

1. <u>REPORT DATE:</u>	March 25, 1992	:	2. <u>BUREAU AGENDA NO.</u>	
3. <u>BUREAU:</u>	Safety and Compliance	:		APR-92-SC-RS-148*
4. <u>SECTION</u>	Rail Safety	:	5. <u>PUBLIC MEETING DATE:</u>	
6. <u>APPROVED BY:</u>		:		April 23, 1992
	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		:		

DOCKETED

JUN 25 1992

MMD

(a) Villanova University
v.
National Railroad Passenger Corporation (Amtrak), et al.

(b) Complaint filed January 31, 1980. Several hearings 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 agrees to construct the improvement at its initial cost and expense. Final right-of-way plans submitted March 5, 1992. On June 14, 1991, the existing bridge was struck and extensively damaged by a passing vehicle, necessitating closure of the crossing. PennDOT recommends that the crossing remain closed until the bridge is replaced.

(c) The Bureau of Safety and Compliance recommends that the Commission adopt an order which directs that construction be performed, approves the right-of-way plan, appropriates railroad property, and directs that a hearing be held upon completion of construction to allocate final construction costs and maintenance responsibilities and any other matters relevant to this proceeding.

After the order is adopted, the right-of-way plan, which has been certified as the correct plan, should have the Commission's seal affixed thereto and said plan should be placed in the document folder with a copy of the order.

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

CONTENT OF MOTION: Staff recommendation adopted.

DOCUMENT
FOLDER



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

April 29, 1992

IN REPLY PLEASE
REFER TO OUR FILE

C-80011839

JAMES W PATTERSON ESQUIRE
1200 WEST SAVINGS BANK BLDG
BROAD & CHESTNUT STREETS
PHILADELPHIA PA 19107

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.

To Whom It May Concern:

This is to advise you that an Order has been adopted by
the Commission in Public Meeting on April 23, 1992 in the above
entitled proceeding.

A copy of this Order has been enclosed for your records.

Very truly yours,

John G. Alford, Secretary

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PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held . April 23, 1992

Commissioners Present:

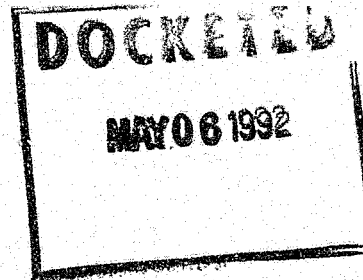
David W. Rolka, Chairman
Joseph Rhodes, Jr., Vice-Chairman
Wendell F. Holland, Commissioner

Villanova University

C-80011839

v.

National Railroad Passenger Corporation
(Amtrak), Consolidated Rail Corporation
(Conrail), Southeastern Pennsylvania Trans-
portation Authority (SEPTA), Pennsylvania
Department of Transportation (PennDOT),
County of Delaware and Radnor Township.



O R D E R

BY THE COMMISSION:

On January 31, 1980, Villanova University filed the instant complaint alleging inadequate and dangerous facilities for pedestrian movement across the lines of track in the vicinity of the crossing (AAR 531 297 Y) where Spring Mill Road (S.R. 0320) crosses over and above four tracks of National Railroad Passenger Corporation (Amtrak), adjacent to Villanova University, in Radnor Township, Delaware County.

Southeastern Pennsylvania Transportation Authority (SEPTA) leases trackage rights and operates the Villanova Passenger Station and parking facilities adjacent to the crossing.

Following several public hearings, the Commission adopted an order on December 17, 1982 which, among other things, directed Pennsylvania Department of Transportation (PennDOT) to annually inform the Commission of progress made toward replacement of the bridge at the subject crossing.

On August 20, 1990, PennDOT submitted preliminary plans for bridge replacement and approach roadway reconstruction and requested that a meeting be held to discuss these plans. Accordingly, a field investigation and conference was arranged by a Commission staff engineer and held on September 25, 1990 at the site of the crossing. Representatives of the following entities were in attendance:

Villanova University
Pennsylvania Department of Transportation

National Railroad Passenger Corporation
Southeastern Pennsylvania Transportation Authority
Philadelphia Electric Company
Radnor Township

Consolidated Rail Corporation, Delaware County, Bell Telephone Company, Philadelphia Suburban Water Company and AT&T Communications were notified of the time and place of the conference but did not attend.

The existing bridge at the subject crossing is a two-lane, single span, steel pony truss with a span length of 70 feet. Clear roadway width is 18.5 feet. The structure was closed to all vehicular traffic on June 14, 1991 after being struck and extensively damaged by a passing vehicle. The closing was affirmed by Emergency Order issued June 19, 1991 under the instant proceeding. The bridge was posted for 5 tons prior to the accident.

According to the preliminary plans, the new bridge will be constructed at essentially the same location as the existing. The proposed structure is a three-span, prestressed concrete, adjacent box beam superstructure, with reinforced concrete deck slab, supported by reinforced concrete abutments and piers. Span lengths are 72 feet, 60 feet and 54 feet. All four tracks pass beneath the 72 foot span.

The proposed bridge cross-section will measure 34 feet between concrete safety parapets to accommodate two traffic lanes and an 8 foot shoulder along the west side. There will be a 5 foot sidewalk along the east side of the bridge resulting in an overall deck width of 43.5 feet out to out of parapets. The exterior parapets will have solid aluminum protective barriers over the railroad tracks and protective fence along the remaining length of the structure. Stairways will lead from the new sidewalk to the passenger platforms below on each side of the tracks.

The proposed vertical alignment on the bridge is a 320 foot crest vertical curve with an ascending grade of 5.10% on the south, descending at a 5.41% grade on the north. Proprietary retaining walls will be placed at the corners of the bridge to retain the approach fill. Proposed minimum horizontal and vertical clearances at the tracks exceed the Commission's minimum requirements.

The railroad's electric traction catenaries are currently attached to the existing bridge. These catenaries will be independently supported upon completion of the new structure.

At the field conference, PennDOT stated that the project is authorized under the "Billion Dollar Bridge Program" and that federal funds will be used to cover a portion of the costs. Estimated construction cost is \$4,000,000. PennDOT agrees to construct the improvement, with the exception of non-carrier utility relocation, at its initial cost and expense. PennDOT also agrees to assume the costs of alteration as required and performed by the railroad to its own facilities and the costs of railroad watchmen and flagmen.

Philadelphia Electric Company agrees to relocate its gas and electric facilities located in public right-of-way, within the Commission's jurisdictional limits, at its initial cost and expense, pending final allocation of those costs after formal hearing. Bell Telephone Company and Philadelphia Suburban Water Company did not attend the field conference. By letter dated September 6, 1990, AT&T notified the Commission that it has no facilities in the area of the crossing.

PennDOT will continue to maintain the detour established when the crossing was closed, until the new crossing is opened to traffic. In addition, PennDOT will acquire all property required to permit construction, except railroad property. It requests that the Commission appropriate the necessary railroad property. PennDOT will initially bear all property damage costs.

Amtrak and SEPTA agree to maintain all railroad owned and operated facilities in the future, including maintenance of the pedestrian tunnel adjacent to the crossing as assigned to Amtrak by the prior Commission order adopted December 17, 1982. PennDOT agrees to initially assume maintenance responsibility for the approach roadways and the entire substructure and superstructure of the new bridge, including the sidewalk and the stairways to the passenger platforms, pending allocation of that responsibility after formal hearing.

The Commission has tentatively established jurisdiction over the entire project between Limit of Authorization Stations 778+90 and 790+50.

The applicant has certified that a copy of the preliminary plans has been submitted to each party in interest. None of the parties has advised this Commission in writing, or the staff engineer at the field conference, that it objects to the issuance of an order, prior to hearing, approving the alteration of the crossing.

Upon full consideration of the matters involved, we determine that it is not necessary to schedule a hearing in this proceeding at this time and that issuance of an order without hearing is proper, since PennDOT has agreed to construct the improvement at its initial cost and expense and none of the other parties has expressed any objection to the proposed project.

We also determine that alteration or relocation of non-carrier public utility company facilities should be made by the respective companies at their initial cost and expense, and that a hearing be scheduled following completion of construction to consider the allocation of costs and expenses incident thereto.

The record having been certified to this Commission, we issue this order pursuant to Section 335(a) of the Public Utility Code, 66 Pa. C.S. §335, and find that the alteration of the crossing is necessary and proper for the service, accommodation, convenience and safety of the public; THEREFORE,

IT IS ORDERED:

1. That the rail-highway crossing (AAR 531 297 Y) where Spring Mill Road (S.R. 0320) crosses above the tracks of National Railroad Passenger Corporation in Radnor Township, Delaware County be reconstructed generally in accordance with the right-of-way plan submitted by Pennsylvania Department of Transportation on March 5, 1992, said plan entitled "Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W in Delaware County", composed of 12 sheets, which plan is made part hereof and is hereby approved except insofar as it may relate to the division of work, deletion of work, or the allocation of costs and expenses incident to construction of the proposed crossing improvement project.

2. That Pennsylvania Department of Transportation, at its initial cost and expense, and prior to the start of construction, prepare and submit to this Commission for approval and to all parties of record for examination, complete detailed construction plans for the work proposed to be performed within the limits of this Commission's jurisdiction.

3. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated for the purpose of the improvement in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 3 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

ALL THOSE CERTAIN TRACTS OF LAND situated in the Township of Radnor, Delaware County, bounded and described as follows, to wit:

TRACT NO. 1
(Required Right-of-Way)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southerly AMTRAK right-of-way line and the northerly legal right-of-way line for State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+56; thence in a northeasterly direction along the right-of-way line of AMTRAK to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northeasterly direction along the required right-of-way line of State Route 0320 to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.2; thence in a southeasterly direction along the aerial easement line to a point distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a southwesterly direction along the legal right-of-way line of State Route 0320 to a point and place of beginning and containing four hundred ten (410) square feet more or less.

TRACT NO. 2
(Required Right-of-Way)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the required right-of-way line for State Route 0320 and the southerly temporary construction easement line for Amtrak distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence northwesterly along the projected temporary construction easement line to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+73; thence northeasterly along the legal right-of-way of State Route 0320 to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320

at or about Station 783+96; thence southeasterly along required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence southwesterly along the required right-of-way line to a point distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing southwesterly along the required right-of-way line to a point and place of beginning and containing two hundred and thirty-two (232) square feet more or less.

TRACT NO. 3
(Aerial Easement)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly legal right-of-way line for State Route 0320 and the southerly required aerial easement line of State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a northwesterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence in a northeasterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+62; thence in a southeasterly direction along the AMTRAK northern right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing two thousand two hundred twenty-one (2221) square feet more or less.

TRACT NO. 4
(Aerial Easement)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly legal right-of-way line of State Route 0320 and the required aerial easement line of State Route 0320 distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+96; thence in a northeasterly direction along the legal right-of-way line of State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction along the temporary construction easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+52.3; thence in a southwesterly direction along the required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence in a northwesterly direction along the required

aerial easement line to a point and place of beginning and containing two thousand one hundred and ninety-eight (2198) square feet more or less.

TRACT NO. 5

(Retainment of Aerial Easement, Conveyance of Surface
Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southern legal right-of-way line of State Route 0320 and the southern aerial easement line of State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+57; thence in a northwesterly direction along the aerial easement line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northeasterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+25; thence in a southeasterly direction along the temporary construction easement line to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+34.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing one thousand two hundred and thirteen (1213) square feet more or less.

TRACT NO. 6

(Retainment of Aerial Easement, Conveyance of Surface
Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southern aerial easement line of State Route 0320 and the northern legal right-of-way line of State Route 0320 distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+41.5; thence in a northeasterly direction along the legal right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the AMTRAK right-of-way line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+80; thence in a southwesterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northwesterly direction along the aerial easement line to a point and place of beginning and containing five hundred three (503) square feet more or less.

The above six (6) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of

deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

4. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated temporarily, for use during the construction period only, in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 4 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania, said temporary appropriation shall terminate upon completion of the construction of the improvement and its opening to public use.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

TEMPORARY CONSTRUCTION EASEMENT NO. 1

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly required legal right-of-way line of S.R. 0320 and the line for the Temporary Construction Easement distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+03.9; thence continuing in a northeasterly direction along the required aerial easement line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+12.5; thence in a southeasterly direction along the front of the AMTRAK/SEPTA platform for the eastbound trains to a point distant four hundred and ninety-seven (497) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southwesterly direction to a point distant five hundred and ten (510) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+20; thence in a northwesterly direction along the AMTRAK property line (projected as necessary) to a point and place of beginning and containing fifteen thousand and seventy-three (15,073) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 2

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the temporary construction easement line and AMTRAK property line distant one hundred and thirty (130) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 786+70.5; thence in a southwesterly direction to a point distant one hundred and thirty (130) feet southeasterly and measured at right angles from State Route 0320 at or about Station 785+88; thence in a

northwesterly direction to a point of intersection with the existing right-of-way line for State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+34.5; thence in a northeasterly direction along the existing right-of-way line for State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction to a point distant ninety-seven (97) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+80; thence in a northeasterly direction along the temporary construction easement line to a point and place of beginning containing two thousand one hundred and ninety-four (2194) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 4

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly required right-of-way line for State Route 0320 and the AMTRAK right-of-way line distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northwesterly direction along the right-of-way line of AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+36.4; thence in a northeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+61; thence in a southeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence continuing in a southeasterly direction along the Required Aerial Easement line to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.3; thence in a southwesterly direction along the required right-of-way line for State Route 0320 to a point and place of beginning and containing four hundred and fifty (450) square feet more or less.

The above three (3) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

5. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to demolish the existing bridge and construct the new bridge and roadway approaches generally in accordance with the approved detailed construction plans and this order.

6. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to maintain the detours and traffic controls, previously established, to properly accommodate highway traffic during the time the crossing improvement is being constructed.

7. That National Railroad Passenger Corporation, at the sole cost and expense of Pennsylvania Department of Transportation, furnish all material and perform all work required to alter or relocate its facilities which may be required as incidental to the construction of the crossing, including alteration of the electric traction catenaries; furnish construction engineering and inspection services required as a result of the construction of the crossing; and furnish and maintain flagmen and watchmen, when necessary, to protect railroad operations during the time the crossing is being constructed above and adjacent to its tracks.

8. That any relocation of, changes in or removal of any adjacent structures, equipment or other facilities of any non-carrier public utility company located within the limits of public right-of-way, within the limits of this Commission's jurisdiction, which may be required as incidental to the execution of the crossing project, be made by said public utility company at its initial cost and expense, and in such manner as will not interfere with the construction of the crossing.

9. That any relocation of, changes in or removal of any adjacent structures, equipment or other facilities of any non-carrier public utility company located beyond the limits of public right-of-way, within the limits of this Commission's jurisdiction, which may be required as incidental to the execution of the crossing project, be made by said public utility company in such manner as will not interfere with the construction of the crossing.

10. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to effect the vacation, relocation, removal or demolition of any non-utility structures, including occupied dwellings, located upon property required for the construction of the crossing in accordance with this order.

11. That Pennsylvania Department of Transportation, at its initial cost and expense, furnish all material and perform all work necessary to complete the remainder of the crossing improvement project, including construction of access roads necessary to maintain access to the railroad station parking areas, extension of passenger platforms to compensate for area lost to bridge construction and any other ancillary features of the project, generally in accordance with the approved plans and this order.

12. That Pennsylvania Department of Transportation, at least ten (10) days prior to the start of work, notify all parties in interest of the actual date on which work will begin.

13. That all non-carrier public utility companies affected hereby cooperate with Pennsylvania Department of Transportation and with each other so that the requirements of each of the named parties will be provided for and accommodated insofar as possible.

14. That National Railroad Passenger Corporation and Southeastern Pennsylvania Transportation Authority each cooperate with the Pennsylvania Department of Transportation and conduct their operations in the vicinity of the crossing in a safe manner and under control during the time the project is being constructed.

15. That Pennsylvania Department of Transportation cooperate with the railroad companies so that during construction of the improvement, the operations and facilities of the railroad companies will not be endangered or unnecessarily impeded.

16. That Pennsylvania Department of Transportation cooperate with Villanova University so that during construction of the project, pedestrian traffic will not be endangered or unnecessarily inconvenienced.

17. That construction of the crossing be completed in a manner satisfactory to this Commission on or before December 31, 1994, and that on or before said date, Pennsylvania Department of Transportation report to this Commission the date of actual completion of the work; and at the earliest practicable time subsequent to said date of completion, each party that performed work at its initial cost and expense submit to this Commission a detailed statement of the actual costs incurred by it in furnishing material and performing work in compliance with this order.

18. That Pennsylvania Department of Transportation, at its initial cost and expense, pay all compensation for damages due to the owners of property taken, injured or destroyed by reason of the construction of the crossing in accordance with this order.

19. That upon completion of construction of the proposed project, each non-carrier public utility company furnish all material and perform all work necessary thereafter to maintain its respective facilities, existing or altered, located within the limits of the improvement.

20. That upon completion of construction of the proposed project, National Railroad Passenger Corporation furnish all material and perform all work necessary thereafter to maintain its tracks, catenaries, station, platforms and other railroad facilities, existing or altered, located within the limits of the improvement, and to maintain the pedestrian tunnel in a safe and satisfactory condition.

21. That upon completion of the construction of the crossing improvement project, Pennsylvania Department of Transportation, at its

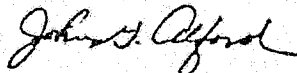
initial cost and expense, furnish all material and perform all work required thereafter to maintain the remainder of the improvement, including the entire substructure and superstructure of the bridge, the highway approaches thereto, and the proprietary retaining walls constructed at each corner of the bridge, the stairways leading from the bridge deck to the railroad passenger platforms below, and any other ancillary features of the improvement constructed in accordance with the provisions of this order.

22. That upon completion of the work herein ordered, this proceeding be scheduled for hearing at a time and place to be designated by this Commission, for the purpose of taking testimony upon the final allocation of costs and expenses incident to the construction of the improvement, the final allocation of responsibility for future maintenance, the final allocation of costs incurred by the non-carrier public utility companies and any other matters relevant to this proceeding.

23. That this order, insofar as it imposes certain costs initially upon the parties herein, is without prejudice to their right to recover part or all of such costs in accordance with any lawful agreement between parties.

24. That in all respects not inconsistent herewith, the previous order of this Commission adopted December 17, 1982 shall remain in full force and effect.

BY THE COMMISSION,



John G. Alford
Secretary

(SEAL)

ORDER ADOPTED: April 23, 1992

ORDER ENTERED: APR 29 1992

FEDERAL PROJECT NUMBER W 36-G300-001											
DISTRICT	COUNTY	TOWNSHIP	BOROUGHS	ROUTE	SECTION	TOTAL SHEETS					
F.E.U. 6-0	DELAWARE	RADNOR		0320	12S RW	12					
STATE PROJECT NUMBER		SECTION		DIST. TO							
SYS	LR OF NO.	SPR PLAN	SECTION	DIST.	TO						
C	013	2	0	0	0	1	2	5	0	6	13

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

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DRAWINGS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY



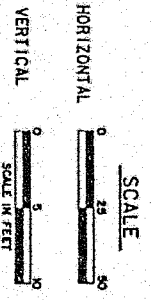
STATE ROUTE 0320 SECTION 12S RW
IN DELAWARE COUNTY

FROM STA. 778+90.00 TO STA. 791+50.00 LENGTH 1260.00 FT. 0.2239 MI.
FROM SEG. 0320 OFFSET 0610.5 TO SEG. 0320 OFFSET 1870.5

**DOCUMENT
FOLDER**

DOCKETED
MAY 06 1992

**BUREAU OF
S & C**
MAR 7 6 1992
**RAIL SAFETY
DIVISION**



THIS PLAN PREPARED PURSUANT TO SECTION 2003 (a) OF THE ADMINISTRATIVE CODE (ACT OF APRIL 9, 1929, P.L. 177, AS AMENDED BY ACT 1979-100), AND SECTION 402 (b) (3) OF THE EMINENT DOMAIN CODE OF 1964 AS AMENDED.

THE PUBLIC UTILITY COMMISSION, WILL APPROPRIATE PROPERTY IN APPLICATION DOCKET NO. 90008 BETWEEN STATION 781+52 AND STATION 786+69 PURSUANT TO THE PROVISIONS OF SECTION 2702 (b) OF THE ACT OF JULY 1, 1978, PL. NO. 116 (66 PS. 2702).

CERTIFIED CORRECT PLANS

Approved by *D. T. Williams, P.E.*
Engineer
Penn. Public Utility Commission

Attest: *Shirley A. Nixey*
Secretary

APR 16 1992

DESIGN DESIGNATION

TRAFFIC DATA
HIGHWAY CLASSIFICATION - MINOR ARTERIAL
DESIGN SPEED - 30 M.P.H.
PAYEMENT WIDTH - 12' & 14' LANES
SHOULDER WIDTH EFFECTIVE - 8' LT.
MEDIAN WIDTH, MAXIMUM - NONE
MINIMUM - NONE

TRAFFIC YEAR A.D.T. - 12,900 (1991)
DESIGN YEAR A.D.T. - 13,300 (2011)
D.H.V. - 1203
D - 86%
T - 3%

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

D. T. Williams
APR 16 1992

RECOMMENDED AUGUST 20 1991
William R. Zite
DISTRICT ENGINEER

RECOMMENDED Aug 23 1991
Michelle Spangola
DEPUTY SECRETARY

APPROVED Aug 23 1991
Harold Greenstein
SECRETARY OF TRANSPORTATION

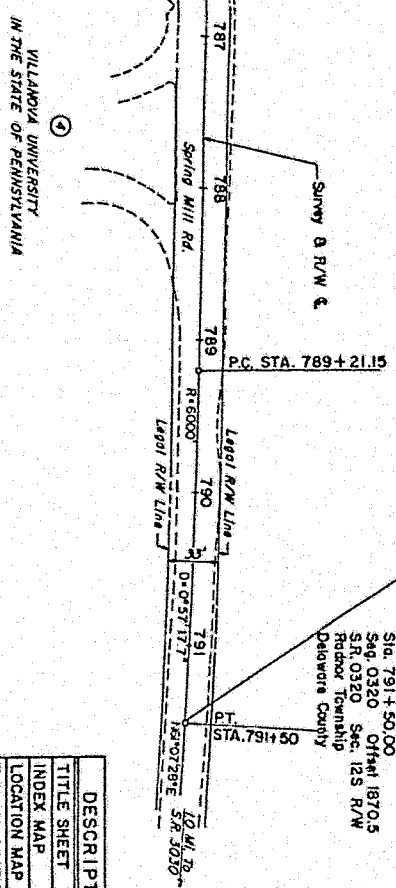
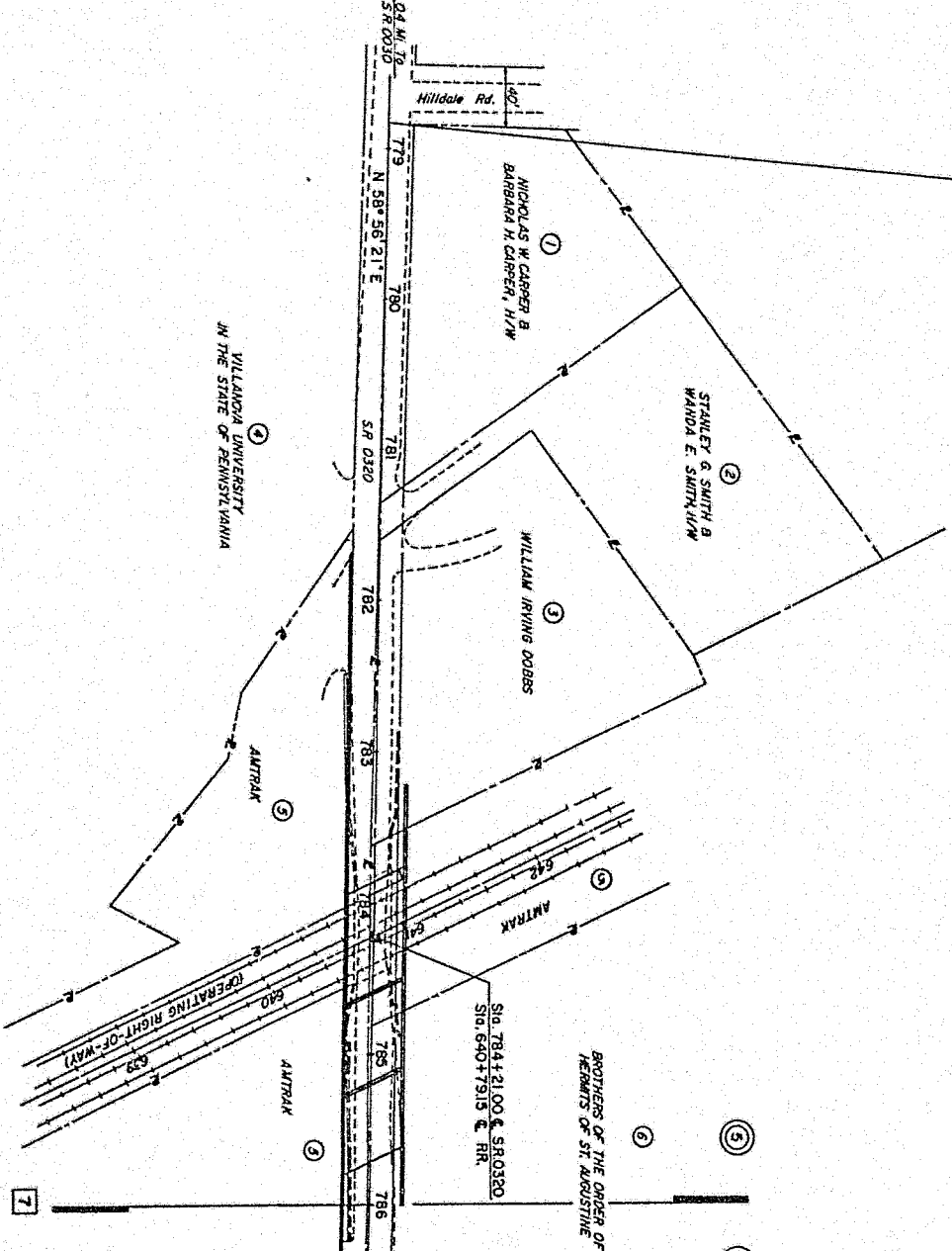
ON BEHALF OF THE GOVERNOR AS WELL AS HISSELF

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS ETC. IN DELAWARE COUNTY PA.
11/19/92
IN V.L. BOOK 17 PAGE 243

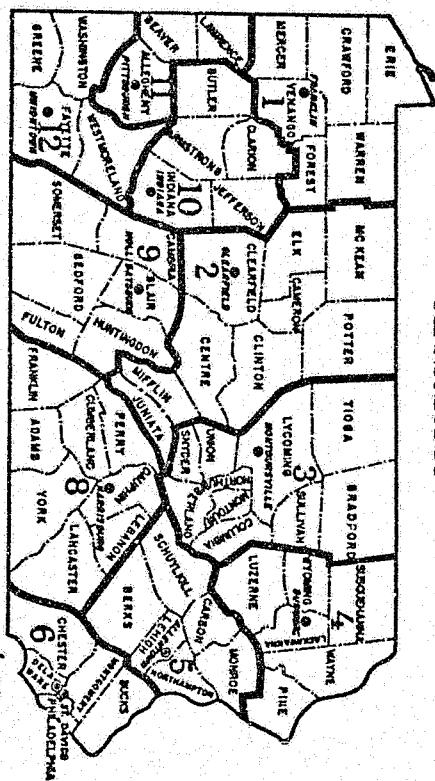
WITNESS MY HAND AND SEAL OF OFFICE

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DAUPHIN
BEFORE ME, A NOTARY PUBLIC, PERSONALLY CAME Harold Greenstein, SECRETARY OF TRANSPORTATION, WHO ACKNOWLEDGED THE WITHIN PLAN COMPRISING 12 SEPARATE SHEETS, TO BE AN OFFICIAL PLAN OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION AND DESIRED THAT THE SAME BE RECORDED AS SUCH.
WITNESS MY HAND AND NOTARIAL SEAL 8-25-91

Limit of Authorization
 Sta. 778 + 90.00
 S49. 0320 Other 810.5
 S.R. 0320 Sec. 12S R/W
 Radnor Township
 Delaware County



Limit of Authorization
 Sta. 791 + 50.00
 S49 0320 Other 1870.5
 S.R. 0320 Sec. 12S R/W
 Radnor Township
 Delaware County



PENNSYLVANIA

DISTRICT	COUNTY	TOWNSHIP	SECTION	SHEET
G-0	DELAWARE	0320	12S/R/W	2 OF 12
RADNOR TOWNSHIP				
SECTION	ROW	DATE	BY	

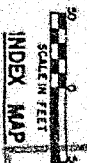
CERTIFIED CORRECT PLANS

Approved by
D.T. Williams, P.E.
 PENNA. PUBLIC UTILITY COMMISSION
 2001 MARKET STREET, PHILADELPHIA, PA 19103

ATTEST:
[Signature]
 Secretary
APR 16 1992

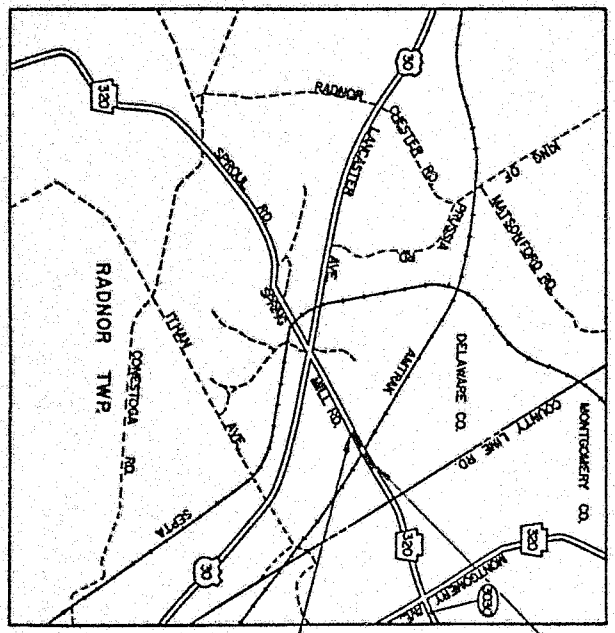
DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP	2
LOCATION MAP	3
TYPICAL SECTIONS	4
DETAILED PLAN SHEETS	5-6
PROFILES	7
PROPERTY PLATS	8-12

LEGEND
 (3) PLAN
 (2) PARCEL IDENTIFICATION
 (8) PROFILE

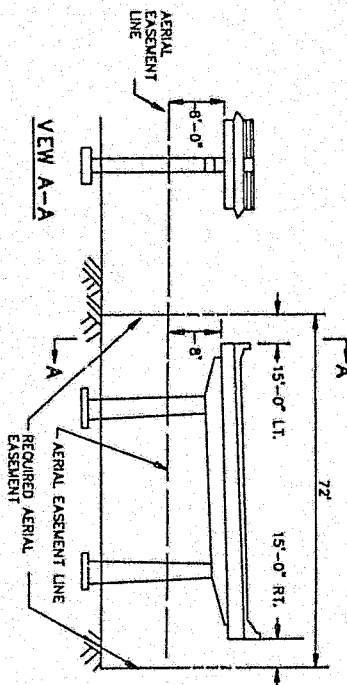


PUBLIC UTILITIES

AT&T COMMUNICATIONS, INC. ENGINEERING INQUIRIES 2315 SALEM ROAD CONYERS, GA. 30208	TOWNSHIP OF RADNOR 301 LEN AVENUE WAYNE, PA. 19087 ATTN: ROBERT CROFFORD TOWNSHIP ENGINEER (215) 688-5600
BELL TELEPHONE COMPANY OF PA 400 CHERRY ST. 3RD FLOOR NORRISTOWN, PA. 19408 ATTN: MS. MARGARET NOLAN (215) 278-0271	PHILADELPHIA SUBURBAN WATER CO. 782 LANCASTER AVENUE BRYN MAWR, PA. 19010 ATTN: MR. THOMAS M. KIELY (215) 525-1400
SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY 200 W. WYOMING AVENUE PHILADELPHIA, PA. 19140 ATTN: M.E. TRZEPACZ CHIEF ENGINEER FACILITIES ENGINEERING & CONSTRUCTION DEPT. (215) 580-4137	CONSOLIDATED RAIL CORPORATION 15 NORTH 32ND STREET ROOM 1200 PHILADELPHIA, PA. 19104-2849 ATTN: MR. J.D. COSELL CHIEF ENGINEER, DESIGN AND CONSTRUCTION (215) 598-3846
PHILADELPHIA ELECTRIC CO. 2301 MARKET STREET PHILADELPHIA, PA. 19101 ATTN: WILLIAM J. HENSIL NEGOTIATOR (215) 841-5393	AMTRAK 307 ST. STATION S. TOWER 3RD FLOOR PHILADELPHIA, PA. 19104 ATTN: K.P. FELSBERG, JR. SENIOR DIRECTOR ENGINEERING & CONSTRUCTION (215) 557-1511
ADELPHIA CABLE COMMUNICATIONS ONE APOLLO ROAD, BOX 198 PLYMOUTH MEETING, PA. 19462 ATTN: MICHAEL KANE (215) 828-4898	



GENERAL NOTES (CONTINUED)



USE OF AIRSPACE BENEATH THE ESTABLISHED GRADELINE OF THE HIGHWAY SHALL PROVIDE SUFFICIENT VERTICAL AND HORIZONTAL CLEARANCES FOR THE CONSTRUCTION, OPERATION, MAINTENANCE, VENTILATION, AND SAFETY OF THE HIGHWAY FACILITY. THE ESTATE ACQUIRED ABOVE THE AERIAL EASEMENT LINE MAY BE ENTERED ON BY MOVING VEHICLES SUCH AS TRUCKS OR RAILROAD ROLLING STOCK.

CERTIFIED CORRECT PLANS

Approved by
D.T. Williams, P.E.
Engineer
Howard S. Nixey
Director of Survey & Construction
DELAWARE COUNTY PUBLIC UTILITY COMMISSION

ATTEST:
John D. [Signature]
Secretary

APR 16 1982

Limit of Authorization
Sta. 791+50.00 to 791+50.00
S.R. 0320 Offset 187b.5
Radnor Township
Delaware County

Limit of Authorization
Sta. 778+90.00 to 778+90.00
S.R. 0320 Offset 0610.5
S.R. 0320 Sec. 125 R/W
Radnor Township
Delaware County

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
R/W C	790+35.59	P.I.	5031.96	5025.01	N 58°56'21" E
	791+50.00	END STA	5087.22	5125.22	N 61°07'28" E

TABULATION OF OVERALL AND AUTHORIZATION LENGTH

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

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON S.R. 320, FORMERLY L.R. 225 IS THIRTY-THREE (33) FEET BASED ON THE ACT OF MAY 1, 1933, P.L. 103, SECTION 1105, AS AMENDED. PRIOR TO THE ADOPTION OF L.R. 225 AS A STATE HIGHWAY IN 1942, IT HAD BEEN ORDERED AND MAINTAINED FOR TWENTY-ONE (21) YEARS OR MORE BY RADNOR TOWNSHIP, A SECOND CLASS TOWNSHIP. THERE IS NO PUBLIC RECORD OF ANY OTHER WIDTH.

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

INDICATES SCALED DIMENSIONS

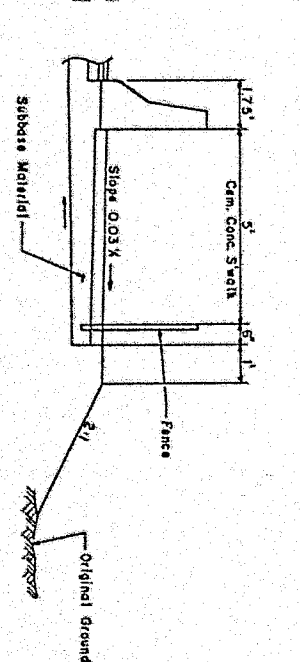
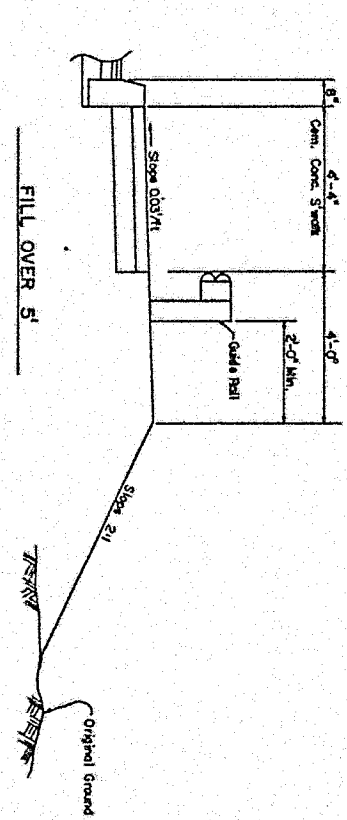
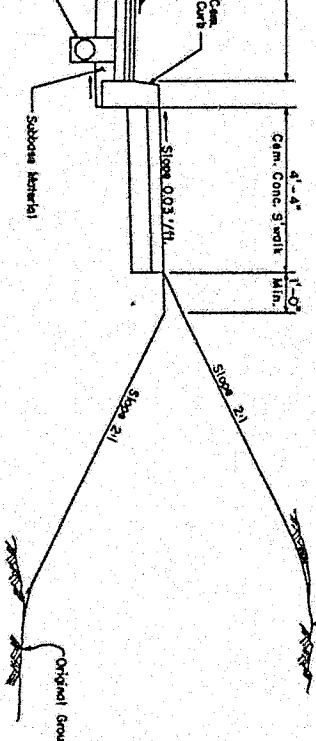
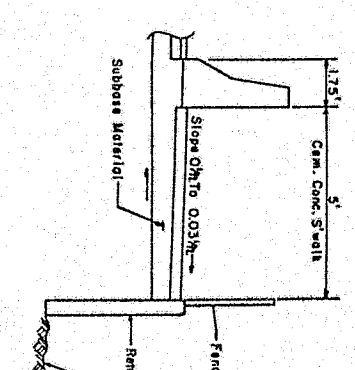
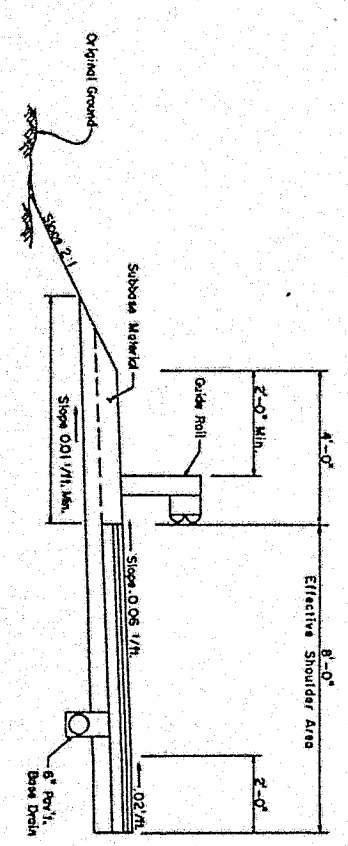
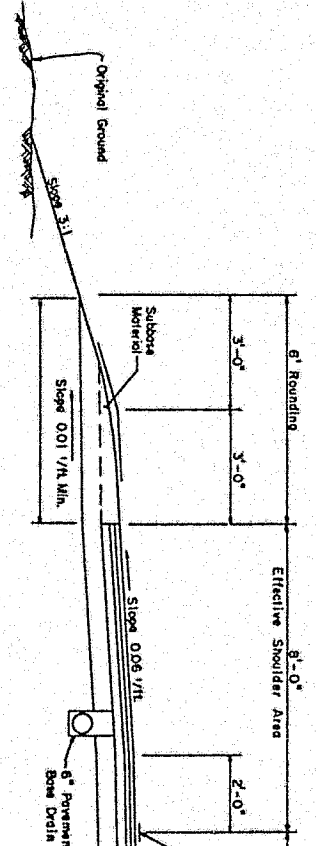
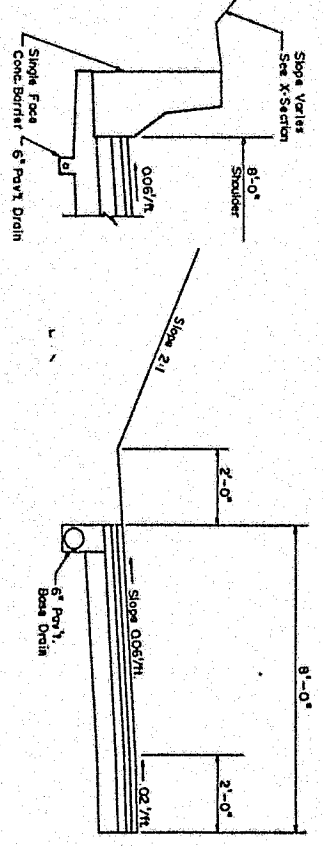
VERTICAL DATUM IS BASED ON AN ASSUMED BENCH MARK.
HORIZONTAL CONTROL IS BASED ON AN ASSUMED COORDINATE SYSTEM AND MAGNETIC NORTH.

LIMITS OF SLOPE ARE INDICATED AS FOLLOWS:

CUT | FILL

SECTION	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	125 R/W	3 OF 12
RADNOR TOWNSHIP				
REVISION	DATE	BY		

- NO USE SHALL BE MADE OF THE PROPERTY WHICH SHALL ENDANGER THE STRUCTURE OR THE HEALTH, SAFETY OR WELFARE OF THE TRAVELING PUBLIC.
- NO FLAMMABLE, EXPLOSIVE, DANGEROUS OR HAZARDOUS MATERIALS SHALL BE USED, PLACED OR STORED ON THE PROPERTY.
- NO BUILDING OR OTHER FACILITY SHALL BE CONSTRUCTED ON THE PROPERTY WITHOUT PRIOR AUTHORITY OF THE DEPARTMENT OF TRANSPORTATION. IF AND WHEN SUCH AUTHORITY IS GRANTED, THE PLANS FOR THE BUILDING OR FACILITY AND CONSTRUCTION METHODS SHALL BE SUBJECT TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION.
- NO INTERFERENCE SHALL BE MADE WITH THE RIGHT OF THE DEPARTMENT OF TRANSPORTATION TO ENTER UPON THE PROPERTY FOR THE PURPOSES OF INSPECTION, MAINTENANCE, REPAIR, PAINTING, RECONSTRUCTION OR ALTERATION OF THE STRUCTURE OR ITS APPURTENANCES. MOVABLE ITEMS MAY HAVE TO BE REMOVED BY THE OWNER DURING SOME OR ALL OF THE ABOVE OPERATIONS.
- ANY SUBSTANTIAL CHANGE IN PROPERTY USE TO BE MADE SUBSEQUENT TO THE ACQUISITION OF THE EASEMENT SHALL BE SUBJECT TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION.
- THE NOTES ON THESE DRAWINGS SHALL NOT BE CONSTRUED AS LIMITING OR INTERFERING IN ANY WAY WITH THE PRESENT AND FUTURE OPERATION, USE, MAINTENANCE, REPAIR, RENEWAL, CHANGE, ADDITION, BETTERMENT OR ALTERATION OF THE RAILROAD AND ITS SUPPORTING FACILITIES.
- 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.
- THE FILING OF THIS PLAN IS NOT A CONDEMNATION OF THE PROPERTIES DESIGNATED THEREIN AND DOES NOT IN ANY MANNER WHATSOEVER RESTRICT THE USE OR DISPOSAL THEREOF. AUTHORIZATION TO CONDUIT UNDER THIS PLAN EXTENDS FOR ONLY ONE YEAR FROM THE DATE OF THE SECRETARY'S SIGNATURE INITIALLY AUTHORIZING ACQUISITION OR SUBSEQUENTLY REVISING THE PLAN OR REAUTHORIZING ACQUISITION THEREUNDER.



DISTRICT	6-0	COUNTY	DELAWARE	SECTION	125 R/W	SHEET	4 OF 12
PROJECT NUMBER		TOWNSHIP	RADBOR				
DATE							

FILL LESS THAN 5'

TYPICAL TANGENT SECTION

FILL OVER 5'

FILL OVER 5'

CERTIFIED CORRECT PLANS

Approved by: *D. T. Miller, P.E.*
 Secretary: *John S. [Signature]*

APR 16 1992

LEGEND

DESIGN NO. DESCRIPTION

① Bituminous Wearing Course, 1D-2, 1-1/2" Depth, SRL-H

② Bituminous Binder Course, 1D-2, 2" Depth

③ Bituminous Concrete Base Course, 4" Depth

- DESIGN NO. DESCRIPTION
- ① Bituminous Wearing Course, 1D-2, 1-1/2" Depth, SRL-H
- ② Bituminous Binder Course, 1D-2, 2" Depth
- ③ Bituminous Concrete Base Course, 4" Depth

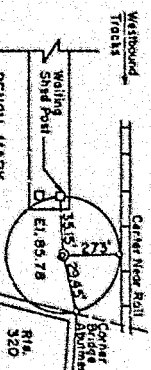
PROPOSED STRUCTURE
 Sta. 783+93
 Type - Span P/S Concrete Spread Box Beam
 Span - Span 1-72 Span 2-60 Span 3-34
 Minimum Vertical Clearance - 22'-6"
 Clear Roadway - 34'

EXISTING STRUCTURE
 Sta. 784+21
 Type - Iron Truss Bridge
 Span - Length 70'
 Minimum Vertical Clearance - 22.0'
 Clear Roadway - 18.5'

Limit of Authorization
 Sta. 778+50.00
 S&G 0320 Of/afel 610.5
 S.R. 0320 Sec. 125 R/W
 Radnor Township
 Delaware County

NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/or Protection Of The Area Within The Right-Of-Way Line. Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Deleterious To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.

BOX CUT ON CONCRETE CURB



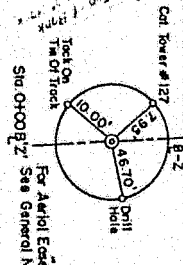
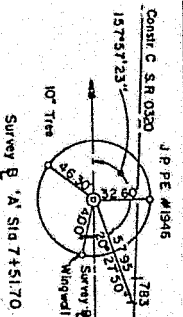
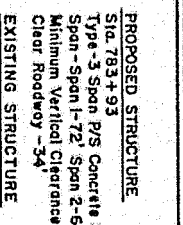
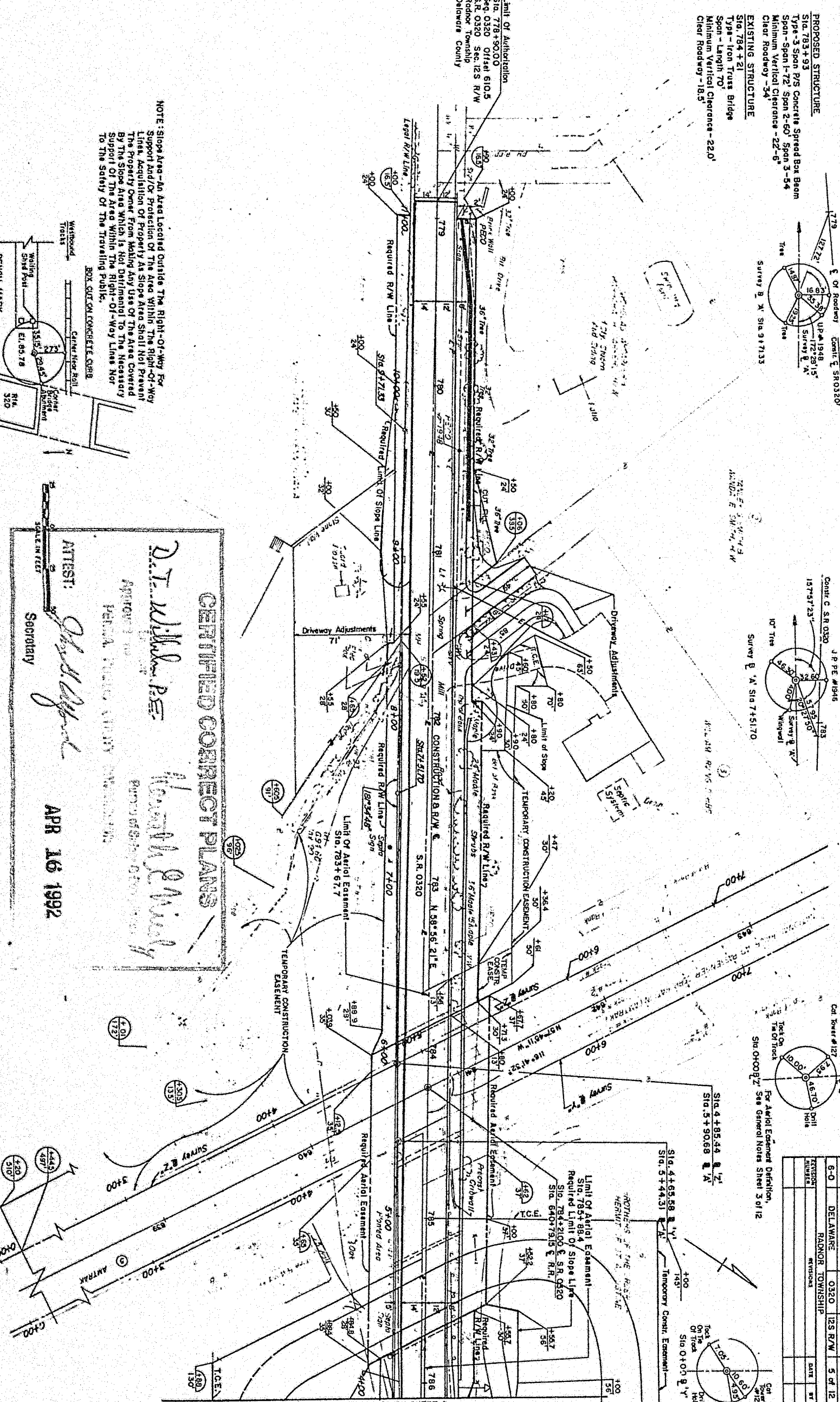
CERTIFIED CORRECT PLANS

D. J. Williams, P.E.
(Signature)
 Professional Engineer

APPROVED BY:
 PENNA. BOARD OF SURVEYING AND MAPPING
 APR 16 1992

ATTEST:
(Signature)
 Secretary

SCALE IN FEET

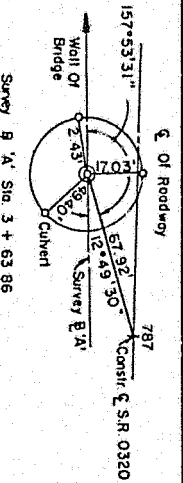


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	125 R/W	5 of 12

TITLE	DATE	BY
RADNOR TOWNSHIP REVISIONS		

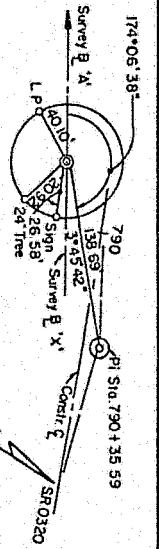
BROTHERS OF THE ORDER OF HERMIT OF ST. AUGUSTINE

6



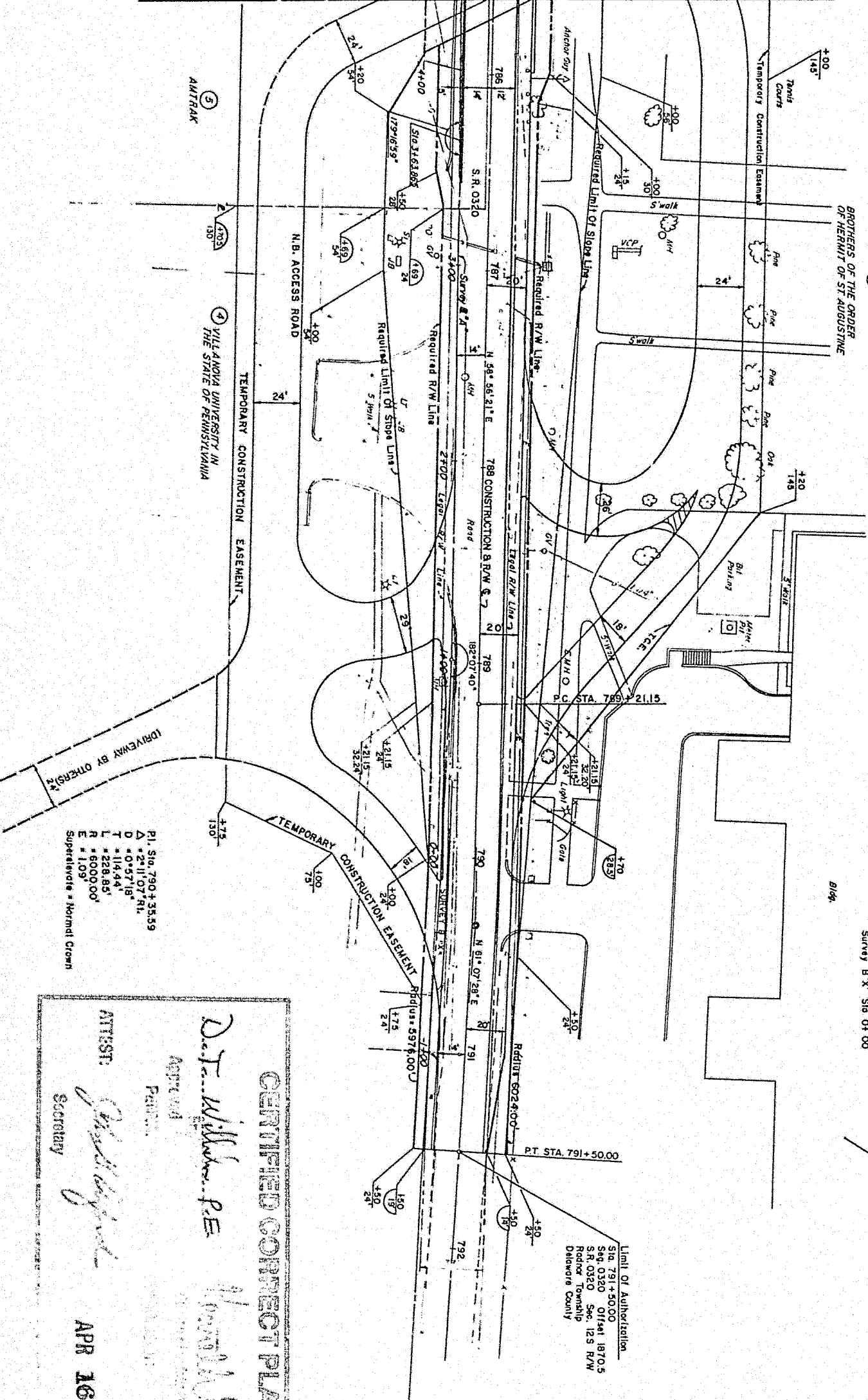
Survey B 'A' Sta. 3 + 63.86

Survey B 'A' Sta 1+100
Survey B 'X' Sta 0+00



B/D/S

Limit of Authorization
Sta. 791+5000
Seq. 0320 Offset 1870.5
S.R. 0320 Sec. 125 R/W
Rodney Township
Delaware County



4 VILLANOVA UNIVERSITY IN THE STATE OF PENNSYLVANIA

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

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TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

- P1. Sta. 790+35.59
 - A = 2° 11' 07" R/L
 - D = 0° 57' 18"
 - T = 116.44'
 - L = 228.85'
 - R = 5000.00'
 - E = 1.09'
- Superelevation = Normal Crown

CERTIFIED CORRECT PLANS

D. T. Wilkins, P.E.

Approved: _____
Permit: _____

ATTEST: _____
Secretary

APR 16 1992

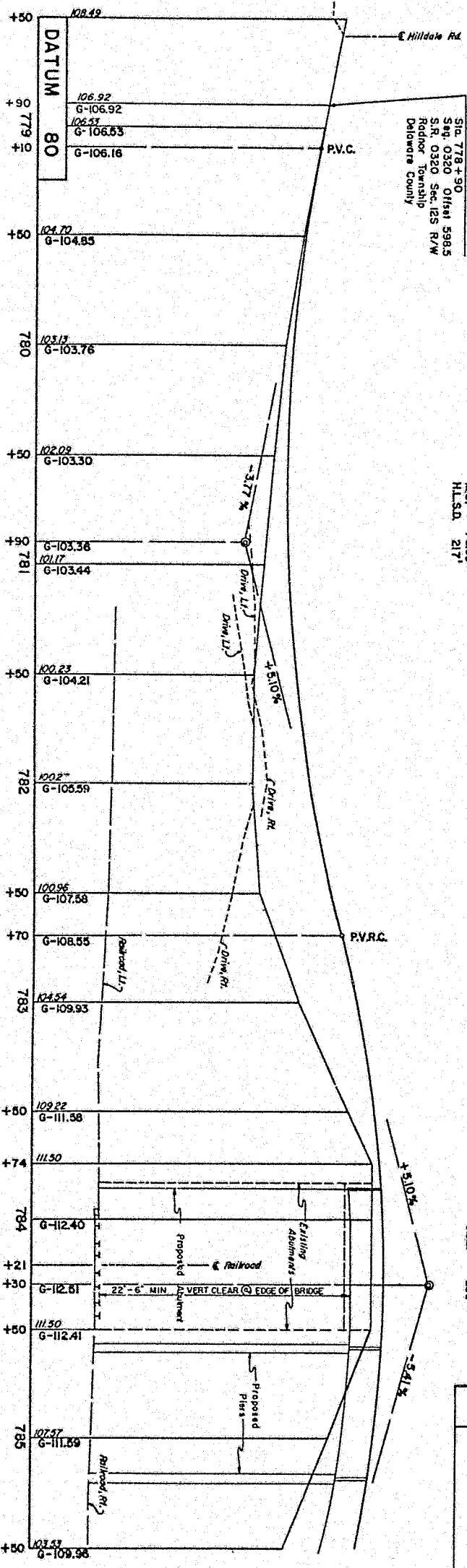
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	125 R/W	6 OF 12
			RADNOR TOWNSHIP	
			REVISIONS	
			DATE	BY

Limit of Authorization
 Sta. 778+90
 Elev. 598.5
 S.R. 0320 Sec. 125 R/W
 Radnor Township
 Delaware County

P.V.I. Sta. 780+90
 Elev. 593.7
 V.C. 360'
 M.O. +3.99'
 H.L.S.D. 217'

P.V.I. Sta. 784+30
 Elev. 620'
 V.C. 320'
 M.O. -4.20'
 H.L.S.D. 206'

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
G-0	DELAWARE	0320	125 R/W	70-12
PROJECT NUMBER	RADNOR TOWNSHIP			
DATE				
BY				



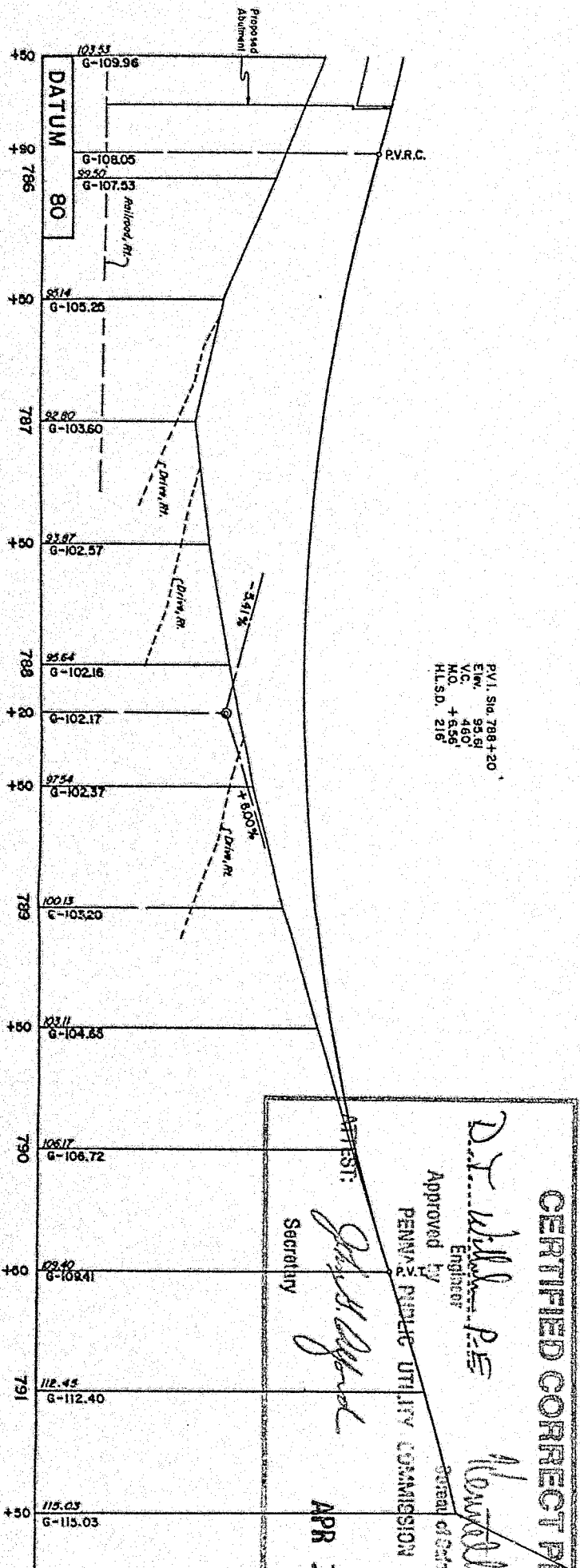
P.V.I. Sta. 788+20
 Elev. 595.61
 V.C. 360'
 M.O. +4.55'
 H.L.S.D. 216'

CERTIFIED CORRECT FILE

Approved by
 PENNAMA PUBLIC UTILITY COMMISSION
 Secretary

APR 16 1992

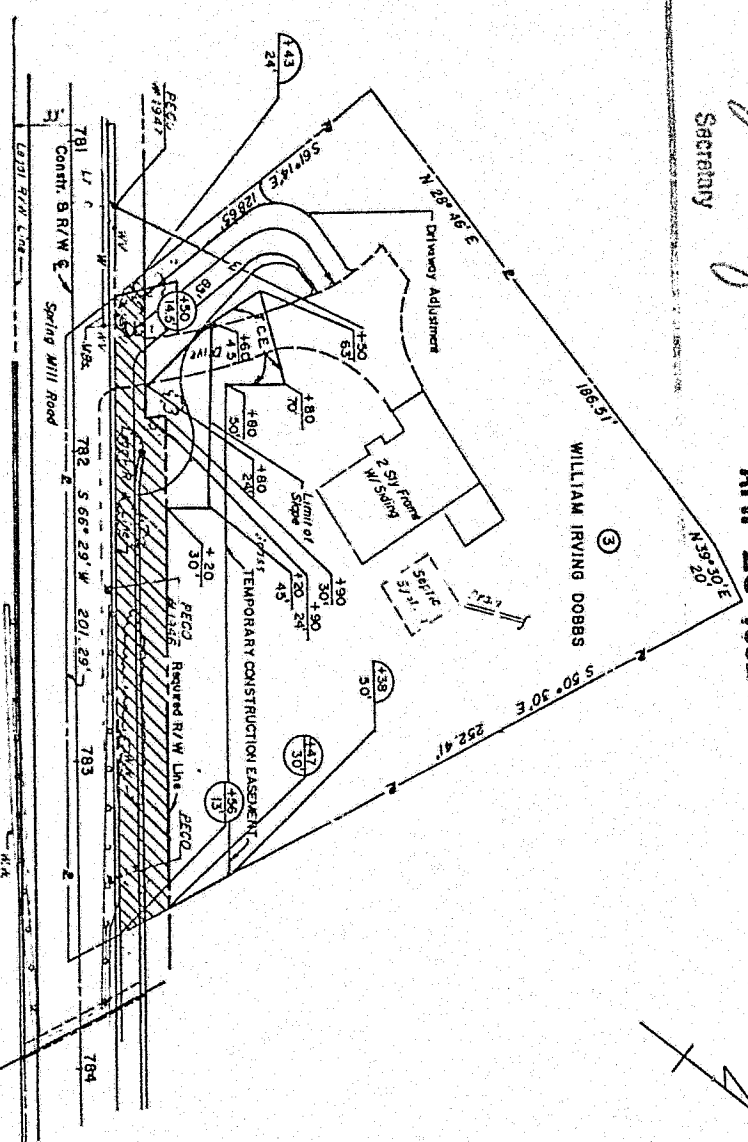
Limit of Authorization
 Sta. 791+50
 Elev. 617.0
 S.R. 0320 Sec. 125 R/W
 Radnor Township
 Delaware County



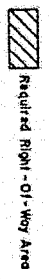
SHEET NO.	8	OF	12
TOWNSHIP	RADNOR	COUNTY	DELAWARE
SECTION	125	R/W	125

Approved by
 PENNA. PUBLIC UTILITY COMMISSION
 Bureau of Safety & Compliance
 APR 16 1992

ATTEST:
 Secretary



NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/OR Protection Of The Area Within The Right-Of-Way Lines, Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Detrimental To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.



