S4 | 3-1-4 | 8 | | ml-d | | CLAYEY SILT WITH TRACE OF SAND (ml-d), GRAY, MOST, SILTY TO VERY SILTY | |
| 7.5 | S5 | 5-10-14 | 12 | | A-6 | | | |
| 9.0 | S6 | 11-13-21 | 18 | | | | | |
| 10.5 | S7 | 7-9-11 | 16 | 3.00 | | | | |
| 12.0 | S8 | 9-8-11 | 13 | | ml | | | |
| 13.5 | S9 | 8-10-11 | 15 | 1.50 | | | MICROUS SANDY SILT WITH CLAY (ml), GRAYISH BROWN, MOST, SILTY TO VERY SILTY | |
| 15.0 | S10 | 6-6-6 | 17 | 1.00 | A-4 | | | |
| 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 | 18-23-41 | 18 | 2.50 | | | | |
| 34.5 | S23 | 25-18-22 | 11 | 2.50 | | | | |
| 35.9 | S24 | 87-158-50/5 | 17 | 4.50 | | | | |
| 39.0 | R2 | 0% RQD | 42% | | | | NO RECOVERY | |
| 44.0 | R3 | 0% RQD | 18% | | | | MICA SCURST GRAY, SOFT TO MEDIUM SILTY WEATHERED, HIGHLY WEATHERED, TO 10" SPACED FRACTURES TO 150'-100" | |

| 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 | | | | | | | | |
| 49.0 | R4 | 0% RQD | 20% | | | | | |
| 54.0 | R5 | 0% | 77% | | | | GRICES, GRAY WITH WHITE SEAMS, MEDIUM TO HARD, APPROXIMATELY TO SLIGHTLY WEATHERED, THINLY BEDDED TO 10"-30", TIGHTLY SPACED FRACTURES TO 150'-100" | |

END OF BORING 59.00'

CERTIFIED CORRECT PLANS

Approved: *[Signature]* P.E.
 Date: *[Date]*

ATTEST: *[Signature]* Secretary

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 **19MM1992** ENCOUNTERED HAVE BEEN VERIFIED.

[Signature]

| REVISIONS | | | | |
|-----------|-------------|----|--------|------|
| Mark | Description | By | Chk'd. | Date |
| | | | | |

S.R. 0320 PREVIOUSLY KNOWN AS LR. 225

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 DELAWARE COUNTY
 S.R. 0320 SEC. 12S
 SEG. 0320 OFFSET 1108
 S.R. 0320 STA. 784+21
 OVER AMTRAK MAIN LINE
 3 SPAN CONT. ADJACENT BOX BEAM BRIDGE
 TEST BORINGS

3-19-92

SHEET 39 OF 42

S - 17313

FOR GENERAL NOTES AND BORING LOCATION PLAN
 SEE SHEET 35
 FOR LEGEND SEE SHEET 34

NOTES

END OF BORING 53.00'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

HK, AP

706+16
SET FROM @ 24.1' RT

W I N G D
BORING NO. VN-15

| SAMPLE NO. OR RUN NO. | BLOWS/0.5 FT ON SOIL SAMPLER OR ROD | RECOVERY (IN.) | POCKET PENT. (TSF) | USCS | | DESCRIPTION | REMARKS |
|-----------------------|-------------------------------------|----------------|--------------------|--------|-----|--|---|
| | | | | AASHTO | | | |
| S1 | 2-3-5 | 4 | | | ml | BROWNISH FINE SAND, GRAY, MOST (FIL) | DOT/716 EL.01 |
| S2 | 6-4-6 | 14 | | | ml | | |
| S3 | 5-6-11 | 16 | | | A-2 | SILT WITH TRACE OF GRAVEL (ml), GRAY, MOST, STIFF | |
| S4 | 4-7-5 | 7 | | | ml | | |
| S5 | 4-4-5 | 11 | 1.00 | | A-4 | | |
| S6 | 10-6-4 | 8 | 1.50 | | | | |
| S7 | 3-3-7 | 16 | 4.25 | | ml | SILT (ml), GRAY, MOST TO WET | |
| S8 | 13-20-21 | 16 | 4.50 | | A-4 | | |
| S9 | 17-15-16 | 12 | | | | | |
| S10 | 5-7-11 | 17 | 2.00 | | ml | MUCOUS SANDY SILT (ml), BROWN, MOST, VERY STIFF | DOT/716 EL.01 V EL.0196 9 HRS. V 20.16 13 HRS. |
| S11 | 4-11-12 | 10 | 2.25 | | A-4 | | |
| S12 | 16-17-21 | 17 | 2.25 | | | | |
| S13 | 15-24-17 | 10 | 3.00 | | | | |
| S14 | 7-14-16 | 15 | 2.50 | | | | |
| S15 | 16-21-34 | 15 | | | | | |
| S16 | 18-24-28 | 11 | | | | | |
| S17 | 11-16-19 | 15 | 4.00 | | | | |
| S18 | 16-21-24 | 12 | 3.00 | | | | |
| S19 | 10-24-32 | 12 | 4.50 | | | | |
| S20 | 32-85-209/3 | 15 | 4.50 | | | | |
| R1 | 05 ROD | | 19% REC. | | | MICA SCALIST, GRAY/BROWN WITH TRACE OF QUARTZ, SORT, HIGHLY WEATHERED, BEDDING AND FRACTURE INFORMATION NOT AVAILABLE | EL.014 (3)(3)(3)(3) |
| R2 | 05 ROD | | 27% REC. | | | | |
| R3 | 05 ROD | | 26% REC. | | | MICA SCALIST, GREY/GRAY, MEDIUM HARDNESS, HIGHLY WEATHERED, VERY DISPERSED NO 25"-40", CLOSELY SPACED FRACTURES NO 140"-155" | |
| R4 | 52 ROD | | 37% REC. | | | | |

END OF BORING 48.00'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

STA. 706+11
OFFSET FROM @ 37.4' LT

W I N G C
BORING NO. VN-14

| DEPTH (FT.) | SAMPLE NO. OR RUN NO. | BLOWS/0.5 FT ON SOIL SAMPLER OR ROD | RECOVERY (IN.) | POCKET PENT. (TSF) | USCS | | DESCRIPTION | REMARKS |
|-------------|-----------------------|-------------------------------------|----------------|--------------------|--------|--|---|---------|
| | | | | | AASHTO | | | |
| 1.5 | S1 | 3-0-9 | 12 | | | TOP SOIL | | |
| 3.0 | S2 | 4-3-3 | 10 | | ml | CLAYEY SILT WITH TRACE OF FINE SAND (ml), DARK BROWN, MOST, STIFF, HOMOGENEOUS | DOT/716 EL.01 | |
| 4.5 | S3 | 4-4-5 | 14 | | A-4 | | | |
| 6.0 | S4 | 3-4-6 | 15 | 1.50 | | | | |
| 7.5 | S5 | 5-6-5 | 11 | | | | | |
| 9.0 | S6 | 5-7-8 | 11 | | d | SILTY CLAY (d), BROWNISH GRAY, MOST, VERY STIFF, HOMOGENEOUS | DOT/716 EL.01 V EL.0278 16 HRS. | |
| 10.5 | S7 | 0-11-15 | 18 | 3.25 | A-6 | | | |
| 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 | MUCOUS SANDY SILT (ml), GRAYISH BROWN, MOST, VERY STIFF, HOMOGENEOUS | EL.0278 0 HRS. V | |
| 16.5 | S11 | 7-0-9 | 13 | 3.25 | A-4 | | | |
| 18.0 | S12 | 10-13-17 | 11 | 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 | MUCOUS SILTY CLAY, SOME SAND (ml), ORANGE RED, BROWN, MOST, HARD | EL.021 (3)(3)(3)(3) | |
| 24.0 | S16 | 22-40-62 | 14 | 4.50 | A-4 | | | |
| 25.0 | S17 | 30-235/2 | 12 | 4.50 | | | | |
| 26.0 | R1 | 05 ROD | 0% REC. | | | NO RECOVERY | | |
| 28.0 | S18 | 175-50/00 | 6 | | | SANDY DECOMPOSED MICA SCALIST, GRAY, HARD | EL.020 V | |
| 28.50 | R2 | 142 ROD | 70% REC. | | | | | |
| 32.0 | R3 | 05 ROD | 70% REC. | | | CRUS WITH SEAMS OF MICA SCALIST, GRAY, DANDS OF WHITE, MEDIUM TO VERY HARD, MODERATELY WEATHERED, VERY THINLY BEDDED NO 10"-40", VERY CLOSELY TO CLOSELY SPACED FRACTURES NO 155"-170" | | |

END OF BORING 38.00'

CERTIFIED CORRECT PLANS

Approved by
[Signature]
PENNSYLVANIA
Department of Safety & Compliance

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

ATTEST: *[Signature]* SEP 17 1992

- NOTES
- FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35
 - FOR LEGEND SEE SHEET 34

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.

176

| Mark | Description | By | Chk'd | Rec'd | Date |
|-----------|-------------|----|-------|-------|------|
| REVISIONS | | | | | |

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONT. ADJACENT BOX BEAM BRIDGE
TEST BORINGS

SHEET 40 OF 42
S - 17313



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

April 25, 1994

IN REPLY PLEASE
REFER TO OUR FILE

RECEIVED
APR 26 11:50
INFO. CONTROL DIV.

In re: C-80011839 - Villanova University
v.
National Railroad Passenger Corporation
(Amtrak), Consolidated Rail Corporation
(Conrail), Southeastern Pennsylvania
Transportation Authority (SEPTA), Penn-
sylvania Department of Transportation
(PennDOT), County of Delaware and Radnor
Township.

Dear :

We have been notified that the project constructed under the
referenced proceeding has been completed.

Please be advised that a Commission staff engineer will hold a
final inspection at the site of the crossing on Thursday, May 19, 1994 at
11:30 .am.

It is anticipated that a determination of the need for a final
hearing to allocate costs and maintenance responsibility will be made at that
time.

Please arrange to have a representative present.

Very truly yours,

David T. Wilhelm, P.E.
Rail Safety Division
Bureau of Safety and Compliance
(717) 787-6805

DTW:dcw

cc: See attached list

INDEXED
DOCUMENT
MAY 09 1994
FOLDF

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265
September 12, 1994

In Re: C-80011839

(See letter dated 10/29/80)

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

Alleging, Inter Alia, that respondents - 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 filed 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.

N O T I C E

This is to inform you that a further hearing on the above-captioned case will be held Thursday, December 8, 1994 at 10:00 a.m. in an available hearing room, 13th Floor, Philadelphia State Office Building, Broad and Spring Garden Streets, Philadelphia, Pennsylvania.

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.

We are enclosing herewith, a list of questions, prepared by our Bureau of Safety & Compliance, indicating information to be developed at the hearing, along with other relevant testimony.

If any party intends to offer prepared written testimony, such testimony must be served upon each participant of record no less than twenty (20) days prior to this hearing.

DOCUMENT
FOLDER

DOCKETED
SEP 14 1994

You are advised that if you fail to appear at the hearing, the hearing will proceed without you. In that event, it is possible that you or your client will have issues determined against you and that you might be assigned positive duties or be required to pay money and will have waived any objection thereto.

The Commission's Rules require that all parties (except individuals appearing on their own behalf) be represented by counsel at hearing, therefore, will you please have counsel of your choice file an appearance on your behalf prior to the hearing date herein stated.

If you intend to file exhibits, please be advised that two copies of all hearing exhibits to be presented into evidence must be submitted to the Reporter and an additional copy should be furnished to the presiding officer and each party of record.

The presiding officer in this proceeding is Administrative Law Judge Herbert Smolen. Judge Smolen can be contacted at 1302 Philadelphia State Office Building, Broad and Spring Garden Streets, Philadelphia, Pennsylvania 19130; telephone (215) 560-2105.

If you are a person with a disability, and you wish to attend the hearing, we may be able to make arrangements for your special needs. Please call Norma Lewis at the Public Utility Commission:

- Scheduling Office: 717-787-1399
- AT&T Relay Service number for persons who are deaf or hearing impaired: 1-800-654-5984

pc: Judge Smolen
John Frazier - BPL
Law Bureau - Room G-28 - 2
Safety & Compliance - Room G-17 - 2
Norma Lewis
Pat Young, Scheduler
Stephen Springer
Beth Plantz
Docket Room

1. 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.
2. 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.
3. PennDOT submit into evidence copies of its pertinent as-built construction plans for the subject crossing.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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 therefor.
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.

12. PennDOT state whether any funds appropriated by the Federal government or by the Bridge Bill were expended in performing any of the work.
13. 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.
14. National Railroad Passenger Corporation (AMTRAK) submit testimony indicating the total number of tracks presently located at the crossing site and state whether any track is electrified; state the number of tracks owned and/or operated over by AMTRAK and identify the owner of the remaining tracks; state the volume, class and approximate speed of all AMTRAK trains operated daily over these tracks; and state whether any changes in such AMTRAK operations are contemplated in the foreseeable future.
15. AMTRAK state how the railroad company is benefitted by the existence of the completed crossing improvement.
16. AMTRAK submit answers to Question Nos. 9, 10, 11, and 13 as if same were directed to it.
17. Southeastern Pennsylvania Transportation Authority (SEPTA) state the number of tracks located at the crossing site which are owned and/or operated over by SEPTA; state the volume, class and approximate speed of all SEPTA trains operated daily over these tracks; and state whether any changes in such SEPTA operations are contemplated in the foreseeable future.
18. SEPTA state how the railroad company is benefitted by the existence of the completed crossing improvement.
19. SEPTA submit answers to Question Nos. 9, 10, 11 and 13 as if same were directed to it.
20. Consolidated Rail Corporation (Conrail) submit answers to Question Nos. 17 and 18 as if same were directed to it.
21. Conrail submit answers to Question Nos. 9, 10, 11 and 13 as if same were directed to it.
22. Radnor Township and Delaware County each state how its residents are benefitted by the existence of the completed crossing improvement.
23. Township and County each state whether it has incurred any costs in connection with the construction that was recently completed and, if so, submit a detailed, itemized summary of costs and submit testimony explaining in full its summary of costs.
24. Township and County each submit answers to Question Nos. 9, 10 and 13 as if same were directed to it.
25. Non-carrier public utility companies each, if seeking reimbursement of costs incurred, submit into the record a detailed plan indicating specific location of 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.

26. Non-carrier public utility companies each, if seeking reimbursement of costs incurred, 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.
27. Non-carrier public utility companies each submit into the record a detailed, itemized summary of all costs and expenses incurred, for which it is seeking reimbursement, in furnishing material and performing work in accordance with the Commission order adopted April 23, 1992, and submit testimony explaining in full the summary of all costs.
28. Non-carrier public utility companies each state whether its relocated facilities were placed in public or private right-of-way and state what benefits or costs incurred to it by such placement.
29. Non-carrier public utility companies each state which items of costs incurred, if any, it agrees to bear and which party or parties it suggests should bear the remaining items of costs, stating the basis for such suggested assignment of costs.
30. Query whether any party in interest, or any other party, desires to submit any additional relevant testimony.

