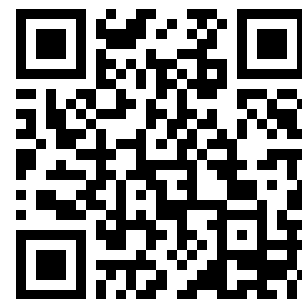

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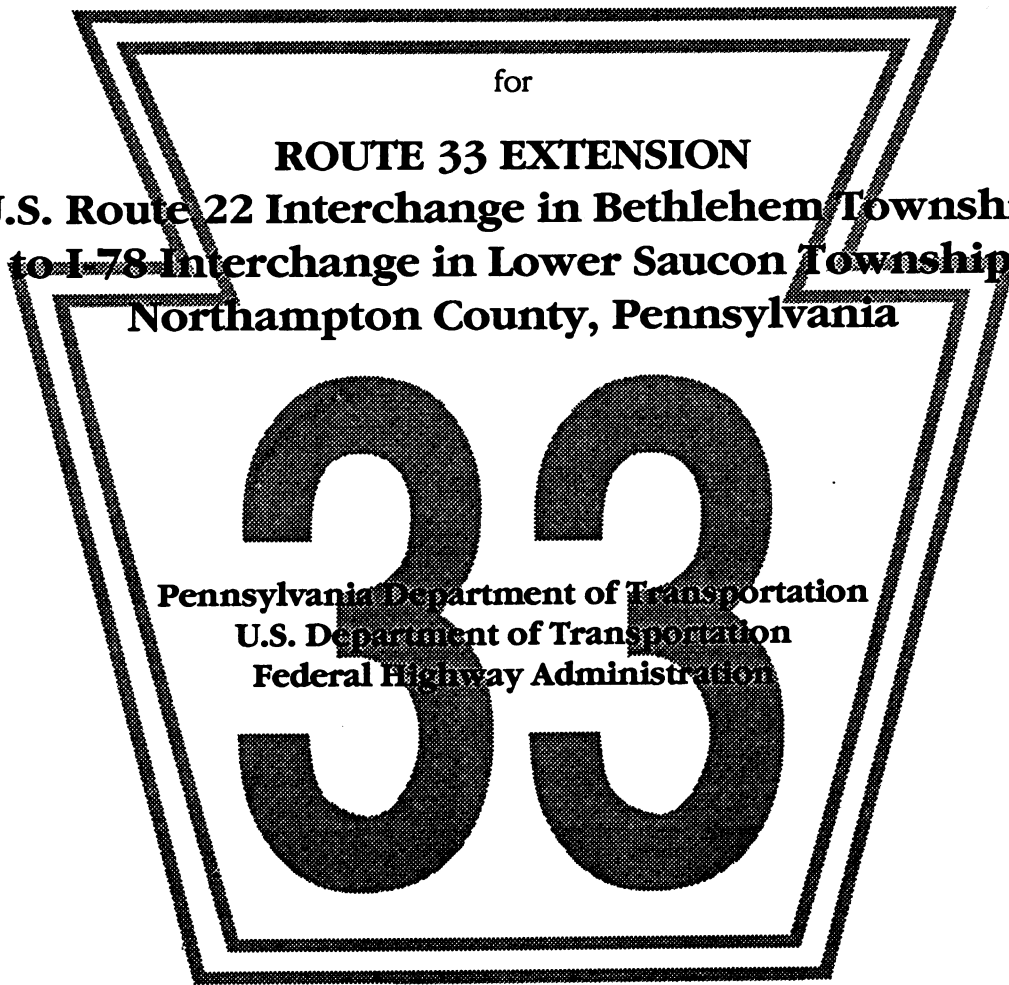
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APPENDICES

VA - PA - 930211 - EAPP



for
ROUTE 33 EXTENSION
U.S. Route 22 Interchange in Bethlehem Township
to I-78 Interchange in Lower Saucon Township
Northampton County, Pennsylvania

33
Pennsylvania Department of Transportation
U.S. Department of Transportation
Federal Highway Administration

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June 1993

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FHWA-PA-EIS-89-03-F

Route 33 Extension from Route 22 to I-78
Northampton County, Pennsylvania

APPENDICES

SUBMITTED PURSUANT TO:
42 U.S.C. 4332 (2)(c) AND 49 U.S.C. 303

by the

U.S. Department of Transportation
Federal Highway Administration
and
Pennsylvania Department of Transportation
and
Cooperating Agency:
Joint Planning Commission
Lehigh-Northampton Counties
Northampton County

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APPENDIX A
ALCAB ADJUDICATION
MAY 8, 1990

COMMONWEALTH OF PENNSYLVANIA
AGRICULTURAL LAND CONDEMNATION
APPROVAL BOARD

IN RE: ROUTE 33 EXTENSION

ADJUDICATION

I. Introduction

On April 19, 1990, the Agricultural Land Condemnation Approval Board (hereinafter the Board), held a public hearing at the Government Building on the grounds of the ABE Airport in Bethlehem, PA. The hearing was held pursuant to the request of the Pennsylvania Department of Transportation to consider the farmland impacts of a proposed extension to State Route 33 in Northampton County. The Board, after requesting legal memoranda, recessed the hearing and, after appropriate public and personal notice to affected landowners, reconvened on May 8, 1990, in Harrisburg. At that hearing, additional testimony was taken and a final decision in this matter was rendered. This opinion follows.

II. Findings of Fact

1. The Department of Transportation (hereinafter the Department) initiated a request to the Board, received on March 9, 1990, for approval to condemn lands in Northampton County. See Board Ex 1.

2. Proper and timely notice of the hearings held herein was given to both the public and the affected landowners. See Board Exhibits 2, 3, 4 and 5.

3. The proposed highway extension to Route 33 is intended to connect an existing interchange on U.S. Route 22 with the newly completed section of U.S. Route 78, between Bethlehem and Easton.

4. The proposed extension is approximately 3.5 miles of four-lane, limited access highway, including intermediate interchanges and a new interchange with Route 78.

5. This project, as recommended by the Department, requires 105.3 ~~acres~~^{acres} of prime farmland out of a total of 126.9 acres for the complete right-of-way.

6. Several affected landowners were present, including one, George Emrich, who, along with legal counsel, represented a family whose members owned much of the proposed area of taking.

7. The project is designed to provide relief to local roads of major north-south traffic as well as to provide an efficient circumferential route in the Bethlehem-Easton area, linking existing highways.

8. The Department presented a review of a "no build" alternative and of two "build" alternatives, each with two options related to the interchanges with existing highways. Both "build" alternatives included a "trumpet" interchange with Route 78.

9. The preferred alternative was Alternative 1, with Option A for the interchanges.

10. The preferred alternative utilized less acres of prime farmland and less acres of farmed parcels, although it affected one additional farm.

11. The preferred alternative best facilitated the engineering of the bridge required to span the Lehigh River.

12. The preferred alternative considered impacts on property eligible to be listed on the National Register of Historic Places.

13. The Department did not consider the options of moving one historical structure, the Emrich farmhouse, or requesting an exemption from the federal highway authorities.

14. At the second hearing, a third alternative route was presented by Mr. Emrich.

15. Penn Dot's farmland assessment did not consider the impact of the project on farm viability.

III. Discussion

Section 306 of the Administrative Code of 1929, as amended (71 P.S. § 106) established the Agricultural Lands Condemnation Approval Board. This act provides, in pertinent part, that no political subdivision, authority, or other body having or exercising powers of eminent domain, shall condemn any agricultural land being used for productive agricultural purposes unless prior approval has been obtained from the Board. The Board's specific

responsibility is to determine whether there is a feasible or prudent alternative to condemnation. (See Act 100 of 1979, 71 P.S. § 106(c)). In addition, this section requires that the Board must act within 60 days of receipt of a request for approval of a condemnation. Failure to so act constitutes approval of the condemnation.

The proposed Route 33 extension is clearly of major importance to the regional and local traffic patterns of the Lehigh Valley. Its economic benefits have been long awaited and the approximate path of the highway was foreshadowed at least as early as the building of the Route 22 interchange in 1973, the southern portion of which has remained closed pending this project.

Because of the location of the rural residential community of Farmersville and the residential subdivision of Prospect Park, the approximate east and west boundaries of the extension were fixed. In addition, the difficult terrain along the Lehigh River and the construction constraints imposed by the wetlands adjacent thereto, also tended to limit the feasible alternatives for locating the connection with Route 78. Along the route, certain historical properties, discussed more fully below, also tended to narrow the alternatives available for the project.

Based on the extensive material supplied by the Department in support of this project, as well as upon the rather complete testimony given by interested parties, the Board is convinced that

there is a need for the extension and that there will be a need to utilize agricultural land within the area designated for the highway. The Farmland Assessment Report (Dept. Ex. 2), data and testimony, all support this conclusion.

However, the Board, for the reasons stated of record, did not approve the condemnation. In discussing these reasons, the Board wishes to note that a failure to have acted on May 8, 1990 would have meant automatic approval. However, the record evidence, especially that of the second day of hearings, raised questions which were not adequately addressed by Penn DOT. For example, the proposal of a new route, located East of the Emrich farmhouse, left no time for PennDot to provide any detailed analysis, as the route previously had neither been studied by the Department nor suggested by any affected landowner.

In finding that PennDot has not properly demonstrated that there is no feasible or prudent alternative to the proposed route, the Board notes the following:

1. No consideration of the engineering or historical implications of moving the Emrich farmhouse was given. This issue was raised by the Board, sua sponte, during the second day of hearings.

2. No formal application to condemn the Emrich farmhouse despite its historical status was ever made to federal authorities.

3. The viability of the farmland for farming, after construction, was not considered.

On this last point the Board has serious concerns. The condemnation of farmland is not merely a question of acreage. It is also a question of the viability of what is left after the taking. Alternative alignments which have varying impacts on the ongoing viability of the remaining farmland ought to be among the issues presented to the Board by aspiring condemnors. The Board wishes to know, before exercising its judgment regarding feasibility and prudence, whether the department, in choosing a preferred alignment, has considered the impact on farming as well as on the amount of farmland to be taken. Only with such knowledge can the Board properly decide these matters.

Therefore, based on all the evidence and after due consideration of the legal arguments and issues herein, the Board concludes that there may be feasible and prudent alternatives to the preferred alignment which require further exploration by PennDot. Under other circumstances, the Board may have continued the hearing to allow PennDot to address these new unknowns. However, as Section 106(c) requires that the Board act within 60 days, and in light of these possible, but unexplored alternatives, the Board was constrained to deny the condemnation, and therefore enters the following Order.

APPENDIX B
TRANSCRIPT FROM PUBLIC HEARING HELD ON
MARCH 8, 1990

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

In Re:

ORIGINAL

Route 33 Extension

PUBLIC HEARING

Taken in the East Hills Middle School, 2005 Chester Avenue, Bethlehem, Pennsylvania, on Thursday, March 8, 1990, commencing at 7:00 p.m., by Wendy Engler Shade, Registered Professional Reporter.

BEFORE:

ROBERT KELLER, Environmental Manager
JACK PORTER, Project Manager
P. THOMAS BARILAR, District Engineer

* * *

SLIFER, VOICE & SHADE
38 South Ninth Street
Allentown, Pennsylvania 18101
(215) 434-8588

INDEX TO WITNESSES

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1 MR. KELLER: Good evening, ladies
2 and gentlemen. I am PennDOT's District 5-0
3 environmental manager. On behalf of Governor Casey,
4 Secretary of Transportation Howard Yerusolim, and
5 District Engineer Thomas Barilar, I am pleased to
6 welcome you to this public hearing. I will act as
7 chairman for tonight's hearing.

8 The purpose of this hearing is for
9 the Department of Transportation to explain the
10 proposed location, the preliminary engineering plans
11 and environmental studies for the extension of
12 Traffic Route 33, Bethlehem Township and Lower
13 Saucon Township, Northampton County. This hearing
14 is a combined requirement of the Act of May 6, 1970,
15 establishing the Pennsylvania Department of
16 Transportation; Title 23, United States Code,
17 Section 128, and the Federal Aid Highway Program
18 Manual 7-7-2, for the Federal Highway
19 Administration, United States Department of
20 Transportation.

21 This is a combined corridor and
22 design public hearing which is designed as a hearing
23 held before a project is approved by the Federal
24 Highway Administration before the State
25 Transportation Department is committed to a specific

1 design proposal; number two, to assure opportunity
2 is afforded for effective participation by
3 interested persons in the process of determining the
4 specific location and major design features of the
5 federal highway; number three, to provide the public
6 a forum that affords full opportunity for presenting
7 views on major design features, including the
8 social, economic, environmental and other effects of
9 alternative designs.

10 Following the introductory
11 remarks, the proposed alternatives will be described
12 as well as design alternatives and tentative
13 schedules for project approval and construction.
14 The draft environmental impact statement was
15 approved by the Federal Highway Administration on
16 January 4th, 1990. This document was made available
17 for public review and comment on January 26, 1990,
18 and will remain available for comment until March
19 30th, 1990.

20 Copies of the document are
21 available at the following locations: At the
22 offices of the Federal Highway Administration,
23 Pennsylvania Divisional Office, which is located at
24 228 Walnut Street, Harrisburg, Pennsylvania; the
25 Pennsylvania Department of Transportation Bureau of

1 Design Division, Room 1118, Transportation and
2 Safety Building, Harrisburg, Pennsylvania; the
3 Pennsylvania Department of Transportation
4 Engineering District 5-0, which is located at 1713
5 Lehigh Street, Allentown, Pennsylvania; the Joint
6 Planning Commission, Lehigh and Northampton
7 Counties, which is located at the Government
8 Building of ABE Airport; it's available in the
9 Bethlehem Township building, which is located at
10 2740 Fifth Street, Bethlehem, Pennsylvania; it's
11 also available at the Bethlehem Public Library at 10
12 East Church Street, Bethlehem Pennsylvania; Easton
13 Area Public Library, Sixth and Church Streets,
14 Easton, Pennsylvania; the Memorial Library,
15 Nazareth, East Center Street, Nazareth,
16 Pennsylvania; the Mary Meuser Library, 18th and
17 Northampton Streets, Easton, Pennsylvania; the
18 library in the Northampton County Area Community
19 College; the Bethlehem Public Library, south side
20 branch, which is located at Fourth and Webster
21 Streets, Bethlehem, Pennsylvania.

22 After this initial testimony,
23 those people who have registered to give testimony
24 tonight will be called upon to testify concerning
25 the location and effects of the proposed highway.

1 Also we'll open the floor to any additional
2 speakers. All persons wishing to be speak will be
3 allowed to speak. In addition, written testimony
4 may be submitted to supplement your public
5 testimony.

6 There will be no
7 cross-examination, questioning or responses to any
8 witness either from the floor or from the chair.
9 Rather, the procedure will be for the witness to
10 testify directly setting forth for the record their
11 opinion regarding the effects of the proposed
12 highway.

13 The following is a summary of the
14 hearing testimony procedure and rules. A copy of
15 the rules are available right here for your further
16 information.

17 Speakers will be called in order
18 as signed in. Individuals will be called to speak
19 by name. The speakers are asked to limit their
20 initial testimony to five minutes. Additional time
21 will be allocated at the conclusion of the other
22 speakers. Written statements may be submitted to
23 supplement for oral testimony. Please make
24 statements only. There will be no responses to
25 questions during the testimony.

1 Questions will be answered by
2 PennDOT representative in the informational area in
3 the adjacent room or addressed in the final
4 environmental impact statement. Please be courteous
5 by refraining from commenting during the testimony
6 of others.

7 If any individual here tonight
8 would prefer to give their testimony in private,
9 please inform me at the conclusion of the hearing
10 and we will make arrangements to have this done.

11 For those of you who may have
12 questions regarding the proposed highway, I would
13 like to point out that engineers from the Department
14 and the Federal Highway Administration, the
15 consulting engineer and PennDOT right-of-way
16 representatives are also available in the adjacent
17 room and will remain after testimony is closed to
18 answer your questions.

19 . Also at any time after this
20 hearing and prior to the zoning design approval,
21 prior to design approval, all information developed
22 in support of the design will be available upon
23 request at the district engineer's office for public
24 inspection and copying. Every issue raised at this
25 hearing will be addressed in the final environmental

1 impact statement. At any time after this hearing
2 and prior to the design approval, all information
3 developed as part of the study will be available
4 upon request at PennDOT District Office in Allentown
5 for public inspection and copying.

6 Anyone may submit written
7 testimony concerning the location of the proposed
8 highway to the district engineering office. This
9 information should be forwarded to Thomas Barilar,
10 District Engineer, 1713 Lehigh Street, Allentown,
11 Pennsylvania. If received by March 30th, 1990, such
12 written testimony will be included and made part of
13 the public record. It is also available from the
14 district engineer for inspection and copying prior
15 to its design approval.

16 A statement of the Department's
17 land acquisition policy and procedures appears in
18 the pamphlet entitled Relocation Assistance
19 Information. This significant information is
20 available in the adjacent room and from our PennDOT
21 right-of-way office, which is located at 2460
22 Parkwood Drive, Allentown, Pennsylvania.

23 The alignment proposed to build
24 alternative number one does involve the acquisition
25 of an occupied residence. Representatives from the

1 PennDOT's District right-of-way department are
2 available in the adjacent room to discuss individual
3 property owner's concerns and Department's
4 relocation assistance policies.

5 You will note that a stenographer
6 is taking notes of this testimony. A verbatim
7 transcript of the hearing will be prepared and
8 studied by the Department of Transportation and
9 forwarded to the Federal Highway Administration with
10 the State's recommendation as to the final location
11 of the proposed highway.

12 The legal notice for this hearing
13 appeared in the Easton Express and the Morning Call
14 on February 4th, 1990, and February 25th, 1990, and
15 in the Bethlehem Globe Times on February 5th, 1990,
16 and February 26th, 1990. In addition, block
17 announcements of this hearing were placed in the
18 Morning Call and the Easton Express on March 4th,
19 1990, and in Bethlehem Globe Times on March 5th,
20 1990.

21 Next I would discuss the need for
22 the project, the study area corridor and alternative
23 description, the results of the draft environmental
24 impact statement, the Department's land acquisition,
25 and family and business relocation policies and

1 procedures.

2 Project need. Environmental and
3 transportation planning studies performed have
4 revealed that there are three major needs for the
5 project. First, the project is needed to complete
6 the regional transportation network in Northampton
7 County. The Route 33 extension will connect Route
8 33 at its interchange with Route 22 to a new
9 interchange with I-78 south of the Lehigh River.

10 Secondly, there is a need in the
11 eastern section of the Lehigh Valley to improve
12 local and regional accessibility to permit
13 optimization of land use for planned economic
14 development. This project will provide access to
15 and from the relatively undeveloped land in
16 Bethlehem Township south of U.S. 22, allowing for
17 planned office, commercial and industrial
18 development to take place.

19 Thirdly, the completion of the
20 project will reduce congestion on local roads such
21 as Freemansburg Avenue, William Penn Highway, and an
22 existing bridge across the Lehigh River from
23 Bethlehem east to the City of Easton.

24 The study area and alternatives.
25 The map on the side will highlight what I'm going to

1 talk about in addition to the pamphlet which
2 shows -- you can follow along that if you prefer to
3 understand what I'm talking about.

4 The Route 33 extension is located
5 in Bethlehem and Lower Saucon Township in
6 Northampton County. The study here is bounded on
7 the north by the existing interchange of Route 33
8 and 22 and on the south by I-78, east boundary
9 follows County Club Road and Hope Road to
10 Freemansburg Avenue, and from that point
11 southeastwardly line of I-78. The western boundary
12 follows the southwesterly line to approximately 50
13 feet west of the existing interchange to 600 feet
14 west of the Farmersville elementary school on
15 William Penn Highway. From that point the boundary
16 line follows the southern line for approximately 2.5
17 miles and then turns southeasterly towards I-78.

18 The Route 22-33 interchange was
19 completed in 1973. Ramps for the proposed extension
20 are completed. A shift in this interchange east or
21 west of 22 is not prudent because of the resultant
22 loss of expended resources, additional displacements
23 and the loss of farmland to transportation use, and
24 a more complicated traffic pattern.

25 South of the interchange of Route

1 22 the proposed line right-of-way line would be the
2 rural residential community of Farmersville to the
3 west and the residential community of Prospect Park
4 to the east. A shift in the study area to the west
5 will cause disruption to Farmersville. A shift to
6 the east would impact Prospect Park, an established
7 residential development.

8 The connection with I-78 is
9 constrained by natural and cultural features of the
10 area. A western shift of the proposed line will
11 impact the Redington Historic District and will be
12 constrained by steep topography. Shifting the
13 alignment/interchange outside the study area to the
14 east could cause construction of a portion of the
15 interchange within the Lehigh River because of
16 I-78's proximity to the river. Three alternatives
17 have been studied in the draft environmental impact
18 statement, a no-build alternative and two build
19 alternatives.

20 No-build alternative assumes
21 maintenance of the existing highway network. The
22 main east-west arterials of William Penn Highway and
23 Freemansburg Avenue is where most of the local
24 traffic travels between Bethlehem and Easton.
25 Traffic will clearly increase due to the residential

1 growth in future years whether the Route 33
2 extension is built or not. The north-south
3 collector streets, Hope Road and Farmersville Road,
4 would also be impacted by increased traffic. As
5 traffic volumes increase, congestion on the local
6 roads would increase, thereby increasing travel time
7 and decreasing safety. It will become increasingly
8 difficult to enter and exit numerous unsignalized
9 side streets and commercial entrances.

10 North-south traffic is restricted
11 and will continue to be restricted with no
12 alternative because of the severe topography
13 adjacent to the Lehigh River and the limited routes
14 to Easton and limited access to bridges in
15 Bethlehem.

16 The two build alternatives would
17 extend Route 33 approximately three and a half miles
18 south of its current intersection at Route 22. The
19 mainline segments of both alternatives consist of
20 two twelve foot northbound lanes and two southbound
21 lanes, typically with ten foot shoulders and a 36
22 foot wide median.

23 Alternatives one and two are very
24 similar to that configuration and are on the same
25 alignment beginning on Route 22. Slightly south of

1 Freemansburg and William Penn Highways, the
2 alternatives diverge on separate alignments.
3 Alternative one is approximately 1,500 feet from
4 alternative two at the southern terminus.

5 Two design options have been
6 proposed within each alternative. Option A would
7 provide a full northbound and southbound access at
8 grade-separated interchanges with the William Penn
9 Highway and Freemansburg Avenue. Option B would
10 provide grade-separated, half-diamond interchanges
11 at Freemansburg Avenue, with service roads located
12 on the east and west sides of Route 33. A
13 northbound on ramp and southbound on ramp would be
14 provided at William Penn Highway interchange, while
15 southbound on ramp and northbound off ramp will be
16 provided at Freemansburg Avenue.

17 The service roads for both
18 alternatives consist of two lane undivided roadways
19 typically 24 feet wide with eight foot shoulders.
20 The service roads would have at-grade intersections
21 with William Penn Highway and Freemansburg Avenue.
22 These roads will be used to gain access to future
23 developments along Route 33.

24 Both alternatives would pass
25 through primarily rural residential and agricultural

1 land between the existing southern perimeters of
2 Route 33 and Freemansburg Avenue. South of
3 Freemansburg Avenue, alternative one would cross
4 Bethlehem-Palmer Township bike trail and Hopewell
5 Road with a bridge structure. A bridge would be
6 provided over the Lehigh River crossing over the
7 Hugh Moore Park and the Lehigh Canal. A full
8 interchange of I-78 would be provided at the
9 southern terminus.

10 South of Freemansburg Avenue,
11 alternative two would proceed southeasterly across
12 the Lehigh Canal and Bethlehem Boating Club just
13 west of Hugh Moore Park boundary, before crossing
14 the Lehigh River. Alternative two will cross the
15 river on a tangent alignment with a lower bridge
16 profile than alternative one. Full interchange with
17 I-78 would also be provided at the southern
18 terminus.

19 . In the interest of expediting the
20 Route 33 project, the County has agreed to
21 participate in financing the project. Usually such
22 transportation partnerships are funded 50 percent
23 state and local funds and -- state and federal funds
24 and 50 percent local and/or private funds. One
25 option for financing a share of the local/private

1 contribution would be to charge for crossing the
2 Route 33 Lehigh River bridge. This project would be
3 designed in such a way as to not preclude this
4 option.

5 Summary of the environmental
6 impact. Detailed environmental studies determined
7 specific impacts of the no build and two build
8 alternatives. Environmental studies analyzed
9 impacts in the areas of socioeconomics,
10 transportation and energy, natural resources, air
11 quality, noise impacts, cultural resources,
12 hazardous waste sites and public recreational
13 resources.

14 The no build alternative would not
15 impact natural and cultural resources in the study
16 area. However, it is not compatible with the
17 inter-regional transportation goals of the
18 Lehigh-Northampton Counties Joint Planning
19 Commission. The no build alternative would result
20 in increased traffic lines on local roads because of
21 the anticipated residential development. As
22 congestion in the areas would worsen, travel time
23 will increase. The development of industry, retail
24 and service businesses would not occur because of
25 the limited access, and the area's economic

1 development potential would be inhibited. There
2 would be no impact on local tax base because the
3 land would not be committed to transportation use.
4 Residents would not be displaced.

5 The build alternatives are
6 compatible with planned future land uses of the
7 area. The extension would relieve traffic
8 congestion on existing roads and would facilitate
9 inter-regional traffic flow to and from major
10 metropolitan areas. With the completion of the
11 expansion, the ability of the area to attract
12 industry, retail and service businesses would
13 increase. Increasing development would have a
14 positive impact on the local and regional economy.
15 Alternative one options would displace one farmstead
16 on Freemansburg Avenue.

17 The build alternatives would
18 result in a short term impact to the Lehigh River
19 and two unnamed tributaries due to temporary erosion
20 and sedimentation caused by construction activity.
21 Long-term highway runoff may affect surface water
22 quality. Recreational use of the river may be
23 temporarily impacted due to the bridge construction.
24 Additionally, the visual setting of and from the
25 river would be altered. Wetlands in the study were

1 identified and delineated using the U.S. Army Corps
2 of Engineers. Both alternatives would impact the
3 wetlands due to bridge construction. Alternative
4 one would permanently impact .09 of an acre and
5 temporarily impact .92 of an acre, and alternative
6 number two would temporarily impact .75 acres of
7 wetlands during construction.

8 The 100 year flood plain of the
9 Lehigh River would be crossed by both alternatives
10 due to construction of the bridge. No fill would be
11 required in the flood plain. In each alternative,
12 disturbance would be limited to the placement of
13 three piers. There would be no significant risk or
14 adverse impacts on the natural or artificial flood
15 plain values caused by construction of the project.

16 The completion of the extension
17 would result in a loss of land area that is suitable
18 for wildlife. Technically, this area is defined as
19 wildlife habitate. Alternatives 1A, 1B, 2A, and 2B
20 would require the acquisition of 133, 152, 137 and
21 164 acres of land. Impacts to potential wildlife in
22 the areas were analyzed using the Pennsylvania
23 Modified Habitat Evaluation Procedure, PAM HEP. As
24 the result of this evaluation, alternatives 1A, 1B,
25 2A and 2B would impact 40, 44, 127, 131 habitates

1 respectively. For this analysis, habitate is
2 defined as an emperical number. It is used to
3 provide a qualitative and quantitative evaluation of
4 the project's build alternatives potential impact on
5 wildlife resources.

6 The majority of land impacted
7 would be farming. Alternative 1A would impact 11
8 actively farmed parcels, a total of 95 acres of
9 active farmlands. Alternative 1B would also impact
10 active farmlands. A total of 112 acres of active
11 farmlands would be required for this alternative.
12 Alternative 2A and 2B would impact ten active
13 farmlands for a total of 106 and 132 acres of
14 farmland. None of this acreage is included in
15 Pennsylvania Act 43.

16 Alternative one options would
17 impact five parcels tax assessed under State Act 319
18 or 515. Alternative two would impact four parcels
19 taxed under these acts.

20 Act 43 is the state's agricultural
21 securities law which is used by local governments to
22 establish agriculture security districts. This act
23 demonstrates the intent of the potential landowner
24 to preserve the lands for future farming. Acts 319
25 and 515 give county governments the authority to

1 initiate and implement special farmland tax for land
2 dedicated to farming.

3 To comply with PA Act 100, a
4 farmland assessment report was prepared and will be
5 submitted to the Agricultural Lands Condemnation
6 Approval Board prior to finalizing the environmental
7 impact statement.

8 In Bethlehem Township, the project
9 will not have an impact on prime farmlands or soils
10 of statewide importance as protected by the Federal
11 Farmland Protection Policy Act of 1981 because this
12 farmland is committed to nonagricultural use by
13 current zoning stipulations.

14 In Lower Saucon Township, impacts
15 to prime farming and soils of statewide importance
16 would not be significant according to Farmland
17 Protection Policy Act.

18 The air quality analysis for the
19 project indicated that the estimated one hour and
20 eight hour average carbon monoxide concentrations
21 would be well below that of the National Ambient Air
22 Quality standards. The air quality analysis
23 determined that the project would not adversely
24 affect the reasonable progress toward attainment of
25 the air quality standards. Construction effects to

1 the air quality would be temporary and minimal.

2 A detailed noise impact analysis
3 was used to predict the future noise capacity of
4 Route 33 extension. Alternative one would impact 11
5 receptors in excess of the Noise Abatement Criteria.
6 Alternative two would impact 13 receptors. The
7 Pennsylvania Department of Transportation is
8 committed to the construction of feasible noise
9 abatement measures at the noise impacted locations,
10 contingent upon feasibility and reasonableness
11 determinations. The impact of locations are shown
12 in the draft of the environmental impact statement.

13 The evaluation of cultural
14 resources included both structures and archeological
15 sites. Alternative one would impact five historical
16 sites: The Lehigh Canal, the George Emrick, Wirth
17 and Fahs Farms, the Redington Historic District.

18 Alternative two would impact seven
19 sites: The Lehigh Canal, the Fahs, the George
20 Emrick, Wagner and Baker farms, the Hopeville and
21 Redington Historic District.

22 Alternative one would impact two
23 archeological sites eligible for the National
24 Register of Historic Places. Alternative two would
25 impact one eligible site and one that has the

1 potential to be listed on the National Registry.

2 Both alternatives would impact
3 significant public recreational resources and
4 historic resources. These historic resources would
5 receive special attention from PennDOT and the
6 Federal Highway Administration. These resources are
7 referred to as section 4(f). Alternative one would
8 impact the Lehigh Canal and the Hugh Moore Park.
9 Alternative two would impact the Lehigh Canal, tow
10 path and Fahs farm.

11 Neither build alternative would
12 impact groundwater quality. The project will have
13 no impact on federal or state-threatened,
14 endangered, or rare species. In the study area,
15 there are no known, alleged or potential hazardous
16 waste sites, as listed by the Pennsylvania
17 Department of Environmental Resources and the United
18 States Environmental Protection Agency.

19 This has been a brief review of
20 the result of the studies conducted to date for this
21 project. A detailed discussion of all these impacts
22 is found in the draft environmental impact
23 statement. This report is available for your review
24 here tonight and at locations previously mentioned.
25 Also separate technical basis reports are available

1 for review.

2 I would like to briefly discuss
3 the Department's land acquisition and family
4 assistance relocation policies and procedures. A
5 more detailed statement of these policies and
6 procedures appears in the pamphlet available for
7 distribution at the hearing: Bulletin 47, titled
8 Relocation Assistance Information. Our right-of-way
9 personnel are here at this hearing to receive your
10 individual questions.

11 It is the policy of the United
12 States Department of Transportation that no person
13 shall be displaced from a federal or
14 federally-assisted construction project unless and
15 until adequate replacement housing has been provided
16 for or is built. If any person, family, business or
17 farm operation is required to move as a result of
18 highway construction, they will receive written
19 notice at least 90 days in advance of the intended
20 vacation date.

21 All persons, families, businesses
22 and farm operations required to move will receive
23 the benefit of the Federal Uniform Relocation
24 Assistance and Real Property Acquisition Policies
25 Act of 1970 as amended and the 1989 amendments to

1 the Pennsylvania Eminent Domain Code.

2 According to the Department's
3 information, adequate, decent, safe and sanitary
4 dwelling units are presently available to
5 accommodate the one residential relocation for
6 alternative one. Accordingly, it is the opinion of
7 the Department that sufficient replacement housing
8 is available.

9 Whether or not relocation of a
10 person, family or business or farm operation is
11 involved, each property owner or other party will be
12 offered full measures of just compensation provided
13 under the Eminent Domain Code for property required
14 for the highway.

15 The Department will make a final
16 recommendation on the build alternative after
17 comprehensive review of all comments on the draft
18 environmental impact statement and a thorough review
19 of the public hearing transcript. We anticipate
20 making this decision in May 1990. A legal notice
21 will be placed in the local newspapers advising the
22 public of our recommendation.

23 A final environmental impact
24 statement will be prepared for the recommended build
25 alternative. Final environmental clearance for this

1 project is tentatively scheduled for late September
2 1990.

3 A summary of the discussion and
4 environmental approval process for this project is
5 as follows: A transcript of tonight's hearing will
6 be reviewed by the Pennsylvania Department of
7 Transportation. All comments and questions
8 presented here tonight on the project and the draft
9 environmental impact statement will be addressed and
10 included in the final environmental impact
11 statement. The transcript of this meeting and the
12 final environmental impact statement will be
13 forwarded to the Federal Highway Administration with
14 the Department's recommendation for approval. Upon
15 obtaining Federal Highway Administration's approval,
16 final design and early right-of-way acquisition of
17 the corridor preservation will proceed.

18 As a reminder, any individual here
19 tonight can present their testimony in private, if
20 they so desire. Please contact me and I will make
21 the arrangements.

22 I would like to remind everyone
23 here tonight that you may sign up to submit oral
24 testimony. In addition, any written comments may be
25 submitted for incorporation into the public record

1 till March 30th, 1990. Following this hearing, a
2 review of all comments will be conducted.

3 This concludes our part of this
4 testimony. As this hearing is a formal procedure to
5 receive comments, no cross-examination or questions
6 will be allowed from the chair or from the audience.
7 Each speaker will be able to speak uninterrupted.
8 Questions raised by the speaker while giving
9 testimony will not be answered here this evening. I
10 will now call on the speakers list.

11 Please state your name, address
12 and the name of any group that you represent clearly
13 at the beginning of your statement so that the
14 stenographer can report it correctly.

15 Congressman Don Ritter.

16 MR. RITTER: I have to give my
17 name, rank and serial number, huh? Congressman Don
18 Ritter, and I reside at Box 344, R. D. 4,
19 Coopersburg, in the beautiful Lehigh Valley. I just
20 got back from Washington, D.C., so the comparison is
21 clear in my mind.

22 I'd like to thank you for the
23 opportunity to appear to testify this evening. I'd
24 like to use my time to try to put this Route 33
25 project in context with where we've been and where

1 we're going and how it sits as we move into the 21st
2 century.