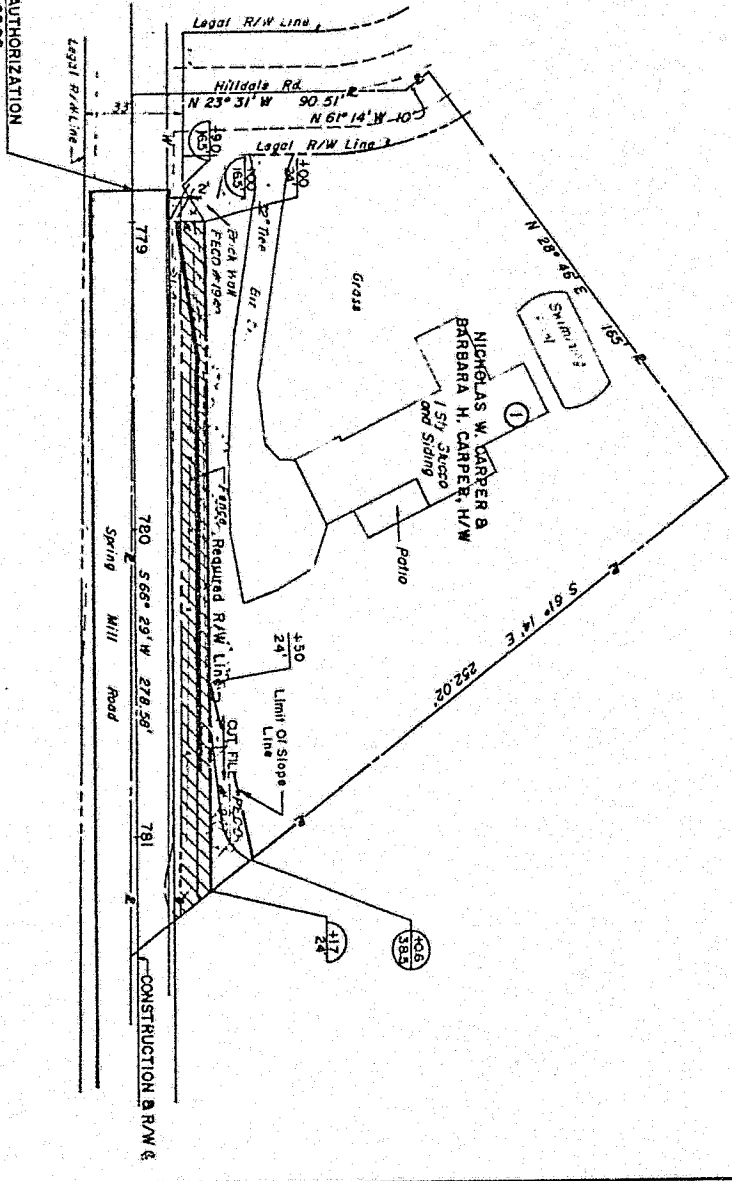
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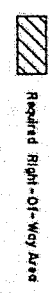
PROPERTY PLAT		COUNTY	
STATE FILE NO.	0320	SECTION NO.	125
SEC. NO.	125 E/W	TOWNSHIP	RADNOR
SHEET NO.	5	COUNTY	DELAWARE
OWNER(S)	WILLIAM IRVING DOBBS		
CREATED BY	C. D. DEERICK, INC.		
AREAS		TOTAL AREA	
DEED BOOK	7713	ACRES	3699.50/171
DATE OF DEED	11-1-78	CALCULATED	36.236
DATE OF RECORD	11-1-78	ADJUSTED	36.277
CONSERVATION	188850	LEGAL A/W	33.010
TOTAL RESERVE	35.833	TOTAL RESERVE	35.833
RESERVE IN		RESERVE IN	
RIGHT OF WAY		RIGHT OF WAY	
RIGHT OF WAY	1010	RIGHT OF WAY	1010
CHANGED	010	CHANGED	010
SCALE	1" = 10'	SCALE	1" = 10'
VERIFICATION DATE	4/23/91	VERIFICATION DATE	4/23/91
DRAWN BY	KM/K	DRAWN BY	KM/K
SCALE		SCALE	

THIS PLAT IS FILED FROM THE DEED OF RECORD IN THE COUNTY COURTHOUSE AND REFLECTS THE ACCURACY AND/OR SUBSEQUENT OF THE DEED.

LIMIT OF AUTHORIZATION
 Sta. 778+90.00



NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/OR Protection Of The Area Within The Right-Of-Way Lines, Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Detrimental To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.



1



PROPERTY PLAT		COUNTY	
STATE FILE NO.	0320	SECTION NO.	125
SEC. NO.	125 E/W	TOWNSHIP	RADNOR
SHEET NO.	5	COUNTY	DELAWARE
OWNER(S)	NICHOLAS W. CARPER & BARBARA H. CARPER, H/W		
CREATED BY	C. D. DEERICK, INC.		
AREAS		TOTAL AREA	
DEED BOOK	113	ACRES	3699.50/171
DATE OF DEED	1-26-78	CALCULATED	36.236
DATE OF RECORD	1-26-78	ADJUSTED	36.277
CONSERVATION	181010	LEGAL A/W	33.010
TOTAL RESERVE	35.833	TOTAL RESERVE	35.833
RESERVE IN		RESERVE IN	
RIGHT OF WAY		RIGHT OF WAY	
RIGHT OF WAY	1010	RIGHT OF WAY	1010
CHANGED	010	CHANGED	010
SCALE	1" = 10'	SCALE	1" = 10'
VERIFICATION DATE	4/23/91	VERIFICATION DATE	4/23/91
DRAWN BY	KM/K	DRAWN BY	KM/K
SCALE		SCALE	

THIS PLAT IS FILED FROM THE DEED OF RECORD IN THE COUNTY COURTHOUSE AND REFLECTS THE ACCURACY AND/OR SUBSEQUENT OF THE DEED.

DISTRICT	COUNTY	TOWNSHIP	SECTION	SHEET
6-0	DELAWARE	0320	125 R/W	9 OF 12
		RADNOSE TOWNSHIP		

CERTIFIED CORRECT PLANS

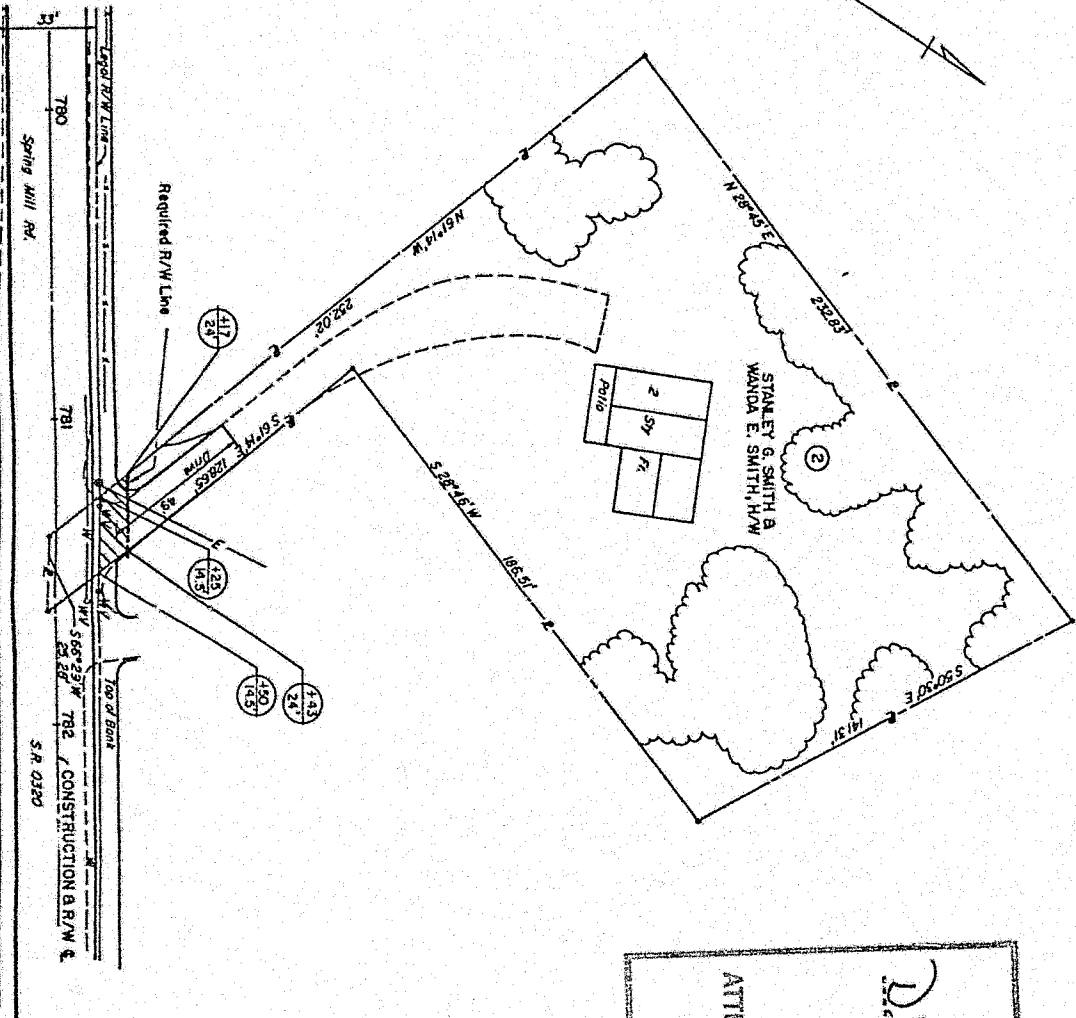
D.T. [Signature] P.E.
 Engineer
 Bureau of Safety & Health

Approved by
 PENNA. PUBLIC UTILITY COMMISSION

ATTEST:
[Signature]
 Secretary

APR 16 1992

NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/or Protection Of The Area Within The Right-Of-Way Lines. Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Deleterious To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.



Required Right-Of-Way Area

2

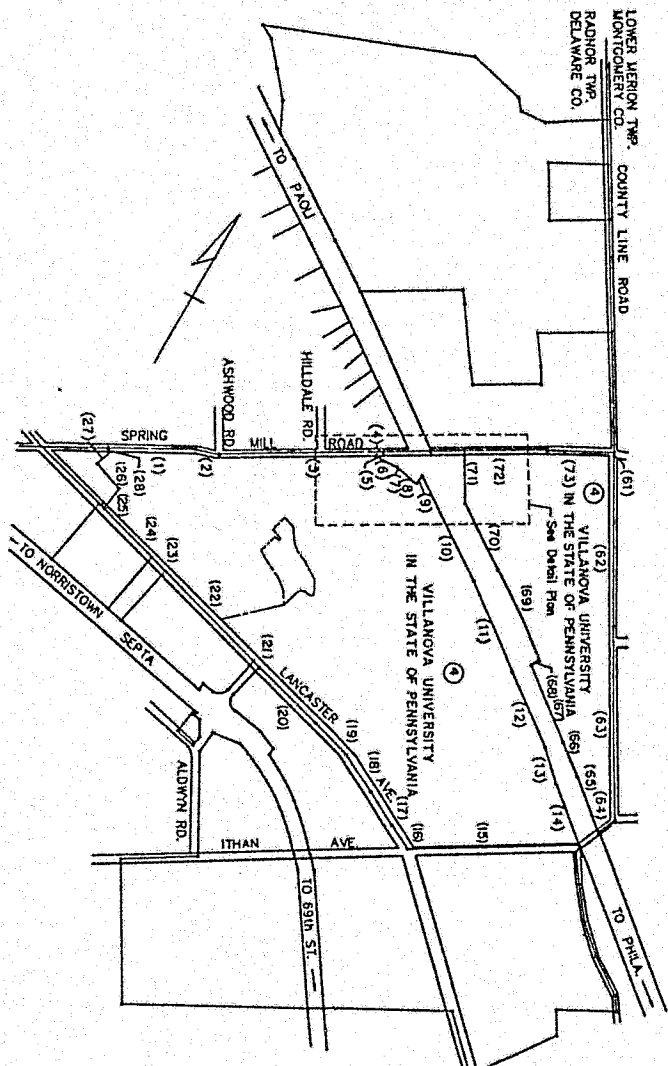
PROPERTY PLAT

COMMONWEALTH OF PENNSYLVANIA-DEPARTMENT OF TRANSPORTATION	
STATE RTE. 0320	SEC. NO. 25 NW
MARGARET STRAITER ACQUICURE	
PROPERTY OWNER(S) STANLEY G. SMITH AND WANDA E. SMITH, H/W	CLAIM NO.
DRAWN BY	DATE
SCALE	

DEED BOOK	DEED	AREAS	REQUIRED AREA
1433	384	446/50 FT.	750 FT.
7-20-38	1433	CALCULATED	RIGHT OF WAY
11-4-76	1433	ADVERSE	CHANNEL
11-27-80	1433	EFFECTIVE	SLOPE
TOTAL RESIDUE	32,201		
RESIDUE LT.			
RESIDUE RT.			

THIS PLAT IS PLOTTED FROM THE DEED OF RECORD IN THE COUNTY COURTHOUSE AND REFLECTS THE ACCURACY AND/OR INACCURACY OF THE DEED.

LOWER MERION TWP. COUNTY LINE ROAD
MONTGOMERY CO. DELAWARE CO.

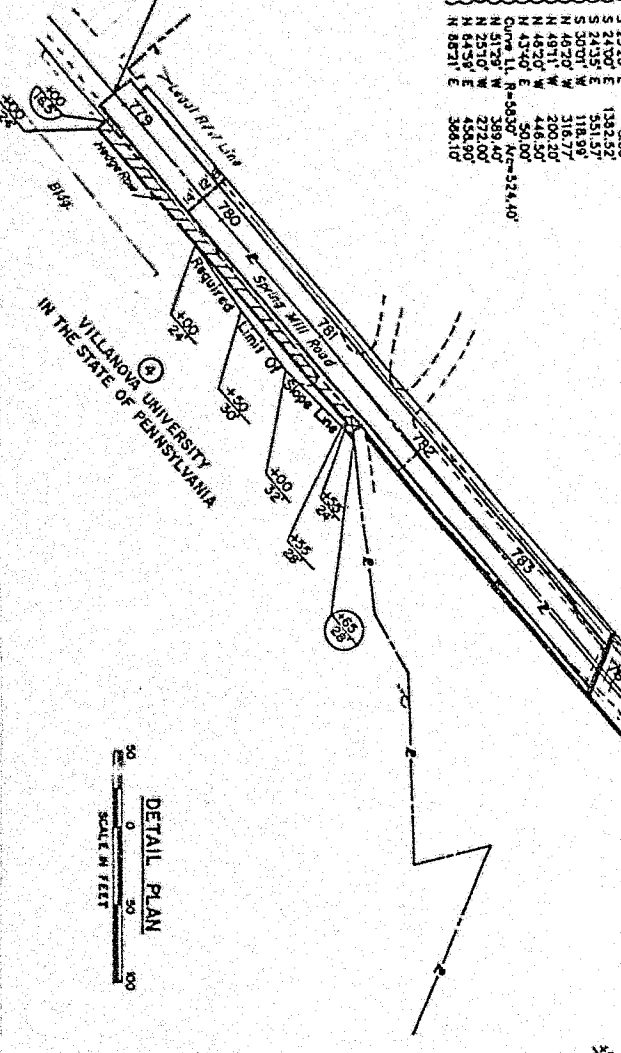


VILLANOVA PLOT PLAN
N.T.S.

- (1) N 66°35' E 491.69'
- (2) N 73°02' E 134.40'
- (3) N 83°32' E 893.92'
- (4) S 84°28' W 141.00'
- (5) N 81°31' E 128.00'
- (6) N 76°21' E 36.20'
- (7) S 75°15' E 124.70'
- (8) S 51°29' E 50.00'
- (9) S 51°29' E 621.39'
- (10) Curve R1, R=500', Arc=510.90'
- (11) S 48°20' E 448.50'
- (12) N 19°16' E 180.00'
- (13) S 40°20' E 342.71'
- (14) S 40°20' E 24.59'
- (15) S 64°02' W 989.23'
- (16) N 51°04' W 190.00'
- (17) N 50°46' W 230.00'
- (18) N 50°46' W 230.00'
- (19) N 50°57' W 221.90'
- (20) N 70°42' W 826.06'
- (21) N 70°42' W 40.00'
- (22) N 70°42' W 570.92'
- (23) N 70°42' W 100.00'
- (24) N 70°42' W 300.00'
- (25) N 57°16' E 174.00'
- (26) N 19°16' E 180.00'
- (27) N 23°35' W 24.59'
- (28) S 25°30' E 4.00'
- (29) S 27°00' E 138.252'
- (30) S 24°35' E 351.57'
- (31) S 30°01' W 118.99'
- (32) N 49°20' W 318.77'
- (33) N 48°11' W 200.20'
- (34) N 48°20' W 448.30'
- (35) N 43°40' E 307.00'
- (36) S 51°29' E 324.40'
- (37) N 23°10' W 272.00'
- (38) N 64°59' E 454.90'
- (39) N 88°31' E 366.10'

CERTIFIED CORRECT PLANS
 Approved by
 P. E. *Thomas H. Mirely*
 Director of Safety & Inspection
 PENNA. PUBLIC UTILITY COMMISSION
 ATTEST:
 Secretary *John S. Applegate*
 APR 16 1992

LIMIT OF AUTHORIZATION
 STA. 778+50
 L.R. 0320, Section 125 R/W
 Radnor Township
 Delaware County



DETAIL PLAN
 SCALE IN FEET
 0 50 100

NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/OR Protection Of The Area Within The Right-Of-Way Lines. Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Deleterious To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.

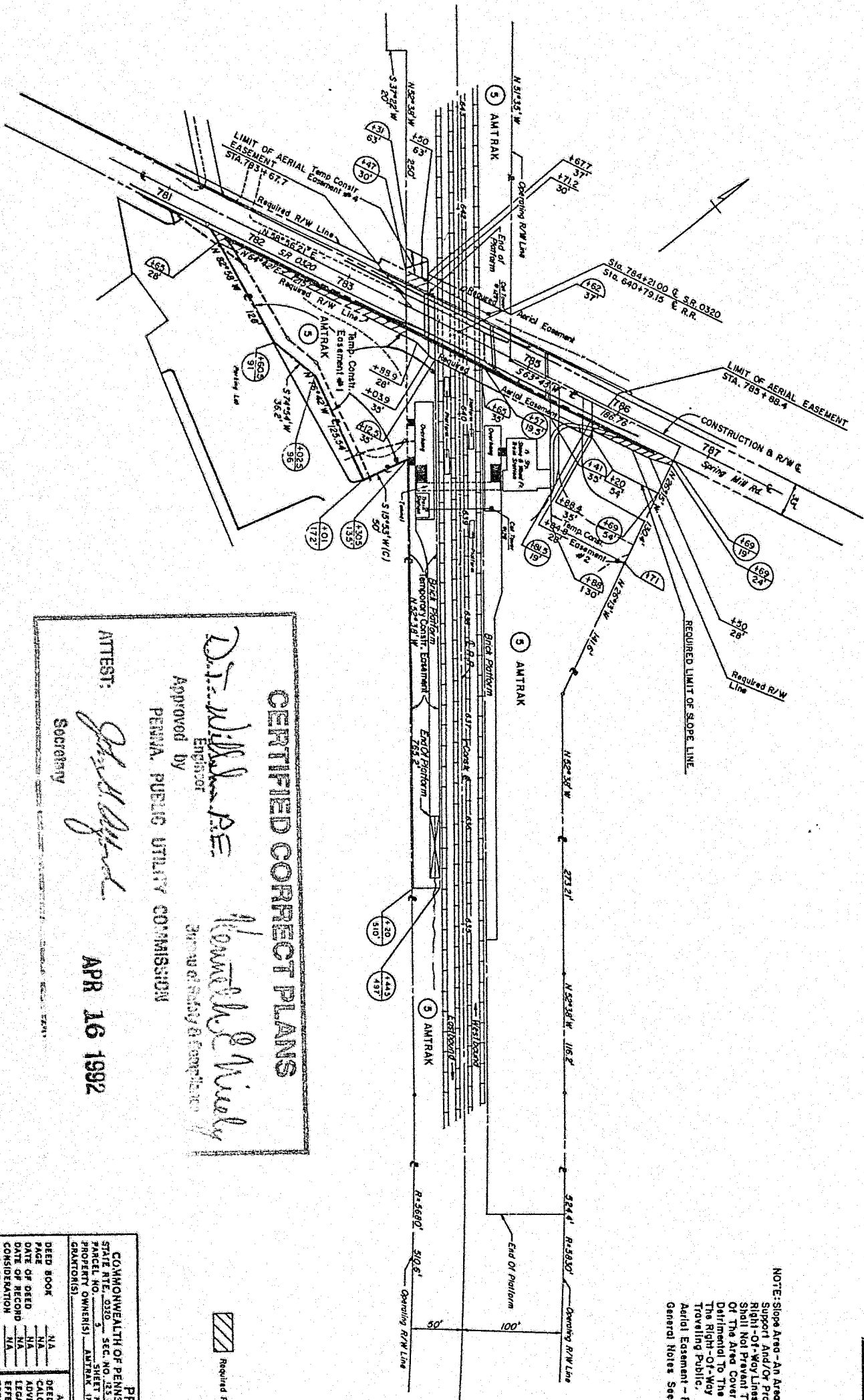
Required Right-Of-Way Area

4

PROPERTY PLAT		COMMONWEALTH OF PENNSYLVANIA-DEPARTMENT OF TRANSPORTATION	
STATE RTE. USED	SEC. NO. (E.B. OR F.B. NO.)	CLAS. NO.	COUNTY
PARCEL NO.	FILE NO.	DATE	DELAWARE COUNTY
PROPERTY OWNER(S) WILL SUFFER NO INTERFERENCE IN THE STATE OF PENNSYLVANIA			
ROADWAY(S) RESERVE(S) OF THE ORDER OF MEMBERS OF ST. AUGUSTINE			
DEED BOOK	0-3	AREAS	463/50 FT.
DATE OF DEED	12-30-2005	DEED CALCULATED	4,081.20 SQ. FT.
DATE OF RECORD	1818	ADVERSE	1.53%
CONSIDERATION		LEGAL R/W	4.53%
TAX STAMPS		EFFECTIVE	4,083.93 SQ. FT.
		TOTAL RECD	3,333.33
		RESIDUE	650.60
		RESIDUE BY	650.60
		RESIDUE BY	650.60
		VERIFICATION DATE	4/13/92
		DRAWN BY	MM
		SCALE	

THIS PLAT IS PLOTTED FROM THE DEED OF RECORD IN THE COUNTY COMMISSIONS AND REFLECTS THE ACCURACY AND/OR INACCURACY OF THE DEED.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	125 R/W	10 of 12
			RADNOR TOWNSHIP	
			REVISED	
			DATE	BY

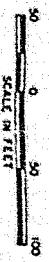


CERTIFIED CORRECT PLANS

D. J. Williams, P.E.
 Approved by
 Engineer
 PENNA. PUBLIC UTILITY COMMISSION
Howard S. Minsky
 Director of Public Utility Regulation

ATTEST: *Shirley D. ...*
 Secretary

APR 16 1992



NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/or Protection Of The Area Within The Right-Of-Way Lines. Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Determined To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.

Aerial Easement - For Aerial Easement Definition See General Notes See 3.0112.

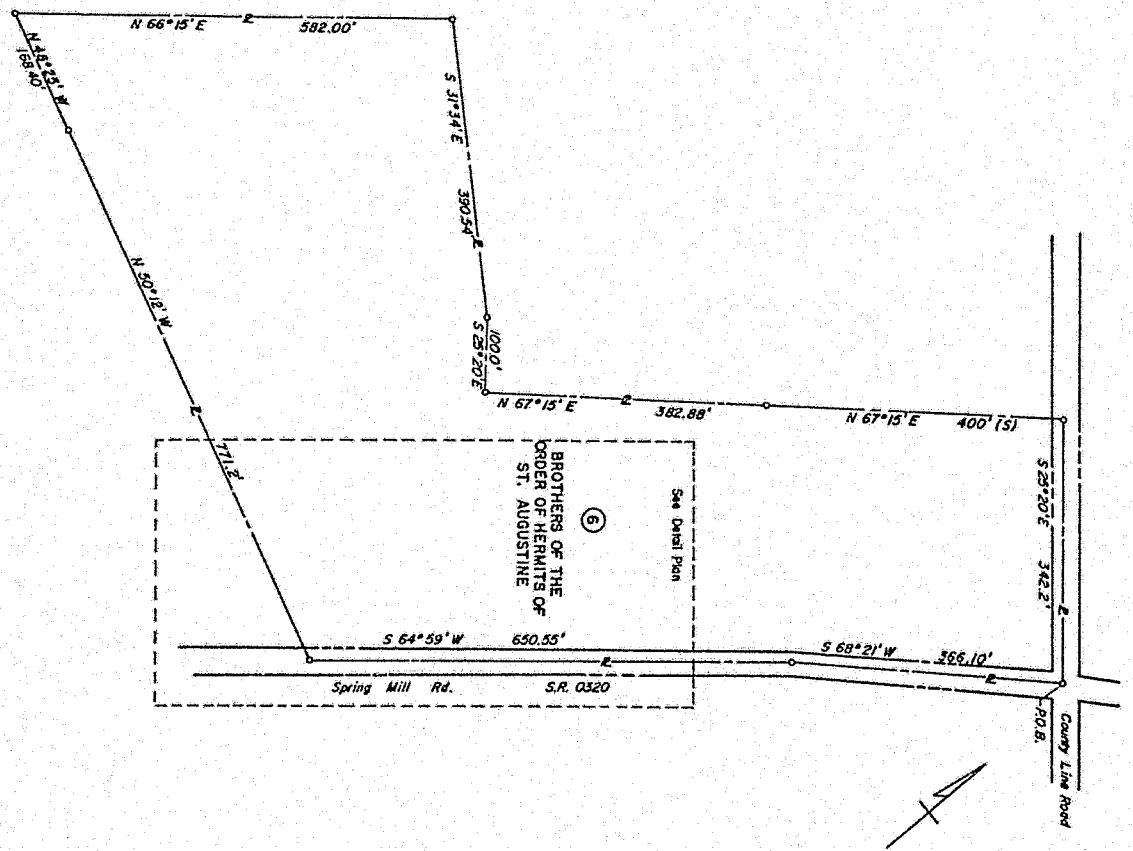
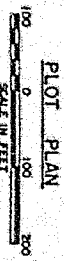
EXTRACT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S R/W	11 OF 12
RADNOR TOWNSHIP				
REVISION	DATE	BY		

PROPERTY PLAT	
COMMONWEALTH OF PENNSYLVANIA-DEPARTMENT OF TRANSPORTATION	DELAWARE COUNTY
STATE RTE. 0320 SEC. NO. 12S R/W	RADNOR TWP.
SHEET NO. 5	CLAIM NO.
PROPERTY OWNER(S) AMTRAK NATIONAL RAILROAD PASSENGER CORPORATION	GRANTOR(S)
DEED BOOK	N/A
PAGE OF DEED	N/A
DATE OF DEED	N/A
DATE OF RECORD	N/A
CONSIDERATION	N/A
TAX STAMPS	N/A
AREAS	REQUIRED AREA
DEED CALCULATED	469/50. FT.
ADVERSE	3.45
LEGAL R/W	N/A
EFFECTIVE	4.376
TOTAL RESIDUE	3.245
RESIDUE LT.	4.00
RESIDUE RT.	40.316
SCALE	AS SHOWN BY DRAWING

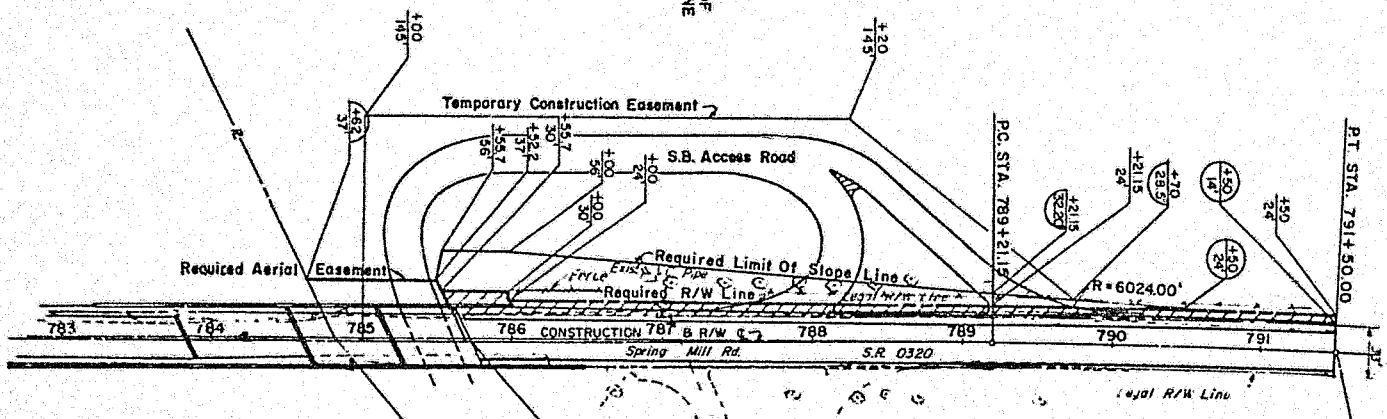
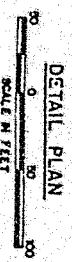
Required Right-Of-Way Area

5

THIS PLAT IS PLOTTED FROM THE DEED OR RECORDS IN THE COUNTY COURTHOUSE AND REFLECTS THE ACCURACY AND/OR INACCURACY OF THE DEED.



⑥ BROTHERS OF THE ORDER OF HERMITS OF ST. AUGUSTINE



LIMIT OF AUTHORIZATION
PT. STA. 791+50.00
Sta. 791+50.00
L.R. 0320, Section 125 R/W
Rodnor Township
Delaware County

CERTIFIED CORRECT PLANS

Approved by *[Signature]*
Engineer
PENNA. PUBLIC UTILITIES COMMISSION
Bureau of Safety & Permitting
Aerial Easement

ATTEST: *[Signature]*
Secretary

APR 16 1992

NOTE: Slope Area - An Area Located Outside The Right-Of-Way For Support And/Or Protection Of The Area Within The Right-Of-Way Lines. Acquisition Of Property As Slope Area Shall Not Prevent The Property Owner From Making Any Use Of The Area Covered By The Slope Area Which Is Not Detrimental To The Necessary Support Of The Area Within The Right-Of-Way Lines Nor To The Safety Of The Travelling Public.
Aerial Easement - For Aerial Easement Definition See General Notes Sheet 3 Of 12.

PROPERTY PLAT		COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION	
STATE	PA	ROUTE	0320
SECTION	125	COUNTY	DELAWARE
PLAT NO.	1	DATE	APR 16 1992
OWNER	BROTHERS OF THE ORDER OF HERMITS OF ST. AUGUSTINE	ENGINEER	<i>[Signature]</i>
GRANTOR(S)	JOHN RODNOR, ESTATE	COMMISSION	<i>[Signature]</i>
DEED BOOK	1230-899	DEED	1230-899
PAGE	1	CALCULATED	14.2796
DATE OF DEED	12-3-91	ADVERSES	01823
DATE OF RECORD	12-3-91	LEGAL N/W	14.0973
CONSIDERATION		EFFECTIVE	01823
TAX STAMPS		TOTAL RECD.	01823
		TOTAL RESIDUE	13.9653
		RESIDUE LT.	
		RESIDUE RT.	
REQUIRED AREA	14.2796	REQUIRED AREA	14.2796
RIGHT OF WAY	01823	RIGHT OF WAY	01823
SLOPE CHANNEL		SLOPE CHANNEL	
LEGAL EASEMENT	00583	LEGAL EASEMENT	00583
T.C.		T.C.	
VERIFICATION DATE	4/23/92	VERIFICATION DATE	4/23/92
DRAWN BY	M.M.M.	DRAWN BY	M.M.M.
SCALE	AS SHOWN	SCALE	AS SHOWN

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
G-0	DELAWARE	0320	125 R/W	12 OF 12
	RADNOR TOWNSHIP			
REVISION	REVISIONS	DATE	BY	

THIS PLAT IS PLOTTED FROM THE DEED OF RECORD IN THE COUNTY COURTHOUSE AND REFLECTS THE ACCURACY AND/OR INACCURACY OF THE D.T.G.

This 1st day of May 1992

the undersigned hereby acknowledges receipt of

FOUR COPIES ORDER

render by the Commission in Docket No. C-80011839

Under date of APRIL 23, 1992 and accepts service

in behalf of JOHN L HEATON ESQUIRE

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

Trent Hargrove

Commonwealth of Pennsylvania
Department of Transportation
RECEIVED
MAY 01 1992
OFFICE OF CHIEF COUNSEL

**DOCUMENT
FOLDER**

RECEIVED
MAY 12 1992

SECRETARY'S OFFICE
Information Control Division

This 5TH day of MAY, 1992

the undersigned hereby acknowledges receipt of

ONE COPY ORDER

render by the Commission in Docket No. C-80011839

Under date of APRIL 23, 1992 and accepts service

in behalf of WILLIAM PICKERING

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

Thomas M. Shwartz

DOCUMENT
FOLDER

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *ordc*
C-80011839

4a. Article Number
044402

4b. Service Type

Registered Insured

Certified COD

Express Mail Return Receipt for Merchandise

Date of Delivery

5. Signature (Addressee) *[Signature]*

6. Signature (Agent) *[Signature]*

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, November 1990 * U.S. GPO: 1991-297-066 **DOMESTIC RETURN RECEIPT**

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *ordc*
C-80011839

4a. Article Number
044402

4b. Service Type

Registered Insured

Certified COD

Express Mail Return Receipt for Merchandise

7. Date of Delivery
5/4

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)
James W. Duerhand

6. Signature (Agent)
[Signature]

PS Form 3811, November 1990 * U.S. GPO: 1991-297-066 **DOMESTIC RETURN RECEIPT**

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
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- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *ordc*
C-80011839

4a. Article Number
044402

4b. Service Type

Registered Insured

Certified COD

Express Mail Return Receipt for Merchandise

7. Date of Delivery
5/4/92

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)
Francis P. Connors, Solicitor

6. Signature (Agent)
[Signature]

PS Form 3811, November 1990 * U.S. GPO: 1991-297-066 **DOMESTIC RETURN RECEIPT**

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
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- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *0-2c*
C-80011839

4a. Article Number: *044406*

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery: *5-4-92*

5. Signature (Addressee): *J. D. Cassel*

6. Signature (Agent): *[Signature]*

8. Addressee's Address (Only if requested and fee is paid): *AMH*

PS Form 3811, November 1990 * U.S. GPO: 1991-287-088

DOMESTIC RETURN RECEIPT

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

4a. Article Number: *044407*

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery: *5-4-92*

8. Addressee's Address (Only if requested and fee is paid): *AMH*

3. Article Addressed to: *0-2c*
C-80011839

5. Signature (Addressee): *Charles E. Mechem, Esq*

6. Signature (Agent): *[Signature]*

PS Form 3811, November 1990 * U.S. GPO: 1991-287-088

DOMESTIC RETURN RECEIPT

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

4a. Article Number: *044408*

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery: *5/4/92*

8. Addressee's Address (Only if requested and fee is paid): *AMH*

3. Article Addressed to: *0-2c*
C-80011839

5. Signature (Addressee): *Peter S. Craig, Esq*

6. Signature (Agent): *[Signature]*

PS Form 3811, November 1990 * U.S. GPO: 1991-287-088

DOMESTIC RETURN RECEIPT

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *Order*
C-80011839

4b. Article Number
044050

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
5-4-52

5. Signature (Addressee)
James W. Patterson, Esq.

8. Addressee's Address (Only if requested and fee is paid)
ANN

6. Signature (Agent)
[Signature]

PS Form 3811, November 1990 *U.S. GPO: 1991-287-066

DOMESTIC RETURN RECEIPT

I do not wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

4a. Article Number **044050**

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
MAY 4 1952

8. Addressee's Address (Only if requested and fee is paid)

3. Article Addressed to: *Order*
C-80011839

5. Signature (Addressee)
Grace Ruane

6. Signature (Agent)
[Signature]

PS Form 3811, November 1990 *U.S. GPO: 1991-287-066

DOMESTIC RETURN RECEIPT

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: *Order*
C-80011839

4a. Article Number
001

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
MAY 4 1952

8. Addressee's Address (Only if requested and fee is paid)
ANN

5. Signature (Addressee)
James Ward

6. Signature (Agent)
[Signature]

PS Form 3811, November 1990 *U.S. GPO: 1991-287-066

DOMESTIC RETURN RECEIPT



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P. O. BOX 3265, HARRISBURG, Pa. 17120

April 29, 1992

IN REPLY PLEASE
REFER TO OUR FILE

C-80011839

JAMES WARD
RECORDER OF DEEDS
COURTHOUSE
WEST FRONT STREET
MEDIA PA 19063

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.
To Whom It May Concern:

Enclosed, herewith, is a certified copy of an excerpt of the Commission order of April 23, 1992 in the above case, appropriating certain lands in the County of Delaware, said lands being described by metes and bounds

The provisions of Section 2702(d) of the Public Utility Code require that:

"The Commission shall file with the recorder of deeds of the proper county, a copy of that portion of the order of the Commission which appropriates such property and such plans and other detailed information as the Commission may deem necessary. Such portion of the Commission's order dealing with the specific property appropriated shall be recorded and indexed under the name or names of the record owners of such specific property at the expenses of the utility or utilities, political subdivisions, municipality or municipalities, governmental agency, including the Department of Transportation and Public Utility Commission, corporation or persons upon whose instigation, petition or complaint the said crossing was constructed, reconstructed, relocated, altered or abolished, as may be ordered to bear such expense of recording by the Commission; provided that when such appropriation of real property has been recorded under the provisions of any other statute, such recording shall not be duplicated under the terms of this section."

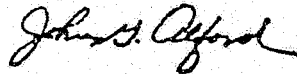
**DOCUMENT
FOLDER**

DOCKETED
MAY 06 1992

You will note that the enclosed excerpt of the Commission order designated the PENNSYLVANIA DEPARTMENT OF TRANSPORTATION as the party responsible for the costs of recording. Consequently, your bill or statement billed in the name of and for the recording fee should be directed to the PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, Room 509 Trans. & Safety Bldg. Harrisburg, Pennsylvania 17120, so that payment may be made promptly.

Kindly advise at your earliest convenience the date of recording and the volume and page at which this order is recorded in your records and return to the Commission.

Very truly yours,



John G. Alford, Secretary

smk
Enclosure
Certified Mail

(2)

OS-600 (3-89)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ORIGINAL

DATE: August 7, 1992

Delaware County
S.R. 320, Section 12S
SUBJECT: Spring Mill Road
C-80011839

AUG 10 1

TO: John Alford
Secretary of Public Utility Commission
Harrisburg, PA 17120

RECEIVED

James M. Stuard

FROM: Fred W. Bowser, P.E.
Director
Bureau of Design

Public Utility Commission
Philadelphia, PA
Construction Control Division

DOCUMENT
FOLDER

In accordance with Public Utility Commission Order C-80011839 adopted April 23, 1992 we are submitting three sets of construction plans for the subject project.

Construction plans have also been forwarded to the following parties of record:

Chairman, Delaware County Commissioners, Government Center Building, Media, PA 19063

Southeastern Pennsylvania Transportation Authority, 200 West Wyoming Avenue, Philadelphia, PA 19140, Attention: Mr. M. E. Tazepacz

Consolidated Rail Corporation, Mr. J. D. Cossel, Chief Engineer, Design and Construction, 12th Floor - 15 N. 32nd Street, Philadelphia, PA 19104

AMTRAK, 30th St., Station S Tower, 3rd Floor Philadelphia, PA 19104, Attention: Mr. J. J. Cunningham

Adelphia Cable Communications, One Apollo Road, Box 198, Plymouth Meeting, PA 19462, Attention: Mr. Michael Kane

James W. Patterson, Esquire, Harper, George, Buchanan & Driver, Attorney for Villanova University, 1200 West Savings Bank Building, Broad and Chestnut Streets, Philadelphia, PA 19107

Philadelphia Electric Company, 2301 Market Street, Philadelphia, PA 19101, Attention: Mr. William J. Hensil

Philadelphia Suburban Water Company, 762 Lancaster Avenue, Bryn Mawr, PA 19010, Attention: Mr. Thomas Kiely

A T & T Communications, Engineering Inquiries, 2315 Salem Road, Convers, Georgia 30208

Delaware County
S.R. 320, Section 12S
Spring Mill Road
C-80011839

August 7, 1992
Page 2

Township of Radnor, 301 Iven Avenue, Wayne, PA 19087, Attention:
Mr. Robert Crofford

Bell Telephone Company of PA, 400 Cherry Street, 3rd Floor,
Norristown, PA 19406, Attention: Ms. Margaret Nolan

4350/HF/kgv

cc: S. B. Lester, P.E., District 6-0, Attn: Jim Ottinger
D. Hart, P.E., Room 408, T. & S. Bldg., Attn: Dave Wilhelm, P.E.



TRANSPORTATION

WINGS

FOR STRUCTION

OF

0320 SECTION 12S

WARE COUNTY

92 + 00.00 Length 1330.00 R.0252 MI.

0590.5 TO SEG. 0320 OFFSET 1920.5

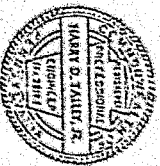
of No. CB0011839

SYS	STATE PROJECT NUMBER											
	L.R. or W/O.	SPUR	PHA	SECTION	DIST.	CO.						
C	0	3	2	0	0	7	1	2	S	0	6	3

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

ALSO INCLUDED:

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



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

Drawn by R. D. Taylor, Jr.
March 9, 1992

RECOMMENDED MARCH 19 19 92

Robert D. Taylor, Jr.
DISTRICT ENGINEER

RECOMMENDED APR 21 19 92

Howard J. Lewis, Jr.
DEPUTY SECRETARY

APPROVED APR 21 19 92

SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS HIMSELF)

AT&T COMMUNICATIONS, INC. ENGINEERING INQUIRIES 2315 SALEM ROAD CONYERS, GA. 30208	TOWNSHIP OF RADNOR 301 IVEN AVENUE WAYNE, PA. 19087 ATTN: MR. ROBERT CROFFORD TOWNSHIP ENGINEER (215) 688-5600
BELL TELEPHONE COMPANY OF PA. 400 CHERRY ST. 3RD FLOOR NORRISTOWN, PA. 19406 ATTN: MS. MARGARET NOLAN (215) 278-0271	PHILADELPHIA SUBURBAN WATER CO. 762 LANCASTER AVENUE BRYN MAWR, PA. 19010 ATTN: MR. THOMAS M. KIELY (215) 525-1400
SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY 200 W. WYOMING AVENUE PHILADELPHIA, PA. 19140 ATTN: MR. METRZEPACZ CHIEF ENGINEER FACILITIES ENGINEERING & CONSTRUCTION DEPT. (215) 580-9137	CONSOLIDATED RAIL CORPORATION 15 NORTH 32ND STREET ROOM 1200 PHILADELPHIA, PA. 19104-2849 ATTN: MR. J.D. COSSELL CHIEF ENGINEER, DESIGN AND CONSTRUCTION (215) 596-3846
PHILADELPHIA ELECTRIC CO. 2301 MARKET STREET PHILADELPHIA, PA. 19101 ATTN: MR. WILLIAM J. HENSIL NEGOTIATOR (215) 841-6393	AMTRAK 30 TH ST. STATION S. TOWER 3RD FLOOR PHILADELPHIA, PA. 19104 ATTN: MR. J.J. CUNNINGHAM ASST. CHIEF ENGINEER M OF W AND STRUCTURES (215) 557-1511
ADELPHIA CABLE COMMUNICATIONS ONE APOLLO ROAD, BOX 198 PLYMOUTH MEETING, PA. 19462 ATTN: MR. MICHAEL KANE (215) 828-4888	LIMIT OF WORK STA. 792 +00 SEG. 0320 Offset 1920.5 S.R. 0320 Sec. 125 R/W Radnor Township Delaware County

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

RC - 10	APR. 1, 1991	BC - 317A	MAR. 2, 1981
11(2 SHTS)	JUNE 30, 1990	337A	MAR. 2, 1981
12	JUNE 30, 1990	701	NOV. 15, 1989
13	MAY 2, 1993	711	NOV. 15, 1989
28	MAY 2, 1993	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)	FEB. 20, 1988	736	JAN. 1, 1991
50	MAY 15, 1991	739	SEPT. 3, 1991
52(5 SHTS)	JULY 26, 1991	752	JAN. 20, 1989
54(3 SHTS)	JULY 26, 1991	757	JUNE 1, 1991
58(3 SHTS)	JUNE 30, 1990	767	MAY 3, 1989
64	FEB. 24, 1989	794	JAN. 20, 1989
67(2 SHTS)	OCT. 12, 1984	TC - 7702B	FEB. 1, 1984
70(4 SHTS)	MAY 15, 1991		
100(2 SHTS)	MAR. 21, 1986		
201(2 SHTS)	FEB. 24, 1989		
231(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+211.5	P.C.	4972.91	4926.98	N 58°56'21" E
CONSTR.	790+35.59	P.I.	5031.96	5025.01	
	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.
TABULATION OF CONSTRUCTION LENGTH		
ROUTE	STATION TO STATION	L.F. MILES
S.R. 0320	778+90.00 TO 791+50.00	1260.00 0.239

EARTHWORK SUMMARY ENTIRE PROJECT

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

CLASS	CU YDS. OF EXCAVATION				CUBIC YDS. OF COMPLETED EMBANKMENT	CUBIC YDS. OF FOREIGN BORROW	CUBIC YDS. OF WASTE	CUBIC YDS. OF SELECT BORROW EXCAV. STRUC. BACKFILL
	CLASS IA	CLASS IB	CLASS 2	CLASS 3				
9690	1	9	33004	1898	16526	4758	4230	1170 Δ

Δ INCLUDED IN L.S. STRUCTURE ITEMS

LIST OF EQUALITIES

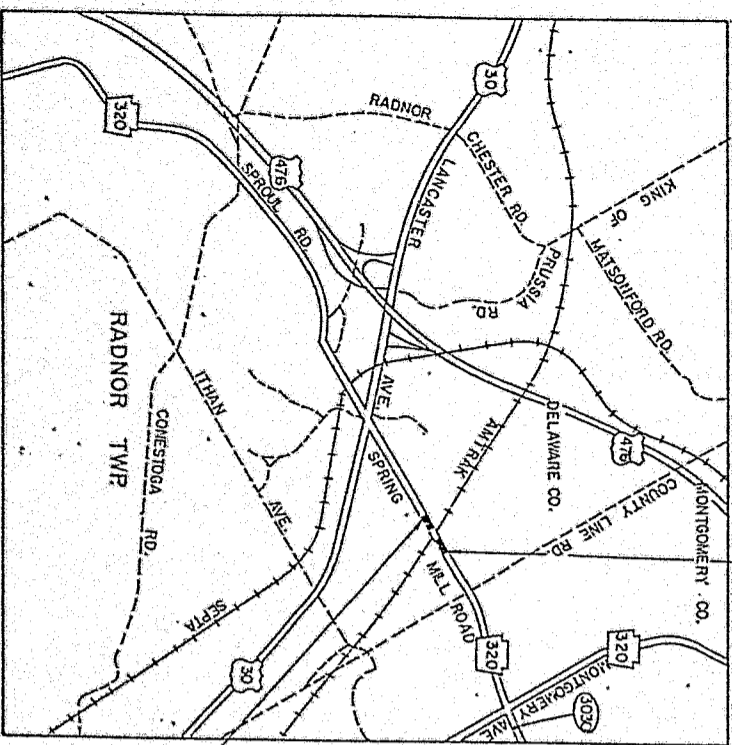
NONE

LIMIT OF WORK
Sta. 778 + 70
509.0320 Offset 590.5
S.R. 0320 Sec. 125 R/W
Radnor Township
Delaware County

LOCATION MAP

SCALE IN MILES
0 1/2

LEGEND
PROJECT
STATE HIGHWAY
TOWNSHIP ROAD
TOWNSHIP LINE



6-0	DELAWARE	0320	12S	30F 20
REVISION NUMBER	RADNOR TOWNSHIP			
REVISIONS	DATE BY			

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON S.R. 0320, FORMERLY L.R. 225, FROM STA. 778+90 TO STA. 791+50 IS VARIABLE IN WIDTH, BASED ON PLAN OF S.R. 0320, SECTION 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 ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

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

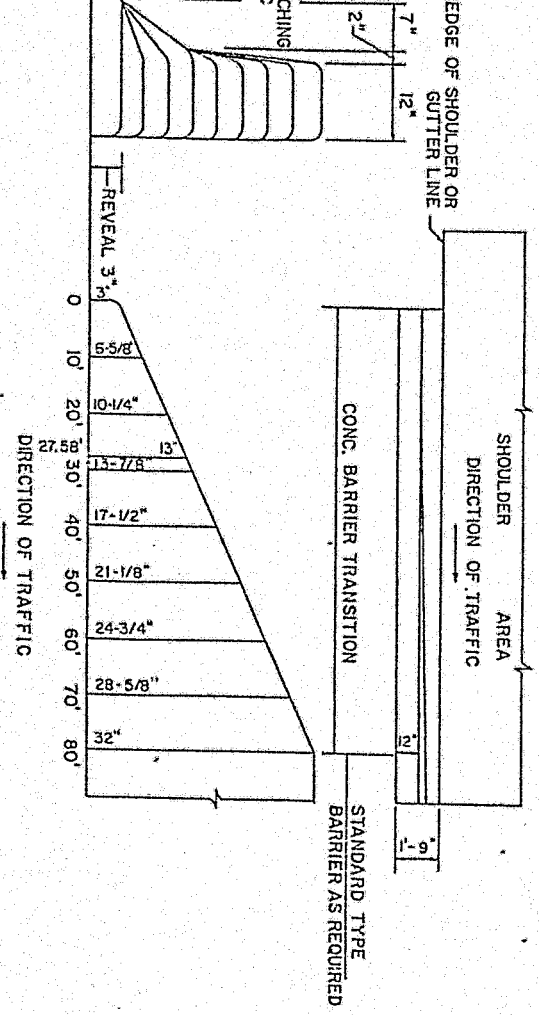
CONSTRUCT PROJECT IN ACCORDANCE WITH PUBLICATION 408 SPECIFICATIONS, DATED 1990.

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

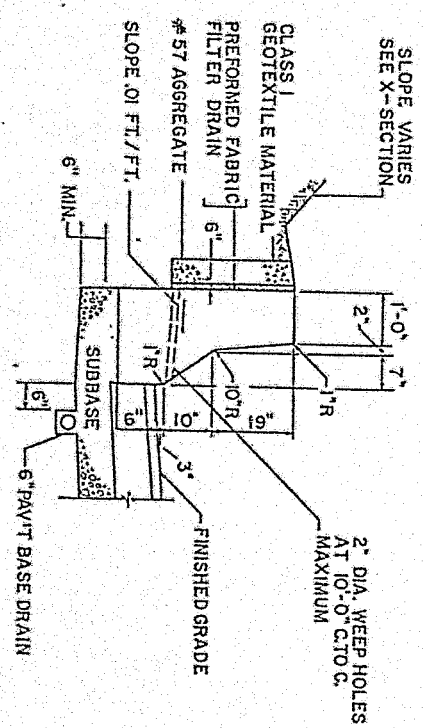
THE DEPARTMENT OF TRANSPORTATION DOES NOT GUARANTEE THE ACCURACY OF THE LOCATIONS OF THE EXISTING SUBSURFACE UTILITY STRUCTURES SHOWN ON THE PLANS, NOR DOES THE DEPARTMENT GUARANTEE THAT ALL SUBSURFACE STRUCTURES ARE SHOWN.

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

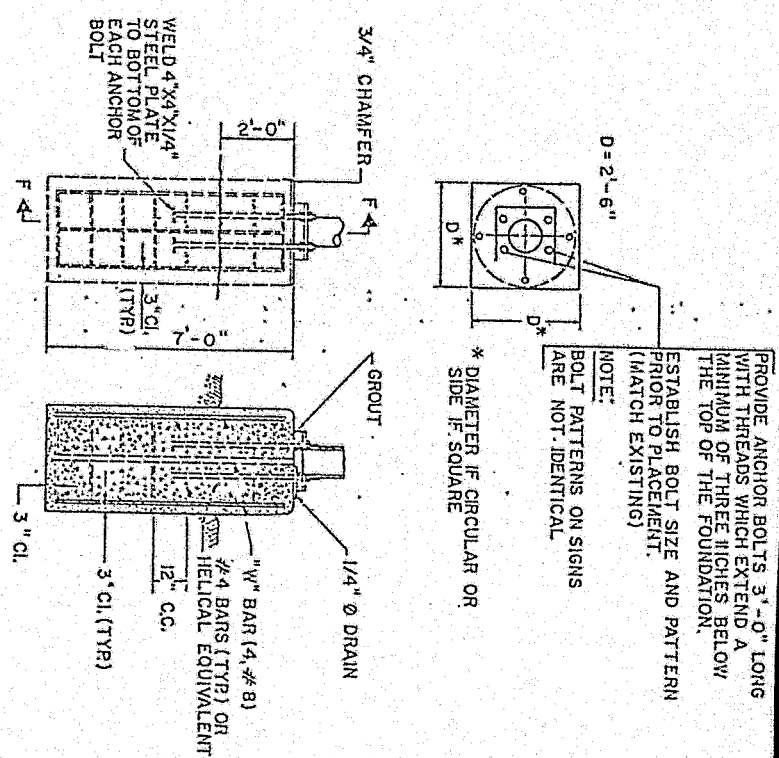
SLOPE EASEMENT: AN AREA LOCATED OUTSIDE THE RIGHT-OF-WAY FOR SUPPORT AND/OR PROTECTION OF THE AREA WITHIN THE RIGHT-OF-WAY LINES. PLACEMENT AND MAINTENANCE OF DRAINAGE FACILITIES ARE INCLUDED AS ALLOWED FOR THE PROTECTION OF THE HIGHWAY. ACQUISITION OF PROPERTY AS SLOPE EASEMENT SHALL NOT PREVENT THE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



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

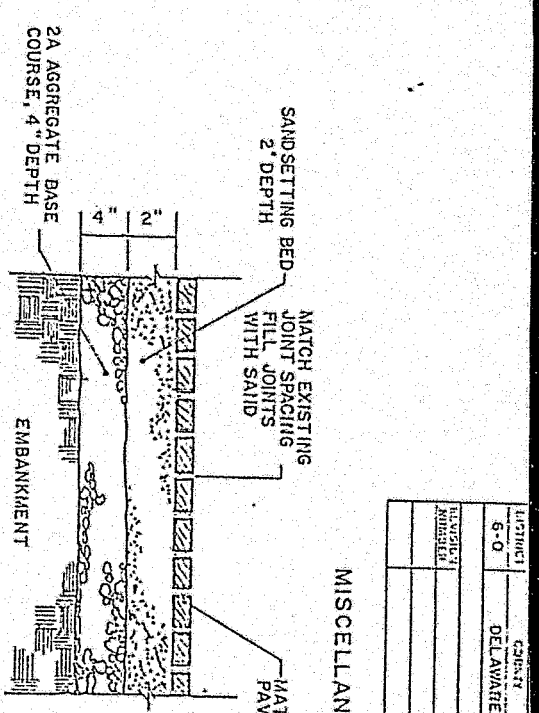


SINGLE FACE CONCRETE BARRIER
TYPE 1
ITEM NO. 9000-0012



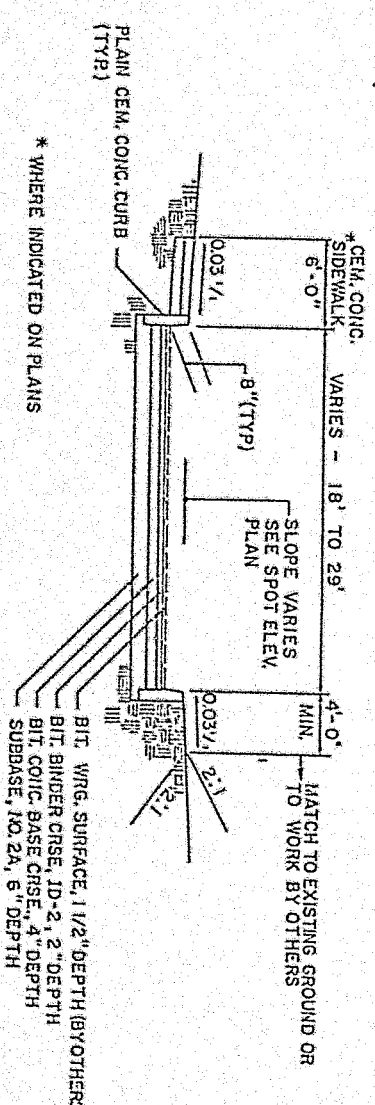
SEPTA SIGN FOUNDATION
ITEM NO. 9000-0001

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



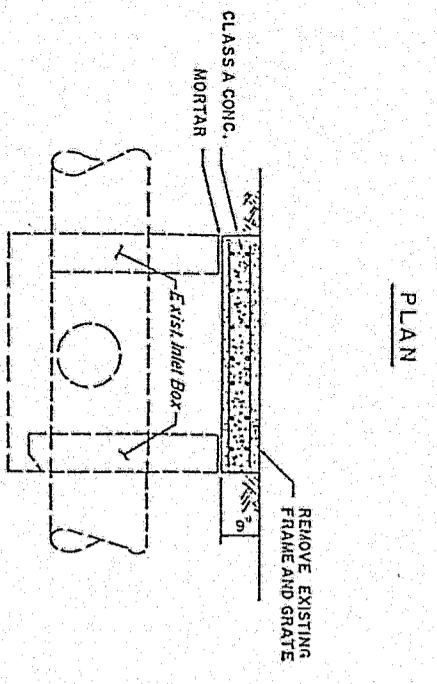
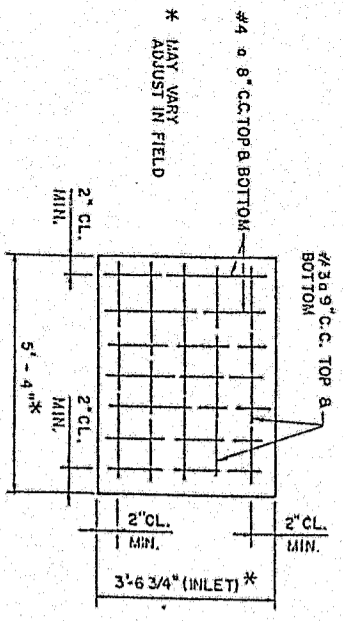
MISCELLANEOUS DETAILS

PROJECT	COUNTY	ROUTE	SECTION	SHEET
5-0	DELAWARE	0320	12S	5 OF 5
DESIGN NUMBER	REVISIONS	DATE		

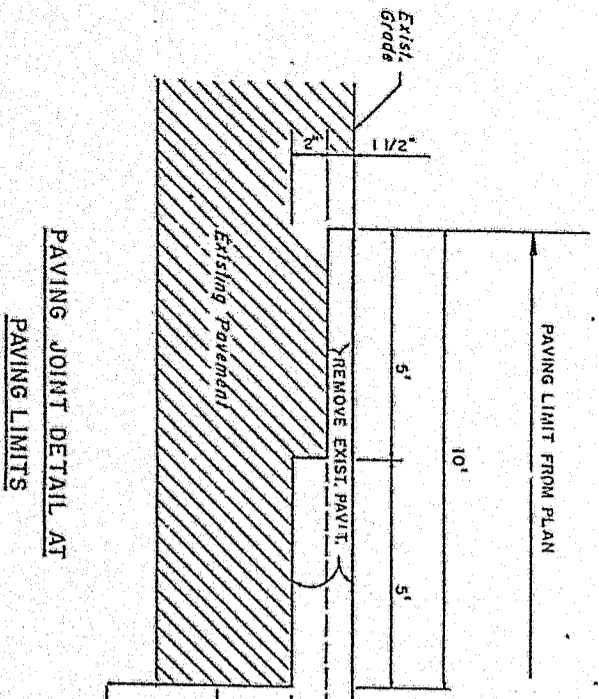


ACCESS DRIVES A, B, C & D
TYPICAL PAVEMENT SECTION

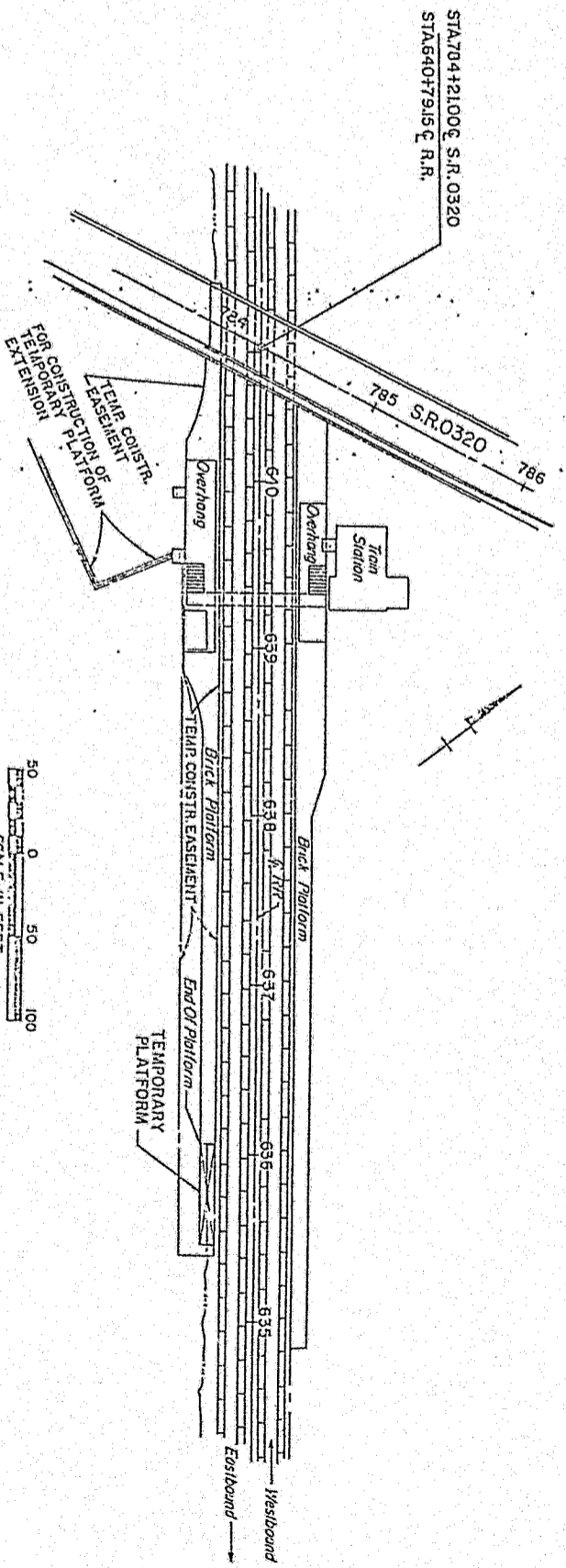
PROJECT	COUNTY	SHEET	TOTAL SHEETS	DATE
6-0	DELAWARE	0320	123	C 01 20
SECTION NUMBER	REVISIONS	DATE	BY	