DTW:sd

LEBOEUF, LAMB, GREENE & MACRAE

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

NEW YORK, NY
WASHINGTON, DC
ALBANY, NY
BOSTON, MA
DENVER, CO
HARRISBURG, PA

320 MARKET STREET
SUITE E400, STRAWBERRY SQUARE
P.O. BOX 12105
HARRISBURG, PA 17108-2105
(717) 232-8199
FACSIMILE: (717) 232-8720

EUROPEAN COMMUNITY: BRUSSELS, BELGIUM AND LONDON, ENGLAND

RUSSIAN FEDERATION: MOSCOW

DIRECT DIAL

ORIGINAL

HARTFORD, CT
JACKSONVILLE, FL
LOS ANGELES, CA
NEWARK, NJ
PITTSBURGH, PA
SALT LAKE CITY, UT
SAN FRANCISCO, CA

September 27, 1994

BY HAND

John Alford, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

Re: Villanova University v. AMTRAK et al.
Docket No. C-80011839

Dear Secretary Alford:

Enclosed for filing on behalf of AT&T Communications are an original and two (2) copies of a Notice of Appearance in the above-captioned matter.

If you have any questions regarding this matter, please contact me at your convenience.

Very truly yours,

Craig A. Doll
Craig A. Doll

CAD/kmv

Enclosures

cc: All Parties on Certificate of Service

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Villanova University :
 :
 v. :
 :
 National Railroad Passenger :
 Corporation (AMTRAK); :
 Consolidated Rail Corporation :
 (Conrail); Southeastern : DOCKET NUMBER C-80011839
 Pennsylvania Transportation :
 Authority (SEPTA); :
 Pennsylvania Department of :
 Transportation (PennDOT); :
 County of Delaware and Radnor :
 Township :

NOTICE OF APPEARANCE

Please enter my appearance in the above-designated matter on behalf of AT&T for purposes of cost allocation.

I am authorized to accept service on behalf of said participant in this matter.

On the basis of this notice, I request a copy of each document hereafter issued by the Commission in this matter.

I am already receiving or have access to a copy of each document issued by the Commission in this matter (alone, or in a consolidated proceeding) and do not on the basis of this notice require an additional copy.

Craig A. Doll

Craig A. Doll
LeBoeuf, Lamb, Greene & MacRae
320 Market Street
Suite E 400, Strawberry Square
Post Office Box 12105
Harrisburg, PA 17108-2105
(717) 232-8199

DOCKETED
SEP 2 - 1993

REC'D. COMM. REG. DIV.
SEP 2 1993

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Villanova University :
 :
 v. :
 :
 National Railroad Passenger :
 Corporation (AMTRAK); :
 Consolidated Rail Corporation :
 (Conrail); Southeastern : DOCKET NUMBER C-80011839
 Pennsylvania Transportation :
 Authority (SEPTA); :
 Pennsylvania Department of :
 Transportation (PennDOT); :
 County of Delaware and Radnor :
 Township :

RECORDED
INDEXED
MAY 17 1982

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of
AT&T's Notice of Appearance upon the participants, listed below,
in accordance with the requirements of §1.54.

Scott K. Wasserkrug, Charles E. Mechem
Conrail
Law Department 16-A, Two Commerce Square
2001 Market Street, P.O. Box 41416
Philadelphia, PA 19101-1416

W. D. Pickering, Utility Engineer
PENNDOT
509 Transportation & Safety Building
Harrisburg, PA 17120

John Heaton, Chief Counsel
PA Department of Transportation
521 Transportation & Safety Building
Harrisburg, PA 17120

David Salapa, Esquire
PA PUC - Law Bureau
G-31 North Office Building
PO Box 3265
Harrisburg, PA 17120

J. M. Power, Manager
Finance and Administrative Reg - Rail Div.
SEPTA
Three Penn Center Plaza, 6th Floor
1515 Market Street
Philadelphia, PA 19102

James G. Pachulski, Senior Attorney
The Bell Telephone Company of PA
One Parkway, 16th Floor
Philadelphia, PA 19102

Rudolph Chillemi
PECO
2301 Market Street
Philadelphia, PA 19101

Richard Cooper, P.E.
National Railroad Passenger Corp.
30th Street Station
3rd Floor South
Philadelphia, PA 19104

Mary Ann Arty, Chairwoman
Delaware County Commissioners
Government Center Building
Media, PA 19063

Francis P. Connors, Esquire
Delaware County Solicitor
Government Center Building
Media, PA 19063

Clinton A. Stuntebeck, President
Radnor Township Commissioners
301 Iven Avenue
Wayner, PA 19087

Eugene H. Evans, Esquire
Radnor Township Solicitor
131 West Market Street
West Chester, PA 19390

James W. Patterson, Esquire
One Liberty Place
32ND Floor
Philadelphia, PA 19103

John Ranieri
Philadelphia Suburban Water Company
762 Lancaster Avenue
Bryn Mawr, PA 19010

Dated: September 27, 1994



Craig A. Doll
LeBoeuf, Lamb, Greene & MacRae
320 Market Street
Suite E400, Strawberry Square
P. O. Box 12105
Harrisburg, PA 17108-2105
(717) 232-8199

APPEARANCE SHEET

ALJ HEARING REPORT

Docket No. C-80011839

CHECK THOSE BLOCKS WHICH APPLY:

Case Name Villanova University v. National Railroad Passenger Corp (AMTRAK), et al.

RECEIVED
94 DEC 20 11:10 AM

Prehearing held YES NO

Hearing held YES NO

Testimony taken YES NO

Hearing concluded YES NO

Location Philadelphia

Further hearing needed YES NO

Date December 8, 1994

Estimated add'l days _____

ALJ Smolen

RECORD CLOSED YES NO

Reporting Firm BLUM-MOORE REPORTING

DATE 3-7-95

Briefs to be Filed YES NO

DATE MAIN - 2/28/95
REPLY - 3/7/95

BENCH DECISION YES NO

RECEIVED

DEC 15 1994

OFFICE OF C.A.L.J.
PUBLIC UTILITY COMMISSION

DOCUMENT FOLDER

REMARKS: ALSO - LATE FILED EXHIBITS

DOCKETED DUE 2/8/95

DEC 27 1994

NAMES, ADDRESSES AND TELEPHONE NUMBERS OF PARTIES OR COUNSEL OF RECORD
PLEASE PRINT CLEARLY
INCOMPLETE INFORMATION MAY RESULT IN DELAY OF PROCESS

| NAME and TELEPHONE NUMBER | ADDRESS | APPEARING FOR |
|---|--|---------------------------------------|
| Gina M. D'Alfonso Telephone No. 717-787-5473 (ext 530) | 513 TES Bldg City: Hdg State: PA Zip: 17120 | COIN. of PA Dept of Transportation |
| Scott K. Wasserkrug Telephone No. 215-269-4997 | 2001 Market St, 16-A City: PHILADELPHIA State: PA Zip: 19101-1416 | CONRAIL |
| Thomas G. Jackson Telephone No. (215) 841-4419 | 2301 Market Street Legal Department City: Phila. State: PA Zip: 19101-8699 | PECO Energy |

CHECK THIS BOX IF ADDITIONAL PARTIES
OR COUNSEL OF RECORD APPEAR ON BACK.

Robyn Clark

REPORTER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

TAE



Office of Chief Counsel
513 Transportation and Safety Building
Harrisburg, Pennsylvania 17120
Telephone No. (717) 787-5473 (Ext. 530)
Fax No. (717) 772-2741

RECEIVED

JAN 9 10 13:01

INFO CONTROL DIV.

IN REPLY REFER TO

January 5, 1995

John G. Alford, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

ORIGINAL

Re: C-80011839

Dear Mr. Alford:

Enclosed please find an original affidavit and one (1) copy to be filed on behalf of the Department of Transportation. This affidavit indicates the willingness of the Department to assume additional maintenance responsibilities. The Department respectfully requests that this affidavit be made part of the record and considered in rendering a Recommended Decision and Order.

Very truly yours,

Gina M. D'Alfonso
Assistant Counsel in Charge

220/GMD:sls

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 6-0

DOCUMENT
FOLDER

ORIGINAL

RECEIVED

95 JAN -3 AM 10:01

P. U. C.
INFO. CONTROL DIV.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

| | | |
|--|---|---------------|
| IN RE: | : | |
| Villanova University | : | |
| v. | : | DOCKET NUMBER |
| 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 |

AFFIDAVIT OF DANIEL C. DEMARIA

Docketed
JAN 11 1995

DOCUMENT
FOLDER

RECEIVED
JAN 3 1995
TRAFFIC CONTROL DIV.

Commonwealth of Pennsylvania :
County of Delaware : Affidavit
C-80011839 :

I, Daniel C. DeMaria, District Railroad Coordinator for the Commonwealth of Pennsylvania Department of Transportation having been duly sworn, testified before the Pennsylvania Public Utility Commission at a hearing in the above captioned matter on December 8, 1994. At that hearing, I testified that the Department would not agree to maintain or perform surface repairs on the sidewalks on the bridge. I, by this affidavit, seek to amend that testimony. The Department will agree to assume the responsibility of maintaining the surface of the sidewalks from Centerline of abutment # 1, Station 783+72.89 to Centerline of abutment #2, Station 785+74.11. The Department will not assume responsibility for snow, ice, debris, or graffiti removal from the sidewalk or the parapets.

12-27-94

DATE

Daniel C. DeMaria

Daniel C. DeMaria

Taken, sworn and subscribed before me, this

27th day of December A.D. 1994

Patricia A. Leach

NOTARIAL SEAL
PATRICIA A. LEACH, Notary Public
Upper Merion Twp., Montgomery Co
My Commission Expires March 23, 1998



COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA PUBLIC UTILITY COMMISSION
 PHILADELPHIA STATE OFFICE BUILDING
 1400 WEST SPRING GARDEN STREET
 PHILADELPHIA, PENNSYLVANIA 19130
 (215) 560-2105

IN REPLY PLEASE
 REFER TO OUR FILE

RECEIVED
 55 JAN 30 PM 12:17
 P.A. P. U. C. DIV.
 INFO. CONTROL

January 26, 1995

See Attached Service List

Re: Villanova University v. National Railroad Passenger Corporation
 (AMTRAK), et al. - Docket Number C-80011839

To All Counsel:

The record in this case indicates that Briefs are to be filed. The briefing schedule is as follows: Main Briefs shall be filed no later than February 28, 1995 and Reply Briefs, if any, shall be filed no later than March 7, 1995. If Briefs are not received by the allotted due date, they shall not be accepted for filing, except by special permission of the presiding officer.

An original and nine (9) copies of each Main and Reply Brief must be filed with the Secretary of the Commission; a copy must be served on the presiding Administrative Law Judge; and three copies on each party of record.

Please note that all Briefs must comply with the Commission's Rules and Regulations promulgated at 52 Pa. Code §§5.501 and 5.502. In addition, the Briefs should contain a history of the case; a summary of the pertinent testimony and evidence adduced at the hearing with appropriate record references; a statement of the questions involved; an argument citing applicable law and Commission decisions; proposed findings of fact with references to transcript pages and exhibits; proposed conclusions of law; proposed ordering paragraphs; and a conclusion.

Very truly yours,

HERBERT SMOLEN
 Administrative Law Judge

DOCKETED

FEB 06 1995

HS/jr

cc: Honorable Allison K. Turner
 Beth Plantz

DOCUMENT
 FOLDER

P.S. The Administrative Law Judge requests that two (2) copies of all Briefs be forwarded to him.

714 Market Street
Philadelphia, PA 19106-2385
(215) 560- 7459



Southeastern Pennsylvania Transportation Authority
Safety • Service • Continuous Improvement

COMMUNICATIONS
TAE

Office of General Counsel
James F. Burt
G. Roger Bowers
Norman Blegen
Eileen Giordano-Katz
Stanley J. Szwed
Philip E. Szwed
Brian J. Kandel
Juan L. Corbach
Eugene M. Cyniak
Nathans J. Staffer
O'Neil Peterson
Linda G. Ulan
Vincent Walsh, Jr.
Counsel R. Lantz
Joan Zuback
William Brown
Lisa Stalder
Glady's Black
Marlene Kapan
Charles Peltz
M. Shirley Young
Robert Water
Joseph G. Gammey
Estimate Coordinator
William Faust
Raymond Parnock
Raymond Green
Jan Feltner
Wayne D. Mingo
Dave Walker
Jason DeBari
Susan Lembeck
Alicia Oppenheimer
Stephen Pedro
Cynthia Ehrman
Marvaco Merzjanc
Meryl Nathans
Barbara Rosenberg

February 15, 1995

RECEIVED
FEB 17 1995

John G. Alford, Secretary
Pa. Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

Re: Villanova University v. Amtrak, et al.
C-80011839

Dear Secretary Alford:

The Southeastern Pennsylvania Transportation Authority ("SEPTA") does not intend to submit a main brief in this proceeding, in light of the facts that it owns no railroad facilities at this crossing, and in light of the Commission's order entered April 29, 1992 in this proceeding, which imposes no obligations on SEPTA and by implication suggests that no party would be proposing anything to the contrary at the current stage.

SEPTA reserves the right to file a reply brief.

I request that my name and address be substituted as the current SEPTA addressee on all parties' certificate of service mailing list for the forthcoming briefs.

Sincerely,

Vincent J. Walsh, Jr.
Assistant Deputy Counsel

VJW/dm

Encl: Certificate of Service
Honorable Herbert Smolen

DOCUMENTED
FEB 27 1995

DOCUMENT
FOLDER

A:\C-800118.ltr (puc)(#2)

2/17
19

CERTIFICATE OF SERVICE

I hereby certify that this day I have mailed true and correct copies of the foregoing Letter to the persons and parties whose names appear below, by first class United States mail, postage prepaid.