3 During the 1980's, the Lehigh
4 Valley witnessed unprecedented economic growth. And
5 while our economy still relies a lot on heavy
6 manufacturing, during the past ten years it's
7 diversified, branched out into service economic
8 including high paying legal, medical, financial,
9 plus high-tech, light manufacturing.

10 This economic diversity, indeed
11 from recent reports in our local press,
12 globalization of our economy, has created thousands
13 of new jobs for our residents and helps us to
14 withstand the painful slimming and trimming of our
15 heavy industries. When the economy is doing well,
16 it's only natural that we look at improving other
17 factors impacted upon our quality of life. As
18 citizens of the Lehigh Valley, we're fortunate to
19 have a high quality of life, but we cannot just be
20 satisfied to maintain the status quo. We must
21 strive to improve it. That's the very least.

22 The key issue Lehigh Valley
23 citizens face as we forge ahead toward the 21st
24 century is how to achieve a balance between
25 increasing prosperity in our area, the side effects

1 of such economic growth, and our quality of life.

2 I am here tonight to voice my
3 support for what I call the missing link in our
4 Lehigh Valley highway infrastructure, the extension
5 of Route 33 between I-78 and Route 22. Many have
6 billed the linking of these two major highways as a
7 key element to continued expansion of economic and
8 job opportunities in the Lehigh Valley. I agree.

9 The Route 33 extension is not just
10 the means to build more industrial parks. We must
11 look beyond the purely economic benefits of the new
12 highway to analyze also its impact on the Lehigh
13 Valley environment, the quality of our lives. And
14 it's on these two issues I'd like to focus tonight.

15 Everyone in this room has at one
16 time or another faced traffic congestion in the
17 Lehigh Valley. One of our problems is that our
18 highway system has poor access to the south to
19 Philadelphia and to the north to the Pocono
20 mountains. The completion of Route 33 will
21 alleviate much congestion by providing great direct
22 access to these areas for trucks, travelers,
23 commuters.

24 Route 33 will substantially lower
25 the number of trucks that presently pass through our

1 smaller towns and communities as a result of not
2 having the direct link between I-78 and Route 22.
3 Plus the neighborhood air pollution should be
4 lowered.

5 In 1989, the Lehigh Valley
6 exceeded Federal Clean Air Standards on 16 days.
7 Primary problem is ozone pollution. The main source
8 of ozone-causative damage is car and truck
9 emissions. Traffic congestion is a major cause of
10 ozone pollution for two reasons: It takes longer
11 for people to get to their destination, and cars and
12 trucks work a lot less efficiently starting and
13 stopping, thus causing more pollution.

14 By diverting traffic off of
15 secondary roads running through our neighborhoods,
16 people, drivers, would spend less time on the roads,
17 and our vehicles will emit less ozone-producing
18 hydrocarbons, thus helping to improve the quality of
19 the air we breathe.

20 The issue of wetlands also came
21 up, and it is touched by the completion of Route 33.
22 President Bush has stated that there will be a net
23 loss of wetlands in his administration. I commend
24 JPC and PennDOT for offering two alternatives that
25 disturb a minimum of wetlands. Both alternatives

1 also make a concerted effort to avoid disturbing the
2 Hugh Moore Park and the National Heritage Carter.
3 As many of you know, I have a personal and major
4 stake in seeing Heritage Carter lead the way to
5 improving the Lehigh Valley's environment.

6 During the final design phase
7 PennDOT and the Federal Highway Administration will
8 meet with the Heritage Commission, Heritage Carter
9 Commission, to assure that the objectives of the
10 Commission are not compromised by the project. This
11 area of Pennsylvania has a vibrant growing economy,
12 offering new job opportunities to our workers and
13 families.

14 But let's face it. We can't
15 sustain economic growth that is environmentally
16 sound without improving our infrastructure. By
17 linking the corridors of Route 22 and Interstate 78,
18 the Route 33 extension will help prevent our area
19 from being over-burdened by its own growth.

20 I see the Route 33 extension as a
21 partnership project from the federal government, the
22 Commonwealth of Pennsylvania, local government and
23 private sector. And when I'm in Congress, I
24 introduced HR 1758, a bill to direct the Secretary
25 of Transportation to carry out the highway

1 demonstration project to extend Pennsylvania State
2 Route 33 to provide limited access highway to
3 Interstate 78 and 80.

4 Last November, I met with
5 representatives of the Joint Planning Commission,
6 the Route 33 Coalition, the Federal Highway
7 Administration, Tom Barilar. We asked him for his
8 support to make the Route 33 extension a
9 demonstration project for the next highway bill.
10 That next highway bill will come up in 1991 or '92.

11 I will continue to persevere, to
12 press for inclusion of my Route 33 legislation in
13 the next highway bill to provide federal funding for
14 part of the extension's cost. The primary rationale
15 for federal participation is that it markedly
16 increases, that it -- that is the extension,
17 markedly increases the efficiency of two key
18 east-west interstates, I-80 and I-78, by linking
19 them directly in a north-south direction.

20 I'm pleased that PennDOT has
21 presented the preliminary engineering draft
22 environmental impact statement to the public, and I
23 understand that final environmental clearance is
24 expected from the Federal Highway Administration at
25 the end of September.

1 I'd like to commend the private
2 citizen groups of Northampton County Development
3 Corporation for their leadership in support of the
4 building of the last 3.5 miles of Route 33. I
5 commend the Joint Planning Commission of Northampton
6 County and PennDOT, which jointly commissioned the
7 study of the potential economic impact of extending
8 Route 33 into Northampton County. This analysis
9 confirms the economic opportunity tasks and traffic
10 benefits which will flow and complete the missing
11 link in our Lehigh Valley highway network.

12 I also want to thank former
13 Northampton County Executive Gene Hartzell for his
14 substantial leadership over the years in this
15 project. And I look forward to working with current
16 county executive Jerry Siegfried.

17 I said in my opening comments that
18 the key issue facing Lehigh Valley citizens in the
19 the .90's is how to balance continued advancement of
20 economic opportunities and our quality of life. The
21 two should not be mutually exclusive, if we're
22 smart. John Dunn, the poet, said that no man is an
23 island entire of itself. Every man is a piece of
24 the continent, a part of the main.

25 Ladies and gentlemen, the same is

1 true for the boroughs, townships and cities of the
2 Lehigh Valley. Regional planning is not a luxury we
3 can only study. It's the way we have to go to
4 maintain the high quality of life we enjoy. Some
5 cities, townships and boroughs are already working
6 together on issues of mutual concern. I applaud
7 their efforts. I also strongly encourage our
8 municipalities to work together on items of regional
9 interest such as transportation, environment, parks
10 and recreation, drinking water, waste water
11 treatment, zoning.

12 The left hand needs to know what
13 the right hand is doing, and we don't have far to
14 look to see the profound effects of the lack of
15 regional cooperation in planning, what that's had on
16 the quality of life.

17 Just look at King of Prussia,
18 Pennsylvania, or other suburban Philadelphia areas
19 with wall to wall shopping malls and development.
20 Traffic sits bumper to bumper as people commute in
21 the morning, back to their homes at night. The
22 over-the-hill communities themselves have lost the
23 dimension, they've lost their environmental quality.

24 We have the opportunity to act now
25 to insure that the completion of Route 33 between

1 I-78 and 22 evolves in a way that impacts as
2 positively as possible the quality of life we enjoy,
3 that we wish to retain, that we wish to enhance, as
4 citizens of the Lehigh Valley. Thank you again for
5 the opportunity to testify this evening.

6 MR. KELLER: Charles Buss.

7 MR. BUSS: Good evening, ladies
8 and gentlemen. I have to agree with what
9 Congressman Ritter said. He took most of my
10 thunder, and I agree with him, the impact that the
11 completion of 33 to I-78 will link the two
12 interstates, I-80 and I-78, and will alleviate many
13 wrecks that could come from not having a link
14 between there. It would alleviate the traffic
15 through Phillipsburg and the traffic getting off of
16 22 to try to get to the various parts of the Lehigh
17 Valley.

18 I must agree with Congressman
19 Ritter that it is very important that Route 33 be
20 completed to I-78 as soon as possible. Thank you.

21 MR. KELLER: Bert Daday.

22 MR. DAVIS: Mr. Chairman, my name
23 is Bruce Davis. I'm an attorney and I am speaking
24 here as solicitor of the Northampton County
25 Development Corporation. The remarks that I will

1 offer in support of the Route 33 extension are
2 offered on behalf of the Northampton County
3 Development Corporation. Bert Daday had planned to
4 be here, but a conflict has delayed him.

5 The remarks are also being offered
6 on behalf of the executive director, Mike Dowd, of
7 the Two Rivers Chamber of Commerce, and a formal
8 statement in support of the Route 33 extension on
9 behalf of the Two Rivers Chamber of Commerce will be
10 submitted before the conclusion of the deadline for
11 public comment on March the 30th.

12 In behalf of the Northampton
13 County Development Corporation and TRCC, I would
14 like to endorse without reservation the statement
15 that was made by Congressman Ritter. His remarks
16 represent the views and the position of the
17 Development Corporation and TRCC.

18 I would also like to comment on
19 the initiative and the leadership of our Northampton
20 County Council, several of whom are here this
21 evening, including council president himself.

22 I'd like to comment and compliment
23 on the fact that the former county executive, Gene
24 Hartzell, has been the leadership of this effort for
25 the past eight years, and our current county

1 executive, Jerry Siegfried, has picked up the
2 leadership role without a step of hesitation.

3 I would also like to compliment
4 the representatives of Gannett Fleming who are here
5 this evening.

6 Ladies and gentlemen, this is the
7 draft of the environmental impact study and the 4(f)
8 study that is the basis of this public hearing. It
9 is a professionally-done study. It reflects the
10 experience and the competence of Gannett Fleming,
11 and they are to be complimented on the thoroughness
12 of their analysis of this proposed highway project.

13 We also need to recognize and
14 compliment the Joint Planning Commission, PennDOT,
15 the Federal Highway Administration, for their strong
16 roles in bringing us from a project that has been a
17 concept since 1964, since 1964 this has been a
18 concept, a recognized need, and after many, many
19 years of frustration and delay, it would appear that
20 we are on our way to seeing within the next matter
21 of years the completion of what Congressman Ritter
22 aptly characterized as the missing link.

23 I'd like to conclude my comments,
24 because a formal statement, Mr. Chairman, has been
25 presented for the record in behalf of the

1 Development Corporation. Those of us that have been
2 involved over the years in economic development in
3 our Lehigh Valley, in Northampton County, and in the
4 two townships, you come to one inescapable
5 conclusion. Economic growth is directly linked to
6 access to a highway network that is modern,
7 well-maintained, but most importantly, carefully
8 planned.

9 And it is the position of the
10 Northampton County Development Corporation and the
11 business and labor leaders that serve as well as the
12 government and the community leaders that serve on
13 the Development Corporation and the Chamber of
14 Commerce businesses that represent greater Easton,
15 that this highway upon its completion will give us a
16 unique opportunity to see meaningful, responsible,
17 compatible economic growth and creation of job
18 opportunities to take place in our valley and in our
19 county, and we compliment, Mr. Chairman, all that
20 has been done to bring us to nearly the completion
21 of phase one, and we look forward to phase two and
22 the final completion of the highway. Thank you.

23 MR. KELLER: Michael Dowd.

24 MR. DAVIS: My remarks were
25 offered also on behalf of Michael Dowd, who is the

1 executive director of the Two Rivers Chamber of
2 Commerce, Mr. Chairman.

3 MR. KELLER: Thank you.
4 Representative Rybak.

5 MR. RYBAK: Thank you, Mr.
6 Chairman and Tom Barilar with the District 5, our
7 contacts with PennDOT on the state level.

8 Ladies and gentlemen, I'm
9 delighted to be here. I'm particularly happy that
10 this is happening, but for a time in March of 1983,
11 what happened in the House chamber on that day, we
12 wouldn't be here to talk about Extension 33. It was
13 on that day at that time when the funding for I-78
14 was ripped from the capital fund budget. It was
15 Governor Casey and others in the valley that
16 contacted me, gave me the facts, and I got on the
17 house floor, debated the issue, and the funding was
18 restored and I-78 became a reality.

19 I-78 to Lehigh Valley economic
20 growth meant jobs, at a time when jobs were wanted.
21 That project generated 9,000 jobs that were direct,
22 that were spun off, that were the result of
23 businesses in the area. Now that that job, that
24 project is complete, there are 3,000 remaining jobs.

25 The same story will occur with

1 this extension. This extension will complete the
2 circle of the transportation system in this area,
3 the north to the south. It will add to the
4 reduction of congestion on 22 that has been a burden
5 to the drivers of that particular highway.

6 We can thank the PennDOT and the
7 Casey administration and the expert engineers that
8 went to work and put up a beautiful corridor into
9 New Jersey. And I'm very confident that when this
10 hearing is over, likewise this project is done,
11 we're going to have a top notch engineering project
12 that will serve this network, that will reduce
13 congestion on 22, that will attract businesses and
14 other people coming into the valley, because the
15 transportation system is just as important to this
16 area as our education system, as our culture, and
17 all the other things that make for a good, decent
18 life in Northampton County.

19 So I am particularly pleased to
20 add my support 100 percent and encourage the
21 expedition to expedite this project to its
22 completion, because it's what's needed, which is
23 what will make for a better life for all of us and
24 what will help the whole area. Thank you very much.
25 I will submit some written support of the project

1 before the deadline. Thank you.

2 MR. KELLER: Are there any other
3 people here present tonight who will present
4 testimony?

5 We've completed our formal public
6 hearing testimony period. Written comments will be
7 accepted by the Pennsylvania Department of
8 Transportation Engineering District 5-0 office
9 located at 1713 Lehigh Street, Allentown,
10 Pennsylvania, until March 30th, 1990.

11 As a final reminder, anyone who
12 wants to present private testimony, please see me at
13 the conclusion of the hearing. Thank you for
14 attending the hearing at this public hearing. Thank
15 you.

16 (Hearing concluded.)
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March 20, 1990

I hereby certify that the evidence
and proceedings are contained fully and accurately
in the notes taken by me of the testimony of the
within hearing, and that this is a correct
transcript of the same.

Wendy Engler Shade
Wendy Engler Shade, RPR, CM
Registered Professional Reporter
Notary Public

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**Pennsylvania Department of Transportation
Public Hearing--Proposed Extension of Pennsylvania Route 33
March 8, 1990
U.S. Rep. Don Ritter (PA-15)**

Thanks for the opportunity to appear tonight.

During the 1980s, the Lehigh Valley witnessed unprecedented economic growth. And while our economy still relies a lot on heavy manufacturing, during the past ten years it has diversified--branched out into the service economy; including high-paying legal, medical and financial services; plus high tech and light manufacturing. This economic diversity--and indeed, to quote recent reports in the local press, *globalization* of our economy -has created thousands of new jobs for our residents and helped us withstand the painful slimming and trimming of our heavy industries.

When the economy is doing well, it is only natural that we look at improving other factors impacting upon our quality of life. As citizens of the Lehigh Valley, we are fortunate to have a high quality of life. But we cannot just be satisfied to maintain the status quo, we must strive to improve it.

The key issue Lehigh Valley citizens face as we forge ahead toward the 21st century is how to achieve a balance between the increasing prosperity of our area, the side effects of such economic growth and our quality of life.

I am here tonight to voice my support for the "missing link" in our Lehigh Valley Highway infrastructure -- the extension of Route 33 between I-78 and Route 22. Many have billed the linking of these two major highways as a key element in the continued expansion of economic and job opportunities in the Lehigh Valley. I agree.

But the Route 33 extension is not just a means to build more industrial parks. We must look beyond the purely economic benefits of a new highway to analyze its

impact upon the Lehigh Valley environment and the quality of our daily lives. And it is on these two issues on which I would like to focus tonight.

Everyone in this room has at one time or another faced traffic congestion in the Lehigh Valley. One of our problems is that our highway system has poor access to the South and Philadelphia, and to the North and the Pocono mountains. The completion of Route 33 will alleviate much congestion by providing greater direct access to these areas for trucks and commuters.

Route 33 will substantially lower the number of trucks that presently pass through our smaller towns and communities as a result of not having a direct link between I-78 and Route 22. Plus neighborhood and overall air pollution should be lowered. In 1989, the Lehigh Valley exceeded federal clean air standards on 16 days. The primary problem is ozone pollution and the main sources of ozone-causing contaminants are car and truck emissions. Traffic congestion is a major cause of ozone pollution for two reasons: it takes longer for people to get to their destination and cars and trucks work less efficiently starting and stopping, thus causing more pollution.

By diverting traffic off the secondary roads running through our neighborhoods, people will spend less time on the roads and our vehicles will emit less ozone-producing hydrocarbons-- thus helping to improve the quality of the air we breathe.

The issue of wetlands is also touched by the completion of Route 33. President Bush has stated that there will be a "no net loss" of wetlands in his administration. I commend the JPC and PennDOT for offering two alternatives that disturb a minimum of wetlands.

Both alternatives also make a concerted effort to avoid disturbing the Hugh Moore Park and the National Heritage Corridor. As you know, I have a personal and major stake in seeing the Heritage Corridor lead the way in improving the Lehigh Valley environment. During the final design phase, PennDOT and the Federal Highway Administration will meet with the Heritage Corridor Commission to assure that the objectives of the Commission are not compromised by the project.

This area of Pennsylvania has a vibrant and growing economy offering new job opportunities to our workers and their families. But let's face it: we cannot sustain economic growth that is environmentally sound without improved infrastructure. By linking the corridors of Route 22 and Interstate 78, the Route 33 extension will help prevent our area from being overburdened by its own growth.

I see the Route 33 extension as a "partnership project" among the Federal government, the Commonwealth of Pennsylvania, local government and the private sector.

In the 101st Congress I have introduced HR 1758,

A Bill to Direct the Secretary of Transportation to carry out a Highway Demonstration Project to Extend Pennsylvania State Route 33 and to Provide a Limited Access Highway to Connect Interstate Routes I-78 and I-80.

Last November, I met with representatives of the Joint Planning Commission, the Route 33 Coalition and Federal Highway Administrator Tom Larson. We asked for his support to make the Route 33 extension a "demonstration project" in the next highway bill, which will come up in 1991 or 1992. I will continue to work to persevere, to press for inclusion of my route 33 legislation in the next highway bill to provide federal funding for part of the extension's costs.

The primary rationale for federal participation is that it markedly increases the efficiency of two key east-west interstates, I-80 and I-78 by linking them in a north-south direction.

I am pleased that PennDOT has presented the preliminary engineering and draft environmental impact statement to the public and I understand that final environmental clearance is expected from the Federal Highway Administration at the end of September.

I'd like to commend the private citizen groups and the Northampton County Development Corporation for their leadership in support of building the last 3.5 miles of Route 33.

I commend the Joint Planning Commission, Northampton County and PennDOT which jointly commissioned the study of the potential economic impact of extending the Route 33 corridor in Northampton County. This analysis confirms the economic opportunity, tax and traffic benefits which will flow from completing this "missing link" in our Lehigh Valley Highway network.

I want to thank former Northampton County Executive Gene Hartzell for his leadership over the years on this project and I look forward to working with current county executive Jerry Seyfried.

I said in my opening comments that the key issue facing Lehigh Valley citizens in the 1990s is how to balance continued enhancement of economic opportunities and our quality of life. The two should not be mutually exclusive... If we're smart.

John Donne the poet said:

No man is an island, entire of itself; every man is a piece of the continent, a part of the main...

The same is true for the boroughs, townships and cities in the Lehigh Valley. Regional planning is not a luxury we can only study; it is the way we have to go to maintain the high quality of life we enjoy. Some cities, townships and boroughs are already working together on issues of mutual concern and I applaud their efforts. I strongly encourage our municipalities to work together on items of regional interest: transportation, environment, parks and recreation, drinking water, waste-water treatment and zoning.

The left hand needs to know what the right hand is doing. And we don't have far to look to see the profound effects the lack of regional cooperation and planning has on the quality of life: just look at King of Prussia, Pennsylvania or other suburban Philadelphia areas with wall-to-wall shopping malls and development.

Traffic sits bumper to bumper as people commute in the morning and back to their homes at night. And the over-developed communities themselves have lost their human dimension and environmental quality.

We have the opportunity to act now to insure that the completion of Route 33 between I-78 and Route 22 evolves in a way that impacts as positively as possible on that high quality of life that we enjoy that we wish to retain and that we wish to enhance as citizens of the Lehigh Valley.

Thank you again for the opportunity to appear this evening.

Law Offices of
MALONEY, DANYI, DAVIS AND DANYI

EAST BROAD AND ELM STREETS

P. O. BOX 1279

BETHLEHEM, PENNSYLVANIA 18016

TELEPHONE (215) 691-1510

THOMAS J. MALONEY
FRANK J. DANYI, JR., P.C.
BRUCE E. DAVIS
KEVIN FRANK DANYI

March 26, 1990

Mr. P. Thomas Barilar, P. E.
District Engineer
Pa. Department of Transportation
1713 Lehigh Street
Allentown, PA 18103

Re: Route 33 Extension
Environmental Impact Statement
Submittal For Record

Dear Mr. Barilar:

This letter requests that the following document be included as part of the record for the Route 33 Extension E.I.S.:

Lower Saucon Township, Pennsylvania
Resolution No. 12-90
Adopted and Approved: 21 February 1990.

A copy of the Resolution is enclosed.

Sincerely,



Bruce E. Davis, Esq.
Northampton County
Development Corporation

BED:slc
Encl.

cc: Mr. James McCann, Township Manager - w/o encl.
Lower Saucon Township
R. D. # 3 - Town Hall
Bethlehem, PA 18015

RESOLUTION NO. 12-90

AUTHORIZING THE PREPARATION OF AN OFFICIAL MAP

WHEREAS, the Right-Of-Way Committee for Route 33 is interested in preserving the Route 33 corridor for the extension of Route 33; and

WHEREAS, the adoption of an official map in accordance with the provisions of the Pennsylvania Municipalities Planning Code would be an effective means for preserving the right-of-way; and

WHEREAS, the Joint Planning Commission and Northampton County presently has the appropriate information in order to prepare an official map; and

WHEREAS, THE LOWER SAUCON TOWNSHIP COUNCIL desires to have this official map prepared by the Joint Planning Commission and Northampton County.

NOW, THEREFORE BE IT, AND IT IS HEREBY RESOLVED BY THE LOWER SAUCON TOWNSHIP COUNCIL, County of Northampton, and Commonwealth of Pennsylvania:

SECTION:

That the Joint Planning Commission and/or Northampton County be hereby requested by the LOWER SAUCON TOWNSHIP COUNCIL to prepare the area for the Route 33 corridor for an official map designation to be considered by the Board of Commissioners.

ADOPTED AND APPROVED THIS 21ST DAY OF FEBRUARY, 1990 AT A REGULAR PUBLIC MEETING.

ATTEST:

Jamie McComa
SECRETARY

LOWER SAUCON TOWNSHIP

L. O. Otwin
VICE PRESIDENT OF COUNCIL



NCDC *Northampton County
Development Corporation*

STATEMENT OF
ROBERT P. DADAY
IN BEHALF OF NORTHAMPTON COUNTY DEVELOPMENT CORPORATION
AND
THE ROUTE 33 CONNECTION COALITION
BEFORE THE
PENNDOT/FHWA PUBLIC HEARING
ROUTE 33 EXTENSION

MARCH 8, 1990

7:00 P.M.

EAST HILLS MIDDLE SCHOOL

BETHLEHEM, PENNSYLVANIA

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157 S. 4th Street, Easton, Pennsylvania 18042

Telephone (215) 253-4213

My name is ROBERT P. DADAY. I am Special Assistant to the Vice President for Community Affairs, Pennsylvania Power and Light Company. My statement is in behalf of the Northampton County Development Corporation (NCDC). I am a member of the NCDC Executive committee. I am also President of the Route 33 Connection Coalition, Inc., a not-for-profit Pennsylvania Corporation.

The Northampton County Development Corporation (NCDC), founded in 1983, is dedicated to bringing new vitality to the economy of Northampton County. We assist local firms with expansions. NCDC helps out-of-state businesses to open their doors in our County. NCDC facilitates new jobs and new revenue streams that increase the tax base and stimulate employment in the Lehigh Valley.

The Route 33 Connection Coalition, incorporated in 1986, is committed to the 3.5 mile extension of Route 33 to connect Interstate Route I-78 and I-80.

The members of NCDC and the Route 33 Connection Coalition includes government and community leaders. Both NCDC and the Coalition endorse completion of the Route 33 "missing link."

The economic base of Northampton County has changed dramatically during the last 20 years. For generations, our County's economy relied heavily on the manufacturing sector. Four basic industries played major roles in our area's economic growth:

- o basic steel
- o cement
- o apparel, garment & needle crafts
- o truck manufacturing and assembly

Each of these industries have a significant involvement in the Route 33 extension. For example, cement and steel companies within our region directly benefit from increases in the construction and rehabilitation of our Commonwealth's network of highways, including the Route 33 extension. Each industry must transport its goods over our network of highways.

Northampton County is like other regions of the United States. Economic improvement requires growth. To achieve growth, there must be economic development. Job creation and job preservation depends upon economic development.

A very important element in economic development efforts is INFRASTRUCTURE. Every existing and every new employer is concerned about the existence and condition of our roads, bridges, mass transit, sewage and waste treatment facilities.

Quite simply: business and industry locate and expand where needed infrastructure is available. Without adequate infrastructure, little if any economic development will take place.

In Northampton County, we are faced with three infrastructure issues:

1. sewers
2. solid waste
3. roads

I want to focus on the third essential "building block" for economic growth: roads.

A modern and well-maintained highway network is essential if Pennsylvania and the Lehigh Valley are to remain attractive to new businesses and new jobs.

Numerous public and private surveys and studies support four (4) important transportation points:

- o Business expansion is closely tied to high-speed highways
- o Economic growth in the Mid-Atlantic states is moving steadily away from the New York-Newark-Philadelphia corridor towards formerly suburban areas, including the Lehigh Valley.

- o Private employment during the next decade will follow modern highway networks.
- o The only common trait shared by most new and expanding businesses is their proximity to a high-speed transportation system.

As Northampton County and the Lehigh Valley have grown, the existing highway network has been strained. While several major arteries have been built, improved, or are planned for improvement, such as Route 22, I-78, and Route 512, the local roads serving business and industry in Northampton County are, in most cases the same two-lane roads designed and built half a century ago. These roads must be improved, if we are to encourage future growth. Many County roads are now at or approaching capacity. The Route 33 "missing link" must be closed to improve our highway system.

The completion of Route 33 to connect with I-78 will result in a higher quality of life and will attract a generally higher caliber work force. But, a failure to complete this project will result in a disinvestment in Northampton County.

I would stress three important facts.

1. There are only two (2) I-78 interchanges in Northampton County.
2. Both of the Northampton County/I-78 interchanges are located in areas not conducive to significant economic development.
3. Completion of the Route 33 "missing link" facilitates economic development in the heartland of Northampton County and the Lehigh Valley.

Recently, the NCDC Planning Committee updated its 5-year plan. This NCDC plan -- the development of which received important help from Mike Kaiser and his able Joint Planning Commission staff --- cited several important truism's regarding our County's potentials and problems:

Potentials

"Proximity to Markets" is the primary advantage of Northampton County as a location for business and industry. The County is well-situated with respect to major highway access to the important East Coast markets, provided the Route 33 extension is built.

The County is within a one-day truck drive to one-third of the U. S. Market.

Problems

According to area employers, the NCDC staff, and other economic development professionals in Northampton County, the primary problems to be overcome involve development of adequate infrastructure to serve industrial sites in the County. Of particular importance is highway access.

In order to capitalize on its locational advantages, Northampton County must assure adequate highway access to prime industrial sites. There are two aspects to this problem. The first is regional access to the County; the second is local access to industrial sites.

Completion of the Route 33 "missing link" helps satisfy both these needs."

ROUTE 33 EXTENSION AND ITS ECONOMIC DEVELOPMENT POTENTIAL

In summary, I would make these points:

1. The link-up of two Interstate highways would foster significant economic development by providing high speed, limited access motor vehicle transportation.

2. The link-up of two Interstate highways would appreciably decrease the use of local roads by through traffic, particularly by heavy duty trucks and vans, thereby promoting passenger car safety.

3. The link-up of two Interstate highways would facilitate intra-regional and inter-regional travel time, thereby promoting energy conservation, reducing transportation costs, and improving air quality.

4. The link-up of two Interstate highways would confirm that economic development projects in a multi-county, bi-state area can be financed through a partnership involving federal, state and local governments.

5. The Joint Planning Commission of Lehigh-Northampton Counties recommended construction of the Route 33 connection as early as 1964. The Lehigh Valley Transportation Study's first transportation plan also recognized the need for the connection and identified the road as a "high priority" four-lane expressway in 1972. In 1984, PennDOT hired the firm of McCormick, Taylor & Associates to update the studies. McCormick, Taylor studies confirmed the need for this link-up. Finally, recent PennDOT/Northampton County economic and marketing studies confirm the prospects on a beneficial cost/benefit ratio.

The position of NCDC and the Route 33 Coalition can be simply stated:

In order for the Lehigh Valley and for Northampton County to realize its potential for economic growth in the next several decades, the Route 33 extension must be build as quickly as funding permits.

Thank you.

Northampton County
Traffic Route 33 Extension
Public Hearing: March 8, 1990
Public Hearing Transcript
Analysis of Testimony

Four individuals presented testimony at the Hearing. The analysis of their testimony is as follows:

Presenter Number 1: U.S. Representative Don Ritter presented testimony on the following issues:

- A. Endorsed the need to complete T.R. 33 between I-78 and T.R. 22. The linking of these two major highways as a key element in the continued expansion of economic and job opportunities in the Lehigh Valley.
- B. Completion of Route 33 will alleviate congestion on local roadways like T.R. 22.
- C. This project will help to improve the regional air quality by diverting traffic off the secondary roads.
- D. This project will have minimal impact on wetlands.
- E. The project as planned will have minimal impact on the Hugh Moore Park and the National Heritage Corridor. During the final design phase, PennDOT and FHWA will meet with the Heritage Corridor Commission to assure the objectives of the Commission are not compromised by the project.
- F. This project is a needed infrastructure improvement in the Lehigh Valley to accommodate ongoing economic growth.
- G. Encourage continued regional planning to address emerging development issues in the Lehigh Valley.

Analysis of Testimony

Congressman Ritter presented favorable testimony in support of this project. As requested, PennDOT and FHWA will continue to coordinate with the National Heritage Corridor Commission to insure that the plans, specifications and estimates for the construction of T.R. 33 includes required mitigation measures which have been approved by the National Heritage Corridor Commission.

Presenter Number Two: Mr. Charles Buss presented testimony in favor of the completion of the project and be urged completion of the project in an expeditious fashion.

Analysis of Testimony:

No further follow-up action is required at this time on this testimony.

Presenter Number Three: Mr. Bruce Davis, Solicitor Northampton County Development Corporation presented testimony which endorsed the need to complete the T.R. 33 project.

Analysis of Testimony

No further follow-up action is required at this time on the content of this testimony.

Presenter Number Four: Pennsylvania State Representative William Rybak presented testimony which endorsed the need to complete this project.

Analysis of Testimony

No further follow-up action is required at this time on the contents of this testimony.

APPENDIX C

**TRANSCRIPT FROM PUBLIC HEARING HELD ON
OCTOBER 3, 1991**

.....
**COMMONWEALTH OF PENNSYLVANIA
ENGINEERING DISTRICT 5-0**

**TRAFFIC ROUTE 33 PUBLIC MEETING
CONDUCTED THURSDAY, OCTOBER 3, 1991**
.....

A Public Meeting was conducted on Thursday, October 3, 1991 at the East Hills Middle School, Bethlehem, Northampton County.

There were approximately 108 people in attendance.

Plans were on display prior to the presentation (5:00pm - 7:00pm).

As visitors arrived they were asked to sign in (copy attached). They were also provided with a pamphlet indicating the various alternatives which have been studied (and also a brief history of the project). An Agenda/Questionnaire was also distributed. Individuals were requested to select the Alternative of their choice and return selection to the recording secretary. (copy attached)

.....
The formal presentation (which would include an informal question/answer session) was scheduled for 7:00pm - 9:00pm.
.....

Robert J. Keller, PADOT 5-0, District Environmental Manager, brought the presentation to order at 7:00pm. He began the presentation with an introduction of the consultants and PADOT project engineer:

Charles Bingham, Gannett Fleming Inc., Project Manager, to provide the Project Overview.

Michael Zizan, Skelly and Loy, Farmlands Specialist, to provide the Farmlands Evaluation.

Jack Smyth, Boles Smyth, Inc., Alternatives Analyst, to provide the Alternative Analysis.

J. Jack Porter, PADOT 5-0, Project Manager, to comment on Department Policy only.

Robert J. Keller, PADOT 5-0, Environmental Manager, to comment on Department Policy only.

.....
Robert Keller proceeded to review the history of the project.

**COMMONWEALTH OF PENNSYLVANIA
ENGINEERING DISTRICT 5-0
TRAFFIC ROUTE 33 PUBLIC MEETING
CONDUCTED THURSDAY, OCTOBER 3, 1991
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Robert Keller explained that the specific purpose of the meeting was to provide the public with an update on the activities of PADOT relative to the TR 33 Extension project and to obtain input from the public on the 2 alternatives developed since PADOT undertook an extensive re-evaluation of the study area.

Questions, comments, and statements concerning the proposed alternatives would be taken and included in the EIS for presentation to the Agriculture Land Condemnation Board. (For those wishing to give a private testimony arrangements would be made if requested.)

Charles Bingham, Gannett Fleming Inc., Project Engineer, provided a brief overview of the previous efforts relative to TR 33. In August 1987 a corridor was identified to extend existing 22 South to I-78 East. Charles referred the public to the pamphlet which contained an overview map of all alternatives studied. He explained that the initial comment from the Agriculture Land Condemnation Board was that we did not do an extensive enough evaluation on the impact the project would have on current farmland operations.

Michael Zizan, Skelly and Loy, Inc., Farmlands Specialist. There was no way to definitely avoid all farmlands, however, certain alternatives didn't slice the farmlands into small pieces of property. There are presently 5 productive agricultural operations.

Jack Smyth, Boles Smyth, Inc., Alternatives Analyst, provided a brief review of the alternatives which were studied for this project.

This highway is designed for speeds of 70 MPH for posting at 55 MPH, it is a totally limited access highway which means you can only get on this highway by entering on an interchange at I-78 and TR 22. There is also a proposed full movement interchange at Freemansburg Avenue and William Penn Highway.

When we began to re-study the alignments for TR 33, we had 12 alignments and "widdled" them down to 2. Jack referred the public to the matrix located on the second last page of the pamphlet. The matrix was designed to indicate the various elements coming into play when evaluating the various alignments.