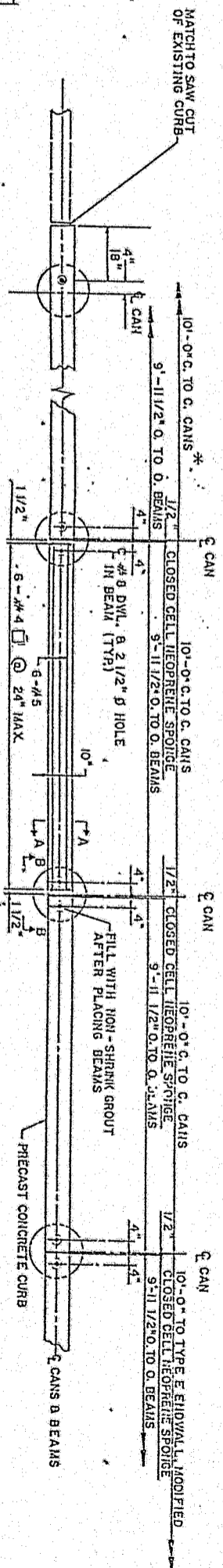
ELEVATION
CAP EXISTING INLET
ITEM 9000-0015



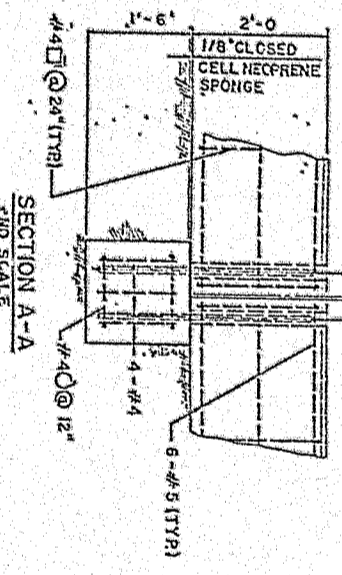
PAVING JOINT DETAIL AT
PAVING LIMITS



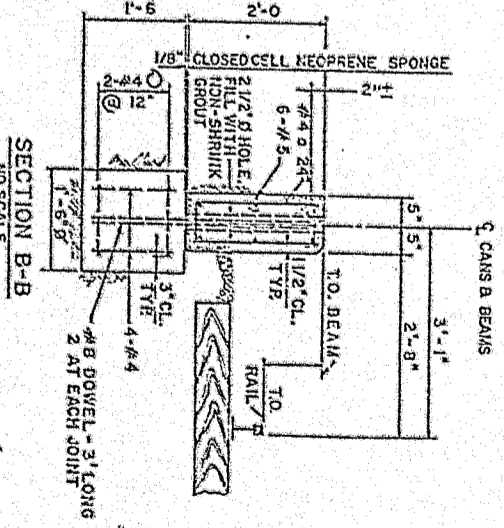
LOCATION FOR TEMPORARY PLATFORM
ITEM 9000 - 0005



PLAN
1/10 SCALE

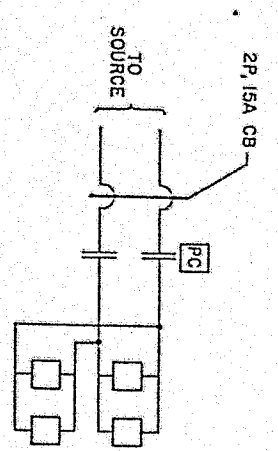
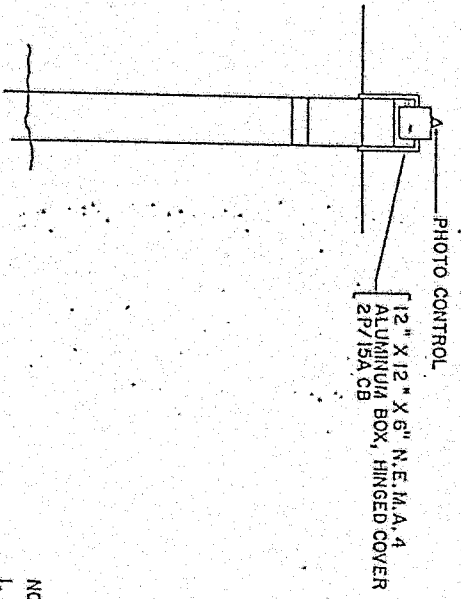
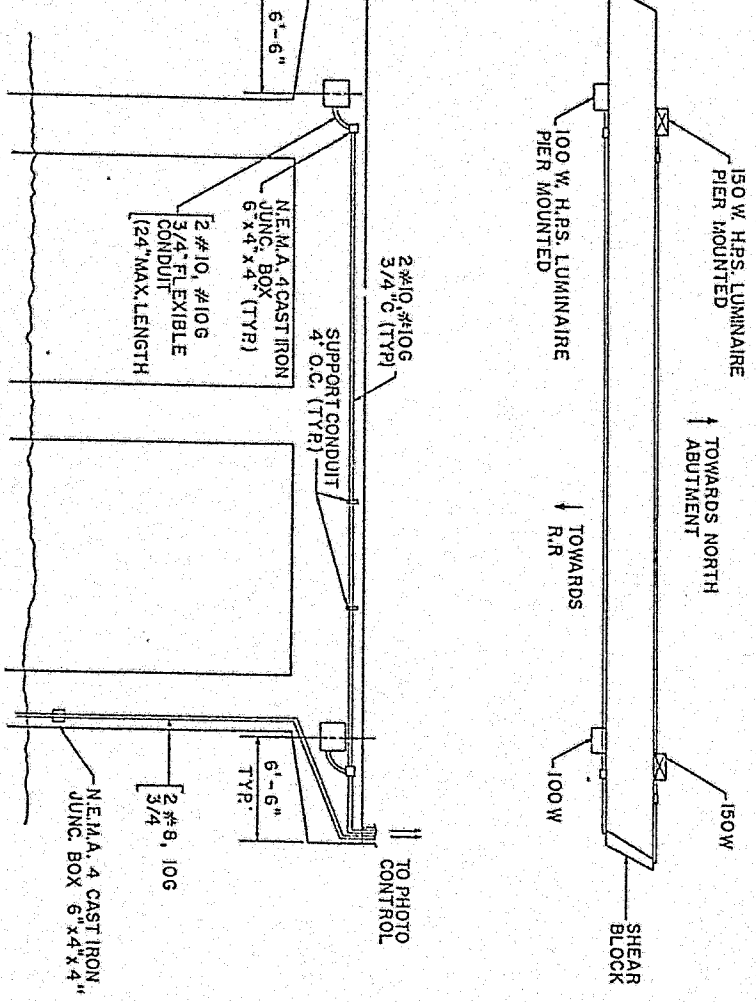


SECTION A-A
1/10 SCALE



SECTION B-B
1/10 SCALE

PLATFORM CURB
ITEM NO. 9000-0016

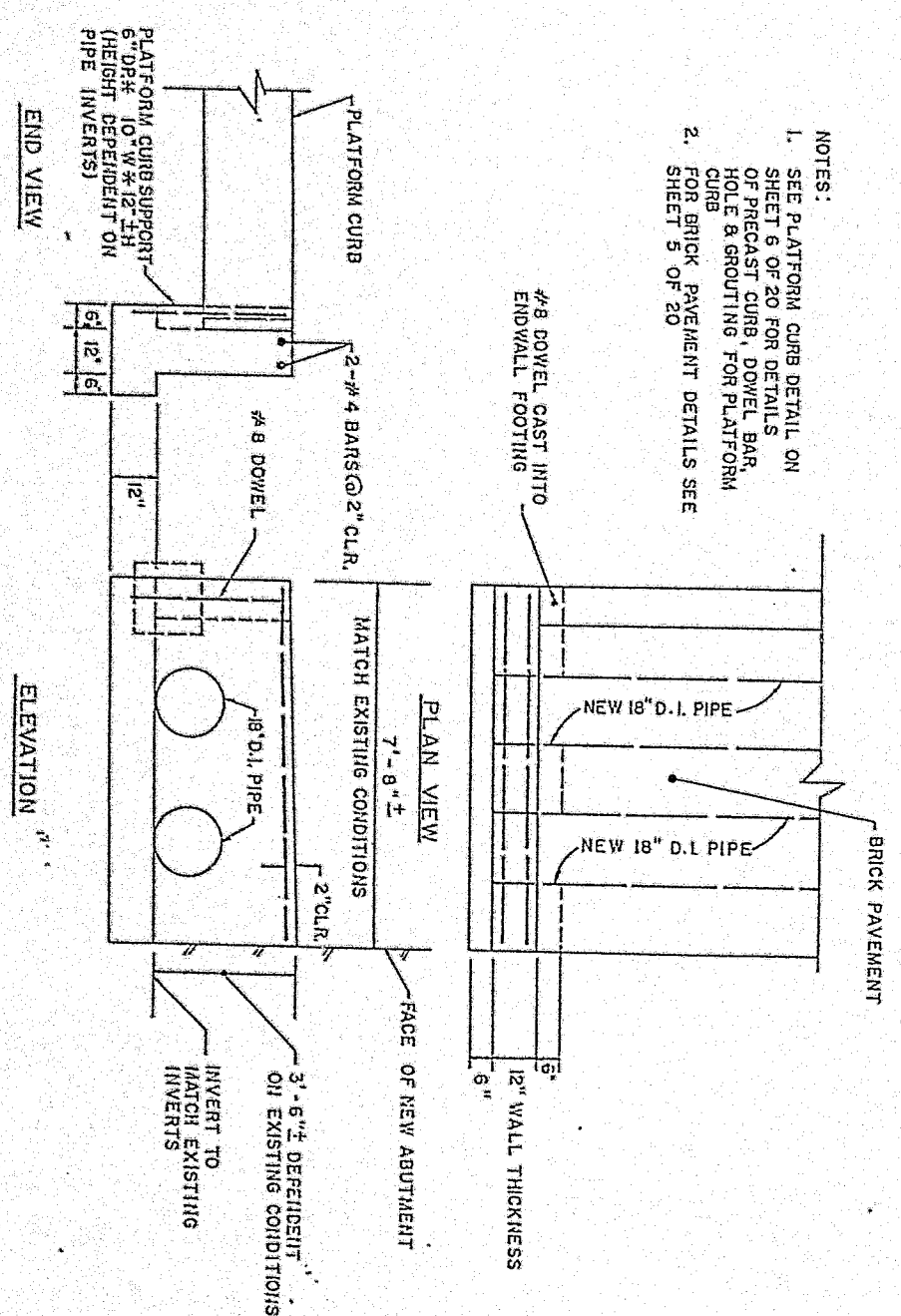


UNDERPASS LIGHTING DETAILS
ITEM NO. 8800-0001

TABULATION OF LIGHTING ITEMS AND APPROXIMATE QUANTITIES				DESCRIPTION
QUANTITY	UNITS	ITEM NUMBER	QUANTITY	
LUMP SUM	LS	8800-0001	-	UNDERPASS LIGHTING
	EA	*	2	150 WATT HIGH PRESSURE SODIUM LUMINAIRE, PIER MOUNTED
	EA	*	2	100 WATT HIGH PRESSURE SODIUM LUMINAIRE, PIER MOUNTED
	EA	*	5	6"x4"x4" CAST IRON, N.E.M.A. 4, JUNCTION BOXES
	EA	*	1	12"x12"x6" N.E.M.A. 4 ALUMINUM BOX, HINGED COVER WITH 2 POLE, 15 AMP CIRCUIT BREAKER
	EA	*	1	PHOTO CONTROL
	L.F.	*	8	3/4" WATER TIGHT FLEXIBLE GALVANIZED STEEL CONDUIT
	L.F.	*	150	3/4" EXPOSED CONDUIT
	L.F.	*	280	1" DIRECT BURIAL CONDUIT (P.V.C.)
	L.F.	*	354	AWG 10 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR
	L.F.	*	960	AWG 8 ELECTRICAL CABLE, COPPER, 1 CONDUCTOR

ITEMS INCLUDED IN ITEM 8800-0001 FOR INFORMATION ONLY

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



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

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET	QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
102	0601 0601 L.F.	30" REINFORCED CEMENT CONCRETE PIPE, CLASS IV			1626	0610 7002 L.F.	6" PAVEMENT BASE DRAIN		14
102	0601 1430 L.F.	36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE	4	12.13	1	0610 7400 C.Y.	ADDITIONAL COARSE AGGREGATE FOR EXTRA DEPTH PAVEMENT BASE DRAIN		14
102	0601 2759 L.F.	36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3 X 1/2" CORRUGATIONS), 14 GAGE			16	0615 0022 L.F.	6" SUBSURFACE DRAIN OUTLETS		14
27	0601 0122 L.F.	18" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12.13	1	0620 0400 EACH	TERMINAL SECTION, SINGLE		14
41	0601 0124 L.F.	24" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12.13	2	0620 0401 EACH	TERMINAL SECTION, DOUBLE		14
41	0601 1427 L.F.	27" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE	6	12.13	6	0620 0402 EACH	TERMINAL SECTION, BRIDGE CONNECTION		14
108	0601 0128 L.F.	36" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12.13	2017	0620 0620 L.F.	4" WHITE TRAFFIC ZONE PAINT, TYPE II		15
24	0601 0126 L.F.	30" REINFORCED CEMENT CONCRETE PIPE, CLASS V		12.13	2520	0620 0640 L.F.	4" YELLOW TRAFFIC ZONE PAINT, TYPE II		15
24	0601 1430 L.F.	36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE	5	12.13	75	0620 1075 L.F.	TYPE 2-S GUIDE RAIL		14
24	0601 1430 L.F.	36" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE			519	* 1620 1075 L.F.	TYPE 2-S GUIDE RAIL, SPECIAL		14
24	0601 2777 L.F.	36" CORRUGATED ALUMINUM ALLOY PIPE, TYPE I (2 2/3 X 1/2" CORRUGATIONS), 12 GAGE		15	25	0620 1100 L.F.	TYPE 2-S GUIDE RAIL		14
90	0601 0595 L.F.	24" CORRUGATED POLYETHYLENE (PE) CULVERT PIPE, TYPE S		12.13	25	* 1620 1100 L.F.	TYPE 2-S GUIDE RAIL, SPECIAL		14
120	0601 0763 L.F.	18" DUCTILE IRON PIPE		12.13	1	0620 1252 EACH	BREAKAWAY CABLE TERMINAL END TREATMENT		14
14	0601 1424 L.F.	18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE		12.13	3377	0630 0001 L.F.	PLAIN CEMENT CONCRETE CURB		10
28	0601 1424 L.F.	18" COATED CORRUGATED GALVANIZED STEEL PIPE, TYPE I, TYPE B (2 2/3 X 1/2" CORRUGATIONS), 16 GAGE	1	12.13	957	0676 0001 S.Y.	CEMENT CONCRETE SIDEWALK		10
288	0601 5400 C.Y.	COARSE AGGREGATE FOR PIPE TRENCH BACKFILL		12.13		* 0604 L.S.	ENGINEERING STAKEOUTS, MODIFIED		HO TAB
219	0601 5403 C.Y.	AGGREGATE FOR BEDDING		12.13	18	0694 0010 S.Y.	CURB CUT RAMPS, TYPE 1 SINGLE		10
8	0605 1300 EACH	TYPE A MANHOLE		12.13	53	0703 0023 C.Y.	NO. 67 COARSE AGGREGATE		15
13	0605 2010 EACH	TYPE C INLET, BICYCLE SAFE GRATE		12.13	1065	0803 0001 C.Y.	PLACING STOCKPILED TOPSOIL		NO TAB
2	0607 0200 V.F.	TYPE M INLET, BICYCLE SAFE GRATE		12.13,15	290	0804 0013 L.B.	SEEDING AND SOIL SUPPLEMENTS - FORMULA D		15
13	0608 0001 L.S.	REBUILD MANHOLE		12.13,15	06	0804 0014 L.B.	SEEDING - FORMULA E		15
		MOBILIZATION		NO TAB	11	* 4694 0014 S.Y.	CURB CUT RAMPS, TYPE 3, MODIFIED		10
		INSPECTOR'S FIELD OFFICE AND INSPECTION FACILITIES, TYPE A		NO TAB	2	0804 0051 ACRE	MOWING		NO TAB
				NO TAB	1	0805 0772 TOL	MULCHING - STRAW		NO TAB
				12.13	8598	0805 0019 S.Y.	MULCH CONTROL NETTING		15

SUMMARY SHEET

(SHEET 2 OF 2)

* SEE SPECIAL PROVISIONS FOR DESCRIPTION OF THESE ITEMS

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
10	0810 EACH	SELECTIVE TREE REMOVAL AND TRIMMING		NO TAB
	0845 PDA	UNFORESEEN WATER POLLUTION CONTROL		15
13	0850 S.Y.	ROCK, CLASS R-4		15
1412	* 9865 L.F.	SILT BARRIER FENCE, 36" HEIGHT		15
	* 0901 L.S.	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION		NO TAB
1	0901 TON	CALCIUM CHLORIDE		NO TAB
1	1001 C.Y.	CLASS C CEMENT CONCRETE		12,13
	* 1018 L.S.	REMOVAL OF EXISTING BRIDGE		10
100	* 1019 S.Y.	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)		11
300	* 1090 L.F.	EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS		11

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
	* 8100 L.S.	STEEL BRIDGE STRUCTURE		
	1005 L.S.	STEEL BEAM TEST PILES, HP12X53		
	1005 L.S.	STEEL BEAM BEARING PILES, HP12X53		
	1005 L.F.	STEEL BEAM BEARING PILES, HP12X53		
	1005 L.S.	STEEL BEAM PILE TIP REINFORCEMENT, HP12X53		
	* 9000 EACH	REDRIVING STEEL BEAM TEST PILES, HP12X53		
	* 9000 EACH	REDRIVING STEEL BEAM BEARING PILES, HP12X53		
	* 8000 L.S.	PRESTRESSED CONCRETE BRIDGE STRUCTURE		
	1005 L.S.	STEEL BEAM TEST PILES, HP12X53		
	1005 L.F.	STEEL BEAM BEARING PILES, HP12X53		
	1005 L.S.	STEEL BEAM PILE TIP REINFORCEMENT, HP12X53		
	* 9000 EACH	AND		
	* 9000 EACH	AND		
	* 9100 EACH	AND		
	* 0040 EACH	AND		
	* 8600 L.S.	UNDERPASS LIGHTING		7, 15
2	* 9000 EA.	REMOVE AND RELOCATE EXISTING SEPTA SIGNS		15
98	* 9000 S.Y.	REMOVAL OF EXISTING BRICK PLATFORM		15
49	* 9000 S.Y.	BRICK PAVEMENT, TYPE 1		15
49	* 9000 S.Y.	BRICK PAVEMENT, TYPE 2		15
	* 9000 L.S.	TEMPORARY PLATFORM EXTENSION		15
	* 9000 L.S.	INSTALLATION OF PHILADELPHIA SUBURBAN WATER CO. FACILITY		11
	* 9000 L.S.	INSTALLATION OF PHILADELPHIA ELECTRIC COMPANY FACILITY		11
	* 9000 L.S.	INSTALLATION OF BELL TELEPHONE COMPANY FACILITY		11

QUANTITY	ITEM NUMBER	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
	* 9000 L.S.	INSTALLATION OF ADELPHIA CABLE COMPANY FACILITY		11
	* 9000 L.S.	PROTECTION OF COMMUNICATION AND SIGNALIZATION DUCTS AT STRUCTURE S-17213		11
100	* 9000 L.F.	SINGLE FACE CONCRETE BARRIER, TYPE 1		14
1	* 9000 EACH	APPROACH END TRANSITION (80 FEET)		14
2	* 9000 EACH	DEWATERING FILTER		15
1	* 9000 EACH	CAP EXISTING INLET		12,13
100	* 9000 L.F.	PLATFORM CURB		15
2	* 9000 EACH	ROCK CONSTRUCTION ENTRANCE		15
1	* 8000 EACH	RISE PIPE ASSEMBLY, MODIFIED		15
1	* 9000 EACH	TYPE E ENDWALL, MODIFIED		12,13
2	* 9000 EACH	METER SUPPORT		3 OF 3
210	* 9000 S.Y.	PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES		11
2660	* 9000 L.F.	TEMPORARY PROTECTIVE FENCE FOR EXISTING PLANT MATERIAL, SPECIAL		15
	* 9000 L.S.	UTILITY SERVICE REPLACEMENTS (PRIVATE RESIDENCE)		3 OF 3
	* 9000 L.S.	UTILITY SERVICE REPLACEMENTS (TO SOUTH TRAIN STATION)		3 OF 3
	* 9000 L.S.	UTILITY SERVICE REPLACEMENTS (TO NORTH TRAIN STATION)		3 OF 3
	* 9000 L.S.	NEW UNDERGROUND UTILITIES FOR PHILADELPHIA ELECTRIC COMPANY		3 OF 3
	* 9000 L.S.	NEW UNDERGROUND UTILITIES FOR BELL TELEPHONE COMPANY OF PA.		3 OF 3
	* 9000 L.S.	NEW UNDERGROUND UTILITIES FOR ADELPHIA CABLE COMMUNICATIONS		3 OF 3
62	* 9601 L.F.	8" EXTRA STRENGTH VITRIFIED CLAY PIPE		12,13.
1	* 9601 EA.	1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE		12,13
1	* 9620 EACH	APPROACH END TRANSITION WITH INLET PLACEMENT		14
3	* 9620 EACH	APPROACH END TRANSITION WITHOUT INLET PLACEMENT		14
	* 9994 PDA	REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO. (NO OUTAGE)		11

6-0	DELAWARE	0320	12S	3
	RADNOR TOWNSHIP			
	REVISION			
	REVISORS			
	DATE			

TABULATION OF DRAINAGE QUANTITIES

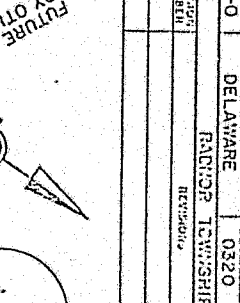
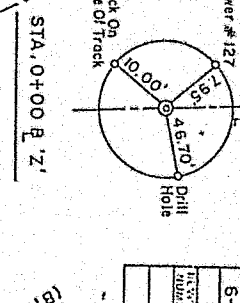
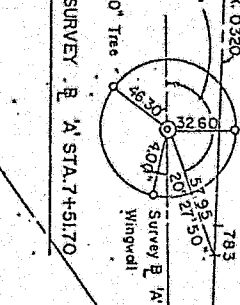
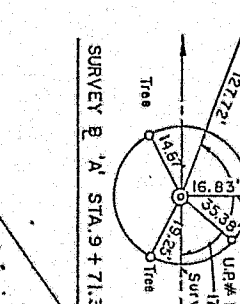
(SHEET 2 OF 2)

* SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

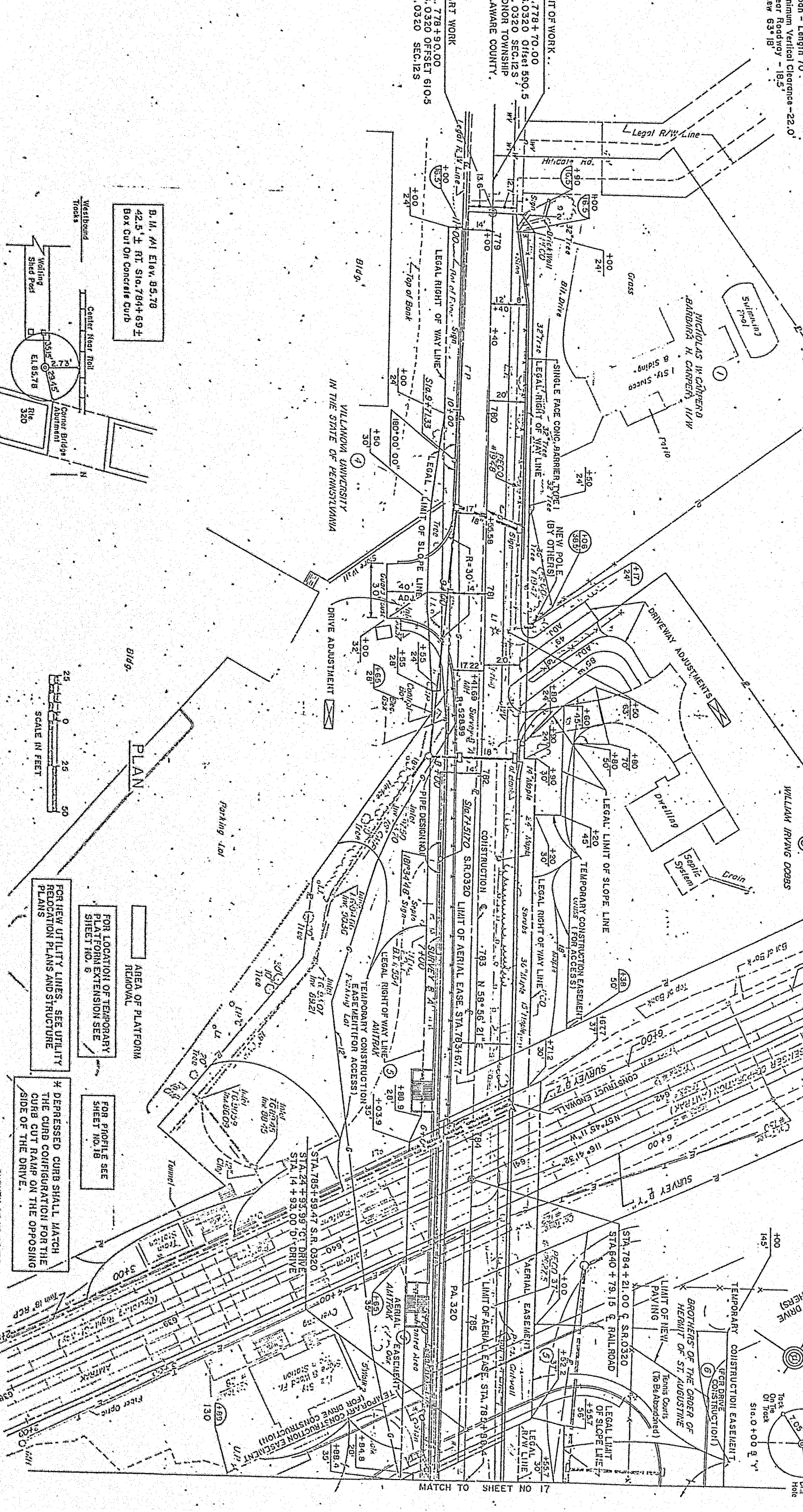
ITEM NUMBER		REMARKS	SIDE	STATIONS	ROUTE
9000 0017 EACH	1	TYPE E ENDWALL, MODIFIED	LT.	786+82±	SR 0320
9000 0015 EACH	1	CAP EXISTING INLET	LT.	786+91±	SR 0320
1001 0020 C.Y.	1	CLASS C CEMENT CONCRETE	LT.	783+78 TO 784+05	SR 0320
0607 0200 V.F.	1	REBUILT MANHOLE	LT.	783+82 TO 784+09	SR 0320
0601 0763 L.F.	60	18" DUCTILE IRON PIPE	LT.	6+05 TO 6+50	'A' DRIVE
9601 0643 EACH	1	1/32 BEND, 8" EXTRA STRENGTH VITRIFIED CLAY PIPE	LT.	788+46	SR 0320
9601 0643 L.F.	12	8" EXTRA STRENGTH VITRIFIED CLAY PIPE	LT.	787+01 TO 787+11	SR 0320
0605 2070 EACH	1	TYPE M INLET, BICYCLE SAFE GRATE	LT.		
0605 2010 EACH	1	TYPE C INLET, BICYCLE SAFE GRATE	LT.		
0605 1300 EACH	2	TYPE A MANHOLE	LT.		
0601 * L.F.	41	PIPE DESIGN NO. 6	LT.		
0601 * L.F.	24	PIPE DESIGN NO. 5	LT.		
0601 * L.F.	102	PIPE DESIGN NO. 4	LT.		
0601 * L.F.	153	PIPE DESIGN NO. 3	LT.		
0601 * L.F.	61	PIPE DESIGN NO. 2	LT.		
0601 * L.F.	28	PIPE DESIGN NO. 1	LT.		
0601 5403 C.Y.	26	AGGREGATE FOR BEDDING	LT.		
0601 5400 C.Y.	288	COARSE AGGREGATE FOR PIPE TRENCH BACKFILL	LT.		
0601 1424 L.F.	14	18" COATED CORR. GALV. STEEL PIPE, TYPE 1, TYPE B (2 2/3x1/2" CORRUGATIONS), 16 GAGE	LT.		
0601 0128 L.F.	10	36" REINFORCED CEMENT CONCRETE PIPE, CLASS V	LT.		
0501 0122 L.F.	27	18" REINFORCED CEMENT CONCRETE PIPE, CLASS V	LT.		
0601 0087 L.F.	247	18" REINFORCED CEMENT CONCRETE PIPE, CLASS IV	LT.		
0601 0026 L.F.	118	30" REINFORCED CEMENT CONCRETE PIPE, CLASS II	LT.		
0601 0024 L.F.	81	24" REINFORCED CEMENT CONCRETE PIPE, CLASS II	LT.		
0601 0022 L.F.	379	18" REINFORCED CEMENT CONCRETE PIPE, CLASS II	LT.		
0204 0150 C.Y.	160	CLASS 4 EXCAVATION	LT.		
ITEM NUMBER		REMARKS	SIDE	STATIONS	ROUTE
UNIT					
		BACKFILL INLET	LT.	786+82±	SR 0320
		PIPE UNDER PLATFORM	LT.	783+78 TO 784+05	SR 0320
		PIPE UNDER PLATFORM	LT.	783+82 TO 784+09	SR 0320
		MEET EXISTING PIPE	LT.	6+05	'A' DRIVE
		MEET EXISTING PIPE	LT.	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			
		TOTALS			

REVISION NUMBER	DATE

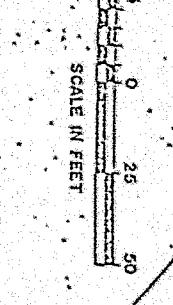
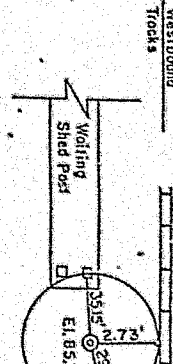
783 + 93
 3 Spon P/S Concrete Spread Box Beam
 Spon 1 - 72' Spon 2 - 60' Spon 3 - 54'
 Minimum Vertical Clearance - 22'-6"
 Survey Elevation - 34'
 Survey Elevation - 63' 18" 28.3"
 17313, Recommended
 KISSING STRUCTURE
 784 + 21
 Iron Truss Bridge
 Vertical Clearance - 22.0'
 Length 70'
 Survey Elevation - 18.5'
 Survey Elevation - 63' 18"



DISTRICT	COUNTY	TOWNSHIP	SECTION
6-0	DELAWARE	RAYBOR TOWNSHIP	12S 16E



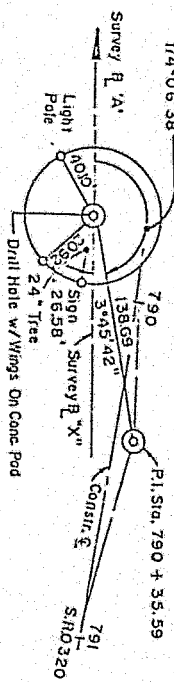
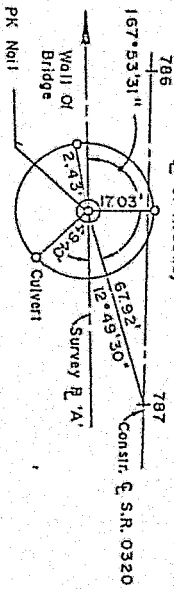
RT WORK
 778 + 90.00
 0320 OFFSET 610.5
 0320 SEC. 12S
 AWARE COUNTY



FOR NEW UTILITY LINES, SEE UTILITY RELOCATION PLANS AND STRUCTURE PLANS
 FOR LOCATION OF TEMPORARY PLATFORM EXTENSION SEE SHEET NO. 6
 FOR PROFILE SEE SHEET NO. 1B
 * DEPRESSED CURB SHALL MATCH THE CURB CONFIGURATION FOR THE CURB CUT RAMP ON THE OPPOSING SIDE OF THE DRIVE.

AREA OF PLATFORM REMOVAL
 FOR LOCATION OF TEMPORARY PLATFORM EXTENSION SEE SHEET NO. 6
 FOR PROFILE SEE SHEET NO. 1B

MATCH TO SHEET NO 17



SURVEY R. A. STA. 1+00 & SURVEY R. X. STA. 0+00

Dormitory

4" STEAM LINE LOCATION TO BE FIELD VERIFIED

TRAFFIC SIGNALS TO BE REMOVED (PROPERTY OF RADNOR TWP)

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

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

P.I. STA. 790 + 35.59
 D * 2°11'07" RT
 T * 114.44'
 L * 220.85'
 R * 6000.00'
 E * 1.09'
 SUPERELEVATE * NORMAL CROWN

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

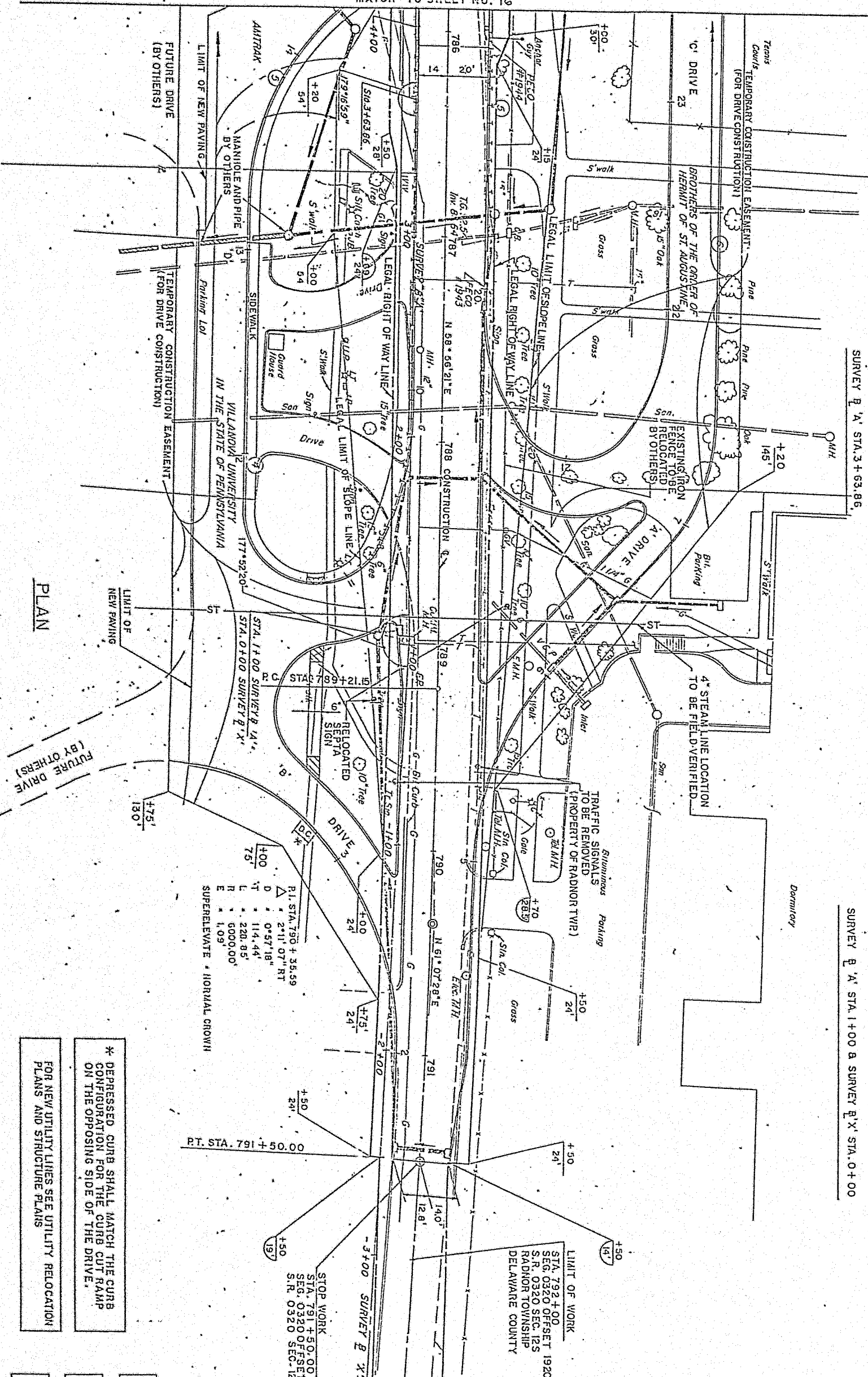
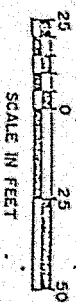
FOR NEW UTILITY LINES SEE UTILITY RELOCATION PLANS AND STRUCTURE PLANS

FOR I/I PROFILE SEE SHEET NO. 18

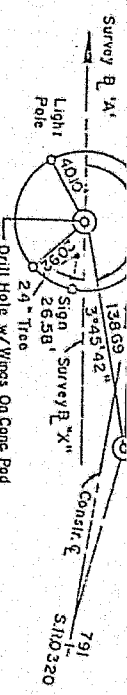
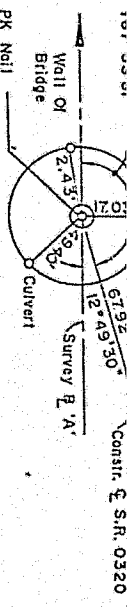
FOR PAV'T CONTROL OF DRIVES A, B, C & D SEE SHEET NO. 20

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

PLAN

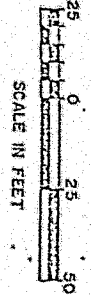
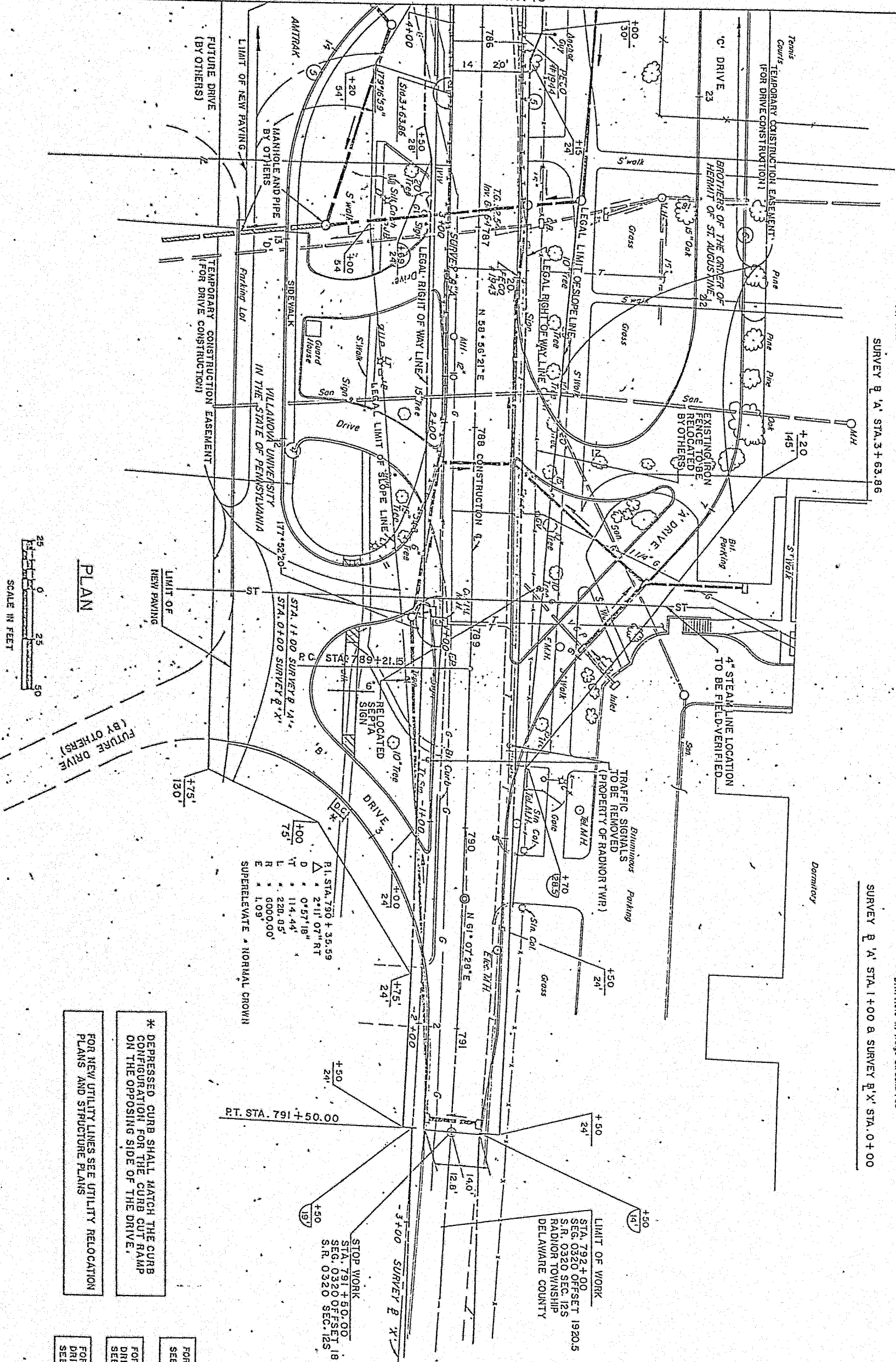
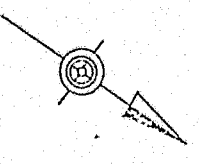


E-0	DELAWARE	0320	125	17
PROJECT NUMBER	REV. NO.	DATE		



SURVEY E, A' STA. 1+00 B SURVEY E, X' STA. 0+00

Domitory



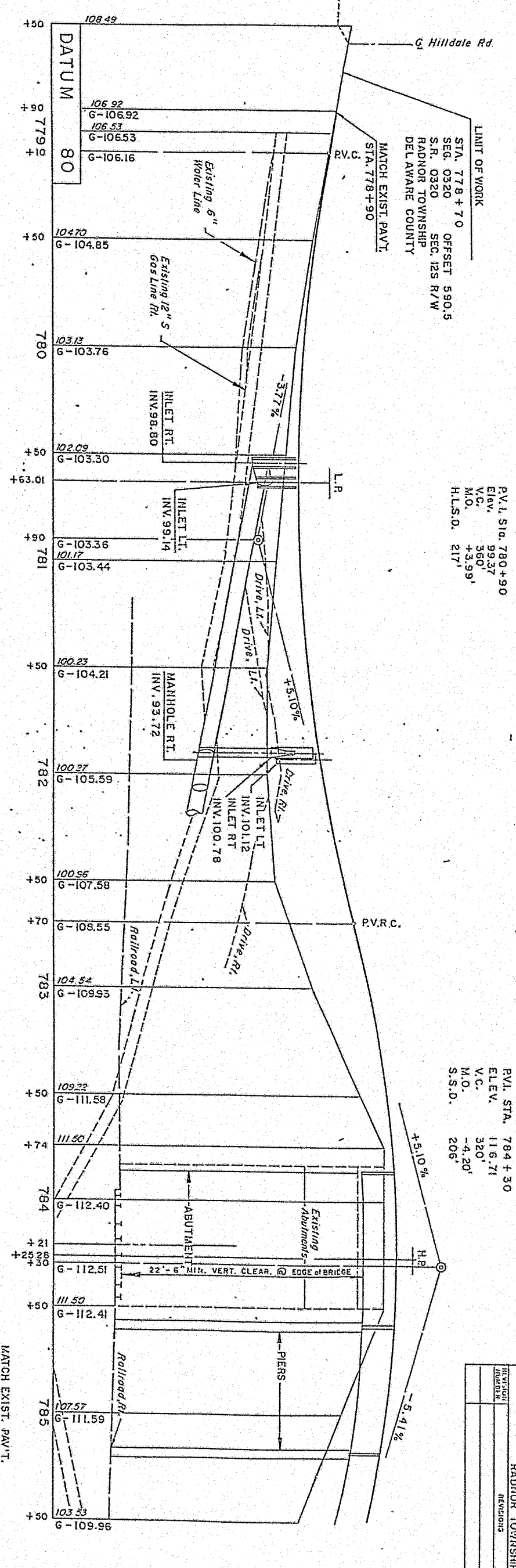
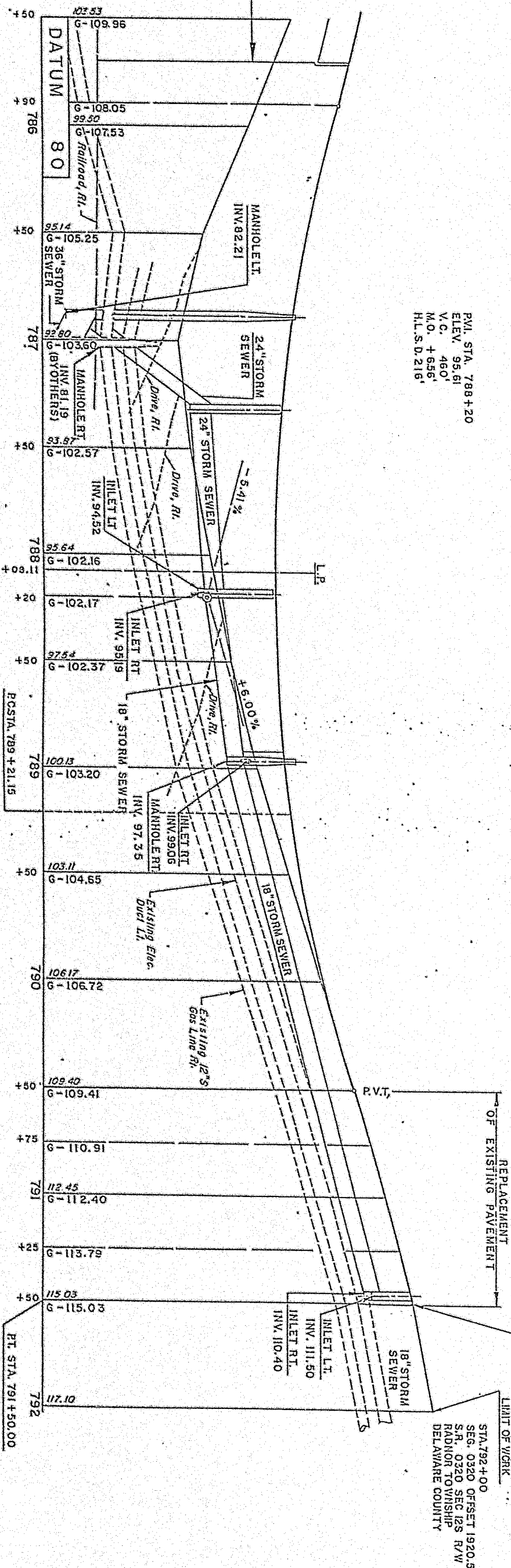
PLAN

RT. STA. 790 + 35.59
 Δ = 2.11' 07" RT
 D = 0° 57' 18"
 T = 114.44'
 L = 220.85'
 R = 6000.00'
 E = 1.09'
 SUPERELEVATE * NORMAL CROWN

STOP WORK
 STA. 791 + 50.00
 SEG. 0320 OFFSET 1870.5
 S.R. 0320 SEC. 12S

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

- * 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 GEOMETRY OF DRIVES A, B, C & D SEE SHEET NO. 19
- FOR 1/2 PROFILE SEE SHEET NO. 18
- FOR PAV'T CONTROL OF DRIVES A, B, C & D SEE SHEET NO. 20



REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

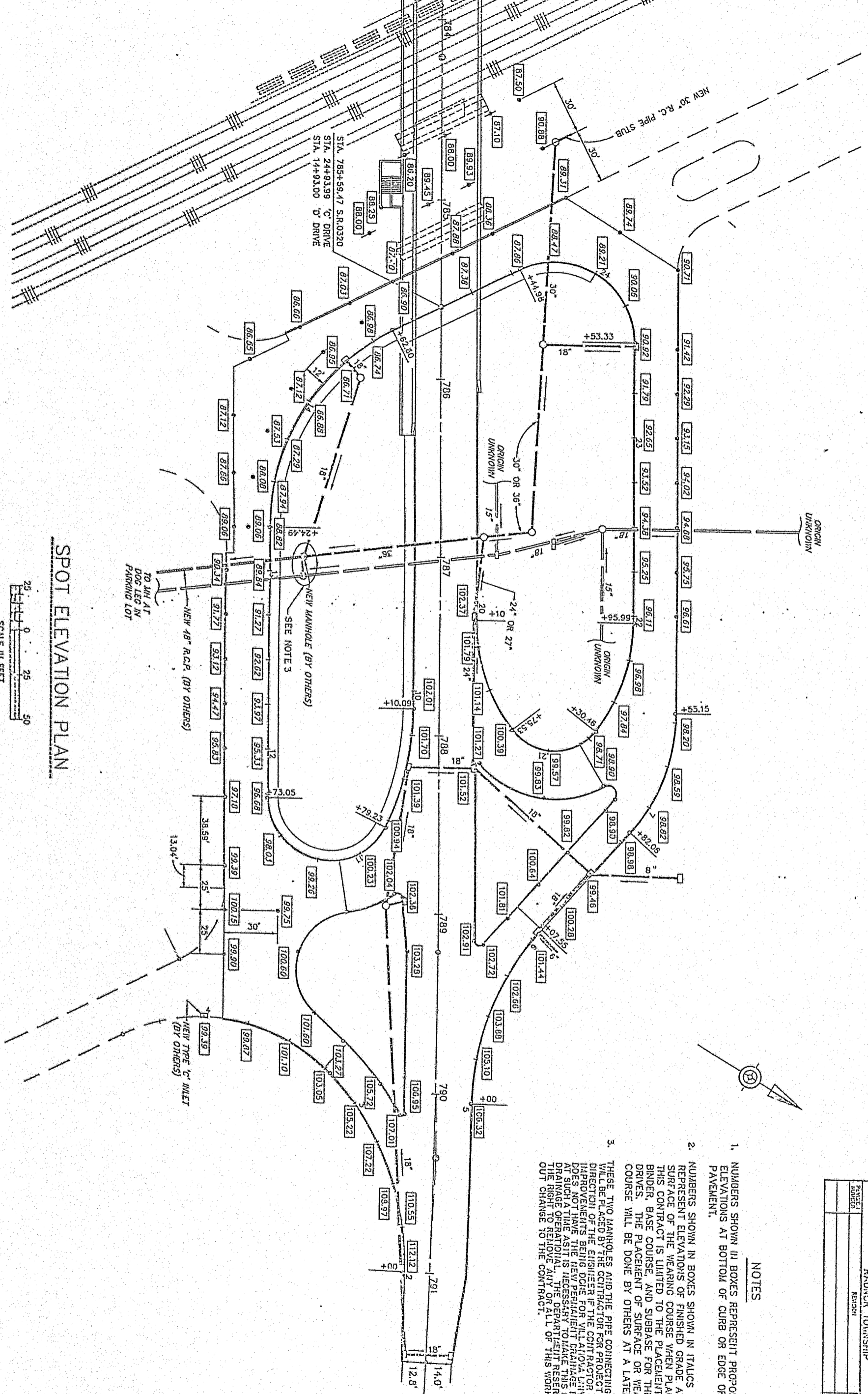
REVISION NUMBER	DATE	BY

REVISION NUMBER	DATE	BY

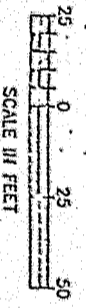
UNIT	COUNTY	ROUTE	SECTION	SHEET
6-0	DELAWARE	0320	12S	20 of 27
PROJECT NUMBER	RADNCR TOWNSHIP			
REVISION	DATE	BY		

NOTES

- NUMBERS SHOWN IN BOXES REPRESENT PROPOSED ELEVATIONS AT BOTTOM OF CURB OR EDGE OF PAVEMENT.
- NUMBERS SHOWN IN BOXES SHOWN IN ITALICS REPRESENT ELEVATIONS OF FINISHED GRADE AT THE SURFACE OF THE WEARING COURSE WHEN PLACED. THIS CONTRACT IS LIMITED TO THE PLACEMENT OF BINDER, BASE COURSE, AND SUBBASE OR WEARING COURSE. THE PLACEMENT OF SURFACE OR WEARING COURSE WILL BE DONE BY OTHERS AT A LATER DATE.
- 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 VILLAVONA UNIVERSITY DOES NOT HAVE THE NECESSARY PERMITS TO INSTALL AT SUCH A TIME AS IT IS NECESSARY TO MAKE THIS PROJECT DRAINAGE OPERATIONAL. THE DEPARTMENT RESERVES THE RIGHT TO REMOVE ANY OR ALL OF THIS WORK WITH-OUT CHANGE TO THE CONTRACT.



SPOT ELEVATION PLAN



TO 1/4" AT
DOG LEG IN
PARKING LOT

NEW 48" R.C.P. (BY OTHERS)

NEW MANHOLE (BY OTHERS)
SEE NOTE 3

NEW TYPE 1" INLET
(BY OTHERS)

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

NEW 30" R.C. PIPE STUB

ORIGIN UNKNOWN

ORIGIN UNKNOWN

ORIGIN UNKNOWN

ORIGIN UNKNOWN

ORIGIN UNKNOWN

ORIGIN UNKNOWN

ORIGIN UNKNOWN

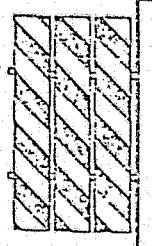
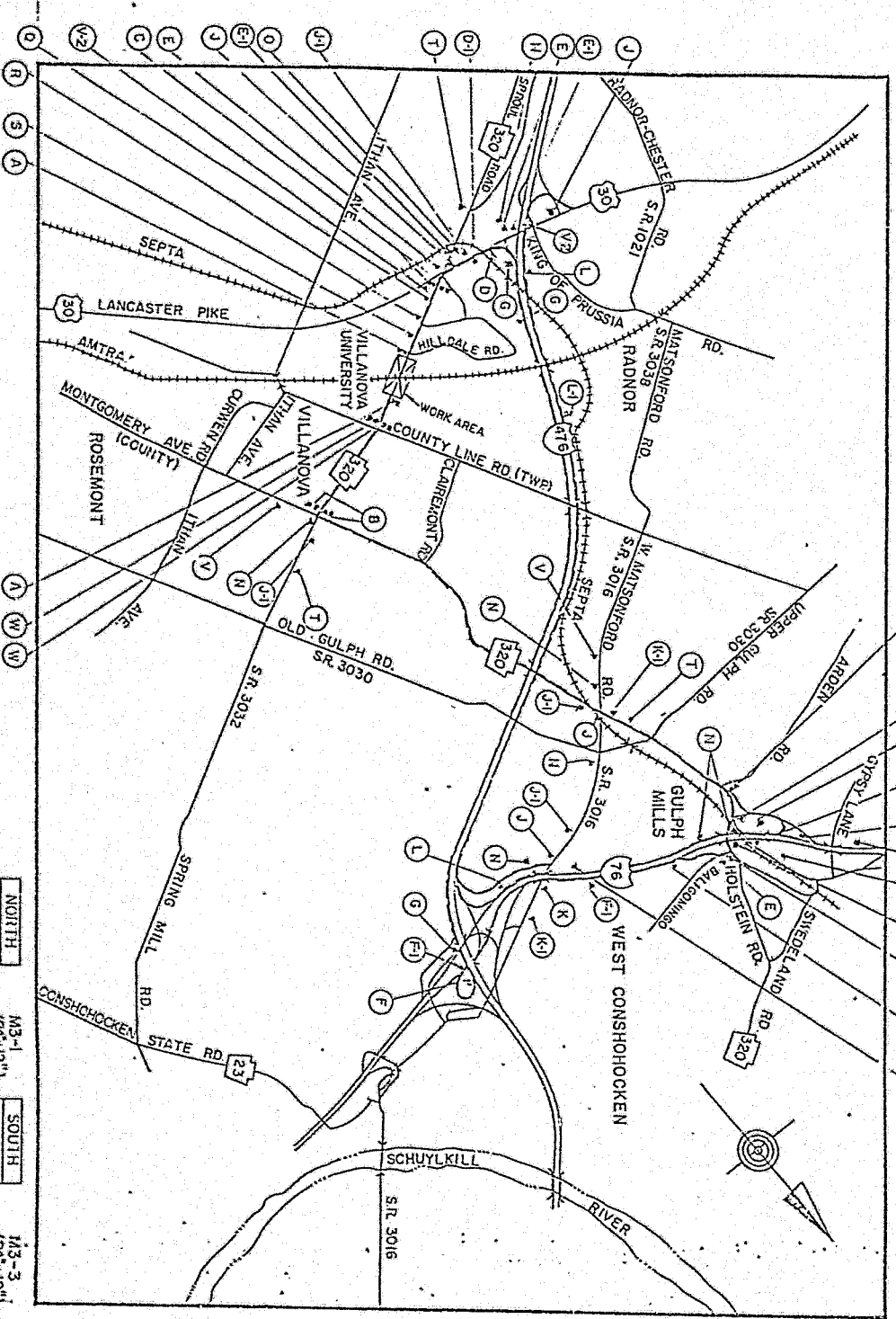
ORIGIN UNKNOWN

ORIGIN UNKNOWN

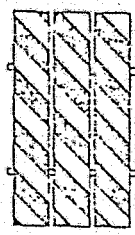
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ORIGIN UNKNOWN

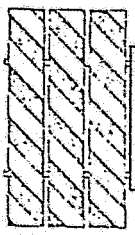
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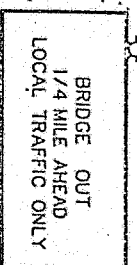
TYPE III
BARRICADE



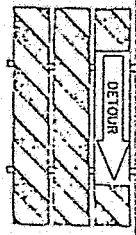
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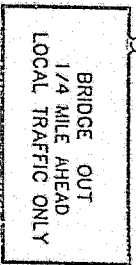
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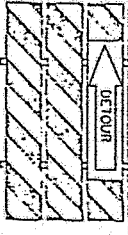
R11-3
(60"x30")
R11-3-1
(48"x12")



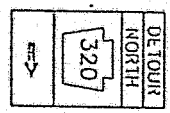
G20-6R
(48"x18")
TYPE III
BARRICADE



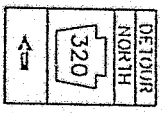
R11-3
(60"x30")
R11-3-1
(48"x12")



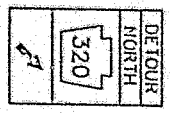
G20-6L
(48"x18")
TYPE III
BARRICADE



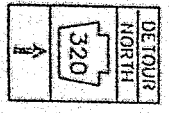
M4-8
(24"x12")
M3-1
(24"x12")
M1-6
(30"x24")
M6-1
(21"x15")



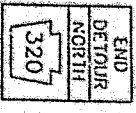
M4-8
(24"x12")
M3-1
(24"x12")
M1-6
(30"x24")
M6-1
(21"x15")



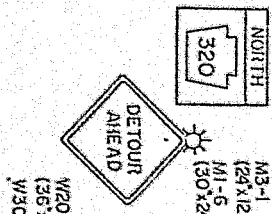
M4-8
(24"x12")
M3-1
(24"x12")
M1-6
(30"x24")
M6-2R
(21"x15")



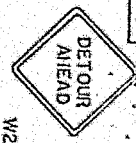
M4-8
(24"x12")
M3-1
(24"x12")
M1-6
(30"x24")
M6-3
(21"x15")



G20-7
(24"x18")
M3-1
(24"x12")
M1-6
(30"x24")



M3-1
(24"x12")
M1-6
(30"x24")
W20-2
(36"x36")
W30-1-6



M3-3
(24"x12")
M1-6
(30"x24")
W20-2
(48"x48")
W20-1-6

RECOMMENDED:

Charles W. Kelly
District Traffic Engineer

W
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KEY	ITEM	DESCRIPTION	SIZE	UNIT	QUAN.	KEY	ITEM	DESCRIPTION	SIZE	UNIT	QUAN.
C	G20-SL	DETOUR ON LEFT ARROW	48"x10"	EACH	1	A	R11-2	ROAD CLOSED	48"x30"	EACH	1
B	G20-GR	DETOUR ON RIGHT ARROW	48"x10"	EACH	1	B,C,W,Y	R11-3	ROAD CLOSED - TRUCKS (SEE ITEM R11-3) AHEAD	60"x30"	EACH	4
H0	G20-7	TRIP DETOUR	24"x10"	EACH	2	D,C,W,Y	R11-3-1	ROAD OUT	48"x12"	EACH	4
D-1 TO V-2	M1-6	320 IN KERSTONE	30"x24"	EACH	20	T,V,Y-2	W20-2	DETOUR	35"x33"	EACH	3
D-1 TO V-2	M3-1	RIGHT	24"x12"	EACH	9	Y-1	W20-2	DETOUR	48"x19"	EACH	1
D-1 TO V-2	M3-1	RIGHT	24"x12"	EACH	10	Q,R,S	W20-3	ROAD CLOSED ** FT.	35"x39"	EACH	3
E-1K-1	M5-11	DETOUR	24"x12"	EACH	14	S	W20-1-1	**	(SEE ITEM W20-3)		1
E-1K-1	M5-11	RIGHT ANGLE LEFT TURN ARROW	21"x15"	EACH	2	R	W20-1-2	**	(SEE ITEM W20-3)		1
D-1-J-1	M5-1R	RIGHT ANGLE RIGHT TURN ARROW	21"x15"	EACH	2	Q	W20-1-3	**	(SEE ITEM W20-3)		4
F-1L-1	M5-2R	45 DEGREE RIGHT TURN ARROW	21"x15"	EACH	2	T,V,Y-1,Y-2	W20-1-6	AHEAD	(SEE ITEM W20-2)		4
D,E,M,K	M6-1	SIDE POINTING ARROW	21"x15"	EACH	4	A-C,Q-V,W	---	---	N/A	EACH	13
F,L	M9-2R	45 DEGREE RIGHT ARROW	21"x15"	EACH	2	A-C,W,Y	---	---	N/A	EACH	5
G,H	M6-3	STRAIGHT AHEAD ARROW	21"x15"	EACH	2	---	---	---	(SEE ITEM R11-3)		

TRAFFIC CONTROL PLAN

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

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

MAINTAIN ACCESS TO SEPTA PARKING AREA AS LONG AS POSSIBLE.