Scott K. Wasserkrug, Esq.
Consolidated Rail Corporation
2001 Market Street
Philadelphia, PA 19103

John Heaton, Chief Counsel
Gina M. D'Alfonso, Esquire
PA DOT
521 Transp. & Safety Bldg.
Harrisburg, PA 17120

Richard Cooper
Amtrak - 30th St. Station
4th Floor South
Philadelphia, PA 19104

Mary Ann Arty, Chairman
Delaware Co. Commissioners
Government Center Bldg.
Media, PA 19063

Clinton A. Stuntebeck, President
Radnor Twp. Commissioners
301 Iven Avenue
Wayne, PA 19087

James W. Patterson, Esquire
Rubin Quinn Moss
One Liberty Place, 32nd Floor
Philadelphia, PA 19103

Rudolph Chillemi, Esq.
Thomas G. Jackson, Esq.
PECO Energy
2301 Market St., Box 8699
Philadelphia, PA 19101

John Ranieri
Phila. Suburban Water Company
762 Lancaster Avenue
Bryn Mawr, PA 19010

William D. Pickering,
Utility Engineer - PA DOT
509 Transp. & Safety Bldg.
Harrisburg, PA 17120

David Salapa, Esquire
PA PUC - Law Bureau
G-31 North Office Bldg.
PO Box 3265
Harrisburg, PA 17105-3265

Dennis M. Moore
Amtrak
60 Massachusetts Avenue, N.E.
Washington, DC 20002

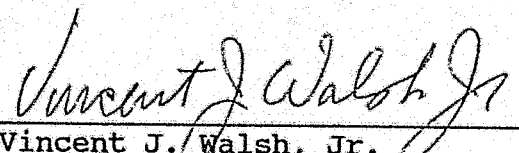
Francis P. Connors, Esq.
Delaware Co. Solicitor
Government Center Bldg.
Media, PA 19063

Eugene H. Evans, Esquire
Radnor Twp. Solicitor
131 W. Market Street
West Chester, PA 19390

James G. Pachulski, Esq.
Bell Atlantic-PA, Inc.
One Parkway, 16th Floor
Philadelphia, PA 19102

Dan McNeill, Supervisor
AT&T Communications, Inc.
1200 Peachtree St.
Promenade Annex 173
Atlanta, GA 30309

Dated: February 15, 1995



Vincent J. Walsh, Jr.
Attorney for SEPTA

COMMONWEALTH OF PENNSYLVANIA
PUBLIC UTILITY COMMISSION

TAE

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 :
respondents-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. :

DOCKET NUMBER:
C-80011839

DOCKETED
FEB 16 1995

RECEIVED

FEB 08 1995

PUBLIC UTILITY COMMISSION
SECRETARY BUREAU

AMTRAK'S NOTICE OF FILING

Pursuant to the procedural schedule established at the December 8, 1994, hearing in the above-captioned case (see Tr. at 244-245), National Railroad Passenger Corporation ("Amtrak") hereby files for the record in this case copies of Amtrak's bills to the Pennsylvania Department of Transportation for the costs associated with Amtrak's work on the bridge reconstruction project. See Testimony of Amtrak's witness, Louis Cheifetz, Tr. at 225-227.


DOCUMENT
FOLDER

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Amtrak hereby attaches and submits for the record invoice numbers: 95023022007 @ \$333.70, 95023022008 @ \$2,320.62, 95023022009 @ \$5,953.29, 95023022010 @ \$1,989.70, 95023022011 @ \$240.50, 95023022012 @ \$345.35, and 95023022013 @ \$187.33. The total amount of Amtrak's final invoices for this project is \$11,370.49.

Amtrak also was asked to report its position regarding lighting under the bridge that appears to serve Amtrak's Villanova train station. At this time, Amtrak has not determined what party installed lighting in this area. Amtrak will continue its research on this question. In any event, as Amtrak testified at the hearing, "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." Tr. 224-225.

Respectfully submitted,



Dennis M. Moore
PA Bar No. 24832
Amtrak Law Department
60 Massachusetts Ave., N.E.
Washington, D.C. 20002
202-906-2750

Date: February 8, 1995

CERTIFICATE OF SERVICE

I certify that on this 8th day of February, 1995, in Washington, D.C. I caused a true copy of Amtrak's Notice Of Filing to be served by first class mail, postage prepaid, to the following:

Herbert Smolen
Administrative Law Judge
Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission
Philadelphia State Office Building
1400 West Spring Garden Street
Philadelphia, PA 19130

Scott K. Wasserkrug, Esq.
Consolidated Rail Corporation
2001 Market Street
Philadelphia, PA 19103

William D. Pickering, Utility Engineer
PA Department of Transportation
509 Transportation & Safety Building
Harrisburg, PA 17120

John Heaton, Chief Counsel
Gina M. D'Alfonso, Esq.
PA Department of Transportation
521 Transportation & Safety Building
Harrisburg, PA 17120

David Salapa, Esq.
PA PUC - Law Bureau
G-31 North Office Building
Post Office Box 3265
Harrisburg, PA 17105-3265

J. M. Power, Manager
SEPTA
Three Penn Center Plaza, 6th Floor
1515 Market Street
Philadelphia, PA 19102

Mary Ann Arty, Chairwoman
Delaware County Commissioners
Government Center Building
Media, PA 19063

Francis P. Connors, Esq.
Delaware County Solicitor
Government Center Building
Media, PA 19163

Clinton A. Stuntebeck, President
Radnor Township Commissioners
301 Iven Avenue
Wayne, PA 19087

Eugene H. Evans, Esq.
Radnor Township Solicitor
131 West Market Street
West Chester, PA 19390

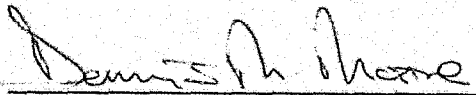
James W. Patterson, Esq.
Rubin Quinn Moss
One Liberty Place
32nd Floor
Philadelphia, PA 19103

James G. Pachulski, Esq.
Bell Atlantic-PA, Inc.
One Parkway, 16th Floor
Philadelphia, PA 19102

Thomas G. Jackson, Esq.
PECO Energy Company
2301 Market Street, Box 8699
Philadelphia, PA 19101

Dan McNeill, Supervisor
AT&T Communications, Inc.
1200 Peachtree Street
Promenade Annex 173
Atlanta, GA 30309

John Ranieri
Philadelphia Suburban Water Company
762 Lancaster Avenue
Bryn Mawr, PA 19010


Dennis M. Moore

NATIONAL RAILROAD PASSENGER CORPORATION
 400 NORTH CAPITOL STREET N. W.
 WASHINGTON, D.C. 20001

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
 200 RADNOR-CHESTER ROAD
 ST. DAVIDS, PA. 19087-5178
 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR

| | |
|------------------|-----------------|
| DATE | 2/6/95 |
| PROJECT | 862806 |
| DIVISION | PHILADELPHIA N. |
| BILLING PERIOD | DECEMBER, 1993 |
| VENDOR REFERENCE | |

TO BILL YOU FOR: 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. | \$ - | \$ - | \$ 146.25 | \$ 146.25 | |
| - | - | - | - | - | |
| - | - | - | - | - | |
| - | - | - | - | - | |
| - | - | - | - | - | |
| - | - | - | - | - | |
| - | - | - | - | - | |
| TOTAL LABOR | \$ - | \$ - | \$ 146.25 | \$ 146.25 | |
| EXEMPT STRAIGHT TIME @ 43.52% OF 001 LABOR | | | | \$ - | |
| STRAIGHT TIME @ 47.38% OF 010 LABOR | | | | - | |
| OVERTIME @ 25.40% OF 014 LABOR | | | | 37.15 | |
| VAC. & PD. HOL. @ 16.14% OF 001 LABOR | | | | - | |
| VAC. & PD. HOL. @ 16.12% OF 010/014 LABOR | | | | 23.58 | |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | | 23.40 | |
| TOTAL EMPLOYEE BENEFITS | | | | | 84.13 |
| MATERIAL | | | | | |
| MATERIAL HANDLING ADDITIVE @ 8.84% | | | | \$ - | |
| TOTAL MATERIAL COSTS | | | | - | |
| EQUIPMENT | | | | - | |
| MISCELLANEOUS | | | | - | |
| OVERHEAD LABOR ADDITIVE | | | | | |
| E. T. @ 55.00% OF LABOR | | | | \$ 80.44 | |
| - | | | | - | |
| - | | | | - | |
| - | | | | - | |
| - | | | | - | |
| - | | | | - | |
| TOTAL OVERHEAD ADDITIVE | | | | | 80.44 |
| BILL SUB-TOTAL | | | | | \$ 310.82 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.36% OF SUB-TOTAL | | | | | 22.88 |
| TOTAL BILLING FOR THE PERIOD: DECEMBER, 1993 | | | | | \$ 333.70 |

NATIONAL RAILROAD PASSENGER CORPORATION
 400 NORTH CAPITOL STREET N. W.
 WASHINGTON, D.C. 20001

| | | |
|---|------------------|-----------------|
| PENNSYLVANIA DEPARTMENT OF TRANSPORTATION 200 RADNOR-CHESTER ROAD ST. DAVIDS, PA. 19087-5178 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR | DATE | 2/6/95 |
| | PROJECT | 862806 |
| | DIVISION | PHILADELPHIA N. |
| | BILLING PERIOD | NOVEMBER, 1993 |
| | VENDOR REFERENCE | |

TO BILL YOU FOR: 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.

| DEPARTMENT | LABOR | | | TOTAL |
|--|--------------|---------------------|----------------|--------------------|
| | EXEMPT (001) | STRAIGHT TIME (010) | OVERTIME (014) | |
| TRACK | \$ - | \$ 724.99 | \$ - | \$ 724.99 |
| E. T. | - | 134.16 | - | 134.16 |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| TOTAL LABOR | \$ - | \$ 859.15 | \$ - | \$ 859.15 |
| EXEMPT STRAIGHT TIME @ 43.52% OF 001 LABOR | | | | \$ - |
| STRAIGHT TIME @ 47.38% OF 010 LABOR | | | | 407.07 |
| OVERTIME @ 25.40% OF 014 LABOR | | | | - |
| VAC. & PD. HOL. @ 16.14% OF 001 LABOR | | | | - |
| VAC. & PD. HOL. @ 16.12% OF 010/014 LABOR | | | | 138.50 |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | | 137.46 |
| TOTAL EMPLOYEE BENEFITS | | | | 683.03 |
| MATERIAL | | | | |
| MATERIAL | | | | \$ - |
| MATERIAL HANDLING ADDITIVE @ 8.84% | | | | - |
| TOTAL MATERIAL COSTS | | | | - |
| EQUIPMENT | | | | - |
| MISCELLANEOUS | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | |
| TRACK @ 75.25% OF LABOR | | | | \$ 545.56 |
| E. T. @ 55.00% OF LABOR | | | | 73.79 |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| TOTAL OVERHEAD ADDITIVE | | | | 619.35 |
| BILL SUB-TOTAL | | | | \$ 2,161.53 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.36% OF SUB-TOTAL | | | | 159.09 |
| TOTAL BILLING FOR THE PERIOD: NOVEMBER, 1993 | | | | \$ 2,320.62 |

INVOICE NO. 95023022008

NATIONAL RAILROAD PASSENGER CORPORATION
400 NORTH CAPITOL STREET N. W.
WASHINGTON, D.C. 20001

| | | |
|---|------------------|-----------------|
| PENNSYLVANIA DEPARTMENT OF TRANSPORTATION 200 RADNOR-CHESTER ROAD ST. DAVIDS, PA. 19087-5178 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR | DATE | 2/6/95 |
| | PROJECT | 862806 |
| | DIVISION | PHILADELPHIA N. |
| | BILLING PERIOD | AUGUST, 1993 |
| | VENDOR REFERENCE | |

TO BILL YOU FOR: 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. | \$ - | \$ 1,615.78 | \$ 178.72 | \$ 1,794.50 |
| C & S | - | 151.44 | 418.59 | 570.03 |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| TOTAL LABOR | \$ - | \$ 1,767.22 | \$ 597.31 | \$ 2,364.53 |
| EXEMPT STRAIGHT TIME @ 43.24% OF 001 LABOR | | | \$ - | |
| STRAIGHT TIME @ 48.34% OF 010 LABOR | | | 854.28 | |
| OVERTIME @ 25.36% OF 014 LABOR | | | 151.47 | |
| VAC. & PD. HOL. @ 16.09% OF 001 LABOR | | | - | |
| VAC. & PD. HOL. @ 15.79% OF 010/014 LABOR | | | 373.36 | |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | 378.32 | |
| TOTAL EMPLOYEE BENEFITS | | | | 1,757.43 |
| MATERIAL | | | | |
| MATERIAL | | | \$ - | |
| MATERIAL HANDLING ADDITIVE @ 7.92% | | | - | |
| TOTAL MATERIAL COSTS | | | | - |
| EQUIPMENT | | | | - |
| MISCELLANEOUS | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | |
| E. T. @ 55.22% OF LABOR | | | \$ 990.92 | |
| C & S @ 70.34% OF LABOR | | | 400.96 | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| TOTAL OVERHEAD ADDITIVE | | | | 1,391.88 |
| BILL SUB-TOTAL | | | | \$ 5,513.84 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.97% OF SUB-TOTAL | | | | 439.45 |
| TOTAL BILLING FOR THE PERIOD: AUGUST, 1993 | | | | \$ 5,953.29 |

INVOICE NO. 95023022009

NATIONAL RAILROAD PASSENGER CORPORATION
400 NORTH CAPITOL STREET N. W.
WASHINGTON, D.C. 20001

| | | |
|---|------------------|-----------------|
| PENNSYLVANIA DEPARTMENT OF TRANSPORTATION 200 RADNOR-CHESTER ROAD ST. DAVIDS, PA. 19087-5178 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR | DATE | 2/6/95 |
| | PROJECT | 862806 |
| | DIVISION | PHILADELPHIA N. |
| | BILLING PERIOD | JUNE, 1993 |
| | VENDOR REFERENCE | |

TO BILL YOU FOR: FORCE ACCOUNT AND MATERIAL ACQUISITION COSTS ASSOCIATED WITH
 ON BRIDGE NO. 12-02 RECONSTRUCTION PROJECT, LOCATED IN VILLANOVA, PA. REFER:
 AGREEMENT NO. 063424, DATED AUGUST 17, 1992.

| LABOR | | | | | TOTAL |
|--|--------------|---------------------|----------------|----|----------|
| DEPARTMENT | EXEMPT (001) | STRAIGHT TIME (010) | OVERTIME (014) | | |
| E. T. | \$ - | \$ 321.81 | \$ 511.11 | \$ | 832.92 |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| TOTAL LABOR | \$ - | \$ 321.81 | \$ 511.11 | \$ | 832.92 |
| EXEMPT STRAIGHT TIME @ 43.24% OF 001 LABOR | | | \$ - | | |
| STRAIGHT TIME @ 48.34% OF 010 LABOR | | | 155.56 | | |
| OVERTIME @ 25.35% OF 014 LABOR | | | 129.62 | | |
| VAC. & PD. HOL. @ 16.09% OF 001 LABOR | | | - | | |
| VAC. & PD. HOL. @ 15.79% OF 010/014 LABOR | | | 131.52 | | |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | 133.27 | | |
| TOTAL EMPLOYEE BENEFITS | | | | | 549.97 |
| MATERIAL | | | | | |
| MATERIAL | | | \$ - | | |
| MATERIAL HANDLING ADDITIVE @ 7.92% | | | - | | |
| TOTAL MATERIAL COSTS | | | | | - |
| EQUIPMENT | | | | | - |
| MISCELLANEOUS | | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | | |
| E. T. @ 55.22% OF LABOR | | | \$ 459.94 | | |
| - | | | - | | |
| - | | | - | | |
| - | | | - | | |
| - | | | - | | |
| - | | | - | | |
| TOTAL OVERHEAD ADDITIVE | | | | | 459.94 |
| BILL SUB-TOTAL | | | | \$ | 1,842.83 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.97% OF SUB-TOTAL | | | | | 146.87 |
| TOTAL BILLING FOR THE PERIOD: JUNE, 1993 | | | | \$ | 1,989.70 |

NATIONAL RAILROAD PASSENGER CORPORATION
400 NORTH CAPITOL STREET N. W.
WASHINGTON, D.C. 20001

| | | |
|---|------------------|-----------------|
| PENNSYLVANIA DEPARTMENT OF TRANSPORTATION 200 RADNOR-CHESTER ROAD ST. DAVIDS, PA. 19087-5178 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR | DATE | 2/6/95 |
| | PROJECT | B62806 |
| | DIVISION | PHILADELPHIA N. |
| | BILLING PERIOD | MAY, 1993 |
| | VENDOR REFERENCE | |