COMMONWEALTH OF PENNSYLVANIA
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TRAFFIC ROUTE 33 PUBLIC MEETING
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Jack further explained that the selected alignment had to meet certain safety requirements for a modern expressway:

- (1) Designed for 70 MPH and posting for 55 MPH
- (2) Minimal impact to the farmland...not just in acreage but also in operations.
- (3) Looking to avoid the historical resources in the corridor.
(Specifically for the TR 33 project Charlie Weikert and Joe Emrick properties.)
- (4) Looking at protecting the community resources, parks, enterprises, and the Township's future plans are taken into consideration for the specific area.

The numbering system for the various alternatives was in the order the various study alternatives occurred.

When looking at the various alternatives, the above mentioned items were taken into consideration. After all these factors were considered, Alternative No. 3 was selected as a quality alternative which does all the necessary jobs from an engineering point of view. The interchange will work very well. Some of the design in this area was shrunk to further minimize impacts on the farmlands and historical resources.

The difference between Alternative Nos. 3 and 4: The yellow indicator line for Alternative No. 3 goes to the West side and Alternative No. 4 goes to the East side. You will notice No. 4 is called modified - the modification is that we minimized impact on the residential area. - Essentially, however, there is no change. They all go under Freemansburg Avenue which is a change from the original Alternative Nos. 1 and 2. By compressing the highway, farmland impact was minimized. All interchanges are full movement interchanges which means you can get to or go to any direction. These go over William Penn Highway.

Robert Keller brought the presentation to a close by directing those in attendance to the conclusion statement located on the last page of the pamphlet. (The conclusion indicates that Alternative No. 3 is slightly superior to Alternative No. 4 Modified.) After this meeting, the public input will be evaluated, a letter will be prepared indicating the recommended alignment and presented to the Ag Board. The Final EIS will be forwarded to FHWA.

QUESTIONS/ANSWERS

Robert J. Keller, PADOT 5-0, Environmental Manager, and J. Jack Porter, PADOT 5-0, Project Manager, provided answers regarding Department Policy only.

Technical questions were answered by the consultants. (Charles Bingham, Gannett Fleming, Inc., Michael Zizan, Skelly and Loy, Inc., and Jack Smyth, Boles Smyth, Inc.)

- o What is the status of the No Build Alternative?

Robert Keller: Whenever the Department plans on doing any type of environmental action, we always consider the No Build as a benchmark to discuss what will happen if we do nothing. That means no new alignment between I-78/TR 22 which means all traffic desiring to use TR 33 would have to travel an alternate route. One of the geographic features was to get the motorist across the river. Therefore, the motorist would have to cross an existing bridge and coming from the I-78/TR 22 area it would mean going to Easton over the Old Philadelphia Bridge or the TR 412 Interchange in Hellertown. The major crossings used for an analysis were the Third Street Bridge, The Glendon Crossing, The Minsi Trail Bridge, and the Hill-to-Hill Bridge. The No Build Alternative would fail under the projected traffic counts.

- o Which route would have the least agricultural impact on the agricultural community?

Michael Zizan: Alternative Nos. 3 and 4 are very similar. However, Alternative No. 4 would require 2 acres less in direct take of productive agricultural land.

- o In terms of taking property, how does the residential displacement enter into this? Residential takings are not indicated on the plan for Alternative No. 3.

Robert Keller: Before we make the final decision on an alignment, PADOT will employ a balance perspective approach. The Department will attempt to balance the impact of the proposed action on the physical, natural and human environment. PADOT is mandated by the National Environmental Policy Act to use an interdisciplinary approach when we make a decision on a highway location. All decisions on highway locations are made in conjunction with the FHWA. PADOT refers to this process as a balanced decision making policy.

Jack Porter. There are no residential relocations on Alternative No. 3.

QUESTIONS/ANSWERS CONTINUED

- o What is the present average daily traffic count on Hope Road and what is the anticipated average daily traffic count to be in the future?

Jack Smyth: These are the figures out of the Draft EIS. The ADT in 1985 was 225 vehicles in the day. We are guessing that it is currently around 400. The design year used was 2010, if you did nothing, the ADT would be 900 vehicles per day. If you add one of the build alternatives it would be 1300 which is not a significant increase. This is not a state road. Hopeville Road is a state road.

- o Are you saying that right now Hope Road is designed for a low traffic count, so if it doesn't get reconstructed the amount of cars will not increase?

Jack Smyth: This analogy really didn't have anything to do with whether the road was curved or straight. The actual amount of traffic desiring to use this road, regardless of the geometry, would be around 1300 in the day during the year 2010. Again the numbers are from the Draft EIS.

- o What's the need for 2 interchanges on this portion of TR 33 (Freemansburg Avenue and William Penn Highway) and how much is the roadway going to be widened with the project? What about William Penn Highway and Freemansburg Avenue?

Charles Bingham: A traffic evaluation placing the interchange only at William Penn Highway and projecting the traffic and looking at the interchange and the William Penn Highway would indicate that if there is only 1 interchange, traffic using this highway would become local traffic. The 2 interchanges balances the traffic.

Robert Keller: The widening of the road within the area of construction will be to carry the projected traffic to handle the ADT's.

Robert Keller: Right now on the Twelve Year Program we do not have any further projects planned on these roads...that's the down-side. The positive-side is that we update this program every 2 years. After this project is permanent, we will be able to work with the Regional Planners to incorporate widening projects into the program.

QUESTIONS/ANSWERS CONTINUED

- o Mark Stein, spokes person for residents of the Kings Crossing Development, presented several questions. A letter was also provided, dated October 3, 1991, for incorporation into the minutes and the Final EIS. The residents of Kings Crossing Development wanted to go on record selecting Alternative No. 3 since impacts from the furthestmost west alternative, in their opinion, would be of a lesser impact to their community. (Mr. Stein circulated copies of their letter.) Mr. Stein also requested that the residents of Kings Crossing Development be invited to all future meetings concerning this project.
- o What do the residents do concerning noise pollution? What if the Department claims the noise levels are acceptable and the residents claim they are not?

Robert Keller: When the Department plans a project, we do an Environmental Impact Study and determine where a noise impact will occur with the placement of a new highway. The Department takes ambient noise level studies. A more intensive evaluation will be done prior to forwarding the project to the FHWA. The evaluation would include where noise abatement might be needed or those areas that might need additional studies. During the final design process, we will meet individually with the affected community and determine what type of abatement will be used. This is the Department Policy. Our Department is committed to the noise issue and will work with the residents to reach an amicable resolution. If residents are not pleased with the results, the residents may contact the local PADOT office. Specific complaints regarding noise levels are looked at on an individual basis.

- o What precautions are being taken to minimize local air pollution levels? Their letter indicates Bethlehem Steel Coke Works is installing new air pollution control equipment.

Robert Keller: As part of the Draft EIS Study, the Department performed a 2 stage air quality analysis. The first study was a microscale air quality analysis. This study addressed the direct impact of the highway on localized carbon monoxide levels. This study concluded that the TR 33 project was well within the National Ambient Air Quality Standards. The second study addressed the air quality issue from a mesoscale basis. This analysis looked at the impact on a regional basis and the results of the study indicated that this project would meet the intent of the State's Air Implementation Plan. It must be noted that the air quality analyses are based on worst case scenario.

Robert Keller: Not able to comment on the Bethlehem Steel Coke Works air pollution equipment.

QUESTIONS/ANSWERS CONTINUED

- o Since extreme efforts are being taken to preserve the agriculture use of the land, what assurances will be made concerning the continued farming of this land in the future?

The issue is the Act 100 procedure that PADOT is mandated to comply with concerning the acquisition of agricultural land. PADOT must get approval from the Agriculture Land Condemnation Board to condemn this land before we are able to acquire the property.

- o Mr. Stein stated that since extreme efforts are being taken to preserve this agricultural land but there is no guarantee that the land will remain productive agricultural land - the Act seems to be out of balance with the concerns and needs of other residents. The property is presently zoned for commercial, light industrial and office which is not to say this could not become an office industrial park, etc.

Robert Keller: Restated that information is provided to the Agricultural Land Condemnation Board by individuals providing testimony.

- o Mr. Stein expressed the residents' concern regarding precautions that will be taken to ensure Ohio Street will remain "residential" and not become a thoroughfare.

Charles Bingham: Would there be a desire to use the local road? If there is a desire to utilize a local road, Hope Road is really the local road which would most likely be utilized. I can't say categorically that there would be no desire to do so. This is why there are 2 interchanges. With only 1 interchange all would have the likelihood of taking the local roads, however, with 2 interchanges the desire is greatly minimized. The numbers which were projected for the area would indicate that the only way the ADT would increase drastically would be if there was some kind of detour to get around the highway.

QUESTIONS/ANSWERS CONTINUED

- o Mr. Stein restated that the concern of the residents was the risk of property and lives. - Even if it were just the placement of stop signs between these local intersections. The farther we get away from the historical, agricultural restrictions the access to the highway becomes a greater risk.

Charles Bingham: Explained that this is not a state highway. On the state highway there are more limitations as to what we can do. This roadway is a local road. Therefore, the Township has jurisdiction over that particular road.

Robert Keller: PADOT highways are built to meet current design safety standards. There is no compromise when it comes to safety. Safety is our Number 1 priority.

- o The constraints imposed on the project by 2 alternatives dictate use of half-diamond and half-clover interchanges. The complexity of the interchanges will make access to and from the highway more dangerous--risking lives and property.

Charles Bingham: The reason a diamond configuration is planned is because it is safer and more efficient at moving traffic with signals. The diamond is not a low grade design, we are able to get more traffic through this area as opposed to the clover interchange. The clover design, many times, will create a weaving problem. PADOT is just as concerned for the safety of lives as the citizens.

Robert Keller: Risk is minimal because PADOT builds safe highways.

- o Lack of complete project funding? How will the deficit be offset?

Jack Porter: The funding is provided through the Twelve Year Program. We do not have a commitment to all funds on the Two Year Update of the Twelve Year Program, but are hoping to have the additional funds. The TR 33 Coalition is a possible source of funds.

QUESTIONS/ANSWERS CONTINUED

- o Mr. Stein said if we don't have the funds committed, then it will be funded through tax increases and the residents of Kings Crossing do not want to be carrying the burden for this project.

Thomas Kotay: Explained that he handles major projects across the Commonwealth. Since the Federal Transportation Act has not been approved, we have no federal funding at this time. We do not know what our federal dollar allocation will be until Congress and the President reach a decision. Thomas further explained that Representative Ritter is trying to get special funds for this project which might mean additional funds. \$5.6 million has been committed to move forward with the project once the EIS is finished. Thomas said that the residents could help keep costs down by cooperating with the Commonwealth and providing free release of property for right-of-way. Thomas also explained the different scenarios of funding from the federal government...90% federal/10% state, 75% federal/25% state but of course, with no budget in place, we do not know what the scenario will be. Thomas concluded with "I know that really doesn't answer your question, but we are not able to answer your question because we simply do not know."

- o Every year the project cost increases. What is the project cost going to be when it goes to construction? Is there a guarantee what the price will be? The residents don't want additional costs. Has it ever been considered to call this an interstate highway?

Thomas Kotay: With the Twelve Year Program, every 2 years we update the costs. The \$96 million figure is estimated out to the year we are planning for construction. You are right, costs could actually escalate. However, as the cost of oil comes down, figures coming in on the bids are actually decreasing. We work with a dynamic program, but a definite price cannot be guaranteed. Yes, years ago, it was considered to call this an interstate highway, but with Congress there's no projected future and the interstate funding could very well end in the near future...Again, that's up to Congress and the President to decide.

- o Mr. Stein asked about funding from the Highway Trust Fund.

Thomas Kotay: Explained that these funds have been utilized to reduce the National deficit nation-wide.

Most projects in this stage do not have full funding. The most important thing to get the project funding is to get the momentum and support required to get the project going. - That is the most opportune time to get the funding.

QUESTIONS/ANSWERS CONTINUED

- o What is the Noise barrier effectiveness?

Robert Keller: When we study a community, we enter all points of the community into the computer and then determine where the noise will be coming from. To make a barrier effective you need to have it at the noise impact area.

- o Why are access roads from the Township onto the proposed TR 33 highway not indicated on the plans? These access roads would bring heavy traffic off of the highway - why hasn't our Township addressed this?

Charles Bingham: The alternative had half interchange and a half interchange with access roads. The lay-out now doesn't address that new industrial park or where a tractor trailer would turn.

- o How did they (ALCAB) obtain their balance of fairness between the community residents and the few farmers?

Robert Keller: When the Department went before the Agriculture Land Condemnation Board, we had to put forth what we thought was a balanced approach. I am not a member of ALCAB, I cannot speak on their behalf, I can only tell you the facts. Their decision was that PADOT failed to do a reasonable assessment of the potential to continue farming operations in the project area. They did not agree with our recommendation. Also, PADOT failed to provide adequate documentation to the Board on why the Department cannot condemn the Historic farmstead.

- o What is the appeals process to the Ag Board's initial decision?

Robert Keller: Not able to respond to this legal issue.

All I can tell you is that the decision was rendered on May 8, 1990. PADOT selected to not appeal their decision (in the 30 day time period allotted).

- o Are there any other alternatives besides Alternative Nos. 3 and 4?

Robert Keller: PADOT recommends Alternative Nos. 3 and 4 as the best possible alignments to meet all the necessary requirements for this type of highway.

- o What's the point of tonight's meeting?

Robert Keller: For public input.

QUESTIONS/ANSWERS CONTINUED

- o Why wasn't the public notified of the 30 days time to appeal the Ag Board's decision?

Robert Keller: The Department selected not to appeal their decision.

- o Can't the appeals process be revisited since the public was not made aware of the meeting? Can't we voice our concerns to the Ag Board? Many of the present residents didn't reside in this community when the first meeting was held.

Robert Keller: Not able to respond to this issue because it deals with legalities.

The residents were referred to the map which indicated the alternative alignments. Robert explained that a highway cannot be built without balancing the impacts against the historical sites on park and farm lands. It would be deceitful if we were to say we can re-visit Alternative No. 1.

Thomas Kotay: The Appeals Process must be worked with the Ag Board and the Ag Board issued a decision on the Act 100. It took us 18 months to do this analysis and the Ag Board then came back to us in 30 days and gave us 30 days to appeal their decision. We selected not to appeal because in order to appeal, we needed more than 30 days time to gather information for an appeal. Thomas further explained that he was almost certain this information was in the local newspaper (May 1990).

- o The problem was that at the first meeting there were only 10 people in attendance. Now there are 100! Don't you think we should go back to the Ag Board?

Thomas Kotay: Explained that we will go back to the Ag Board and show all the alternatives and all the public input and concern. The Ag Board will review the new information and make their decision.

- o Mr. Stein expressed his concern that the public wasn't made aware of the Appeals Process and if the residents of Kings Crossing are offered the opportunity to go before the Ag Board, many of them would be glad to do so.
- o Does PADOT's recommendation of Alternative No. 3 have to go before the Ag Board?

Robert Keller: Yes.

QUESTIONS/ANSWERS CONTINUED

- o Is there any indication from the Ag Board concerning Alternative No. 3 or Alternative No. 4? What makes PADOT think the Ag Board will prefer Alternative No. 3?

Robert Keller: The Ag Board wanted to learn how many of the farms were operating in the study area. That was the purpose of what we did. One of the primary reasons we did this study was to find out what was taking place. We actually had the consultant go with us to farms and asked what crops they raised, what type of equipment they used, where they marketed the product, etc. The results of the work sites are reflected in the matrix on the second last page of the pamphlet. This study will be forwarded to the Ag Board so that they would know the status of our findings. We wanted to balance the impacts between the entire farming community. We also wanted to remain in the original study area. Whenever you start a new alignment, you enter new problems.

- o Do you feel this study satisfies the Ag Board? Did PADOT fully evaluate their concerns?

Robert Keller: The PA Historical Commission Agency is responsible to over-see the historical district. We asked them to re-evaluate if the building was eligible for the register. We did a comprehensive survey and advised all farming districts that they were eligible for the entity listing on the historical eligibility register. The building is considered very significant because it reflected a type of farming technology regarding the way the structure was built. We can't disagree. We gave them the information, they evaluated it, and we must move on. We did ask the Historical Commission if we could relocate the historical building, but they said that was not an option because the building was significant also because of the area it was built at. We have letters to this affect. When we put a property on the register, we will do a study. The agency doing the action provides the information to the Ag Board...that's the law. The Museum Commission did not have a problem with Alternative No. 1, the Ag Board did.

The reason we think Alternative No. 3 will be better is because the farmers operating within the study area are large scale operators and with the previous alignments we segregated many of these large farming operations. Their farming productions will be able to continue almost as they have before.

QUESTIONS/ANSWERS CONTINUED

- o What happened to Alternative No. 5?

Charles Bingham: This alignment is not good from an operational view point. This alternative has some options that go across on a different alignment with I-78. The increase in the alignment was very significant, therefore, very costly.

- o What is the effectiveness of the noise barriers?

Robert Keller: When we model this community the geometric configuration of the highway will be put into the computer and will determine where the most serious potential for noise will be. To make an effective barrier you have to control the flanking noise area. Therefore, the barrier must be designed to mitigate the noise.

- o What is the cost effectiveness of Alternative No. 3 and Alternative No. 4?

Jack Smyth: If you move west of the river, the valley gets wider. Alternative No. 3 is approximately 1750 ft. and Alternative No. 4 is approximately 2250 ft. Both alternatives cross at the same height. The cost is similar. When a bridge span is longer the cost increase is significant, but when roadway length is increased, the cost increase isn't very great. The cost difference between Alternative Nos. 3 and 4 is approximately a half million dollars.

- o Is a toll plaza facility necessary? Mr. Stein felt there were no other state highways that had toll facilities. He considered I-78 as a federal highway. Why should we have a toll bridge when we would be contributing to it every day, with the increased gasoline prices and taxes we (locals) shouldn't have to pay tolls also.

- o Economic impact on the farmers compared to the entire community...since when does a few votes out-weight the votes of an entire community? Has the Ag Board ignored us? If we go with Alternative No. 4, which we do not want, what's the impact of the value of our homes?

Robert Keller: Not able to respond to economic concerns.

The Department hasn't made a decision with Alternative No. 4. We had a study done to provide us with technical information. We recognize there will be environmental and economic impacts but these impacts will be lessened by selecting Alternative No. 3.

COMMONWEALTH OF PENNSYLVANIA
ENGINEERING DISTRICT 5-0
TRAFFIC ROUTE 33 PUBLIC MEETING
CONDUCTED THURSDAY, OCTOBER 3, 1991
PAGE NO. 14

The TR 33 Coalition submitted a letter endorsing the need for the extension of TR 33 for inclusion with the Public Meeting minutes.

The formal question/answer period was ended approximately 9:30pm. The public in attendance were reminded to return their questionnaires to the secretary recording the minutes of the meeting prior to their departure.

PADOT representatives and the consultants remained to answer any questions on an individual basis. The individual question/answer session lasted until approximately 10:00pm.

050/LMB
33PUBMTG.DOC

Attachment(s)

MINUTES REVIEWED AND APPROVED BY ROBERT J. KELLER AND J. JACK PORTER 10/18/91



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
BOX 1026
HARRISBURG, PENNSYLVANIA 17108-1026

June 14, 1991

Fred W. Bowser, Director
Bureau of Design
Department of Transportation
1118 Transportation & Safety Bldg.
Harrisburg, PA 17120

TO: KURT CARR, CHIEF
USE BHP REFERENCE

Re: ER 88-0224-095-P
Northampton County
S.R. 0033, Sections
A09 & A10, PA 33
Extension Project:
Memo Re D. Bayer Farm

Dear Mr. Bowser:

The above named project has been reviewed by the Bureau for Historic Preservation (the State Historic Preservation Office) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

We are in receipt of your memo concerning the proposed moving of the National Register eligible, D. Bayer Farmstead to avoid impact by the proposed PA 33 Extension project. In our opinion the moving of these structures will seriously affect the eligibility of the property by destroying its integrity of location, setting and association, not to mention any historic archaeological features which may be present on the site. In our opinion this is not a viable mitigation measure which should be considered.

If you need further information in this matter please consult Susan M. Zacher at (717) 783-8946 or 783-8947.

Sincerely,

Kurt Carr, Chief
Division of Archaeology &
Protection

cc: D. Suci, PDOT, Bur. of Design
KC/snz

October 3, 1991

Mr. Paul J. Paslawsky, Township Manager
Bethlehem Township
2740 5th Street
Bethlehem, PA 18017

Mr. Allen J. Robertson, Commissioner
Bethlehem Township
2740 5th Street
Bethlehem, PA 18017

Dear Mr. Paslawsky & Mr. Robertson:

As residents of the Kings Crossing housing development, we would like to express our concerns about how the Route 33 extension will affect our community. The highway extension is generally viewed in a positive light, however, the proximity to our community raises the following issues:

Environmental Concerns

1. Increased Local Noise Pollution.

What do we do when the community believes a problem exists concerning noise pollution and we need to resolve the situation? Presently residents adjacent to Interstate 78 are complaining about noise levels deemed acceptable by PENNDOT.

2. Increased Local Air Pollution.

What precautions are being taken to minimize and monitor local air pollution levels? Presently there are several local air pollution concerns being addressed. The most noted being Bethlehem Steel Coke Works which is installing new air pollution control equipment in January 1992. We don't want this project to increase the existing problem.

3. Future Agricultural Use of Land.

Since extreme efforts are being taken to preserve the agriculture use of the land, what assurances will be made concerning the continued farming of this land in the future. If we are incurring the costs to avoid the destruction of this valued property, what protection do we have on this investment?

Safety Concerns

1. Increased Local Traffic.

What precautions will be taken to insure Ohio Street will remain "residential" and not become a thoroughfare?

2. Safe Highway Access.

What will be done to ensure the safest access possible to the highway at Freemansburg Avenue and William Penn Highway? The constraints imposed on the project by these two alternatives dictate use of half-diamond and half-clover interchanges. The complexity of these interchanges will make access to and from the highway more dangerous--risking property and lives.

Economic Concerns

1. Economic impact of one farmer outweighing the economic impact on an entire community.

When does one vote outweigh an entire community's? Shouldn't the needs of the many outweigh the needs of the few, or the needs of the one? The decision to veto Alternatives 1 and 2 appears to have ignored the impact on the entire community and only addressed agriculture concerns.

2. Questionable impact on market value of existing and future residences.

What impact will this project have on the marketability of our homes? With a major highway literally in the back yard of our community, what impact will this have on the value of our property?

We recognize there will be environmental, safety, cost and economic effects on our community, but these impacts can be minimized by selecting the farthest west alternative for completing Highway 33.

Sincerely,

Concerned Residents of Kings Crossing
Bethlehem Township

September 17, 1991

Senator Arlen Specter
202 Hart Senate Office
Washington, DC 20510

Dear Senator:

It seems as if the people you are supposed to represent have no influence on your decisions. I am writing to you to plead that you rethink your "full support" pledge on the proposed Route 33 extension.

Moving back to Pennsylvania was a dream for me and my family. The peace and quiet, a good family neighborhood, and a reasonable tax structure were the main reasons I returned here after 5 years of living in the high-stressed, overcrowded, and over-taxed state of New Jersey.

Now, after being in my new home for only two weeks, I find that the new route for the proposed Route 33 extension is going to be built practically in my new back yard! As an airline pilot, the airport noise that I moved to get away from will pale in comparison to the constant truck and car noise that this roadway will produce. (Route 78 which is over 2½ miles away is already noticeable.) One dream shattered.

Next you will probably raise taxes to pay for the road (an issue which you failed to address during your recent news conference with Don Ritter; who will pay for all of this?) since you are not allowed to dip into the Highway Trust Fund due to the deficit reduction deal. Second dream shattered.

Finally, the well established homes as well as the new community of Kings Crossing will have their housing values plummet if you place the road where it is currently proposed to be - 3/10ths of a mile away from the entrance to our development - a large neighborhood of new families. It follows that the "good family neighborhood" dream that I had will also be shattered.

I strongly urge you to reconsider your "full support" of the Route 33 extension. To re-route the road to accommodate one farmer's corn field is ludicrous. A corn field will not re-elect you or any of the candidates you support. Kings Crossing will ultimately have about 1300 residents...don't the needs of the many outweigh the needs of the few? I believe that the ground swell of public opposition is just beginning.

Thank you for your time and consideration in reading this letter. A reply would be greatly appreciated, preferably prior to October 3rd, at which time a Public Hearing is scheduled to address this issue further.

Sincerely,



Mark W. Nebbia
3599 New Hampshire Ave.
Easton, PA 18042
(215) 253-1077

15641

COMMITTEES
AGING
JUDICIARY
APPROPRIATE
VETERANS AFFAIRS

United States Senate

WASHINGTON, DC 20510-3802

10/17 Barila
10/18 Moyer
10/21 HY

October 1, 1991

The Honorable Howard Yerusalm
Secretary
Pennsylvania Department of Transportation
Transportation and Safety Building
Harrisburg, PA 17120

Dear Secretary Yerusalm:

I am writing on behalf of my constituent, Mr. Mark Nebbia of Easton, Pennsylvania. The information contained herewith was provided to me by Mr. Nebbia.

Mr. Nebbia has expressed concern about the design and location of the Route 33 extension in Northampton County. Knowing of ongoing efforts to determine an appropriate location for Route 33, I have enclosed Mr. Nebbia's letter and ask that you review his comments and incorporate them in this process.

Please accord Mr. Nebbia's case all due consideration. I would appreciate it if PennDot would respond to Mr. Nebbia directly and forward a copy of the response to Susan Becker of my staff.

Thank you for your attention in this matter.

Sincerely,


Arlen Specter

AS/srb
Enclosure

RECEIVED
PENNSYLVANIA DEPT. OF TR.
OCT 03 1991
SECRETARY'S OFFICE

October 21, 1991

Mr. Mark W. Nebbia
3599 New Hampshire Avenue
Easton, PA 18042

Dear Mr. Nebbia:

Reference is made to your September 11, 1991 letter to Senator Arlen Specter regarding the proposed location of the Traffic Route 33 Extension in Bethlehem Township, Northampton County. Senator Specter asked me to respond directly to you. I am sorry I could not respond prior to the October 3, 1991 Public Meeting; however, I personally did not receive a copy of your letter until October 8, 1991.

Mr. Nebbia, you have raised some very valid concerns regarding the location of the Traffic Route 33 Extension in Northampton County. As you already know, the primary purpose of the October 3, 1991 Public Meeting was to provide the public an update on the on-going activities of the Department regarding the placement of this highway. Since the March 8, 1990 Public Hearing, the Department, as a result of a decision by the Pennsylvania Agricultural Land Condemnation Approval Board, conducted an extensive reevaluation of the project's alignment in an effort to give further consideration to the minimization of farmland and environmental impacts.

During the reevaluation study, new alternatives and modifications to earlier alternatives presented in the draft took into consideration the following objectives: minimize impacts to farmlands, maximize viability of remaining farmland parcels, minimize impacts to historical, archeological and recreational communities, and minimize impacts to other environmental factors including wetlands, streams, noise receptors, and residential/commercial displacements. Based on these concerns, two viable build alternatives surfaced which would best appear to meet the overall transportation needs of the region and minimize the overall environmental impact of the build options. The advantages and disadvantages of each of the options were presented at the meeting.

Mr. Mark W. Nebbia
October 21, 1991
Page 2

Presently, the Department is analyzing all the comments raised at the meeting. These issues will be given serious consideration during the final decision-making process for this project. Our ultimate objective will be to select an alignment which balances the concerns of the surrounding communities and the environment.

Finally, your letter will be incorporated into the project's official records, and all issues will be addressed in the project's Final Environmental Impact Statement.

Thank you for your interest in our highway system.

Sincerely,

Howard Yerusalim
Howard Yerusalim, P.E.
Secretary of Transportation

050/PTB/RK/cads
15647.DOC

cc: Secretary's Reading File
Larry M. King, Special Assistant to the Deputy Secretary
for Planning
Governor's Washington Office
William Moyer, P.E., Acting Deputy Secretary for Highway
Administration
P. Thomas Barilar, P.E., District Engineer - 050
J. F. Hanosek, P.E., ADE-Design
R. Keller, District Environmental Manager
Design Division Copy

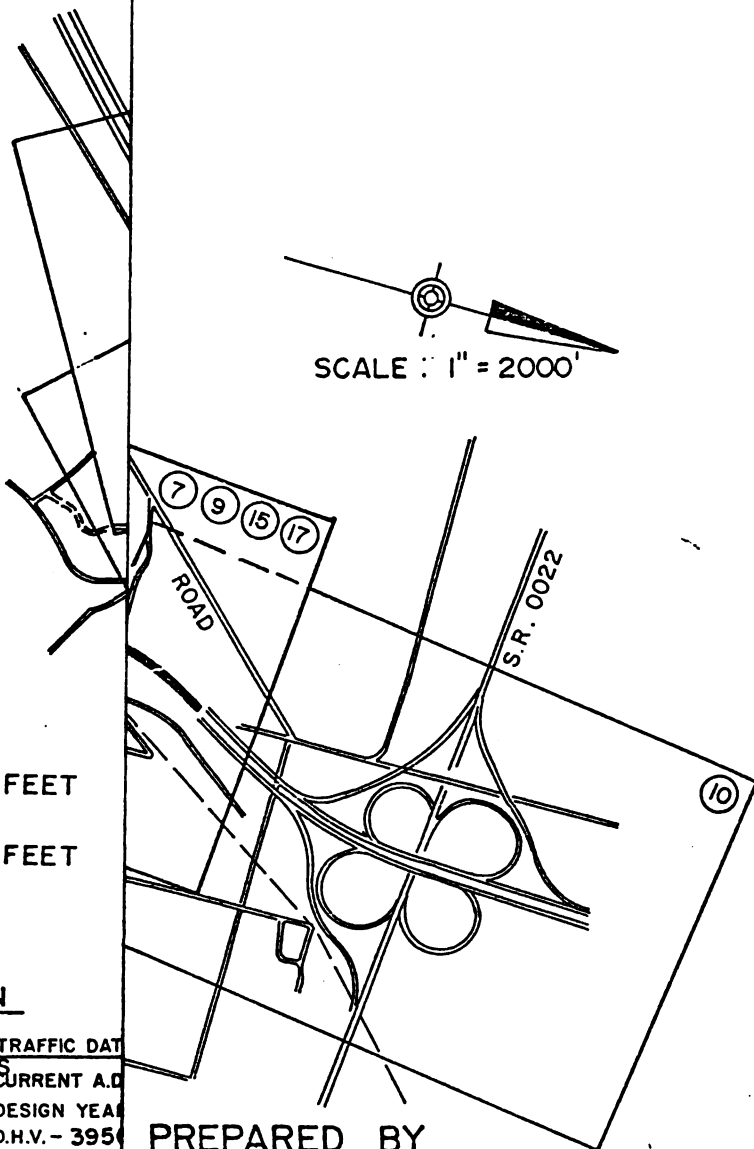
Honorable Arlen Specter
United States Senate
331 Hart Building
Washington, DC 20510
Attn: Susan Becker

/s/ John F. Hanosek, P.E.

APPENDIX D
PRELIMINARY DESIGN DRAWINGS

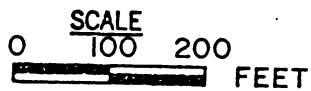


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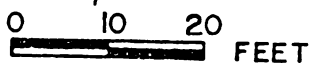


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HORIZONTAL



VERTICAL

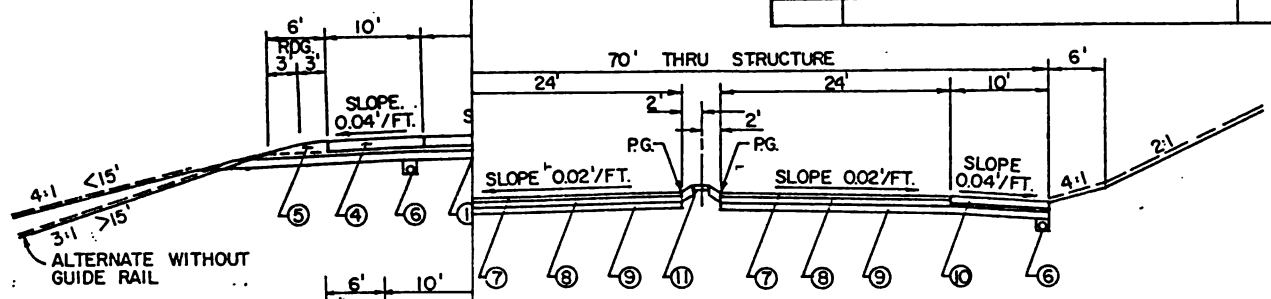


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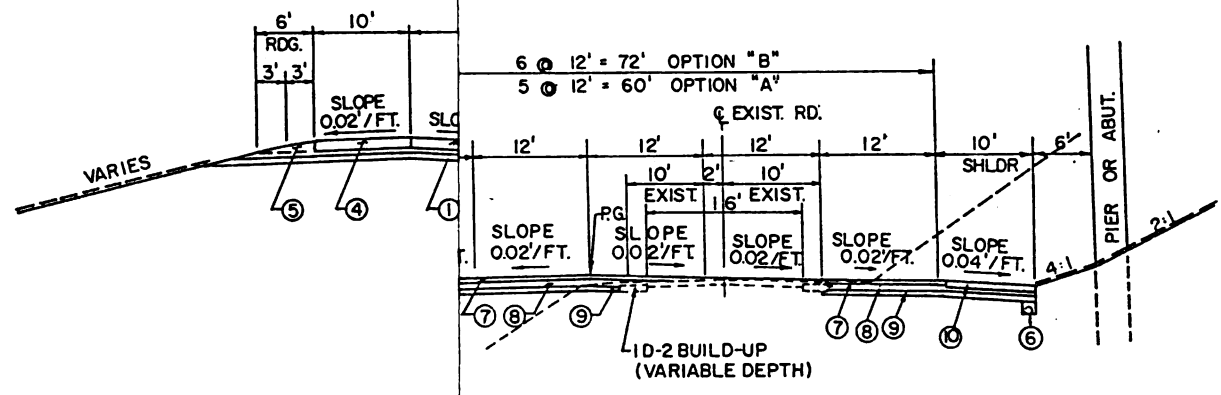
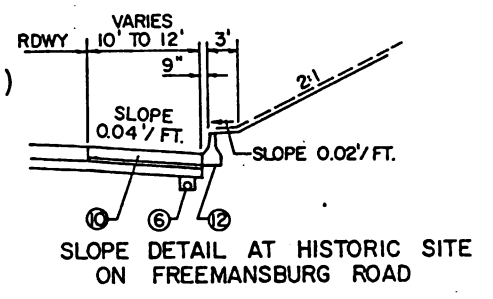
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DESIGN SPEED	- ARTERIAL	CURRENT A.D.
PAVEMENT WIDTH	- 60	DESIGN YEAR
SHOULDER WIDTH	- 2-24' LANES	D.H.V. - 395
MEDIAN WIDTH, MAXIMUM	- 10' RT. 4' LT.	D - 53
MINIMUM	- 48'	T - 12

PREPARED BY
ETT FLEMING, INC.
HARRISBURG, PA.