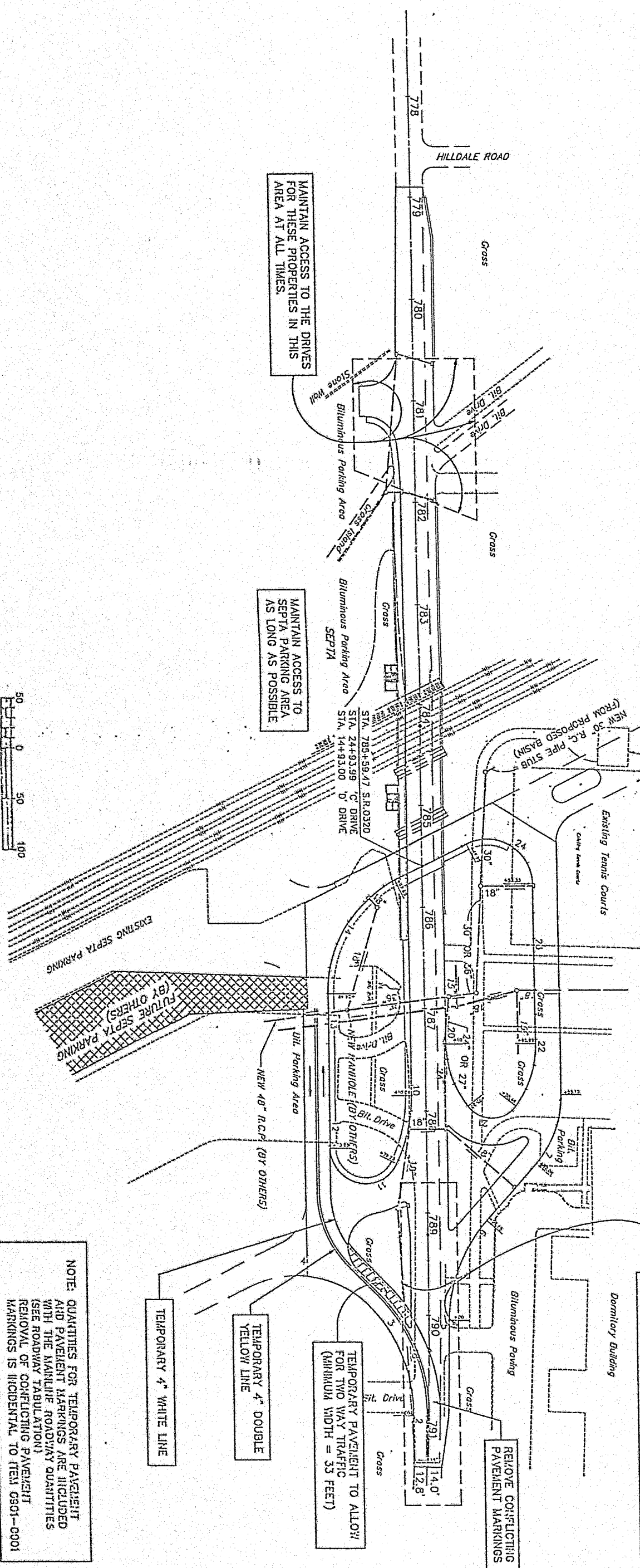
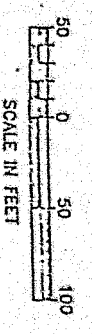
TEMPORARY 4" WHITE LINE

TEMPORARY 4" DOUBLE YELLOW LINE

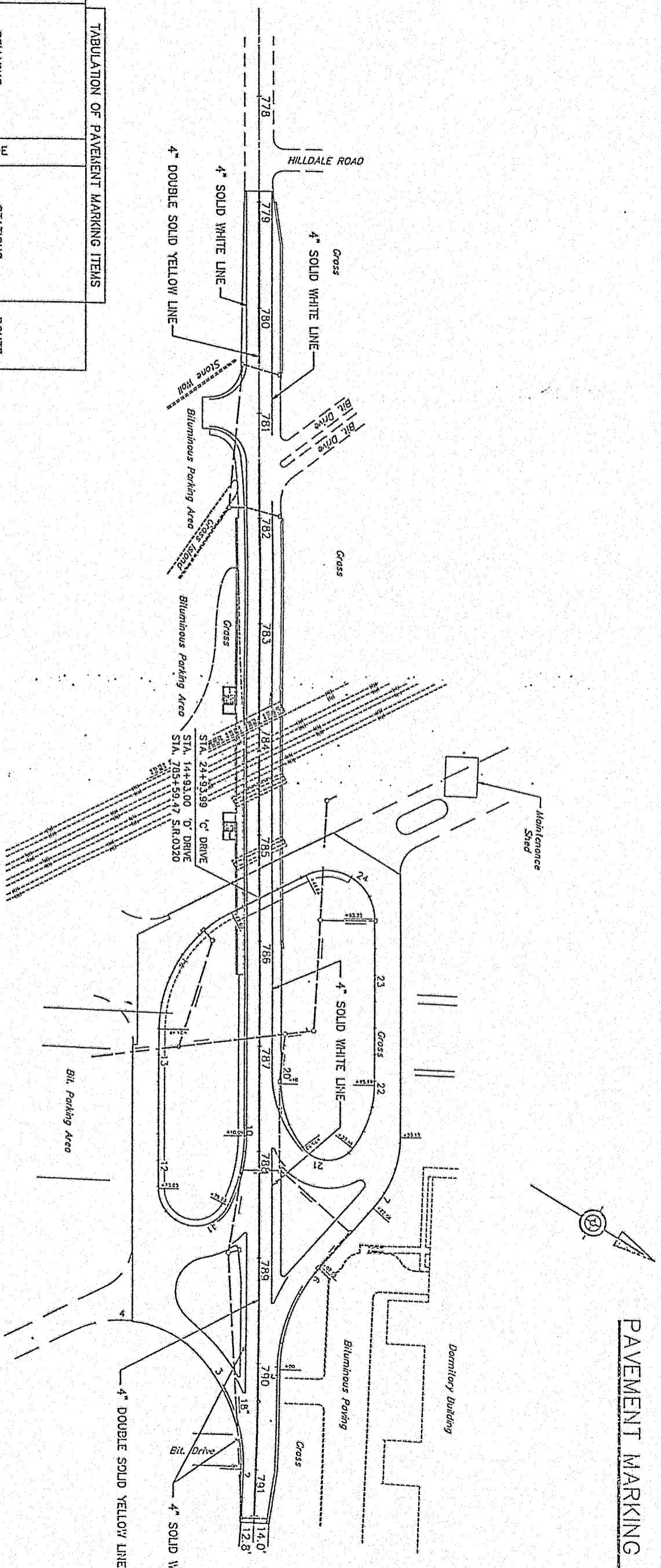
TEMPORARY PAVEMENT TO ALLOW FOR TWO WAY TRAFFIC (MINIMUM WIDTH = 33 FEET)

REMOVE CONFLICTING PAVEMENT MARKINGS

NOTE: QUANTITIES FOR TEMPORARY PAVEMENT AND PAVEMENT MARKINGS ARE INCLUDED WITH THE MAINTENANCE QUANTITIES (SEE ROADWAY TABULATION) REMOVAL OF CONFLICTING PAVEMENT MARKINGS IS INCIDENTAL TO ITEM 0501-0901



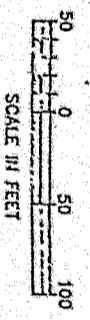
PAVEMENT MARKING PL.



TABULATION OF PAVEMENT MARKING ITEMS

ITEM NUMBER	UNIT	REMARKS	SIDE	STATIONS	ROUTE
0962 0620 L.F.		4" YELLOW TRAFFIC ZONE PAINT, TYPE II			
0962 0620 L.F.		4" WHITE TRAFFIC ZONE PAINT, TYPE II			
B45	LANE EDGE	LANE EDGE	L.T.	778+90 TO 787+35	S.R. 0320
99	LANE EDGE	LANE EDGE	L.T.	788+16 TO 789+15	S.R. 0320
100	LANE EDGE	LANE EDGE	L.T.	790+50 TO 791+50	S.R. 0320
166	LANE EDGE	LANE EDGE	R.T.	778+90 TO 780+56	S.R. 0320
643	LANE EDGE	LANE EDGE	R.T.	781+42 TO 787+85	S.R. 0320
114	LANE EDGE	LANE EDGE	R.T.	788+91 TO 790+05	S.R. 0320
50	LANE EDGE	LANE EDGE	R.T.	791+00 TO 791+50	S.R. 0320
2520	CENTER LINE	CENTER LINE	C	778+90 TO 791+50	S.R. 0320
2520	TOTALS	TOTALS			S.R. 0320

PLAN

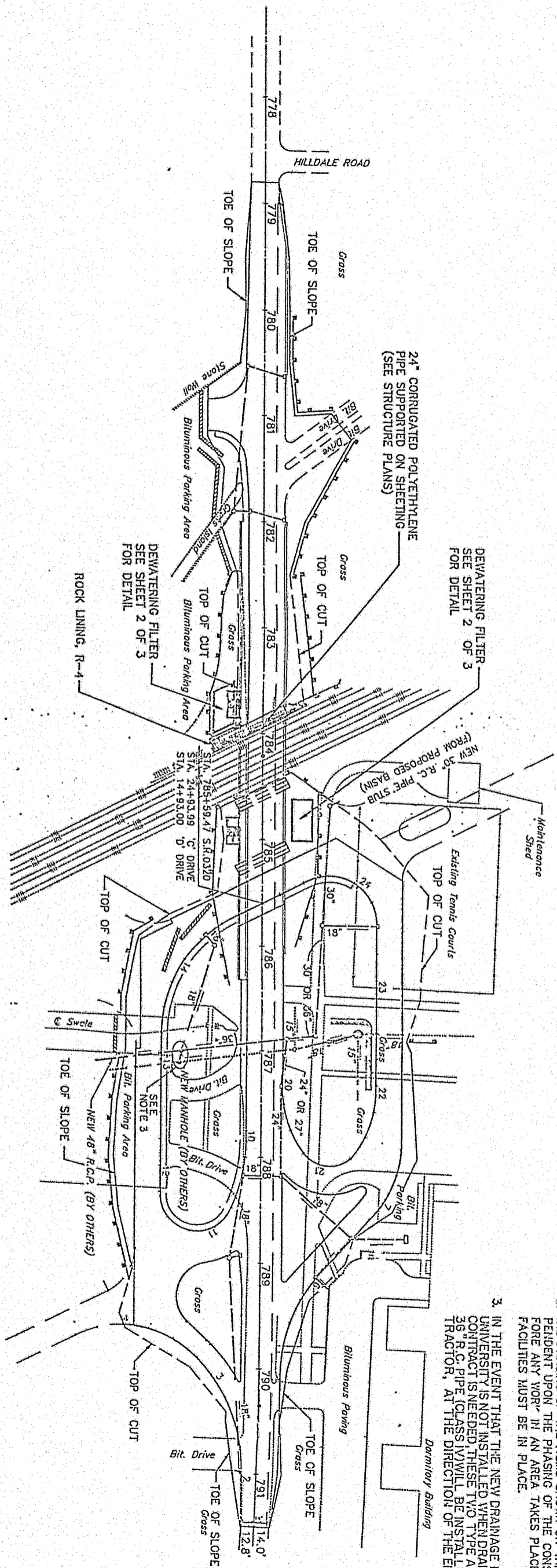


PROJECT NO.	6-0	COUNTY	DELAWARE	DATE	1/1
PROJECT NAME	RADNOR TOWNSHIP		DATE	03/20	1/1
DESIGNER		DATE			
CHECKED		DATE			

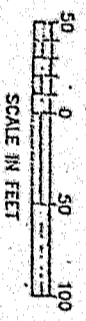
EROSION AND SEDIMENT POLLUTION CONTROL PLAN

NOTES

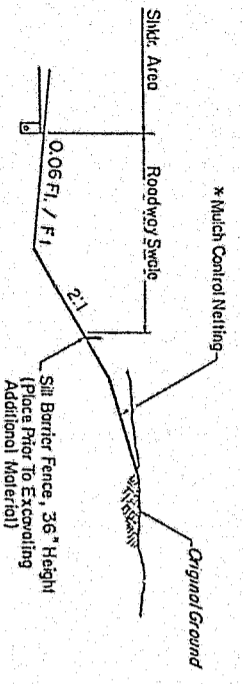
1. ALL ITEMS FOR EROSION AND SEDIMENT POLLUTION CONTROL ARE TO BE MAINTAINED BY THE CONTRACTOR UNTIL THE REMOVAL, THE MAINTENANCE AND REMOVAL OF ALL EROSION AND SEDIMENT POLLUTION CONTROL ITEMS IS INCLUDED IN THE CONTRACT UNIT PRICE FOR SAID ITEMS.
2. THE PHASING OF THE ITEMS SHOWN ON THIS PLAN ARE IDENTIFIED 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 PLANIFIED BY THE UNIVERSITY IS NOT INSTALLED WHEN DRAINAGE FOR THE CONTRACT IS NEEDED, THESE TWO TYPE MANHOLES AS 36" R.C. PIPE (CLASS) WILL BE INSTALLED BY THIS CONTRACTOR, AT THE DIRECTION OF THE ENGINEER.



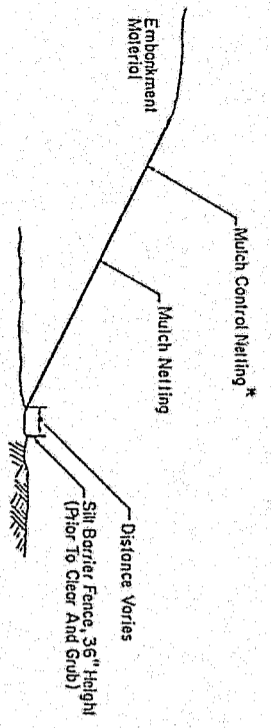
PLAN



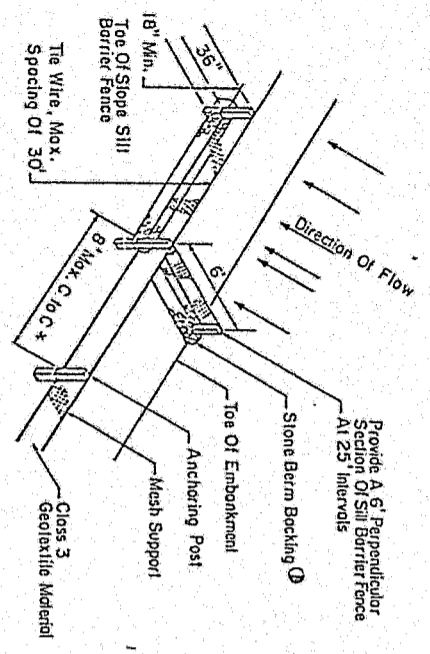
SYMBOL	DESCRIPTION
	ROCK LINING AT PIPE OUTLET, (10'x10')
	ASHTO NO. 67 STONE BERM
	36" WIRE MESH REINFORCED SILT FENCE WITH 6" PERPENDICULAR INTERRUPTS @ 25'
	RISER PIPE ASSEMBLY, MODIFIED
	EARTH RETENTION BERM



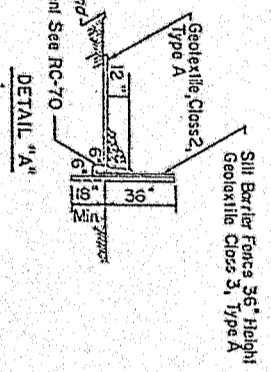
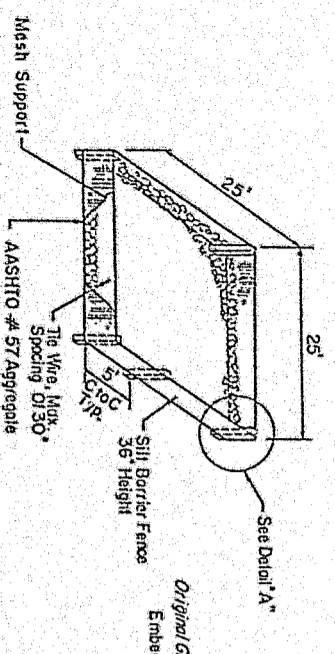
* As Indicated On Tab Sheet
CUT SLOPE STABILIZATION



* As Indicated On Tab
FILL SLOPE STABILIZATION



SILT BARRIER FENCE



DEWATERING FILTER
 ITEM NO. 9000-0014

GENERAL NOTES

CONSTRUCT SOIL EROSION AND SEDIMENT CONTROL FACILITIES IN ACCORDANCE WITH THE METHODS 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 SEED 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.

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

6-0	DELAWARE	0320	125	2 of 3
RAIDIOR TOWNSHIP				
DATE: 01/21/2023	TIME: 10:23	USER: [unclear]	SCALE: 1:50	

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 STORM EVENT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THEY ACCUMULATE TO ONE-THIRD THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER FENCE IS NO LONGER NEEDED MUST BE REMOVED OR DRESSED TO CONFORM TO THE SURROUNDING GRADE, FERTILIZED AND SEED.

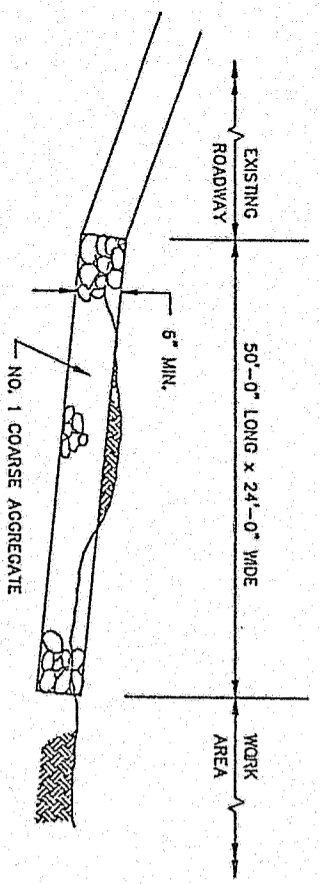
ANY SILT, SEDIMENT AND MUD LEAVING THE SITE MUST BE CONSIDERED AS DAMAGE TO NEIGHBORING PROPERTY AND IT WILL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN UP THE SEDIMENT AND RESTORE THE PROPERTY TO ITS ORIGINAL CONDITION, TO THE SATISFACTION OF THE NEIGHBORING PROPERTY OWNER, UPON OBTAINING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

REVISION NUMBER	REVISION	DATE	BY

**EROSION AND SEDIMENT
POLLUTION CONTROL PLAN**

DETAILS

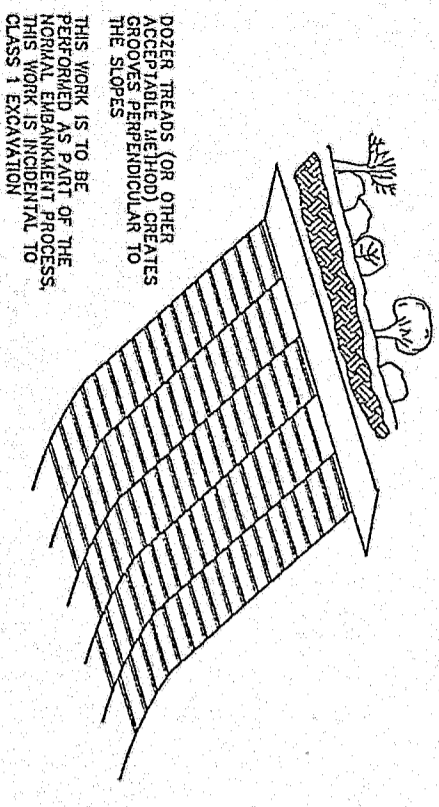
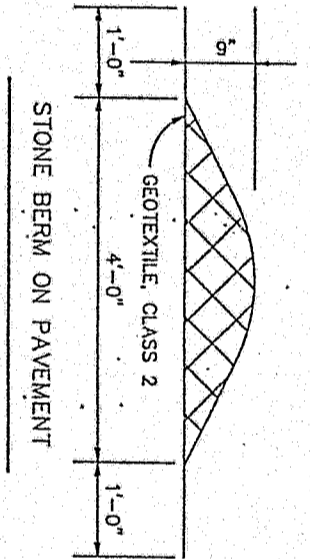


PROFILE

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

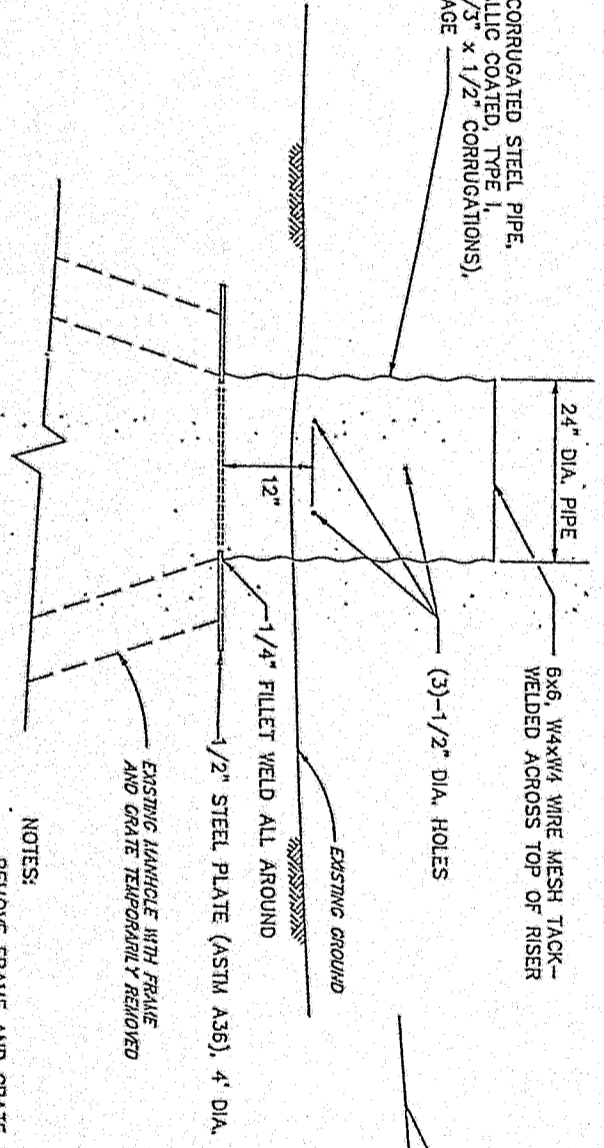
ROCK CONSTRUCTION ENTRANCE

ITEM NO. 9000-0018



SLOPE TRACKING

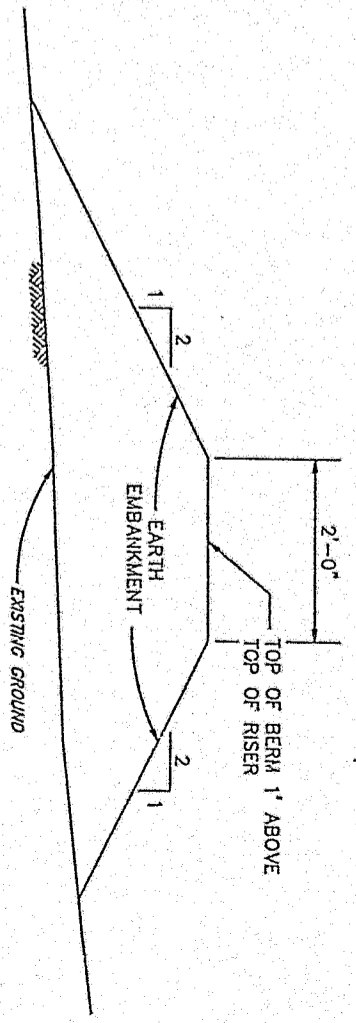
24" CORRUGATED STEEL PIPE, METALLIC COATED, TYPE 1, (2 2/3" x 1/2" CORRUGATIONS), 16 GAGE



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

RISER PIPE ASSEMBLY, MODIFIED

ITEM NO. 9000-0019



TEMPORARY EARTH BERM

INCIDENTAL TO ITEM NO. 9000-0019

RISER AND BERM DETAILS

(FOR SPECIAL SEDIMENT POND)

NEW UTILITIES SHOWN ON THIS PLAN MUST BE DONE AS EARLY AS POSSIBLE IN ORDER TO AVOID DELAYS TO THE CONSTRUCTION AS IS PHYSICALLY POSSIBLE IN ORDER TO AVOID DELAYS TO THE CONSTRUCTION. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO STAGE THE PLACEMENT OF THESE UTILITIES WITH HIS CONSTRUCTION SCHEDULE.

NEW LINES ARE SHOWN ON THESE SEPARATE PLANS FOR CLARIFICATION. 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 AT WILLANOVA UNIVERSITY HAS CAMPUS UTILITIES IN THIS AREA, WHICH 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.

CONDUIT TURNING RADIUS OR STUB UP RADIUS SHALL BE LESS THAN 36 INCHES.

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

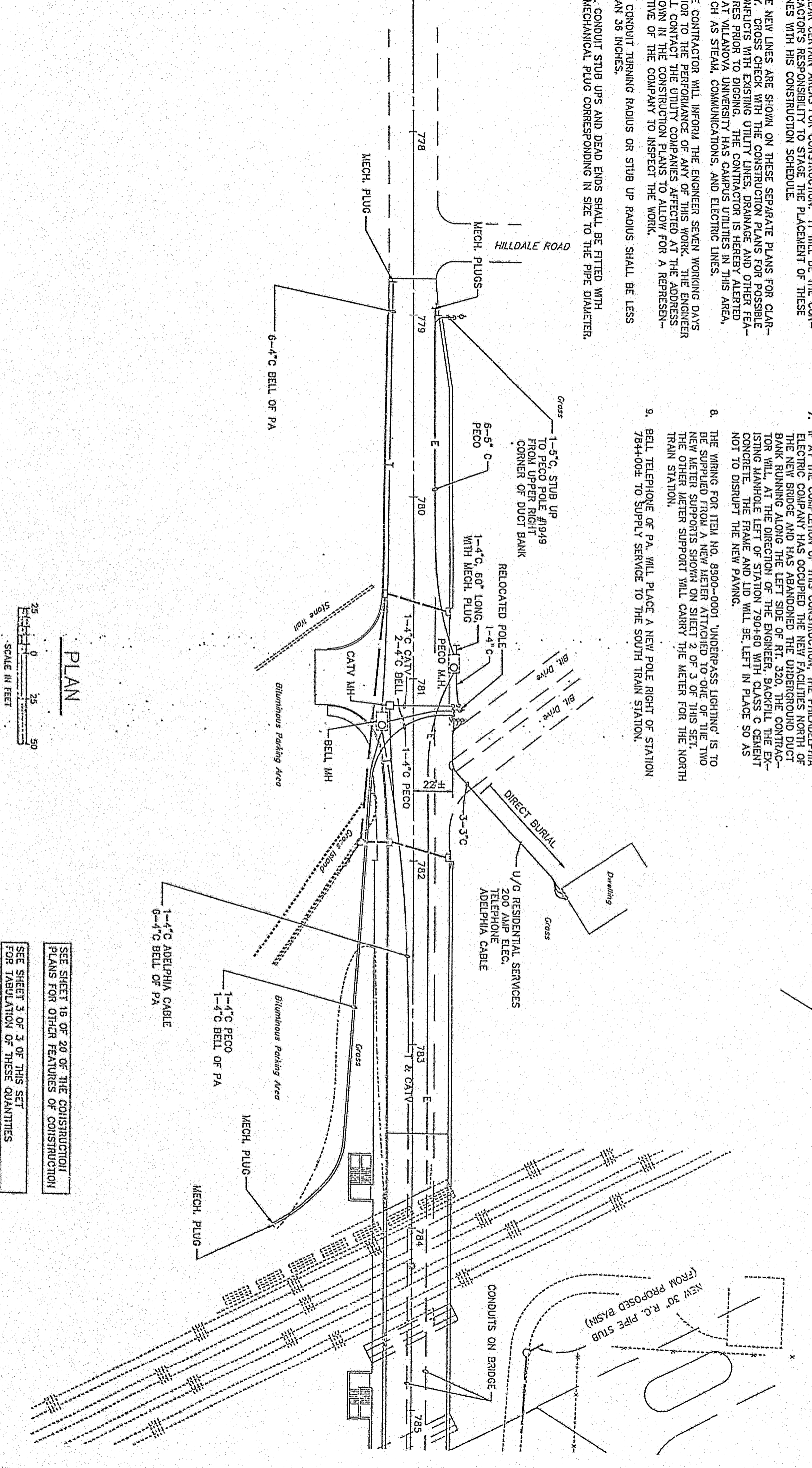
6. THE CONTRACTOR WILL PROVIDE A FISH LINE IN ALL CONDUITS.

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+60 WITH CLASS C CEMENT CONCRETE. THE FRAME AND LID WILL BE LEFT IN PLACE SO AS NOT TO DISRUPT THE NEW PAVING.

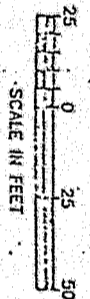
8. THE WIRING FOR ITEM NO. 8900-0001 'UNDERPASS LIGHTING' IS TO BE SUPPLIED FROM A NEW METER ATTACHED TO ONE OF THE TWO NEW METER SUPPORTS SHOWN ON SHEET 2 OF 3 OF THIS SET. THE OTHER METER SUPPORT WILL CARRY THE METER FOR THE NORTH TRAIN STATION.

9. BELL TELEPHONE OF PA. WILL PLACE A NEW POLE RIGHT OF STATION 784+00E TO SUPPLY SERVICE TO THE SOUTH TRAIN STATION.

UTILITY RELOCATION PLANS



PLAN

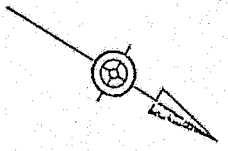
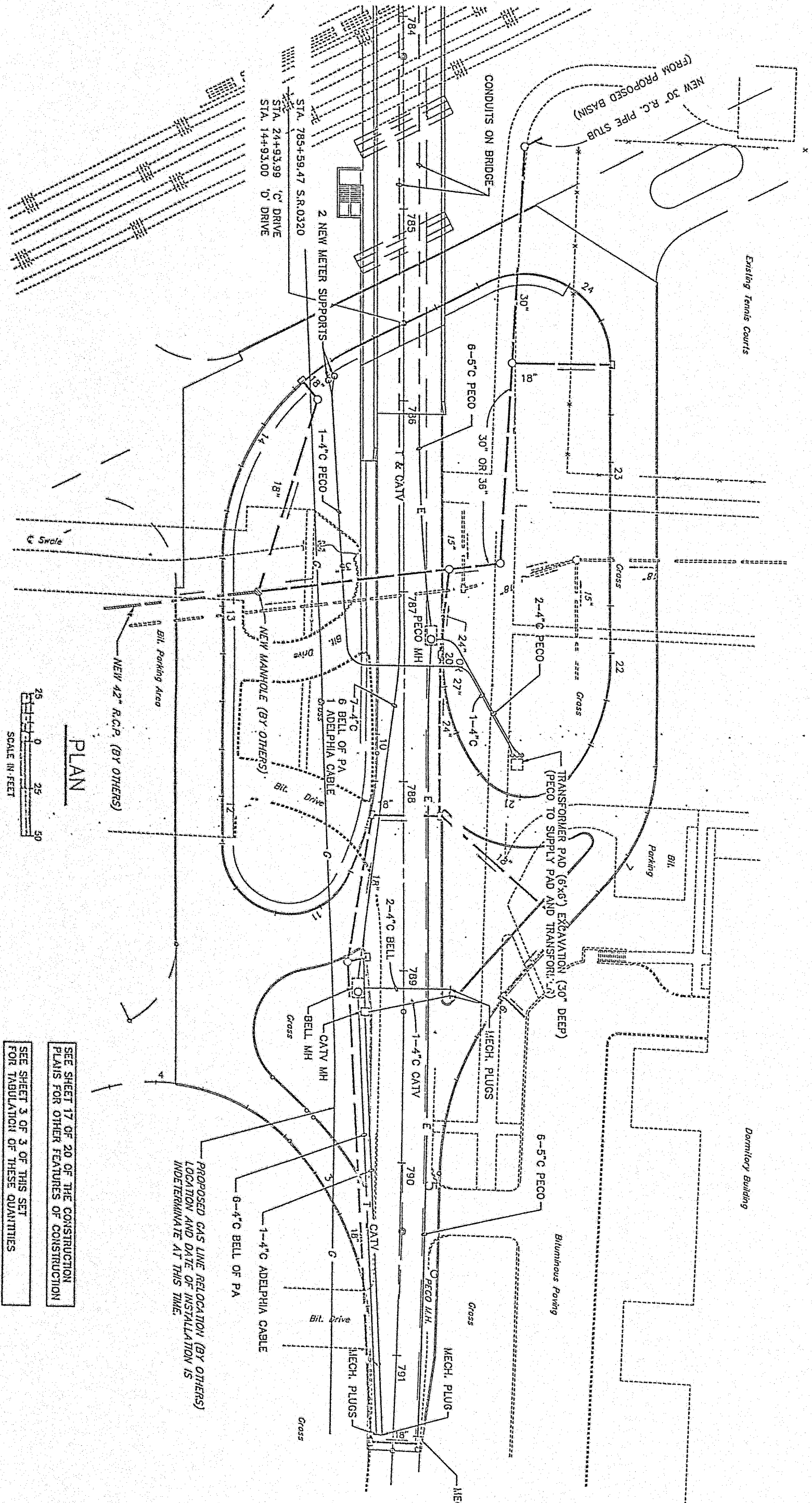


SEE SHEET 16 OF 20 OF THE CONSTRUCTION PLANS FOR OTHER FEATURES OF CONSTRUCTION

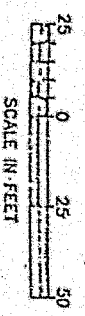
SEE SHEET 3 OF 3 OF THIS SET FOR TABULATION OF THESE QUANTITIES

6-0	DELAWARE	0320	123
	RAVINCOR TOWNSHIP		
	REVISION		

UTILITY RELOCATION



PLAN



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

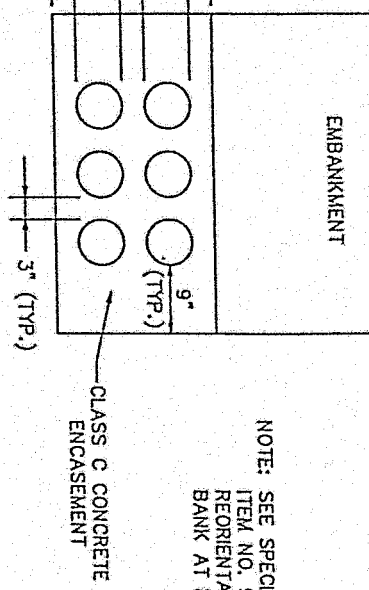
SEE SHEET 3 OF 3 OF THIS SET FOR TABULATION OF THESE QUANTITIES

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

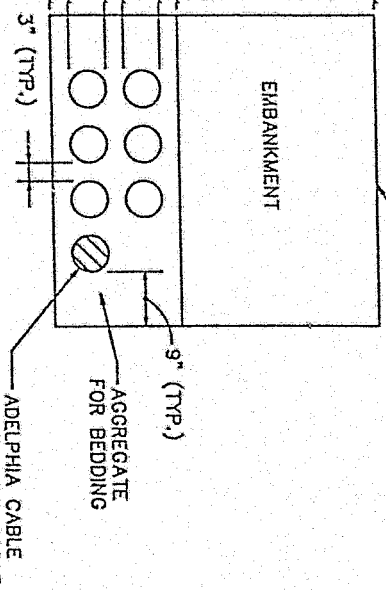
NOTE: SEE SPECIAL PROVISIONS FOR ITEM NO. 9000-0034 FOR THE REORIENTATION OF PECCO DUCT BANK AT MANHOLE ENTRY.

TABULATION OF UTILITY QUANTITIES
(FOR INFORMATION ONLY)

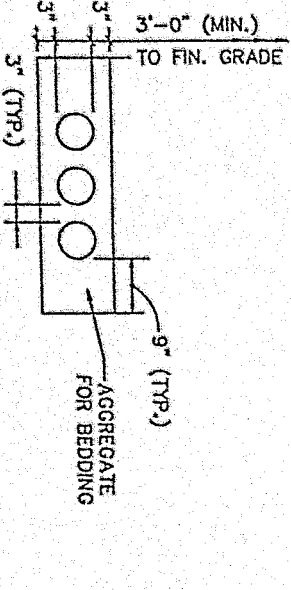
AFFECTED UTILITY	APPLIES TO ITEM NUMBER													SIDE	TIONS	ROUTE					
	5" MECHANICAL PLUG (FOR INFORMATION ONLY)	4" MECHANICAL PLUG (FOR INFORMATION ONLY)	SERVICE HEAD AND CONDUIT	METER SUPPORT	WIRE FOR CABLE TV RESIDENTIAL SERVICE CONNECTION	WIRE FOR TELEPHONE RESIDENTIAL SERVICE CONNECTION	WIRE FOR 200 AMP RESIDENTIAL SERVICE CONNECTION	CATV MANHOLE	TELEPHONE MANHOLE	ELECTRIC MANHOLE	5" DIAMETER PVC PIPE, FED. SPEC. WC-1094A (TYPE EB DUCT)	4" DIAMETER PVC PIPE, SCHEDULE 40 ASTM D1785	3" DIAMETER PVC PIPE, SCHEDULE 40 ASTM D1785				CLASS C CEMENT CONCRETE BACKFILL FOR EXISTING UTILITY MANHOLES (AS DIRECTED)	CLASS C CEMENT CONCRETE ENCASEMENT FOR PECCO DUCT BANKS	AGGREGATE FOR BEDDING	EMBANKMENT	CLASS 4 EXCAVATION
PECCO	6	1								1170	5			51	1	49	86	9000-0034	LT.	778+96 TO 780+86	S.R. 320
PECCO		1							1	1530	25			41	1	81	150	9000-0034	LT.	780+91 TO 783+48	S.R. 320
PECCO									1	678				18		41	75	9000-0034	LT.	786+07 TO 787+23	S.R. 320
BELL		6									1434				40	79	124	9000-0035	RT.	778+82 TO 781+20	S.R. 320
BELL									1		1320				38	102	136	9000-0035	RT.	781+25 TO 783+49	S.R. 320
BELL											1776				51	108	179	9000-0035	RT.	786+07 TO 789+08	S.R. 320
BELL		6									1440				42	82	129	9000-0035	RT.	789+13 TO 791+50	S.R. 320
ADELPHIA		1									44				3	9	13	9000-0036	LT.& RT.	789+13 TO 789+23	S.R. 320
ADELPHIA											235				4	16	25	9000-0036	RT.	781+17 TO 783+48	S.R. 320
ADELPHIA											315				3	7	10	9000-0036	RT.	786+07 TO 789+21	S.R. 320
ADELPHIA		1									230				13	47	65	9000-0036	RT.	789+23 TO 791+50	S.R. 320
PECCO	5									2550				5	128	209		9000-0034	LT.	787+28 TO 791+50	S.R. 320
ADELPHIA		1									36				2	7	9	9000-0036	LT.& RT.	781+15 TO 781+15	S.R. 320
PECCO		2									180				5	18	30	9000-0033	LT.	787+25 TO 787+85	S.R. 320
BELL		2									90				3	10	14	9000-0035	LT.& RT.	789+08 TO 789+08	S.R. 320
PECCO				2														9000-0022	RT.	785+88	S.R. 320
PECCO, BELL, & ADELPHIA			1		150	150	150					162			5	30	35	9000-0031	LT.	781+18 TO 782+15	S.R. 320
PECCO & BELL		4				335	335				710				24	79	106	9000-0032	LT.& RT.	781+17 TO 783+98	S.R. 320
PECCO		2									270				16	50	67	9000-0033	RT.& LT.	785+87 TO 787+85	S.R. 320



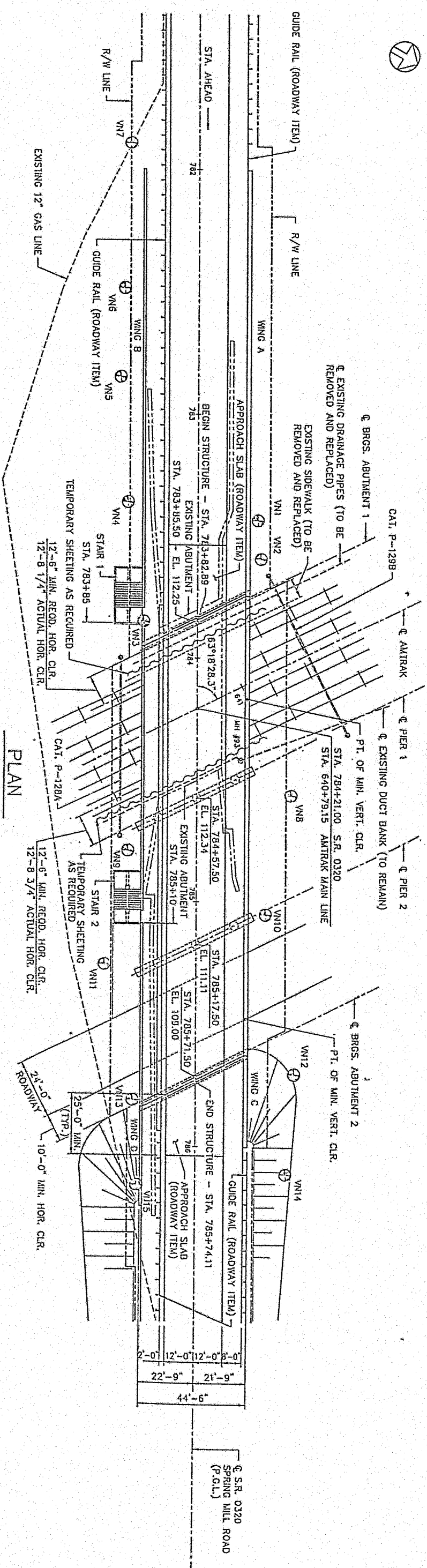
MECHANICAL CONDUIT TRENCH
FOR PHILADELPHIA ELECTRIC CO.
NOT TO SCALE



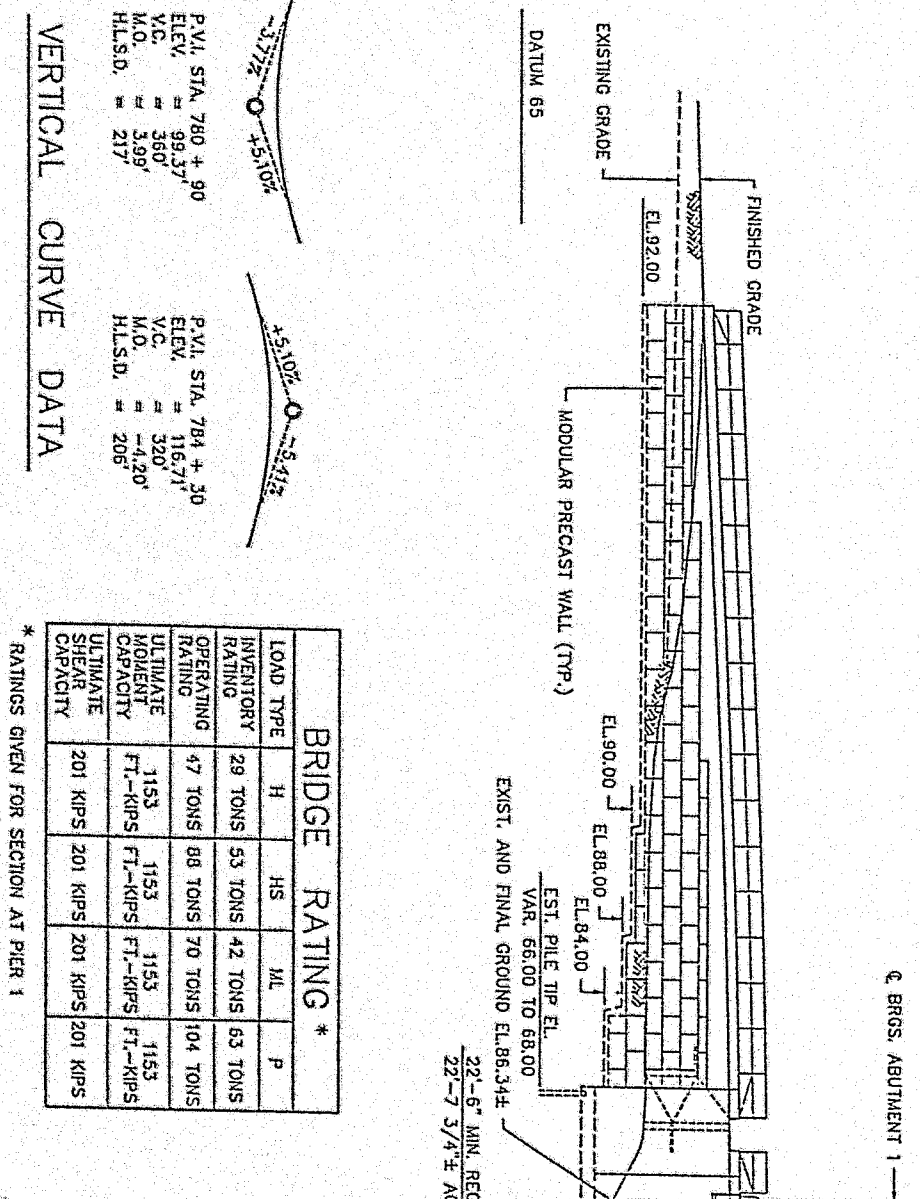
MECHANICAL CONDUIT TRENCH
(FOR BELL OF PA)
ADELPHIA CABLE WHERE APPLICABLE
NOT TO SCALE



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



PLAN



ELEVATION

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

Mark	Description	By	Chk'd	Reco.	Date

P.U.C. DOCKET NO. C80011839
 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 PLAN AND ELEVATION

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

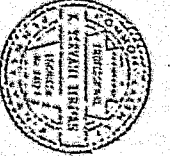
* RATINGS GIVEN FOR SECTION AT PIER 1

P.V.L. STA. 780 + 90
 ELEV. = 99.37'
 V.C. = 350'
 M.O. = 3.99'
 H.L.S.D. = 217'

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



VERTICAL CURVE DATA

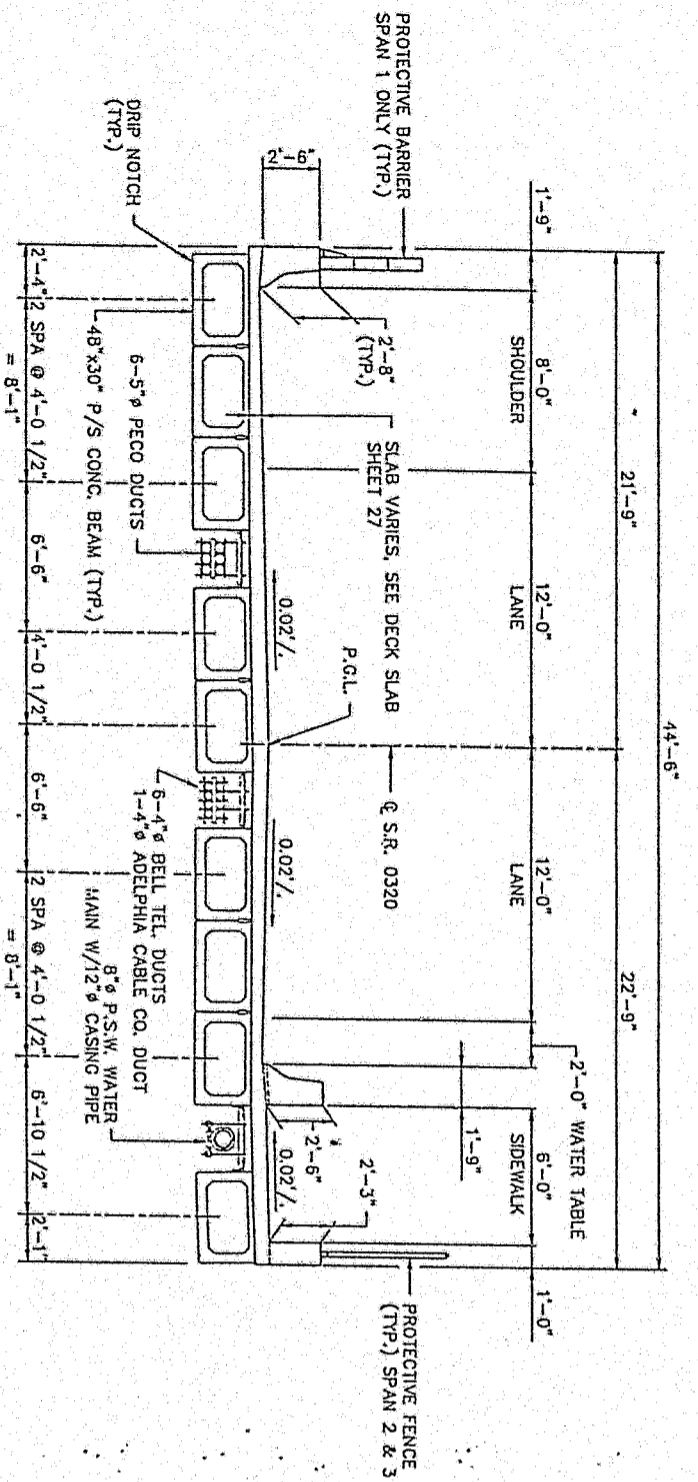


K. Dennis Tengler
 2-3-92

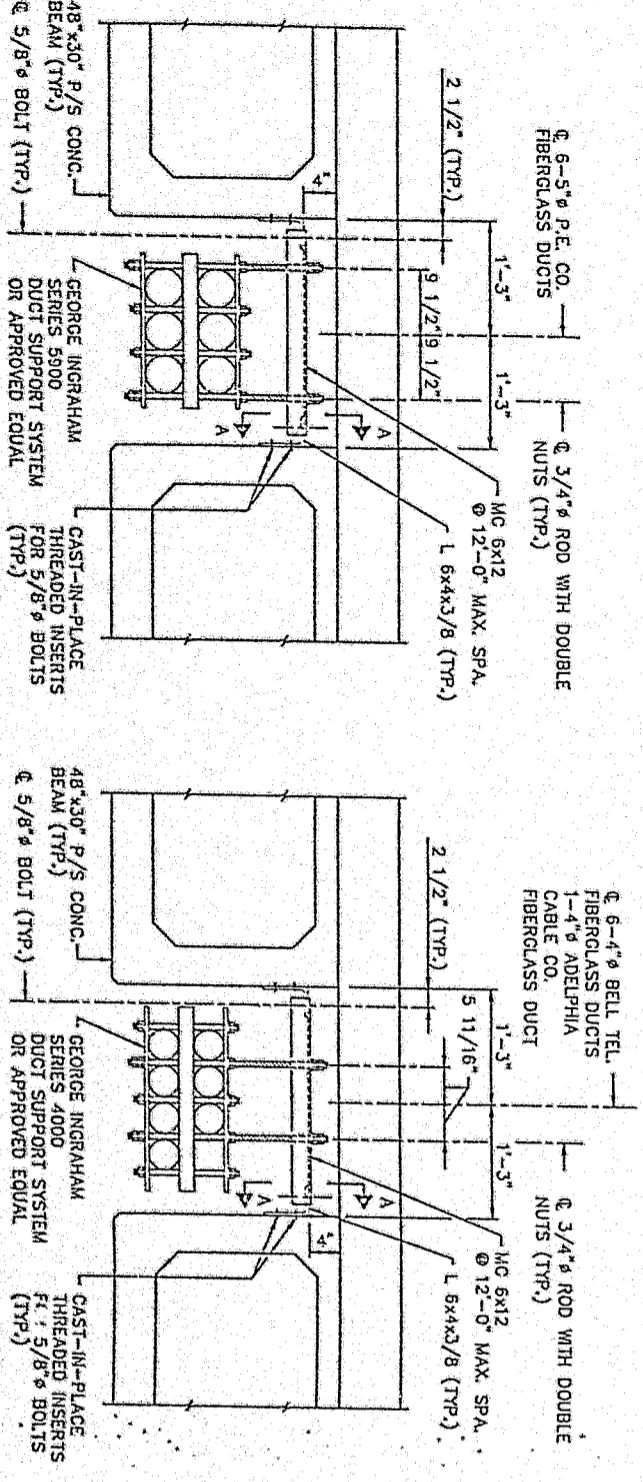
PREPARED BY
 URBAN ENGINEERS, INC.
 300 N. THIRD STREET
 PHILA., PA. 19106

UTILITY ATTACHMENTS & SUPPORT DETAILS	BC-794	1-20-09
NEOPRENE STRIP SEAL DAM	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 GUIDERAIL TRANSITION	BC-739	9-3-91
REINFORCEMENT BAR FABRICATION DETAILS	BC-735	6-1-91
WALL CONST. & EXPANSION JOINT DETAILS	BC-734	1-20-89
THREADED INSERT ANCHOR ASSEMBLY	BC-732	1-15-89
PRISMATIC METAL DECK FORUS	BC-711	1-20-89
PROTECTIVE FENCE	BC-701	1-15-89
RAILING ANCHOR SYSTEM	BC-337A	3-2-81
BRIDGE APPROACH SLAB	RC-23	4-1-91
BACKFILL AT STRUCTURES	RC-12	6-30-90
CLASSIFICATION OF FABRICATION FOR STRUCT.	RC-11	6-30-90
DESCRIPTION	DWG. NO.	APP. DATE

RECOMMENDED
 3-19-92
 SHEET 1 OF 30

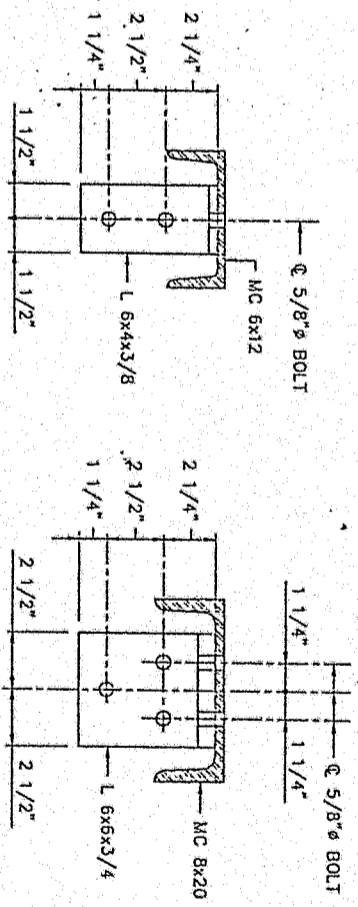


TYPICAL SECTION
SCALE: 1/4" = 1'-0"



P.E. CO. UTILITY SUPPORT
SCALE: 1" = 1'-0"

BELL TEL. & ADELPHIA CABLE CO.
UTILITY SUPPORT
SCALE: 1" = 1'-0"

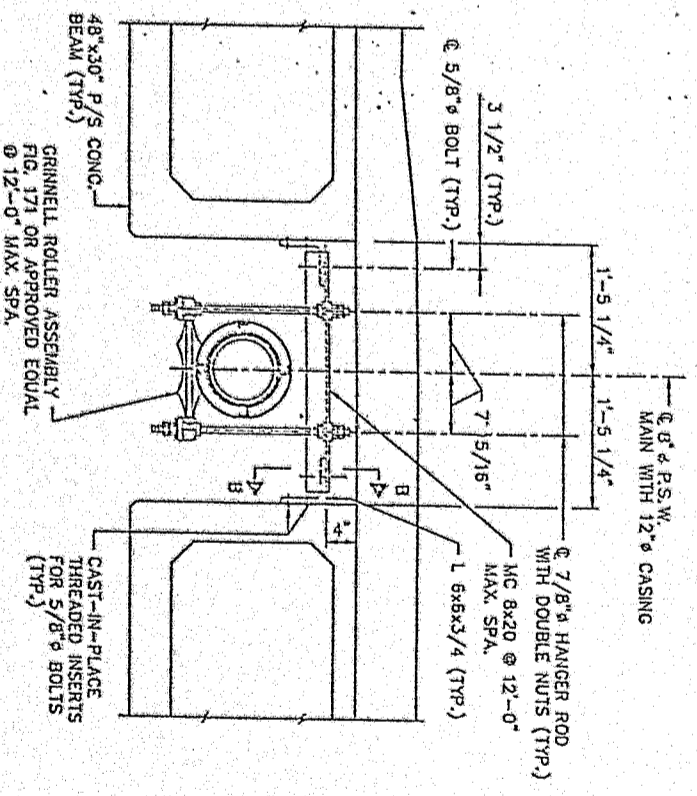


SECTION A-A
SCALE: 3" = 1'-0"

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

UTILITY NOTES

- EXPANSION COUPLINGS REQUIRED AT EACH END OF BRIDGE. SEE FRAMING PLAN SHEET 22.
- STAGGER COUPLINGS BOTH HORIZONTALLY AND VERTICALLY BY 2'-0" MINIMUM.
- PROVIDE DOUBLE NUTS AT TOP AND BOTTOM OF HANGER RODS, THREADED RODS, WASHERS AND NUTS ARE TO BE HOT DIPPED GALVANIZED.
- FOR DETAILS AT ABUTMENTS SEE SHEET 9.



P.S.W. UTILITY SUPPORT
SCALE: 1" = 1'-0"

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 DETAILS
32	STAIR BAR SCHEDULE
33	STELLANEOUS DETAILS
34	TEST BORINGS 1
35	TEST BORINGS 2
36	TEST BORINGS 3
37	TEST BORINGS 4
38	TEST BORINGS 5
39	TEST BORINGS 6
40	TEST BORINGS 7

NOTE
• FOR PLAN AND ELEVATION SEE SHEET 1.

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
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 IB LOADING. FATIGUE DESIGN IS BASED ON THE FOLLOWING:
 - B. PRESTRESSED CONCRETE: ADT1 < 2500 (1990)
 - (ONE DIRECTIONAL)
 - TRUCK LOADING 500,000 CYCLES
 - LANE LOADING 100,000 CYCLES
 - MAXIMUM ALLOWABLE TENSILE STRESS IN PRECOMPRESSED TENSILE ZONE: $3 \times \sqrt{f_c}$
- 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.

- 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 REMEDIATION, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE, AND LOCATION OF ANY UTILITY.

PILE DRIVING NOTES

- 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 DEAM PILES HP 12 x 53".
- DRIVE BEARING PILES TO ABSOLUTE REFUSAL INTO STRATUM DEFINED BY TIP ELEVATIONS PREDETERMINED 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.