TO BILL YOU FOR: 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) | STRAIGHTTIME (010) | OVERTIME (014) | TOTAL |
| E. T. | \$ - | \$ 94.65 | \$ - | \$ 94.65 |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| TOTAL LABOR | \$ - | \$ 94.65 | \$ - | \$ 94.65 |
| EXEMPT STRAIGHT TIME @ 43.24% OF 001 LABOR | | | | \$ - |
| STRAIGHT TIME @ 48.34% OF 010 LABOR | | | | 45.75 |
| OVERTIME @ 25.36% OF 014 LABOR | | | | - |
| VAC. & PD. HOL. @ 16.09% OF 001 LABOR | | | | - |
| VAC. & PD. HOL. @ 15.79% OF 010/014 LABOR | | | | 14.95 |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | | 15.14 |
| TOTAL EMPLOYEE BENEFITS | | | | 75.84 |
| MATERIAL | | | | |
| MATERIAL | | | | \$ - |
| MATERIAL HANDLING ADDITIVE @ 7.92% | | | | - |
| TOTAL MATERIAL COSTS | | | | - |
| EQUIPMENT | | | | - |
| MISCELLANEOUS | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | |
| E. T. @ 55.22% OF LABOR | | | | \$ 52.26 |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| TOTAL OVERHEAD ADDITIVE | | | | 52.26 |
| BILL SUB-TOTAL | | | | \$ 222.75 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.97% OF SUB-TOTAL | | | | 17.75 |
| TOTAL BILLING FOR THE PERIOD: MAY, 1993 | | | | \$ 240.50 |

NATIONAL RAILROAD PASSENGER CORPORATION
400 NORTH CAPITOL STREET N. W.
WASHINGTON, D.C. 20001

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
 200 RADNOR-CHESTER ROAD
 ST. DAVIDS, PA. 19087-5178

 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR

| | |
|------------------|-----------------|
| DATE | 2/6/95 |
| PROJECT | 862806 |
| DIVISION | PHILADELPHIA N. |
| BILLING PERIOD | OCTOBER, 1992 |
| VENDOR REFERENCE | |

TO BILL YOU FOR: 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.

| DEPARTMENT | LABOR | | | TOTAL |
|--|--------------|---------------------|----------------|------------------|
| | EXEMPT (001) | STRAIGHT TIME (010) | OVERTIME (014) | |
| E. T. | \$ - | \$ 136.24 | \$ - | \$ 136.24 |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| TOTAL LABOR | \$ - | \$ 136.24 | \$ - | \$ 136.24 |
| EXEMPT STRAIGHT TIME @ 44.60% OF 001 LABOR | | | | \$ - |
| STRAIGHT TIME @ 47.77% OF 010 LABOR | | | | 65.08 |
| OVERTIME @ 25.39% OF 014 LABOR | | | | - |
| VAC. & PD. HOL. @ 16.09% OF 001 LABOR | | | | - |
| VAC. & PD. HOL. @ 15.79% OF 010/014 LABOR | | | | 21.51 |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | | 21.80 |
| TOTAL EMPLOYEE BENEFITS | | | | 108.39 |
| MATERIAL | | | | |
| MATERIAL | | | | \$ - |
| MATERIAL HANDLING ADDITIVE @ 7.92% | | | | - |
| TOTAL MATERIAL COSTS | | | | - |
| EQUIPMENT | | | | - |
| MISCELLANEOUS | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | |
| E. T. @ 55.22% OF LABOR | | | | \$ 75.23 |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| - | | | | - |
| TOTAL OVERHEAD ADDITIVE | | | | 75.23 |
| BILL SUB-TOTAL | | | | \$ 319.86 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.97% OF SUB-TOTAL | | | | 25.49 |
| TOTAL BILLING FOR THE PERIOD: OCTOBER, 1992 | | | | \$ 345.35 |

NATIONAL RAILROAD PASSENGER CORPORATION
 400 NORTH CAPITOL STREET N. W.
 WASHINGTON, D.C. 20001

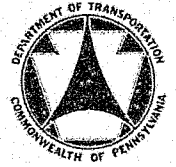
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
 200 RADNOR-CHESTER ROAD
 ST. DAVIDS, PA. 19087-5178

 ATTN: JAMES B. OTTINGER, DIST. UTILITY MNGR

| | |
|------------------|-----------------|
| DATE | 2/6/95 |
| PROJECT | 862806 |
| DIVISION | PHILADELPHIA N. |
| BILLING PERIOD | MAY, 1994 |
| VENDOR REFERENCE | |

TO BILL YOU FOR: 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.

| DEPARTMENT | LABOR | | | TOTAL |
|--|-----------------|---------------------|----------------|------------------|
| | EXEMPT (001) | STRAIGHT TIME (010) | OVERTIME (014) | |
| ENGINEERING | \$ 84.68 | \$ - | \$ - | \$ 84.68 |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| TOTAL LABOR | \$ 84.68 | \$ - | \$ - | \$ 84.68 |
| EXEMPT STRAIGHT TIME @ 43.14% OF 001 LABOR | | | | \$ 36.53 |
| STRAIGHT TIME @ 46.06% OF 010 LABOR | | | | - |
| OVERTIME @ 25.40% OF 014 LABOR | | | | - |
| VAC. & PD. HOL. @ 16.14% OF 001 LABOR | | | | 13.67 |
| VAC. & PD. HOL. @ 16.12% OF 010/014 LABOR | | | | - |
| FORCE ACCOUNT INSURANCE (16.00% OF TOTAL LABOR) | | | | 13.55 |
| TOTAL EMPLOYEE BENEFITS | | | | 63.75 |
| MATERIAL | | | | |
| MATERIAL | | | \$ - | |
| MATERIAL HANDLING ADDITIVE @ 8.84% | | | - | |
| TOTAL MATERIAL COSTS | | | | |
| EQUIPMENT | | | | - |
| MISCELLANEOUS | | | | - |
| OVERHEAD LABOR ADDITIVE | | | | |
| ENGINEERING @ 30.77% OF LABOR | | | \$ 26.06 | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| - | | | - | |
| TOTAL OVERHEAD ADDITIVE | | | | 26.06 |
| BILL SUB-TOTAL | | | | \$ 174.49 |
| GENERAL & ADMINISTRATIVE ADDITIVE @ 7.36% OF SUB-TOTAL | | | | 12.84 |
| TOTAL BILLING FOR THE PERIOD: MAY, 1994 | | | | \$ 187.33 |



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

Office of Chief Counsel
Rm. 513, Transportation and Safety Building
Harrisburg, Pennsylvania 17110
Telephone No. (717) 787-3128
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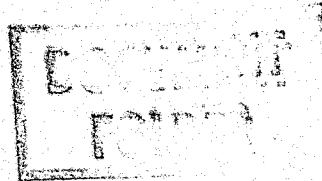
IN REPLY REFER TO:

February 28, 1995

John G. Alford, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

TAE
MAR 01 1995
10:30 AM '95

Re: Complaint Docket No. C-80011839



Dear Secretary Alford:

Enclosed for filing please find the original and nine (9) copies of the Main Brief of the Department of Transportation in the above-captioned matter.

I hereby certify that the requisite number of copies have been served on each party as indicated in the Certificate of Service.

ORIGINAL

Very truly yours,

Gina M. D'Alfonso

Gina M. D'Alfonso
Assistant Counsel in Charge

220/GMD:sls

cc: Parties of Record
Honorable Herbert Smolen
William D. Pickering, P.E. (Attn: Roger Aulakh, P.E.)
District 6-0 (Attn: Daniel DeMaria)

DOCKETED

MAR 01 1995



BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

C-80011839

NO. A-109482

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

MAIN BRIEF OF THE
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

RECEIVED
MAR 1 1995
10:30 AM '95

FILED

DOCKETED

MAR 01 1995

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ORIGINAL

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STATEMENT OF THE QUESTIONS

- I. WHETHER IT IS JUST AND REASONABLE FOR PECO ENERGY COMPANY TO BEAR THE COST OF THE RELOCATION OF ITS FACILITIES?

Suggested Answer: Yes

- II. WHETHER A PARTY OR PARTIES OTHER THAN THE DEPARTMENT SHOULD BE ORDERED TO REMOVE SNOW, ICE, DEBRIS AND GRAFFITI FROM THE SIDEWALKS AND PARAPETS ON THE BRIDGE AND APPROACHES, MAINTAIN THE STAIRWAY FROM THE BRIDGE TO THE AMTRAK PLATFORM AND MAINTAIN AND ENERGIZE THE STREET LIGHTING SYSTEM ON AND BELOW THE BRIDGE?

Suggested Answer: Yes

STATEMENT OF THE CASE

On January 31, 1980, Villanova University, filed a complaint alleging inadequate and dangerous facilities for pedestrian movement across the lines of track in the vicinity of the crossing where Spring Mill Road, S.R. 0320, crosses over and above 4 tracks of National Railroad Passenger Corporation (AMTRAK) adjacent to Villanova University, in Radnor Township, Delaware County. Following several public hearings this Commission adopted an Order on December 17, 1982, which directed the Pennsylvania Department of Transportation (Department) to inform the Commission annually of progress made toward the replacement of the bridge at the subject crossing.

The Department submitted preliminary plans on August 20, 1990, for bridge replacement and approach roadway construction. As a result of the submission of the plans, the Department was directed to construct the improvement at its initial cost and expense. The project was completed on May 9, 1994.

A further hearing was held on December 8, 1994, to take testimony regarding cost incurred by all parties prior to the allocation of the cost and the responsibility for future maintenance.

SUMMARY OF THE TESTIMONY

Consolidated Rail Corporation (Conrail) offered testimony that it has trackage rights on AMTRAK on this line of railroad. Conrail has no regular or irregular freight operations on the bridge. Conrail has the right to operate under AMTRAK's dispatch and supervision of the freight trains (N.T. 179-180).

The Department testified that Spring Mill Road is a grade separated structure carrying State Route 320 over four (4) AMTRAK railroad tracks (N.T. 202). The demolished structure consisted of a single span, through truss bridge which was erected prior to 1914. The new crossing consists of a 26 foot roadway with an 8 foot shoulder on the north side and 5 foot sidewalk on the south side (N.T. 203). This project resulted in improved vertical alignment, widening of the roadway approaches and elimination of the posted weight limit restrictions (N.T. 204). The bridge structure changed significantly prior to construction since the contractor opted for value engineer redesign. This resulted in the correction of right of way plans and tract descriptions. The corrected right of way plans and descriptions are reflected in the Department's Exhibits 16 and 17 (N.T. 204-205). Spring Mill Road runs generally in a northeast-southwest direction and connects with Lancaster Avenue (S.R. 30) on the southwest and County Line Road, a local road, toward the northeast. There are

no plans for future highways in this area (N.T. 205).

This improvement not only eliminated the weight limit posting for the vehicles but also improved the conditions for pedestrian movement across the rail lines (N.T. 206).

The Department has no records of pedestrian traffic on the structure. However, the average annual daily traffic (AADT) in 1990 was 12,900 vehicles of which 3% was estimated to be trucks. It is estimated that the AADT will be 13,300 consisting of 3% trucks by the year 2011 (N.T. 207).

The Commission Order entered February 7, 1993, assigned maintenance responsibility to AMTRAK for the pedestrian tunnel connecting the northbound platform to the southbound platform (N.T. 208). A subsequent order entered April 29, 1992, directed AMTRAK to maintain 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 (N.T. 210).

The Department is not seeking reimbursement for any maintenance it performed on the demolished crossing structure. 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 (N.T. 211) as well as the maintenance of the surface of the sidewalks on the bridge from the centerline of Abutment No. 1, Station 783+72.89 to centerline of Abutment No. 2, Station 784+74.11 (Affidavit of Daniel C. DeMaria dated December 21, 1994). The Department will not assume maintenance responsibility for the stairways leading from the bridge to the railroad passenger platform below the structure. The Department will assume responsibility for snow, ice and debris removal from the roadway from curb to curb on the approach and from curb to parapet on the bridge. It is the opinion of the Department that the local municipality should be responsible for snow, ice, debris and graffiti removal from the sidewalks and parapets on the bridge and approaches as well as maintenance of the approach sidewalks (N.T. 212).

The railroad should be ordered to maintain the stairs leading from the bridge deck sidewalks to the railroad platform below as well as to remove snow, ice and debris. Patrons from either the railroad and/or the local municipality receive the benefits from the pedestrian sidewalk and stairway improvements. Therefore, parties other than the Department should be responsible for its maintenance and cost thereof (N.T. 212).

All non-carrier public utilities and all railroads should be

solely responsible for the maintenance and cost of their respective facilities (N.T. 212).

The Department further testified that Villanova University should be responsible for the maintenance and cost of service for the lighting and cost of maintenance for the street lighting across the bridge. The reason for this is that the bridge is an extension of the parking lot of Villanova University (N.T. 213).

The Department incurred costs of \$4,048,840.26 in complying with the Order of the Commission adopted April 23, 1992 (N.T. 213; Exhibit No. 7). Also included in Exhibit No. 7 are costs of items performed on behalf of the utilities, Philadelphia Suburban Water Company, Philadelphia Electric Company, Bell Telephone Company and Adelphia Cable Company. For those items of work, the Department acted as the contractor as required by the utility on behalf of the respective utility. The Department is seeking 100% reimbursement for all items of work performed on behalf of the utility and does not agree to bear any of these costs (N.T. 214).

The Department incurred cost on behalf of Philadelphia Suburban Water Company in the amount of \$40,143.00. The Department incurred costs on behalf of Philadelphia Electric Company in the amount of \$99,486.00. The Department incurred costs on behalf of Bell Telephone in the amount of \$64,071.00 and

on behalf of Adelphia Cable Company in the amount of \$11,988.00. At this time, the Department is seeking reimbursement from Philadelphia Suburban Water Company and Adelphia Cable Company in the amounts referenced above (N.T. 214-215).

The project was constructed using 75% Federal funds and 25% Commonwealth funds in accordance with the Billion Dollar Bridge Program (N.T. 215).

The Department will agree to bear all costs incurred by SEPTA and AMTRAK to construct the project. The Department will also agree to bear the cost of utility facilities, protected, adjusted or relocated that were located in private right of way or have a compensable interest within the public right of way. The Department will not agree to reimburse a privately owned non-carrier utility for cost incurred for the protection, adjustment or relocation of facilities that were located in legal (public) right of way (N.T. 216-217). The Department will not agree to reimburse any utility company for any betterment received from the relocation of its facilities (N.T. 218).

The costs incurred on behalf of PECO were for a bridge attachment and did not include relocation costs (N.T. 219).

AMTRAK testified that it 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 m.p.h. AMTRAK does not contemplate any changes to AMTRAK operations in the foreseeable future (N.T. 222-223).

AMTRAK receives the same benefit as the travelling public who use the bridge. It provides a safe crossing for train, vehicular and pedestrian traffic (N.T. 223). AMTRAK testified that their only obligation is to maintain railroad owned facilities at the location. These facilities include electrification and communications and signal facilities (N.T. 224). AMTRAK agrees to maintain its own facilities at this location at its sole cost and expense (N.T. 224).