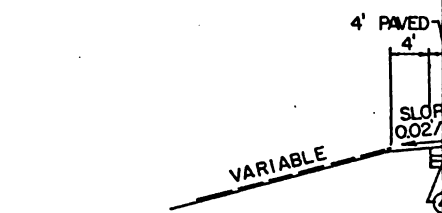
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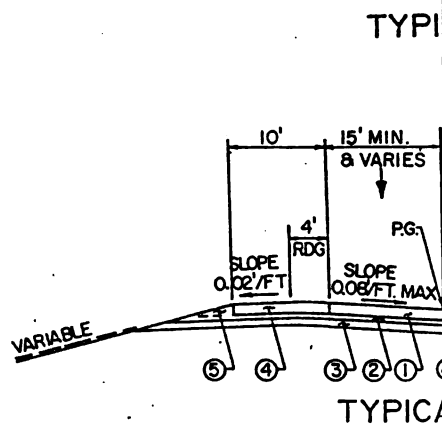
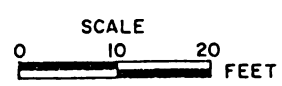
2020 (WILLIAM PENN HIGHWAY)
(LOOKING WEST)



LEGEND

- ① PLAIN CEM. CONC. PAV'T. R.P.S. 13" DEPTH
- ② LEAN CEM. CONC. BASE COURSE 5" DEPTH
- ③ 8" SUBBASE
- ④ CONCRETE SHOULDER TYPE I
- ⑤ SUBBASE MAT'L. (INCIDENTAL TO THE SHOULDER)
- ⑥ PAVEMENT BASE DRAIN
- ⑦ BITUM. WEARING COURSE 10-2 1 1/2" DEPTH S.R.L.-H
- ⑧ BITUM. BINDER COURSE 10-2 2" DEPTH
- ⑨ 5" SUBBASE
- ⑩ TYPE I SHOULDER
- ⑪ MOUNTABLE CURB
- ⑫ CONCRETE BARRIER

--- SOIL / SEED SLOPES
 --- SEED SLOPES

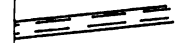


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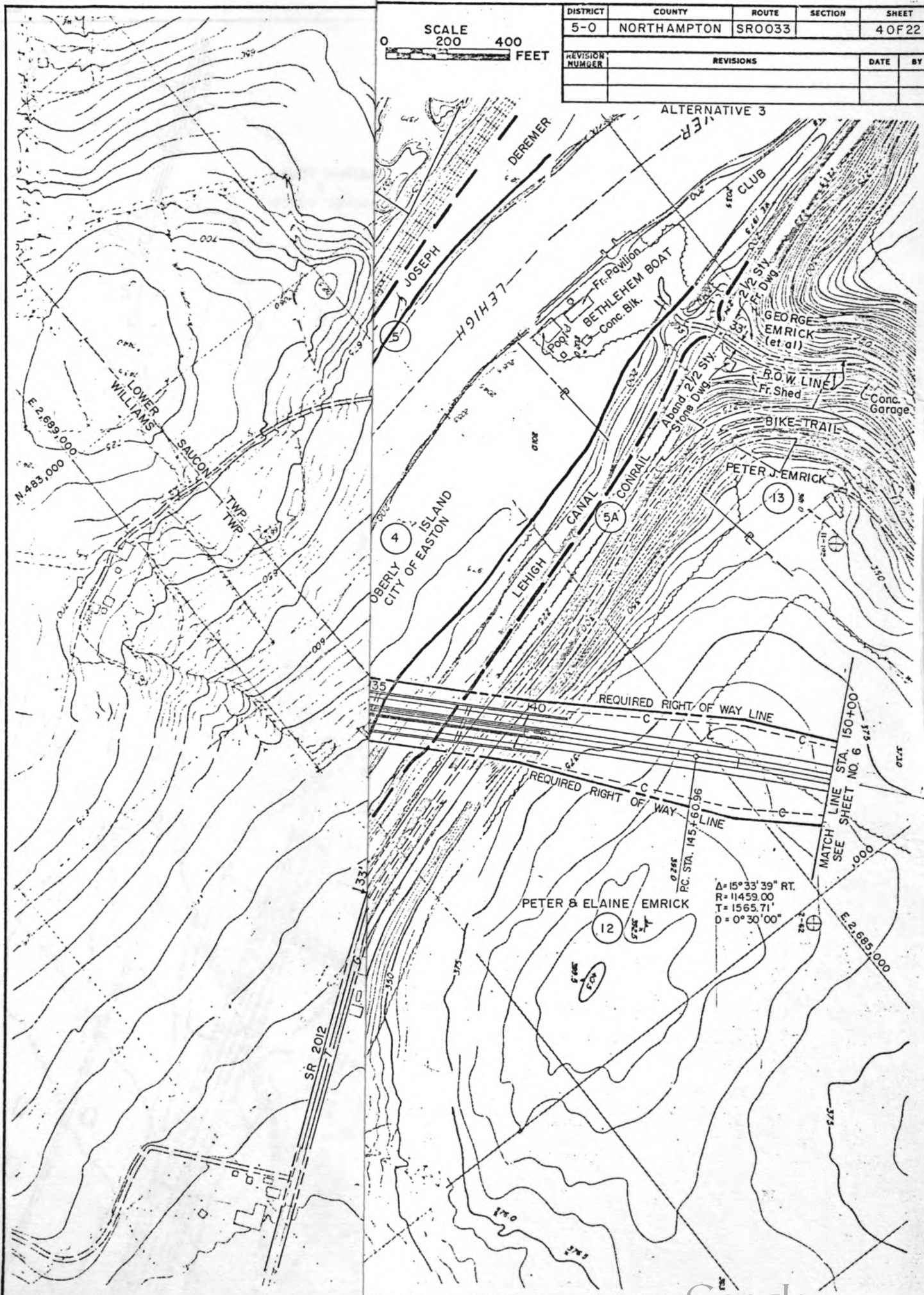
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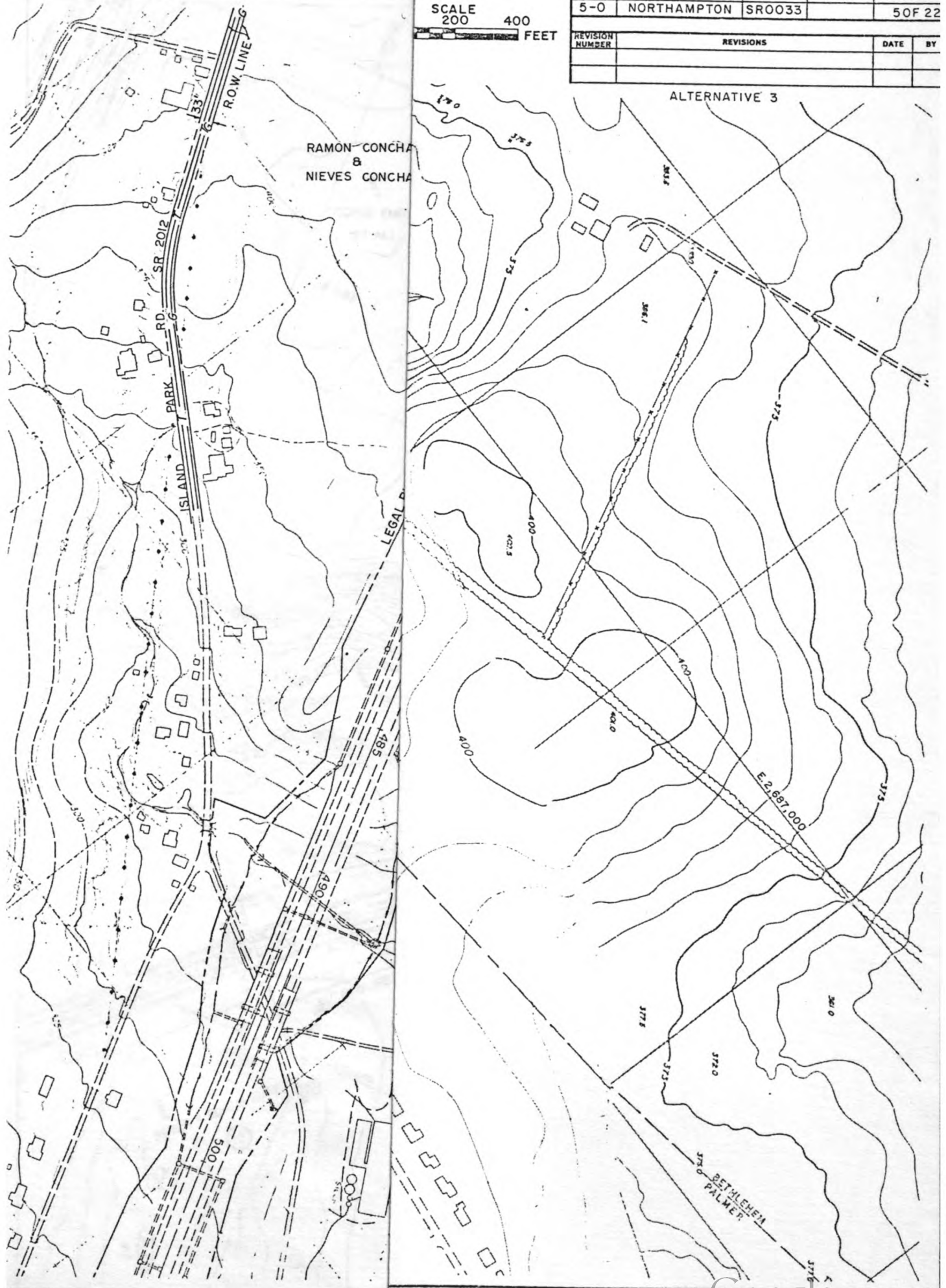
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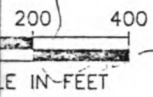
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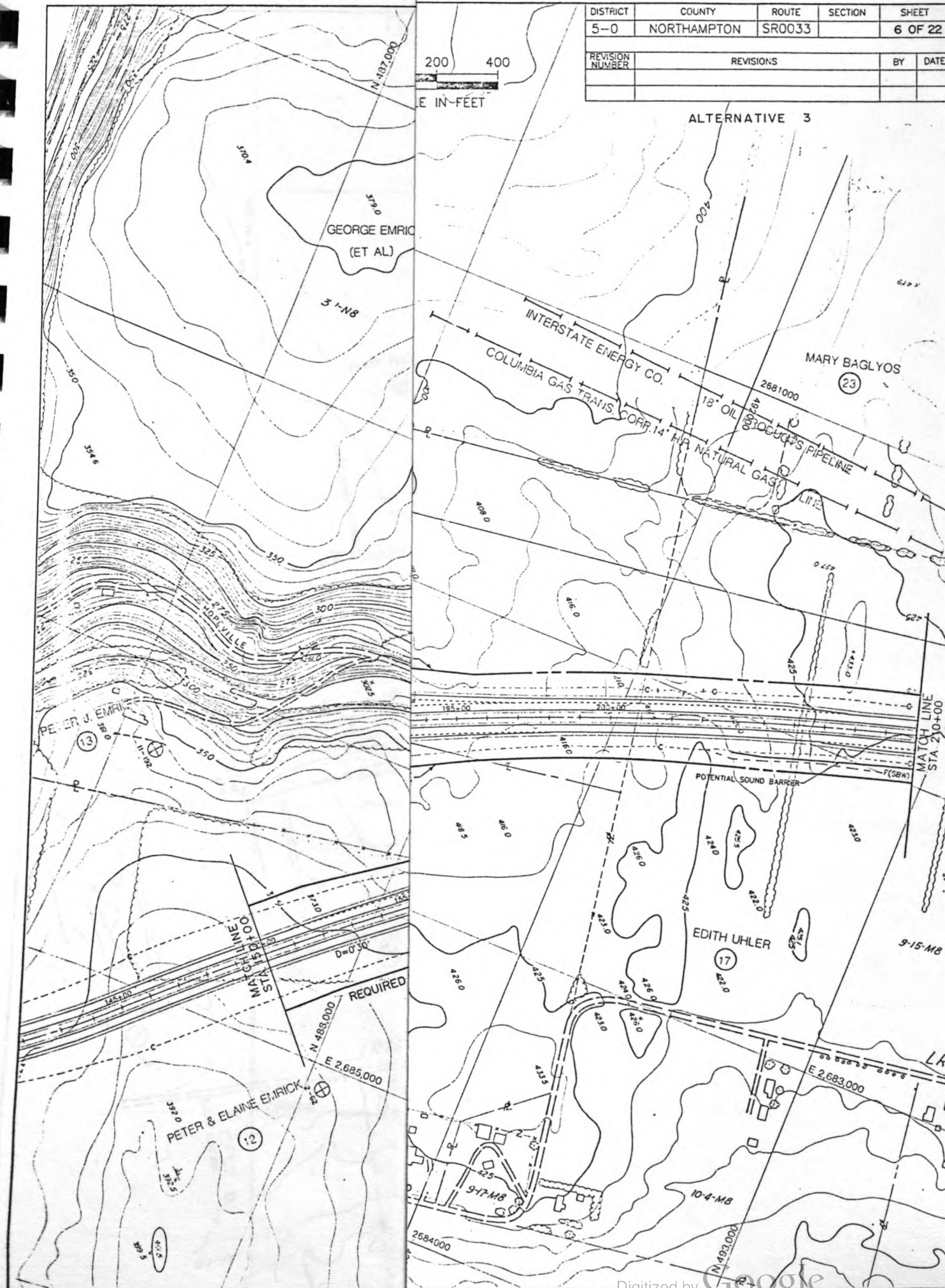
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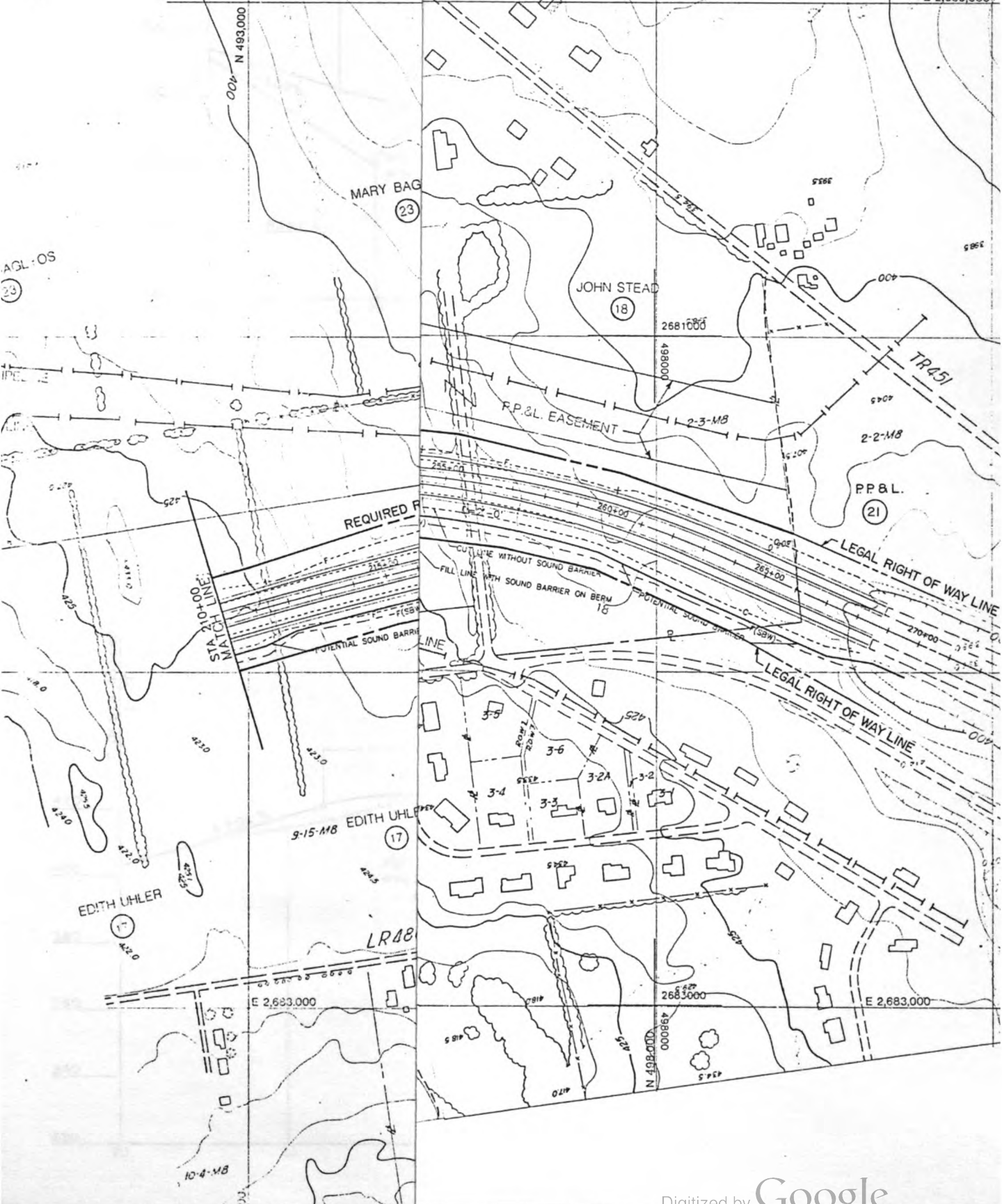
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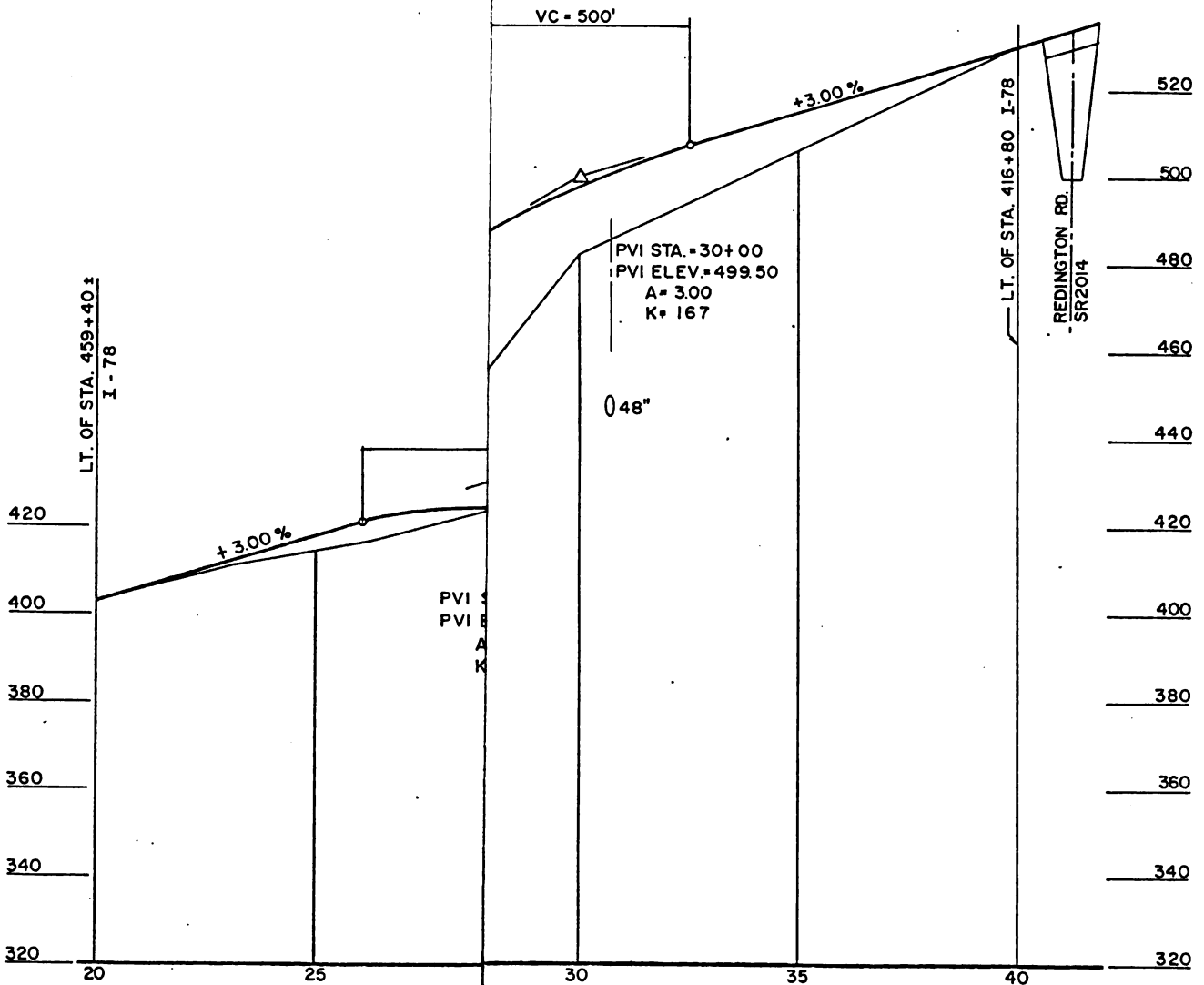
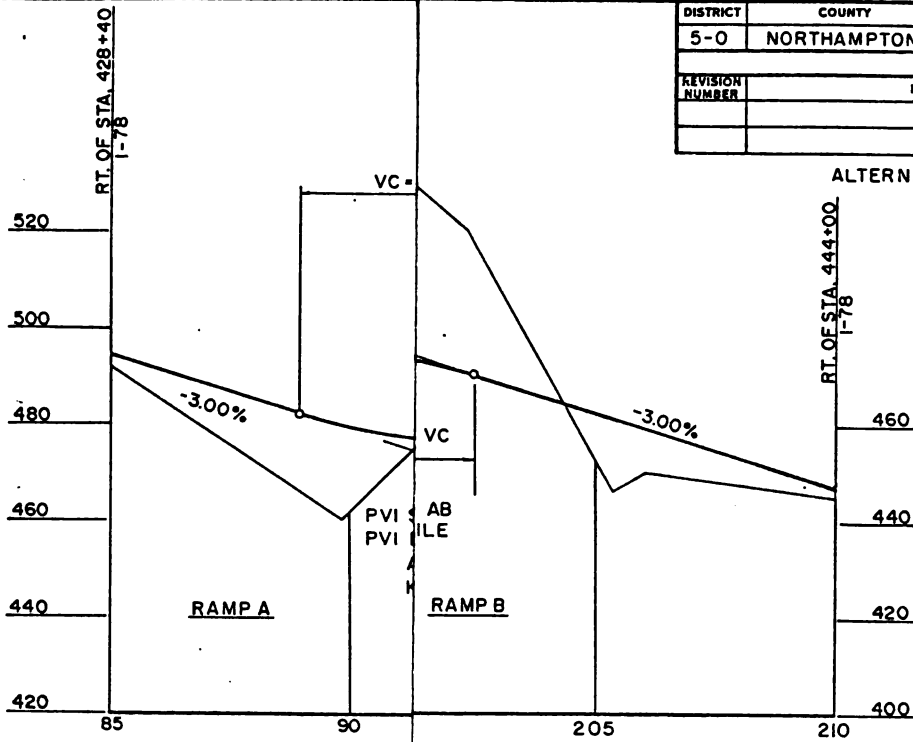
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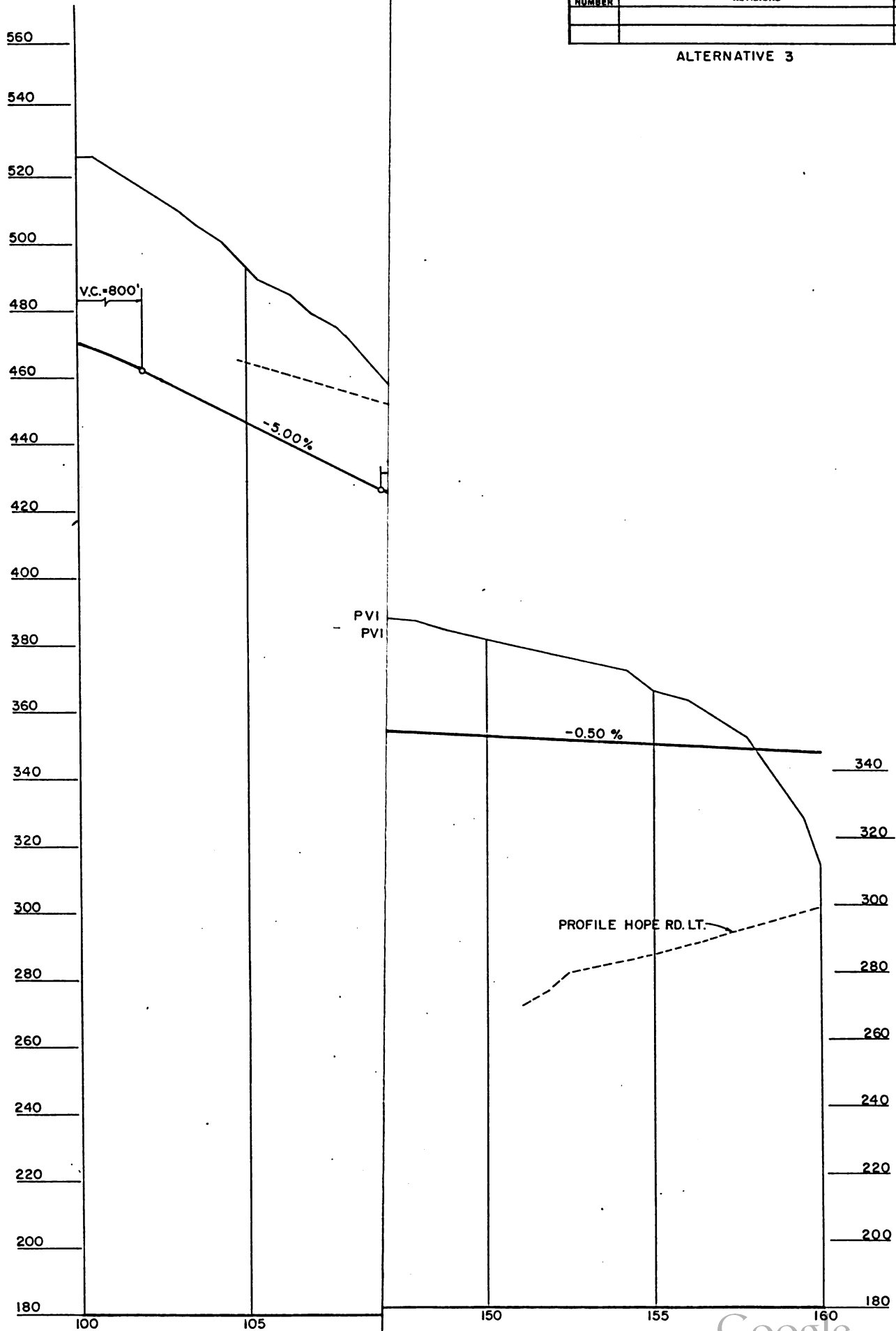
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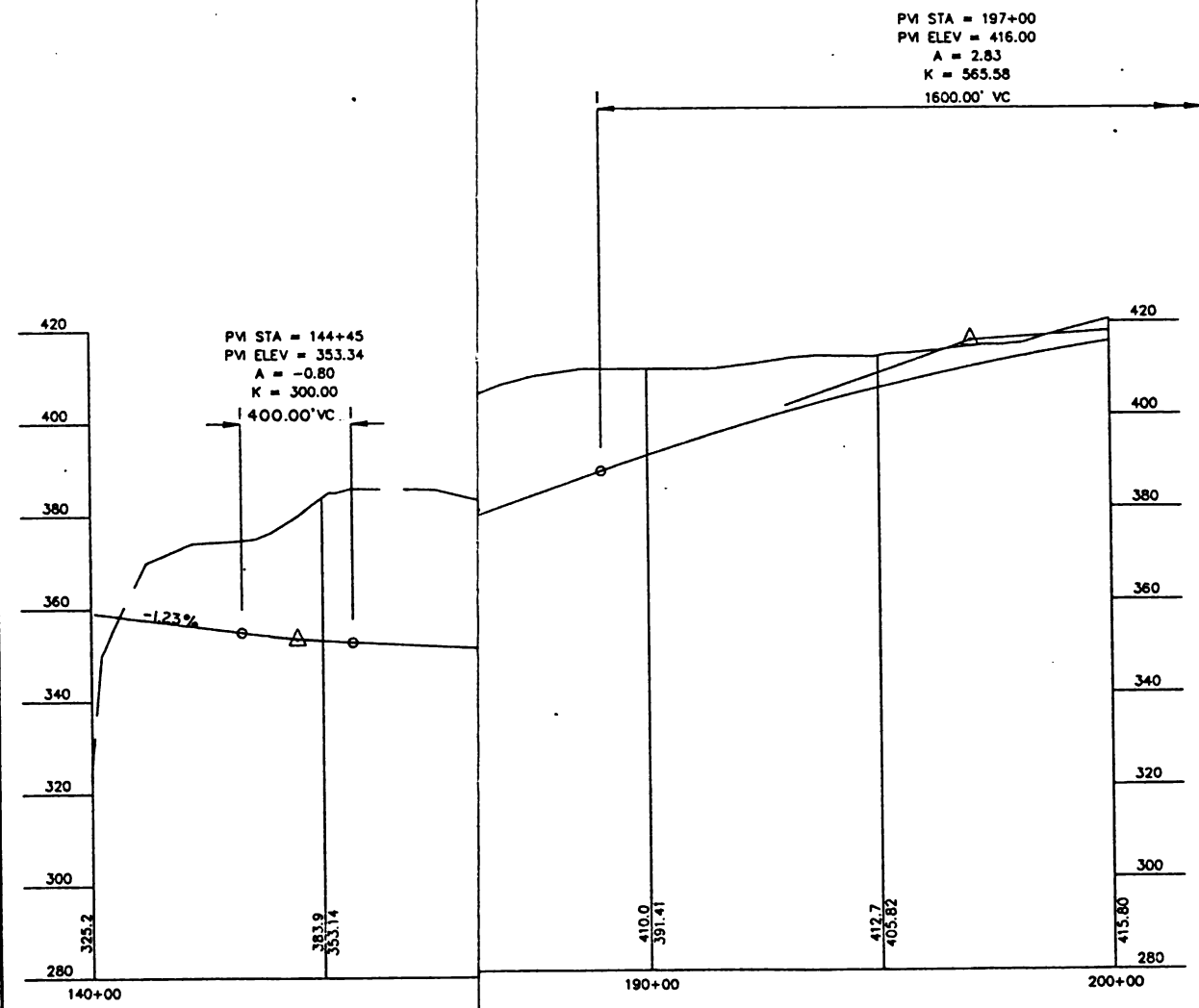
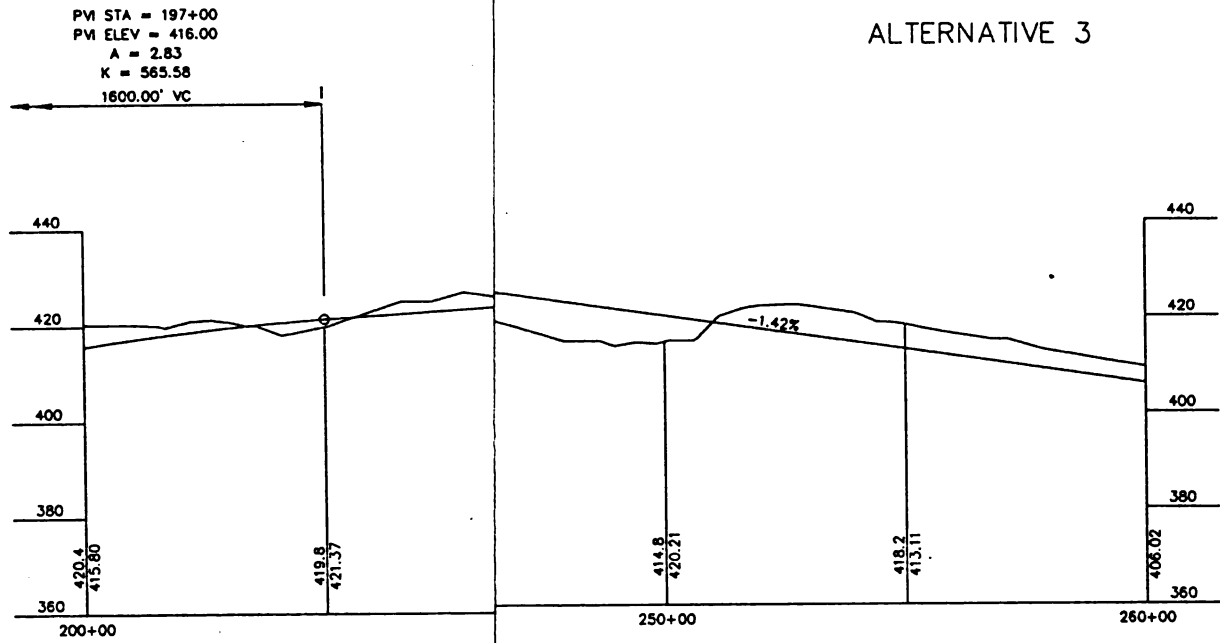
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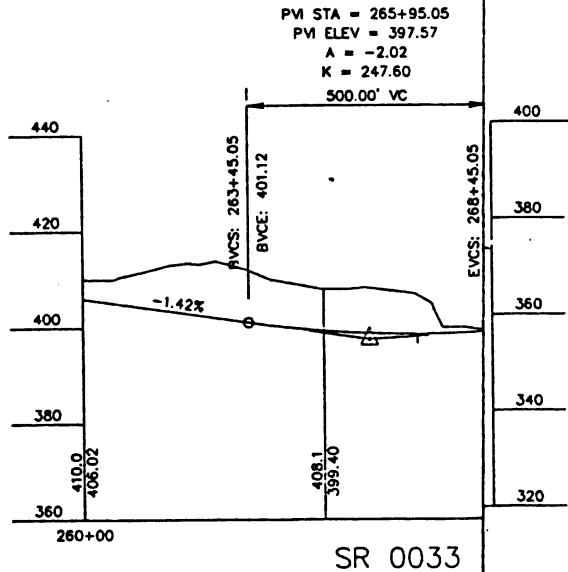
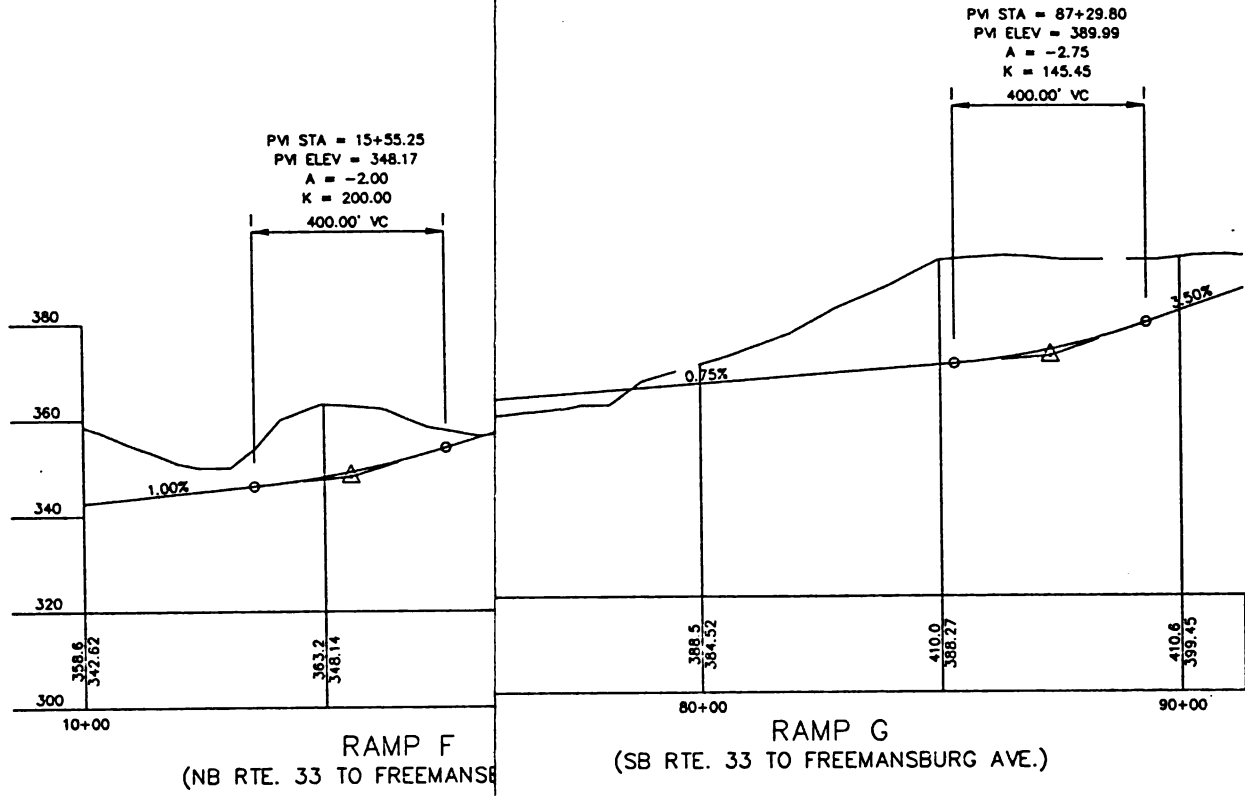
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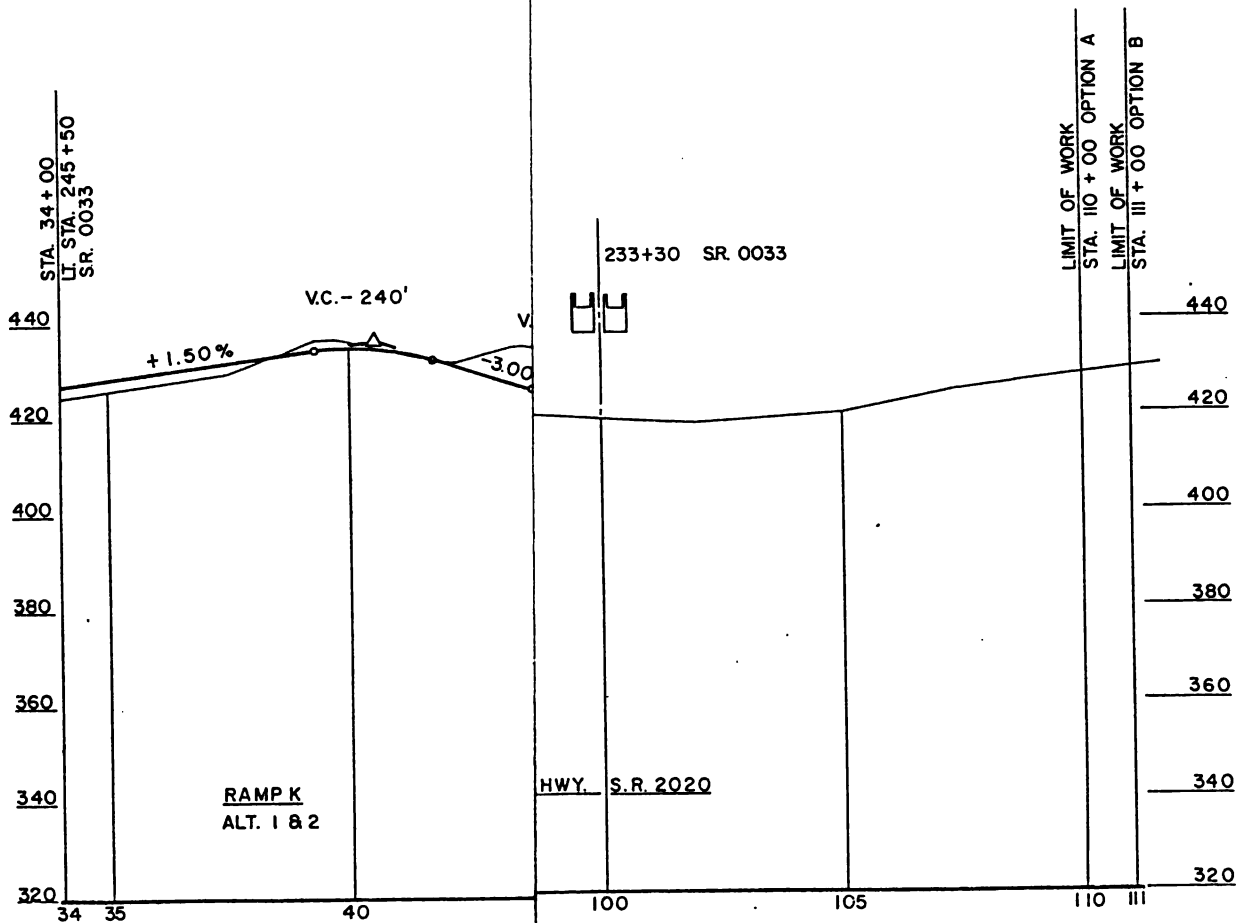
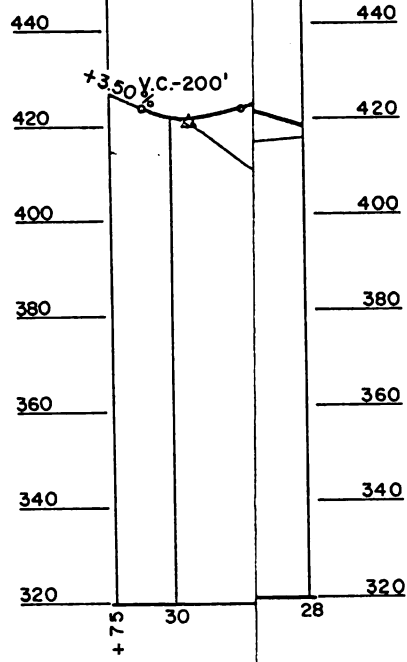
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ALTERNATIVE 3