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
GENERAL NOTES

RECOMMENDED 3-19-92

SHEET 3 OF 42

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

QUANTITY	UNITS	ITEM NUMBER	DESCRIPTION	AMOUNT	UNIT PRICE	TOTAL	REMARKS
1380	CY.	8040-0001	BRIDGE STRUCTURE, AS DESIGNED, S-17313	630	120	150	420
72	L.F.	*	CLASS 3 EXCAVATION, SPECIAL	36	-	-	36
7	CY.	*	GEOTEXTILE, CLASS 1	3	-	-	3
840	CY.	*	NO. 57 COARSE AGGREGATE	440	50	20	320
200	CY.	*	SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL	-	-	-	-
158	CY.	*	CLASS AAA CEMENT CONCRETE	18	1	1	18
890	CY.	*	CLASS AA CEMENT CONCRETE	370	140	100	260
72,000	LB.	*	CLASS A CEMENT CONCRETE	3,000	-	-	3,000
109,500	LB.	*	REINFORCEMENT BARS, EPOXY COATED	37,000	27,000	23,000	22,000
144	L.F.	*	PROTECTIVE BARRIER	-	-	-	144
280	L.F.	*	PARAPET PROTECTIVE FENCE, VINYL COATED STEEL	32	-	-	23
1130	SY.	*	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)	-	-	-	300
98	L.F.	*	NEOPRENE STRIP SEAL DAM, 2" MOVEMENT	48	-	-	48
1,680	L.F.	*	PRESTRESSED CONCRETE ADJACENT BOX BEAMS, 48"x30"	-	-	-	1,680
18	EA.	*	DOWEL HOLES, 22" DEPTH	-	18	-	-
73	EA.	*	STAIR GRIT STRIPS	-	-	-	-
320	L.F.	*	1 1/2" DIAMETER ALUMINUM HANDRAIL (SCHEDULE 10)	-	-	-	-
25	L.F.	*	1 1/2" DIAMETER PVC PIPE (SCHEDULE 40)	-	-	-	25
1005-0450	L.S.		STEEL BEAM TEST PILES, HP12x53	2 @ 16'	2 @ 17'	2 @ 40'	2 @ 28'
1005-1103	L.F.		STEEL BEAM BEARING PILES, HP12x53	680	440	910	1,000
1005-1153	EA.		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	52	28	28	38
9000-0011	EA.		REDRIVING STEEL BEAM TEST PILES, HP12x53	2	2	2	2
9000-0023	EA.		REDRIVING STEEL BEAM BEARING PILES, HP12x53	52	28	28	38
8100-0001	L.S.		STEEL BRIDGE STRUCTURE	-	-	-	-
1005-0451	L.F.		STEEL BEAM TEST PILES, HP12x53	-	-	-	-
1005-1103	L.F.		STEEL BEAM BEARING PILES, HP12x53	-	-	-	-
1005-1153	EA.		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	-	-	-	-
9000-0037	EA.		REDRIVING STEEL BEAM TEST PILES, HP12x53	-	-	-	-
9000-0039	EA.		REDRIVING STEEL BEAM BEARING PILES, HP12x53	-	-	-	-
8000-0001	L.S.		PRESTRESSED CONCRETE BRIDGE STRUCTURE	-	-	-	-
1005-0452	L.F.		STEEL BEAM TEST PILES, HP12x53	-	-	-	-
1005-1103	L.F.		STEEL BEAM BEARING PILES, HP12x53	-	-	-	-
1005-1153	EA.		STEEL BEAM PILE TIP REINFORCEMENT, HP12x53	-	-	-	-
9000-0038	EA.		REDRIVING STEEL BEAM TEST PILES, HP12x53	-	-	-	-
9000-0040	EA.		REDRIVING STEEL BEAM BEARING PILES, HP12x53	-	-	-	-
8642-0001	L.S.		WINGWALLS, PRECAST MODULAR, S-17313, (APPROXIMATELY 7,030 S.F.)	-	-	-	-
8610-0001	L.S.		WINGWALLS, CAST IN PLACE, S-17313, (APPROXIMATELY 7,030 S.F.)	-	-	-	-
1018-0001	L.S.		REMOVAL OF EXISTING BRIDGE	-	-	-	-
9000-0006	L.S.		INSTALLATION OF PHILA. SUBURBAN WATER CO. FACILITY	-	-	-	-
9000-0007	L.S.		INSTALLATION OF PHILA. ELECTRIC CO. FACILITY	-	-	-	-
9000-0008	L.S.		INSTALLATION OF BELL TELEPHONE CO. FACILITY	-	-	-	-
9000-0009	L.S.		INSTALLATION OF ADELPHI CABLE CO. FACILITY	-	-	-	-
9000-0010	L.S.		PROTECTION OF COMMUNICATION & SIGNALIZATION DUCTS AT STRUCTURE S-17313	-	-	-	-
9999-9994	PDA		REIMBURSEMENT FOR WORK BY PHILADELPHIA ELECTRIC CO. (NO OUTAGE)	-	-	-	-
1090-0332	L.F.		EPOXY INJECTION CRACK REPAIR FOR BRIDGE DECKS	-	-	-	-
1019-0010	S.Y.		PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)	20	-	60	130
9000-0024	S.Y.		PROTECTIVE COATING FOR REINFORCED CONCRETE SUBSTRUCTURE SURFACES	434	-	-	75
4203-0001	C.Y.		CLASS 1 EXCAVATION, SPECIAL	434	-	-	75
4205-0200	C.Y.		SELECTED BORROW EXCAVATION, SPECIAL	4	-	-	2
0208-0001	110UP		SPECIAL ROLLING	-	-	-	-

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

Mark	Description	By	Chk'd.	Reco.	Date
	REVISIONS				

S.R. 0320 PREVIOUSLY KNOWN AS LR. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONTINUOUS BOX BEAM BRIDGE
QUANTITIES

RECOMMENDED 3-19-92

UTILITY MATERIALS

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

MATERIAL	FURNISHED BY	INSTALLED BY	UNIT	AMOUNT
PHILADELPHIA SUBURBAN WATER CO. FACILITY (FOR FUTURE USE)				
EPOXY COATED PIPE ROLLER AND HANGER ASSEMBLY	CONTRACTOR	CONTRACTOR	EA.	16
FABRICATED STRUCTURAL STEEL (PAINTED)	CONTRACTOR	CONTRACTOR	LBS.	1390
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.E. CO. FACILITY (FOR FUTURE USE)				
5" DIA. FIRE 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
FIRE 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. FIRE 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. FIRE 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
FIRE 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. FIRE 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. FIRE 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
FIRE 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. FIRE 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

SEC. 0320 OFFSET 1106

S.R. 0320 STA. 784+21

OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE

QUANTITIES 2

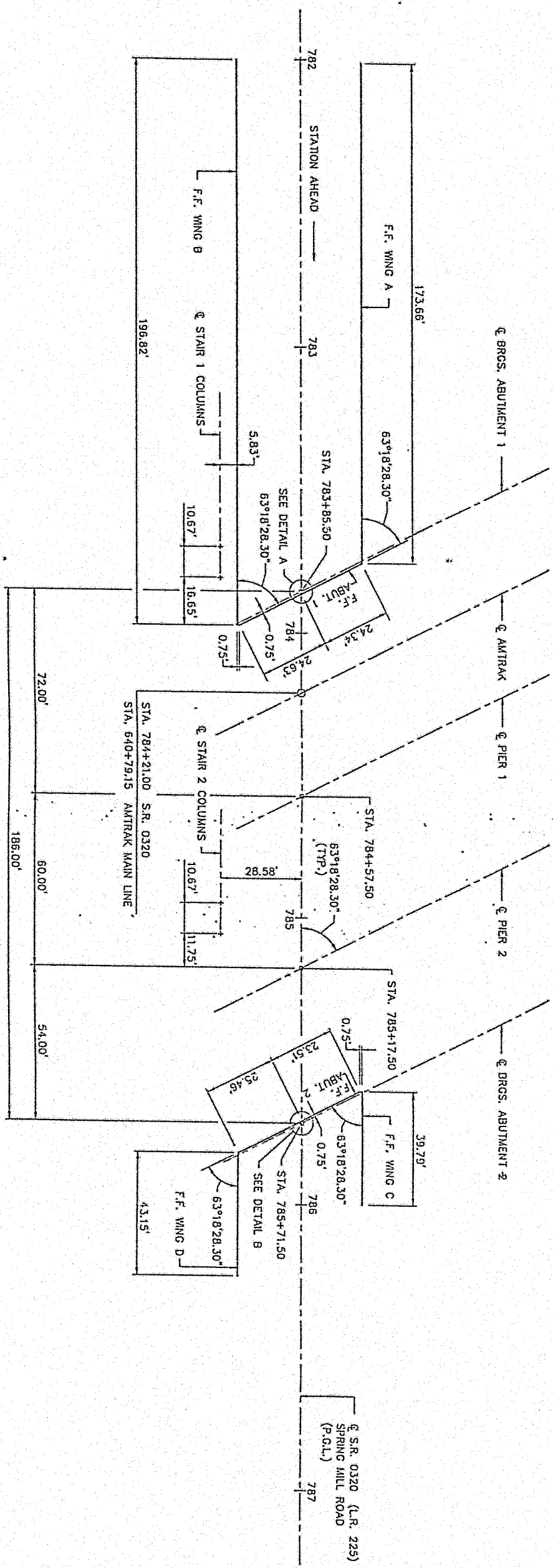
RECOMMENDED

3-19-92

SHEET 5 OF 40

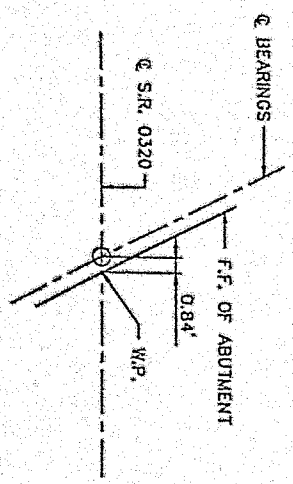
S - 17313

Mark	Description	By	Chkd.	Reco.	Date
	REVISIONS				

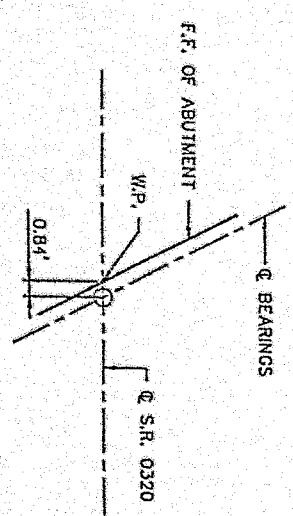


STAKE - OUT PLAN

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

Mark	Description	By	Chk'd.	Reco.
REVISIONS				

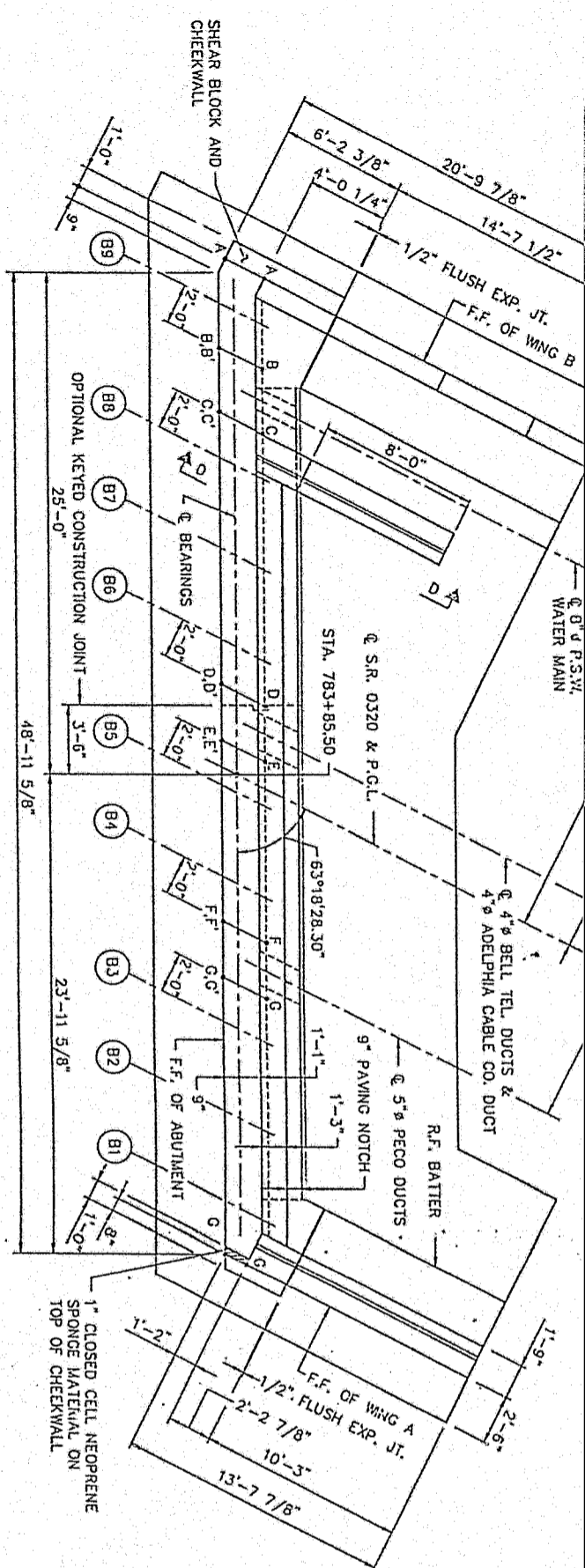
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

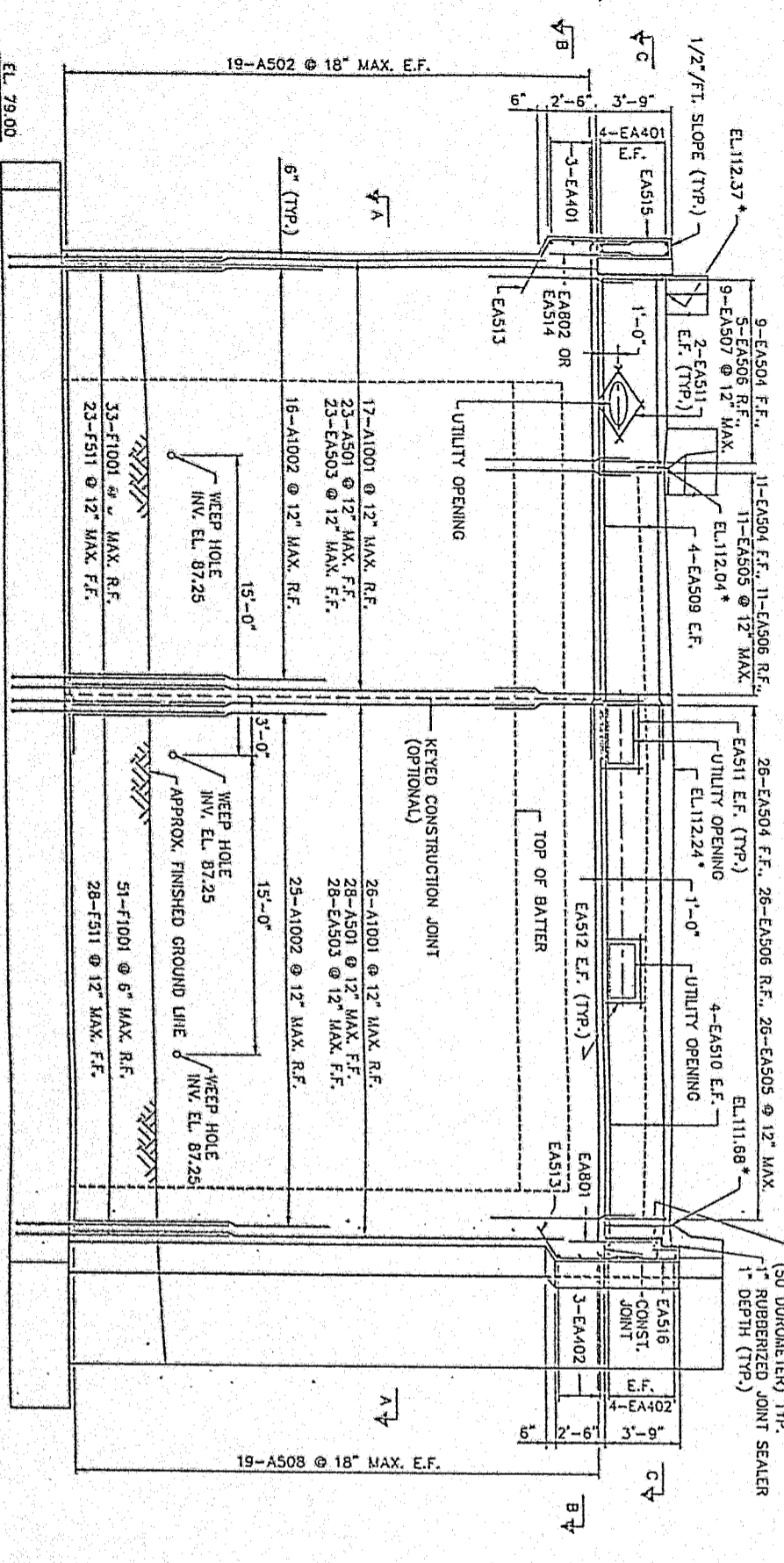
DELAWARE COUNTY
 S.R. 0320 SEC. 12S

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 STAKE - OUT PLAN

RECOMMENDED 3-19-92 SHEET 6 OF S - 173

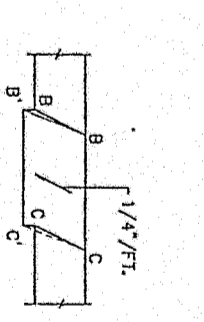


PLAN
SCALE: 1/4" = 1'-0"



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

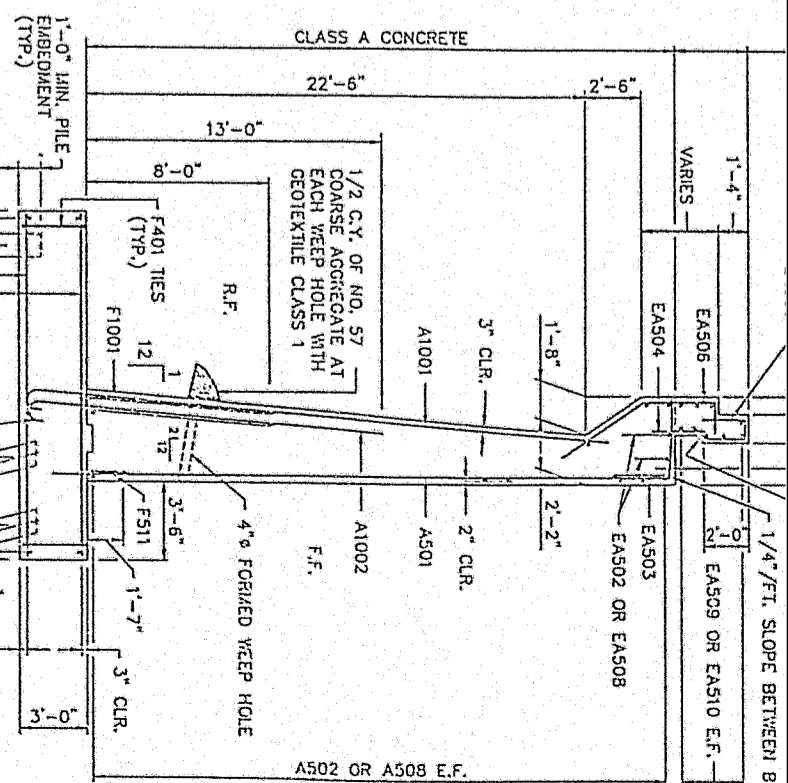
LEGEND
F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE
TYP. = TYPICAL
BOT. = BOTTOM
MAX. = MAXIMUM



TYP. ELEVATION LOCATION
BETWEEN BEAMS

BEAM SEAT ELEVATION	
A	108.95
B	108.87
B	108.82
C	108.58
C'	108.53
D	108.75
D'	108.70
E	108.73
E'	108.68
F	108.56
F'	108.51
G	108.48
G'	108.43

- NOTES
- FOR GENERAL NOTES SEE SHEET 3
 - FOR BAR SCHEDULE SEE SHEET 16
 - 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 PAVICO PIPE SLEEVE DETAIL, SEE DG-794



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

REVISIONS

Mark	Description	By	CHK'd	Reco.

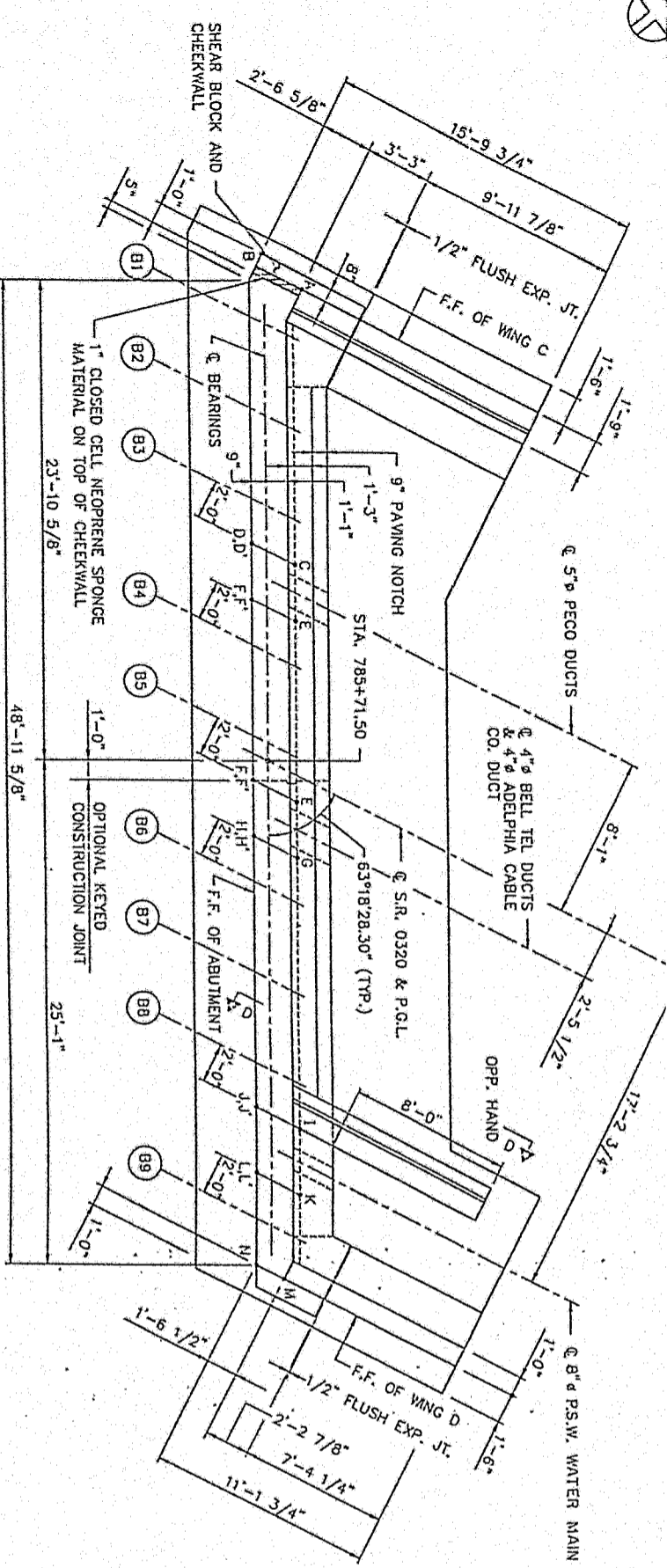
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

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 BRID
ABUTMENT 1

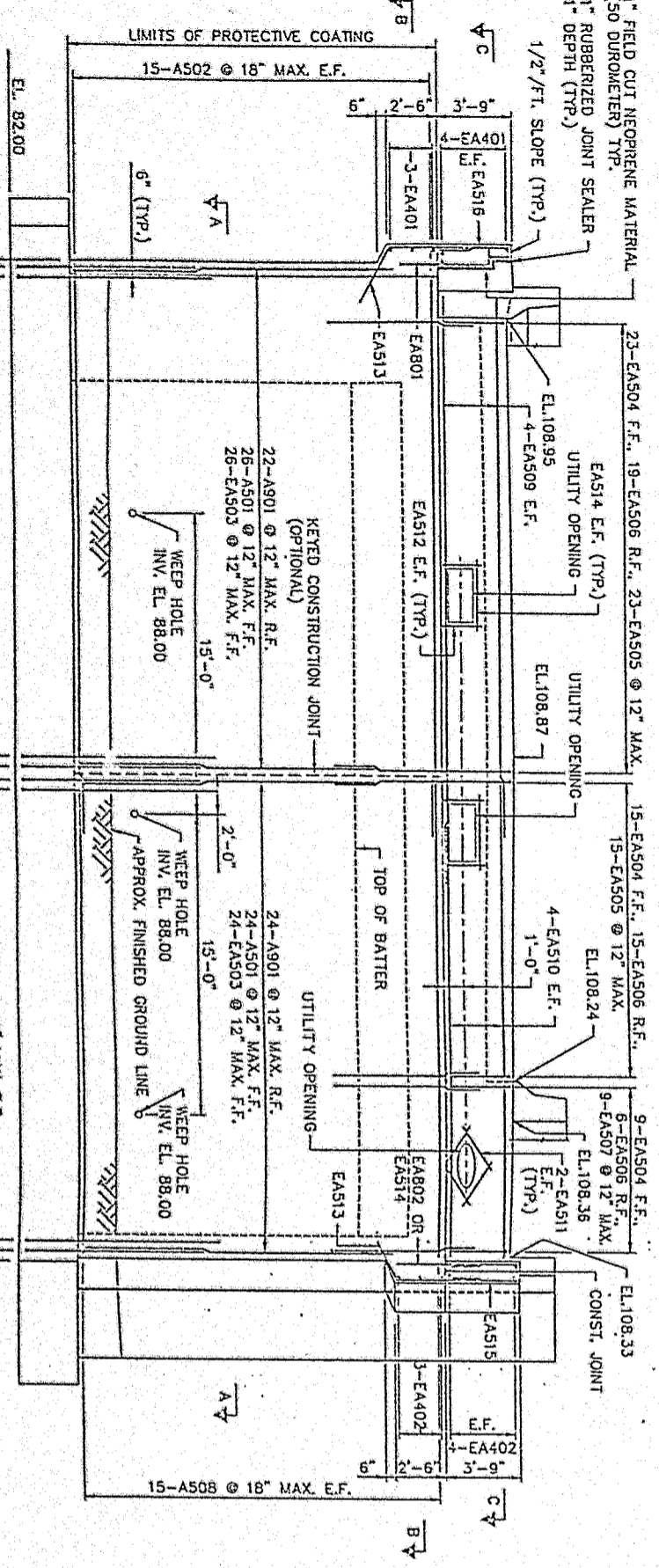
RECOMMENDED 3-19-92

SHEET 7
S-1

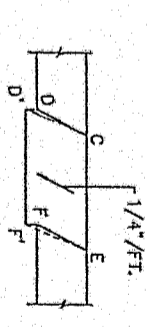


PLAN
SCALE: 1/4" = 1'-0"

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



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

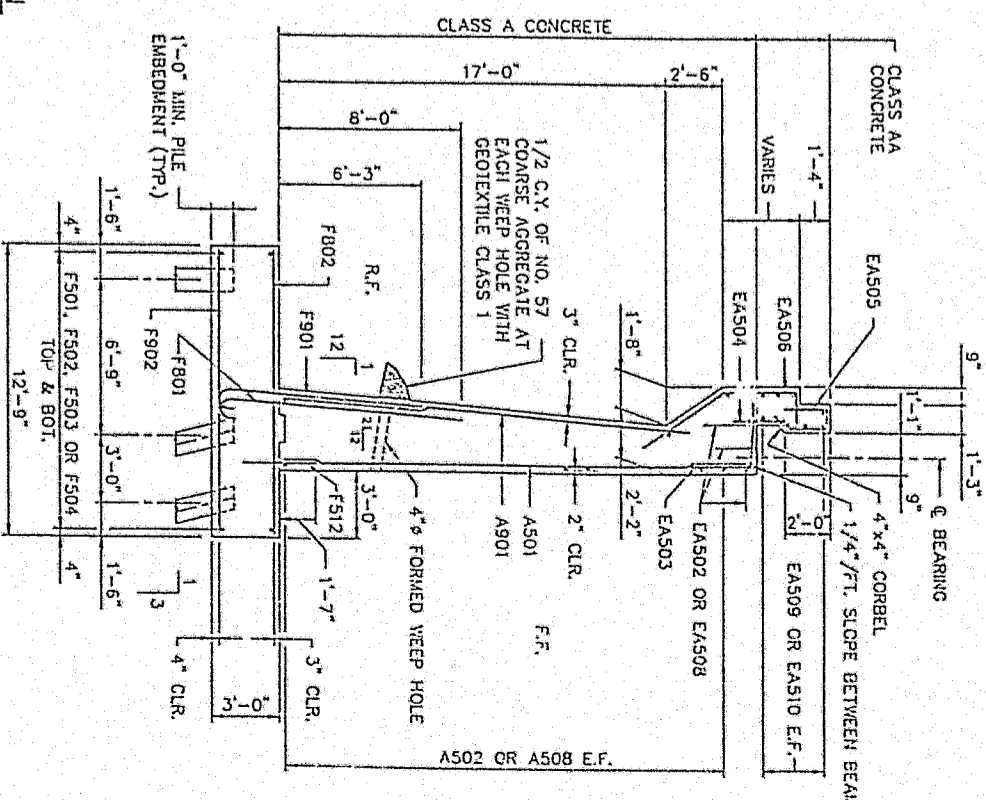


TYP. ELEVATION LOCATION BETWEEN BEAMS

BEAM SEAT ELEVATIONS	
A	105.82
B	105.91
C	105.59
D	105.68
D'	105.63
E	105.53
F	105.62
F'	105.57
G	105.43
H	105.53
H'	105.48
I	105.13
J	105.23
J'	105.18
K	105.04
L	105.14
L'	105.09
M	105.06
N	105.13

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 P.S.W.CO. PIPE SLEEVE DETAIL SEE BC-794



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

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 2

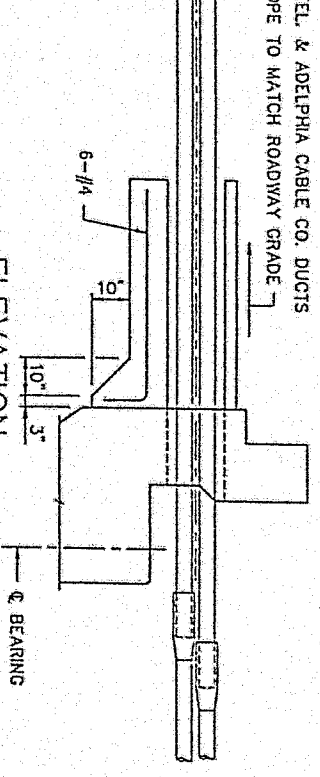
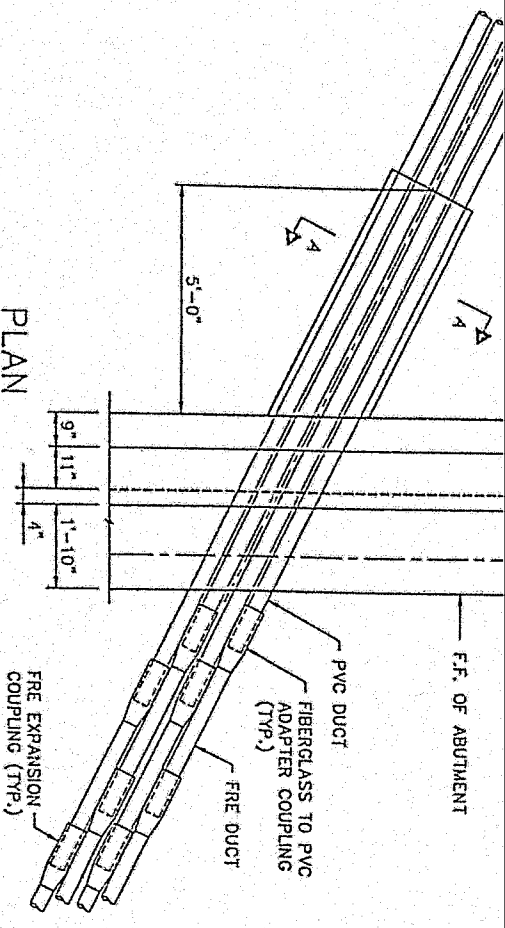
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

Mark	Description	By	Chk'd.	Recd.

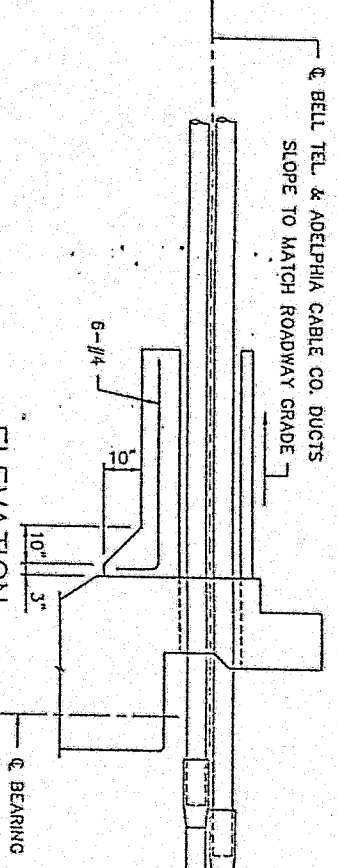
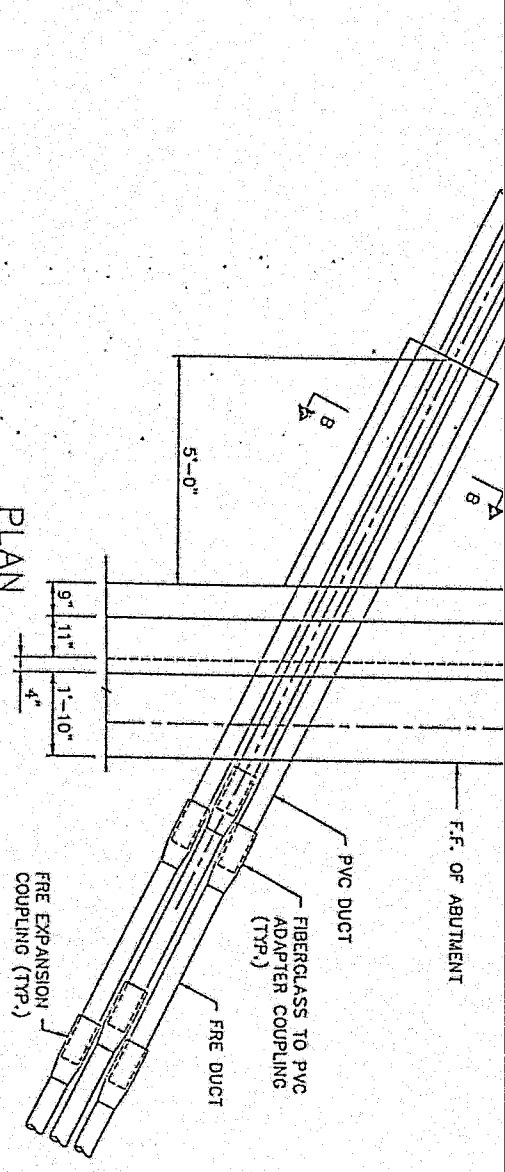
REVISIONS

RECOMMENDED 3-19-92

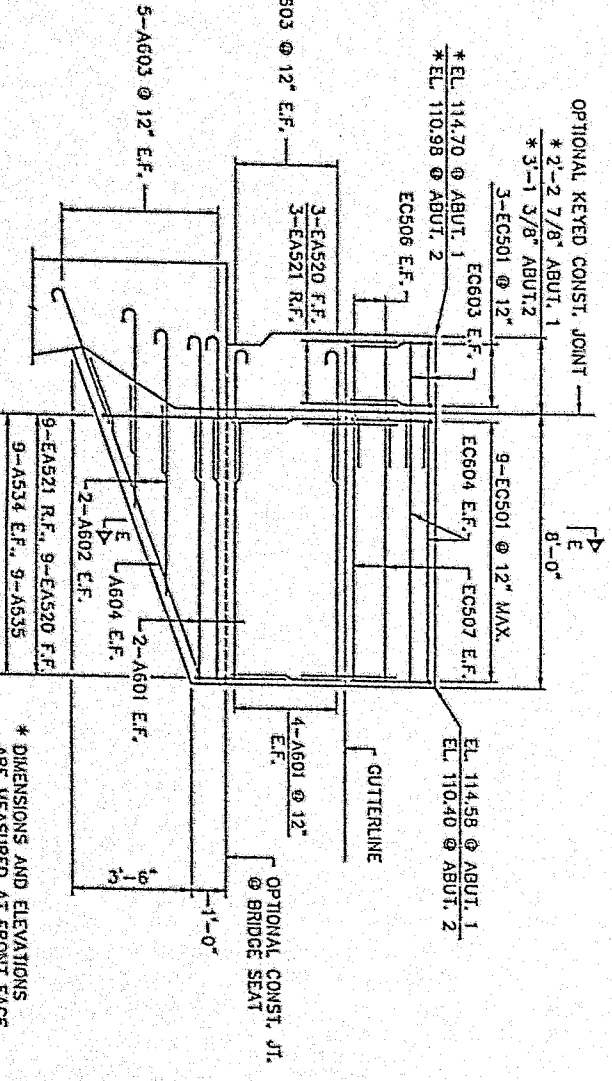
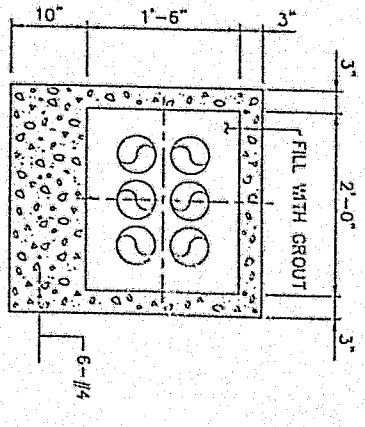
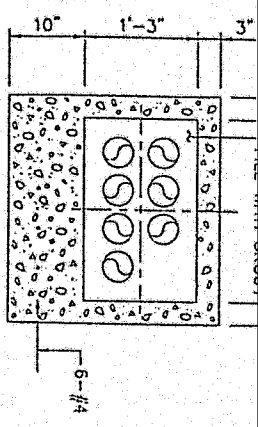
SHEET 8
S-1



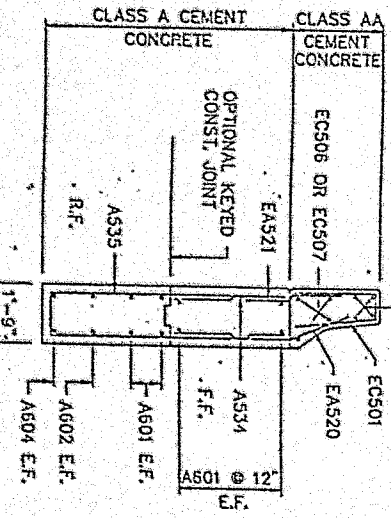
**BELL TEL. & ADELPHIA CABLE CO.
DUCTS AT ABUTMENTS**



PECO DUCTS AT ABUTMENT



* DIMENSIONS AND ELEVATIONS ARE MEASURED AT FRONT FACE



SECTION E-E

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.

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

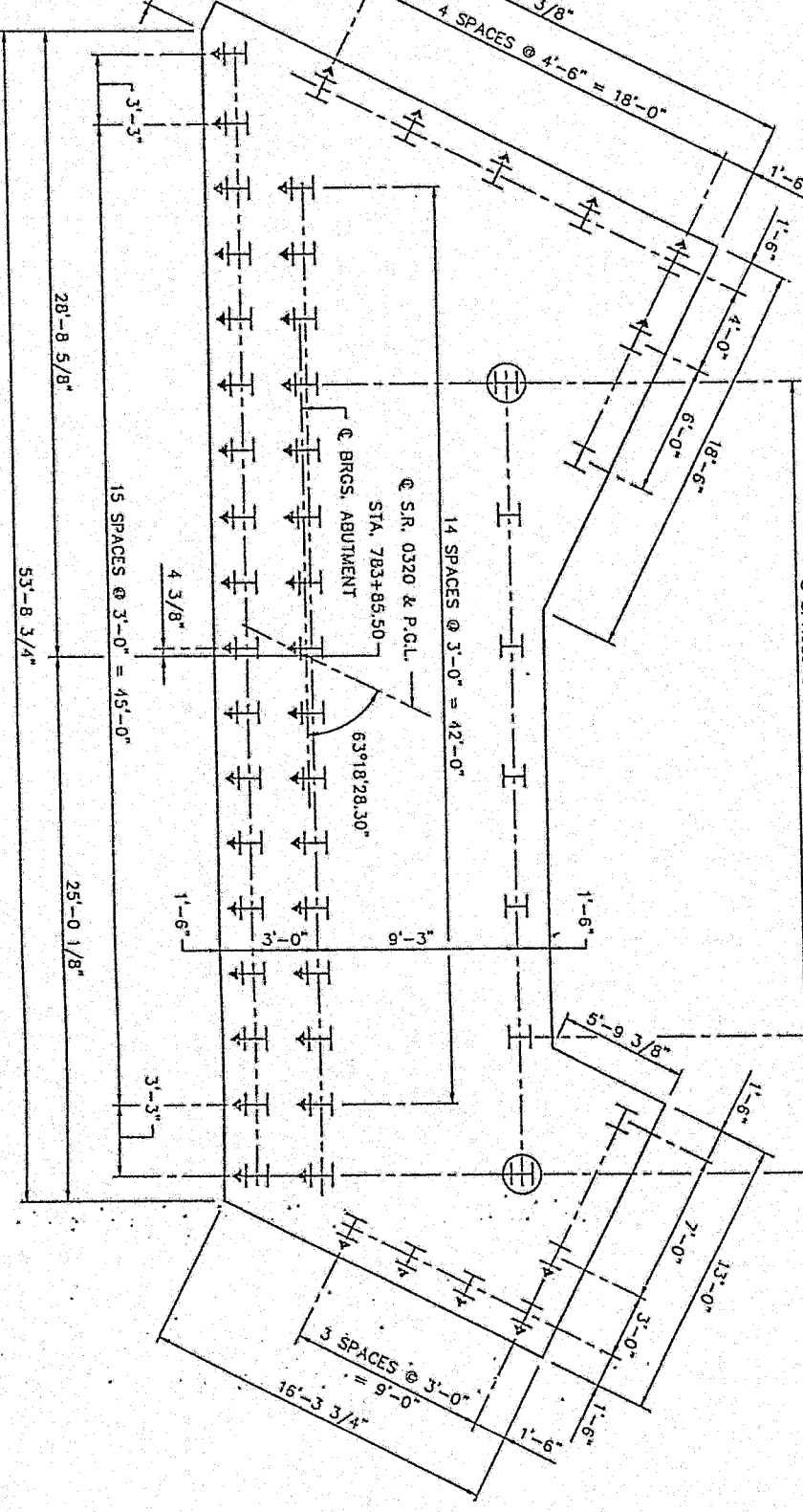
ABUTMENT DETAILS

RECOMMENDED

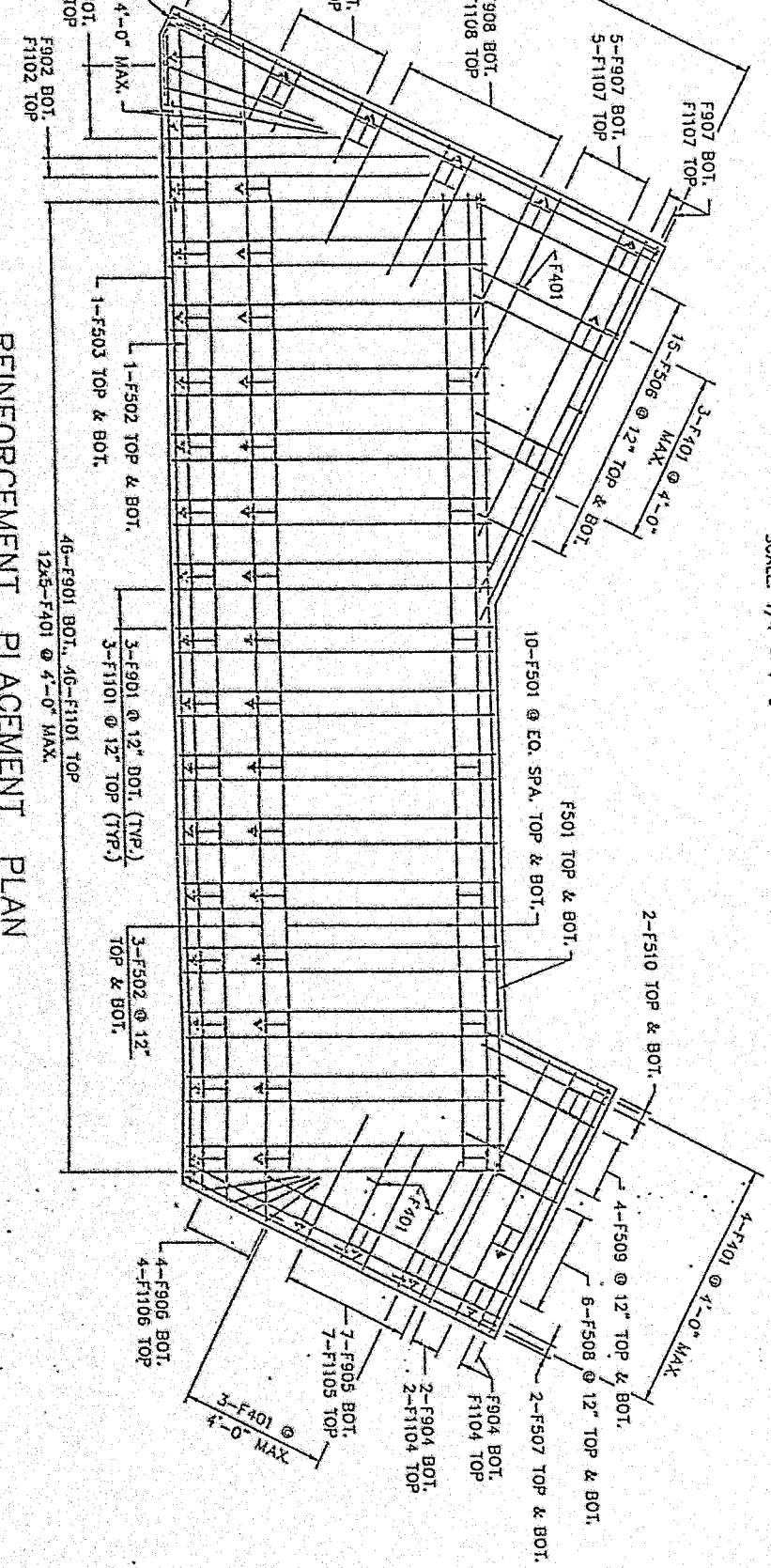
3-19-92

SHEET 9 OF 40

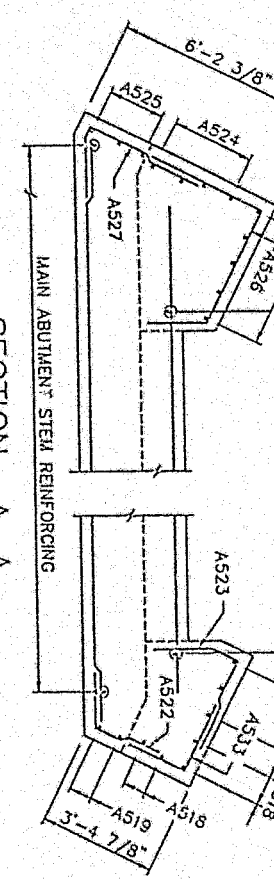
S - 17313



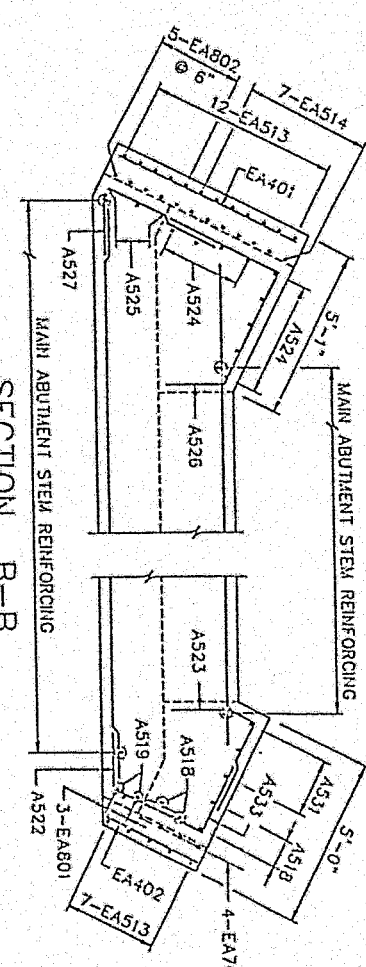
FOOTING PLAN
SCALE: 1/4" = 1'-0"



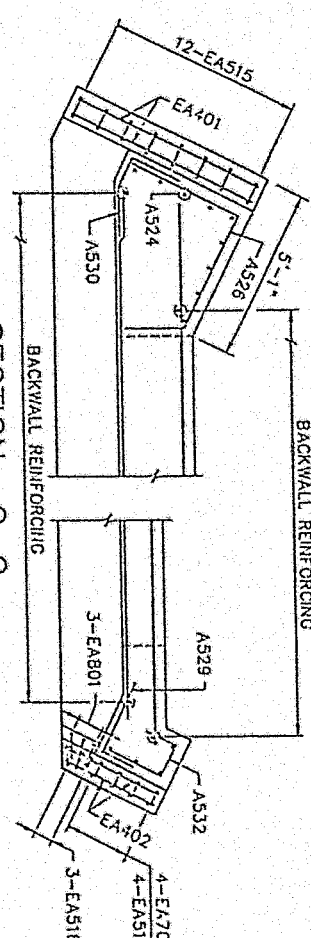
REINFORCEMENT PLACEMENT PLAN
SCALE: 1/4" = 1'-0"



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 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

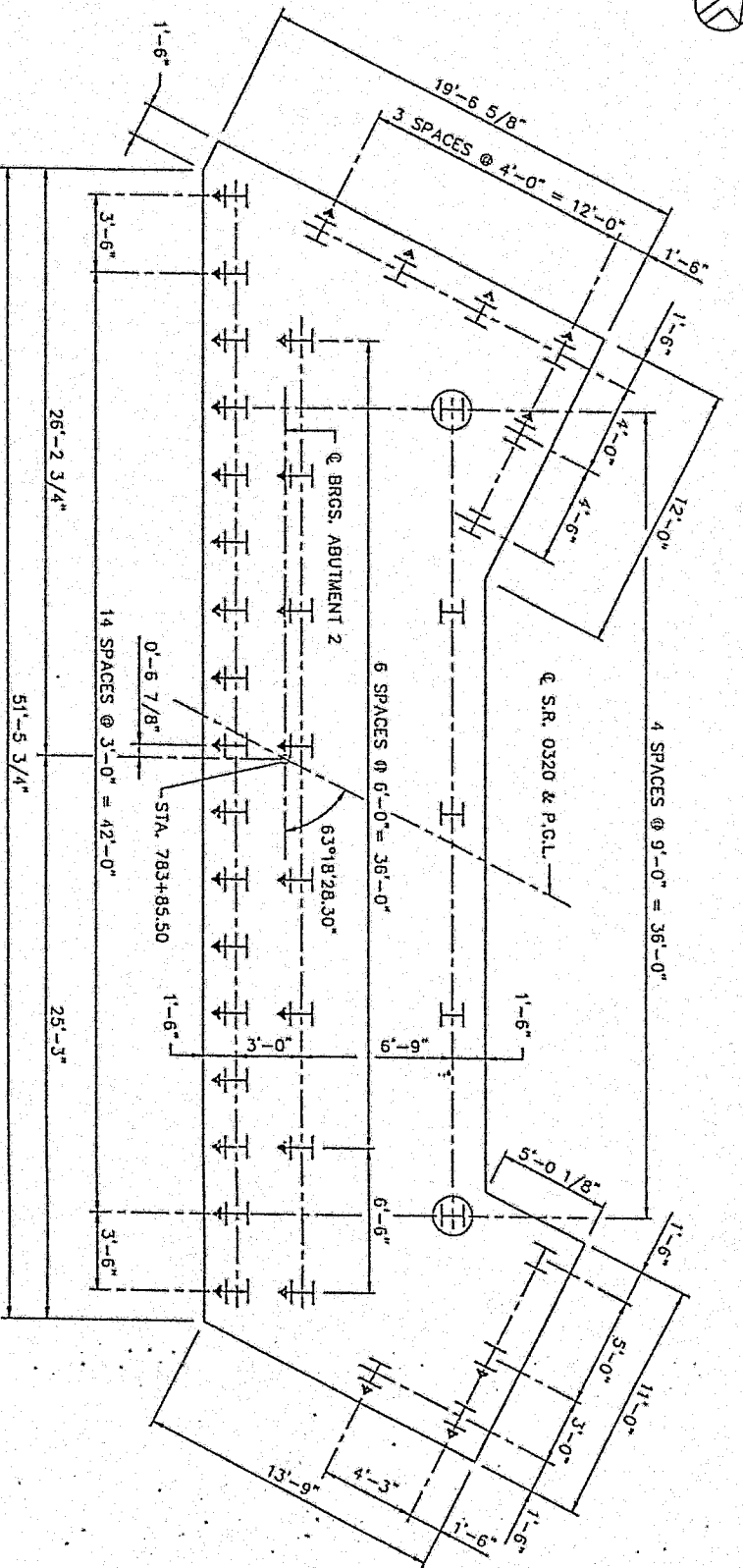
Mark	Description	By	Chk'd	Reco.	Date
REVISIONS					
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225					

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

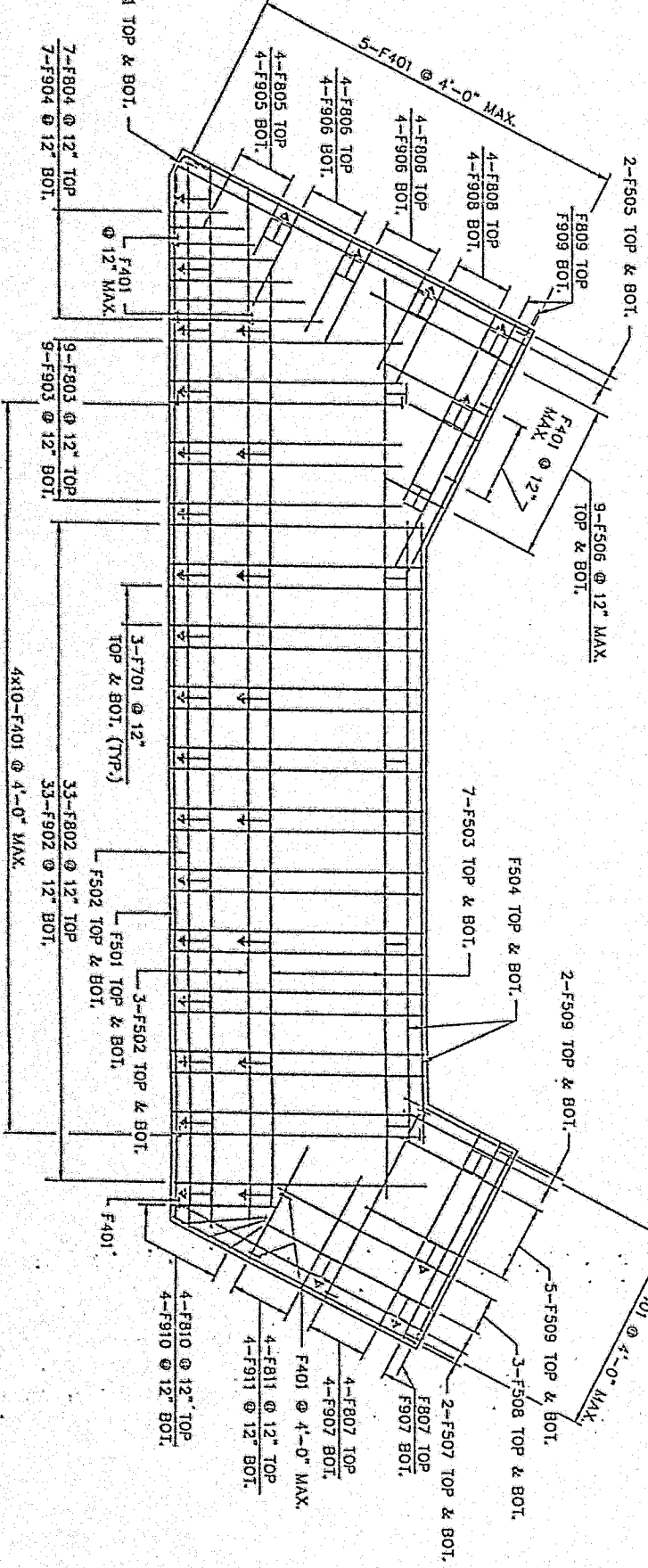
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEC. 0320 OFFSET 1108
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

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

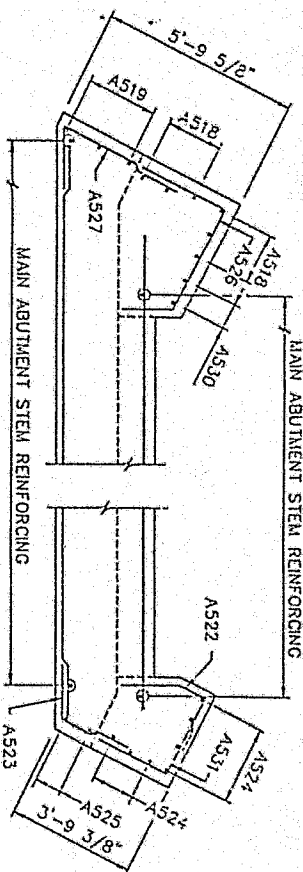
RECOMMENDED 3-19-92 SHEET 10 OF 40
S - 17313



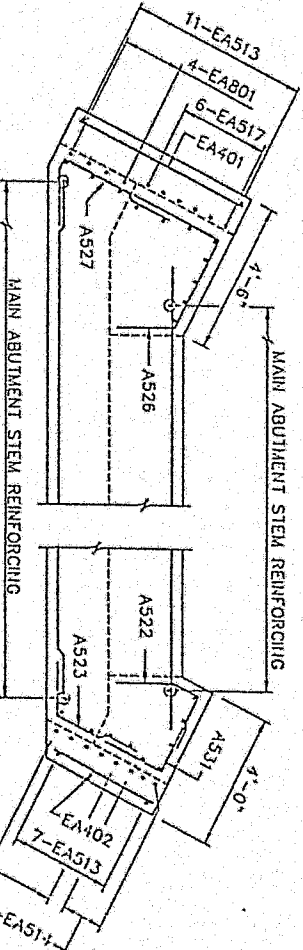
FOOTING PLAN
SCALE: 1/4" = 1'-0"



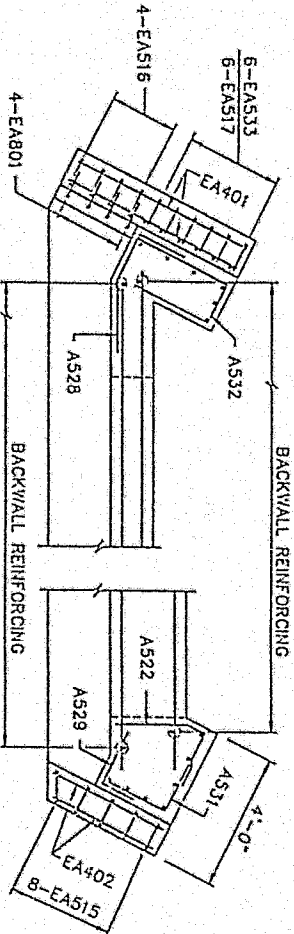
REINFORCEMENT PLACEMENT PLAN
SCALE: 1/4" = 1'-0"



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



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



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

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

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

- PILE NOTES**
- ALL PILES ARE HP12x63 STEEL PILES
 - MAX. PILE DESIGN LOAD = 60 TONS
 - ESTIMATED PILE TIP ELEVATION EL. 52.00 TO EL. 62.00

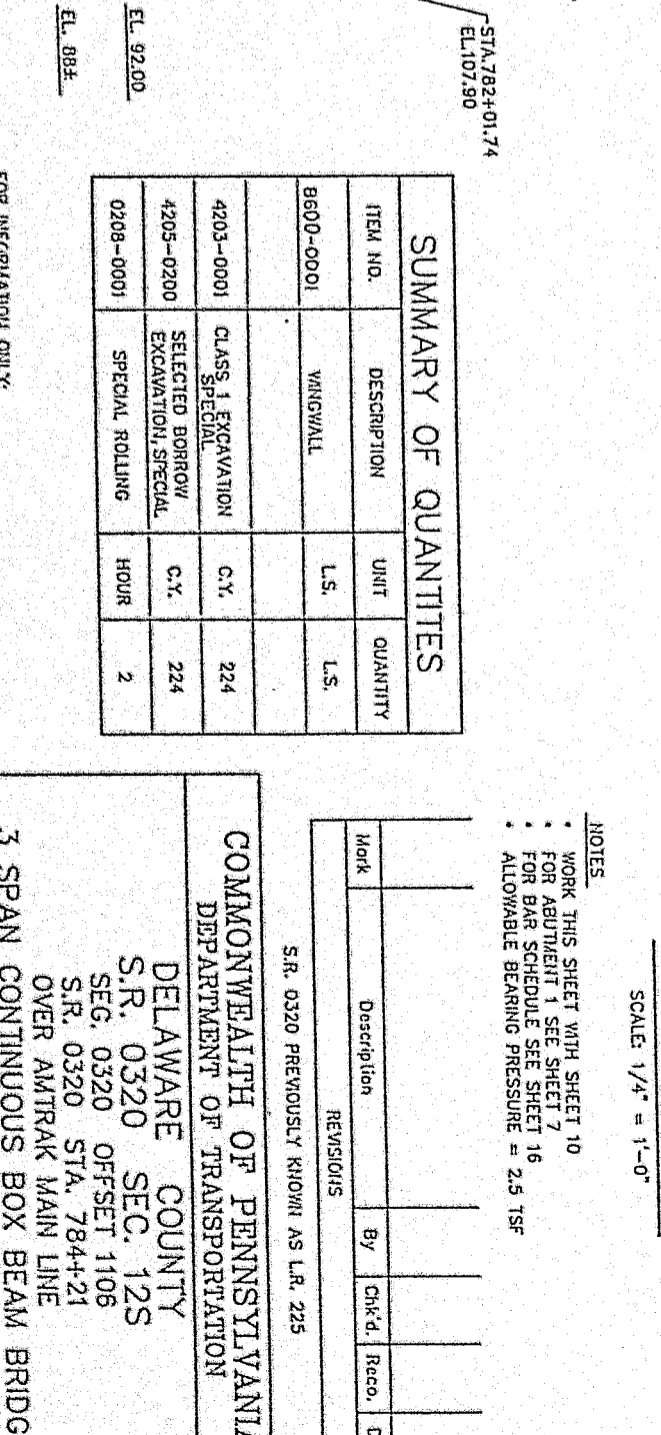
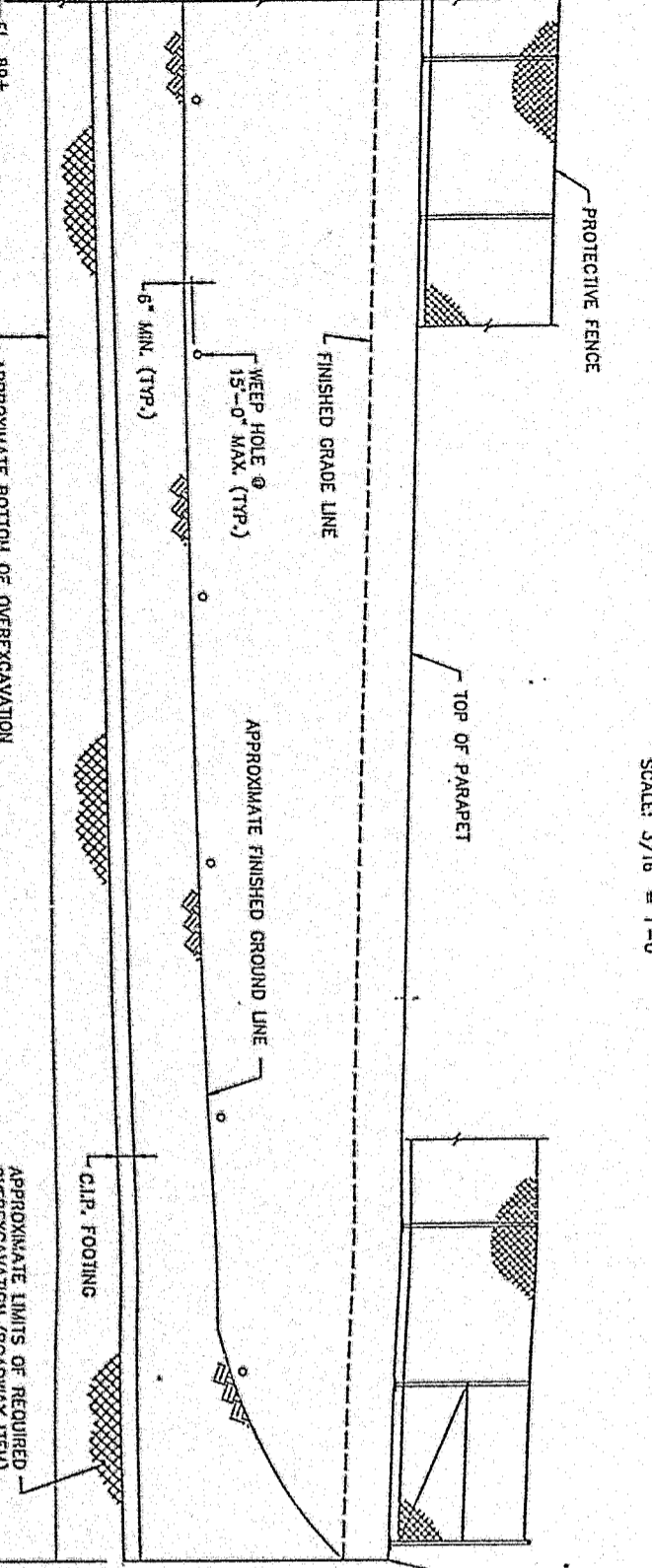
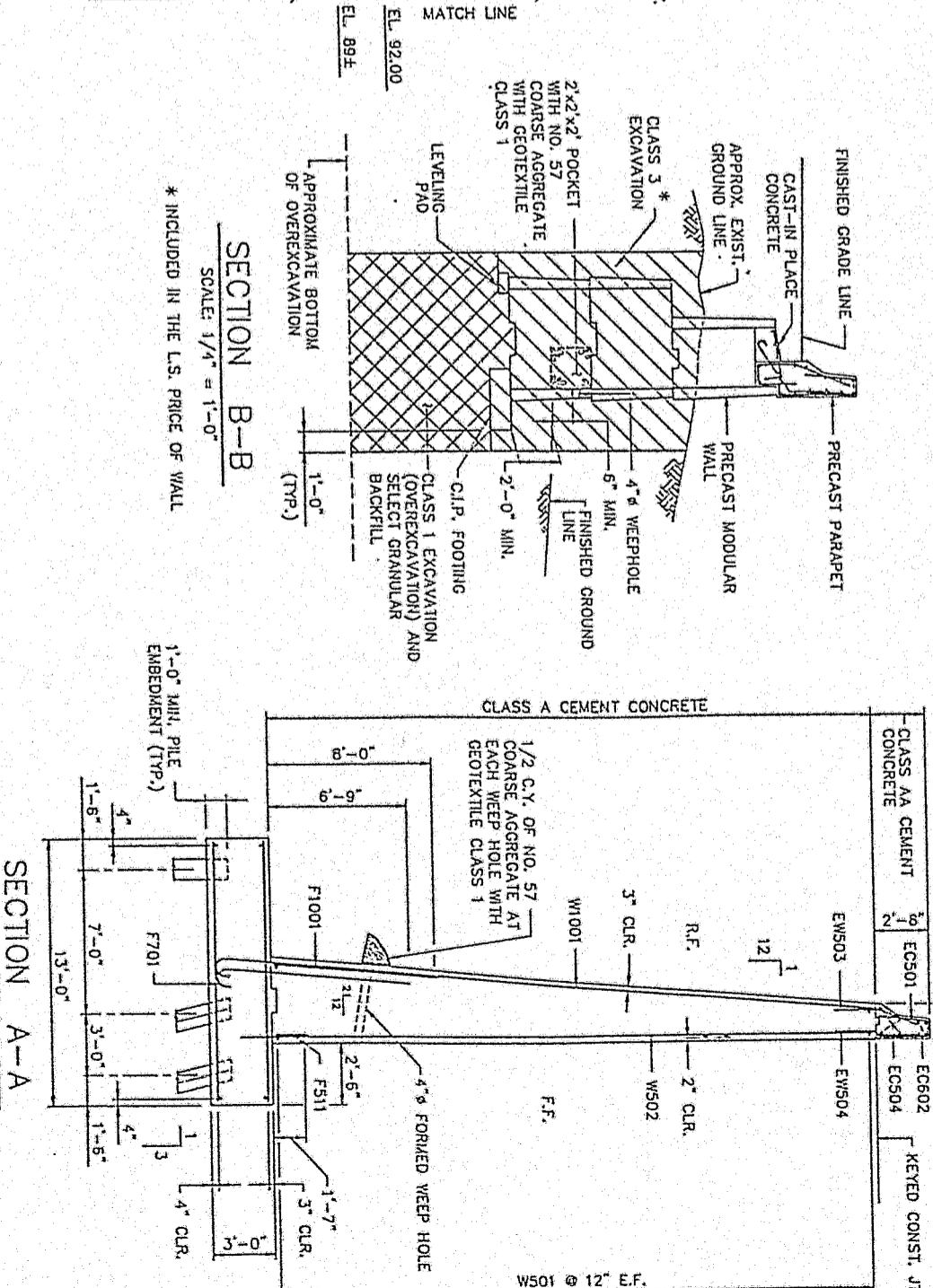
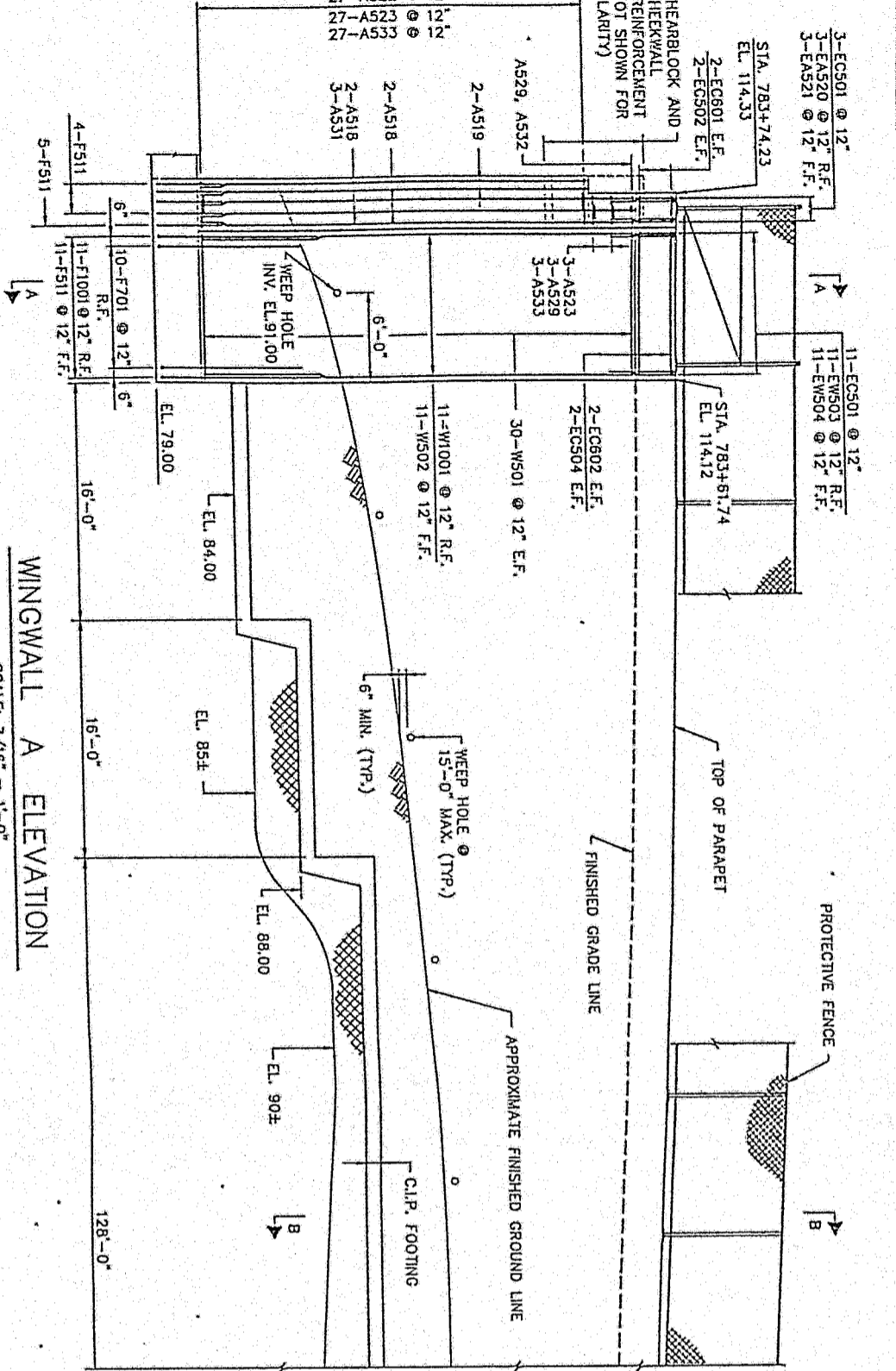
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