AMTRAK does not agree to bear any items of costs incurred to perform the work by itself or other parties and does not have any opinion as to whom should bear these costs (N.T. 227).

PECO testified that they are seeking reimbursement in the amount of \$99,302.06 (N.T. 234). PECO seeks reimbursement for the work due to the reconstruction of the bridge which included but is not limited to the removal of wood poles, the relocation of some wood poles and the reconstruction of some duct bank and

also the relocation of wires, conductors and transformers (N.T. 235).

The facilities that existed prior to the reconstruction of the bridge included 8 wood poles installed between 1961 and 1979 under permit and in public right of way. Each pole had an expected service life of 40 years. Five of the poles were removed; 3 were replaced and relocated (PECO Statement 1, Page 2). Aerial wire was installed in 1961 and 1963 with an expected service life of 40 years. At the time of relocation the aerial wire installed in 1961 had an expected remaining service life of 21 years; the aerial wire installed in 1963 had an expected remaining service life of 22 years. Three direct buried ducts and 1 manhole installed under permit in public right of way in 1970 had an expected life of 50 years. At the time of relocation the expected remaining service life was 27 years. One 3 conductor underground cable installed in 1970 with an expected life of 55 years had an expected remaining service life of 43 years at the time of relocation. Cathodic protection wire installed in 1970 had an expected service life of 55 years. At the time of relocation the expected remaining service life was 43 years (PECO Statement 1, Page 2).

The expected service life of the facilities relocated in 1993 is as following: Ducts - 50 years, underground cable - 55

years, wood poles and wires - 40 years (PECO Statement 1, Page 2).

The relocated facilities were all placed in public right of way (PECO Statement 1, Page 3).

No salvage value was attributed to any of the facilities which were removed because the condition of the facilities did not warrant their reuse (N.T. 240).

PECO does not have to obtain further permits when it places facilities in public right of way. PECO does not have to acquire right of way. PECO is always mindful of its ratepayers when making a decision as to where to locate facilities and wants to do what is best for the ratepayers (N.T. 243).

SUMMARY OF THE ARGUMENT

It would be just and reasonable to order PECO Energy Company to bear the cost of the relocation of their facilities as a result of this rail/highway crossing project.

It would also be just and reasonable and consistent with Commission precedent to direct Radnor Township to remove the snow, ice, debris and graffiti from the sidewalks and parapets on the bridge and the approaches thereto. AMTRAK should be ordered to maintain the stairway leading from the bridge to the AMTRAK platform as well as to remove snow, ice, debris and graffiti.

It would also be just and reasonable to order that party which is currently maintaining and energizing the street lighting below and across the bridge, Villanova University, to continue the energization and maintenance of those facilities without prejudice to any agreements it may have with any other entity.

ARGUMENT

I. PECO ENERGY SHOULD BEAR ALL COSTS ASSOCIATED WITH THE RELOCATION OF THEIR FACILITIES.

The Commission is vested with the exclusive jurisdiction to allocate costs of relocation of "facilities at or adjacent to such crossings which were used in any kind of public utility service. 66 Pa. C.S.A. §2704(a). However, when apportioning the costs and future maintenance responsibilities at a rail/highway crossing the Commission is not limited to any fixed rule but must consider all relevant factors and render an order which is just and reasonable. East Rockhill Township, supra. The Pennsylvania Supreme Court in City of Philadelphia v. Philadelphia Electric Company, 504 Pa. 312, 473 A.2d 997 (1984) noted that "allocation of these costs is to be made as the Commission determines." 473 A.2d at 1003. Therefore, this Commission is free to determine that PECO is not entitled to any reimbursement.

There are a number of factors that must be considered pursuant to the just and reasonable standard. One factor the Commission must consider is whether or not a non-carrier utility has its facilities located in public right of way. It must be noted that pursuant to State Highway Law, 36 P.S. §670-411, non-carrier public utility companies are free to occupy public right

of way of Commonwealth highways subject only to fees for permits. The utilities occupy this right of way knowing that they are subject to the power of the State to control and regulate the highways for the safety and convenience of the travelling public. The utilities also occupy the right of way knowing that unless the Commission orders otherwise, they must relocate their facilities at their sole costs and expense. See, 67 Pa. Code §459.7. Also, as this Commission outlined in Application of City of Wilkes Barre, Opinion and Order entered April 9, 1981, at Docket No. A-101606, there are other factors that may be considered when determining the allocation of cost. Among those factors are benefits to the non-carrier utility, availability of funding, party responsible for the relocation and the equities of the situation. This Commission is not limited to these factors when rendering its order.

This Commission recognized in Application of City of Reading, 62 Pa. PUC 1 (1986) that a utility which provides service to its customer chooses, at its discretion, that location of its distribution system. Throughout this process, the utility is mindful of the best interest and economic advantage to the company and its ratepayers. PECO elected to place its facilities in public right of way and made that decision mindful of its ratepayers (N.T. 243). PECO has enjoyed the option to locate its facilities in public right of way. In fact, these facilities

were installed as early as 1961. Therefore, PECO will continue to enjoy the benefits that accrue from location in public right of way such as not having to acquire right of way, not having to maintain the right of way and not having to pay property taxes on the right of way (N.T. 243).

PECO has also benefited by the relocation of their facilities in that the service life of the facilities has been extended. The wooden poles that were installed between 1960 and 1979 had an expected service life of 40 years. The poles were in place for 15 to 30 years with expected remaining service life of 18 to 30 years. Therefore, all of the wooden poles had a diminished remaining service life which was extended to 40 years for all of the poles. The aerial wire was installed in 1961 and 1963 and had an expected service life of 40 years. The aerial wire was in place for at least 30 years and had expended at least 50% of its expected remaining service life. The 3 direct buried ducts and 1 manhole were installed in 1970 and had an expected life of 50 years. These facilities had been in place for 23 years and had expended a significant portion of their service life. The underground cable and cathodic protection were installed in 1970 had an expected life of 55 years. It had been in place for 23 years and had expended a significant portion of its service life. All of these facilities now have an extended service life since they were all replaced with new facilities.

Therefore, PECO has benefited by the replacement of its facilities since the service life on all facilities has been extended. Moreover, PECO testified that no salvage value was attributed to any of the facilities which were removed due to the condition of the facilities at time of removal (See PECO Statement 1, Page 2; N.T. 240). One can conclude that since the condition of the facilities did not warrant a salvage value, replacement was imminent.

Though Federal Funds were used in part to build this project, this Commission does not consider the ability to bear costs by a party when making its decision. This Honorable Commission has held that, "[t]o consider outside funding as a means of off setting one party's costs, in our opinion, diminishes and interferes with this Commission's authority to allocate costs in a just and reasonable manner for ultimately one party will bear an unjust and unreasonable share of the total project costs." Application of City of Reading, 62 Pa. PUC 1, 9 (1986). To order the Commonwealth to expend federal funds would be unjust, unreasonable and inequitable.

If federal funds are used to reimburse non-carrier utility relocation costs on this project would come at the expense of other potential improvement projects in the Delaware County area. Federal funding is not unlimited source of monies. The

Commonwealth of Pennsylvania receives a yearly fixed allocation of federal funds for all types of construction project. When that allocation is exhausted, the Department may not tap into another category of federal funding to reimburse the utility for this project. As is well known, the Commonwealth of Pennsylvania, Department of Transportation's highway project budget is a combination of federal and state funds. Many projects compete for the funds from the limited budget. Therefore, the Department must establish priorities and exercise discretion when utilizing federal funding allocations. If this Commission directs the Department to reimburse PECO for the relocation of facilities in public right of way, it will be at the expense of other highway construction projects in this Commonwealth. Money may be available for other highway or grade crossing improvements.

Based upon the equities of this case, it would not be just and reasonable to order the Department to bear any of the cost of utility relocation. As this Honorable Commission noted in Application of Southeastern Pennsylvania Transportation Authority, Docket No. A-00108276, Order entered September 15, 1993, the Commission must recognize the benefits of the location of facilities in public right of way and in balancing the equities and other factors, it is just and reasonable for the utility to bear at least a portion of its relocation costs.

However, an order directing the utility herein, PECO, to bear 100% of its relocation costs would be consistent with the following Commission orders: A-108276, Order entered September 15, 1993; A-109395, Order entered October 8, 1993; A-107385, Order entered November 14, 1994 and A-103719, Order entered December 16, 1994.

THEREFORE, the Department respectfully requests that PECO Energy be ordered to bear 100% of the cost of relocating their facilities which were located in public right of way.

II. A. RADNOR TOWNSHIP SHOULD BE ORDERED TO REMOVE SNOW, ICE, DEBRIS AND GRAFFITI FROM THE SIDEWALKS AND PARAPETS ON THE BRIDGE AND APPROACHES.

It is the opinion of the Department that the Commission should direct Radnor Township to remove snow, ice, debris and graffiti from the sidewalks and parapets on the approaches to the bridge and on the bridge. The State Highway Law and Commission Orders have recognized that it is the responsibility of the local municipality to maintain sidewalks. In this particular case, the Department has agreed to maintain the structural integrity of the of the sidewalks on the bridge from centerline of Abutment No. 1, Station 783 + 72.89 to centerline of Abutment No. 2, Station 785 + 74.11 since the sidewalks are an integral part of the structure. The Department will not agree to remove snow, ice, debris and graffiti from the sidewalks or parapets (Affidavit of Daniel C. DeMaria, dated December 27, 1994).

The State Highway Law has clearly and consistently limited the maintenance responsibility of the Department to the area between the curbs and defines departmental maintenance responsibility as being limited to roadway paving. The maintenance responsibility for the area beyond the curb lines remains the responsibility of the city, township or borough. See, 36 P.S. §670-513, §670-542 and §1758-204. The Pennsylvania Superior Court held in O'Brien v. Borough of Jeanette, 128 Pa.

Superior Ct. 443, 194 A. 314 (1937), that the designation of a borough street as part of a state highway system does not necessarily include the bordering sidewalk as part of that highway so as relieve the borough of maintenance responsibility for the sidewalk.

The Department recognizes that the Commission has been granted the power to regulate rail/highway crossings pursuant to 66 Pa. C.S. §§2702 and 2704. The Commission has also been judicially recognized to have exclusive jurisdiction at such crossings. City of Philadelphia v. Philadelphia Electric Company, 524 Pa. 312, 373 A.2d 997 (1984). Therefore, the Commission may order maintenance and repair responsibilities contrary to certain State Highway Laws cited above.

This Commission, when apportioning costs and future maintenance responsibilities, is not limited to any fixed rule but must consider all relevant factors and render an order which is just and reasonable. East Rockhill Township v. Pa. PUC, 115 Pa. Commonwealth Ct. 228, 540 A.2d 600 (1988). Additionally, there is Commission precedent on this issue. It would be just and reasonable in this instance to direct Radnor Township to be responsible for the snow, ice, debris and graffiti removal from the parapets and sidewalks on the bridge and the approaches to the bridge. In fact, this Court, by Recommended Decision at A-

00108276, dated July 13, 1993, agreed with the argument of the Department that the [Township] is in the best position to control, monitor and to maintain the sidewalks and that the pedestrians are the parties who benefit from the sidewalks and curbs. In this particular case, your Honor recommended and the Commission ordered the Township to be responsible for maintenance of the sidewalks including snow, ice and debris removal of the sidewalks and curbs on the approaches and under the overhead bridge. This allocation of responsibility was without prejudice to the right the Township to enforce its local ordinances. A-00108276, Recommended Decision dated July 13, 1993 at Page 21; Order adopted, September 25, 1993.

It cannot be disputed that pedestrians, not motor vehicles, utilize the sidewalks. Pedestrians are the parties that benefit from sidewalks and curbs. The local municipalities are in the best position to control, monitor and maintain the sidewalks.

THEREFORE, based upon the evidence of record and the arguments asserted herein, it would just and reasonable to order Radnor Township to be responsible for the snow, ice, debris and graffiti removal from the sidewalks within their jurisdictional limits. An order directing the Township to remove the snow, ice, debris and graffiti is consistent with the policy of the Commission to assign snow and ice removal and maintenance of

sidewalks to local municipalities. This policy is premised on the fact that the sidewalks benefit their residents and the local municipalities have the personnel and equipment more suited to this type of work and maintenance. See, A-00107729, Order adopted November 10, 1993, and entered November 12, 1993.

- B. AMTRAK SHOULD BE ORDERED TO MAINTAIN THE STAIRWAY LEADING TO THE PASSENGER PLATFORM AS WELL AS REMOVE SNOW, ICE AND DEBRIS.

Since this stairway services the patrons of AMTRAK and hence AMTRAK itself, it should be deemed an AMTRAK rail appurtenance. AMTRAK should be ordered to maintain the stairway as well as to remove the snow, ice, debris and graffiti. In the alternative, Radnor Township, as the municipality whose residents utilize the station should be ordered to be responsible for the stairway.

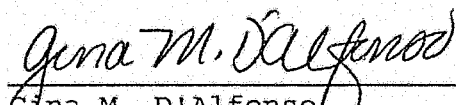
- C. VILLANOVA UNIVERSITY SHOULD BE ORDERED TO MAINTAIN AND ENERGIZE THE STREET LIGHTING SYSTEM ON AND BELOW THE BRIDGE.

The street lighting below and across the bridge is an extension of the parking lot of Villanova University (N.T. 213). This structure provides a crossing for pedestrians at Villanova University. In the interest of safety for Villanova students, the University should continue to maintain the street lighting and the cost of service.

CONCLUSION

WHEREFORE, the Department of Transportation respectfully requests this Honorable Commission to direct PECO to bear the entire cost of the relocation of its facilities which are originally located in public right of way. The Department also requests this Honorable Commission to direct Radnor Township to be responsible for the snow, ice, debris and graffiti removal from the sidewalks and parapets on the approaches as well as on the bridge and maintain the approach sidewalks. AMTRAK, or in the alternative, Radnor Township, should be ordered to maintain the stairway and to remove snow, ice and debris. Villanova University, without prejudice to any agreements, should be ordered to continue to maintain and energize the street lighting system.

Respectfully submitted,



Gina M. D'Alfonso
Assistant Counsel in Charge
ID No. 46767
Commonwealth of Pennsylvania
Department of Transportation
Room 513, Transportation and
Safety Building
Harrisburg, PA 17120
Telephone No. (717) 787-3128

FINDINGS OF FACT

1. Conrail has trackage rights on AMTRAK but has no regular or irregular freight operations. Conrail has the right to operate under the dispatch and supervision of AMTRAK (N.T. 179-180).

2. Spring Mill Road is a grade separated structure carrying State Route 320 over 4 AMTRAK railroad tracks (N.T. 202).

3. The demolished structure consisted of a single span, through truss bridge which was erected prior to 1914. The new crossing consists of a 26 foot roadway with an 8 foot shoulder on the north side and a 5 foot sidewalk on the south side (N.T. 203).

4. The project resulted in improved vertical alignment, wider roadway approaches and the elimination of the posted weight limit restrictions (N.T. 204).

5. Spring Mill Road runs generally in a northeast - southwest direction and connects Lancaster Avenue and County Line Road. There are no plans for future highways in area. (N.T. 205).