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ALTERNATIVE 3



DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
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REVISION NUMBER	REVISIONS			DATE	BY

ALTERNATIVE 3

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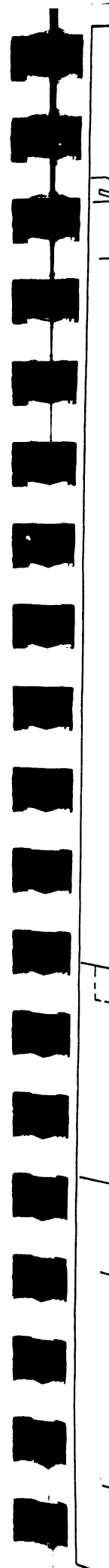
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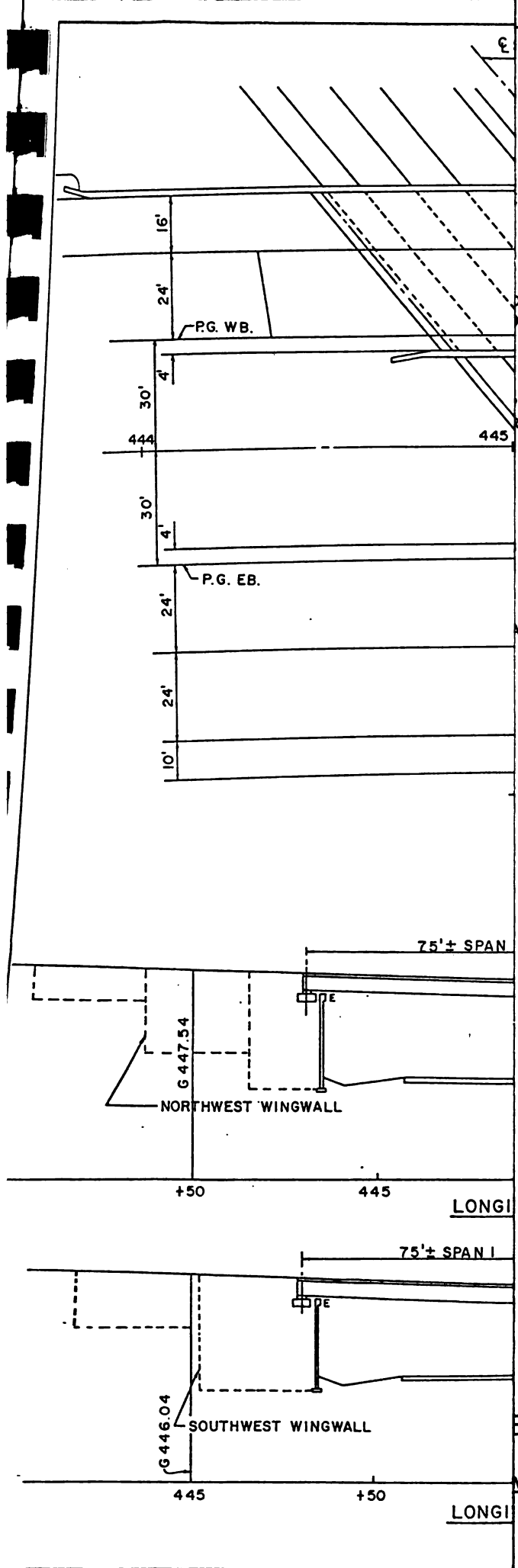
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18 X BEAMS - W.B.
18 X BEAMS - E.B.

IMPACT

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GIRDERS - E. B.

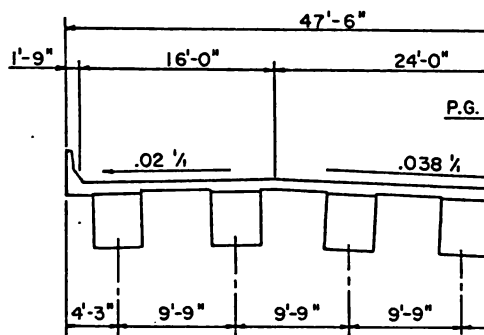
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ALTERNATIVE 3

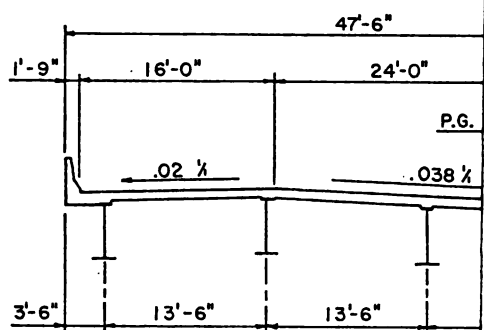
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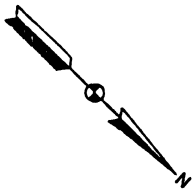


WESTBOUND



WESTBOUND

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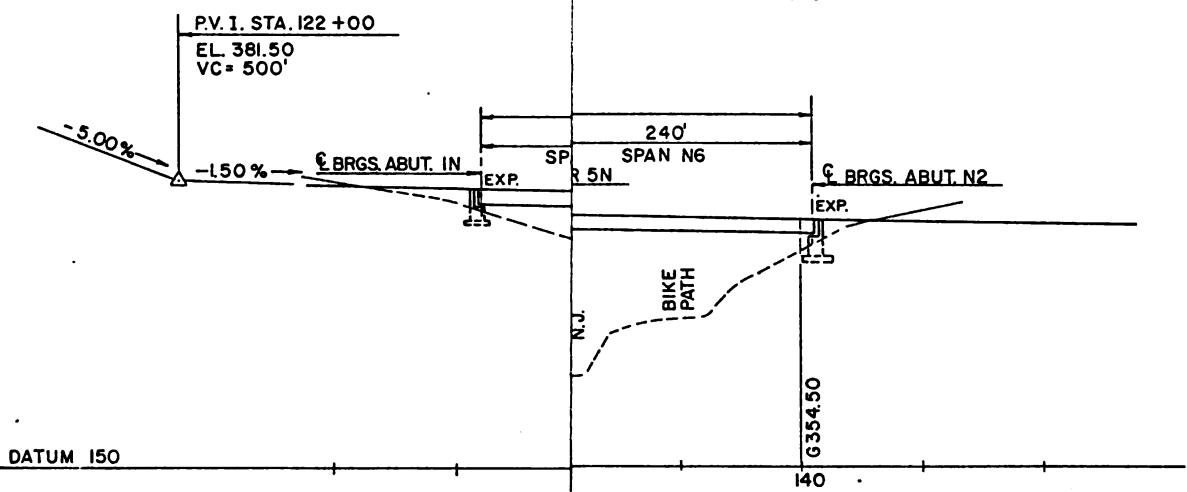
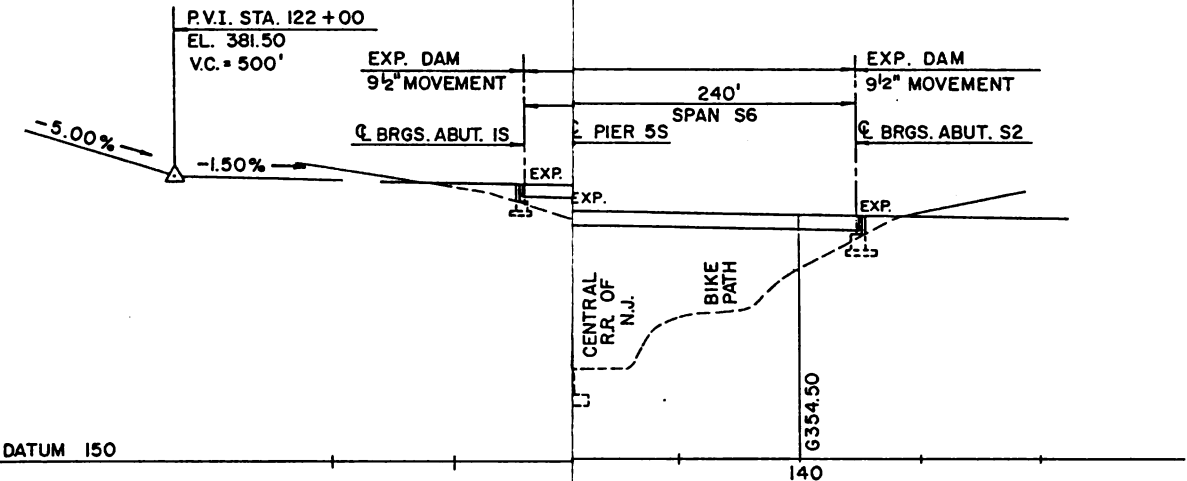
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CENTRAL R.R.
OF N.J.

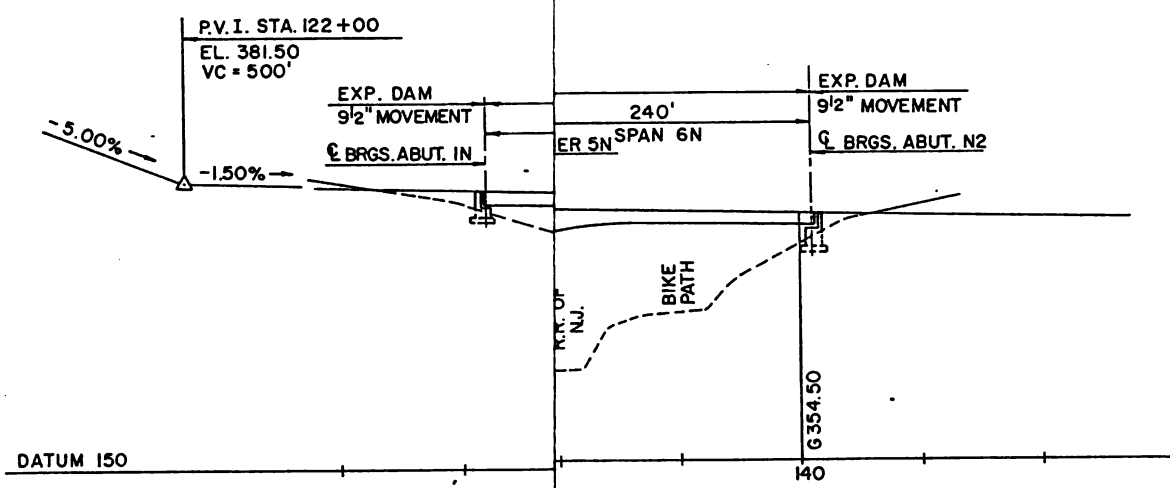
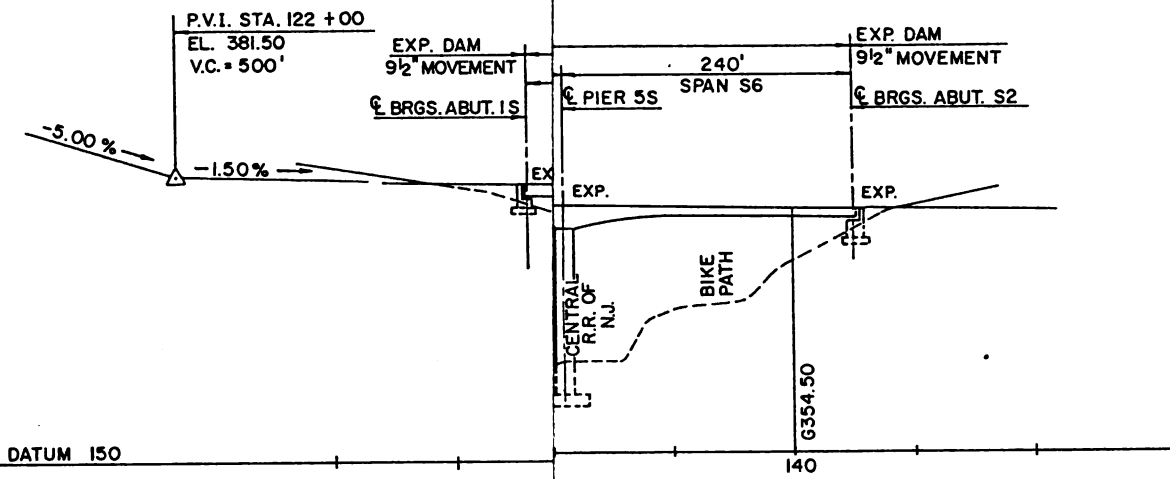
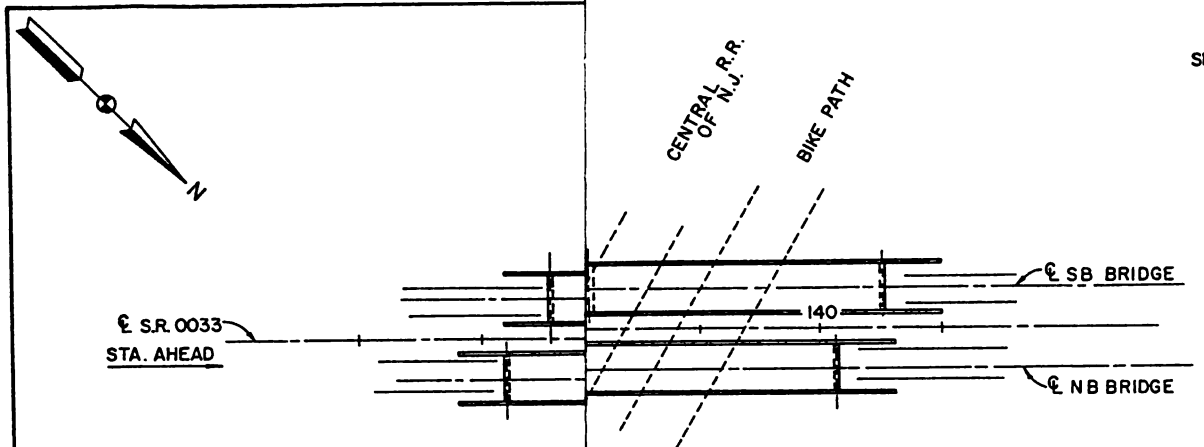
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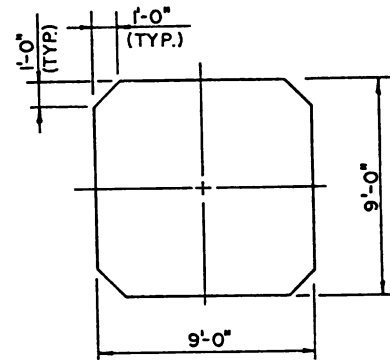
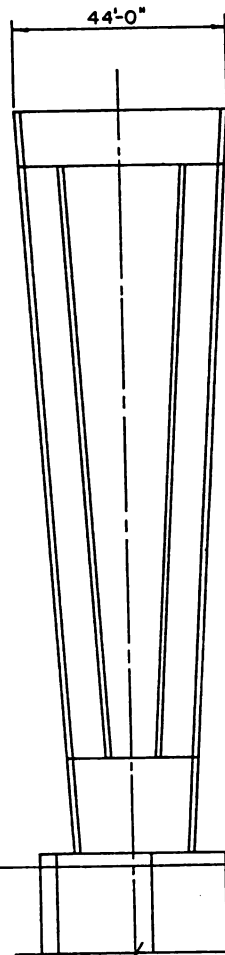
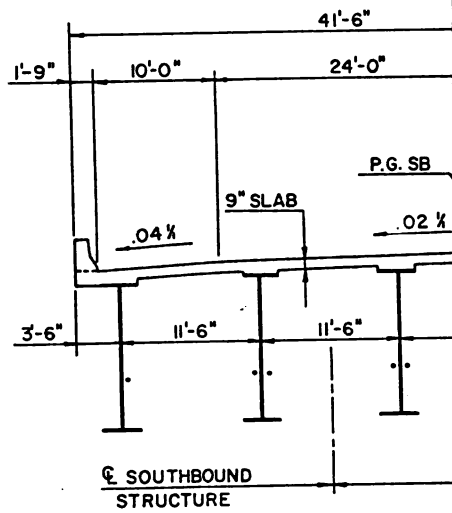
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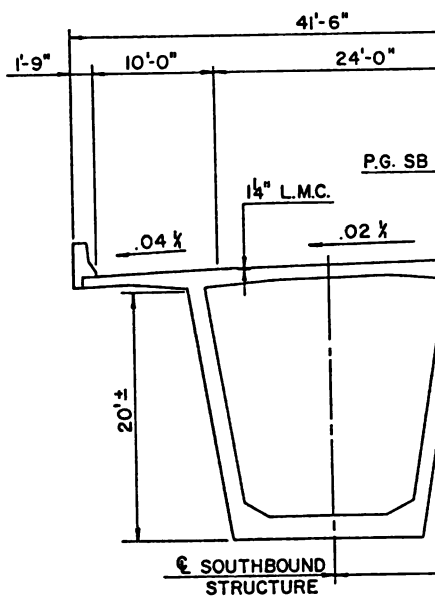
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 STA. 130+00
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ALTERNATIVE I
 33 SB & NB OVER LEHIGH RIVER
 STA. 130+00
 ALTERNATE IC



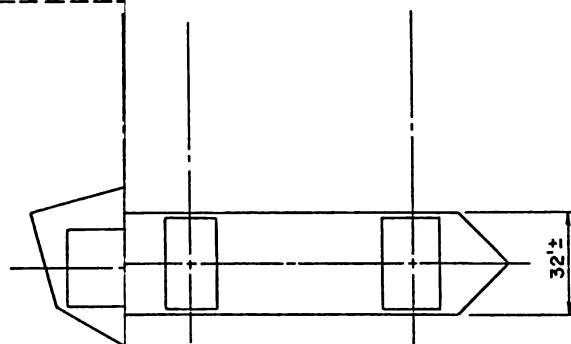
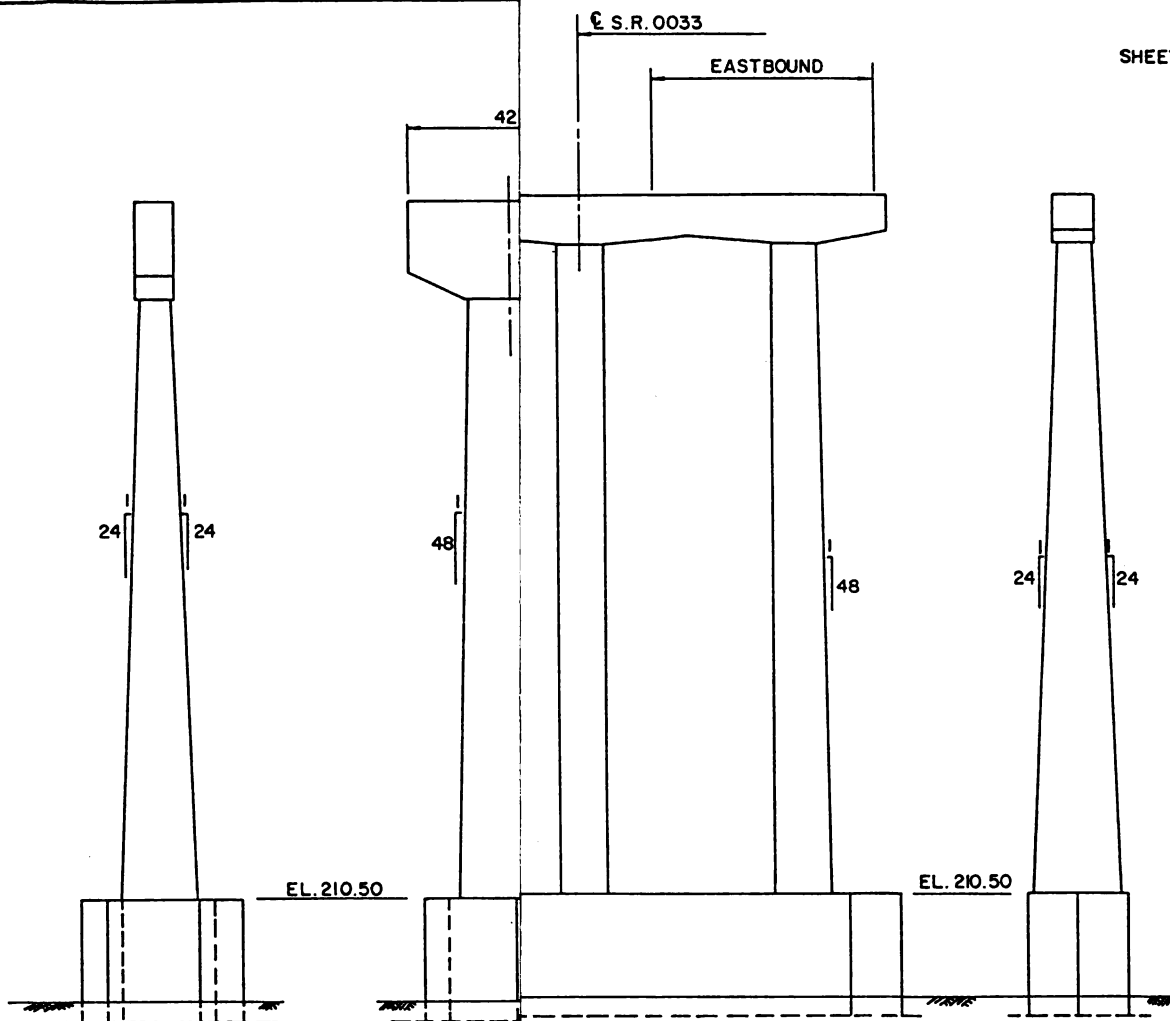
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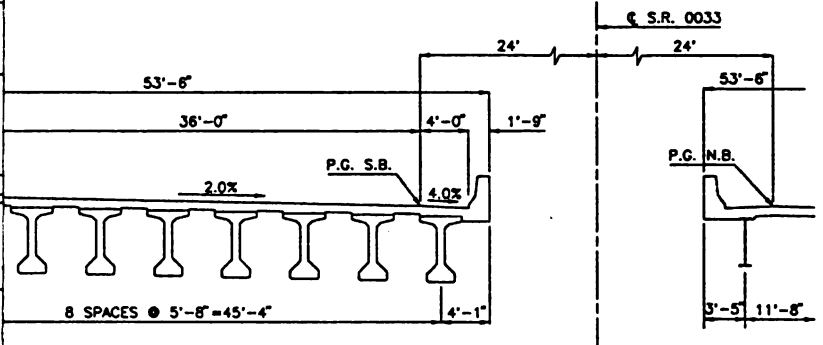
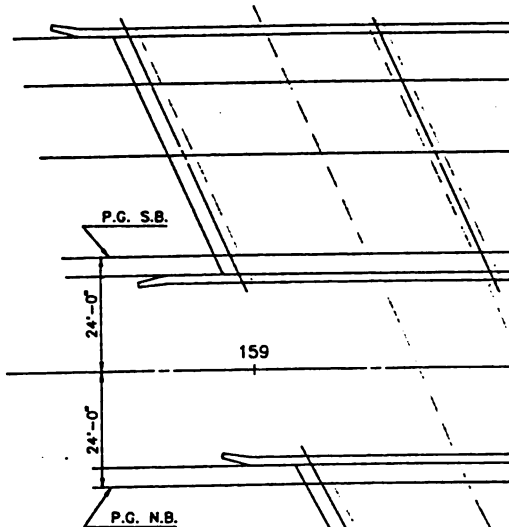
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33 SB & NB OVER LEHIGH RIVER
STA. 130 + 00
ALTERNATE IS & IC



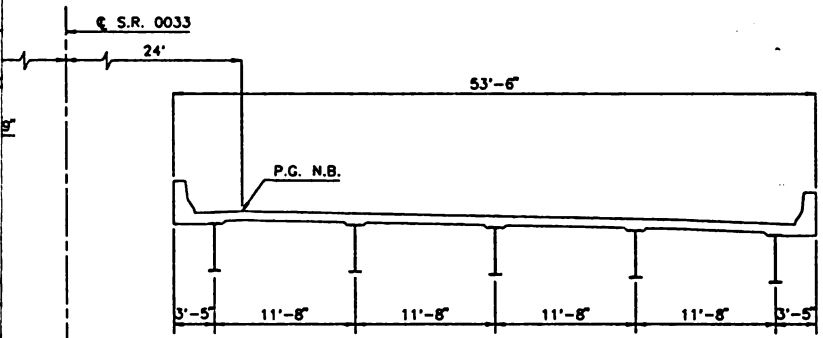
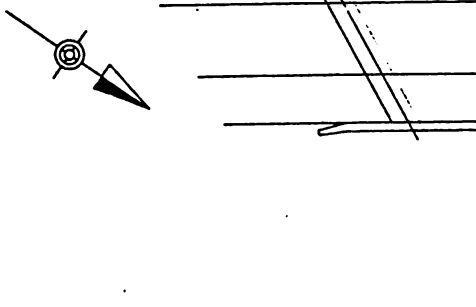
PIER TYPE 2

PIER TYPE 5

ALTERNATIVE I
 33 SB & NB OVER LEHIGH RIVER
 STA. 130+00
 ALTERNATE IS & IC



TYPICAL SECTION-CONCRETE ALTERNATE



TYPICAL SECTION-STEEL ALTERNATE

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

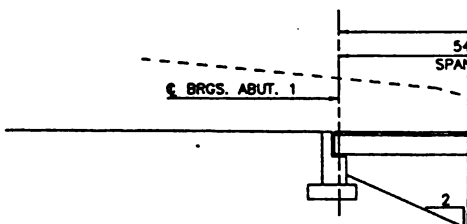
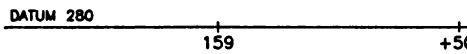
NOTES:

CONCRETE ALTERNATE

- 8 INCH DECK
- 18-28/66 P/S COMPOSITE CONCRETE AASHTO TYPE I-BEAMS
- 4 SIMPLE SPANS FOR DEAD LOAD
- 4 SPAN CONTINUOUS FOR LIVE LOAD PLUS IMPACT

STEEL ALTERNATE

- 9 INCH DECK
- 10 COMPOSITE HYBRID WELDED STEEL GIRDERS
- 48 INCH DEEP WEB
- 4 SPAN CONTINUOUS FOR BOTH DEAD LOAD AND LIVE LOAD PLUS IMPACT



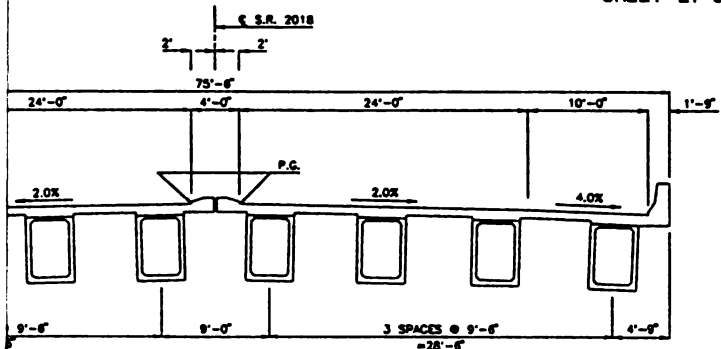
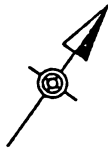
ALTERNATIVE 3
 ROUTE 33 (S.R. 0033) SB & NB
 OVER HOPEVILLE RD. (S.R. 2007)

(RETAINS 100' RAILROAD RIGHT-OF-WAY)

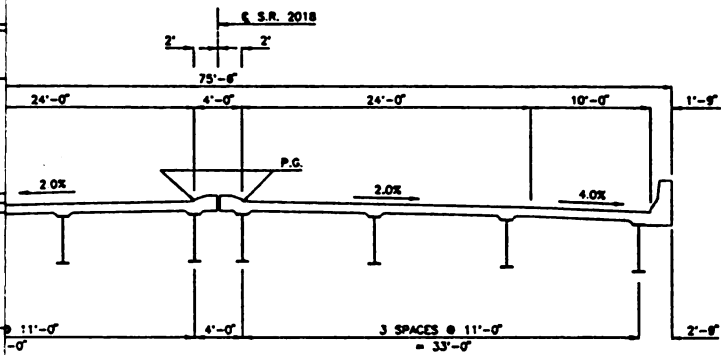
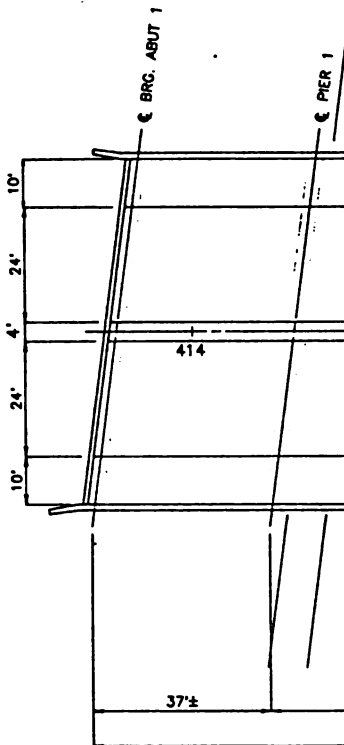
PREPARED BY:

BOLES, SMYTH ASSOC. INC.
 2400 CHESTNUT ST.
 PHILA., PA. 19103-4316





TYPICAL SECTION-CONCRETE ALTERNATE



TYPICAL SECTION-STEEL ALTERNATE

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

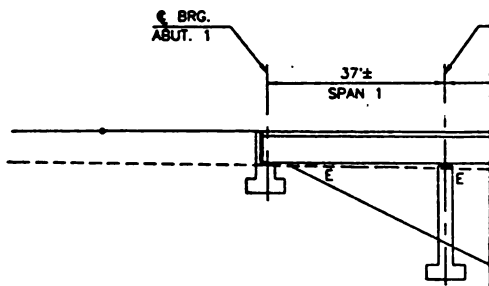
CONCRETE ALTERNATE

- 8 INCH DECK
- 8 48/66 P/S COMPOSITE CONCRETE SPREAD BOX BEAMS
- 4 SIMPLE SPANS FOR DEAD LOAD
- 4 SPAN CONTINUOUS FOR LIVE LOAD PLUS IMPACT

STEEL ALTERNATE

- 9 INCH DECK
- 8 COMPOSITE HYBRID WELDED STEEL GIRDERS
- 48 INCH DEEP WEB
- 4 SPAN CONTINUOUS FOR BOTH DEAD LOAD AND LIVE LOAD PLUS IMPACT

STRUCTURE DESIGN NOT TO PRECLUDE EXISTING AND FUTURE UTILITIES (PP&L, BELL, CABLE TV, GAS, SEWER PRESSURE LINE, WATER, ETC.)