Mark	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 CONTINUOUS BOX BEAM BRIDGE
ABUTMENT 2 FOOTING PLAN & DETAILS

RECOMMENDED 3-19-92
SHEET 11 OF 40
S - 17313



SUMMARY OF QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
B600-0001	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	HOURL	2

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

REVISIONS

Mark	Description	By	Chk'd.	Recd.	Date

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

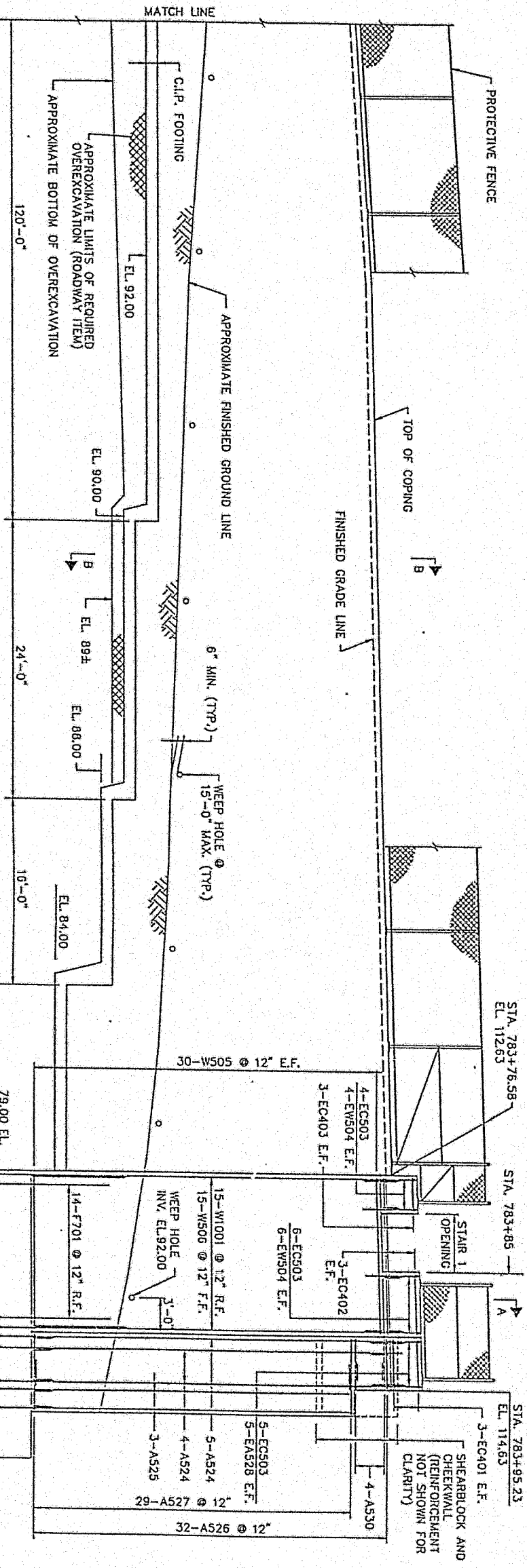
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 WINGWALL A

RECOMMENDED 5-19-92

SHEET 12 OF 40
 S - 17313



SUMMARY OF QUANTITIES

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	HOUR	2

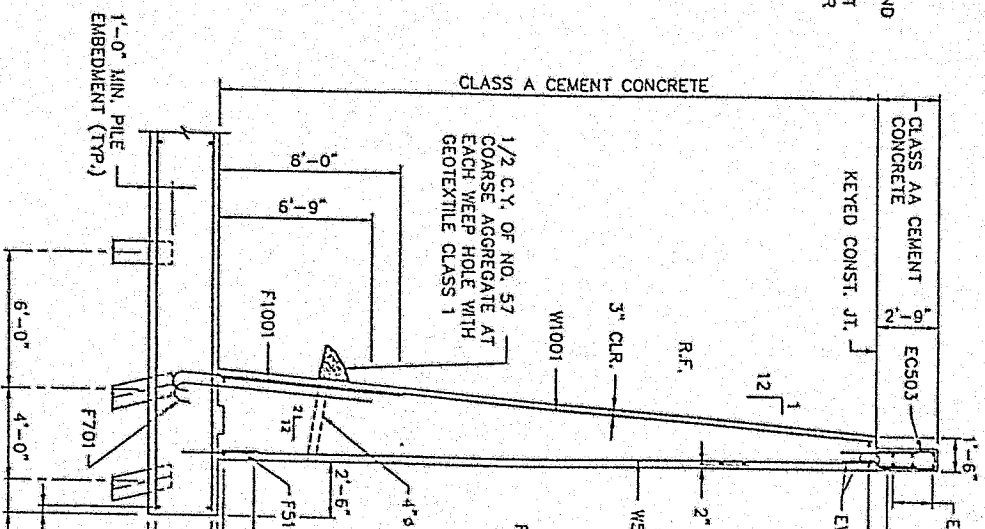
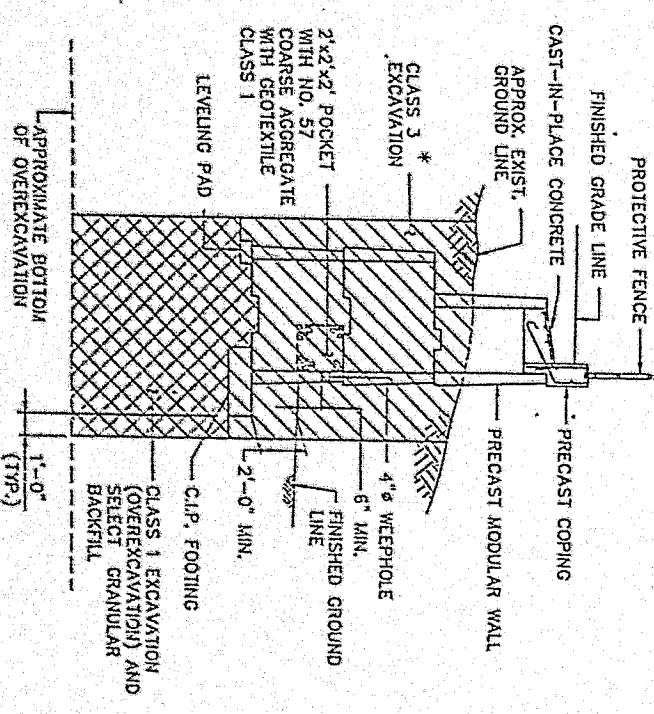
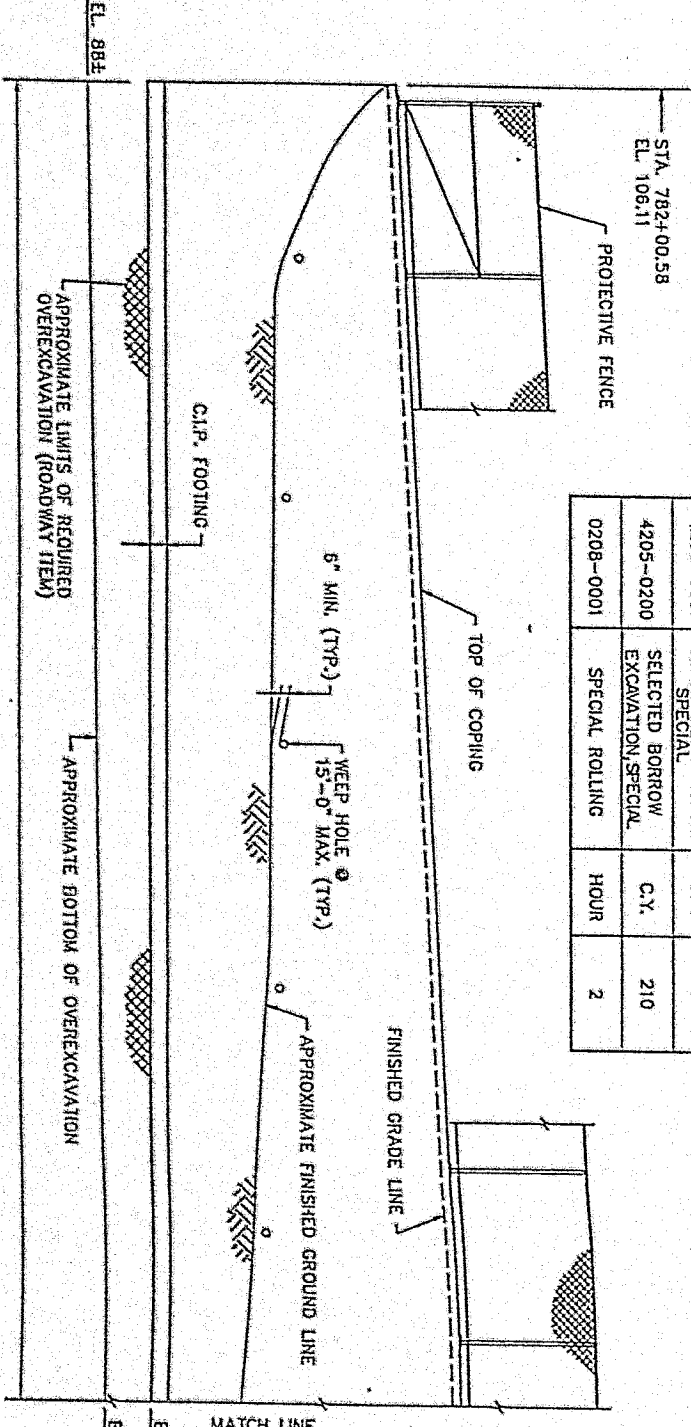
FOR INFORMATION ONLY:

AREA FACE OF WALL = 3300 S.F.

LENGTH OF PRECAST COPING = 176 L.F.

LENGTH OF PROTECTIVE FENCE = 176 L.F.

(INCLUDED IN L.S. PRICE OF WALL)



SECTION A-A

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

- NOTES
- WORK THIS SHEET WITH SHEET 10.
 - PROVIDE SMOOTH FINISH TO TOP OF WALL.
 - PARAPET ENDS AT STAIR OPENING SHALL BE AS SHOWN.
 - FOR ABUTMENT 1 SEE SHEET 7.
 - FOR BAR SCHEDULE SEE SHEET 16.
 - ALLOWABLE BEARING PRESSURE = 2.5 T

REVISIONS

Mark	Description

S.R. 0320 PREVIOUSLY KNOWN

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DELaware CO

S.R. 0320 SEC

SEG. 0320 OFFSET

S.R. 0320 STA. 783+76.58

OVER AMTRAK MAINLINE

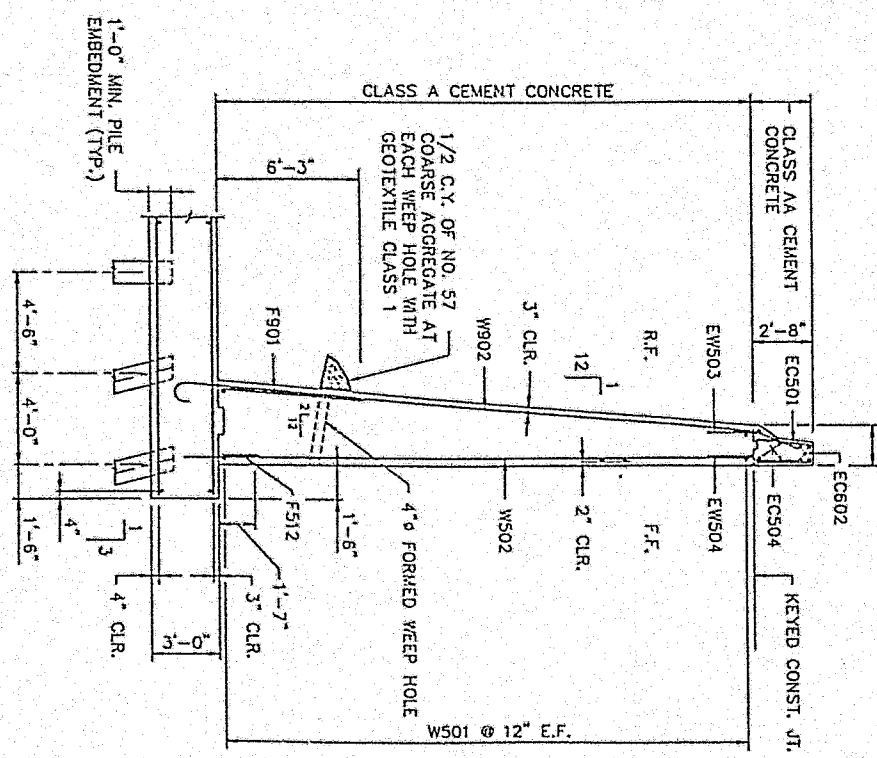
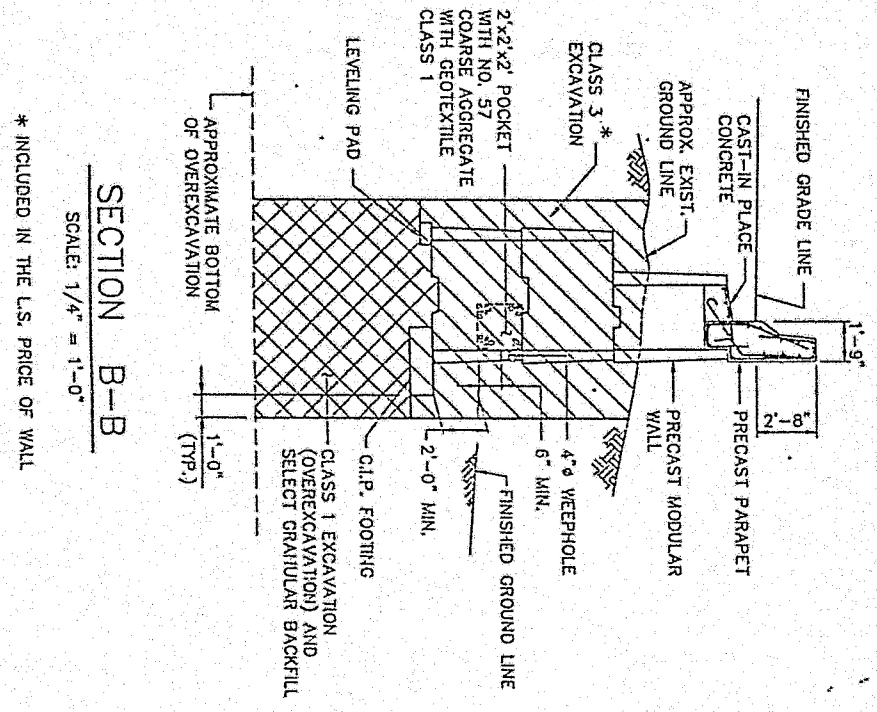
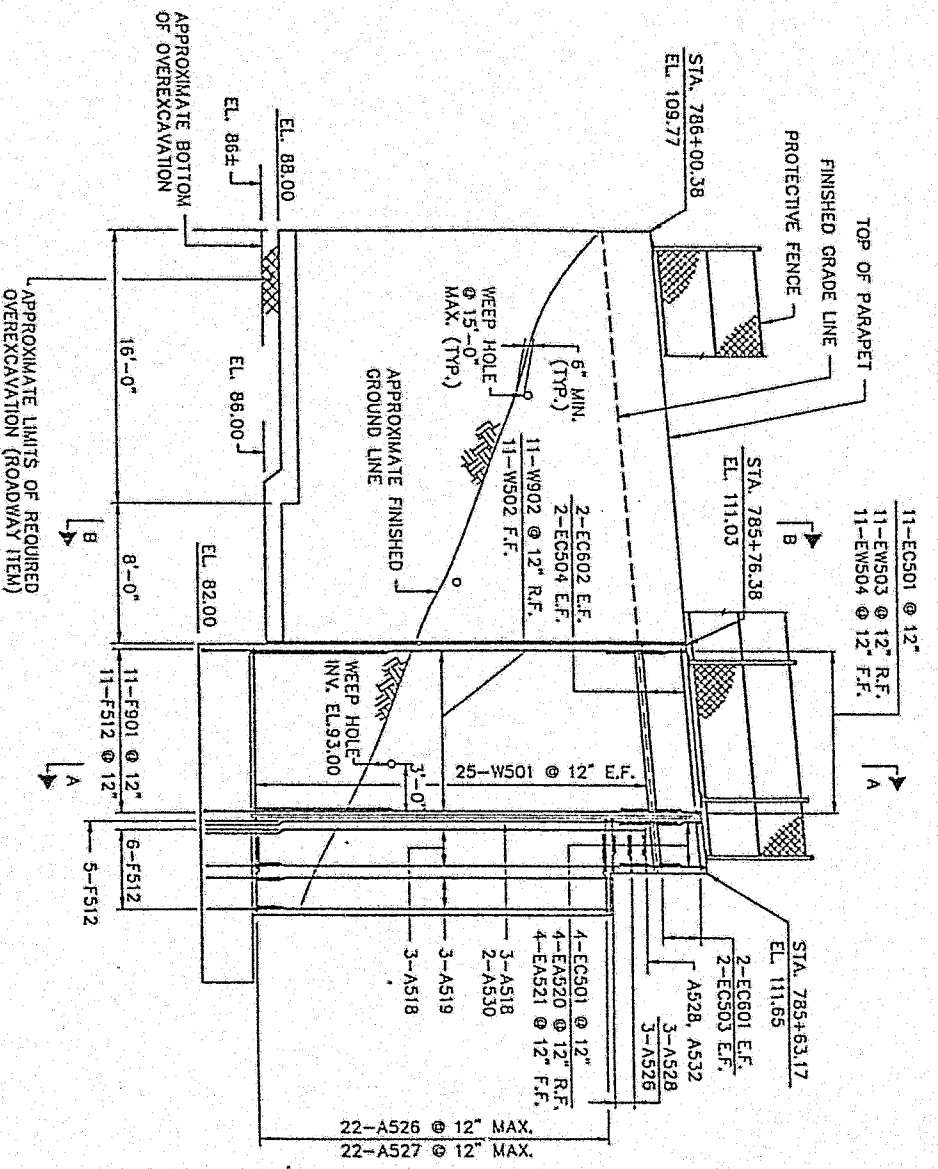
3 SPAN CONTINUOUS BOX WINGWALL

RECOMMENDED

3-19-92

WINGWALL B 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.	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 U.S. PRICE OF WALL)

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

Mark	Description	By	Chk'd.	Rec'd.	D.
REVISIONS					

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

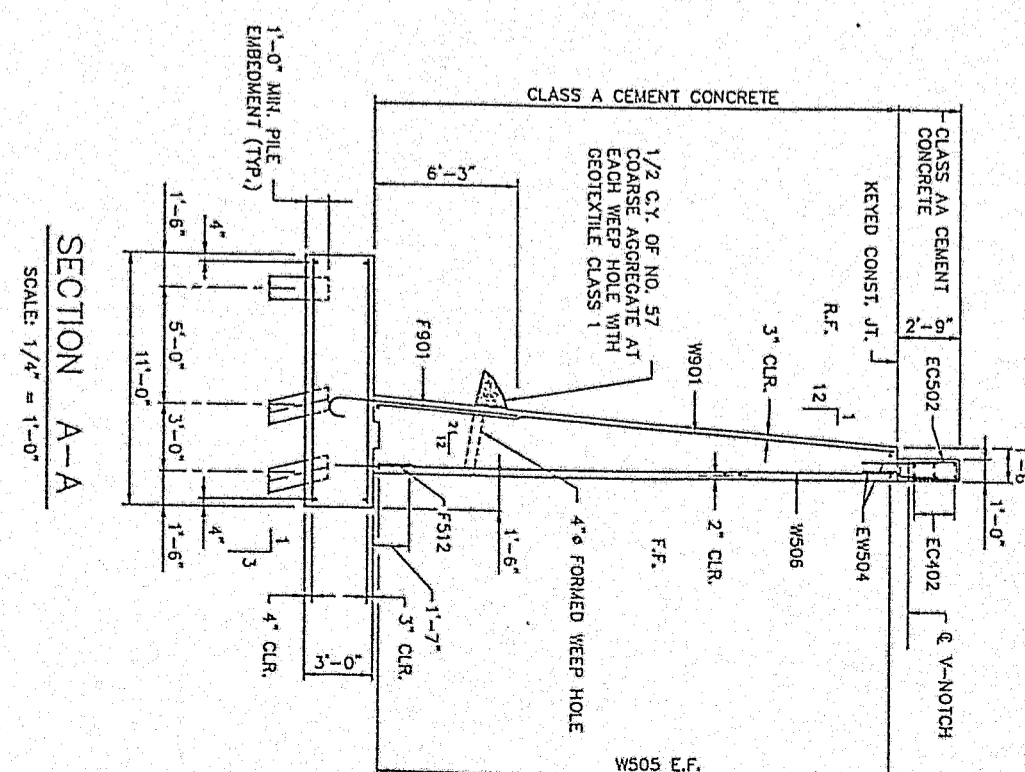
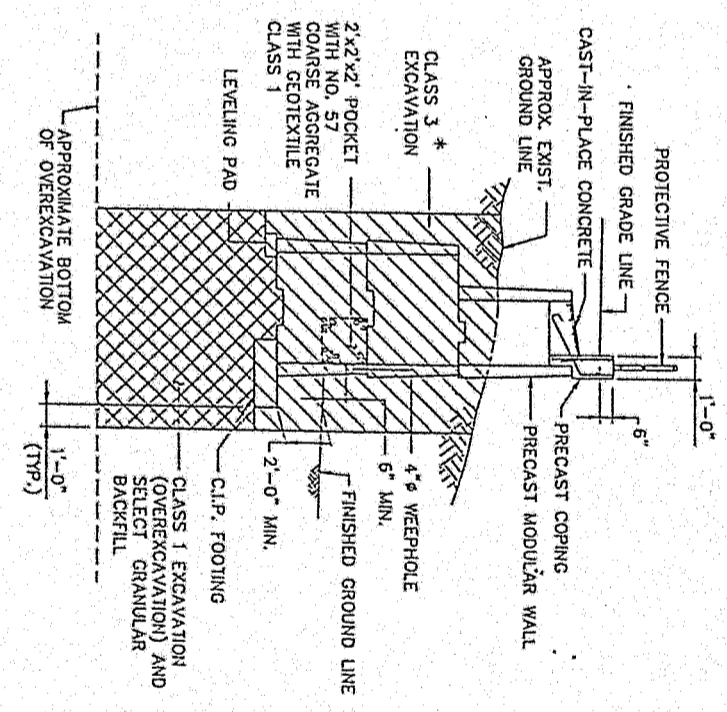
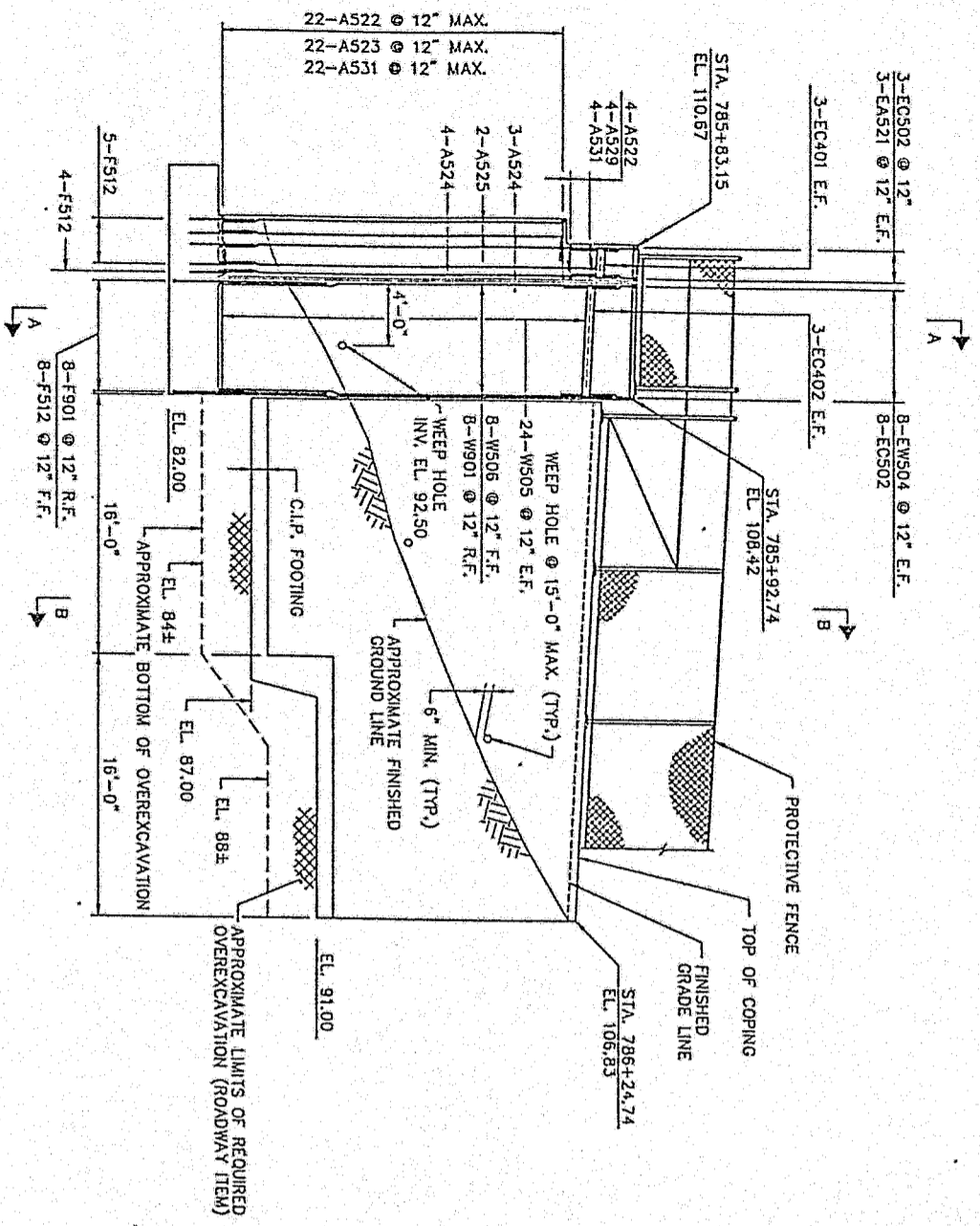
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

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

3 SPAN CONTINUOUS BOX BEAM BRIDGE

RECOMMENDED 3-19-92

SHEET 14 OF S-173



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 U.S. PRICE OF WALL)

- 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

REINFORCEMENT BAR SCHEDULE

REINFORCEMENT BAR SCHEDULE

SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
4	82	3'-3"	(10)	0'-6"	2'-5"	0'-4"				
5	24	45'-3"	STR							
5	8	53'-0"	STR							
5	2	53'-4"	STR							
5	2	6'-2"	(7)	2'-5"	1'-2"		2'-2 3/4"			
5	4	25'-3"	STR							
5	30	2'-0" TO 9'-0"	STR							VARY 2 EACH BY 0'-6"
5	4	15'-11"	STR							VARY 2 EACH BY 1'-10 3/4"
5	12	3'-6" TO 13'-0"	STR							
5	8	5'-6"	STR							
5	4	6'-4"	STR							
5	98	2'-10"	STR							
7	24	10'-3"	(14)	0'-10"	9'-5"					
9	46	14'-11"	STR							
9	2	12'-3"	STR							
9	4	7'-3" TO 8'-0"	STR							VARY 1 EACH BY 0'-3"
9	4	12'-8"	STR							VARY 1 EACH BY 0'-3"
9	7	6'-3"	STR							VARY 1 EACH BY 1'-8"
9	4	3'-3" TO 4'-0"	STR							
9	7	9'-6" TO 19'-6"	STR							
9	10	6'-6"	STR							
9	6	3'-6"	STR							
10	10	12'-1"	(14)	1'-5"	10'-8"					
11	46	14'-11"	STR							
11	2	12'-3"	STR							
11	4	7'-3" TO 8'-0"	STR							VARY 1 EACH BY 0'-3"
11	4	12'-8"	STR							VARY 1 EACH BY 0'-3"
11	7	6'-3"	STR							VARY 1 EACH BY 1'-8"
11	10	3'-3" TO 4'-0"	STR							
11	7	9'-6" TO 19'-6"	STR							
11	10	6'-6"	STR							
11	6	3'-6"	STR							
4	11	5'-9"	STR							
4	11	2'-9"	STR							
5	51	26'-3"	STR							
5	40	24'-6"	STR							
5	51	6'-5"	(10)	3'-0"	3'-5"					
5	46	2'-6"	STR							
5	37	5'-0"	(8)	0'-8"	1'-9"		0'-11"	0'-5 5/8"		
5	42	7'-6"	(7)	1'-0"	3'-0"		1'-11 1/2"	1'-8"		
5	9	5'-9"	(8)	0'-8"	1'-9"		0'-5 5/8"			
5	40	20'-10"	STR							EPOXY COAT 2 BARS ONLY
5	8	25'-0"	STR							
5	8	26'-10"	STR							
5	16	3'-0"	STR							
5	8	1'-6"	STR							
5	19	5'-6"	(11)	4'-0"	1'-6"		1'-3"			
5	7	3'-6"	STR							
5	12	7'-7"	(4)	3'-6"	0'-7"		3'-6"			

MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
EA516	5	6	5'-7"	(4)	1'-9"	0'-4"	3'-6"				
EA517	5	4	4'-0"	(10)	0'-5"	3'-7"					
AS18	5	4	29'-6"	STR							
AS19	5	2	26'-3"	STR							
EA520	5	15	4'-0"	(11)	2'-0"	2'-0"	0'-11 1/4"				
EA521	5	15	3'-6"	STR			2'-0"				
AS22	5	27	4'-6"	(7)	2'-3"	2'-3"	2'-0"				
AS23	5	30	5'-7"	(7)	3'-0"	0'-10"	1'-9"				
AS24	5	9	30'-0"	STR			0'-9 1/2"				
AS25	5	3	26'-9"	STR			1'-10"				
AS26	5	32	9'-3"	(7)	3'-9"	3'-9"	0'-9 1/2"				
AS27	5	29	6'-0"	(7)	3'-6"	0'-6"	2'-0"				
EA528	5	10	3'-6"	STR			1'-9 1/2"				
AS29	5	4	3'-0"	(10)	1'-0"	2'-0"					
AS30	5	4	3'-9"	(7)	1'-6"	0'-9"	1'-6"				
AS31	5	3	28'-0"	STR			1'-4 1/8"				
AS32	5	1	4'-3"	(4)	1'-10"	1'-5"	1'-0"				
AS33	5	30	5'-9"	(10)	2'-9"	3'-0"					
AS34	5	18	3'-0"	STR							
AS35	5	9	7'-6" TO 12'-10"	(4)	3'-0" TO 5'-3"	1'-6"	3'-0" TO 5'-8"				VARY A AND C. 1 EACH BY 0'-4"
AG01	6	12	7'-9"	STR							
AG02	6	4	3'-10" TO 5'-8"	STR							
AG03	6	18	4'-11"	(14)	0'-8"	4'-3"					
AG04	6	2	9'-6"	STR							
EA701	7	4	3'-10"	STR							
EA801	8	3	5'-11"	(10)	0'-7"	5'-4"					
EA802	8	5	6'-0"	STR							
AI001	10	43	24'-6"	STR							
AI002	10	41	12'-10"	STR							
EC401	4	6	3'-8"	STR							
EC402	4	6	6'-0"	STR							
EC403	4	6	3'-1"	STR							
EC501	5	26	5'-5"	(7)	2'-3 1/2"	0'-9"	2'-4 1/2"	0'-3"			
EC502	5	4	1'-10"	STR							
EC503	5	15	5'-11"	(4)	2'-7"	0'-9"	2'-7"				
EC504	5	4	9'-10"	STR							
EC505	5	4	-	STR							
EC506	5	4	4'-4"	STR							
EC507	5	4	7'-8"	STR							
EC601	6	4	1'-10"	STR							
EC602	6	4	9'-10"	STR							
EC603	6	4	4'-9"	STR							
EC604	6	4	7'-8"	STR							
W501	5	60	9'-10"	STR							
W502	5	11	29'-3"	STR							
EW503	5	11	4'-0"	(11)	2'-0"	2'-0"	0'-11 1/4"				
EW504	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 180° HOOKS ARE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE STANDARD HOOKS ARE USED.
- * REINFORCEMENT BAR SCHEDULE QUANTITIES AND DIMENSIONS ARE FOR INFORMATION ONLY. VERIFY PRIOR TO BIDDING AND FABRICATION.

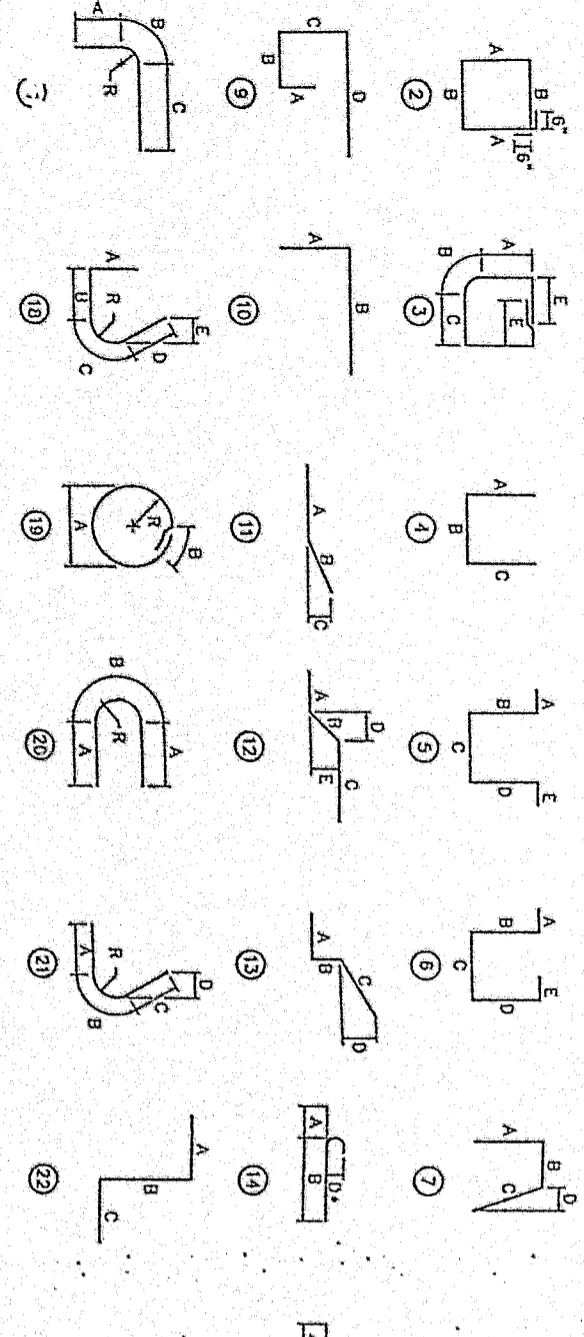
Mark	Description	By	Chk'd.	Reco.	Date

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 BAR SCHEDULE

REINFORCEMENT BAR SCHEDULE

NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
61	3'-3"	(10)	0'-6"	2'-5"					
2	51'-3"	STR			ABUTMENT 2 0'-4"				
8	52'-7"	STR							
14	45'-6"	STR							
4	30'-6"	STR							
4	19'-1"	STR							
18	3'-9" TO 7'-9"	STR							VARY 2 EACH BY 0'-6"
4	13'-5"	STR							
4	9'-6"	STR							
14	6'-0"	STR							
2	6'-2"	(7)	2'-6"	1'-2"	2'-6"	2'-2 3/4"			
89	2'-10"	STR							
46	11'-7"	(9)	0'-11"	10'-8"					
33	12'-5"	STR							
9	11'-5"	STR							VARY 1 EACH BY 0'-10"
7	3'-0" TO 8'-0"	STR							
4	3'-6"	STR							
8	5'-6"	STR							VARY 1 EACH BY 2'-0"
4	10'-8"	STR							
6	5'-6" TO 11'-6"	STR							VARY 1 EACH BY 1'-0"
2	13'-9"	STR							
4	2'-6" TO 5'-6"	STR							VARY 1 EACH BY 1'-0"
4	6'-6"	STR							
65	10'-2"	(9)	1'-3"	8'-11"					
33	12'-5"	STR							
9	11'-5"	STR							VARY 1 EACH BY 0'-10"
7	3'-0" TO 8'-0"	STR							
4	3'-6"	STR							
8	5'-6"	STR							
6	10'-8"	STR							VARY 1 EACH BY 2'-0"
4	5'-6" TO 11'-6"	STR							
2	13'-9"	STR							VARY 1 EACH BY 1'-0"
4	2'-6" TO 5'-6"	STR							
4	6'-6"	STR							
11	5'-5"	STR							
11	3'-4"	STR							
50	19'-6"	STR							EPOXY COAT 3 BARS ONLY
32	26'-6"	STR							
50	6'-5"	STR							
47	2'-6"	STR							
38	5'-0"	(9)	0'-8"	1'-9"	0'-11"	1'-8"	0'-5 5/8"		
40	7'-6"	(7)	1'-0"	3'-0"	1-11 1/2"	1'-8"			
9	5'-9"	(9)	0'-8"	1'-9"	1'-8"				
32	23'-9"	STR							EPOXY COAT 3 BARS ONLY
8	24'-5"	STR							
8	23'-9"	STR							
8	3'-0"	STR							
8	1'-6"	STR							
18	5'-6"	STR							

MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
EA514	5	11	3'-6"	STR							
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"	STR							
EA518	5	6	23'-9"	STR							
EA519	5	3	20'-6"	STR							
EA520	5	16	4'-0"	(1)	2'-0"	2'-0"	0'-11 1/4"				
EA521	5	22	3'-6"	STR							
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"	STR							
EA525	5	2	20'-0"	STR							
EA526	5	25	7'-11"	(7)	3'-0"	3'-2"	1'-9"				
EA527	5	22	6'-9"	(7)	4'-6"	0'-3"	2'-0"				
EA528	5	4	4'-6"	(7)	1'-6"	1'-6"	1'-6"				
EA529	5	4	3'-0"	(10)	1'-0"	2'-0"	1'-4 1/8"				
EA530	5	2	22'-5"	STR							
EA531	5	26	4'-0"	(10)	2'-0"	2'-0"	0'-9 1/2"				
EA532	5	1	7'-0"	(4)	3'-0"	1'-6"	2'-6"				
EA533	5	6	4'-0"	(10)	0'-5"	3'-7"					
EA534	5	18	3'-0"	STR							
EA601	5	9	7'-6" TO 12'-10"	(4)	3'-0" TO 5'-8"	1'-6"	3'-0" TO 5'-8"				VARY 1 EACH BY 0'-4"
EA602	6	12	7'-9"	STR							
EA603	6	4	3'-10" TO 5'-8"	STR							VARY 2 EACH BY 1'-11"
EA604	6	18	4'-11"	(4)	0'-8"	4'-3"					
EA801	8	2	9'-6"	STR							
EA802	8	4	5'-11"	(10)	0'-7"	5'-4"					
EA901	9	5	6'-0"	STR							
EA902	9	46	18'-0"	STR							
EC401	4	6	1'-11"	STR							
EC402	4	6	6'-11"	STR							
EC501	5	27	5'-5"	(7)	2'-3 1/2"	0'-9"	2'-4 1/2"				0'-3"
EC502	5	11	4'-11"	(4)	2'-1"	0'-9"	2'-1"				
EC503	5	4	3'-0"	STR							
EC504	5	4	9'-8"	STR							
EC505	5	4	9'-8"	STR							
EC506	5	4	4'-4"	STR							
EC507	5	4	7'-8"	STR							
EC601	6	4	3'-0"	STR							
EC602	6	4	9'-8"	STR							
EC603	6	4	4'-9"	STR							
EC604	6	4	7'-8"	STR							
EW501	5	50	9'-8"	STR							
EW502	5	11	23'-0"	STR							
EW503	5	11	4'-0"	(1)	2'-0"	2'-0"	0'-11 1/4"				
EW504	5	27	3'-6"	STR							
WS05	5	48	6'-11"	STR							
WS06	5	8	22'-6"	STR							
WS01	9	8	22'-6"	STR							
WS02	9	11	23'-0"	STR							



Mark	Description	By	CHK'd	Rec'd	Date
	REVISIONS				

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

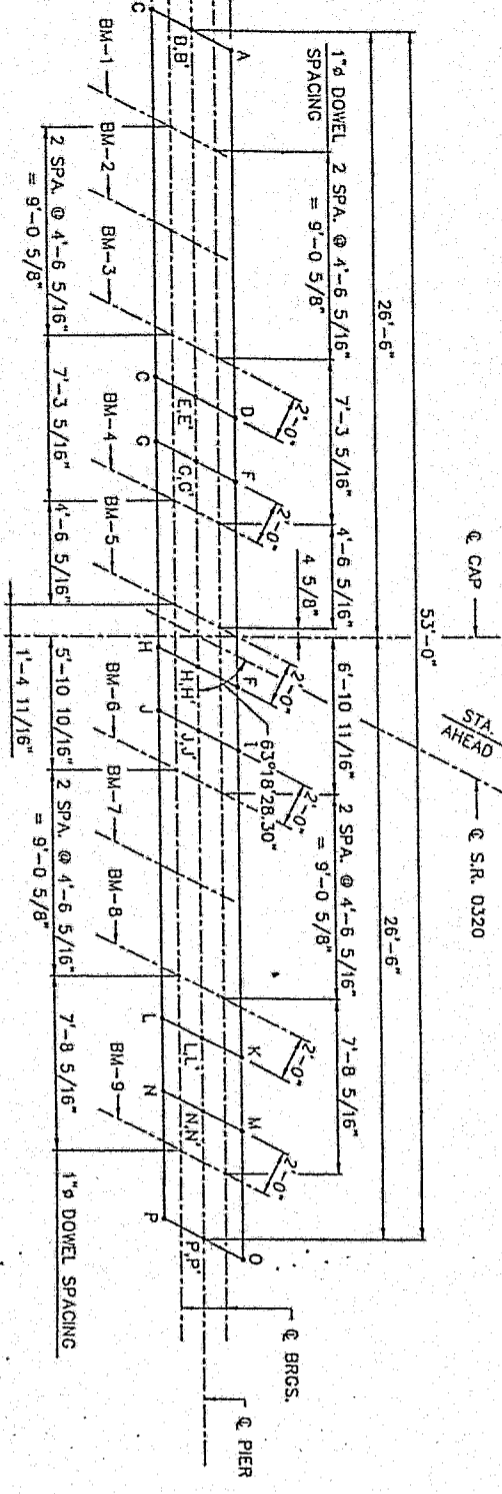
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

RECOMMENDED 3-19-92

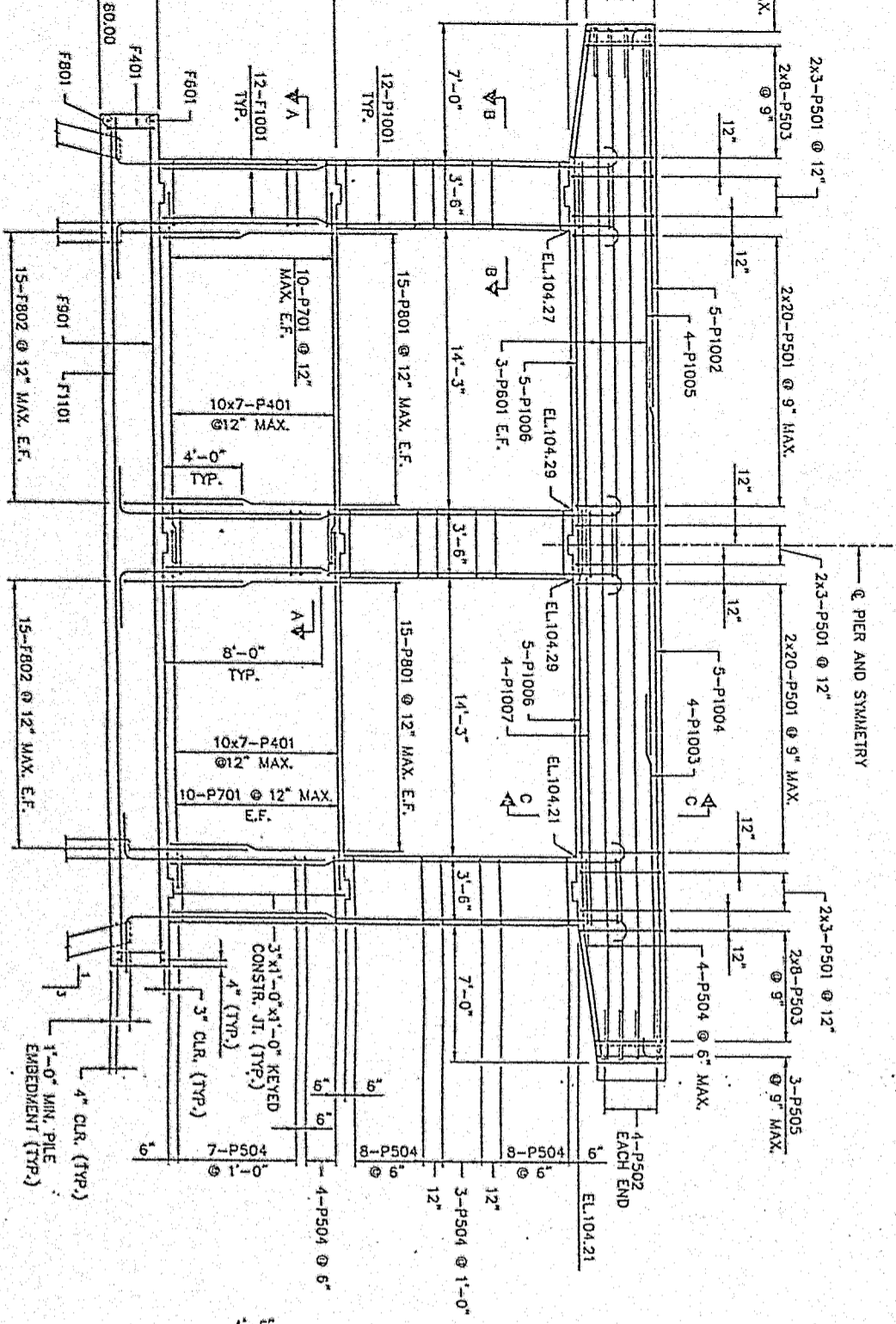
SHEET 17 OF 40

S - 17313

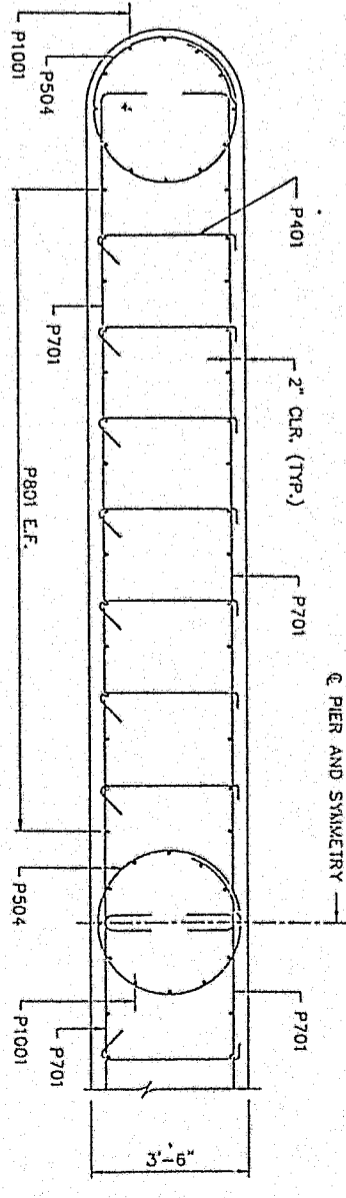
* E PREFIX DENOTES EPOXY COATED BARS.
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 * FIGURES IN CIRCLES SHOW TYPES.
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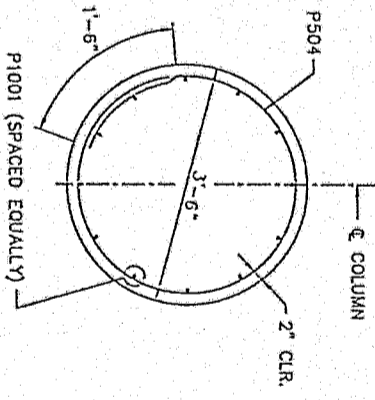
PLAN
SCALE: 1/4" = 1'-0"



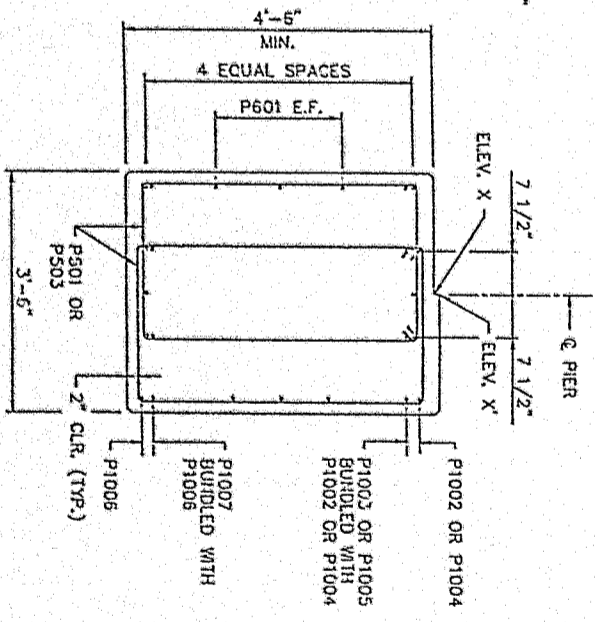
ELEVATION AT PIER
SCALE: 1/4" = 1'-0"



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



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



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

BEAM SEAT 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	108.81
J	108.78
J'	108.95
K	108.72
L	108.76
L'	108.83
M	108.83
M'	108.73
N	108.90
N'	108.89
O	108.83
P	108.94
P'	108.94

- LEGEND
- EL. = ELEVATION
 - JT. = 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

Work	Description	B/J	Chkd.	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

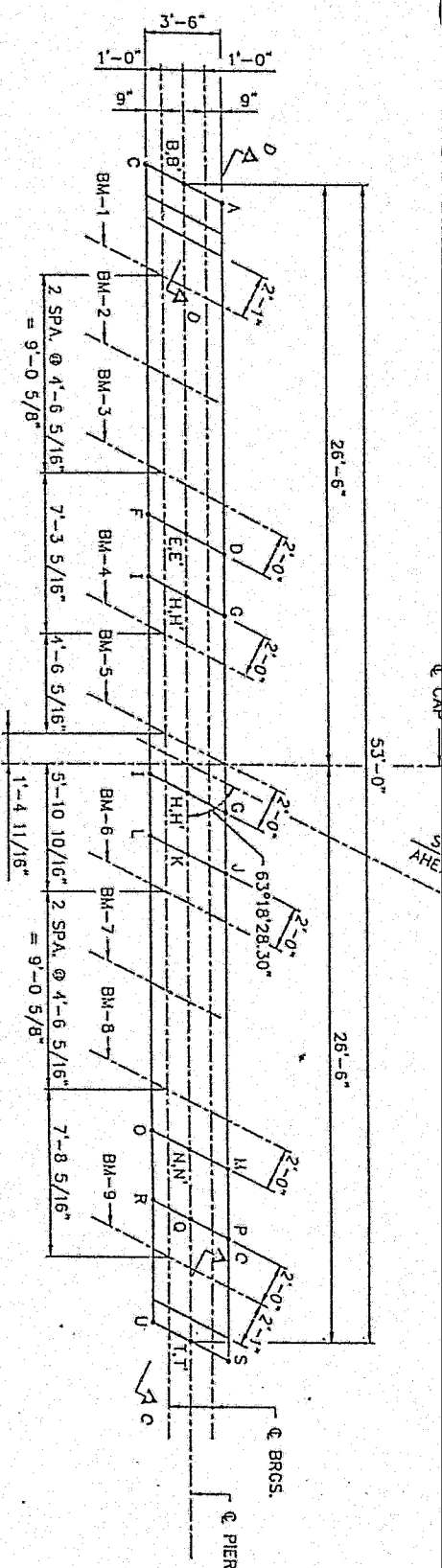
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE

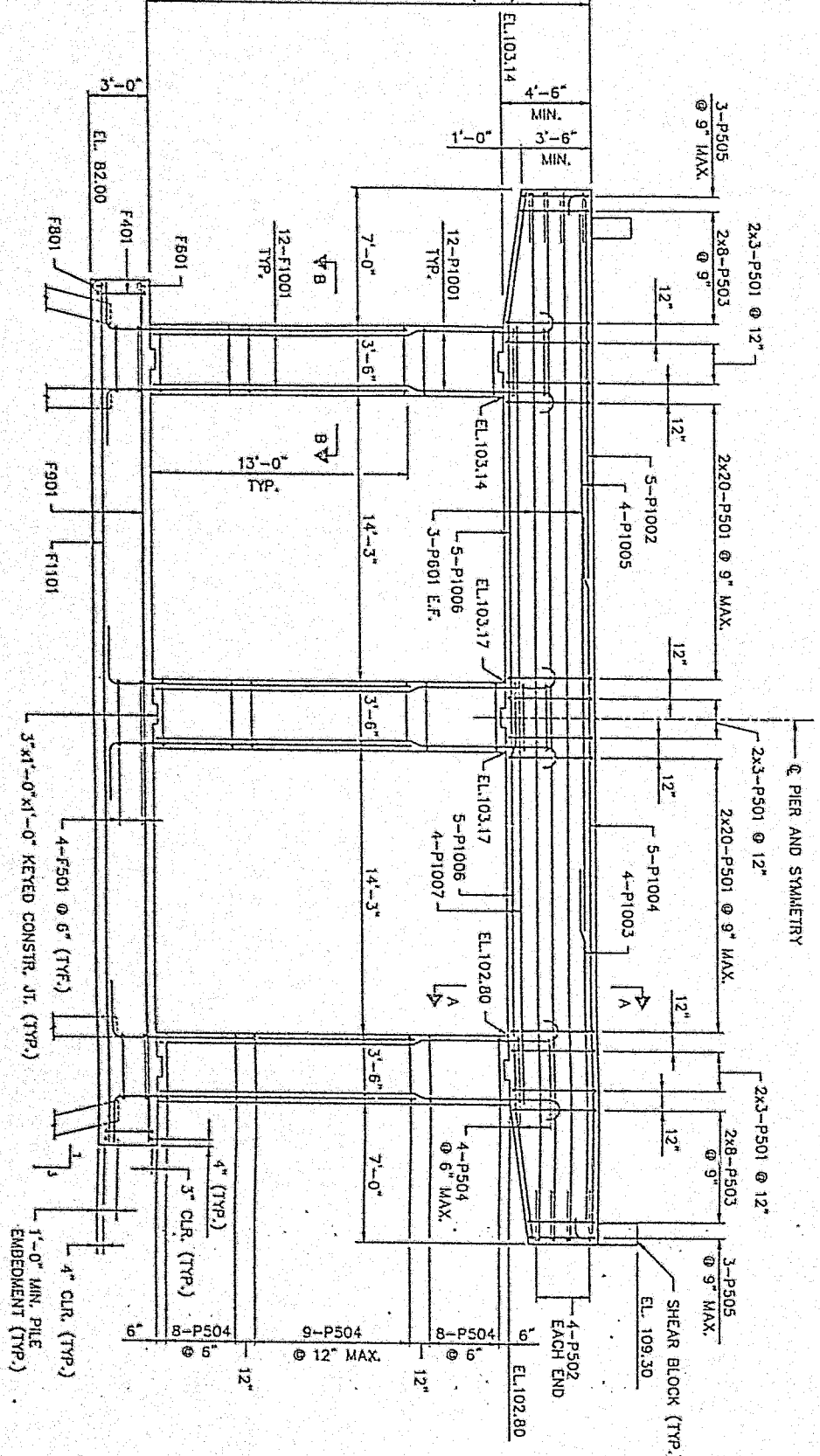
PIER 1

RECOMMENDED 3-19-92

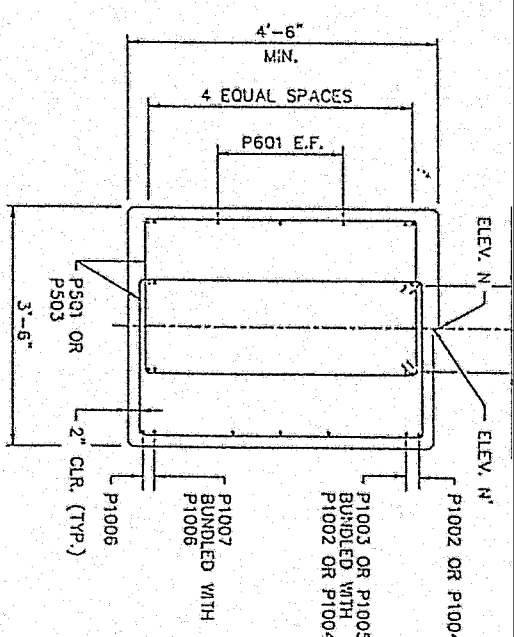
SHEET 18 OF 40
S - 17313



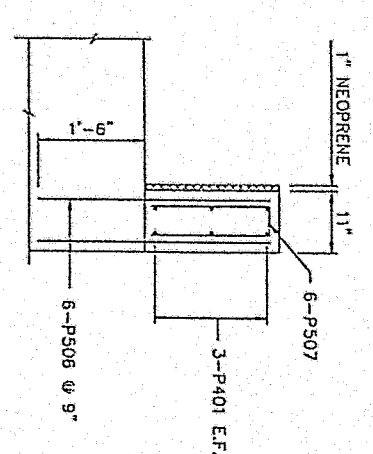
PLAN
SCALE: 1/4" = 1'-0"



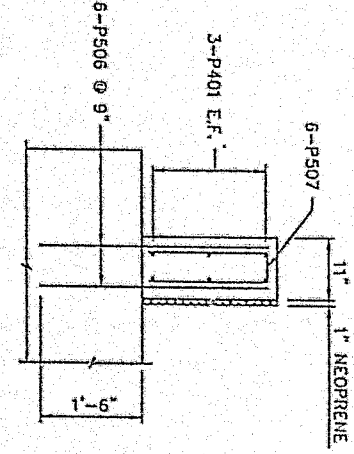
ELEVATION AT PIER
SCALE: 1/4" = 1'-0"



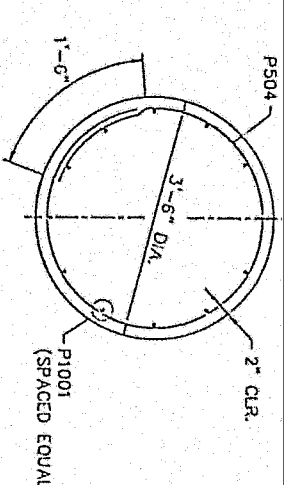
SECTION A-A
SCALE: 3/4" = 1'-0"



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



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



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

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	107.32
H'	107.76	T	107.46
I	107.80	T'	107.50
J	107.80	U	107.55

- LEGEND
- EL. = ELEVATION
 - JT. = JOINT
 - CONSTR. = CONSTRUCTION
 - TYP. = TYPICAL
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - E.F. = EACH FACE

NOTES

- 1. FOR GENERAL NOTES SEE SHEET 3
- 2. FOR BAR SCHEDULE SEE SHEET 21

Mark	Description	By	Chk'd.	Reco.
REVISIONS				

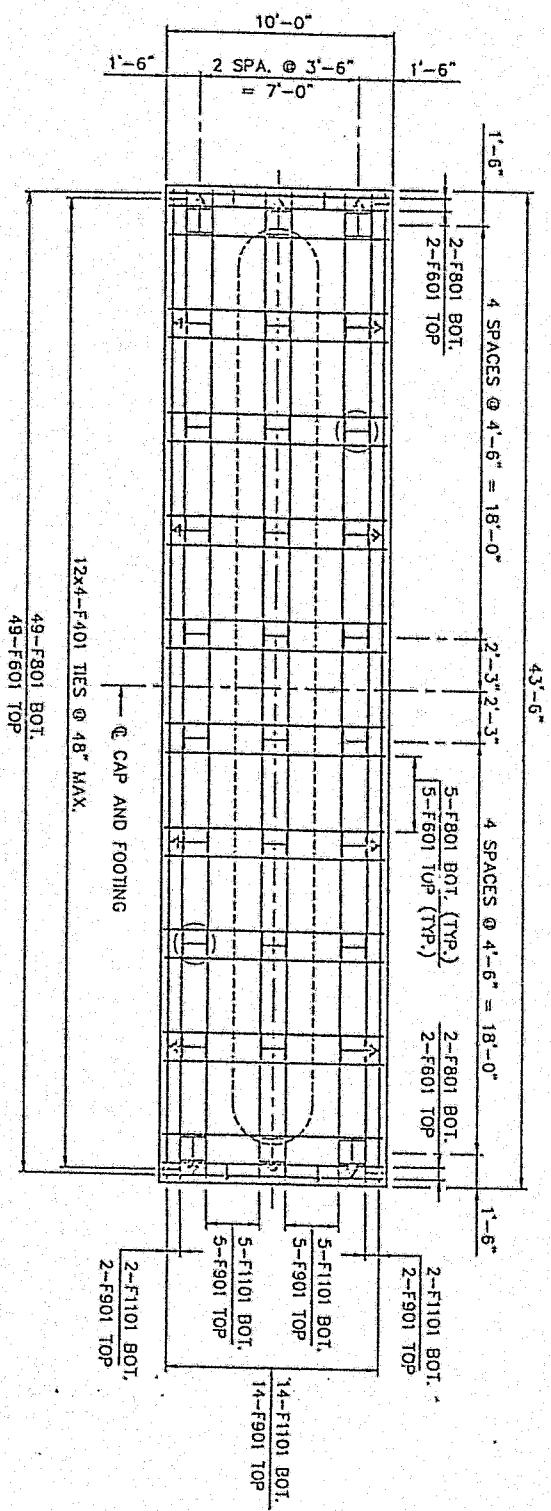
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