6. The average annual daily traffic in 1990 was 12,900

vehicles of which 3% was estimated to be trucks. It is estimated that the average annual daily traffic in the year 2011 will be 13,300 with 3% trucks (N.T. 207).

7. The Commission, by order entered February 7, 1993, assigned maintenance responsibility to AMTRAK for the pedestrian tunnel connecting the northbound platform to the southbound. Subsequent order directed AMTRAK to maintain its tracks, catenaries, station platforms and other rail facilities within the limits of the improvement (N.T. 208-210). AMTRAK agrees to maintain its own facilities at this location at its sole and expense (N.T. 224).

8. The Department will maintain the substructure and superstructure including the sidewalk structure of the bridge. The Department will maintain the roadway approaches from curb to curb (N.T. 211). The Department will also maintain the surface of the sidewalks on the bridge (Affidavit of Daniel C. DeMaria dated December 21, 1994).

9. The Department will not maintain the stairways leading from the bridge to the railroad passenger platform below the structure (N.T. 212).

10. The Department will remove snow, ice and debris from

the roadway from curb to curb on the approach and from curb to parapet on the bridge (N.T. 212).

11. It is the opinion of the Department that the local municipality should be responsible for snow, ice, debris and graffiti removal from the sidewalks and parapets on the bridge and approaches as well as maintain the sidewalks on the approaches (N.T. 212).

12. The railroad should be ordered to maintain the stairs leading from the bridge deck sidewalks to the railroad platform below as well as to remove snow, ice and debris. Patrons from either the railroad and/or the local municipality receive the benefits from the pedestrian sidewalk and the stairway improvements (N.T. 212).

13. All non-carrier public utilities and all railroads should be solely responsible for the maintenance and cost of their respective facilities (N.T. 212).

14. Villanova University should be responsible for the maintenance and cost of service for the lighting and the cost of maintenance for street lighting across the bridge (N.T. 213).

15. The Department incurred the cost of \$4,048,840.26

complying with the April 23, 1992, order of the Commission (N.T. 213). The Department acted as the contractor for Philadelphia Suburban Water Company, Philadelphia Electric Company, Bell Telephone Company and Adelphia Cable Company and is seeking 100% reimbursement for all items of work performed on behalf of the utility (N.T. 214).

16. The Department incurred \$40,143.00 on behalf of Philadelphia Suburban Water Company; \$99,486.00 on behalf of Philadelphia Electric Company; \$64,071.00 on behalf of Bell Telephone and \$11,988.00 on behalf of Adelphia Cable Company. To date, only Philadelphia Suburban Water Company and Adelphia Cable Company have not reimbursed the Department (N.T. 214-215).

17. The project was constructed using 75% Federal funds and 25% Commonwealth funds in accordance with the Billion Dollar Bridge Bill Program (N.T. 215).

18. The Department agrees to bear all costs incurred by SEPTA and AMTRAK to construct the project (N.T. 216-217).

19. The Department agrees to reimburse any non-carrier utility whose facilities had to be protected, adjusted or relocated and were located in private right of way or with a compensable interest within the public right of way. The

Department will not agree to reimburse a privately owned non-carrier utility for cost incurred for the protection, adjustment or relocation of facilities that were located in public right of way (N.T. 216-217).

20. The Department will not reimburse any utility company for any betterments (N.T. 218).

21. AMTRAK owns and operates 4 electrified tracks. There are approximately 20 AMTRAK trains and 83 commuter trains that pass by the subject crossing on a daily basis. AMTRAK trains travel at speeds of up to 60 m.p.h. AMTRAK does not contemplate any changes to its operations in the foreseeable future (N.T. 222-223).

22. AMTRAK receives the same benefit as the travelling public who used the bridge since it provides safe crossing for train, vehicular and pedestrian traffic (N.T. 223).

23. AMTRAK will maintain railroad owned facilities at the location including electrification, communications and signal facilities and will maintain these facilities at its sole cost and expense (N.T. 224).

24. AMTRAK does not agree to bear any items of cost

incurred by itself or any other party (N.T. 227).

25. PECO is seeking reimbursement in the amount of \$99,302.06 (N.T. 234).

26. PECO had to perform this work due to the reconstruction of the bridge. PECO had to remove and relocate wood poles, reconstruct duct bank and relocate wires, conductors and transformers (N.T. 235).

27. PECO had 8 wood poles that were installed between 1961 and 1979 in public right of way with an expected service life of 40 years. Five poles are removed; 3 were replaced and relocated (PECO Statement 1, Page 2).

28. Aerial wire installed in 1961 and 1963 had an expected service life of 40 years. The wire installed in 1961 had an expected remaining service life of 21 years at the time of relocation. The aerial wire installed in 1963 had an expected remaining service life of 22 years at the time of relocation (PECO Statement 1, Page 2).

29. The 3 direct buried ducts and 1 manhole installed under permit and in public right of way in 1970 had an expected service life of 50 years. At the time of relocation, the remaining

life of 50 years. At the time of relocation, the remaining service life was 27 years (PECO Statement 1, Page 2).

30. The 1 three (3) conductor underground cable installed in 1970 with an expected service life of 55 years had 43 years remaining of its expected service life (PECO Statement 1, Page 2).

31. Cathodic protection wire that was installed in 1970 with an expected service life of 55 years had 43 years remaining of its expected service life (PECO Statement 1, Page 2). The expected service life of the facilities that were relocated in 1993 is as follows: ducts - 50 years; underground cable - 55 years; wood poles and wires - 40 years (PECO Statement 1, Page 2).

32. All relocated facilities were placed in public right of way (PECO Statement 1, Page 3). PECO did not attribute any salvage failure to the facilities which were removed due to the condition of the facilities. The condition of the facilities did not warrant their reuse (N.T. 240).

33. PECO is always mindful of its ratepayers when making a decision as to where to locate the facilities and wants to do what is best for ratepayers. PECO, when locating facilities in public right of way does not have to obtain further permits, or acquire right of way (N.T. 243).

PROPOSED CONCLUSIONS OF LAW

1. The Commission has the exclusive authority to order the construction, reconstruction, alteration, repair, protection or abolition of rail/highway crossings, as well as the exclusive authority to determine and order which parties should perform such work at the crossings and which parties shall maintain the crossings in the future, all to effectuate the prevention of accidents and to promote the safety of the public. 66 Pa. C.S.A. §§2702, 2704.

2. The Commission has jurisdiction over the parties and subject matter in this proceeding.

3. The Commission has the exclusive authority to assess the costs of the work ordered performed upon the parties to this proceeding in such property proportions as it may determine. 66 Pa. C.S.A. §§2702, 2704.

4. In apportioning costs in rail/highway crossing cases, the Commission is not limited to any fixed rule but takes into consideration all relevant facts, the only requirement being that its order must be just and reasonable. East Rockhill Township v. Pennsylvania Public Utility Commission, 115 Pa. Commonwealth Ct.

228, 540 A.2d 600 (1988).

5. Any Commission decision must be based upon substantial evidence. Substantial evidence is such relevant evidence as a reasonable mind can accept as adequate to support a decision.

Manchester Township v. Pennsylvania Public Utility Commission, 43

Pa. Commonwealth Ct. 118, 401 A.2d 1237 (1979).

PROPOSED ORDERING PARAGRAPH

1. That, PECO Energy Company, shall, at its sole cost and expense, bear the cost of the relocation of its facilities resulting from this rail/highway crossing improvement.

2. That, Philadelphia Suburban Water Company shall reimburse the Department of Transportation in the amount of \$40,143.00 for work completed by the Department on behalf of Philadelphia Suburban Water Company.

3. That, Adelphia Cable Company shall reimburse the Department \$11,988.00 for work done by the Department on behalf of Adelphia Cable Company.

4. That, Radnor Township shall, at its sole cost and expense, be responsible for the snow, ice, debris and graffiti removal from the sidewalks and parapets on the bridge and the approaches thereto.

5. That, AMTRAK shall, at its sole cost and expense, be responsible for the stairway leading from the bridge sidewalks to the AMTRAK platform below as well as remove snow, ice, debris and graffiti from the stairway.

PROPOSED ORDERING PARAGRAPH

1. That, PECO Energy Company, shall, at its sole cost and expense, bear the cost of the relocation of its facilities resulting from this rail/highway crossing improvement.

2. That, Philadelphia Suburban Water Company shall reimburse the Department of Transportation in the amount of \$40,143.00 for work completed by the Department on behalf of Philadelphia Suburban Water Company.

3. That, Adelphia Cable Company shall reimburse the Department \$11,988.00 for work done by the Department on behalf of Adelphia Cable Company.

4. That, Radnor Township shall, at its sole cost and expense, be responsible for the snow, ice, debris and graffiti removal from the sidewalks and parapets on the bridge and the approaches thereto.

5. That, AMTRAK shall, at its sole cost and expense, be responsible for the stairway leading from the bridge sidewalks to the AMTRAK platform below as well as remove snow, ice, debris and graffiti from the stairway.

6. That, having agreed to do so, AMTRAK will maintain the railroad and facilities at this location.

7. That, having agreed to do so, Villanova University will continue to maintain and pay for the costs of maintenance of the street lighting facilities located under and on the bridge.

8. That, all non-carrier utilities shall maintain their facilities at this location.

9. That, the Pennsylvania Department of Transportation, shall at its sole cost and expense, maintain the substructure and superstructure, including the sidewalk structure on the bridge as well as the surface of the sidewalks on the bridge from centerline of Abutment No. 1, Station 783 + 72.89 to centerline of Abutment No. 2, Station 785 + 74.11.

8. That, the Department of Transportation shall at its sole cost and expense remove snow, ice and debris from the roadway from curb to curb on the approaches and from curb to parapet on the bridge.

10. That, all prior orders of this Commission, to the extent not consistent with the provisions herein, shall remain in full force and effect.

11. That, this order, insofar as it places cost on various parties, is without prejudice to their respective rights to recover said costs from others in accordance with any lawful agreements.

12. That, this order is binding upon the parties hereto and the respective heirs, successors, and assigns.

CERTIFICATE OF SERVICE

I hereby certify that I am this date serving two (2) copies of the foregoing brief upon the persons and in the manner indicated below:

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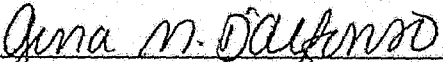
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DATED: February 28, 1995



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February 28, 1995

Via FedEx

John G. Alford, Secretary
Pennsylvania Public Utility Commission
Room B-20, North Office Building
Harrisburg, PA 17105

Re: Villanova University v. AMTRAK et al.
Docket No. C-80011839

Dear Secretary Alford:

Enclosed for filing with the Commission are an original and nine copies of PECO Energy Company's Initial Brief in the referenced case. Also enclosed is an extra copy of this letter which I request that you date stamp and return to me in the enclosed envelope as proof of filing.

Very truly yours,

Mary McFall Hopper

Enclosures

MAR 03 1995

cc: Honorable Hebert S. Smolen (w/ encl. - 2 copies)
All parties of record (w/encl.)

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FEB 28 1995

PUBLIC UTILITY COMMISSION
SECRETARY BUREAU

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION

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 respondents -
National Railroad Passenger Corporation
(AMTRAK); Consolidated Rail Corporation
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Authority (SEPTA); Commonwealth of
Pennsylvania (PENNDOT); County of
Delaware and Radnor Township, Delaware
County have filed 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.

Docket No. C-80011839

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PUBLIC UTILITY COMMISSION
SECRETARY BUREAU

INITIAL BRIEF OF PECO ENERGY COMPANY

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Dated this 28th day of February, 1995

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Dated this 28th day of February, 1995



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INITIAL BRIEF OF PECO ENERGY COMPANY

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(215) 841-4256

Dated this 28th day of February, 1995

INITIAL BRIEF OF PECO ENERGY COMPANY

I. STATEMENT OF THE CASE

This case first came before the Commission in 1982 when Villanova University filed a complaint against Amtrak, Conrail, SEPTA, and PennDOT alleging that the bridge crossing above four Amtrak railroad tracks was inadequate and posed a danger to pedestrian traffic. In December of 1982, the Commission ordered PennDOT to make annual progress reports on the status of efforts to replace the bridge. In August of 1990, PennDOT submitted bridge replacement and roadway approach reconstruction plans. By order dated April 29, 1992, the Commission instructed non-carrier public utilities to relocate their facilities located in public right of way in connection with the project at their initial cost and expense. The bridge reconstruction was completed in May, 1994 and the bridge is open to the travelling public.

On December 8, 1994, a hearing was held before Administrative Law Judge Herbert Smolen with respect to the allocation of costs and expenses incident to the project. In addition to PECO Energy Company ("PECO Energy" or the "Company"), the parties represented at the hearing were PennDOT, Conrail¹, and Amtrak.

¹ Conrail has no operations on the rails or at the rail highway at Spring Mill Road and incurred no costs with respect to this project. Conrail was granted permission to withdrawal from this proceeding. (N.T. 181).

At the conclusion of the hearing, Judge Smolen requested briefs and established a briefing schedule. PECO Energy submits this brief in response to that request.

II. SUMMARY OF THE TESTIMONY

The grade crossing at issue in this case is a grade separated structure carrying Spring Mill Road (also known as S.R. 320) over four Amtrak railroad tracks. Spring Mill Road generally runs in a northeast-southwest direction, from Lancaster Avenue on the southwest and northeast to County Line Road. (N.T. 205). There are no at-grade crossings involved but there is a pedestrian tunnel running below the tracks connecting the northbound station platform to the southbound platform. (N.T. 202).

PennDOT presented the testimony of Mr. Daniel C. Demaria, the District 6-0 Railroad Coordinator at PennDot. (N.T. 201). Mr. Demaria testified that the original crossing structure was constructed before 1914 and consisted of a single span, through truss bridge that was 72 feet, 9 inches long with 20 feet, 10 inches between the center line of trusses. The clear roadway between the curbs was 18 feet, 6 inches, with little or no shoulders. (N.T. 203).

The new crossing structure consists of a 261-0" roadway with an 8 foot shoulder on the north side and a 5 foot sidewalk on the southside. The structure has a two-span 8 inch thick composite deck with reinforced concrete parapets, topped with a protective barrier that acts as a safety shield for the electrified rails. (N.T. 203-204). The Commission ordered PennDOT to replace the bridge in response to a complaint filed by Villanova University alleging that the existing facilities were inadequate and dangerous for pedestrian traffic over the tracks. On

December 17, 1982, the Commission order PennDOT to make annual progress on the status of the bridge replacement and PennDOT filed preliminary replacement and roadway approach reconstruction plans on August 20, 1990. (N.T. 206). Mr. Demaria testified that the project was constructed in order to improve the vertical alignment of the structure, widen the roadway approaches and eliminate the posted weight limit restriction, which had been set at 15 tons by the Commission on January 15, 1986. (N.T. 204).

On April 29, 1992, the Commission issued an order providing that all non-carrier public utilities located in the public and private rights-of-way were to relocate their facilities at their initial expense to accommodate the project. The non-carrier utilities were also ordered to maintain their facilities after the project was completed. (N.T. 209-210).