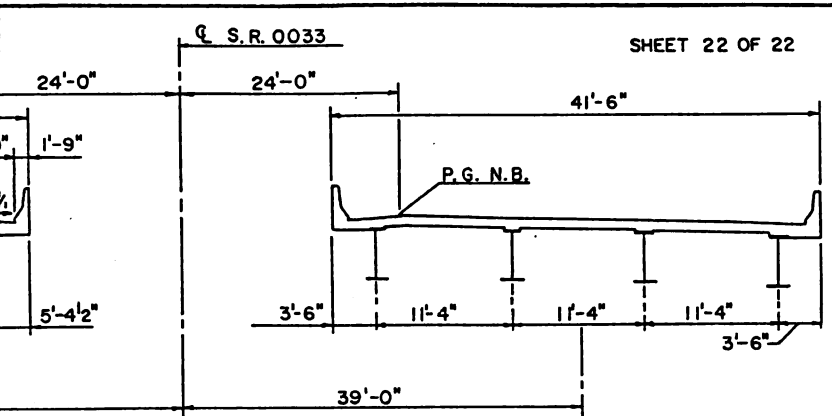
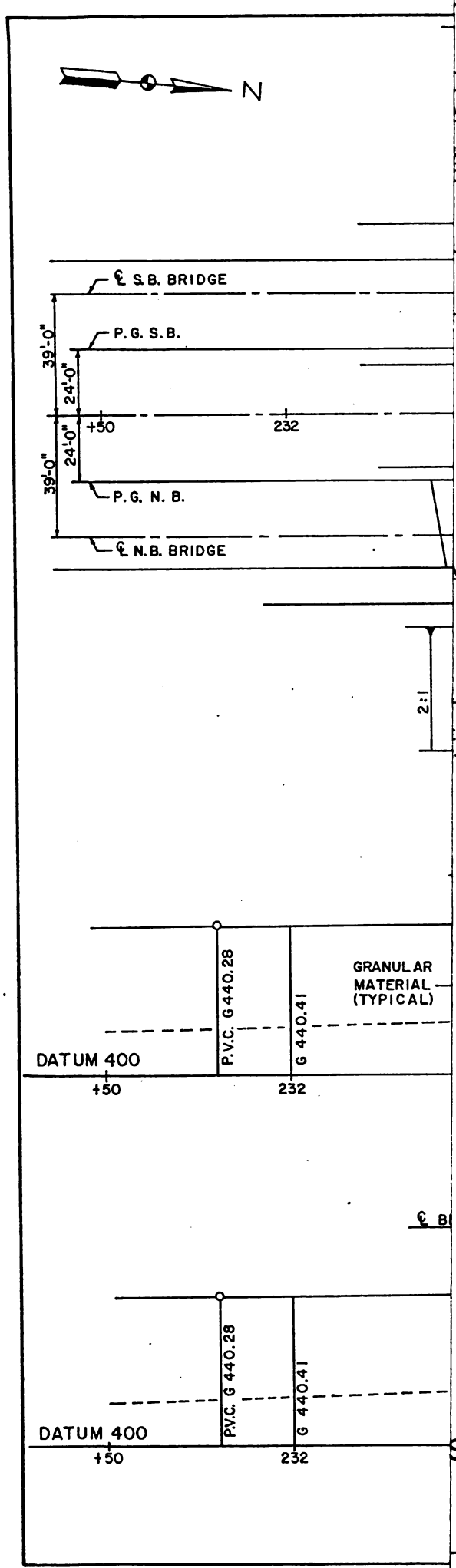
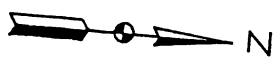


ALTERNATIVE 3
 FREEMANSBURG ROAD (S.R. 2018)
 OVER ROUTE 33 (S.R. 0033)

PREPARED BY:
 BOLES, SMYTH ASSOC. INC.
 2400 CHESTNUT ST.
 PHILA., PA. 19103-4316

REV. 6/23/92





STEEL ALTERNATE

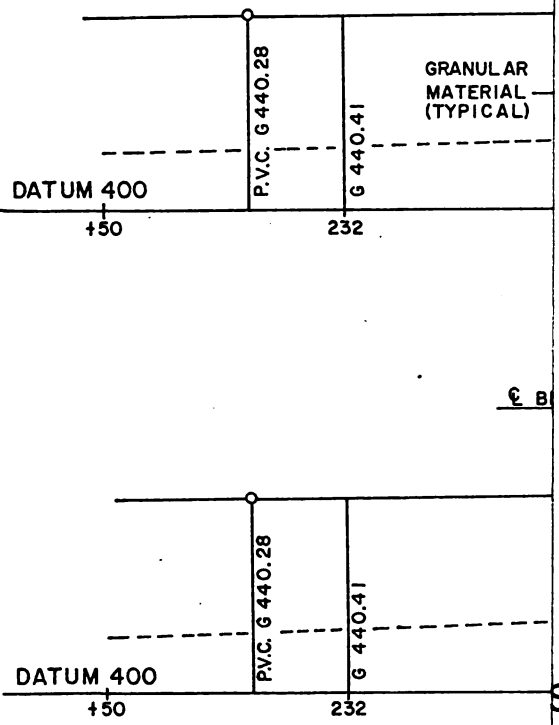
SCALE: 1/8" = 1'-0"

TE - I C

COMPOSITE CONCRETE SPREAD BOX BEAMS
- SB & NB

- I S

HYBRID WELDED STEEL GIRDERS
- SB & NB



ALTERNATIVE I
(OPTION A SHOWN)

SB & NB OVER S.R. 2020-WM. PENN HIGHWAY
STA. 233+25
ALTERNATE I C & I S

APPENDIX E

**CAPACITY ANALYSIS FOR SELECTED
ALTERNATIVE**

FREEWAY SEGMENT CAPACITY ANALYSIS SUMMARY

SEGMENT	SELECTED ALTERNATIVE	
	L.O.S.	# LANES
PA 33 NB BETWEEN 22 AND W.P. HWY. SB BETWEEN 22 AND W.P. HWY. NB BETWEEN W.P. HWY. AND FREE. SB BETWEEN W.P. HWY. AND FREE. NB BETWEEN FREE. AND I-78 SB BETWEEN FREE. AND I-78	D D C C C C	2 2 2 2 2 2
INTERSTATE 78 EB WEST OF PA 33 WB WEST OF PA 33 EB EAST OF PA 33 WB EAST OF PA 33	F E F E D C E C	2 3 2 3 2 3

TWO LANE HIGHWAY CAPACITY ANALYSIS SUMMARY

SEGMENT	SELECTED ALTERNATIVE
WILLIAM PENN HIGHWAY EAST OF PA 33 WEST OF PA 33	F E
FREEMANSBURG ROAD EAST OF PA 33 WEST OF PA 33	E E

RAMP AND RAMP JUNCTION CAPACITY ANALYSIS

RAMP	RAMP	# LANES		SELECTED ALTERNATIVE		
		HWY.	RAMP	MERGE	RAMP JUNCTION DIVERGE	RAMP PROPER
RAMP A	OFF I-78	2 3	2 2		F,F B,C	C
RAMP B	OFF PA 33 ON I-78	2 2 3	1 1 1	E C	C	C
RAMP C	OFF I-78 ON PA 33	2 3 3	1 1 1		F D	B
RAMP D	ON I-78	2 3	2 2	F,F F,F		C
RAMP E		2	1	D		B
RAMP F		2	1		C	B
RAMP G		2	1		C	B
RAMP H		2 2	1 2	D C,C		B B
RAMP I		2	1	C		B
RAMP J		2	1		C	B
RAMP K		2 2	1 2		E C,E	C B
RAMP L		2 2	1 2	E D,D		C B

INTERSECTION CAPACITY ANALYSIS SUMMARY

INTERSECTION	SELECTED ALTERNATIVE					OVERALL
	EB	WB	NB	SB		
W.P. HWY. AT RAMPS I AND K						
NUMBER OF LANES/USAGE LEVEL OF SERVICE	1 (TR) *	1 (LT) *	-	1 (LR) *		*
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1T+1R) F	2 (1L+1T) B	-	2 (1L+1R) F		F
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1T+1R) B	2 (1L+1T) B	-	2 (1L+1FR) A		B
NUMBER OF LANES/USAGE LEVEL OF SERVICE	3 (2T+1R) B	3 (1L+2T) B	-	2 (1L+1R) A		B
W.P. HWY. AT RAMPS J AND L						
NUMBER OF LANES/USAGE LEVEL OF SERVICE	1 (LT) *	1 (TR) *	1 (LR) *	-		*
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1L+1T) C	2 (1T+1R) C	2 (1L+1R) D	-		C
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1L+1T) B	2 (1T+1TR) C	2 (1L+1R) C	-		C
NUMBER OF LANES/USAGE LEVEL OF SERVICE	3 (2L+1T) B	2 (1T+1R) C	2 (1L+1R) C	-		C
NUMBER OF LANES/USAGE LEVEL OF SERVICE	3 (1L+2T) B	3 (2T+1R) C	2 (1L+1R) C	-		B
FR. AVE. AT RAMPS E AND G						
NUMBER OF LANES/USAGE LEVEL OF SERVICE	1 (TR) E	1 (LT) *	-	1 (LR) E		*
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1T+1R) B	2 (1L+1T) B	-	2 (1L+1R) B		B
FR. AVE. AT RAMPS E AND G						
NUMBER OF LANES/USAGE LEVEL OF SERVICE	1 (LT) *	1 (TR) *	1 (LR) *	-		*
NUMBER OF LANES/USAGE LEVEL OF SERVICE	2 (1L+1T) B	2 (1T+1R) B	2 (1L+1R) B	-		B

KEY: R = SEPARATE RIGHT TURN LANE; T = SEPARATE THROUGH LANE;
 L = SEPARATE LEFT TURN LANE; TR = SHARED THROUGH & RIGHT LANE;
 LT = SHARED LEFT & THROUGH LANE; LR = SHARED LEFT & RIGHT LANE;
 FR = FREE RIGHT TURN

**FIGURE
ROUTE 33 EXTENSION
SELECTED ALTERNATIVE - 2010 PM PEAK**

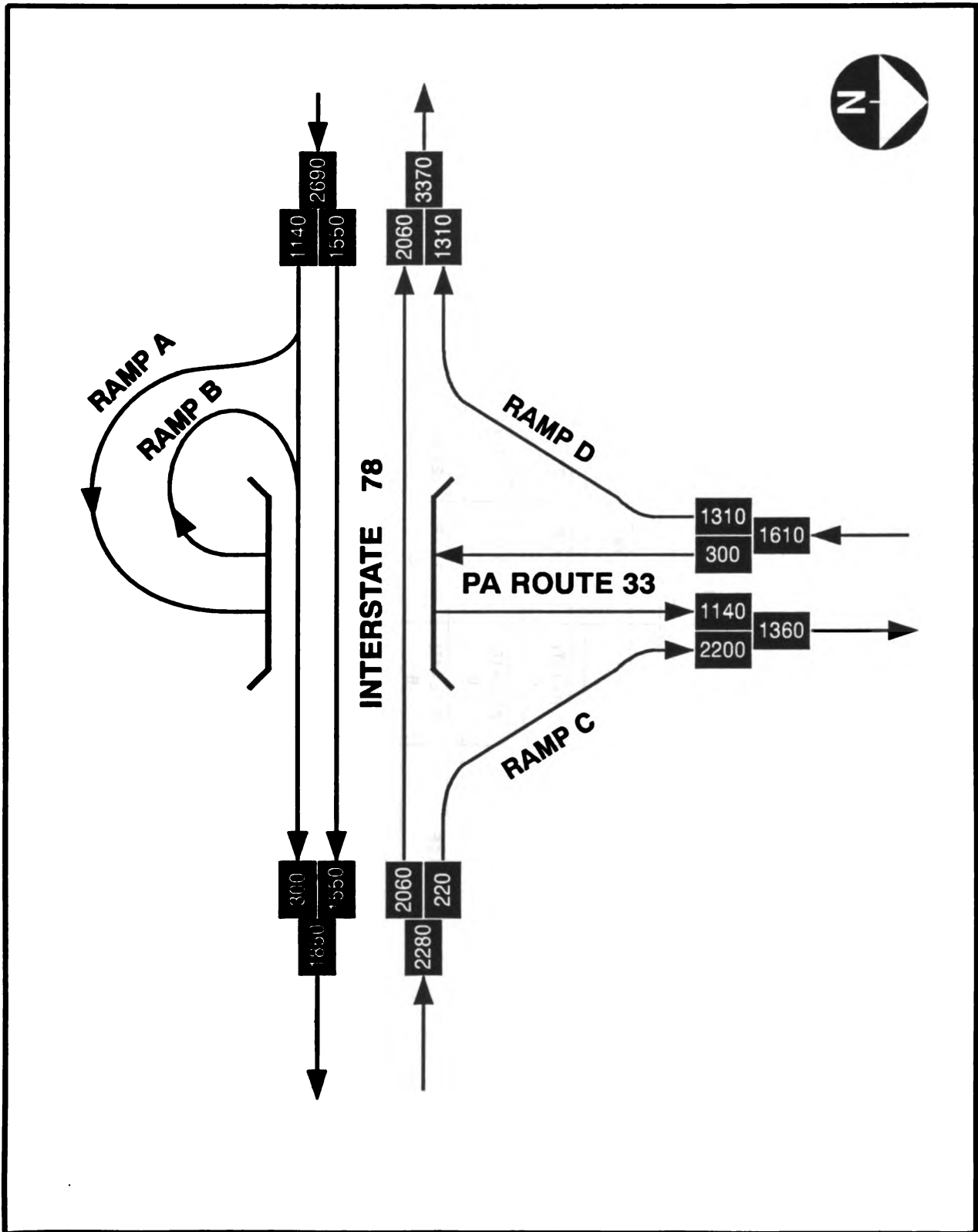
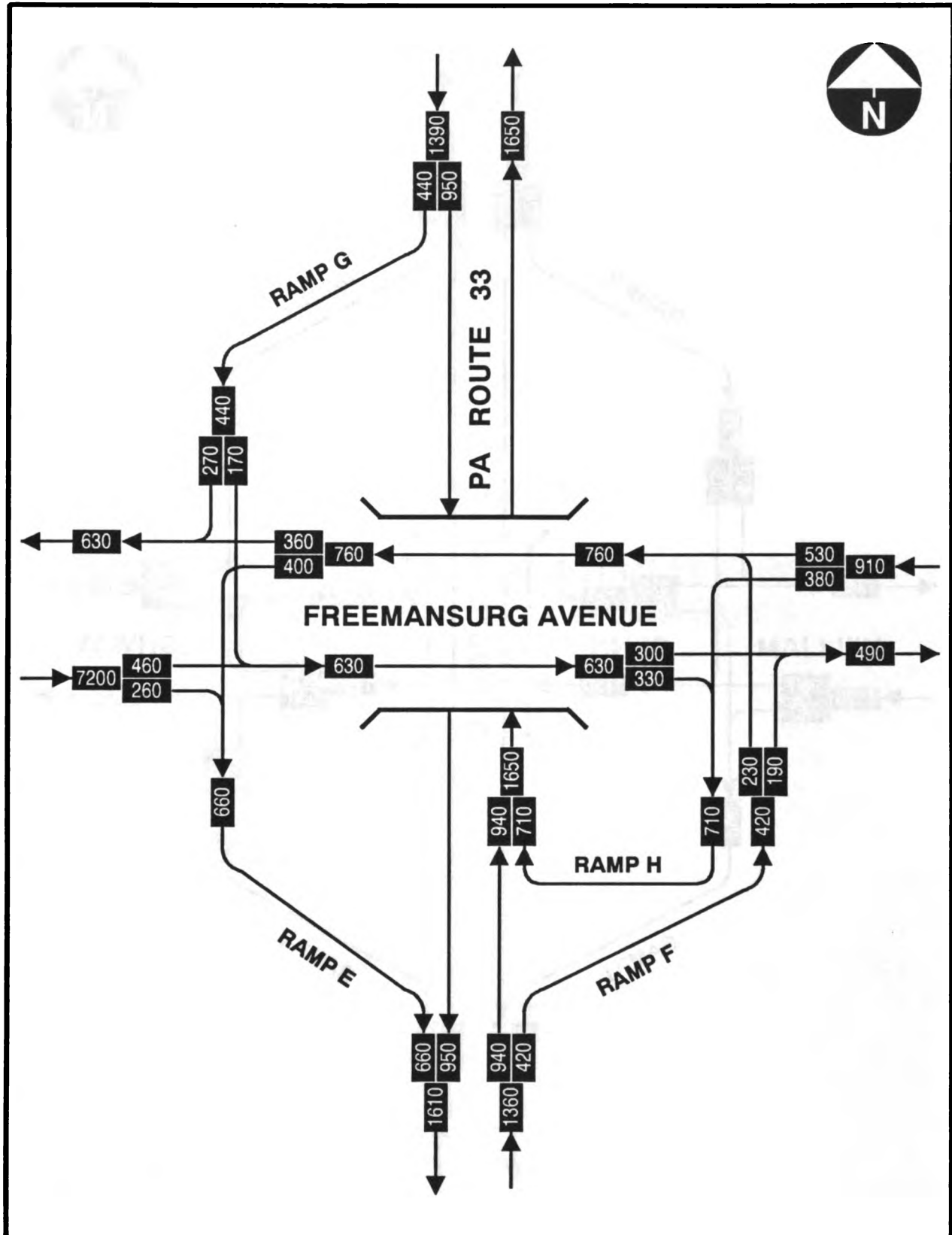
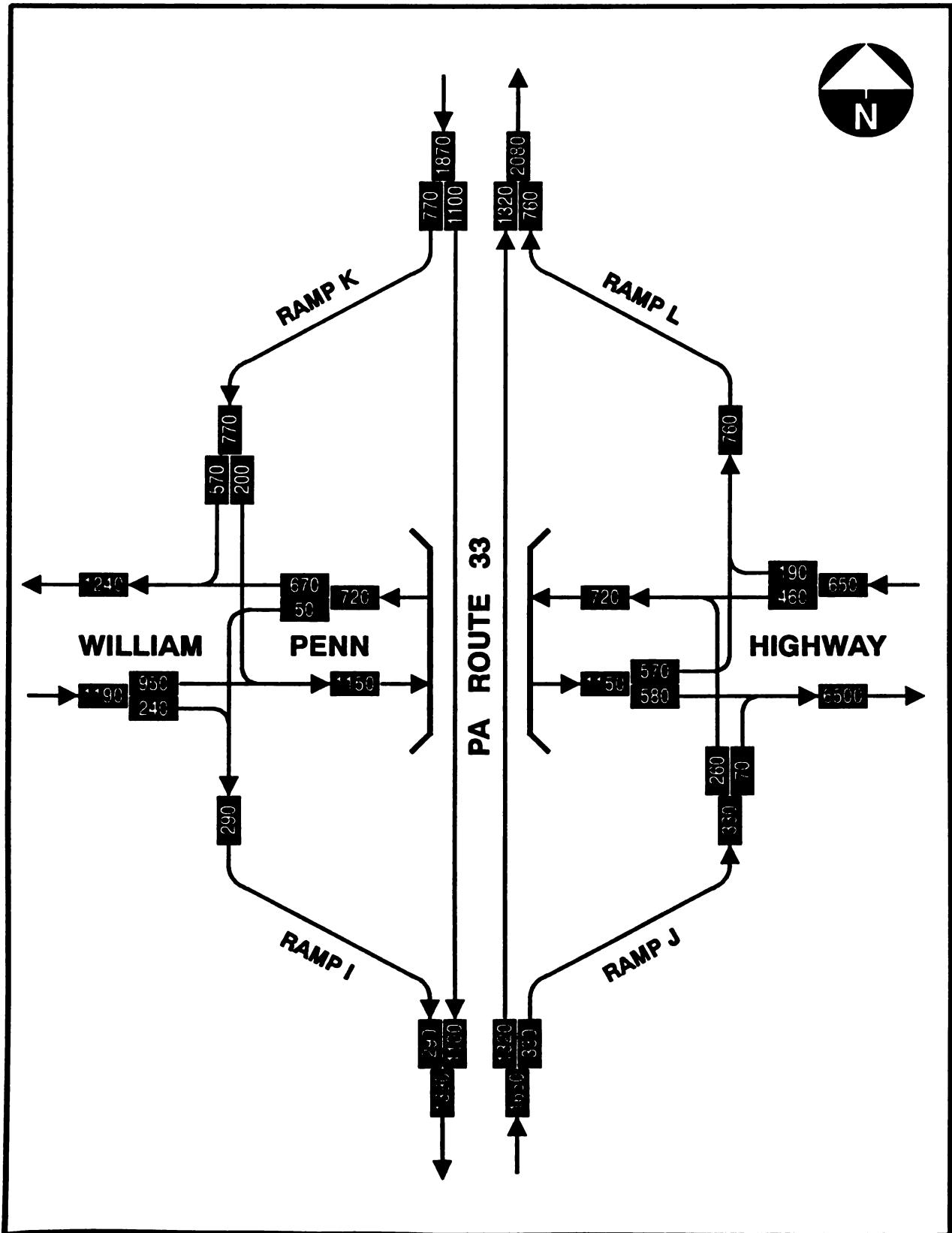


FIGURE
ROUTE 33 EXTENSION
SELECTED ALTERNATIVE - 2010 PM PEAK



**FIGURE
ROUTE 33 EXTENSION
SELECTED ALTERNATIVE - 2010 PM PEAK**



APPENDIX F

**DETERMINATION OF ELIGIBILITY AND
ELIGIBILITY NOTIFICATION FORMS**



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
BOX 1026
HARRISBURG, PENNSYLVANIA 17108-1026

Nov. 14, 1989

Fred W. Bowser, Director
Bureau of Design
Department of Transportation
1118 Transportation & Safety Bldg.
Harrisburg, PA 17120

RECEIVED
NOV 15 1989
BOWSER

Re: ER 88-J224-095-E
Northampton County
S.R. 0033, Sections A09 & A10
(T.R. 33 Extension Project)
Final Cultural Resources
Report

Dear Mr. Bowser:

Based on the supplemental information recently submitted to the Bureau for Historic Preservation concerning the above referenced project, the Bureau has re-evaluated the effect of this activity on cultural resources. Your cooperation in dealing with this matter has been appreciated.

As previously outlined in our letter of Feb. 13, 1989 it is the opinion of the State Historic Preservation Officer that the following properties are not eligible for listing in the National Register of Historic Places:

1. Unangst (Seiple) Farm: Locus 12, Seiple Farm District, Island Park Road, Williams Twp.
2. Mrs. Unangst Farm: Locus 13, Conchado District, Island Park Road, Williams Twp.
3. Coch Farm: Locus 1: Uhler Farm District, 3103, 3117 Hope Road, Bethlehem Twp.
4. Javis House: Locus 5, Cimino Lane, Bethlehem Twp.
5. Frankenfield Farm: Locus 3, Joseph Emick Farm District, 4135, 4525 Freemansburg Ave., Bethlehem Twp.
6. O. Richards Farm: Locus 6, George Emerick Farm District, 4500 Freemansburg Ave., Bethlehem Twp.

It is the opinion of the State Historic Preservation Officer that the following properties are eligible for listing in the National Register of Historic Places:

7. W.H. Clouse Farm: Locus 4, Walter Wagner Farm District, 4175 Freemansburg Ave., Bethlehem Twp.
8. Anthony Oberly House: Locus 9, William Baker Farm District, Redington Road, Lower Saucon Twp.
9. J. Oberly Farm District: Locus 10, Kenneth Fahs Farm District, Redington Road, Lower Saucon Twp.

10. Unangst (Wirth) Farm: Locus 11, Wirth Farm, Island Park Road, Williams Twp.
11. D. Bayer Farm: Locus 2, George Emerick Farm District, 4329 Freemansburg Ave., Williams Twp.
12. Hopeville Village Historic District: Locus 7b, Hopeville Historic District, Hope Road, Bethlehem Twp.
13. The Lehigh Canal: the canal was listed on the National Register of Historic Places on 10/2/78 and 12/17/89. Enclosed is a map of the official NR boundaries for the canal. Included in the nomination and boundaries are the Lock Keepers House at Hopeville and Oberly and Turkey Islands.

In our Feb. 13, 1989 letter, we requested additional information on the Redington Historic District/Coleraine Iron Company/Bethlehem Steel's Proving Grounds and Shell Filling Site. We have not yet received the information needed to evaluate the National Register eligibility of the area. Please submit the following:

1. A district/site map with the identified buildings labeled by number.
2. Photos showing the industrial site; the industrial site in relationship to the workers housing and streetscapes of the workers housing.
3. Description of the ruins on the industrial site with accompanying photographs.

The final cultural report also included these sites.

14. Locus 14: Hopeville Tavern Site: this structure is located in the determined eligible Hopeville Village Historic District. It appears to meet National Register criteria A and C. The final cultural report also questions its eligibility under Criterion D for its archaeological significance. Limited Phase I testing was reported in the final cultural report and in the author's opinion the site was not eligible under Criterion D. It is our opinion that the testing at this site was too limited to verify this eligibility. Therefore, if this property is to be affected by the proposed highway a more extensive Phase II level testing must be performed. Please submit a Phase II workplan for the site if affected by the proposed roadway.

15. Locus 15: Floodplan Deposit, Oberly Island Site. This area is already listed on the National Register of Historic Places as part of the Lehigh Canal nomination. As per our Oct. 4, 1989 letter this site appears also to individually eligible under criterion D. If the site is to be affected by the project a Memorandum of Agreement for the project would have to include mitigation for this site.

16. Locus 16: Site 36NM116, Prehistoric Site. This site was determined eligible for the National Register as part of the I-78 project. If the site is to be affected by the project additional archaeological investigations must be completed.

17. Locus 17: Fahs Site, 36NM135. This historic farmstead was determined eligible for the National Register under Criteria A and C. The final cultural report also addresses its eligibility under Criterion D. We agree that the site may also possess significance under this criterion and a Phase II level investigation must be completed. A more detailed Phase II workplan must be submitted to the Bureau for review. The workplan should include maps of the site showing the proposed locations for test pits and sections.

18. Locus 18: Seiple Lime Kiln Site. While the farmstead associated with this site was determined not eligible, we agree with the conclusions of this report that the lime kiln site may be eligible for the National Register under Criterion D. If the site is to be affected by the highway project, a Phase II workplan must be submitted to the Bureau for review.

The Bureau for Historic Preservation did not receive an official alternatives report. We were given a handout at the July 26, 1989 Interagency Coordination Meeting entitled: Presentation of Preliminary Alternatives Analysis. While this does not substitute for an official alternatives analysis report we offer the following comments based on the limited mapping in the July 26th handout.

Alternative 1: From the maps this alternative may affect the following cultural resources.

1. D. Bayer Farm: Locus 2, George Emrick Farm District, 4329 Freemansburg Ave., Bethlehem Twp.
2. The Lehigh Canal
3. Locus 15: Floodplain archaeological site
4. Locus 16: Site 36NM116

Alternative 2: From the maps this alternative may affect the following cultural resources.

1. W.H. Clouse House: Locus 4, Walter Wagner Farm District, 4175 Freemansburg Ave., Bethlehem Twp.
2. The Hopeville Village Historic District: Locus 7a
3. Locus 14: The Hopeville Tavern Site
4. The Lehigh Canal
5. Locus 16: Site 36NM116
6. Locus 17: Fahs Site, 36NM135

Page 4
F. Bowser
Nov. 14, 1989

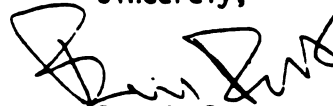
Please address the affect of the selected alternative on the cultural resources in your Phase 2 Alternatives Analysis Report for our review.

In reviewing the Cultural Resource Survey document the following items still need to be addressed in the final addition:

1. Provide original photographs for Plates 1, 2, and 3. The photocopies are of poor quality and provide no useful information.
2. On Figure 8 and 9, the USGS maps are not identified, nor is a scale provided. Please correct this in the final version.

If you need further information in this matter please consult Susan M. Zacher or Bob Wall at (717) 783-8946 or 783-8947.

Sincerely,



Brenda Barrett
Director

Enclosures

cc: R. Leister, PDOT, Bur. of Design
BB/smz

EO. 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION National Register of Historic Places National Park Service

Name of property: Bayer, D., Farm
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible Not Eligible No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible Applicable criteria: A, C Not Eligible

Comments:

35 CFR Part 63
Determination:

Documentation insufficient
(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks
Keeper of the National Register

Date: 7/10/90

E.O. 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service

Name of property: Clause, W. H., Farm
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible

Applicable criteria: A, C

Not Eligible

Comments:

36 CFR Part 63
Determination

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

Keeper of the National Register

Date: 7/1/90

Digitized by Google

EO 11593

**DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service**

Name of property: Hopeville Village Historic District
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible Not Eligible No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible **Applicable criteria:** A, D Not Eligible

Comments:

**36 CFR Part 63:
Determination**

Documentation insufficient
(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks
Keeper of the National Register

Date: 4/23/90

EO. 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service

Name of property: Oberly, Anthony, House
(PA33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible Applicable criteria: C

Not Eligible

Comments:

**36 CFR Part 63
Determination**

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks

Keeper of the National Register

Date: *5/12/90*

E.O. 11593

**DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service**

Name of property: Redington Historic District
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible

Applicable criteria: A

Not Eligible

Comments:

**36 CFR Part 63.2
Determination**

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks
Keeper of the National Register

Date: 7/12/90

EO. 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service

Name of property: Oberly, J., Farm District
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible

Applicable criteria: A, C.

Not Eligible

Comments:

36 CFR Part 63
Determination

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks
Keeper of the National Register

Date: 4/23/90

EO 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service

Name of property: Unangst--Wirth Farm
(PA 33 Extension Project)

Location: Northampton Co.