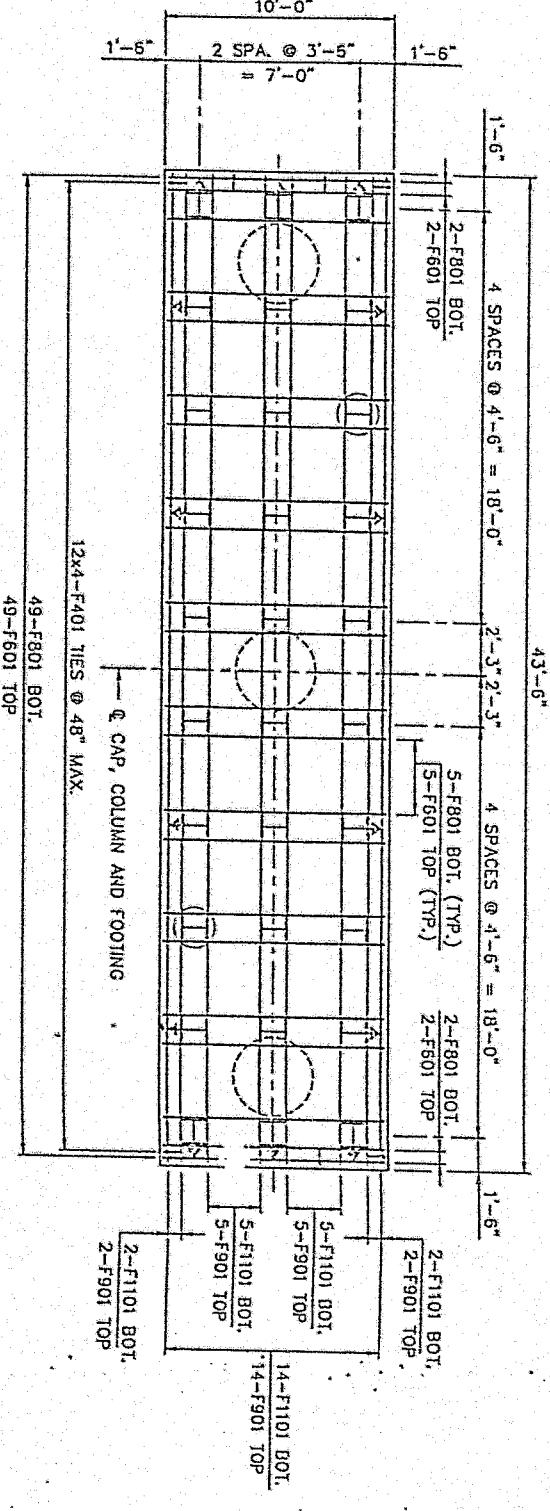
DELAWARE COUNTY
S.R. 0320 SEC. 12S
S.R. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
PIER 2

RECOMMENDED 3-19-92

SHEET 19 OF S-17



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



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

- LEGEND**
- II DEMOTES VERTICAL PILES
 - II DEMOTES BATTERED PILES 1 TO 3
 - DIRECTION OF ARROW
 - ⊕ DEMOTES TEST PILES

- PILE NOTES**
- ALL PILES ARE HP12x53 STEEL PILES
 - MAX. PILE DESIGN LOAD = 80 TONS PER PILE
 - ESTIMATED PILE TIP ELEVATION 88.00 - PIER 1
 - ESTIMATED PILE TIP ELEVATION 39.00 TO 64.00 - PIER 2

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

Mark	Description	By	Chk'd	Reco.	Date
	REVISORS				

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 1 AND 2 FOOTING PLAN

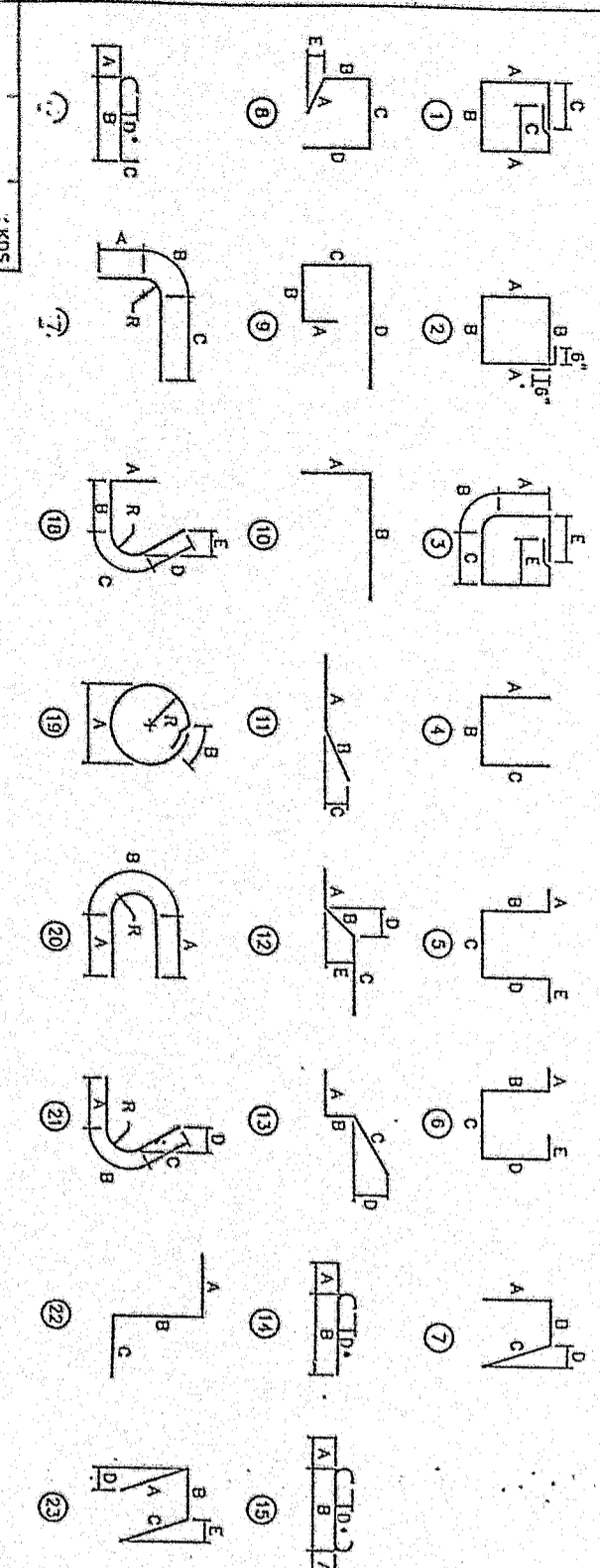
RECOMMENDED 3-19-92

SHEET 20 OF 40

S - 17313

		PIER 1									
F401	4	48	3'-5"	(10)	0'-6"	2'-5"	0'-6"				
F601	6	49	9'-8"	STR							
F801	8	49	9'-8"	STR							
F802	8	60	7'-8"	(10)	1'-4"	6'-4"					
F901	9	14	43'-2"	STR							
F1001	10	36	12'-0"	(10)	1'-10"	10'-2"					
F1101	11	14	43'-2"	STR							
P401	4	140	4'-2"	(10)	0'-6"	3'-2"	0'-6"				
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 1/2 TO 4'-2"	2'-4"					
P504	5	102	9'-11"	(9)	3'-2"	1'-6"					
P505	5	6	9'-2" TO 9'-4"	(4)	3'-0"	3'-2" TO 3'-4"					
P601	6	6	52'-8"	STR							
P701	7	40	20'-7"	(4)	1'-2"	18'-3"	1'-2"				
P801	8	60	8'-10"	STR							
P1001	10	36	24'-8"	(4)	1'-5"	23'-3"					
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"	(11)	21'-3"	6'-10"	0'-11 1/2"				
P1007	10	8	39'-0"	STR							

		PIER 2									
F401	4	48	3'-5"	(10)	0'-6"	2'-5"	0'-6"				
F501	5	12	9'-11"	(19)	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 1/2 TO 4'-2"	2'-4"					
P504	5	87	9'-11"	(9)	3'-2"	1'-6"					
P505	5	6	9'-2" TO 9'-4"	(4)	3'-0"	3'-2" TO 3'-4"					
P506	5	24	3'-6"	STR							
P507	5	12	4'-3"	(4)	1'-9"	0'-9"	1'-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"	(11)	21'-3"	6'-10"	0'-11 1/2"				
P1007	10	8	39'-0"	STR							

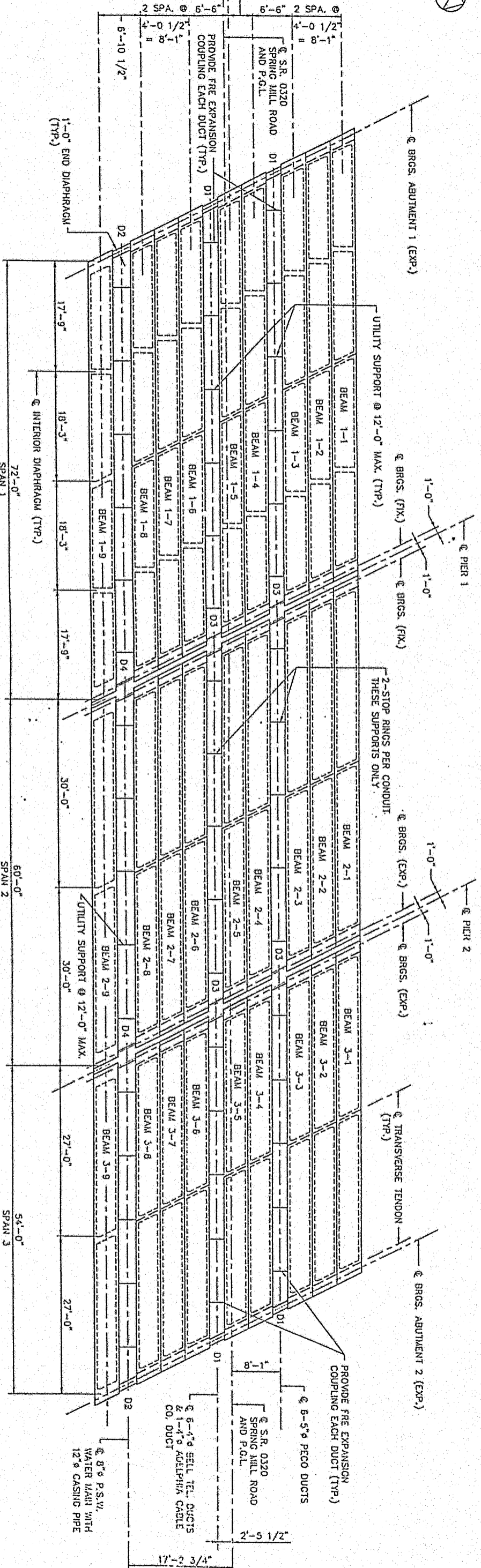


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Mark	Description	By	Chk'd	Reco.	Date
	REVISIONS				

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

RECOMMENDED 3-19-92 SHEET 21 OF 43
 S-17313



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

NOTE
FOR GENERAL NOTES SEE SHEET 3

Work	Description	By	Chk'd.	Reco.	Dt.
REVISIONS					

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

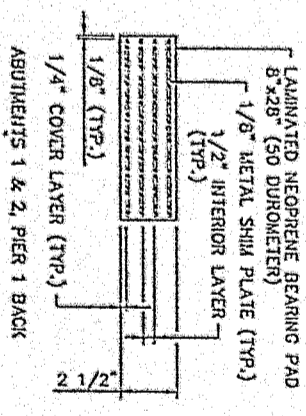
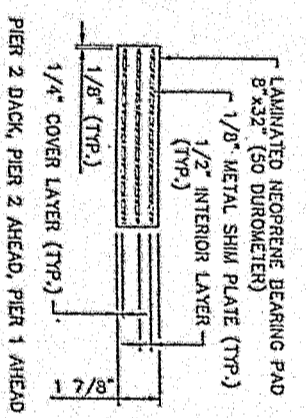
DELAWARE COUNTY

S.R. 0320 SEC. 12S

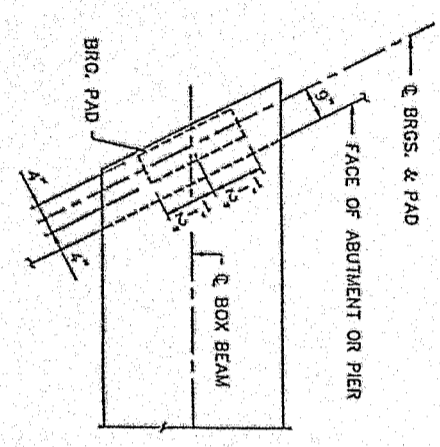
SEG. 0320 OFFSET 1106

S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
FRAMING PLAN

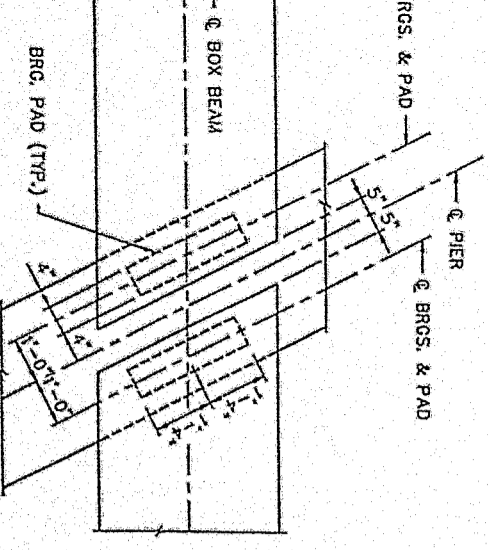
3 SPAN CONTINUOUS BOX BEAM BRIDGE
FRAMING PLAN



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



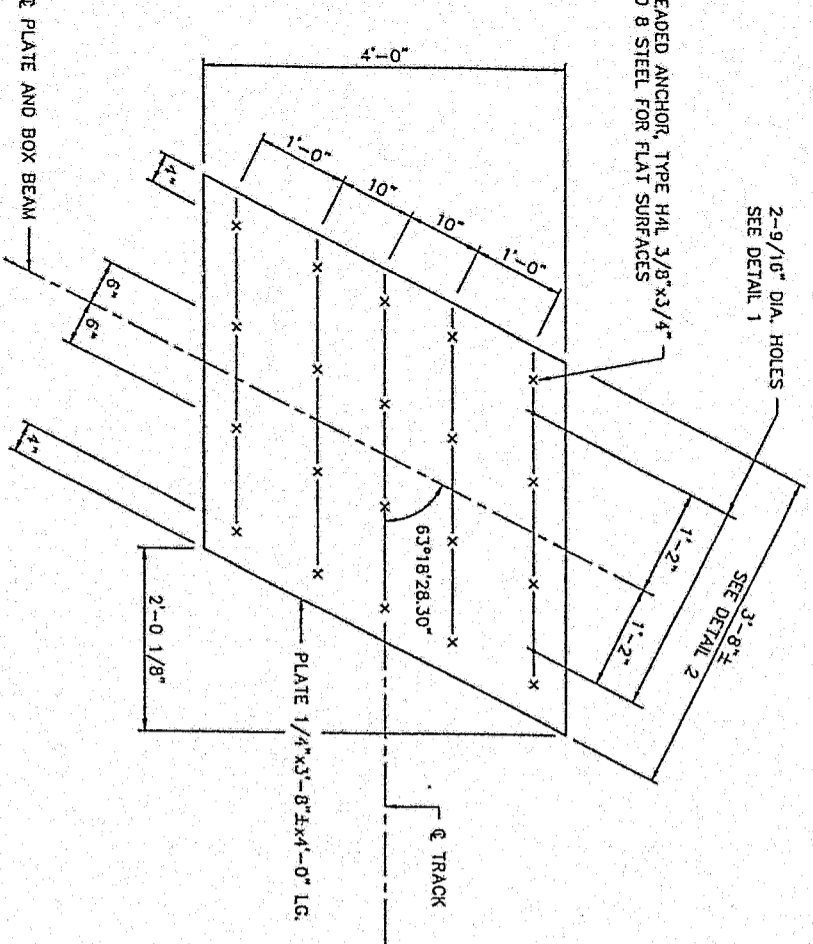
TYP. PLAN @ PIER 1 AHEAD
AND PIER 2
SCALE: 1/2" = 1'-0"



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

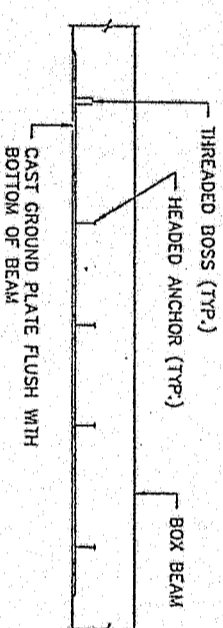
RECOMMENDED 3-19-92

SHEET 22 OF 2
S - 173



BOX BEAM GROUNDING PLATE

SCALE: 1" = 1'-0"

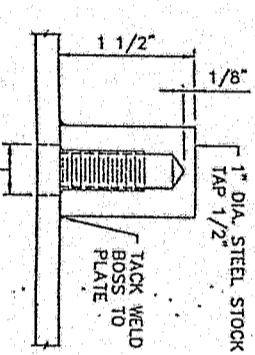


TYPICAL SECTION

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.

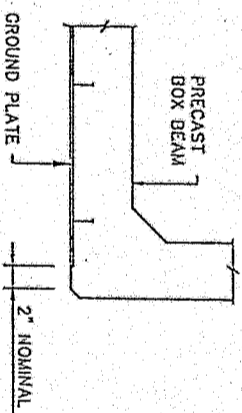


NOTE
CLEAN UP THREADS AFTER GALVANIZING AND INSERT GREASED TREADED PLUG TO EXCLUDE CONCRETE

DETAIL 1

N.T.S.

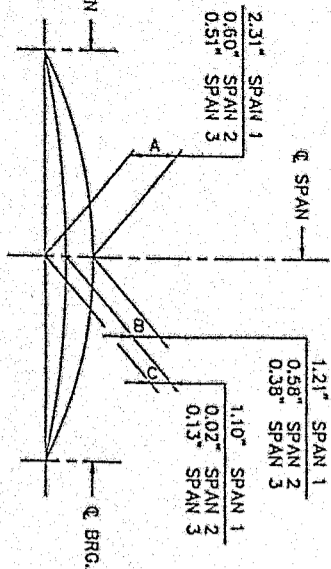
THREADED BOSS FOR MOUNTING GROUND CLAMP



DETAIL 2

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

PART SECTION SEE NOTE 2

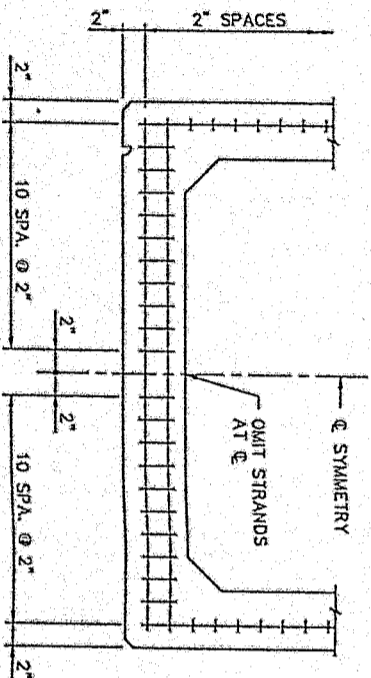


BEAM CAMBER DESIGN

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).

CAMBER VALUES ARE THEORETICAL AND MAY VARY WITH ACTUAL CONCRETE STRENGTH, AND PRESTRESS LOSSES.

GROUNDING DETAILS



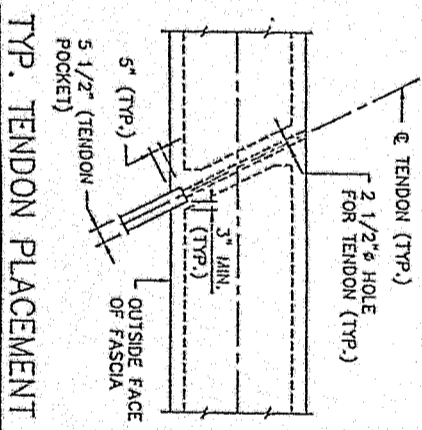
TYPICAL STRAND GRID

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

PRESTRESSING DATA

PRESTRESSED BEAM SIZE = 30"x4'-0" WIDE
= 30"x4'-0" WIDE
= 30"x4'-0" WIDE

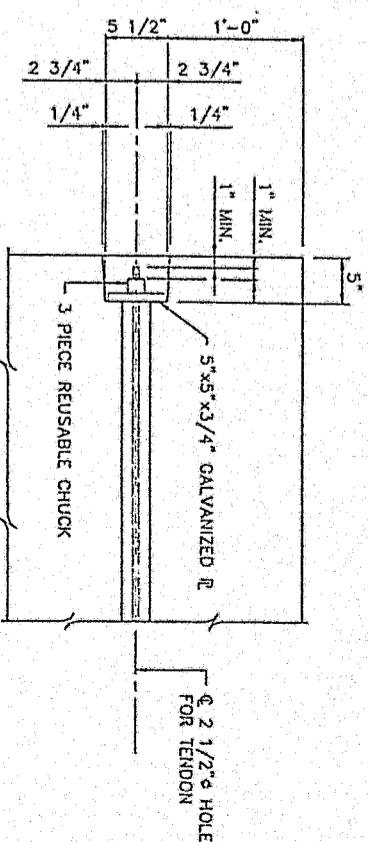
INITIAL PRESTRESSING FORCE PER BEAM (P _i)	SPAN 1	SPAN 2	SPAN 3
INITIAL PRESTRESSING FORCE PER BEAM (P ₁)	1157 K	752 K	630 K
INITIAL PRESTRESSING FORCE PER BEAM (P ₂)	1157 K	752 K	630 K
CONCRETE STRENGTH AT 28 DAYS (f' _c)	7250 PSI	7250 PSI	7250 PSI
USE LOW RELAXATION 270 ksi, 1/2" STRANDS			



TYP. TENDON PLACEMENT

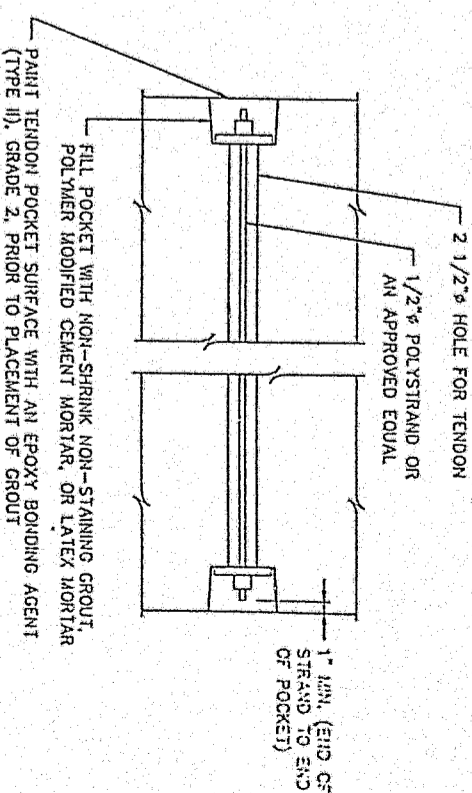
SCALE: 3/8" = 1'-0"

C.G. STRANDS		DRAPED PT. FROM Q BEARING
SPAN 1	6.50 IN	4.00 IN
SPAN 2	6.00 IN	6.00 IN
SPAN 3	5.45 IN	5.45 IN



TYPICAL SECTION OF TENDON POCKET

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



TYPICAL SECTION OF TENDON PLACEMENT

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

- NOTES
- FOR GENERAL NOTES SEE SHEET 3
 - WORK THIS SHEET WITH SHEET 24 AND 25

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

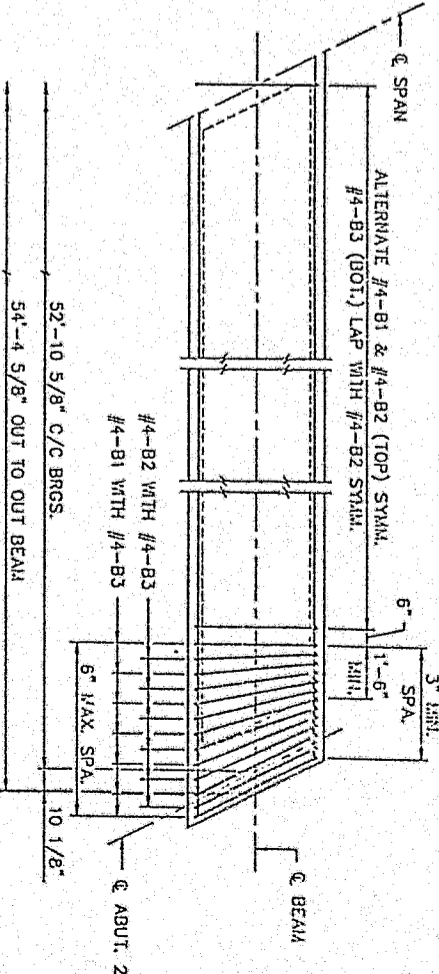
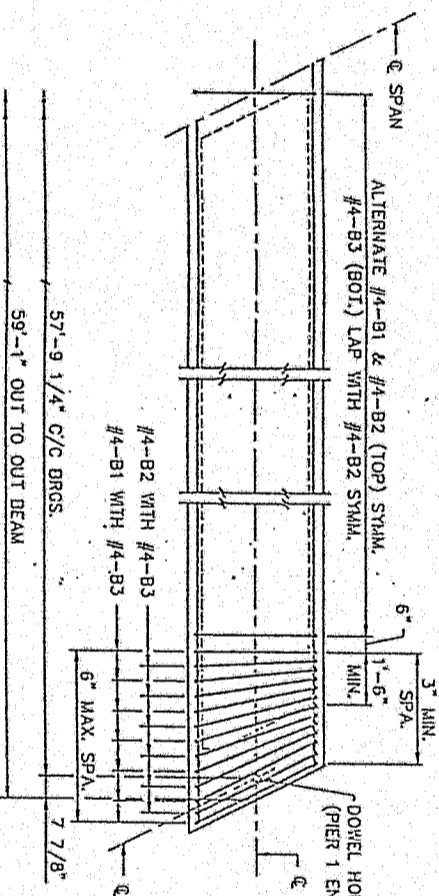
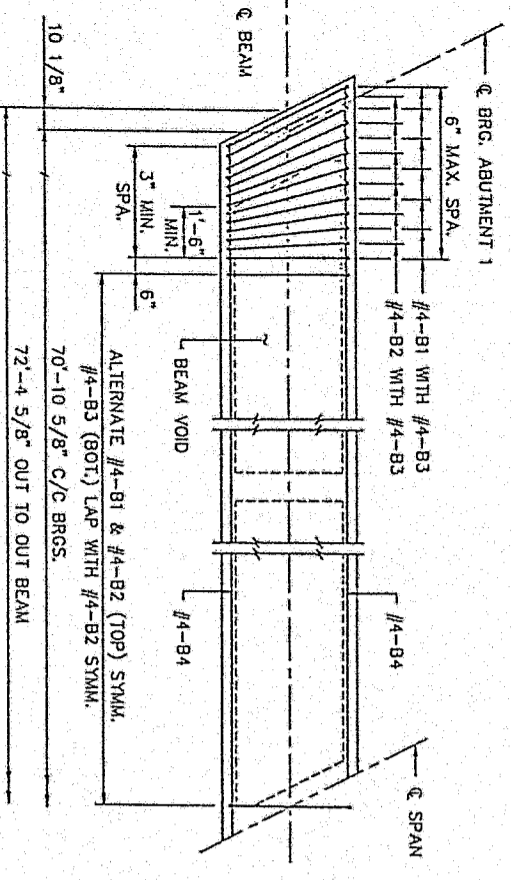
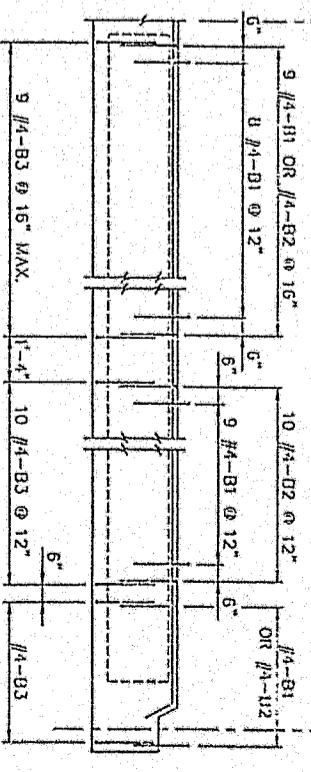
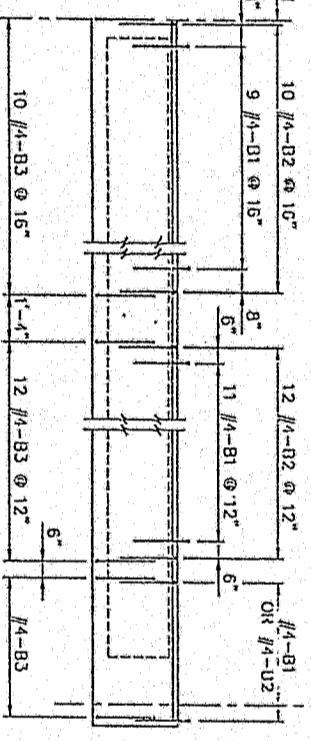
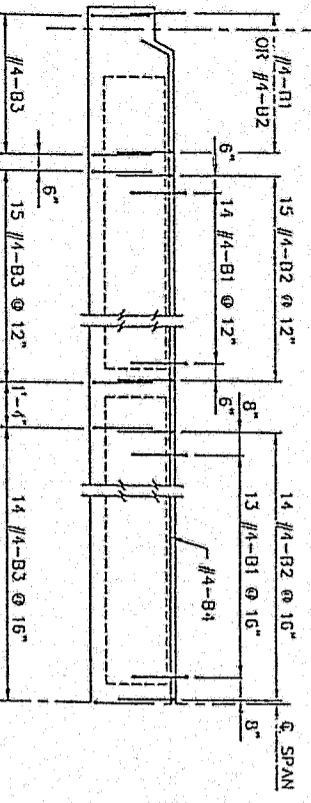
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE
BEAM DETAILS 1

RECOMMENDED 3-19-92

SHEET 23 OF 40

S - 17313



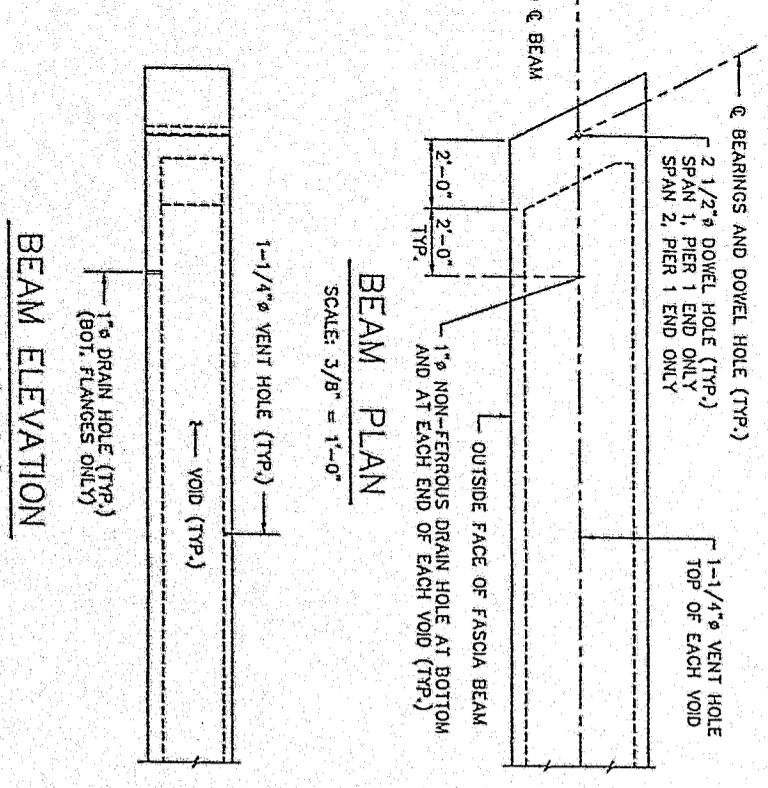
SPAN 1

SPAN 2

SPAN 3

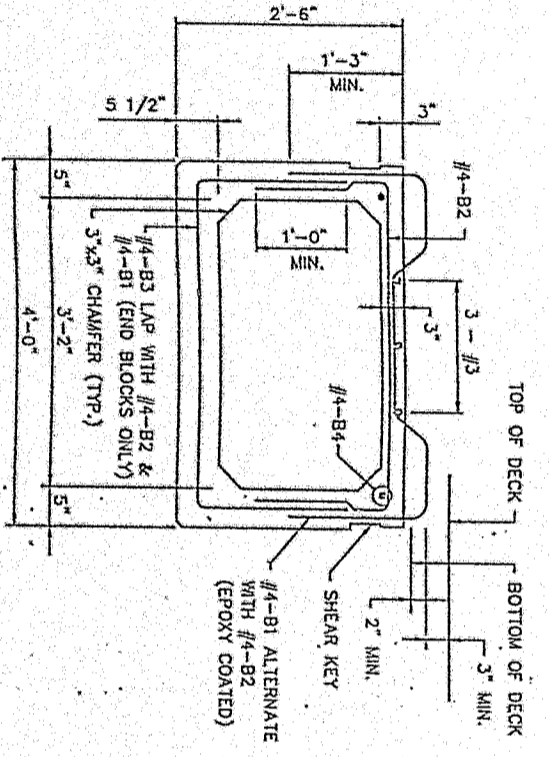
BEAM ELEVATION

TYPICAL BEAM PLAN



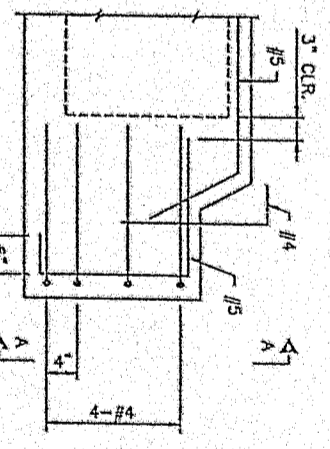
BEAM PLAN

TYPICAL BEAM SECTION



SECTION A-A

BEAM END DETAIL



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

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

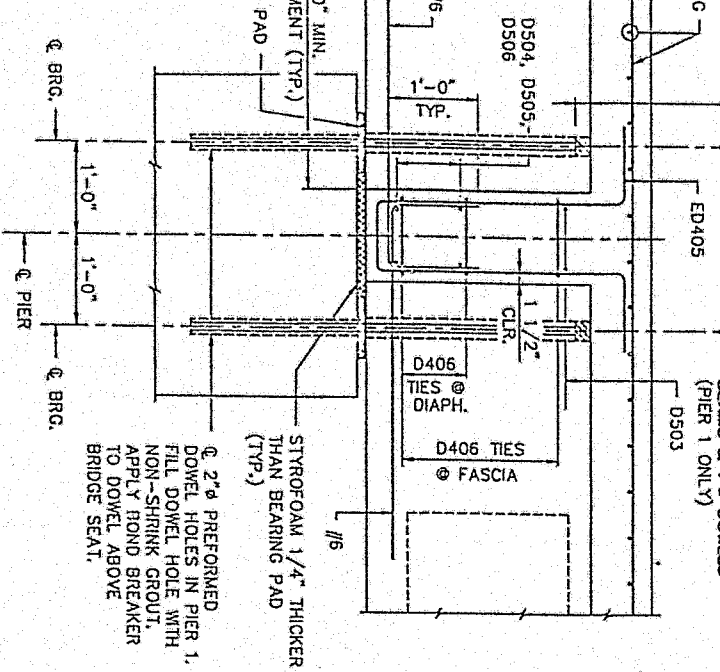
SEG. 0320 OFFSET 1106
 S.R. 0320 STA. 784+21

3 SPAN CONTINUOUS BOX BEAM BRIDGE
 BEAM DETAILS 2

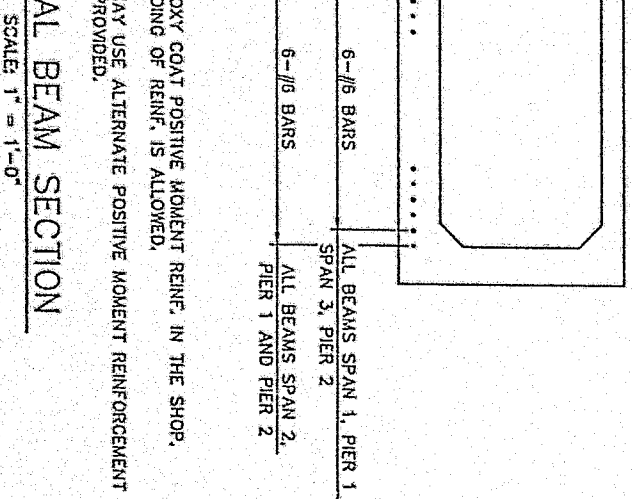
RECOMMENDED 3-10-92

SHEET 24 OF 45

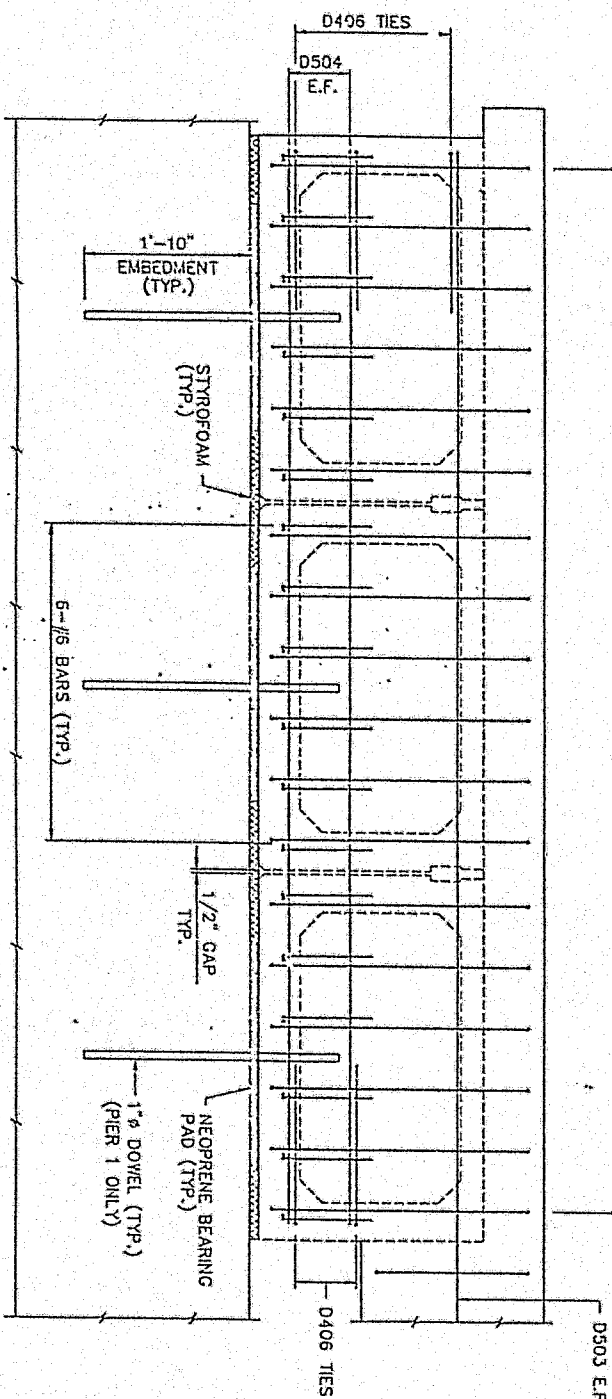
S - 17313



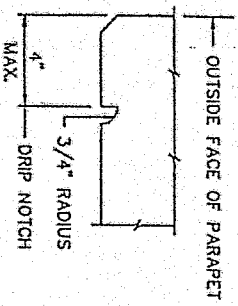
SECTION AT PIER
SCALE: 1" = 1'-0"



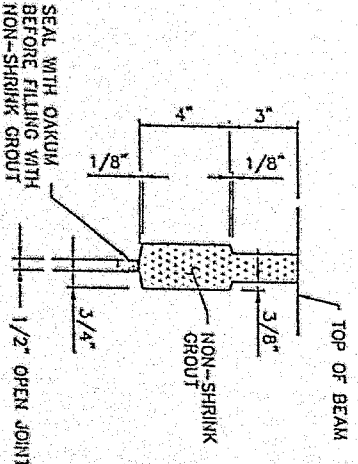
AL BEAM SECTION
SCALE: 1" = 1'-0"
MOMENT CONNECTION



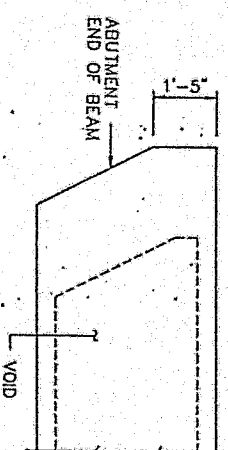
ELEVATION AT PIER
SCALE: 1" = 1'-0"



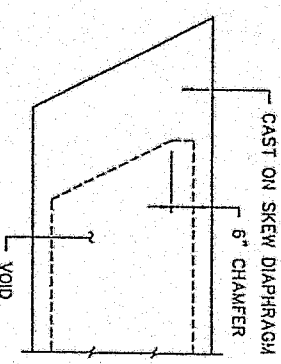
DRIP NOTCH DETAIL
SCALE: 3" = 1'-0"



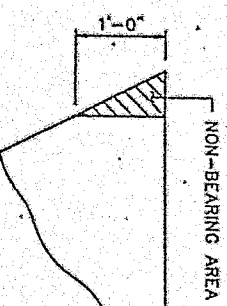
SHEAR KEY DETAIL
SCALE: 3" = 1'-0"



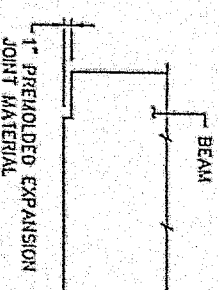
BEAM BEVEL PLAN
BEAMS 1-1 AND 3-9
SCALE: 1/2" = 1'-0"



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

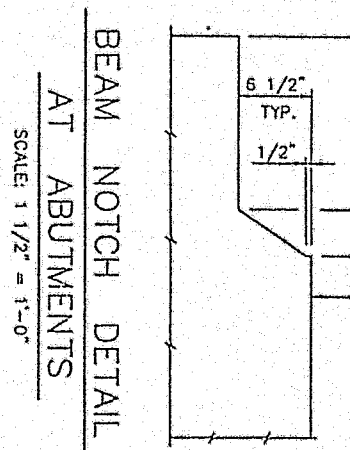


PLAN
SCALE: 1" = 1'-0"



ELEVATION
SCALE: 1" = 1'-0"

TYPICAL BEAM CORNER DAP



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

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

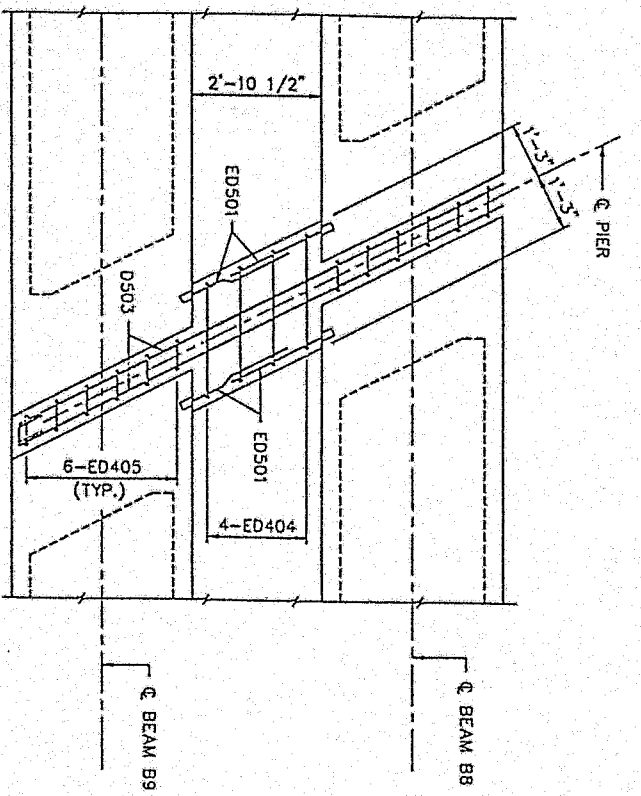
REVISIONS				
Mark	Description	By	Chk'd.	Reco.

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
BEAM DETAILS 3

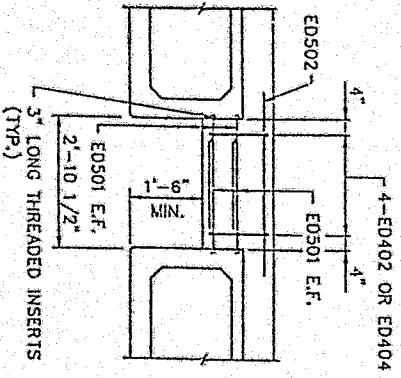
RECOMMENDED 3-19-92
SHEET 25 OF 40



NOTE: FOR REINFORCEMENT NOT NOTED SEE SHEET 25

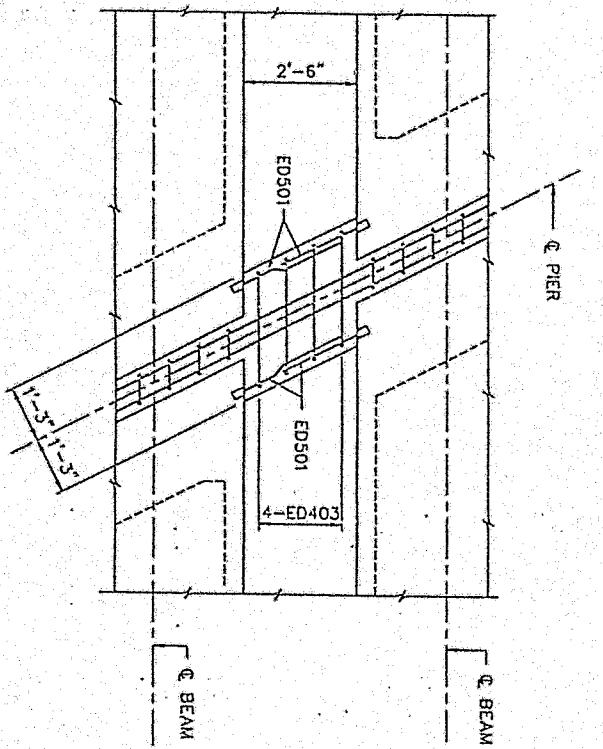
PIER DIAPHRAGM DETAIL - D4

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



TYPICAL ELEVATION DIAPHRAGM D-2 AND D-4

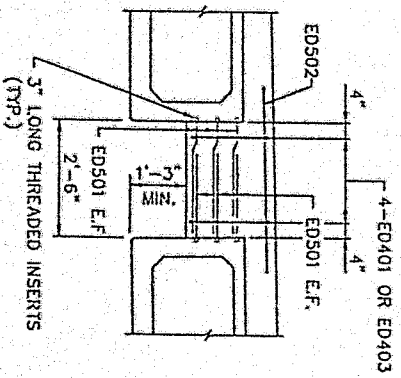
SCALE: 1/2" = 1'-0"



NOTE: FOR REINFORCEMENT NOT NOTED SEE SHEET 25

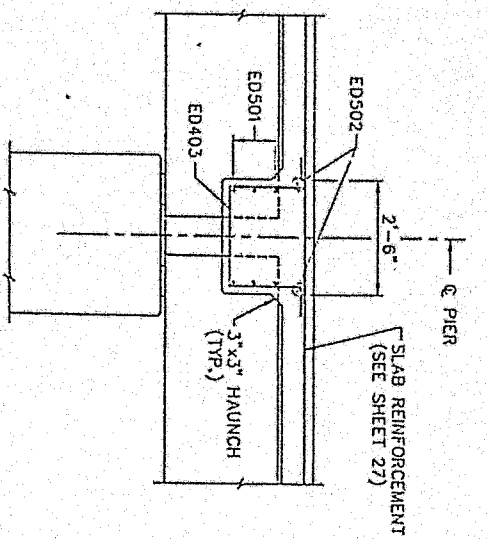
PIER DIAPHRAGM DETAIL - D3

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



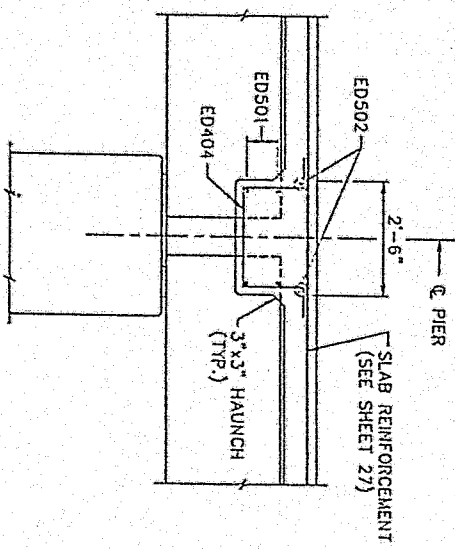
TYPICAL ELEVATION DIAPHRAGM D-1 AND D-3

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



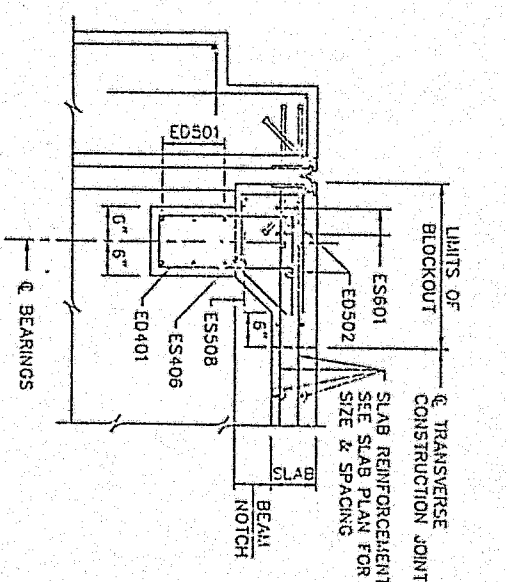
PIER DIAPHRAGM SECTION - D3

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



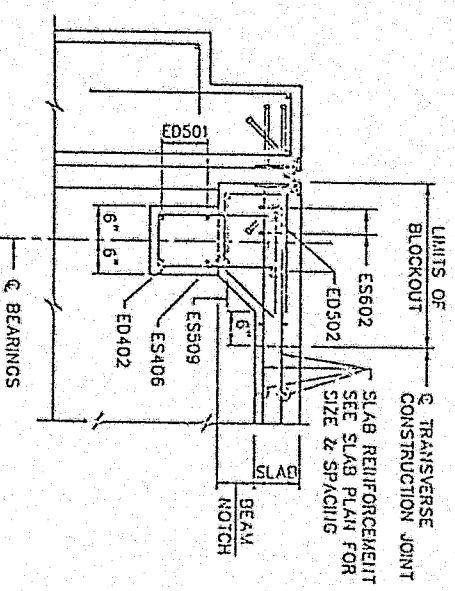
PIER DIAPHRAGM SECTION - D4

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



END DIAPHRAGM SECTION - D1

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



END DIAPHRAGM SECTION - D2

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

- NOTES
- FOR GENERAL NOTES SEE SHEET 3
 - FOR BAR SCHEDULE SEE SHEET 28
 - FOR FRAMING PLAN SEE SHEET 22

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

Mark	Description	By	Chk'd	Rec'd	Date
REVISIONS					

S.R. 0320 PREVIOUSLY KNOWN AS LR, 225

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY

S.R. 0320 SEC. 12S

SEG. 0320 OFFSET 1106

S.R. 0320 STA. 784+21

OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE

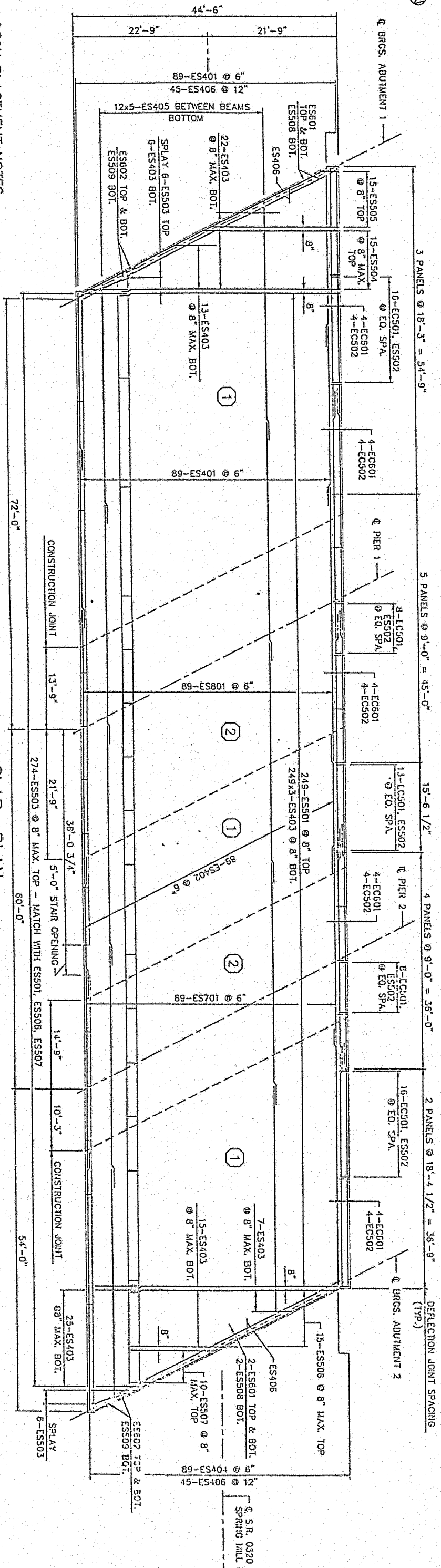
DIAPHRAGM DETAILS

RECOMMENDED

2-19-92

SHEET 25 OF 40

S - 17313

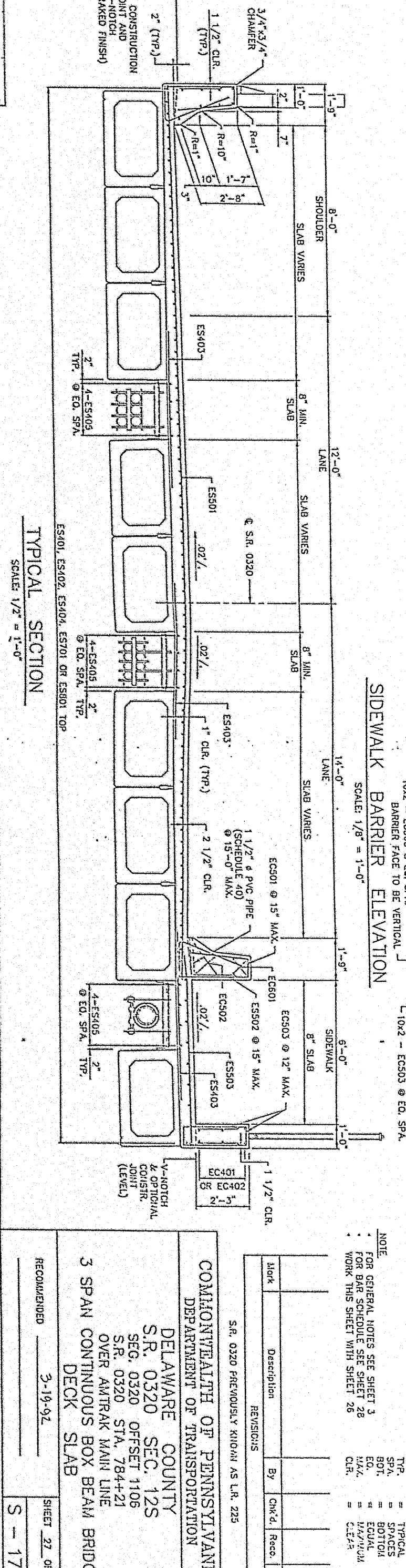


DECK PLACEMENT NOTES

- DENOTES DECK PLACEMENT SEQUENCE
- PLACE END DIAPHRAGMS AT ABUTMENTS PRIOR TO PLACEMENT 1
- PLACE CONTINUITY DIAPHRAGMS AT PIERS AFTER PLACEMENT 1 AND PRIOR TO PLACEMENT 2
- PLACE PARABELTS/BARRIERS IN POSITIVE MOMENT REGION, THEN NEGATIVE MOMENT REGION, UNLESS CONTINUOUS PLACEMENT CAN BE MAINTAINED

SLAB PLAN
SCALE: 1/8" = 1'-0"

SIDEWALK BARRIER ELEVATION
SCALE: 1/8" = 1'-0"



NOTE

- FOR GENERAL NOTES SEE SHEET 3
- FOR BAR SCHEDULE SEE SHEET 28
- WORK THIS SHEET WITH SHEET 26

LEGEND

E.F.	=	EACH FACE
JT.	=	JOINT
CONSTR.	=	CONSTRUCT
TYP.	=	TYPICAL
SPA.	=	SPACES
BOT.	=	BOTTOM
EQ.	=	EQUAL
MAX.	=	MAXIMUM
CLR.	=	CLEAR

REVISIONS

Mark	Description	By	Chk'd.	Rec'd.	Date

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

COMPONENTS OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

DELAWARE COUNTY SEC. 12S

S.R. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER ANTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE DECK SLAB

RECOMMENDED 3-19-92

SHEET 27 OF S-172

REINFORCEMENT BAR SCHEDULE

SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
4	178	29'-9"	STR							
4	89	23'-0"	STR							
4	835	7'-0"	STR							
4	89	43'-3"	STR							
4	60	40'-0"	STR							
4	90	4'-6 1/2"	(8)	1'-0"	1'-2 1/2"	0'-8"	1'-8"	0'-9"		
5	249	37'-4"	(1)	21'-7"	15'-9"	0'-7 1/2"				
5	330	6'-11 1/2"	(9)	2'-6"	1'-4"	0'-7 1/2"				
5	286	B'-11"	(14)	0'-7"	8'-4"		2'-6"	1'-2"		
5	15	22'-9" TO 37'-4"	(1)	1'-2" TO 15'-9"	21'-7"	0'-10 3/8"				VARY A 1 EACH BY 1'-0 1/2"
5	15	2'-11" TO 21'-7"	STR							VARY 1 EACH BY 1'-4"
5	5	16'-3" TO 34'-11"	(1)	6" TO 19'-2"	15'-9"	0'-7 1/2"				VARY A 1 EACH BY 1'-4"
5	10	2'-11" TO 14'-11"	STR							VARY 1 EACH BY 1'-4"
5	5	40'-0"	(1)	22'-4"	17'-8"	0'-7 1/2"				
5	4	9'-4"	STR							
6	8	40'-0"	(1)	22'-4"	17'-8"	0'-7 1/2"				
6	8	9'-4"	STR							
7	89	32'-9"	STR							
B	89	44'-6"	STR							
4	30	37'-8"	STR							
5	330	5'-5"	(7)	2'-3 1/2"	0'-9"	2'-4 1/2"	0'-3"			
5	40	40'-3"	STR							
5	390	4'-9"	(4)	2'-0"	0'-9"	2'-0"				
6	40	41'-0"	STR							

REINFORCEMENT BAR SCHEDULE

MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
ED401	4	16	4'-11"	(6)	0'-8"	1'-5"	0'-9"	1'-5"	0'-8"		
ED402	4	8	4'-5"	(6)	0'-8"	1'-2"	0'-9"	1'-2"	0'-8"		
ED403	4	16	6'-8"	(5)	0'-8"	1'-5"	2'-6"	1'-5"	0'-8"		
ED404	4	8	6'-2"	(5)	0'-8"	1'-2"	2'-6"	1'-2"	0'-8"		
ED405	4	108	7'-0"	(5)	0'-8"	2'-5"	0'-8"	2'-5"	0'-8"		
ED406	4	36	2'-11 1/2"	(3)	1'-3"	0'-5 1/2"	1'-3"	0'-5 3/4"	0'-8"		
ED501	5	128	2'-5"	STR							3" THREADED ONE
ED502	5	24	5'-0"	STR							
DS03	5	4	25'-9"	STR							
DS04	5	16	13'-2"	STR							
DS05	5	8	8'-8"	STR							
DS06	5	8	4'-2"	STR							

DIAPHRAGMS

- 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 BIDDING AND FABRICATION.