The project was constructed using 75% Federal funds and 25% Commonwealth funds in accordance with the Billion Dollar Bridge Program II. (N.T. 215). PennDOT expects 100% reimbursement for non-carrier utility work done for this project and will not agree to bear any of the costs. (N.T. 214). PennDOT, however, agrees to bear all costs incurred by Amtrak and SEPTA in connection with the project. (N.T. 216). PECO Energy has reimbursed PennDOT \$99,486, which represents PennDOT's invoice for a bridge reattachment and was negotiated between PECO Energy and PennDOT and does not address an assessment for relocated facilities. (N.T. 217, 219).

Amtrak presented the testimony of one witness, Mr. Louis Cheifitz. Mr. Cheifitz testified that Amtrak owns and operates on four electrified tracks and eight rails at the crossing involved in this proceeding. (N.T. 222-223). There are about 20 Amtrak trains and 83 commuter trains that pass the crossing daily. (N.T. 222). Amtrak does not contemplate any changes to its operation.

PECO Energy presented the testimony of Mr. Guiseppe Termine, an engineer in PECO Energy's Engineering and Design Division of its Transmission and Distribution Services Department. Mr. Termine testified concerning PECO Energy's facilities before and after the bridge reconstruction. (PECO Statement 1, p. 1). Before the bridge reconstruction, PECO Energy's facilities consisted of eight wood poles installed between 1961 and 1979, each with an expected service life of 40 years. Five of the poles were permanently removed from service, and three of the remaining poles were replaced and relocated. At the time of the relocation, the wooden poles had expected remaining lives of 18 through 30 years. There were also aerial wires installed in 1961 and 1963 with an expected service life of 40 years. At the time of the relocation in 1993, the aerial wires installed in 1961 and 1963 had expected remaining service lives of 21 and 22 years respectively. PECO Energy had three direct buried ducts and one manhole installed under permit in the public right of way in 1970 with expected lives of 50 years. At the time of the relocation, the three ducts and one manhole had expected remaining lives of 27 years. There was also one three conductor underground cable installed in 1970 with an expected life of 55 years, and at the time of the relocation, the expected

remaining service life of the cable was 43 years. In addition, there was cathodic protection wire installed in 1970 with an expected service life of 55 years and at the time of the relocation the expected remaining service life of this wire was 43 years. (PECO Statement 1, pp. 2-3).

Mr. Termine testified that all of the PECO Energy facilities were functionally replaced with no increase in capacity except for a portion of the duct bank, which was increased from three to six ducts. (PECO Statement No. 1, p. 3). Mr. Termine testified that none of the facilities removed were re-used, with the exception of one of the transformers, which was taken out of service to be relocated. PECO Energy did not have any salvage amounts for the facilities taken out of service. (PECO Statement 1, p. 3).

PECO Energy's total costs for the replacement was \$99,302.06 and all the costs were incurred solely as a result of the reconstruction, without any benefit to PECO Energy or its customers. The total costs include the work done in connection with the bridge reconstruction, wood pole removal and relocation, partial duct bank reconstructions, and relocation of wires, conductors and transformers. Mr. Termine testified that PECO Energy seeks reimbursement for all costs associated with the replacement, except for the costs of the portion of the duct bank increased from three to six ducts. PECO Energy's position is that but for the bridge reconstruction, all prior existing facilities would have remained in service and the reconstruction does not result in any benefit or betterment to PECO Energy's system or customers. (PECO Statement 1, p. 3, PECO Exhibit 3).

III. STATEMENT OF THE QUESTION INVOLVED

Whether PennDOT should be ordered to reimburse PECO Energy Company for all or a substantial portion of PECO Energy Company's relocation costs associated with the proposed reconstruction of the Spring Mill Road crossing?

IV. SUMMARY OF THE ARGUMENT

Section 2704(a) of the Public Utility Code empowers the Commission to order the Commonwealth to reimburse non-carrier public utilities for relocation costs the utilities incur as a result of the reconstruction of a rail-highway grade crossing structure. Well-established precedent provides that the Commission should order such reimbursement when: (1) the primary beneficiary of the reconstruction of a crossing is the travelling public, (2) the Commonwealth's costs are paid for by Federal and State funds, and (3) the customers of the public utility receive little or no benefit from the reconstruction. The record in this case reflects that with respect to PECO Energy Company, all of these factors are present, and therefore the Commission should order PennDOT to reimburse PECO Energy for its relocation and replacement costs of \$99,302.06.

PennDOT reconstructed the subject crossing to improve safety for vehicular and pedestrian traffic pursuant to an Order issued by the Commission in 1982 that provided that the subject crossing was "inadequate and dangerous." (N.T. 206). Moreover, the Federal government paid for 75% of the costs of the project and the Commonwealth paid for the remaining 25%. In addition, the facilities PECO Energy was forced to relocate and replace solely because of PennDOT's need to construct a safe crossing structure were more than adequate to serve PECO Energy's customers, and had remaining service lives ranging from 18 to 43 years. PECO Energy's customers, therefore, received little or no benefit from the work PECO Energy was forced to undertake to accommodate the reconstruction.

Accordingly, PECO Energy requests that the Commission exercise its authority pursuant to § 2704(a) of the Public Utility Code, and order PennDOT to reimburse PECO Energy for its relocation costs.

V. ARGUMENT

To determine whether to exercise its statutory discretion to award non-carrier utilities reimbursement for relocation costs incurred to accommodate the reconstruction of a grade crossing structure, the Commission considers the following factors:

- The benefits received by the ratepayers of a particular utility;
- The availability of State and Federal funding for a project;
- The placing of costs upon the party responsible for the situation; and
- The equities of a particular situation.

Application of the City of Wilkes-Barre, Docket No. A-101606 (1981).

Notwithstanding the common law rule that normally requires utilities to bear the cost of relocating facilities located within the public right-of-way to accommodate public works projects², if analysis of the Wilkes-Barre factors suggests that non-carrier utilities should be reimbursed for all or part of their costs, then the Commission may order such reimbursement. By enacting section 2704(a) of the Public Utility Code, which gives the Commission the power to allocate relocation costs between non-carrier utilities, municipal corporations, and the Commonwealth, the Pennsylvania legislature abrogated the common law rule. See, e.g., Application

² See, e.g., Pennsylvania Gas & Water Co. v. Nenna & Frain, Inc., 467 A.2d 330 (Pa. Super. 1983).

of PennDOT, 1988 Pa. PUC LEXIS 569 at *25 (Docket No. A-00106313, April 11, 1988)("[A]n exception [to the common law rule] has been carved out by the Legislature in rail-highway crossing cases. . . . In rail-highway crossing cases, the common law rule does not control").

In this case, analysis of all of the Wilkes-Barre factors suggests that the Commission should order PennDOT to reimburse PECO Energy for all or most of the costs PECO Energy incurred to relocate its facilities in the public right-of-way.

A. PECO Energy's Customers Received Little Or No Benefit From The Reconstruction

When the customers of a non-carrier utility receive little or no benefit from the reconstruction of a crossing, the Commission normally awards the utility at least a portion of the utility's relocation costs. For example, in Re Consolidated Rail Corporation, 69 Pa. PUC 6 (1989), the Commission awarded non-carrier utilities a portion of their relocation costs in part because "the ratepayers of these utilities do not directly benefit from the improved traffic flow." Re ConRail, 69 Pa. PUC at 11. Similarly, in Com. Dept. of Transp. v. Pa. P.U.C., 440 A.2d 657 (1987), the Commonwealth Court affirmed a Commission Order awarding non-carrier utilities a portion of their relocation costs in part because the relocation was not primarily intended "for the benefit of the utilities or their customers." Yet another example is Application of PennDOT, 1988 Pa. PUC LEXIS 131 (Docket No, A-00107408, February 25, 1988), in which the Commission awarded AT&T 80%

of its relocation costs in part because its existing cable was "adequate to meet the telecommunications needs of AT&T's customers. . . AT&T and its customers will derive no benefit from the relocation and/or replacement of the cable." Application of PennDOT, 1988 Pa. PUC LEXIS 131 at *22. See also, Re City of Philadelphia, 55 Pa. PUC 320 (1981)(awarding non-carrier utilities 100% of relocation costs in part because of finding that the "benefits accruing to the customers of [the utilities] to be inconsequential, and therefore would assign no costs under this theory").

As the testimony of PECO Energy's witness Mr. Guiseppe Termine makes clear, PECO Energy's customers will receive little or no benefit from the reconstruction of the Spring Mill Road crossing structure. Mr. Termine testified that the PECO Energy facilities had to be removed or relocated solely to accommodate the project and would have remained in service but for the reconstruction. (PECO Statement 1, p. 3). Mr. Termine testified further that the relocated or replaced facilities do not have greater capacity than the facilities in place before the reconstruction, with the exception of a portion of the duct bank that PECO Energy increased from three to six ducts. (PECO Statement No. 1, p. 3).³ In addition, Mr. Termine testified that the facilities in place before the reconstruction had remaining service lives ranging from 18 to 43 years.

PECO Energy's customers, therefore, received little or no benefit from the work PECO Energy was forced to undertake solely to accommodate the

³PECO Energy does not seek reimbursement for the costs associated with this increase in capacity of the duct bank. (PECO Statement No. 1, p. 3).

reconstruction. The facilities that had to be relocated would have lasted for a considerable length of time, and the relocated facilities do not provide PECO Energy or its customers with any increased capacity or other benefit. Therefore, application of the Wilkes-Barre "benefit" factor favors PECO Energy in this case, and suggests that the Commission should award reimbursement to PECO Energy for all or a portion of its relocation costs.

B. PennDOT Used Federal And State Funds To Pay For The Costs Of The Crossing Reconstruction

When State and especially Federal funding is available for grade crossing structure reconstruction projects, the Commission normally and routinely awards reimbursement to non-carrier utilities. The Commission observed in Application of PennDOT, 1987 Pa. PUC LEXIS 47 (Docket No. A-00106489, November 18, 1987) that "[t]he Commission in rail highway crossing cases, especially those involving Federal funds, has . . . allowed reimbursement to utilities." Application of PennDOT, 1987 Pa. PUC LEXIS 47 at *26.⁴

For example, in Application of PennDOT, 1988 Pa. PUC LEXIS 569 (Docket No. A-00106313, April 11, 1988), the Commission awarded non-carrier utilities between 50% and 60% of their relocation costs in part because of the availability

⁴Even before the Commission articulated the Wilkes-Barre criteria, the availability of State and Federal funds was a factor the Commission considered when deciding whether to award non-carrier utilities a portion of their relocation costs. See, e.g., Department of Highways v. Pa. PUC, 197 Pa. Super. 350, 359-360, 178 A.2d 820, 824 (1962).

of Federal funds to pay for the project, which funds PennDOT could use to cover its reimbursement of the non-carrier utilities. Application of PennDOT, 1988 Pa. PUC LEXIS 569 at *32. The Commission reasoned that the utilities' customers had a right to reimbursement because they had contributed their taxes to the Federal government and therefore had a reasonable expectation that they would benefit from the Federal Highway Program that their taxes helped pay for:

"[T]he Commission will allow Pennsylvanians the benefits of the Federal Highway Program, to which they contribute their taxes, and also will obviate the burden on [the non-carrier utilities'] ratepayers who may obtain no benefit from the highway-railroad project."

Application of PennDOT, 1988 Pa. PUC LEXIS 569 at *32-33.

In this case, the PennDOT witness testified that PennDOT obtained State and Federal funding to pay for the entire crossing reconstruction project. The Federal government paid for 75% of the project and the Commonwealth of Pennsylvania paid for the remaining 25%. (N.T. 215). Accordingly, application of the Wilkes-Barre "availability of funding" factor favors PECO Energy in this case, and suggests that the Commission should award reimbursement to PECO Energy for all or a portion of its relocation costs. PECO Energy is an investor-owned public utility, and its customers pay substantial taxes to the Federal government and to the Commonwealth each year. The Commission should not burden them with the costs of this relocation, and should award PECO Energy reimbursement of all or part of its relocation costs.

C. PennDOT Is The Party Responsible For The Situation And The Equities Favor Reimbursement Of PECO Energy For Its Relocation Costs

Long-established Commission precedent holds that when the reason for the reconstruction of a crossing is to benefit the travelling public, non-carrier utilities should be reimbursed for all or a portion of their relocation costs. See, e.g., Re Consolidated Rail Corporation, 69 Pa. PUC at 11 ("[T]he reconstructed bridge herein will also provide for the general good of motorists and pedestrians. Since this is the case, . . . it is therefore reasonable that the County reimburse the above-enumerated utilities for 20% of their costs"). In such circumstances, the party responsible for the reconstruction is PennDOT, the railroad involved, or the municipality affected, and therefore it is appropriate to place the burden of the costs associated with the relocation project on PennDOT, the railroad, or the municipality rather than on the customers of the non-carrier utilities.

This is especially true when the benefit to the travelling public of the reconstruction is, in part, the elimination of an unsafe or hazardous condition. For example, in Com. Dept. of Transp. v. Pa. P.U.C., the Commonwealth Court upheld a Commission award of relocation costs to non-carrier utilities because the only evidence in the record was that the subject reconstruction project was made necessary to eliminate a hazard:

"[T]here is no evidence in this record that any portion of the highway relocation project proposed by PennDOT was made necessary by anything other than the hazard posed by the inadequate highway railroad bridge, and, indeed, the testimony of PennDOT's expert witnesses has been consistently to the effect that the whole of the

project was designed to remedy the hazard at the bridge and that in the absence of the inadequate bridge no portion of the project would have been undertaken."

Com. Dept. of Transp. v. Pa. P.U.C., 440 A.2d at 663-664.

In this case, the sole reason for the reconstruction of the Spring Mill Road crossing is to remedy unsafe conditions that the old crossing structure posed to pedestrian and vehicular traffic. The evidence in the record is that PennDOT reconstructed the subject crossing to improve safety pursuant to an Order issued by the Commission in 1982 that provided that the subject crossing was "inadequate and dangerous." (N.T. 206). There is no evidence in the record, however, that any of PECO Energy's facilities caused or contributed to the inadequacy or hazardous condition of the old structure. Accordingly, the party responsible for the project is PennDOT, and therefore it should reimburse PECO Energy for the costs PECO Energy incurred to accommodate PennDOT's desire to remedy unsafe conditions at the crossing.

Other equities favor reimbursement of PECO Energy's relocations as well. As argued above, PECO Energy's customers will receive no benefit on account of the crossing structure. The relocated and replaced facilities do not have more capacity than those that were in place before, and PECO Energy would not have had to replace any of them for almost 20 years. In addition, PennDOT obtained State and Federal funds to pay for the project. Since PECO Energy's customers received no benefit, and since its customers pay State and Federal taxes that help to fund the State and Federal Highway and Bridge programs from which PennDOT

obtained the funding for the project, it would be inequitable to deny reimbursement to PECO Energy.