State: PENNSYLVANIA

Request submitted by: FHWA/Manuel A. Marks

Date received: 4/23/90

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible **Not Eligible** **No Response**

Comments:

The Secretary of the Interior has determined that this property is:

Eligible **Applicable criteria:** A **Not Eligible**

Comments:

36 CFR Part 63.
Determination

Documentation insufficient
(Please see accompanying sheet explaining additional materials required)

Manuel A. Marks

Keeper of the National Register

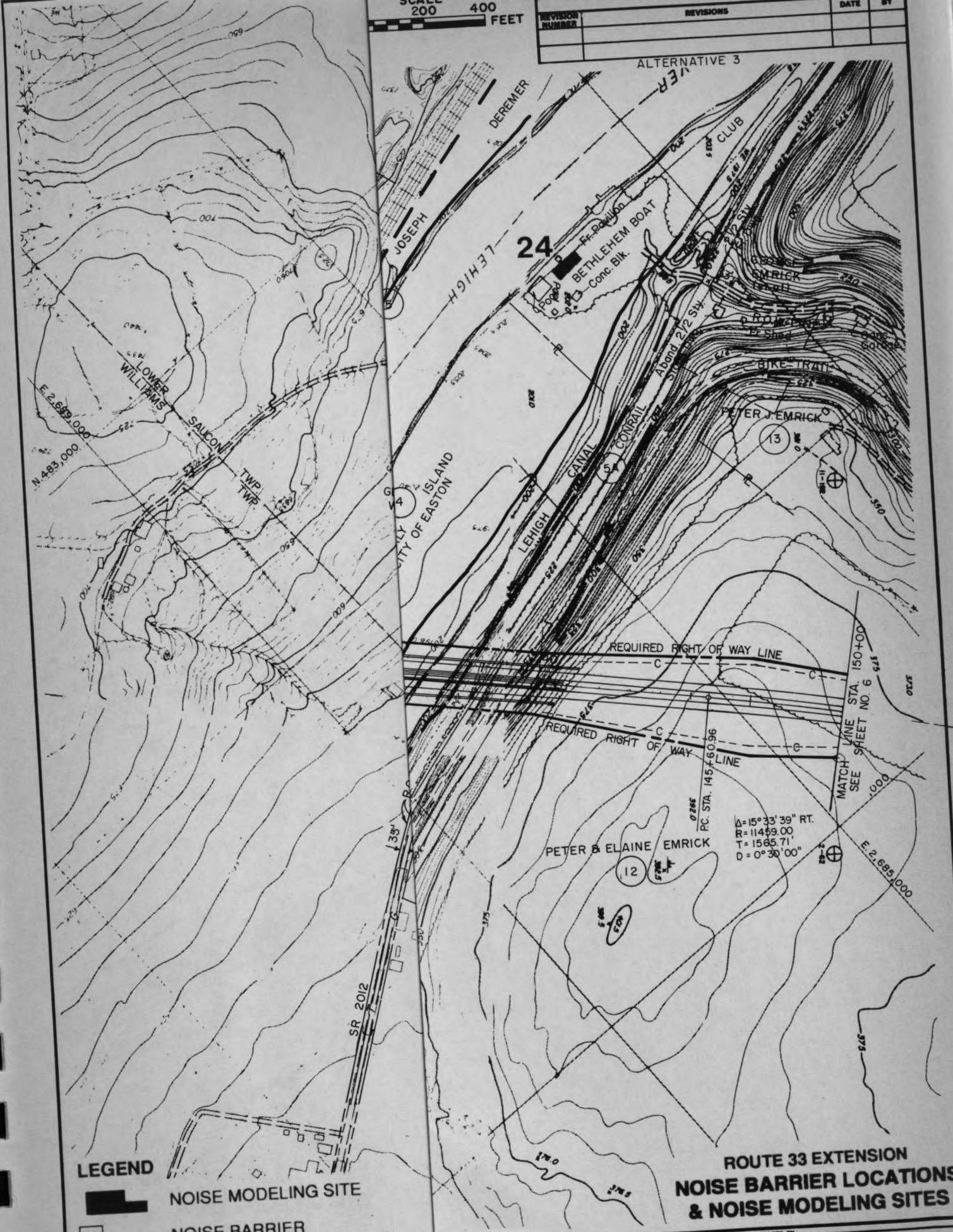
APPENDIX G

**LOCATION OF NOISE BARRIER LOCATIONS
AND NOISE MODELING SITES**


D-200 10-20


SCALE 200 400 FEET

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5-0	NORTHAMPTON	SR0033		4 OF 22	
REVISIONS				DATE	BY
REVISION NUMBER					



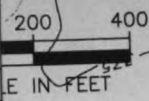
LEGEND

 NOISE MODELING SITE

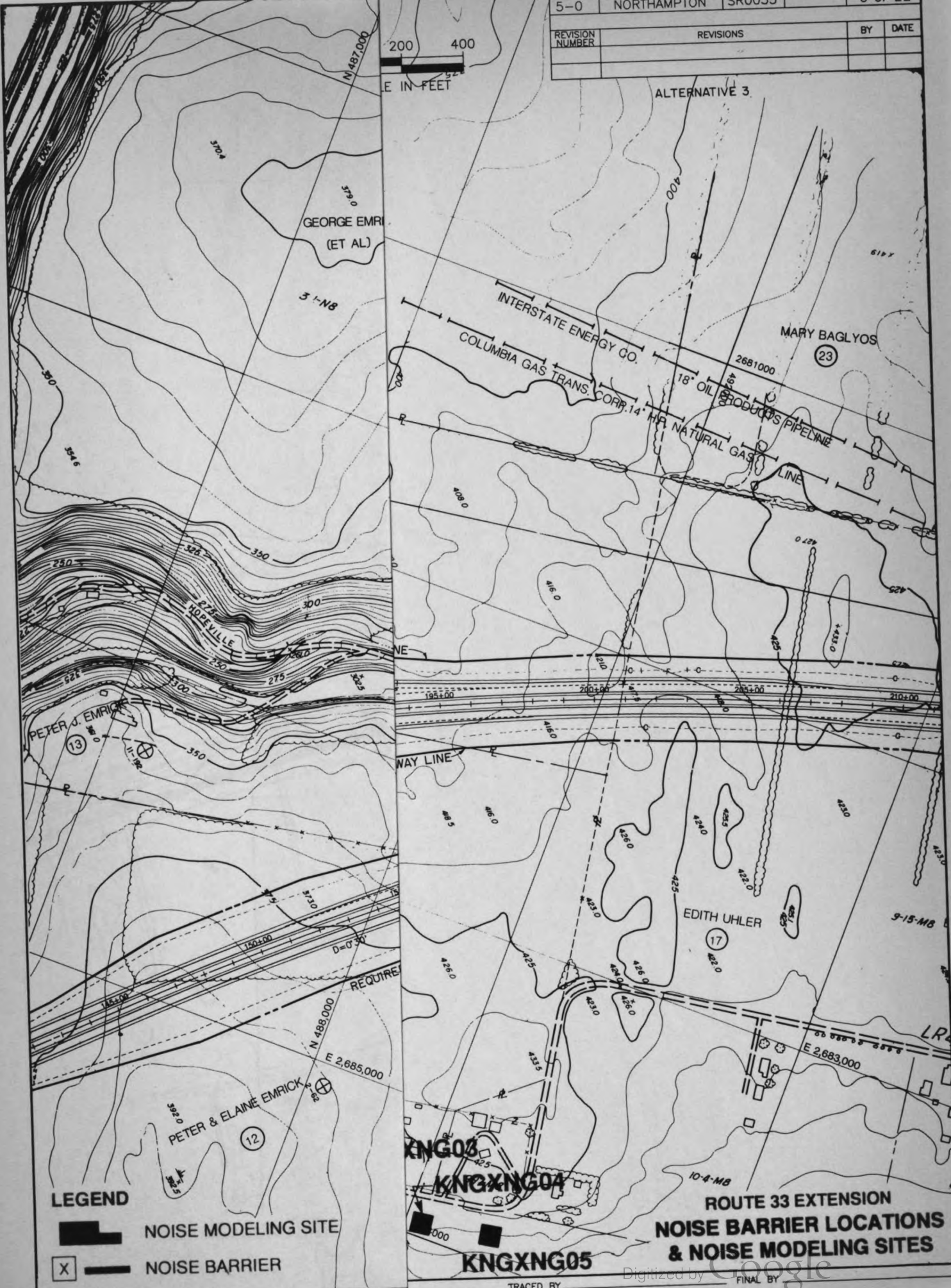
 NOISE BARRIER

**ROUTE 33 EXTENSION
NOISE BARRIER LOCATIONS
& NOISE MODELING SITES**


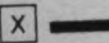
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	NORTHAMPTON	SR0033		6 OF 22
REVISION NUMBER	REVISIONS			BY DATE



ALTERNATIVE 3



LEGEND

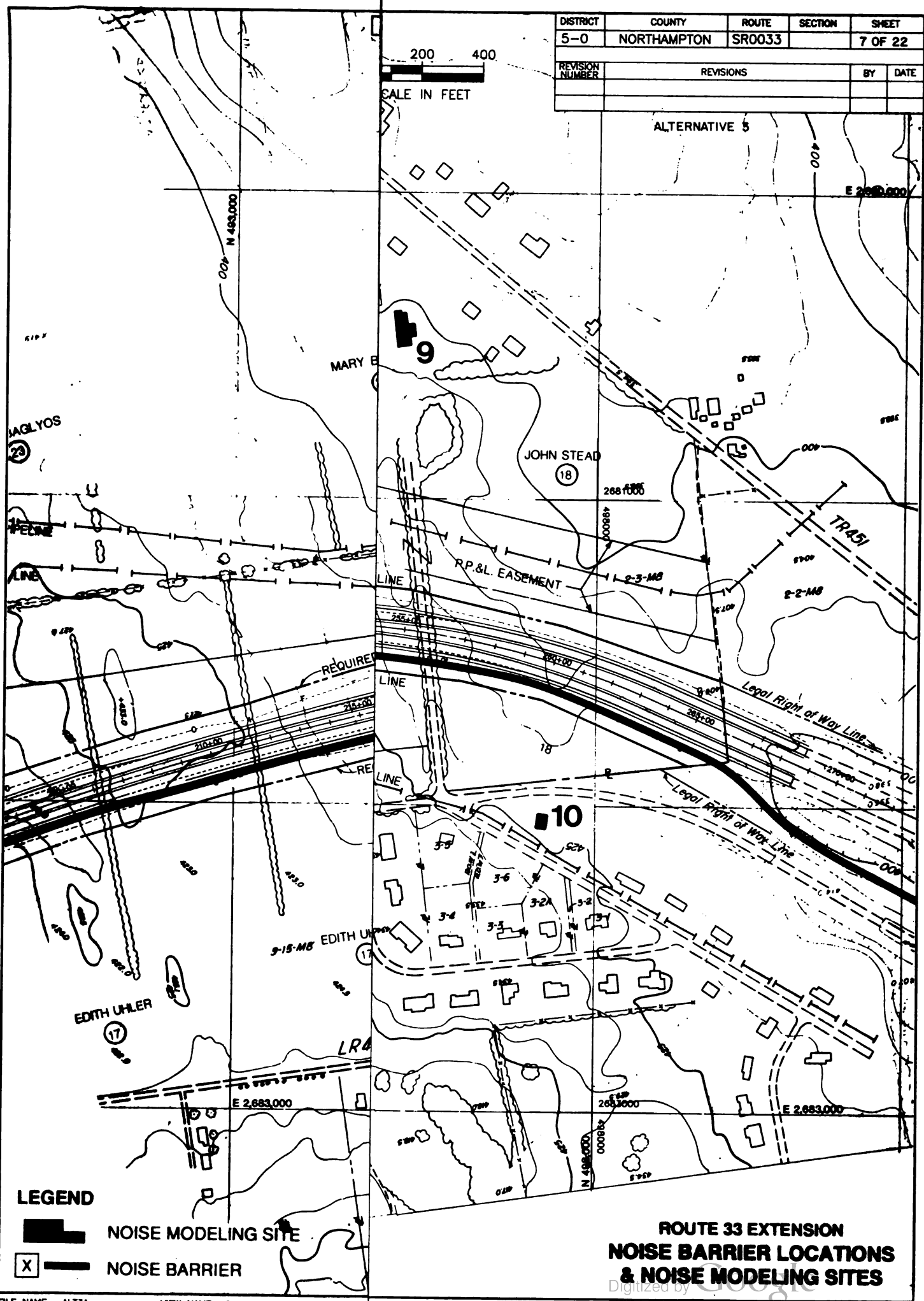
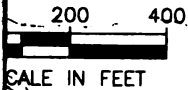
-  NOISE MODELING SITE
-  NOISE BARRIER

**ROUTE 33 EXTENSION
NOISE BARRIER LOCATIONS
& NOISE MODELING SITES**



KNGXNG03
KNGXNG04
KNGXNG05

TRACED BY _____ FINAL BY _____

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	NORTHAMPTON	SR0033		7 OF 22
REVISION NUMBER	REVISIONS			BY DATE



LEGEND

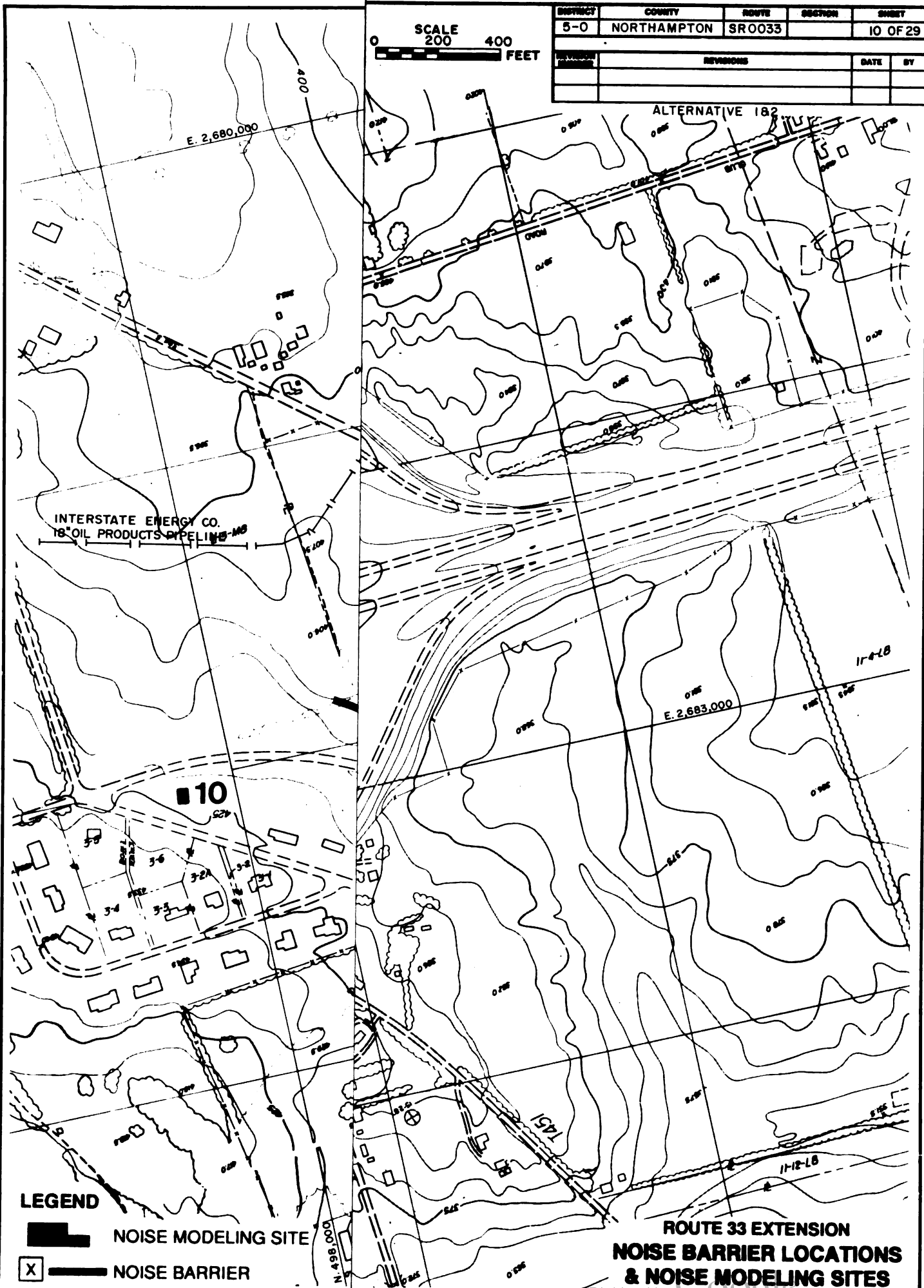
-  NOISE MODELING SITE
-  NOISE BARRIER

**ROUTE 33 EXTENSION
NOISE BARRIER LOCATIONS
& NOISE MODELING SITES**



Digitized by 



DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	NORTHAMPTON	SRO033		10 OF 29	
REVISION NUMBER	REVISIONS			DATE	BY



LEGEND

-  NOISE MODELING SITE
-  NOISE BARRIER

**ROUTE 33 EXTENSION
NOISE BARRIER LOCATIONS
& NOISE MODELING SITES**

APPENDIX H

SHPO's DETERMINATION OF EFFECTS LETTER



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Post Office Box 1026
Harrisburg, Pennsylvania 17108-1026

October 8, 1992

Fred W. Bowser, Director
Bureau of Design
Department of Transportation
1118 Transportation & Safety Bldg.
Harrisburg, PA 17120

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: ER 88-0224-095-Y
Northampton County
S.R. 0033, Sec. 001
and 002, Route 33
Extension Project:
Determination of
Effect Report and
Memorandum of
Agreement

Dear Mr. Bowser:

The above named project has been reviewed by the Bureau for Historic Preservation (the State Historic Preservation Office) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

The Bureau for Historic Preservation is in agreement with the findings in the above listed report.

In our opinion this project will have an effect on properties listed in or eligible for the National Register of Historic Places (listed below). Furthermore, it is our opinion that this project will adversely effect the historic and architectural qualities that make the properties eligible.

1. D. Bayer Historic District, 4329 Freemansburg Ave. Williams Township, Northampton County
2. Lehigh Canal: Easton Section, Northampton County: this property must be addressed in the Determination of Effect Report as it is eligible under Criteria A, C and D. Please add this evaluation to the report.

Page 2
F. Bowser
Oct 8, 1992

In our opinion the proposed project will have no adverse effect on the properties listed below that are listed in or have been determined eligible for the National Register of Historic Places.

3. Unangst Farm (Wirth Farm), Island Park Rd., Williams Twp.
4. J. Oberly Farm (Fahs Farm), Redington Rd., Lower Saucon Twp.

The properties listed below, listed in or eligible for the National Register of Historic Places, are located near the project area. However, due to the nature of the activity, it is our opinion that there will be no effect on these properties.

5. Anthony Oberly House, Redington Road. Lower Saucon Twp.
6. W.H. Clouse Farm, 4175 Freemansburg Ave., Bethlehem Twp.
7. Hopeville Historic District, Hope Rd., Bethlehem Twp.
8. Redington Historic District, Lower Saucon Twp.
9. Hartz Property, Country Club Road and William Penn Highway, Bethlehem Twp.

Thank you for submitting the additional information clarifying the Determination of Effect Report for effects on the Lehigh Canal and the D. Bayer Farm District. Therefore as a result of this additional information, the Bureau will consent to the implementation of the stipulations in the enclosed Memorandum of Agreement.

If you need further information in this matter please consult Susan M. Zacher at (717) 783-8946 or 783-8947.

Sincerely,



Kurt Carr, Chief
Division of Archaeology &
Protection

cc: D. Suci Smith, PDOT, Bur. of Environmental Quality
FHWA
KC/snz

APPENDIX I

**ALCAB ADJUDICATION
FEBRUARY 4, 1992**



JJF
Note: modification terms
agreed to?
ZCB
1/18
to KIM

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF AGRICULTURE
LEGAL OFFICE

February 10, 1992

FEB 10 1992

SEARCHED	INDEXED
SERIALIZED	FILED
FEB 10 1992	
FBI - HARRISBURG	
FILED	

Honorable Howard Yerusolim
Secretary of Transportation
Transportation and Safety Building
Harrisburg, PA 17120

Re: **ALCAB Decision**
Route 33 Extension

Dear Secretary Yerusolim:

Please find enclosed a copy of the February 4, 1992 decision of the Agricultural Lands Condemnation Approval Board with respect to the Route 33 extension project. The Board has approved PennDOT's application to condemn lands as described in "Alternative 3" of the farmlands assessment report.

Sincerely,


Dwight-Jared Smith, Esquire
Assistant Counsel

Enclosure

cc: Fred Wertz (w/encl.)

DJS:jmr



COMMONWEALTH OF PENNSYLVANIA
AGRICULTURAL LAND CONDEMNATION
APPROVAL BOARD

IN RE: ROUTE 33 EXTENSION

ADJUDICATION

I. Introduction

On January 9, 1992 the Agricultural Land Condemnation Approval Board held the third hearing regarding the proposed taking of agricultural land for the extension of Route 33 in Northampton County. The first two hearings resulted in an Order from the Board in May of 1990 prohibiting the condemnation primarily due to a concern that the Department of Transportation had not fully considered the impact on those farming operations that would remain after the taking. In response to that Order, the Department undertook an exhaustive effort to address the Board's concern, and those of the affected landowners, regarding this important issue.

At the January hearing, the Department, through numerous media, presented a thorough and complete analysis of the proposed project. One notable benefit of the project review was a new emphasis on creative ways to ameliorate the impact on farming operations while still adhering to historic preservation mandates which had seriously influenced the earlier siting plans. Of course, some aspects of the project had not changed from earlier assessments.

For instance, the need for the extension remains of importance to the regional and local economy. In addition, the range of possible sites is constrained by the needs to join with an existing interchange on the north, have a viable river crossing on the south, and avoid emerging residential growth in the middle.

After hearing all the evidence, including that provided both by citizens and through their cross-examination of department witnesses, the Board voted to approve the preferred alternative, that being number 3, with certain specified modifications. Those modifications, included by reference in the formal motion approved by the Board, were set forth during the testimony of Mr. Smythe, a witness for the Department. These included drainage control, to prevent farmland erosion, signal lights to provide safe travel to and from the Emrich farmstead, and access to that portion of the Emrich farm west of the highway site along with continued access for the existing bike path. Finally, should a section of Hope Road be relocated, the old portion would be removed so that the land in that area could be returned to farming. These modifications are, of course, in addition to those already planned (e.g., noise walls, below-grade road placement, etc.). Based upon the whole record before it, the Board, in approving alternative 3, makes the following:

II. Findings of Fact

1. The Department of Transportation (hereinafter the Department) initiated a request to the Board, dated November 8, 1991, again requesting approval of the condemnation of farmland for the extension of Pennsylvania Route 33 in Northampton County.

2. Proper and timely notice of the hearing held herein was given to both the public and the affected landowners.

3. The proposed highway extension to Route 33 is intended to connect an existing interchange on U.S. Route 22 with the newly completed section of U.S. Route 78, between Bethlehem and Easton.

4. The proposed extension is approximately 3.5 miles of four-lane, limited access highway, including intermediate interchanges and a new interchange with Route 78.

5. The preferred alternative requires approximately 92 acres of active farmland lost to the right-of-way with an additional 2.23 acres lost due to the impracticability of farming them.

6. The preferred alternative provided by the Department was alternative 3.

7. The Department provided a thorough and persuasive study and recommendations regarding the impact upon farmland which would remain after the actual taking.

8. The preferred alternative facilitates the engineering of the bridge required to span the Lehigh River as well as the interchange with Route 78.

9. The preferred alternative considers impacts on property eligible to be listed on the National Register of Historic Places.

10. The Department appropriately considered the options regarding the historical properties and has included mitigation measures in order to take account of these properties.

III. Conclusions Of Law

1. The Agricultural Land Condemnation Approval Board has jurisdiction over this matter pursuant to 71 P.S. § 106.

2. The affected landowners were given appropriate notice of the hearing and of the proposed taking of active farmland.

3. Alternative three, as modified by this Opinion, is a feasible and prudent alternative and there remains no other such alternative for the placement of this highway extension.

Based on all of the above, the Board hereby enters the following Order:


COMMONWEALTH OF PENNSYLVANIA
AGRICULTURAL LAND CONDEMNATION
APPROVAL BOARD

ORDER

AND NOW, this 4th day of February, 1992, the Agricultural Land Condemnation Approval Board hereby approves the application of the Pennsylvania Department of Transportation to condemn lands of the affected landowners as presented in the farmlands assessment report for alternative 3, and as further modified by this Opinion.

AGRICULTURAL LAND CONDEMNATION
APPROVAL BOARD

By:



Neal Buss
Deputy Secretary
Department of Agriculture
Chairman

Dated:

2/4/92

APPENDIX J

MEMORANDUM OF AGREEMENT (MOA)



U.S. Department
of Transportation

Federal Highway
Administration

Region 3
Pennsylvania Division

Courthouse and Federal Building
228 Walnut Street
P.O. Box 1086
Harrisburg, Pennsylvania
17108-1086

DEC 24 1992

IN REPLY REFER TO:

HE-PA.5

Northampton County
S.R. 0033, Sections 001 & 002
Determination of Effects and
Memorandum of Agreement

Mr. Don Klima
Eastern Office of Review and Compliance
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, N.W., #809
Washington, D. C. 20005

Attention: Ms. Druscilla Null

Dear Mr. Klima:

The Pennsylvania Department of Transportation intends to use Federal-aid funds for the above referenced project. An Environmental Impact Statement is being completed. As part of the studies, a historic structures survey was completed. Fifteen properties were evaluated and nine historic properties were identified within the project area as eligible for the National Register of Historic Places: D. Bayer Farm District, W.H. Clouse Farm, Hopeville Village Historic District, Redington Historic District, Anthony Oberly House, J. Oberly Farm District, Unangst (Wirth) Farm, The Lehigh Canal, and the Hartz Property. Two archaeological sites were also determined eligible for the National Register, the Oberly Island Site (36Nm140) and Site 36Nm116.

As per Section 800.8(a) of the regulations, we are providing the following information:

- Section I,II (page 1) of the document includes the project description. The project would consist of approximately 3.5 miles of four-lane, limited access highway, three major interchanges, and a bridge over the Lehigh River. Section I,III (page 5) of the document describes the alternatives studied in detail and the Preferred Alternative.
- Section I,V (page 14) describes the historic properties. Correspondence is included in the section from the Pennsylvania State Historic Preservation Officer dated January 15, 1988, February 13, 1989, November 14, 1989 stating their opinion on the eligibility of the sixteen properties for the National Register of Historic Places. The nomination forms are included in the Appendices of Section 1.
- Section I, VI (page 24) contains the Determination of Effect documentation including the application of the Criteria of Effect and application of the Criteria of Adverse Effect. Section I, VII (page 41) contains a summary of effects. Correspondence dated June 8, July 25, and September 4, 1990 is enclosed stating the SHPO's opinion on effect. Subsequent to this, the preferred alignment was modified and a re-evaluation of effect was completed. Section II (page 153) of the document contains the information relevant to impacts to the Hartz

Property and the D. Bayer Farm as a result of the changes. Correspondence dated September 16, 1992 is enclosed from the SHPO stating that in their opinion the project will have an adverse effect on the D. Bayer Historic District and Lehigh Canal: Easton Section; no adverse effect on the Unangst Farm (Wirth Farm) and J. Oberly Farm; and no effect on the Anthony Oberly House, W.H. Clouse Farm, Hopeville Historic District, Redington Historic District, and Hartz Property.

- Section III (page 202) of the document contains the information on archeological sites 36Nm140 and 36Nm116 including a description of the sites, relationship of the proposed project to the sites, the application of criteria and the Phase III data recovery work plan. In the appendix for Section III is the correspondence from the SHPO stating that in their opinion the project will have no adverse effect on Site 36Nm116 based upon the execution of an approved Data Recovery Work Plan. Site 36Nm140 also should have been referenced in this letter; however, it has been included in the attached Memorandum of Agreement.

The Memorandum of Agreement(MOA) for the project is enclosed. The MOA addresses mitigation for impacts to the D. Bayer Historic District, the Lehigh Canal:Easton Section, the Oberly Island Archeological Site (36Nm140) and Archeological Site 36Nm116. It also addresses commitments made to protect resources during construction. Appendix A referened in the MOA is the enclosed Determination of Effects Summary Report. The MOA has been approved and signed by the PA SHPO and has been concurred in by PennDOT, the Delaware and Lehigh Navigation Canal National Heritage Corridor Commission, Hugh Moore Historical Park and Museums, Inc., and the City of Easton. If you agree that we should carry out the above conditions and that by carrying them out we will ensure that this undertaking mitigates the effect on the resources, please sign the agreement and forward copies to the other signing parties.

Please review the enclosed and if you have any additional questions please contact Renee Sigel of our office at (717) 782-3785.

Sincerely yours,

Sgd. George L. Hamon

Manuel A. Marks
Division Administrator

Enclosures

cc: ✓ J. J. Faiella, Bureau of Design, PennDOT
HE-PA

**MEMORANDUM OF AGREEMENT
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
PURSUANT TO 36 CFR §800.6(a)**

**NORTHAMPTON COUNTY
BETHLEHEM AND LOWER SAUCON TOWNSHIPS
TRAFFIC ROUTE 33 EXTENSION
S.R. 0033, SECTION 001
AND
S.R. 0033, SECTION 002**

Whereas, the Federal Highway Administration has determined that the proposed project will have an effect on the D. Bayer Historic District (Emrick Farm), the Oberly Island Archaeological Site (36Nm140), and Archaeological Site 36Nm116, all of which are eligible for inclusion in the National Register of Historic Places; the Lehigh Canal, which is included on the National Register of Historical Places, and has consulted with the Pennsylvania State Historic Preservation Officer and the Advisory Council on Historic Preservation (ACHP), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

Whereas, the Advisory Council on Historic Preservation, the Hugh Moore Historical Park and Museums (Hugh Moore Park), and the Delaware and Lehigh Navigation Canal National Heritage Corridor Commission (Corridor Commission) participated in the consultation and have been invited to concur in this Memorandum of Agreement;

Now therefore, FHWA, Pennsylvania SHPO and the ACHP agree that the construction of the Route 33 Extension project shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

FHWA will ensure that the following stipulations are carried out:

- 1) **D. Bayer Historic District (Emrick Farm)**. The property to the west and south of the D. Bayer Historic District (Emrick Farm) will be landscaped in accordance with a landscaping plan designed in consultation with the SHPO. If it is determined that sound barriers will be constructed, the landscaping plan, specifically on the west side of the historic district, will include the sensitive usage of plantings and grading to minimize the visual impact. Landscaping on the south side of the historic district will include the partial removal, regrading and planting of existing Freemansburg Avenue. This planting may include traditional agricultural crops used on the functioning farmstead, such as corn.

2) Lehigh Canal and Towpath. The FHWA will continue to coordinate the development of design plans for the structure carrying S.R. 33 over the Lehigh Canal and Towpath and the Lehigh River up until the preparation of the final design construction drawings with the SHPO, the Hugh Moore Park and the Corridor Commission.

FHWA will ensure development of an historical and educational plaque for the Corridor Commission that will detail the route of the Lehigh Canal and other useful historical, canal-related information. The Pennsylvania SHPO will be given an opportunity to review the verbiage and design of the plaque before it is erected. Location of the plaque will be determined in consultation with the Pennsylvania SHPO, Hugh Moore Park, and the Corridor Commission. The plaque will be erected upon completion of construction.

During final design, a record of the existing condition of the Canal at the areas of impact will be recorded. This information will be submitted to the SHPO for review and comment.

3) Archaeological Sites. FHWA shall ensure that the Phase III Data Recovery Work Plan (Basalik and Lewis 1990) for the Oberly Island Site (36Nm140) and Site 36Nm116, eligible for inclusion in the National Register of Historic places, is implemented prior to, and in coordination with, those project activities that could disturb the two referenced sites. See Appendix A. FHWA shall ensure that all materials and records resulting from the Phase III Data Recovery conducted at the two referenced sites are curated by the SHPO in accordance with 36 CFR Part 79.

4) Construction Impacts. During construction, the canal/towpath area and the archeological sites will be fenced to avoid impacts to resources outside the construction area.

Construction access to the Lehigh Canal area via temporary construction roads and bridges will be submitted to the SHPO for review. Construction impacts to the Lehigh Canal properly including grading, bridging, and the capping of historic stratigraphy, will be detailed and submitted to SHPO for review. If any elements of the canal, prism, towpath, or berm will be temporarily impacted by construction, these will be recorded to HABS/HAER standards prior to construction and submitted to the SHPO.

FHWA will ensure that particular care is taken during construction to avoid affecting any archaeological remains outside of project limits that may be associated with the Oberly Island Site (36Nm140) and Site 36Nm116. Restrictions on construction work and areas will be accomplished by the erection of temporary fencing. Suitable arrangements for archaeological monitoring will be made in consultation with the SHPO prior to construction. At a minimum, such monitoring will include recording and reporting of major features or artifact concentrations uncovered, and recovery/curation of a sample of uncovered remains where practicable.

5) FHWA shall ensure that any unanticipated features or any other previously unrecorded cultural features located during construction will be treated in accordance with 36 CFR 800.11 and follow appropriate protocol.

6) The FHWA shall ensure that all work pursuant to this MOA is carried out by or under the direct supervision of a person or persons meeting the minimum qualifications as set forth in Secretary of Interior's Professional Quality Standards (48 FR 44738-9).

7) Should the Pennsylvania SHPO or any other participating parties named in this Agreement object within 30 calendar days of receipt to any plans or documents provided for review or actions proposed pursuant to this agreement, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall request the further comments of the Council pursuant to the 36 CFR Part 800.6(b). Any Council comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR Part 800.6(c)(2) with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

Execution of this Memorandum of Agreement by FHWA and the Pennsylvania SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence has afforded the Council an opportunity to comment on the Extension of S.R. 33, and the Lehigh River/Lehigh Canal Bridge project and its effects on historic properties, and that FHWA has taken into account the effects of the undertaking on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

BY: Sgt. George L. Harrison DATE: DEC 24 1992

PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICER

BY: Brent D. Hays DATE: 10/7/92

CONCUR:

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

BY: 10/6/92 Cheryl J. Speer DATE: 10/7/92

DELAWARE AND LEHIGH NAVIGATION CANAL NATIONAL HERITAGE CORRIDOR COMMISSION

BY: Walter M. Rinnino DATE: 8/14/92

HUGH MOORE HISTORICAL PARK AND MUSEUMS, INC.

BY: James C. Van Vleet DATE: 8/24/92

CITY OF EASTON (FOR HUGH MOORE PARK)

BY: Theresa J. Lee DATE: 8/21/92

ACCEPTED for the Advisory Council on Historic Preservation

BY: _____ DATE: _____

APPENDIX K
PHMC FINDING OF EFFECT



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Post Office Box 1026
Harrisburg, Pennsylvania 17108-1026

8/31/92

Fred W. Bowser, Director
PaDOT, Bureau of Design
1118 T & S Building
Harrisburg, Pa. 17120

Re: 88-0224-095-U & V
Finding of Effect,
Site 36 Nm 116
SR 0033, SEC 001 & 002
Northampton Cty.

Dear Mr. Bowser:

Additional information for the above named project has been reviewed by the Bureau for Historic Preservation (the State Historic Preservation Office) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980, and the regulations (36 CFR 800) of the Advisory Council on Historic Preservation.

Thank you for addressing our comments and questions of 11/7/90. Based on this additional information, we find that this project will have no adverse effect on site 36 Nm 116 on the following conditions:

1) The agreed upon data recovery plan must be completed prior to construction.

2) A final report for the excavations which meets the Pennsylvania State Guidelines for Archaeological Survey and the Secretary of Interior's Standards for the Treatment of Archaeological Properties must be accepted by our office.

3) Collections and field records for the project must be submitted to and accepted by the State Museum of Pennsylvania.

If you have any questions or comments regarding our review of this project, please contact Joe Baker at (717) 783-9900.

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology
and Protection

CC: FHWA
D. Bachman

KWC:jab

RECEIVED

SEP 1 1992

STATE MUSEUM OF PENNSYLVANIA

APPENDIX L

**METHODOLOGY USED TO PREDICT POLLUTANT
LOADINGS FROM HIGHWAY RUNOFF**

Methodology Used To Predict Pollutant Loadings From Highway Stormwater Runoff

A procedure to determine water quality characteristics of highway stormwater runoff has been developed by the Federal Highway Administration (FHWA). This procedure uses fixed site data, rainfall and streamflow characteristics, and highway runoff quality to develop probability curves of instream concentrations for each pollutant of concern. Target concentrations and the pollutant probability curves are compared to determine the return period at which the target concentration is exceeded. When target concentrations are exceeded at a frequency that has been determined to be unacceptable, some type of control is required to meet the chosen water quality criteria. This procedure has been standardized by development of a computer program (Driscoll et al., 1990) which is available through FHWA and NTIS.