Mark	Description	By	Chk'd.	Reca.	Date

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

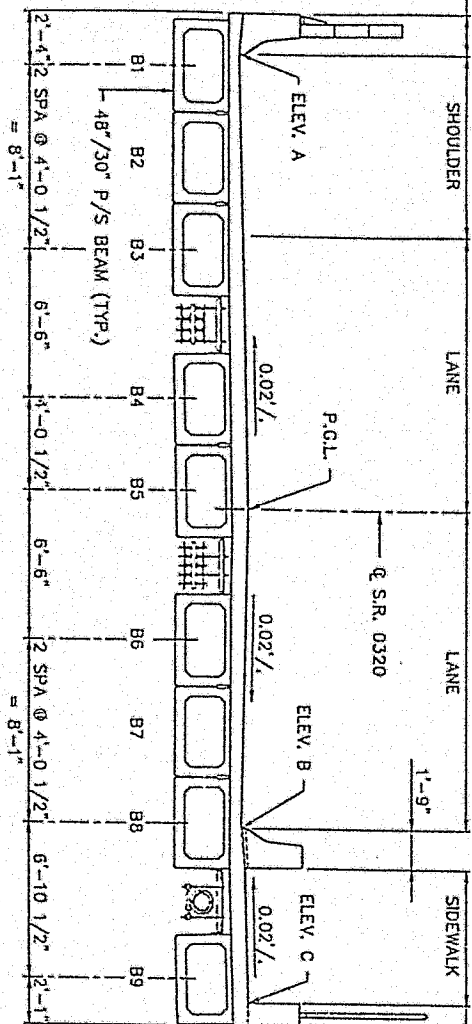
DELAWARE COUNTY
S.R. 0320 SEC. 12S
SEC. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE
DECK SLAB BAR SCHEDULE

RECOMMENDED 3-19-92

SHEET 28

S-1



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

DECK ELEVATION @ Q BEAM & Q BEARINGS

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	111.05	111.00	109.05
B3	111.94	112.18	112.16	111.08	111.01	109.04
B4	112.12	112.28	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

DECK ELEVATIONS @ 10' INTERVALS

STATION	P.G.L. ELEVATION	ELEV. A	ELEV. B	ELEV. C
783 + 50	111.58	111.18	111.50	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	111.58	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	108.74	108.79	109.08
785 + 80	108.60	108.18	108.30	108.59
785 + 90	108.05	107.65	107.77	108.06

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

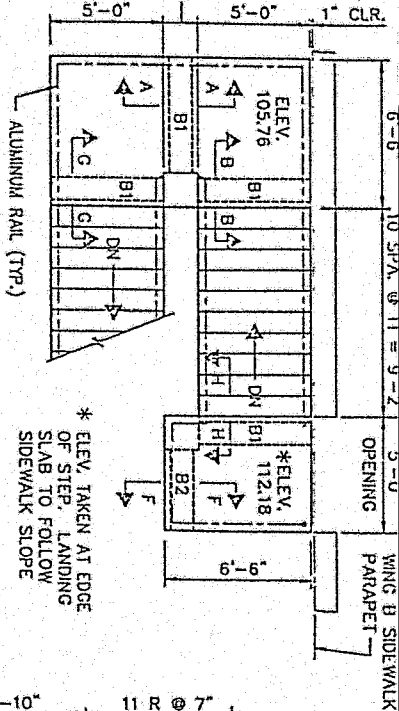
SEG. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE

3 SPAN CONTINUOUS BOX BEAM BRIDGE
DECK ELEVATIONS

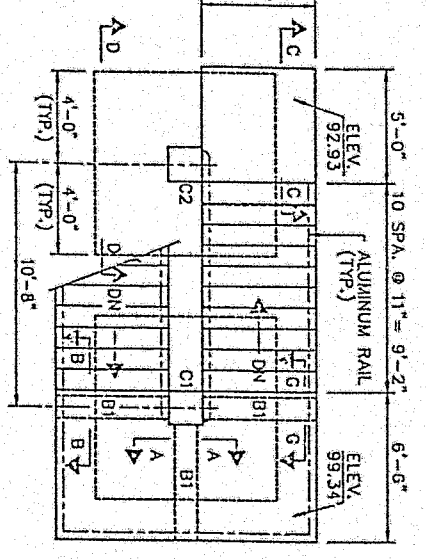
RECOMMENDED 3-19-92

SHEET 29 OF 40

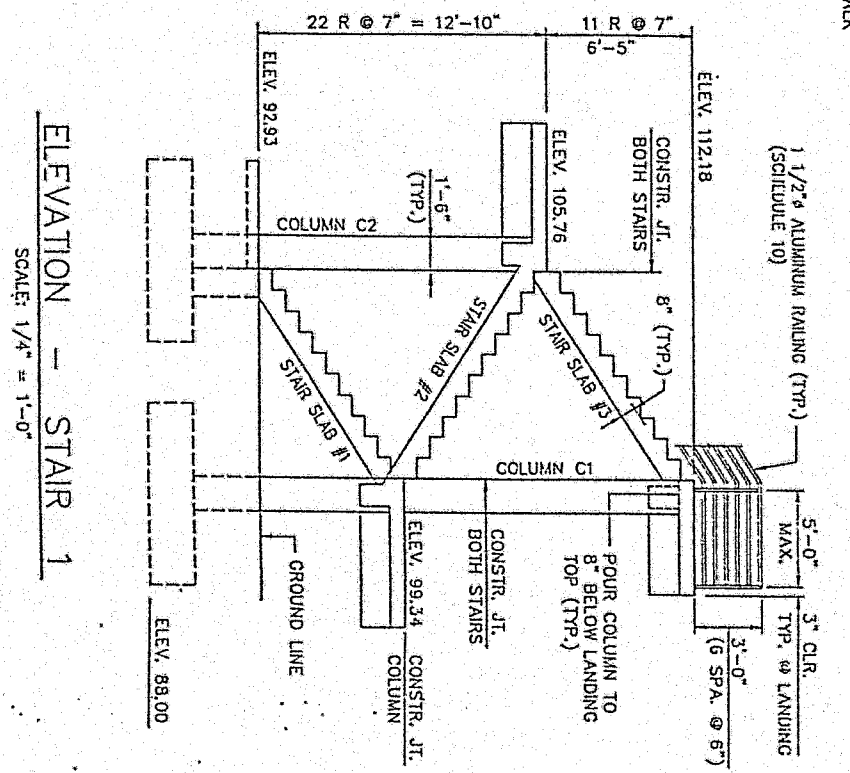
S - 17313



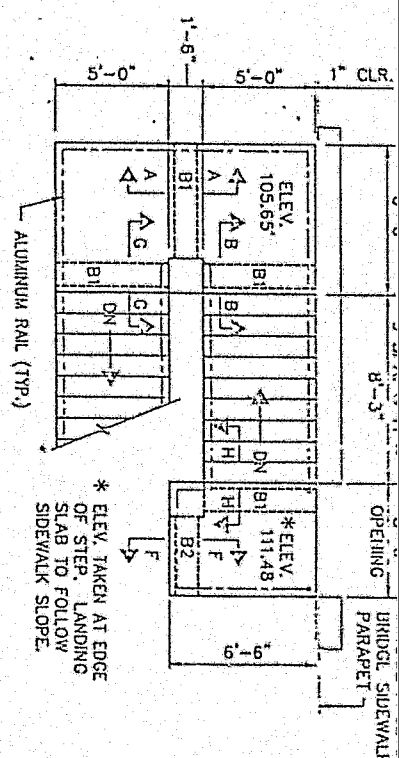
* ELEV. TAKEN AT EDGE OF STEP. LANDING SLAB TO FOLLOW SIDEWALK SLOPE



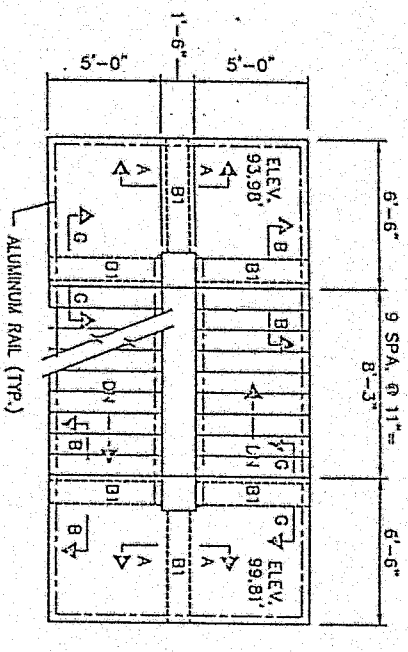
PLAN - STAIR 1
SCALE: 1/4" = 1'-0"



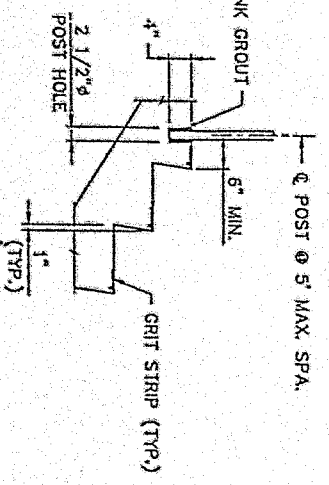
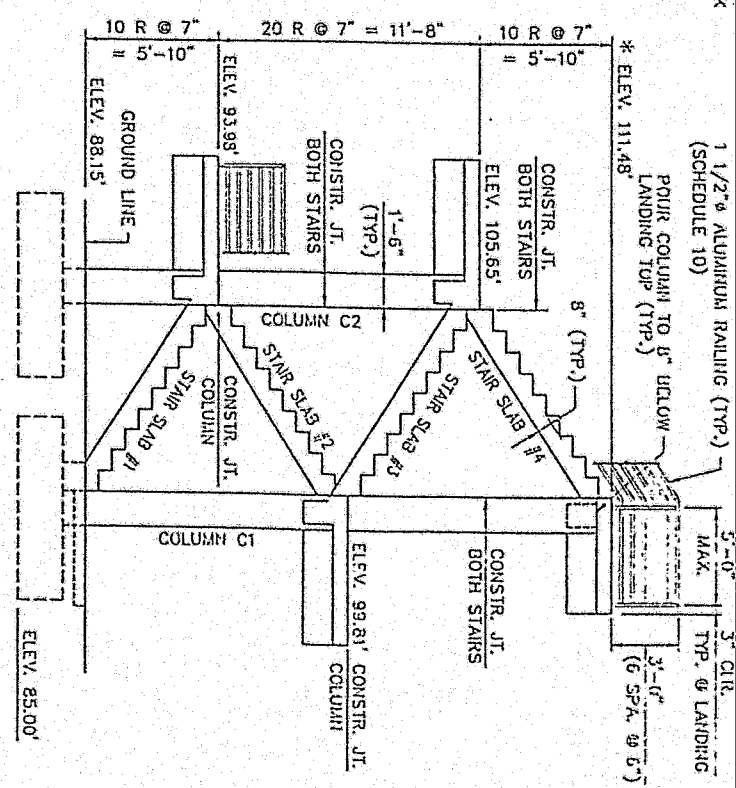
ELEVATION - STAIR 1
SCALE: 1/4" = 1'-0"



* ELEV. TAKEN AT EDGE OF STEP. LANDING SLAB TO FOLLOW SIDEWALK SLOPE



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



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

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

- LEGEND
- ELEV. = ELEVATION
 - JT. = JOINT
 - CONSTR. = CONSTRUCTION
 - TYP. = TYPICAL
 - SPA. = 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

REVISIONS			
Work	Description	By	Chk'd

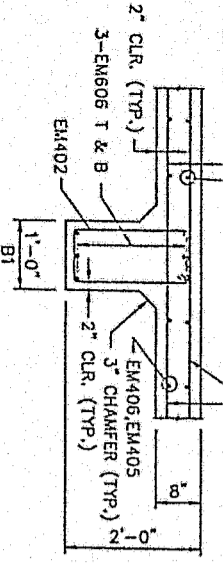
S.R. 0320 PREVIOUSLY KNOWN AS L.R. 228

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

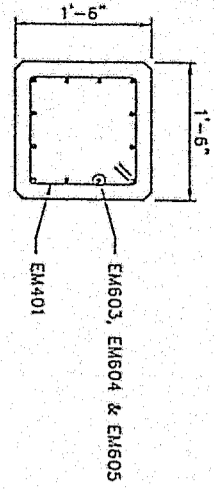
DELAWARE COUNTY
S.R. 0320 SEC. 125
SEC. 0320 OFFSET 1106
S.R. 0320 STA. 784+21
OVER AMTRAK MAIN LINE
3 SPAN CONTINUOUS BOX BEAM BRIDGE
STAIR 1 AND STAIR 2

RECOMMENDED 3-19-92 SHEET 20 OF 40

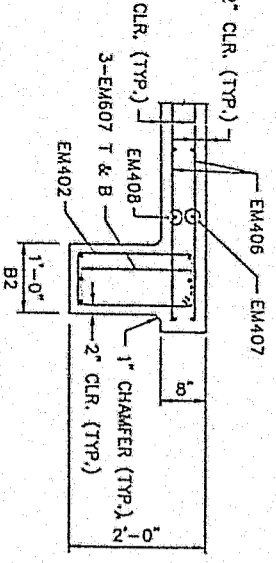
S-17313



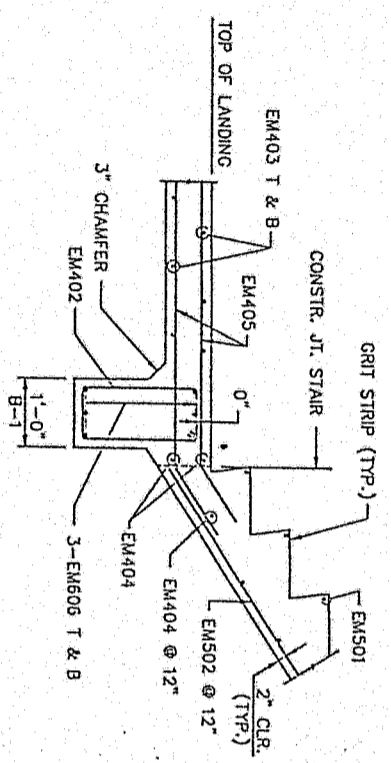
SECTION A-A
SCALE: 3/4" = 1'-0"



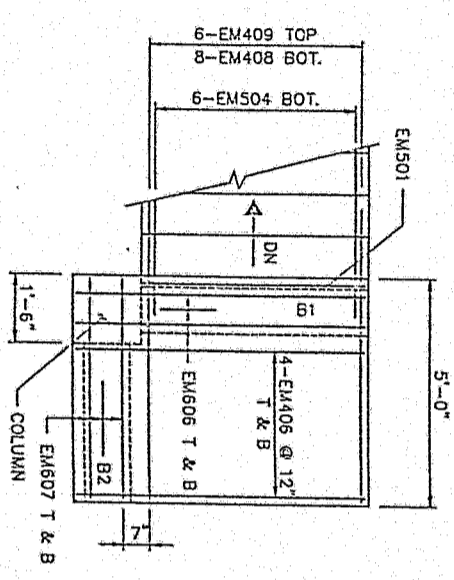
SECTION E-E
SCALE: 1" = 1'-0"



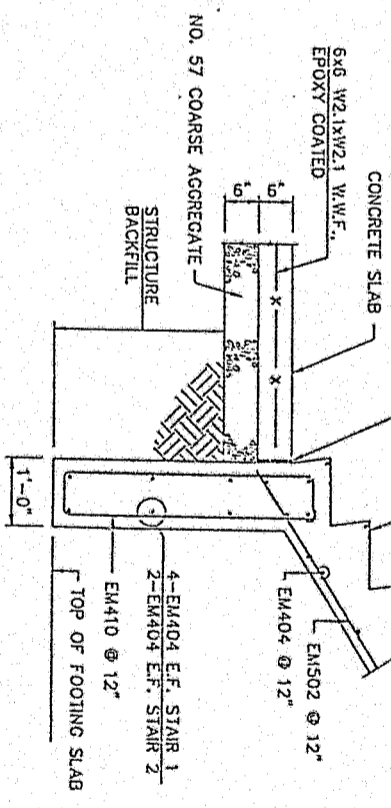
SECTION F-F
SCALE: 3/4" = 1'-0"



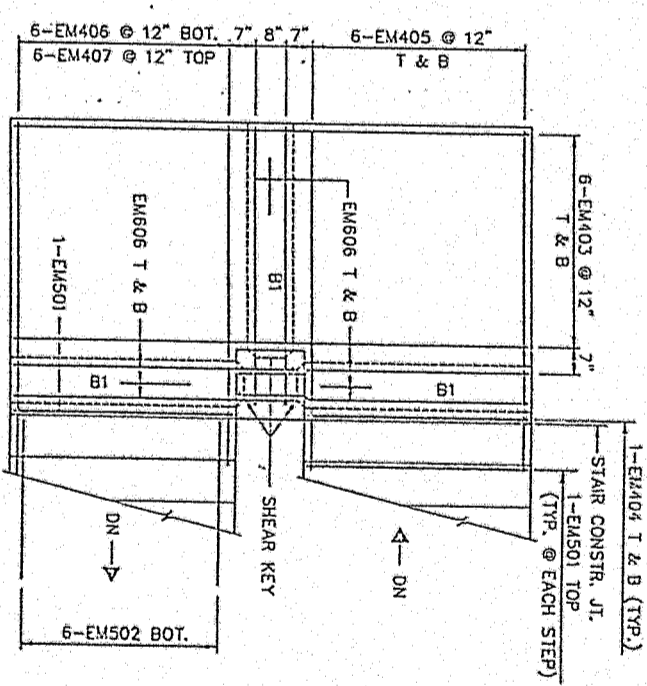
SECTION B-B
SCALE: 3/4" = 1'-0"



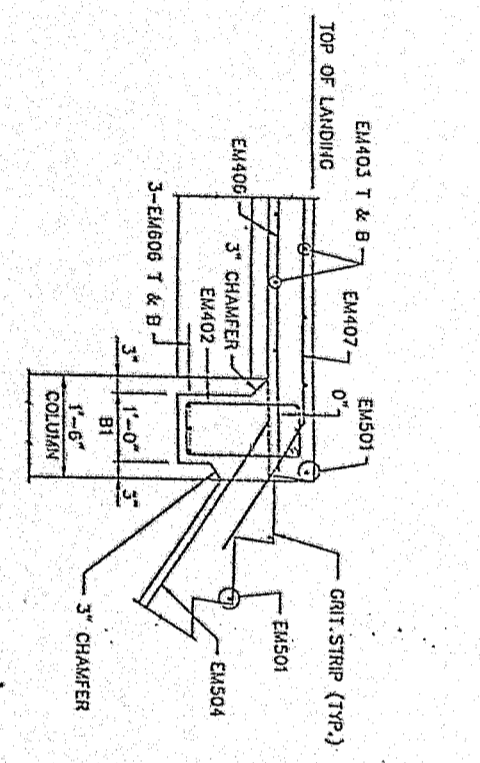
SLAB PLAN
TOP OF STAIR
SCALE: 1/2" = 1'-0"



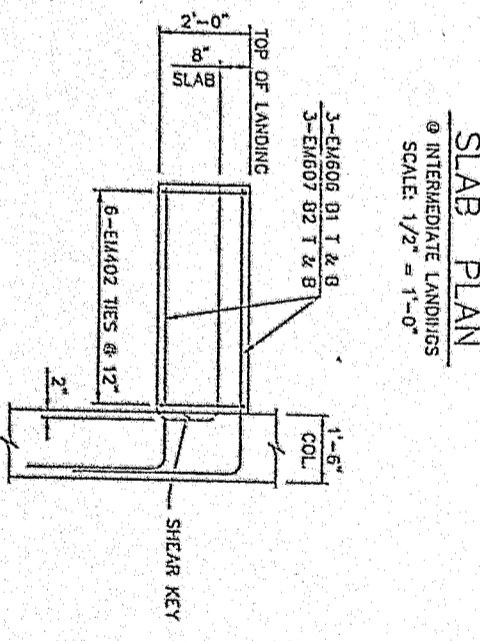
SECTION C-C
SCALE: 3/4" = 1'-0"



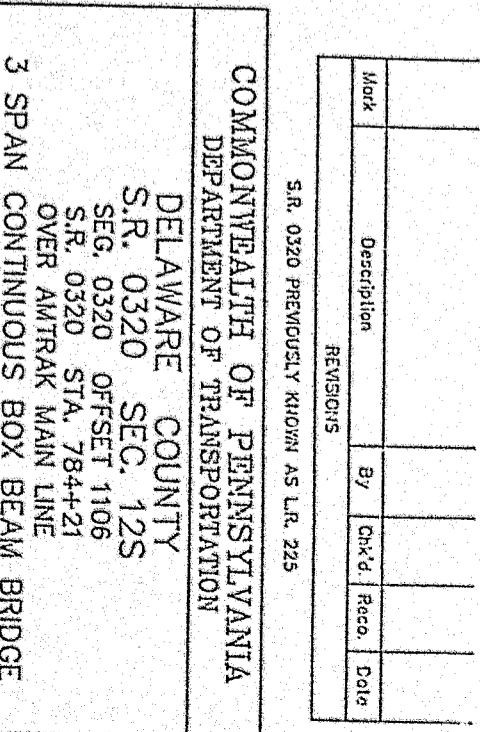
SLAB PLAN
@ INTERMEDIATE LANDINGS
SCALE: 1/2" = 1'-0"



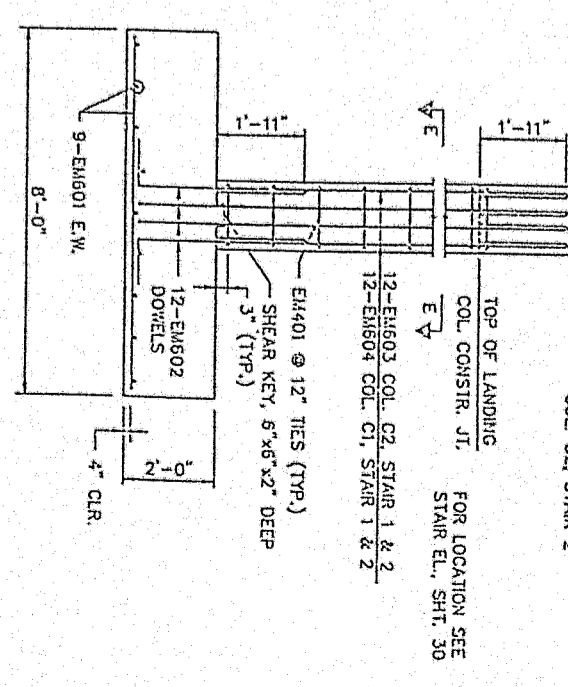
SECTION G-G
SCALE: 3/4" = 1'-0"



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



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



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

LEGEND

T	=	TOP
B	=	BOTTOM
JT.	=	JOINT
CONSTR.	=	CONSTRUCTION
TYP.	=	TYPICAL
SPA.	=	SPACES
COL.	=	COLUMN
E.W.	=	EACH WAY
CLR.	=	CLEAR

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

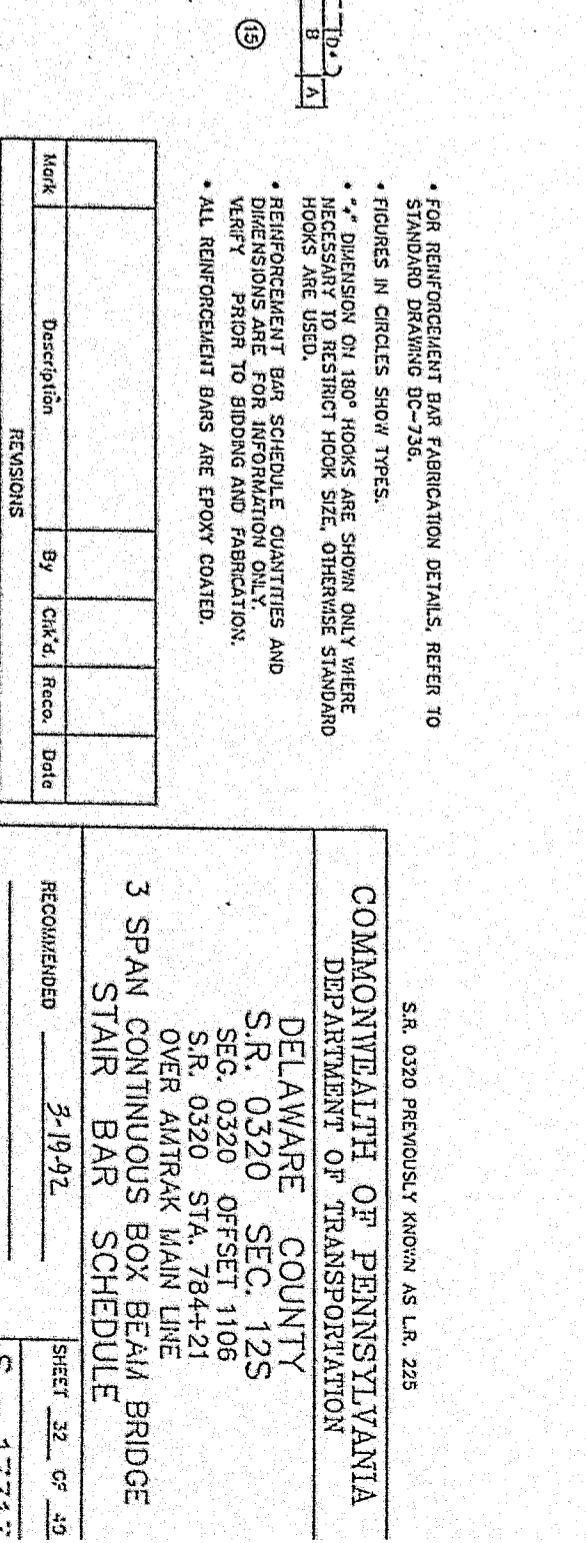
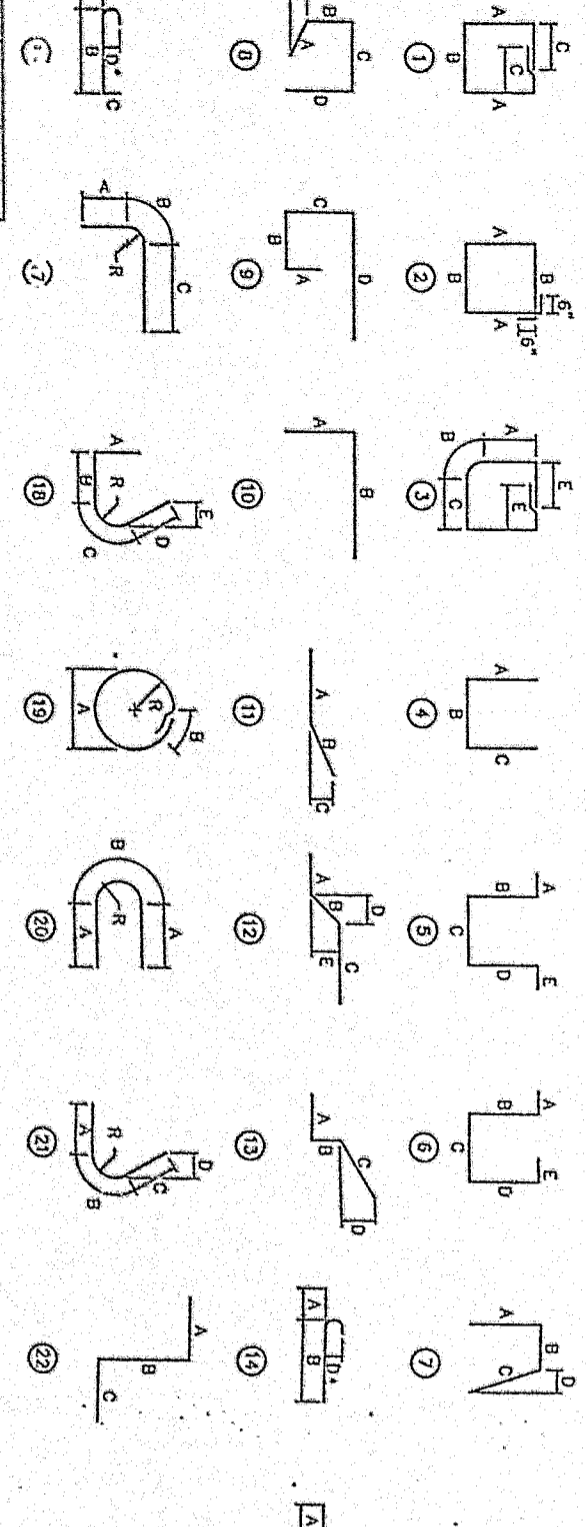
Mark	Description	By	Chk'd	Reco.	Date
	REVISIONS				

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
 STAIR DETAILS
 RECOMMENDED 3-19-92
 SHEET 31 OF 45
 S-17315

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	
EM601	6	36	7'-8"	(2)	1'-2"	(2)	1'-8"	(2)	1'-8"	(2)	1'-2"	(2)	1'-2"	(2)	3'-2"	(2)	3'-2"	(2)	3'-2"
EM602	6	24	4'-7"	(10)	1'-0"	(10)	3'-7"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	1'-4"	(10)	1'-4"	(10)	1'-4"
EM401	4	24	5'-8"	(2)	1'-2"	(2)	1'-2"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM402	4	42	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM403	4	17	5'-8"	(2)	1'-2"	(2)	1'-2"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM404	4	12	15'-5"	(2)	1'-2"	(2)	1'-2"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM405	4	42	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM406	4	42	9'-2"	(10)	6'-2"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	1'-4"	(10)	1'-4"	(10)	1'-4"
EM407	4	4	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM408	4	6	7'-8"	(10)	4'-8"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	1'-4"	(10)	1'-4"	(10)	1'-4"
EM409	4	6	6'-4"	(11)	3'-10"	(11)	2'-6"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"
EM410	4	15	4'-8"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM411	4	6	5'-0"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM412	4	10	4'-8"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM413	4	6	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM414	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM415	4	6	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM416	4	11	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM417	4	10	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM418	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM419	4	11	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM420	4	10	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM421	4	6	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM422	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"

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	
EM601	6	36	7'-8"	(2)	1'-2"	(2)	1'-8"	(2)	1'-8"	(2)	1'-2"	(2)	1'-2"	(2)	3'-2"	(2)	3'-2"	(2)	3'-2"
EM602	6	24	4'-7"	(10)	1'-0"	(10)	3'-7"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	1'-4"	(10)	1'-4"	(10)	1'-4"
EM401	4	26	5'-8"	(2)	1'-2"	(2)	1'-2"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM402	4	60	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM403	4	12	14'-7"	(2)	1'-4"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM404	4	12	11'-4"	(2)	1'-4"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM405	4	18	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM406	4	18	9'-2"	(11)	6'-2"	(11)	3'-0"	(11)	3'-0"	(11)	3'-0"	(11)	3'-0"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"
EM407	4	18	5'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM408	4	6	7'-8"	(10)	4'-8"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	3'-0"	(10)	1'-4"	(10)	1'-4"	(10)	1'-4"
EM409	4	6	6'-4"	(11)	3'-10"	(11)	2'-6"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"	(11)	1'-4"
EM410	4	15	4'-8"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM411	4	6	5'-0"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM412	4	10	4'-8"	(2)	1'-4"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM413	4	6	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM414	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM415	4	11	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM416	4	10	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM417	4	6	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM418	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM419	4	11	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM420	4	10	4'-8"	(2)	1'-8"	(2)	1'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"	(2)	0'-8"
EM421	4	6	9'-5"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"
EM422	4	6	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"	(2)	3'-0"



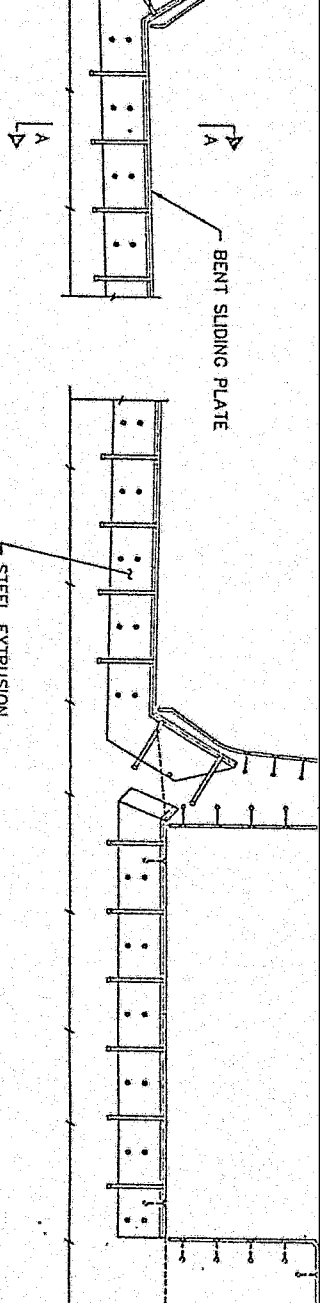
Mark	Description	By	Chk'd.	Reco.	Date

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

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 CONTINUOUS BOX BEAM BRIDGE
 STAIR BAR SCHEDULE

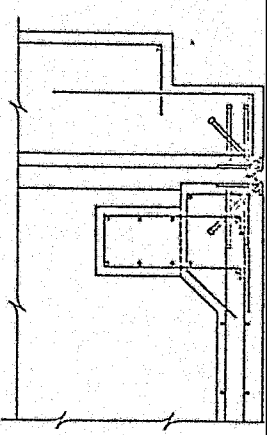
RECOMMENDED 5-19-92

SHEET 32 OF 49
 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

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
 SEC. 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

S - 17313

STA. 783+85
OFFSET FROM & 22.1' RT

BORING NO. VN-3

ABUTMENT 1

STA. 783+59
OFFSET FROM & 26.4' LT

BORING NO. VN-2

WING A

STA. 783+43
OFFSET FROM & 25' LT

BORING NO. VN-1

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 MICKLEOUS SAND (ml), BROWN, MOIST, SOFT TO MEDIUM, HOMOGENEOUS	TOPSOIL EL. 81.59 20 HRS
3.0	S2	2-2-2	18		ml	A-4	CLAYEY SILT WITH TRACE OF SAND (ml), GRAY BROWN, MOIST, MEDIUM, HOMOGENEOUS	
4.5	S3	3-3-3	11	3.00	ml		CLAYEY SILT WITH TRACE OF SAND (ml), GRAY BROWN, MOIST, MEDIUM, HOMOGENEOUS	DOL./TIC. EL. 79.9 0 HRS
6.0	S4	4-6-9	13	1.00	ml	A-4	MICKLEOUS SANDY SILT (ml), DARK BROWN, MOIST, VERY STIFF	
7.5	S5	10-11-12	13	1.50	ml		MICKLEOUS SANDY SILT (ml), DARK BROWN, MOIST, VERY STIFF	DOL./TIC. EL. 81.59 20 HRS
9.0	S6	9-9-11	11	1.75	ml	A-4	MICKLEOUS SANDY SILT (ml), DARK BROWN, MOIST, VERY STIFF	
10.5	S7	5-9-16	18	1.25	ml		MICKLEOUS SANDY SILT (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	DOL./TIC. EL. 79.19 0 HRS
12.0	S8	15-17-13	15	2.25	ml	A-2	SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	
13.5	S9	17-19-22	17	3.00	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	DOL./TIC. EL. 81.59 20 HRS
15.0	S10	12-29-43	15	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	
16.5	S11	42-45-48	14	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	DOL./TIC. EL. 81.59 20 HRS
18.0	S12	32-56-95	15	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	
19.5	S13	25-50-56	16	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	DOL./TIC. EL. 81.59 20 HRS
21.0	S14	20-37-100	15	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	
22.5	S15	20-53-100/42-50/28	16	4.50	ml		SILT MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO VERY DENSE, HOMOGENEOUS	DOL./TIC. EL. 81.59 20 HRS
23.5	R1	0% ROD	20%	REC.			MICA SCHIST, GRAY, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED AND 25°-35° CLOSELY SPACED FRACTURES NO 150°	
25.5	R2	0% ROD	20%	REC.			MICA SCHIST, GRAY, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED AND 25°-35° CLOSELY SPACED FRACTURES NO 150°	DOL./TIC. EL. 81.59 20 HRS
36.5	R3	19% ROD	69%	REC.			MICA SCHIST, GRAY, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED AND 25°-35° CLOSELY SPACED FRACTURES NO 150°	
37.5	R4	30% ROD	77%	REC.			MICA SCHIST, GRAY, BROWN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED AND 25°-35° CLOSELY SPACED FRACTURES NO 150°	DOL./TIC. EL. 81.59 20 HRS
50								

END OF BORING 42.50'

60 TON CAPACITY HP12X53 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		ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 81.59 20 HRS
3.0	S2	2-2-2	10	1.25	ml	A-4	SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
4.5	S3	2-4-7	9	1.75	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 79.19 0 HRS
6.0	S4	2-4-5	16		ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
7.5	S5	6-6-6	15	1.00	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 81.59 20 HRS
9.0	S6	6-6-7	14	1.25	ml	A-2	SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
10.5	S7	9-11-12	18	1.75	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 81.59 20 HRS
12.0	S8	7-9-10	14	1.25	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
13.5	S9	12-19-23	14	2.50	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 79.19 0 HRS
15.0	S10	11-21-35	16	2.50	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
16.5	S11	13-16-43	15	3.75	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 81.59 20 HRS
18.0	S12	32-40-43	16	4.50	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
19.5	S13	23-34-40	16	4.50	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	DOL./TIC. EL. 81.59 20 HRS
20.83	S14	42-130-200/4	12	4.50	ml		SILT WITH TRACE OF SAND AND TRACE OF FINE MICA PARTICLES (ml), MOTTLED BROWN, MOIST, MEDIUM TO VERY DENSE	
21.0	R1	0% ROD	16%	REC.			MICA SCHIST, GRAY, BROWN (BLACK AT FRACTURE SURFACE), SOFT, HIGHLY WEATHERED, BEDDING AND JOINTS - LOW RECOVERY, CANNOT BE ASSESSED	DOL./TIC. EL. 81.59 20 HRS
24.0	R2	0% ROD	31%	REC.			MICA SCHIST, DARK BROWN, SOFT TO MEDIUM, HIGHLY WEATHERED, THINLY BEDDED AND 45° CLOSELY SPACED FRACTURES NO 150°	
31.0	R3	17% ROD	50%	REC.			MICA SCHIST, GRAY, BROWN TO HARD, MODERATELY TO SLIGHTLY WEATHERED TO FRESH, THINLY BEDDED AND 30°-45° CLOSELY SPACED FRACTURES NO 150°-100°	DOL./TIC. EL. 81.59 20 HRS
36.0	R4	20% ROD	60%	REC.			MICA SCHIST, GRAY, BROWN TO HARD, MODERATELY TO SLIGHTLY WEATHERED TO FRESH, THINLY BEDDED AND 30°-45° CLOSELY SPACED FRACTURES NO 150°-100°	

END OF BORING 41.00'

60 TON CAPACITY HP12X53 WITH TIP REINFORCEMENT

INDICATES GROUND WATER ELEVATION HOURS AT BORING COMPLETION

LEGEND

NOTES

FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35

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. 96.19' (CASING DEPTH 29.58')								
1.5	S1	1-1-1	7		ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
3.0	S2	1-2-2	8		ml	A-4	SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
4.5	S3	9-5-5	10	1.25	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 79.19 0 HRS
6.0	S4	3-4-4	18	1.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
7.5	S5	5-5-4	6		ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
9.0	S6	6-3-9	6		ml	A-4	SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
10.5	S7	3-5-7	17	2.00	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
12.0	S8	6-7-6	11		ml	A-4	SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
13.5	S9	6-7-7	12		ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
15.0	S10	3-4-4	15	1.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
16.5	S11	4-6-6	15		ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 79.19 0 HRS
18.0	S12	7-9-10	16	3.00	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
19.5	S13	4-6-10	12	2.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
21.0	S14	3-6-25	16		ml	A-2	SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
22.5	S15	15-17-12	11	2.00	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
24.0	S16	7-16-18	13	3.25	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
25.5	S17	5-9-23	14	3.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
27.0	S18	15-20-23	14	4.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	
28.5	S19	24-45-52	16	4.50	ml		SILT WITH TRACE OF FINE MICKLEOUS SAND (ml), DARK BROWN, MOIST, MEDIUM TO STIFF	DOL./TIC. EL. 81.59 20 HRS
29.58	R1	52-80-50/1	9		ml	A-4	MICA SCHIST, GRAYISH BROWN, SOFT TO MEDIUM, HIGHLY WEATHERED, VERY THINLY BEDDED AND 15°-35° CLOSELY SPACED FRACTURES NO 150°-170°	
32.0	R2	22% ROD	70%	REC.			MICA SCHIST, BROWNISH GRAY, MEDIUM TO HARD, MODERATELY WEATHERED, THINLY BEDDED AND 15°-45° CLOSE TO HUB FRACTURE SPACING NO 120°-170°	DOL./TIC. EL. 81.59 20 HRS

END OF BORING 39.58'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

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 CONT. ADJACENT BOX BEAM BRIDGE
TEST BORINGS

3-19-94

SHEET 34 OF 42

S-17313

DEPTH	DIAMETER	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
SURFACE EL. 98.16' (CASING DEPTH 31.54')							
2.0	S1	6-8-8	7				
3.5	S2	10-10-10	9				
5.0	S3	5-3-9	12				
6.5	S4	10-9-10	13				
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	18				
21.5	S14	26-24-28	17				
23.0	S15	15-16-24	13.5				
24.5	S16	16-24-28	16				
26.0	S17	17-25-28	10				
27.5	S18	50-70-120	10				
29.0	S19	66-80-79	7				
30.5	S20	10-23-30	16				
31.5	S21	45-120-50/04	13				
34.5	R2	OZ ROD	OZ REC.				
41.5	R3	256 ROD	60% REC.				

END OF BORING 46.50'

(CASING DEPTH 31.54')

DEPTH	DIAMETER	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
SURFACE EL. 97.93' (CASING DEPTH 25.00')							
1.5	S1	2-3	5				
3.0	S2	3-3-4	15				
4.5	S3	6-6-8	7				
6.0	S4	4-10-12	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	15-13-18	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	10-42-43	16				
24.0	S16	30-32-40	16				
25.0	S17	14-55-50/08	12				
28.0	R2	OZ ROD	OZ REC.				
33.0	S18	55/33-50/08	3				
38.0	S19	50/5-50/08	6				
43.0	R3	OZ ROD	OZ REC.				
48.0	R6	7% ROD	40% REC.				

END OF BORING 53.00'

(CASING DEPTH 25.00')

- 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 402, SECTION 102.05). THE CLASSIFICATION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

176

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

3 SPAN CONT. ADJACENT BOY BEAM BRIDGE

STA. 784+56
OFFSET FROM Q 39' LT

BORING NO. VM-8

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. 94.58' (CASING DEPTH 25.60')								
1.5	S1	1-2-2	11	1.25	ml		SAND, BLACK, MOIST, LOOSE (ILL)	
3.0	S2	2-3-7	14	1.25	ml		SILT WITH SOME MICACEOUS SAND, TRACE ROOTS (ml), BROWN, MOIST, 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, MOIST, STIFF	
10.5	S7	12-16-30	12		A-4			
12.0	S8	19-24-34	13	4.00	A-6			
13.5	S9	22-24-28	12	4.25	ml		MICACEOUS SANDY SILT (ml), RED, ORANGE, BROWN, WET, VERY STIFF	
15.0	S10	6-13-19	14	4.00	A-4			
16.5	S11	11-15-11	17	3.50	sm		SILT MICACEOUS 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	4.50	A-2			
21.0	S14	13-23-32	15					
22.5	S15	7-9-22	14					
24.0	S16	4-4-2-65	13					
25.5	S17	11-4-2-100/3	14				DECOMPOSED MICA SCHIST	
28.0	R2	0% ROD	0%				NO RECOVERY	
35.0	S18	200/42-50/00	6				DECOMPOSED MICA SCHIST	
35.5	R3	0% ROD	30%				MICA SCHIST, BROWNISH GRAY, HARD, SLIGHTLY TO MODERATELY WEATHERED, VERY THINLY BEDDED TO 40°, VERY CLOSE TO CLOSELY SPACED FRACTURES TO 140°	
40.0	R4	0% ROD	33%				MICA SCHIST, GRAY, HARD, SLIGHTLY WEATHERED, VERY THINLY BEDDED TO 40°, CLOSELY SPACED FRACTURES TO 140°	
45.0	R5	0% ROD	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.

STA. 784+79
OFFSET FROM Q 28.2' RT

PIER 1

BORING NO. VN-9

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. 86.08' (CASING DEPTH 18.58')								
1.5	S1	1-2-3	16	2.00	ml-d		SAND FILL, BLACK, MOIST	
3.0	S2	4-7-9	14	2.50	ml-d		CLAYEY SILT WITH SOME FINE SAND (ml-d), BROWN, GRAY, MOIST, VERY STIFF	
4.5	S3	10-12-16	16	2.50	A-4			
6.0	S4	3-5-4	15	1.00	ml		MICACEOUS SILT WITH SOME FINE SAND (ml), BROWN, GRAY, MOST STIFF	
7.5	S5	3-4-5	6		A-4			
9.0	S6	6-0-9	14		sm		MICACEOUS MEDIUM TO FINE SAND WITH SOME SILT (sm), BROWN, GRAY, MEDIUM DENSE	
10.5	S7	4-4-6	17		A-2			
12.0	S8	5-0-14	13		sm			
13.5	S9	6-9-15	13		sm			
15.0	S10	13-13-21	17		A-2			
16.5	S11	6-32-43	14		sm			
18.0	S12	23-40-75	15				MICACEOUS SILTY SAND (sm), RED, BROWN, GRAY, MOIST, VERY DENSE (DECOMPOSED MICA SCHIST)	
18.50	S13	115-60/00	6		A-2			
21.5	R2	0% ROD	15%				MICA SCHIST, BROWN, SORT, HIGHLY WEATHERED, LOW RECOVERY, OTHER INFORMATION CANNOT BE OBTAINED	
28.5	R3	7.5% ROD	35%				MICA SCHIST, BROWN, SORT, HIGHLY WEATHERED, VERY THINLY BEDDED TO 45°, VERY CLOSE TO MEDIUM FRACTURE SPACING TO 110°-140°	
38.5	R4	0% ROD	13%					

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 ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS	AASHTO	DESCRIPTION	REMARKS
CONTINUED								
43.5	R5	0% ROD	5%					
48.5	R6	0% ROD	50%					
53.5	R7	23% ROD	70%					

END OF BORING 58.50'

60 TON CAPACITY HP12x53 WITH TIP REINFORCEMENT

Mark	Description	By	CHK'd	Recd.	Date

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DELWARE 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

3-19-02

SHEET 37 OF 40

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
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	2-2-3	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	8-15-8	8		sm	CONCRETE, STONE SAND FILL (sm), BLACK, DRY TO MOIST	
10.5	S7	11-11-17	4		A-2		
12.0	S8	17-5-15	2				
13.5	S9	9-9-7	3		ml	SILT WITH SOME MICACEOUS SAND, TRACE OF CLAY (ml), BROWN, MOIST, VERY STIFF	BO1/71G, EL.82
15.0	S10	18-35-12	9		A-4		EL.811 EL.82 0 LBS
16.5	S11	11-12-16	9				
18.0	S12	11-11-18	16	3.00	A-4	SILT WITH SOME CLAY, TRACE OF SAND (ml), GRAY, MOIST, VERY STIFF	
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	38-23-20	10		sm	SILTY SAND (sm), GRAY, BLACK, ORANGE, BROWN, MOIST, VERY DENSE, LAYERED (COMPOSED OF MICASCHIST)	
27.0	S18	14-24-30	13	4.50	A-2		
28.5	S19	9-18-32	9				
30.0	S20	42-20-18	10				
31.5	S21	11-19-34	13				
32.5	S22	40-50/08	7				
35.0	R1	OK ROD				MICA SCHIST AND QUARTZ, GRAY, BROWN, SOFT, HIGHLY WEATHERED, GRAVEL SIZE PIECES	FL.661 EL.640
	R2	OK ROD				NO RECOVERY	
42.0	R3	OK ROD				MICA SCHIST AND QUARTZ, GRAY, SOFT, HIGHLY WEATHERED, GRAVEL SIZE PIECES	
52.0	R4	15% ROD				MICA SCHIST, GRAY, MEDIUM TO HARD, MODERATE TO SLIGHTLY WEATHERED, VERY THIN TO THINLY BEDDED TO 35'-55', CLOSE TO MEDIUM FRACTURE SPACING TO 150'-180'	

END OF BORING 57.00'

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 ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS	DESCRIPTION	REMARKS
SURFACE EL. 87.25' (CASING DEPTH 46.08')							
1.5	S1	1-2-5	13		ml	TOPSOIL, FILL	
3.0	S2	3-3-4	11		A-4	CLAYEY SILT WITH TRACE OF SAND (ml), BROWN, MOIST, MEDIUM	BO1/71G, EL.82
4.5	S3	3-3-5	16				
6.0	S4	5-9-12	17	4.00	ml-d	CLAYEY SILT WITH TRACE OF MICACEOUS SAND (ml-d), GRAY, MOIST, VERY STIFF	EL.765 EL.775 0 LBS
7.5	S5	13-14-17	16	4.00	A-4		
9.0	S6	5-8-7	15				
10.5	S7	6-6-6	5				
12.0	S8	4-4-5	3				
13.5	S9	2-4-5	14				
15.0	S10	4-7-9	18	1.50	ml	MICACEOUS SANDY SILT (ml), ORANGISH BROWN, MOIST, STIFF TO VERY STIFF	EL.7675 EL.82 14 LBS
16.5	S11	3-6-7	15		A-4		
18.0	S12	5-7-7	17				
19.5	S13	7-7-10	10				
21.0	S14	5-8-9	11				
22.5	S15	9-9-19	15				
24.0	S16	11-19-20	12				
25.5	S17	8-11-11	12				
27.0	S18	11-12-22	14				
28.5	S19	5-10-17	8				
30.0	S20	5-7-9	13		ml-d	MICACEOUS CLAYEY SILT (ml-d), REDDISH BROWN, MOIST, STIFF, HOMOGENEOUS	
31.5	S21	5-7-7	12.5		A-4		
33.0	S22	5-0-6	16	1.50	A-6		
34.5	S23	3-5-5	13				
36.0	S24	3-4-6	13				
37.5	S25	6-10-15	17				
39.0	S26	9-15-13	14				
40.5	S27	10-20-25	15	4.00	d-m	MICACEOUS SANDY SILT (d-m), ORANGISH BROWN, MOIST, VERY STIFF	
42.0	S28	12-24-15	17	4.50	A-6		
43.5	S29	17-25-38	14				
45.0	S30	26-36-54	16				
46.5	S31	47-124-50/00	12		A-4	MICACEOUS SANDY SILT (ml), ORANGISH BROWN, MOIST, HARD, HOMOGENEOUS	

60 TON CAPACITY HP12X33 WITH JIP REINFORCEMENT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR ROD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS	DESCRIPTION	REMARKS
CONTINUED							
46.5	R1	OK ROD	17%			MICA SCHIST, GRAY, SOFT, HIGHLY WEATHERED BEING AND FRACTURE INFORMATION NOT AVAILABLE	FL.414 EL.390
49.0	R2	1 1/2" ROD	40%			MICA SC. IT AND GNEISS, BROWN AND GRAY, SOFT TO MEDIUM, HIGHLY TO MODERATELY WEATHERED, VERY THIN TO THINLY BEDDED TO 30", VERY CLOSELY TO CLOSELY SPACED FRACTURE TO 150"	
56.0	R3	OK ROD	27%				
61.0	R4	5/8" ROD	100%			CHIEFS, GRAY, HARD, SLIGHTLY WEATHERED, THINLY BEDDED TO 10'-40", CLOSELY SPACED FRACTURES TO 135'-170"	

END OF BORING 66.00'

THIS SHEET IS INCLUDED FOR THE CONVEENIENCE 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.

Work	Description	By	Ch'd	Per'd	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 CONT. ADJACENT BOX BEAM BRIDGE
TEST BORINGS

3-19-92

SHEET 38 OF 40

S-17313

STA. 785+70
OFFSET FROM @ 40.7' LT

BORING NO. VN-12

ABUTMENT 2

BORING NO. VN-13

STA. 785+81
OFFSET FROM @ 25.9' RT

DEPTH (FT.)	SAMPLE NO. OR RUN NO.	BLOWS/0.5 FT ON SOIL SAMPLER OR RQD	RECOVERY (IN.)	POCKET PENT. (TSF)	USCS	AASHTO	DESCRIPTION	REMARKS
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SURFACE EL. 95.18' (CASING DEPTH 29.58')

1.5	S1	4-6-2	6		sm	TOPSOIL		
3.0	S2	7-10-7	8		sm	SILTY 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 STIFF, 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	S6	7-14-20	16	4.00	d-ml	CLAYEY SILT WITH SAND WITH TRACE OF MICA FLAKES (ml-d), GRAY, MOST, STIFF		
13.5	S9	20-22-27	16	3.50	A-6	CLAYEY SILT WITH TRACE OF MICA FLAKES (ml-d), BROWN AND GRAY, MOST, VERY STIFF		
15.0	S10	7-9-12	6	2.00	A-4			
16.5	S11	4-6-8	18	2.50	sm	SANDY SILT (sm), ORANGISH, MOST, VERY STIFF TO HARD		
18.0	S12	6-8-9	16	1.50	A-2			
19.5	S13	6-10-11	16	2.75				
21.0	S14	8-10-13	13	3.00				
22.5	S15	10-13-18	11	3.00				
24.0	S16	13-19-20	12	2.75				
25.5	S17	10-11-18	16	2.50				
27.0	S18	11-20-30	11	4.50				
28.5	S19	30-54-70	12		d-ml	HOMOGENEOUS CLAYEY SILT (d-ml), ORANGISH BROWN, MOST, HARD		
29.58	S20	51-130-50.06	13		A-6	GRAVEL SIZE MICA SCORST RECOVERED		
32.0	R2	02 RQD	02			GRAY CUTTINGS, NO voids NO RECOVERY		
37.0	S21	11-105-50/04	11		sm	CONCRETE SAND (sm), MOD. GRAY, MOST, HARD (DISCONTINUED)		
37.92	R3	02 RQD	48%			MICA SCORST WITH LAYERS OF CHESSE GRAY AND GREEN, SOFT, HIGHLY WEATHERED, VERY THINLY BEDDED RD 10'-40', VERY CLOSELY SPACED FRACTURES RD 135'-180'		
43.0	R4	02 RQD	50%					
48.0	R5	36% RQD	87%			MICA SCORST CHESSE GRAY, HARD TO VERY HARD, MODERATELY TO SLIGHTLY WEATHERED, THINLY BEDDED RD 10'-45', MODERATELY SPACED FRACTURES RD 150'-180'		

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
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SURFACE EL. 90.16' (CASING DEPTH 36.00')

1.5	S1	4-4-4	4		ml	TOPSOIL, BLACK		
3.0	S2	2-3-4	13		A-4	SANDY SILT (ml), DARK BROWN, MOST, MEDIUM TO STIFF		
4.5	S3	5-5-6	15					
6.0	S4	3-4-4	8		ml-d	CLAYEY SILT WITH TRACE OF SAND (ml-d), GRAY, MOST, STIFF TO VERY STIFF		
7.5	S5	5-10-14	12		A-4			
9.0	S6	11-13-21	18		A-6			
10.5	S7	7-9-11	16	3.00				
12.0	S8	9-9-11	13					
13.5	S9	8-10-11	15	1.50	ml	HOMOGENEOUS SANDY SILT WITH CLAY (ml), ORANGISH BROWN, MOST, STIFF TO VERY STIFF		
15.0	S10	6-8-6	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	4-8-12	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	16-23-23	14	2.00				
30.0	S20	13-20-23	16	2.00				
31.5	S21	15-20-30	18	2.25				
33.0	S22	18-23-11	18	2.50				
34.5	S23	25-18-22	11	2.50				
35.9	S24	07-158-50/5	17	4.50				
39.0	R2	02 RQD	43%			NO RECOVERY		
44.0	R3	02 RQD	18%			MICA SCORST GRAY SILT TO MEDIUM, HIGHLY WEATHERED, VERY THINLY BEDDED RD 45'-50', EXTREMELY CLOSE TO CLOSE FRACTURE SPACING RD 150'-180'		

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
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CONTINUED

49.0	R4	02 RQD	20%					
54.0	R5	02	77%					

END OF BORING 59.00'

THIS SHEET IS INCLUDED FOR THE CONVEYANCE 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.

UPG

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 CONT. ADJACENT BOX BEAM BRID
TEST BORINGS

NOTES

FOR GENERAL NOTES AND BORING LOCATION PLAN SEE SHEET 35

END OF BORING 53.00'

60 TON CAPACITY HP12x63 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
SURFACE EL. 92.96' (CASING DEPTH 30.00')								
1.5	S1	2-3-5	4				BROWNISH PAVEMENT	
3.0	S2	6-4-6	14		ml		SAND, GRAVEL ASH (sm), BLACK, MOIST (ml)	
4.5	S3	5-6-11	18		ml			
6.0	S4	4-7-5	7		ml		SILT WITH TRACE OF GRAVEL (ml), GRAY, MOIST, STIFF	DOT/71G EL.91
7.5	S5	4-4-5	11		ml			
9.0	S6	10-6-4	8	1.50				
10.5	S7	3-3-7	16	4.25	ml		SILT (ml), GRAY, MOIST TO WET	V EL.88.96 0 HRS.
12.0	S8	13-20-21	16	4.50	ml			
13.5	S9	17-15-16	12		ml			
15.0	S10	5-7-11	17	2.00				
16.5	S11	4-1-12	10	2.25			MICACEOUS SANDY SILT (ml), BROWN, MOIST, VERY STIFF	V EL.86.16 13 HRS.
18.0	S12	16-17-21	17	2.25				
19.5	S13	15-24-17	10	3.00				
21.0	S14	7-14-16	15	2.50				
22.5	S15	16-21-34	15					
24.0	S16	18-24-28	11					
25.5	S17	11-16-19	15	4.00				
27.0	S18	16-21-24	12	3.00				
28.5	S19	10-24-32	12	4.50				
30.0	S20	32-85-200/5	15	4.50				
33.0	R1	0% ROD	19% REC.				MICA SPHIST, GRAY/BROWN WITH TRACE OF QUARTZ, SORT, NOT AVAILABLE	EL.83.3
36.0	R2	0% ROD	27% REC.					
38.0	R3	0% ROD	26% REC.				MICA SPHIST, GREEN/GRAY, MEDIUM TO FINE, HIGHLY WEATHERED, VERY FINELY BEDDED AND 25'-40', CLOSELY SPACED FRACTURES RD 140'-155'	
43.0	R4	6% ROD	32% REC.					

END OF BORING 48.00'

MAXIMUM ALLOWABLE BEARING PRESSURE IS 2.5 TSF

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. 94.78' (CASING DEPTH 25.00')								
1.5	S1	3-6-9	12				TOPSOIL	
3.0	S2	4-3-3	10		ml		CLAYEY SILT WITH TRACE OF FINE SAND (ml), DARK BROWN, MOIST, STIFF, HOMOGENEOUS	
4.5	S3	4-4-5	14		ml			
6.0	S4	3-4-6	15	1.50				DOT/71G EL.88
7.5	S5	5-6-5	11					
9.0	S6	5-7-8	11		d		SILTY CLAY (d), BROWNISH GRAY, MOIST, VERY STIFF, HOMOGENEOUS	V EL.86.78 16 HRS.
10.5	S7	8-11-15	18	3.25				
12.0	S8	13-16-19	9	4.25	ml			
13.5	S9	18-21-24	9					V EL.82.78 0 HRS.
15.0	S10	14-19-22	11	3.75				
16.5	S11	7-8-9	13	3.25			MICACEOUS SANDY SILT (ml), GRAYISH BROWN, MOIST, VERY STIFF, HOMOGENEOUS	
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			
24.0	S16	22-40-62	14	4.50			MICACEOUS SILTY CLAY, SOFT SAND (ml), GRAY, RED, BROWN, MOIST, HARD	EL.79.4
25.0	S17	30-250/2	12	4.50				
28.0	R1	0% ROD	0% REC.				NO RECOVERY	
29.0	R2	175-50/08	6				SANDY BEDDED MICA SPHIST, GRAY, HARD	EL.67.80
32.0	R3	14% ROD	70% REC.				CHESS WITH SEAMS OF MICA SPHIST, GRAY, BANDS OF WHITE, MEDIUM TO VERY HARD, MODERATELY WEATHERED, VERY FINELY BEDDED AND 10'-40', VERY CLOSELY TO CLOSELY SPACED FRACTURES RD 135'-170'	

END OF BORING 38.00'

60 TON CAPACITY HP12X53 WITH TIP REINFORCEMENT

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.

LPG

Work	Description	By	Chk'd	Rec'd	Do

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 CONT. ADJACENT BOX BEAM BRIDGE
TEST BORINGS

3-19-97



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

September 9, 1992

IN REPLY PLEASE
REFER TO OUR FILE

C-80011839

Villanova University

v.

National Railroad Passenger Corporation (AMTRAK), Consoli-
dated Rail Corporation, Southeastern Pennsylvania Transporta-
tion Authority (SEPTA), Department of Transportation of the
Commonwealth of Pennsylvania, Delaware County and Radnor
Township

Grace C. Ruane
Recorder of Deeds
Delaware County
Government Center Building
Media, Pennsylvania 19063

Receipt is acknowledged of the excerpt of the Commission's
order of April 23, 1992, issued in the above docketed proceeding, with
a notation thereon the said excerpt has been recorded in the Office
of the Recorder of Deeds of Delaware County at Volume 0964, Pages 711
through 718.

Very truly yours,

for JOHN G. ALFORD
Secretary

cc: Legal Division
PennDOT
Fifth Floor - Transportation
& Safety Building
Harrisburg, Pennsylvania 17120

mpk

043171

COMMONWEALTH OF PENNSYLVANIA, SS:

I, John G. Alford, Secretary of the Pennsylvania Public Utility Commission, do hereby certify that the attached is a full, true and correct copy of an excerpt of the Commission Order dated April 23, 1992, in the matter of the Complaint of 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, and the allocation of the costs and expenses incident thereto (Complaint Docket No. 80011839); as same remains of record and on file in this office.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the seal of Pennsylvania Public Utility Commission to be affixed, this TWENTY NINTH day of APRIL, 1992.

John G. Alford
Secretary

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Grace C. Luane

3. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated for the purpose of the improvement in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 3 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

C-2011839

ALL THOSE CERTAIN TRACTS OF LAND situated in the Township of Radnor, Delaware County, bounded and described as follows, to wit:

RECEIVED

TRACT NO. 1
(Required Right-of-Way)

SEP 4 1992

SECRETARYS OFFICE
DELAWARE COUNTY

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southerly AMTRAK right-of-way line and the northerly legal right-of-way line for State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+56; thence in a northeasterly direction along the right-of-way line of AMTRAK to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northeasterly direction along the required right-of-way line of State Route 0320 to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.2; thence in a southeasterly direction along the aerial easement line to a point distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a southwesterly direction along the legal right-of-way line of State Route 0320 to a point and place of beginning and containing four hundred ten (410) square feet more or less.

TRACT NO. 2
(Required Right-of-Way)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the required right-of-way line for State Route 0320 and the southerly temporary construction easement line for Amtrak distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence northwesterly along the projected temporary construction easement line to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+73; thence northeasterly along the legal right-of-way of State Route 0320 to a point distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320

at or about Station 783+96; thence southeasterly along required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence southwesterly along the required right-of-way line to a point distant twenty-eight (28) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing southwesterly along the required right-of-way line to a point and place of beginning and containing two hundred and thirty-two (232) square feet more or less.

TRACT NO. 3
(Aerial Easement)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly legal right-of-way line for State Route 0320 and the southerly required aerial easement line of State Route 0320 distant thirteen (13) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+80; thence in a northwesterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence in a northeasterly direction along the required aerial easement line to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+62; thence in a southeasterly direction along the AMTRAK northern right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing two thousand two hundred twenty-one (2221) square feet more or less.

TRACT NO. 4
(Aerial Easement)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly legal right-of-way line of State Route 0320 and the required aerial easement line of State Route 0320 distant twenty (20) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+96; thence in a northeasterly direction along the legal right-of-way line of State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction along the temporary construction easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+52.3; thence in a southwesterly direction along the required aerial easement line to a point distant thirty-five (35) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+03.9; thence in a northwesterly direction along the required

aerial easement line to a point and place of beginning and containing two thousand one hundred and ninety-eight (2198) square feet more or less.

TRACT NO. 5

(Retainment of Aerial Easement, Conveyance of Surface
Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southern legal right-of-way line of State Route 0320 and the southern aerial easement line of State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+57; thence in a northwesterly direction along the aerial easement line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northeasterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+25; thence in a southeasterly direction along the temporary construction easement line to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+34.5; thence in a southwesterly direction along the legal right-of-way line for State Route 0320 to a point and place of beginning and containing one thousand two hundred and thirteen (1213) square feet more or less.

TRACT NO. 6

(Retainment of Aerial Easement, Conveyance of Surface
Easement to Amtrak Excluding Pier Footing Area)

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the southern aerial easement line of State Route 0320 and the northern legal right-of-way line of State Route 0320 distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+41.5; thence in a northeasterly direction along the legal right-of-way line to a point distant thirteen and one half (13.5) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+72.5; thence in a southwesterly direction along the AMTRAK right-of-way line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+80; thence in a southwesterly direction along the AMTRAK property line to a point distant three (3) feet southeasterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 784+50; thence in a northwesterly direction along the aerial easement line to a point and place of beginning and containing five hundred three (503) square feet more or less.

The above six (6) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of

deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.

4. That in accordance with the provisions of Section 2702 of the Public Utility Code, 66 Pa. C.S. §2702, the following described property be and is hereby taken and appropriated temporarily, for use during the construction period only, in accordance with the right-of-way plan approved in Paragraph 1 of this Order, and that Paragraph 4 of this Order shall be recorded by the Recorder of Deeds of Delaware County, and shall be indexed under the name of the record owner of said property, grantor, and the Commonwealth of Pennsylvania, grantee, at the sole cost and expense of the Department of Transportation of the Commonwealth of Pennsylvania, said temporary appropriation shall terminate upon completion of the construction of the improvement and its opening to public use.

National Railroad Passenger Corporation - Record Owner
400 North Capital Street NW
Washington, D.C. 20001

TEMPORARY CONSTRUCTION EASEMENT NO. 1

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the southerly required legal right-of-way line of S.R. 0320 and the line for the Temporary Construction Easement distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+77; thence in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant twenty-eight (28) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+88.9; thence continuing in a northeasterly direction along the required right-of-way line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+03.9; thence continuing in a northeasterly direction along the required aerial easement line for State Route 0320 to a point distant thirty-five (35) feet and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 784+12.5; thence in a southeasterly direction along the front of the AMTRAK/SEPTA platform for the eastbound trains to a point distant four hundred and ninety-seven (497) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+44.5; thence in a southwesterly direction to a point distant five hundred and ten (510) feet and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 785+20; thence in a northwesterly direction along the AMTRAK property line (projected as necessary) to a point and place of beginning and containing fifteen thousand and seventy-three (15,073) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 2

Beginning at a point on the southerly side of State Route 0320, said point being the intersection of the temporary construction easement line and AMTRAK property line distant one hundred and thirty (130) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 786+70.5; thence in a southwesterly direction to a point distant one hundred and thirty (130) feet southeasterly and measured at right angles from State Route 0320 at or about Station 785+88; thence in a

northwesterly direction to a point of intersection with the existing right-of-way line for State Route 0320 distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+34.5; thence in a northeasterly direction along the existing right-of-way line for State Route 0320 to a point distant nineteen and one half (19.5) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+44.5; thence in a southeasterly direction to a point distant ninety-seven (97) feet southeasterly and measured at right angles from the right-of-way centerline for State Route 0320 at or about Station 785+80; thence in a northeasterly direction along the temporary construction easement line to a point and place of beginning containing two thousand one hundred and ninety-four (2194) square feet more or less.

TEMPORARY CONSTRUCTION EASEMENT NO. 4

Beginning at a point on the northerly side of State Route 0320, said point being the intersection of the northerly required right-of-way line for State Route 0320 and the AMTRAK right-of-way line distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+47; thence in a northwesterly direction along the right-of-way line of AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+36.4; thence in a northeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant fifty (50) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+61; thence in a southeasterly direction along the Temporary Construction Easement line for AMTRAK to a point distant thirty-seven (37) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+67.7; thence continuing in a southeasterly direction along the Required Aerial Easement line to a point distant thirty (30) feet northwesterly and measured at right angles from the right-of-way centerline of State Route 0320 at or about Station 783+71.3; thence in a southwesterly direction along the required right-of-way line for State Route 0320 to a point and place of beginning and containing four hundred and fifty (450) square feet more or less.

The above three (3) tracts of land shown on the Department of Transportation's Drawings Authorizing Acquisition of Right-of-Way for State Route 0320 Section 12S R/W and designated and delineated as part of Parcel No. 5 on Sheet 11 of said drawings as recorded in the office for the recording of deeds, etc. in Delaware County, Pennsylvania, in Volume 17, Page 243, on January 17, 1992 are portions of real estate which became legally vested in National Railroad Passenger Corporation by deed of Consolidated Rail Corporation, dated October 11, 1978 and recorded October 20, 1978 in Deed Book 2670, Page 988 in the Delaware County Courthouse.