In addition, fairness suggests that the equitable outcome is to award reimbursement to PECO Energy, and the Commission has often held that when allocating costs in grade crossing cases, its objective is to achieve fundamental fairness. See Application of Redevelopment Authority of City of Philadelphia, 48 Pa. PUC 513, 518 (1974) ("We believe the ratepayers of every utility company should be treated equally and fairly . . . In the interest of equity and justice, . . . all utility companies should receive the same treatment"); Re City of Philadelphia, 55 Pa. PUC 320 (1981). In this case, it would not be fair to deny reimbursement to PECO Energy since PennDOT has agreed to reimburse Amtrak and SEPTA for all of their costs. (N.T. 216). Indeed, in Re City of Philadelphia, it was this kind of unfair treatment that motivated the Commission to award 100% reimbursement to non-carrier utilities:

"In view of the fact that the city is prepared to reimburse the Philadelphia Gas Works, the Philadelphia Water Department, and has raised no exception to the imposition of the AMTRAK costs upon it, we are of the opinion that the equities dictate the imposition of all costs upon the city."

Re City of Philadelphia, 55 Pa. PUC at 326.

Accordingly, fairness dictates that PennDOT should have to reimburse PECO Energy to the same degree that it has agreed to reimburse Amtrak and SEPTA.

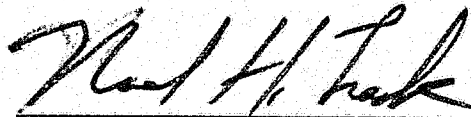
In sum, application of the third and fourth Wilkes-Barre factors suggests that PennDOT is the party responsible for the siting and the equities favor

reimbursement of PECO Energy. The Commission should order PennDOT to reimburse PECO Energy for 100% of PECO Energy's relocation costs.

VI CONCLUSION

For the foregoing reasons, PECO Energy respectfully requests that the Commission order PennDOT to reimburse PECO Energy for all of PECO Energy's relocation costs.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Noel H. Trask", written over a horizontal line.

Noel H. Trask
Counsel for
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(215) 841-4256

Dated: February 28, 1995

FINDINGS OF FACT

1. This case arises out of a complaint filed by Villanova University against Amtrak, Conrail, SEPTA and PennDOT alleging that the bridge carrying Spring Mill Road above four Amtrak railroad tracks was inadequate and posed a danger to pedestrian traffic. (N.T. 206)
2. On December 17, 1982, the Commission ordered PennDOT to make annual progress reports on the status of its efforts to replace the bridge. (N.T. 206)
3. On August 20, 1990, PennDOT submitted bridge replacement and roadway approach reconstructions plants. (N.T. 206)
4. On April 29, 1992, the Commission issued an order instructing non-carrier public utilities to relocate their facilities located in the public and private rights of way in connection with the reconstruction at their initial costs and expense. (N.T. 209-210).
5. The bridge reconstruction was completed in May, 1994 and is open to the travelling public. (N.T. 174-176)
6. On December 8, 1994, a hearing was held before the Honorable Administrative Law Judge Herbert Smolen with respect to the allocation of costs and expenses incident to the project.
7. PECO Energy Company, PennDot, Conrail and Amtrak were represented at the hearing.

8. Conrail was granted permission to withdrawal from the proceeding as it has no operations on the rails or at the rail highway at Spring Mill Road and incurred no costs with respect to this project. (N.T. 181).

9. PennDOT has fulfilled all maintenance obligations as prescribed in the Commission's previous orders. (N.T. 211).

10. PennDOT agreed to maintain the substructure and superstructure of the bridge, including the supporting structure sidewalk and to maintain the roadway approaches from curb to curb only and from curb to parapet on the bridge. (N.T. 211).

11. PennDOT's purpose in reconstructing the bridge was to remedy inadequate and dangerous conditions posed by the old structure. The new structure has improved vertical alignment, wider roadway approaches, and no posted weight limit restriction. (N.T. 204, 206).

12. The total cost incurred by PennDOT for the project is \$4,048,840.26. (N.T. 213).

13. The bridge carries vehicular and pedestrian traffic. PennDot has no record of the pedestrian traffic on the bridge. The Average Annual Daily Traffic in 1990 was 12,900 vehicles of which 3% was estimated to be trucks. It is estimated that by the year 2001, the Average Annual Daily Traffic will be 13,300 consisting of 3% trucks. (N.T 207).

14. State and Federal funds will be used to pay for the project. (N.T 215).

15. PennDOT has agreed to reimburse Amtrak and SEPTA for all of their costs. (N.T. 216).

16. PECO Energy has reimbursed PennDOT \$99,486, which represents PennDOT's invoice for bridge reattachment and does not address an assessment for relocated facilities. (N.T. 217, 219).

17. The bridge reconstruction project required PECO Energy to alter its facilities. The alteration of PECO Energy's facilities includes wood pole removal and relocation, partial duct bank reconstruction, and relocation of wires, conductors and transformers. (PECO Statement 1, pp. 1-3).

18. But for the bridge reconstruction, all prior existing facilities would have remained in service and the reconstruction does not result in any benefit or betterment to PECO Energy's system or customers. (PECO Statement 1, p. 3).

19. PECO Energy seeks reimbursement of \$99,302.66 for the work done in connection with the bridge reconstruction. (PECO Statement 1, p. 3, PECO Exhibit 3).

20. The expected service life of PECO Energy's relocated facilities at the time of installation in 1993 is 50 years for the partial duct banks, 55 years for the underground cables and 40 years for the wood poles and wire. (PECO Statement 1, p. 2).

PROPOSED CONCLUSIONS OF LAW

1. The PUC has jurisdiction over the site of the grade crossing and over the parties to this case.
2. The grade crossing is a grade separated structure carrying Spring Mill Road (also known as S.R. 320) over four Amtrak railroad tracks.
3. The PUC has the power to allocate the costs for the alteration and relocation of non-carrier utility facilities located in public right-of-way made necessary by the reconstruction of a grade crossing structure.
4. The purpose of the reconstruction of the grade crossing structure was PennDOT's need to remedy "inadequate and dangerous" conditions that the structure posed to the travelling public.
5. PECO Energy would not have had to alter or relocate its facilities but for PennDOT's need to reconstruct the structure to eliminate dangerous and unsafe conditions, and therefore PennDOT is the party responsible for the project.
6. Neither PECO Energy nor its customers will receive any benefit from the proposed project.
6. Because, (1) PennDOT is the party responsible for the project, (2) PECO Energy's customers will not benefit from the reconstruction, (3) State and Federal funding was available to PennDOT for 100% of the project's costs, and (4) PennDOT is willing to pay 100% of the costs Amtrak and SEPTA incurred in connection with the project, the equities of the situation dictate that PennDOT should reimburse PECO Energy for 100% of PECO Energy's relocation costs.

7. PennDOT is ordered to pay PECO Energy 100 percent of the costs for labor, materials, and work required to accommodate the subject project.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Villanova University :
 :
 vs. : Docket No. C-80011839
 :
 :
 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 respondents - :
 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 filed 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. :

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of PECO Energy's
Initial Brief upon the participants, listed below in accordance with the requirements
of § 1.54.

Via FedEx

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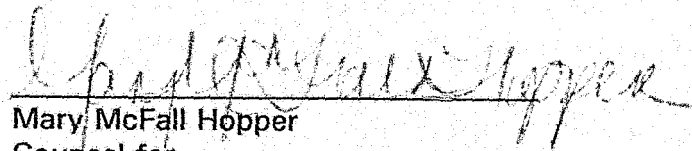
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Dated this 28th day of February, 1995

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 :
respondents-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. :

DOCKET NUMBER:
C-80011839

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MAR 7 1995

PUBLIC UTILITY COMMISSION
SECRETARY BUREAU

REPLY BRIEF OF NATIONAL RAILROAD PASSENGER CORPORATION

Introduction

National Railroad Passenger Corporation ("Amtrak") hereby submits its reply to the brief filed by the Pennsylvania Department of Transportation ("PennDOT"),¹ which proposes that Amtrak be responsible for and the stairway leading from the bridge sidewalks to the railroad platform below, as well as for snow, ice, debris and graffiti, at Amtrak's sole cost and expense.² This proposal is contrary to federal law and is unsupported by the record in this case.

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Issues

The only issue Amtrak addresses in this brief is -- whether the Commission should order Amtrak to bear the responsibility for the stairway leading from the bridge sidewalks to the railroad platform below as well as remove snow, ice, debris and graffiti from the stairway. It should not.

Argument

PennDOT's brief proposes that Amtrak should bear the final cost and expense of maintaining a pedestrian passageway, essentially an extension of the sidewalk for the bridge. However, this proposal should be rejected based upon the facts of this case and based upon binding federal law.

First, Amtrak is exempt by federal statute from any "tax or fee" imposed by a state, a political subdivision thereof, or local taxing authority, pursuant to 49 U.S.C. §24301(1),³ which provides:

(1) EXEMPTION FROM TAXES LEVIED AFTER SEPTEMBER 30, 1981. -- (1) Amtrak or a rail carrier subsidiary of Amtrak is exempt from a tax or fee imposed by a State, a political subdivision of a State, or a local taxing authority and levied on it after September 30, 1981. However, Amtrak is not exempt under this subsection from a tax or fee that it was required to pay as of September 10, 1982.

(2) The district courts of the United States have original jurisdiction over a civil action Amtrak brings to enforce this subsection and may grant equitable or declaratory relief requested by Amtrak.

This exemption has been held to apply to Orders by the Pennsylvania Public Utility Commission imposing upon Amtrak costs for maintaining pedestrian bridge structures on Amtrak's right-of-way. National Railroad Passenger Corp. v. Pennsylvania Public Utility Commission,

665 F. Supp. 402 (E.D.Pa. 1987), affirmed, 848 F.2d 436 (3d Cir.), cert. denied, 488 U.S. 893 (1988), permanent injunction enforced, 1991 WL 998 (E.D.Pa. Order dated January 2, 1991, copy attached).⁴

The express provisions of the United States Court Order enforce the permanent injunction preventing the Commission from ordering Amtrak to maintain the Cassatt Avenue bridge as a pedestrian crossing in Amtrak's right-of-way. See Attached Order at 3.

Amtrak denies ownership of the pedestrian structure; Amtrak owns only catenary facilities at this location. Tr. 222-23, 224. Although Amtrak will maintain its own facilities at this crossing (Tr. 224), the bridge itself and the new stairs leading to them are not Amtrak facilities. PennDOT designed the bridge at issue, including the stairways, which were not part of the prior bridge structure. PennDOT has not pointed to any request by Amtrak for the addition of stairways nor any agreement by Amtrak to pay for the maintenance of pedestrian stairways at this location. Thus, the Commission may not rely on the bare proposal of PennDOT that is unsupported by facts in the record.⁵

Even if Amtrak did own the original bridge, that fact is not dispositive of the maintenance issues. In his January 2, 1991 Order enforcing the permanent injunction issued against the Commission, Judge Newcomer responded to arguments by the Commission in that case that Amtrak was the successor in interest and was obligated to maintain that bridge. The Judge ruled that such arguments were not relevant to a determination regarding Amtrak's federal exemption. Judge Newcomer ruled that "while Amtrak may be the successor in interest to the Pennsylvania Railroad, and Pennsylvania Railroad may

have maintained that bridge before Amtrak bought the tracks beneath it, unlike Conrail in Consolidated Rail [423 A.2d 1108 (1980)], Amtrak is exempted by a federal statute from paying such fees." Id. at 2.

Accordingly, by operation of 49 U.S.C. §29301(1), as interpreted by federal case law binding on the Commission, Amtrak is exempt from the imposition by the Commission of costs to maintain highway or pedestrian bridges over its right-of-way.

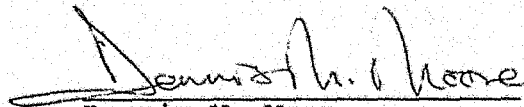
Finally, the common law of Pennsylvania provides ample support for assessing the costs of maintaining pedestrian structures on bridges to the local authorities. "The rule at common law that a bridge is a part of the highway traversing it was long ago declared to be the law of this State." (Citations omitted) Heinlein v. Allegheny County, 98 A.2d 36, 38, 374 Pa. 496 (Pa. 1953). "[A]uthorities are abundant to show that in the absence of any special obligation by prescription or legislative enactment, the duty of repairing bridges falls on the public, either the county, city, or borough where the bridge is erected, provided it be a bridge dedicated to and used by the public." Meadville v. The Erie Canal Co., 17 Pa. 66, 68 (1851).

It is undisputed that the bridge at issue here is an extension of a local roadway known as Spring Mill Road. The record in this case demonstrates that closure of the earlier crossing was ordered, in part, due to health and safety concerns of the local pedestrian traffic at this location. See Opinion and Order adopted December 17, 1982, entered February 7, 1983. Therefore, the Commission's prior finding regarding the need to improve the crossing for pedestrian traffic supports the conclusion that the railroad should not bear the costs of maintaining pedestrian bridge structures.

Conclusion

Amtrak may not be assigned the costs of maintaining any pedestrian bridge structures at this location. Such an order to Amtrak would violate federal law and would be unsupported by the facts in the record in this case. Accordingly, the Commission should not adopt paragraph 5 of the order proposed by PennDOT.

Respectfully submitted,



Dennis M. Moore
Amtrak Law Department
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202-906-2750

Dated: March 7, 1995

1. The only briefs in this case that Amtrak has received prior to today's filing deadline for reply briefs are PennDOT's and PECO's.
2. See PennDOT's brief at 33, ¶ 5.
3. Effective July 5, 1994, the former section 45 U.S.C. § 546b was recodified, as part of a comprehensive recodification of United States Code provisions relating to Amtrak, at the current section 49 U.S.C. §29301(1). See 108 Stat. 905, Pub. L. 103-272, 103d Congress (July 5, 1994).
4. See also Southeastern Pa. Transp. Auth. v. Pennsylvania Public Utility Commission, 826 F. Supp. 1506 (E.D.Pa. 1993), affirmed, 27 F.3d 558 (3d Cir.) cert. denied, 115 S.Ct. 318 (1994).
5. PennDOT has not and cannot point to any facts in the record in this proceeding that support its recommendation. See PennDOT's brief at 5, 21.

CERTIFICATE OF SERVICE

I certify that on this 7th day of March, 1995, in Washington, D.C. I caused a true copy of Amtrak's ^{Reply}~~Notice of~~ ^{Brief}~~Filing~~ to be served by first class mail, postage prepaid, to the following:

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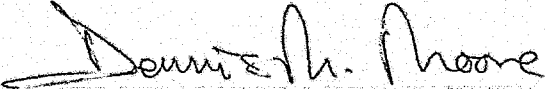
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May 15, 1995

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Re: Villanova University V. National Railroad Passenger
Corporation (AMTRAK), et al.
Docket No. C-80011839

Dear Judge Smolen:

Thank you for pointing out the discrepancy in the Department's late-filed Exhibit No. 17. The Section is correctly designated as 12S R/W. Therefore, the Department respectfully request that on page 8, line 4, Section 123 R/W be corrected to read Section 12S R/W.

The parties indicated on the attached Service List have been served with a copy of this letter.

DOCKETED
MAY 18 1995

Very truly yours,
Gina M. D'Alfonso
Gina M. D'Alfonso
Assistant Counsel in Charge

2200/GMD:sls

cc: John G. Alford, Secretary
Parties of Record (Page 2)
William D. Pickering, P.E.
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**DOCUMENT
FOLDER**

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