The FHWA procedure, through use of the available computer program, was used to calculate the impacts of highway stormwater runoff from the Preferred Alternative. Heavy metals (copper, lead, and zinc) are considered to be the pollutants of concern when stormwater discharge is to flowing streams. Calculations of predicted stream water quality, for heavy metals, was made for the three streams (Nancy Run, the Lehigh River and an unnamed tributary to the Lehigh River) that will receive stormwater runoff from the Preferred Alternative. When targeted water quality concentrations were exceeded at a less than one in 3-year frequency suggested by the EPA criteria for acute concentrations, additional treatment controls were analyzed. In these situations, pollutant concentrations to the receiving stream were reduced by use of overland flow and grass channels. Further information concerning the computer model and impacts of treatment controls can be found in FHWA-RD-88-007, Volume II: Users Guide for Interactive Computer Implementation of Design Procedure.

Modeling Data

Fixed Site Data

Watershed drainage area, total road right-of-way, and actual paved road surface area are required inputs to the model under fixed site data. Total road right-of-way and paved road area are used to obtain a runoff coefficient for each drainage area. Watershed drainage area is combined with streamflow data to develop streamflow probability curves.

The three watersheds, upstream of the Preferred Alternative, were delineated and watershed areas for Nancy Run and the unnamed tributary to the Lehigh River were calculated. As a conservative number, the drainage area of the Lehigh River at the USGS gauge at Bethlehem was used as the watershed area contributing to the Lehigh River at the river crossing. Total right-of-way and the actual paved surface road surface areas were calculated for each watershed. All areas used for calculations are listed in Table 1.

Table 1. Input Data for Watershed and Road Areas

Watershed Name	Watershed Area (Square Miles)	Total Road Right-of-Way (Acres)	Paved Road (Acres)
Nancy Run	0.3	134.0	37.5
Unnamed Tributary	1.8	93.5	21.0
Lehigh River	1279	97.5	31.0

Rainfall Data

Rainfall statistical information is used to estimate runoff from the highway. This information is entered as long term means and coefficients of variation for rainfall volume, intensity, duration and interval between the midpoints of successive storm events.

Rainfall input data for regional Zone 1 as listed in Volume I, Design Procedure were used for each watershed of interest. These values are listed in Table 2.

Table 2. Rainfall Characteristic Input Data

Rainfall Characteristic	Mean	Coefficient of Variation
Volume	0.26	1.46
Intensity	0.05	1.31
Duration	5.8	1.05
Interval	73.0	1.07

Stream Characteristics

Annual average stream flow and the coefficient of variation are used to calculate the resulting dilution from highway runoff. The annual average stream flow is more representative of stream conditions during a highway runoff event than the more typical lowest 7-day flow in 10 years used in calculation of stream water quality for NPDES discharges.

A regional value of 1.5 cfs/sq. mi., from Figure 3 of the Design Manual, was used as input for each watershed with a corresponding coefficient of variation of 1.5.

The Fish and Aquatic Life Criteria (Maximum Concentrations) for heavy metals a based on stream hardness. This requires input of a stream hardness that is representative of design flow conditions. Figure 4 of the Design Manual shows a stream hardness range of 60 to 120

as CaCO₃ for the Lehigh region of Pennsylvania. With groundwater flow through carbonate geology for Nancy Run and the unnamed tributary to the Lehigh River, a slightly higher hardness value of 125 mg/l as CaCO₃ was used as an input value for these two watersheds. Stream hardness and stream flow data exist for the Lehigh River at the Bethlehem USGS gauge. Use of the following regression equation, based on stream hardness and flow data for the Bethlehem USGS gauge, calculates a stream hardness of 64 mg/l as CaCO₃ at design stream flow.

$$\text{Hardness} = 1125 * \text{Flow}^{-0.38} \quad (r^2=0.73)$$

Highway Runoff Concentrations

Pollutant loading probability curves can be calculated from site mean concentrations and coefficients of variability and rainfall runoff characteristics. Highway runoff concentrations are dependent upon number of vehicles per day. The Design Manual uses the value of 30,000 vehicles/day to differentiate between urban and rural highways. Based on traffic volume, the default values for an urban highway, listed in Table 3, were used as the site mean pollutant concentrations and coefficient of variation.

Table 3. Pollutant Concentrations, Coefficient of Variation, and Soluble Fraction for All Watersheds

Pollutant	Site Mean Concentration (µg/l)	Coefficient of Variation	Soluble Fraction (%)
Copper	54	0.71	40
Lead	400	0.71	10
Zinc	329	0.71	40

Modeling Results

Predicted Stream Water Quality

Calculations of predicted stream water quality, for heavy metals, were made for Nancy Run, the Lehigh River and an unnamed tributary to the Lehigh River. These three water bodies will receive stormwater runoff from the Preferred Alternative. When targeted water quality concentrations were exceeded at a frequency less than one in 3-year frequency suggested for acute concentrations, additional treatment controls were analyzed. In these situations, pollutant concentrations of highway runoff is reduced as the runoff flows overland and through grassed channels and results in as acceptable return frequency.

Modeling results for each of the three watersheds are presented in the following sixteen pages.

-----TITLE OF ANALYSIS: Nancy Run - Copper

-----TEST CONDITION: Additional reduction for grass lined swales

***** SUMMARY OF INPUTS *****

-----WATERSHED DATA

Watershed Drainage Area = .3 sq.mi.
Total Hardness of Surface Water = 125 mg/l as CaCO3
STREAMFLOW = 1.5 CFS/sq.mi.
MEAN = .45 CFS Coef. of Var = 1.5

-----RAINFALL CHARACTERISTICS

	RAIN EVENT STATISTICS	VOLUME inch	INTENSITY in/hr	DURATION hours
MEAN	.26	.05	5.8	73
CofV	1.46	1.31	1.05	1.07

-----HIGHWAY CHARACTERISTICS

Highway Right-of-way = 134 HWY Paved Area = 37.5

-----HIGHWAY RUNOFF CONCENTRATIONS

Site Median Concentration (SMC) = 15 ug/l
Coef of Var of EMC's = .51
SOLUBLE FRACTION = 40 %
POLLUTANT = COPPER Target Concentration = 22

RUNOFF FLOW MEAN = 2.04 CFS Coef of Var = 1.31

***** IMPACT ANALYSIS RESULTS *****

The STREAM impact analysis indicates that the 22ug/l TARGET concentration
will be exceeded during24 % of storm events
or, on an average of once every 3.53 years

On an average of once every 3 years, the stream concentration
during a storm is computed to be 21 ug/l

***** REMARKS *****

1. Nancy Run
2. Copper
3. Additional 50% reduction due to grass lined swales

ANALYSIS BY :Dave Shellman

DATE: 5/4/92

-----TITLE OF ANALYSIS: Nancy Run - Zinc

-----TEST CONDITION: No Treatment

***** SUMMARY OF INPUTS *****

-----WATERSHED DATA

Watershed Drainage Area = .3 sq.mi.
Total Hardness of Surface Water = 125 mg/l as CaCO3
STREAMFLOW = 1.5 CFS/sq.mi.
MEAN = .45 CFS Coef. of Var = 1.5

-----RAINFALL CHARACTERISTICS

RAIN EVENT STATISTICS	VOLUME inch	INTENSITY in/hr	DURATION hours
MEAN .26	.05	5.8	73
CofV 1.46	1.31	1.05	1.07

-----HIGHWAY CHARACTERISTICS

Highway Right-of-way = 134 HWY Paved Area = 37.5

-----HIGHWAY RUNOFF CONCENTRATIONS

Site Median Concentration (SMC) = 329 ug/l
Coef of Var of EMC's = .71
SOLUBLE FRACTION = 40 %
POLLUTANT = ZINC Target Concentration = 387

RUNOFF FLOW MEAN = 2.04 CFS Coef of Var = 1.31

***** IMPACT ANALYSIS RESULTS *****

The STREAM impact analysis indicates that the 387ug/l TARGET concentration will be exceeded during 3.88 % of storm events or, on an average of once every 78.3 days
On an average of once every 3 years, the stream concentration during a storm is computed to be 738 ug/l

***** REMARKS *****

1. Nancy Run
2. Zinc
3. No Treatment

ANALYSIS BY :Dave Shellman

DATE: 5/4/92

-----TITLE OF ANALYSIS: Unnamed Tributary - Zinc

-----TEST CONDITION: No Treatment

***** SUMMARY OF INPUTS *****

-----WATERSHED DATA

Watershed Drainage Area = 1.8 sq.mi.
Total Hardness of Surface Water = 125 mg/l as CaCO3
STREAMFLOW = 1.5 CFS/sq.mi.
MEAN = 2.7 CFS Coef. of Var = 1.5

-----RAINFALL CHARACTERISTICS

RAIN EVENT STATISTICS	VOLUME inch	INTENSITY in/hr	DURATION hours
MEAN .26	.05	5.8	73
CofV 1.46	1.31	1.05	1.07

-----HIGHWAY CHARACTERISTICS

Highway Right-of-way = 93.5 HWY Paved Area = 21

-----HIGHWAY RUNOFF CONCENTRATIONS

Site Median Concentration (SMC) = 329 ug/l
Coef of Var of EMC's = .71
SOLUBLE FRACTION = 40 %
POLLUTANT = ZINC Target Concentration = 387

RUNOFF FLOW MEAN = 1.24 CFS Coef of Var = 1.31

***** IMPACT ANALYSIS RESULTS *****

The STREAM impact analysis indicates that the 387ug/l TARGET concentration will be exceeded during 1.05 % of storm events or, on an average of once every 288.3 days
On an average of once every 3 years, the stream concentration during a storm is computed to be 526 ug/l

***** REMARKS *****

1. Unnamed Tributary
2. Zinc
3. No Treatment

ANALYSIS BY :Dave Shellman

DATE: 5/26/92

-----TITLE OF ANALYSIS: Unnamed Tributary - Lead

-----TEST CONDITION: Reduction for overland flow

***** SUMMARY OF INPUTS *****

-----WATERSHED DATA

Watershed Drainage Area = 1.8 sq.mi.
Total Hardness of Surface Water = 125 mg/l as CaCO3
STREAMFLOW = 1.5 CFS/sq.mi.
MEAN = 2.7 CFS Coef. of Var = 1.5

-----RAINFALL CHARACTERISTICS

RAIN EVENT STATISTICS	VOLUME inch	INTENSITY in/hr	DURATION hours
MEAN .26	.05	5.8	73
CofV 1.46	1.31	1.05	1.07

-----HIGHWAY CHARACTERISTICS

Highway Right-of-way = 93.5 HWY Paved Area = 21

-----HIGHWAY RUNOFF CONCENTRATIONS

Site Median Concentration (SMC) = 210 ug/l
Coef of Var of EMC's = .6
SOLUBLE FRACTION = 10 %
POLLUTANT = LEAD Target Concentration = 108

RUNOFF FLOW MEAN = 1.24 CFS Coef of Var = 1.31

***** IMPACT ANALYSIS RESULTS *****

The STREAM impact analysis indicates that the 108ug/l TARGET concentration will be exceeded during02 % of storm events or, on an average of once every 51.03 years
On an average of once every 3 years, the stream concentration during a storm is computed to be 67 ug/l

***** REMARKS *****

1. Unnamed Tributary
2. Lead
3. 50% Reduction for overland flow

ANALYSIS BY :Dave Shellman

DATE: 5/26/92

-----TITLE OF ANALYSIS: Lehigh River - Copper

-----TEST CONDITION: No Treatment

***** SUMMARY OF INPUTS *****

-----WATERSHED DATA

Watershed Drainage Area = 1279 sq.mi.
Total Hardness of Surface Water = 64 mg/l as CaCO3
STREAMFLOW = 1.5 CFS/sq.mi.
MEAN = 1918.5 CFS Coef. of Var = 1.5

-----RAINFALL CHARACTERISTICS

	RAIN EVENT STATISTICS	VOLUME inch	INTENSITY in/hr	DURATION hours
MEAN	.26	.05	5.8	73
CofV	1.46	1.31	1.05	1.07

-----HIGHWAY CHARACTERISTICS

Highway Right-of-way = 97.5 HWY Paved Area = 31

-----HIGHWAY RUNOFF CONCENTRATIONS

Site Median Concentration (SMC) = 54 ug/l
Coef of Var of EMC's = .71
SOLUBLE FRACTION = 40 %
POLLUTANT = COPPER Target Concentration = 12

RUNOFF FLOW MEAN = 1.62 CFS Coef of Var = 1.31

***** IMPACT ANALYSIS RESULTS *****

The STREAM impact analysis indicates that the 12ug/l TARGET concentration will be exceeded during 0 % of storm events or, on an average of once every 298.15 years
On an average of once every 3 years, the stream concentration during a storm is computed to be 2 ug/l

***** REMARKS *****

1. Lehigh River
2. Copper
3. No Treatment

ANALYSIS BY :Dave Shellman

DATE: 5/26/92

References

Driscoll, E.D., P.E. Shelley and E.W. Streker. Pollutant Loadings and Impacts from Highway Stormwater Runoff, Volume I: Design Procedure, FHWA-RD-88-006, Federal Highway Administration, Washington D.C., April 1990.

Driscoll, E.D., P.E. Shelley and E.W. Streker. Pollutant Loadings and Impacts from Highway Stormwater Runoff, Volume II: Users Guide for Interactive Computer Implementation of Design Procedure, FHWA-RD-88-007, Federal Highway Administration, Washington D.C., April 1990.

APPENDIX M
WINTER MAINTENANCE IMPACTS

Winter Maintenance Impacts

Application of antiskid material to roadway surfaces, has the potential to impact water quality of the Lehigh River. The follow is calculation of a maximum application rate of NaCl such that chloride water quality criteria (250 mg/L) is not exceeded.

Assumptions

- Chloride criteria is 250 mg/L
- Chloride has a molecular weight of 35.5
- Sodium chloride has a molecular weight of 58.4
- Antiskid material is 100% NaCl
- All NaCl applied to roadway is washed off during a melt event
- Water quality impacts result from a melt event with a duration of 4 hours
- Melt event can occur during the winter months of November, December, January or February

Equivalent Sodium Chloride criteria

$$\frac{250 \text{ mg}}{\text{L}} * \frac{58.4}{35.5} = \frac{411 \text{ mg}}{\text{L}} \text{ NaCl}$$

Conversion of Sodium Chloride criteria as mg/L to lbs/ft³

$$\frac{411 \text{ mg}}{\text{L}} * \frac{1 \text{ gm}}{1000 \text{ mg}} * \frac{\text{lb}}{453.6 \text{ gm}} * \frac{28.3 \text{ L}}{\text{ft}^3} = \frac{0.0256 \text{ lb}}{\text{ft}^3}$$

The average daily flow, for the winter months at the USGS stream gauge at Bethlehem, is 2461 cfs. Resulting volume of flow, in the Lehigh River, during a 4 hour melt event is

$$2461 \frac{\text{ft}^3}{\text{sec}} * 60 \frac{\text{sec}}{\text{min}} * 60 \frac{\text{min}}{\text{hr}} * 4 \text{ hr} = 35,438,400 \text{ft}^3$$

Maximum Application Rate of Sodium Chloride Between Melt Events

$$\frac{0.0256 \text{ lbs}}{\text{ft}^3} * 35,438,400 \text{ ft}^3 = 908,718 \text{ lbs} = 454 \text{ tons of NaCl}$$

A maximum of 454 tons of pure sodium chloride can be applied to the section of highway that drains directly to the Lehigh River.

APPENDIX N

**U.S. ARMY CORPS OF ENGINEERS
JURISDICTIONAL DETERMINATION**



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE—2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106-2901

RECEIVED

APR 5 1989

APR 03 1989

Regulatory Branch

SUBJECT: CENAP-OP-R-88-1802-1(JD)

Mr. Edward S. Gabsewics, C.E.P.
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Mr. Gabsewics:

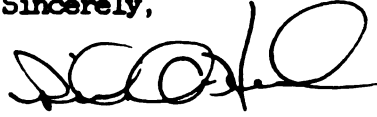
This is in regard to your letters of June 27, 1988 and February 17, 1989, on behalf of the Pennsylvania Department of Transportation, concerning Department of the Army jurisdiction over the proposed extension of Route 33 over the Lehigh River and Canal, between Route 22 and Interstate 78, near Bethlehem, Northampton County, Pennsylvania.

The areas within the proposed roadway alignments, alternatives 1 and 2, were examined during a site inspection by our office on March 23, 1989. Based upon our site inspection and information contained in the wetland delineation report prepared by Gannett Fleming, dated June 7, 1988, we offer the following comments with regard to our regulatory authority:

1. The wetland boundaries identified in your wetland report are an accurate delineation of federally regulated wetlands on the project site. This delineation represents an examination of vegetation, soils and hydrology. These wetland areas are adjacent to the Lehigh River and Canal
2. The project site also contains two intermittent streams. These streams are characterized by well-defined stream banks, and do not contain any adjacent wetlands. As such, our regulatory jurisdiction on these headwater streams is limited to discharges of dredged or fill material within the ordinary high water marks of the streams.
3. The Lehigh River and Canal are considered navigable waters of the United States. Pursuant to the Department of Transportation Act of 1966, the responsibility for regulation of bridge and causeway structures over navigable waters has been delegated to the U.S. Coast Guard. Our regulatory authority is limited to discharges of dredged or fill materials in accordance with Section 404 of The Clean Water Act.

A more specific comment concerning our permit authority will be provided as soon as more detailed construction drawings are available. If you should have any further questions regarding this matter, please contact Mr. Edward Bonner of this office at (215) 597-4722 between 1:00 PM and 3:30 PM or write to the above address.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Hassel', written in a cursive style.

Richard A. Hassel
Chief, Application Section

APPENDIX O
PAM HEP HSI SPECIES MODELS

PAM HEP HSI MODEL

Species: American Toad (Bufo americanus americanus)

Project: Route 33 Extension

Cover Types: Urban Land
 Argicultural
 Herbaceous Rangeland
 Shrub-Brush Rangeland
 Mixed Rangeland
 Deciduous Forest
 Mixed Forests

Life History Synopsis:

The American toad lives in a large variety of habitats from suburban parks to mountain wilderness. The only common requirement of all habitats are moist hiding places, shallow pools (temporary pools, ditches, streams, ponds, lakes, etc.), and abundant insect populations. American toads have been observed travelling 1,950 feet to reach breeding sites.

Breeding occurs in the spring with eggs deposited in quiet shallow water. Tadpoles spend the summer in shallow water feeding primarily on algae and other small aquatic plants. They occasionally feed on bottom ooze and filter protozoans.

Food of adult American toads include insects, snails, sowbugs, collembola, millipedes, centipedes, aphids, spiders, and worms. In one study, American toads ate 22 percent diptera (mostly larvae), 15.5 percent mites, 12.8 percent ants, 11.8 percent beetles and larvae, 10 percent thrips, 6.2 percent collembola, and 12.1 percent snails, aphids, sowbugs, spiders, and worms. In another study, spiders were the major food item followed by ants and beetles. The American toad is very much an opportunist feeding on whatever is most abundant on the ground.

During cold weather, American toads retreat to the deep holes in the ground or other suitable shelter.

Limiting Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding	1. No depressions that will hold water 1-2 months, no shallow water within 1,950 feet	0.0
	Few areas of shallow water 1,500 to 1,950 feet away	0.4
	Several shallow water areas 1,200 to 1,500 feet away	0.6
	Numerous shallow water areas less than 900 feet away	1.0

Food/Cover	2.	Dry ground; no rock piles, wood piles rotting logs, etc. Scarcity of insects on ground	0.0
		Open short grassy areas; little cover. No holes, logs, brush piles, etc.	0.2
		Moist ground; one to three cover sites per acre; moderate invertebrate populations	0.5
		Moist ground; tall grassy areas. Old fields; some cover sites such as rock piles, logs, etc.	0.7
		Moist ground; four or more cover sites per acre; open cavities in ground; abundant invertebrate populations	1.0

HSI Determination: HSI is equal to the lowest life requisite value.

References: Hamilton, W. J. 1930, Notes on the Food of the American toad. *Coplia* (2): 45.

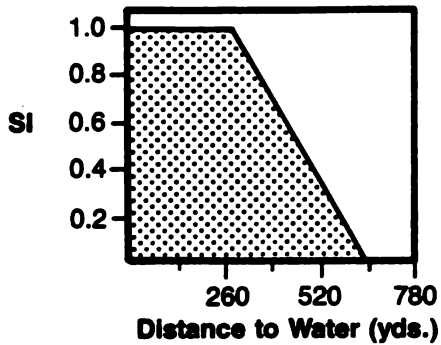
Smith, C. C. and A. N. Bragg. 1949. Observations on the Ecology and Natural History of Anura VII. Food and Feeding habitats of the Common species of Toads in Oklahoma. *Ecology* 30: 333-349.

WELUT HSI Model, June 1978.

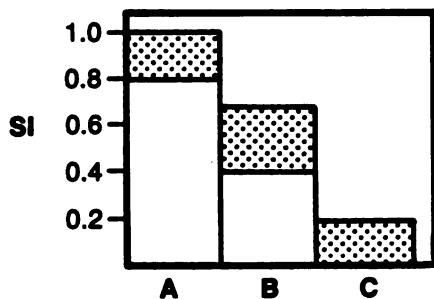
Conant, R. 1975. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Second Edition Houghton Mifflin Co., Boston. 429 pp.

AMERICAN TOAD

BREEDING



FOOD/COVER



- A. High ground moisture (not wetlands) > 4 cover sites within sight (logs, rock piles, brush piles, etc); open cavities in ground. Abundant invertebrate population.
- B. Moist ground; tall grassy areas; old fields; 2 to 4 cover sites within sight; moderate invertebrate populations.
- C. Dry ground; 1 or less cover sites within sight; short grassy or mowed areas; scarce invertebrate populations.

PAM HEP HSI MODEL

Species: Eastern Cottontail (Sylvilagus floridanus)

Project: Generic model for Pennsylvania

Cover Types: Argicultural Land
Herbaceous Rangeland
Shrub-Brush Rangeland
Mixed Rangeland

Life History Synopsis:

Good cottontail rabbit habitat is characterized by diversity. Rabbit home ranges averages approximately 0.5 acre, and diversity should be present at that level to provide optimum habitat value. Large monocultures of any type are not suitable for rabbits except for the edge effect where they interface with other cover types.

Breeding--There are no special requirements for mating cover. Nests have been found in every conceivable cover type, but short grassy areas are preferred, especially with adjacent escape cover.

Food--Food is generally not a limiting factor if breeding and cover requirements are met. Young, succulent growth is required for young juveniles and is provided by the nesting cover requirements.

Cover--Rabbits require a mixture of herbaceous and shrub cover. Herbaceous cover should constitute a minimum of 10 percent of the area, with optimum value being reached at 50 percent. Shrubs should constitute 10 to 25 percent of the area. Shrub clumps or rows must provide cover to the ground and be dense enough to hide rabbits from predators. Single, isolated shrubs have almost no cover value.

Conifers can provide the same cover values as deciduous shrubs if they provide the same basic cover and habitat diversity. Deciduous trees do not provide cover. If they comprise 10 percent or less of the area, they will not affect cover values. If more than 10 percent, they will reduce cover value proportionately. Forested areas of any type are basically not rabbit habitat, although they may be utilized by cottontails along the edges and may occasionally sustain a low-level population.

Water--In Pennsylvania, water is not a limiting factor.

Limiting Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding	1. Short, grassy areas (4" or less in height) one square yard or larger, during April May and June.	
	No short, grassy areas present.	0.1
	5% percent of area in short grassy cover with adjacent escape cover.	0.5
	10% or more of area in short grassy cover with adjacent escape cover.	1.0

Food	Is not a limiting factor.	
Cover	2.	Area in herbaceous cover 10" or more high (average annual conditions).
		Less than 10% of the area in herbaceous cover 0.1
		30% of area in herbaceous cover 0.5
		50% or more of area in herbaceous cover 1.0
	3.	Area in shrub clumps or rows providing cover to ground (conifers providing same cover are included in this analysis).
		Less than 10% or more than 75% of area in shrubs. 0.1
		15% to 60% of the area in shrubs 0.5
		25% to 50% of the area in shrubs 1.0
	4.	Distribution of shrubs.
		Shrubs clumped in one or two locations or otherwise poorly distributed, or present only along interface with another cover type as an adjacent value 0.1 - 0.4
	Shrubs moderately distributed 0.4 - 0.7	
	Shrubs well distributed 0.7 - 1.0	

$$\text{Cover SI} = \frac{2 + 3 + 4}{3}$$

Water Is not a limiting factor.

HSI Determination: HSI is equal to the lowest life requisite value.

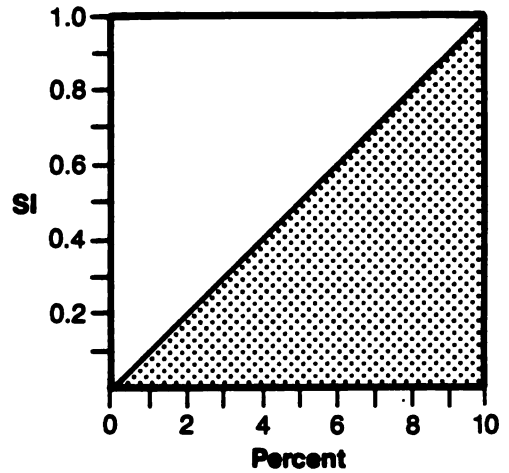
References: Palmer, J. H. 1976. Cottontail Rabbits. Game Mgt. Div., PA Game Commission, Harrisburg.

Developed: September 7, 1982, by J. Hugh Palmer, Pennsylvania Game Commission
Revised August 17, 1987, by J. Hugh Palmer.

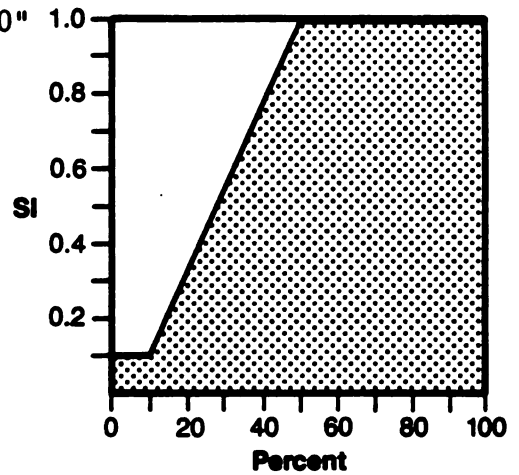
EASTERN COTTONTAIL

VARIABLE 1: Percent of area in short grassy vegetation (4" or less in height) one square yard or larger during April, May, and June.

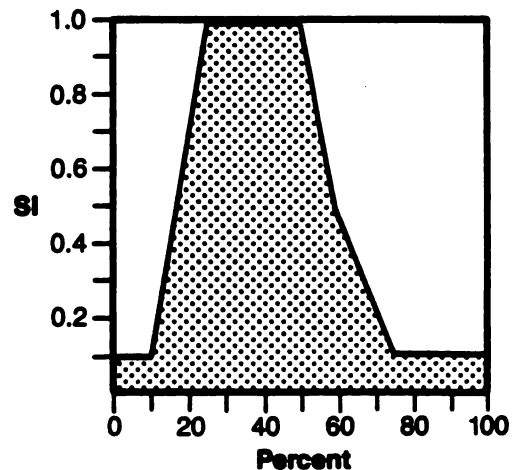
Note: Graphed values end at 10%. All values in excess of 10% receive a 1.0 SI rating.



VARIABLE 2: Percent of area in herbaceous cover 10" or more high (average annual conditions).



VARIABLE 3: Percent of area in shrub clumps or rows providing cover to the ground (conifers providing same cover are included in this analysis).

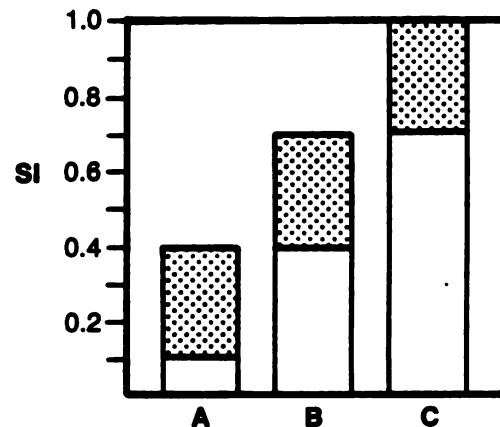


VARIABLE 4: Distribution of Shrubs

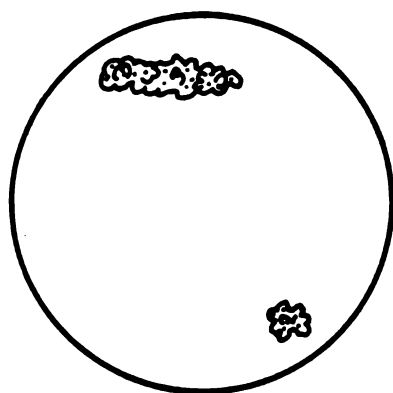
A = Shrubs clumped in one or two locations or otherwise poorly distributed, or present only along interface with another cover type as an adjacent value.

B = Shrubs moderately distributed.

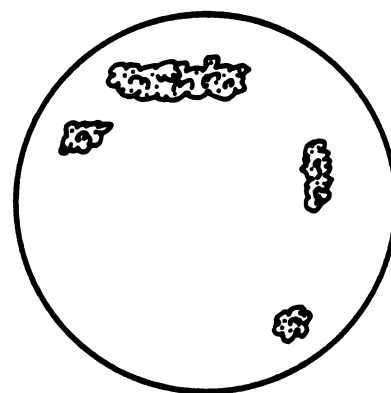
C = Shrubs well distributed.



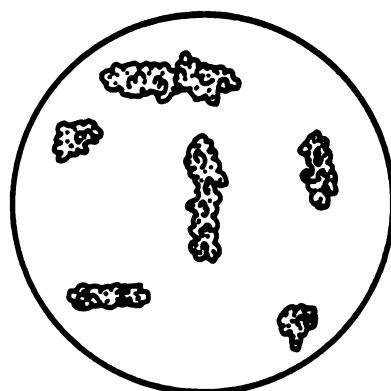
Examples of Shrub Distribution



Shrubs Poorly Distributed



Shrubs Moderately Distributed



Shrubs Well Distributed

PAM HEP HSI MODEL

Species: Raccoon (Procyon lotor)

Project: Route 33 Extension

Cover Types: Urban Land
 Argicultural
 Herbaceous Rangeland
 Shrub-Brush Rangeland
 Mixed Rangeland
 Deciduous Forest
 Emergent Wetland
 Scrub-Shrub Wetland
 Forested Wetland

Life History Synopsis:

Prefers forested areas with available permanent water. Does well in a variety of cover types ranging from urban to dense forests. Average home range size approximately 135 acres.

Hollow den trees are the most important breeding habitat. Suitable cavities have 4" to 10" openings 15' or more above ground. Suitable cavities usually found in mature trees, but presence not directly related to tree height. Dens may also be found in ground burrows, rock ledges, and buildings. Optimum den tree density two or more per 10 acres.

Raccoons eat a variety of plant and animal life. Preferred foraging areas are bottomland forests, wetlands, and adjacent upland forests. Raccoons utilize agricultural and rangeland areas more in summer and fall when feeding on fruits, corn, insects, and birds nests. Acorns are an important food source in forested habitats. Food value is based on diversity of basic habitat types and the diversity of food supply within each type.

Cover requirements are synonymous with the breeding and food requirements within 1 mile. Three or more permanent water sources per square mile is considered optimal.

Limiting Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding 1.	No den trees present	0.0
	1 den tree per ten acres	0.5
	2 den trees per ten acres	1.0
Note: Adjust values upwards for presence of ground, ledge and building sites where applicable. Apply adjacent value to areas where den sites are not present if den sites occur within 0.5 miles.		
Food 2.	(For determining food values for Urban, Agricultural, and Rangeland)	
	Deciduous forest and/or wetlands 0.5 miles or more distant	0.2
	Deciduous forest and/or wetlands 0.25 to 0.50 miles distant	0.4
	Deciduous forest and/or wetlands less than 0.25 miles distant	0.6

Note: Adjust values based on quantity, diversity, and seasonal availability of food.

3. (For determining food values for Deciduous Forest and Wetlands)
- | | |
|---|-----|
| Wetland (deciduous forest) 0.5 miles or more distant | 0.3 |
| Wetland (deciduous forest) 0.25 to 0.50 miles distant | 0.5 |
| Wetland (deciduous forest) less than 0.25 miles distant | 0.7 |

Note: Adjust values based on quantity, diversity, and seasonal availability of food. Adjust values upwards for agricultural or rangeland within 0.5 miles.

Cover Is not a limiting factor. Met by breeding and food requirements.

- | | | | |
|-------|----|-------------------------------------|-----|
| Water | 4. | No permanent water within 1.0 miles | 0.0 |
| | | Permanent water within 0.5 miles | 0.5 |
| | | Permanent water within 0.25 miles | 1.0 |

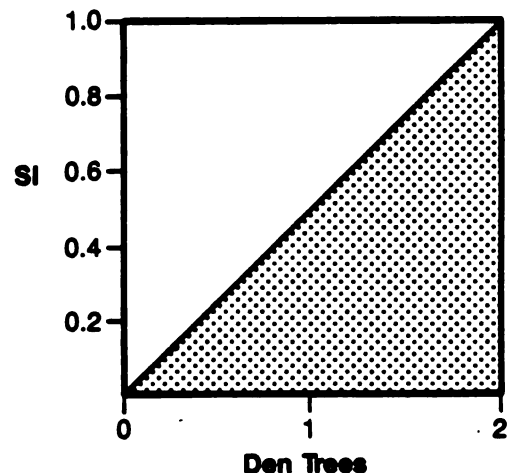
HSI Determination: HSI is equal to the lowest life requisite value.

References: WELUT HSI Model, April 1980.
PAM HEP HSI Model, Loyalhanna Lake, September 1982.

Developed: April 13, 1983, by J. H. Palmer, PA Game Commission.

RACCOON

VARIABLE 1: Number of den trees per 10 acres

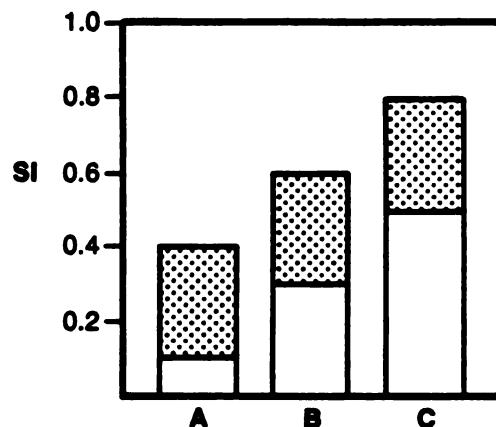


VARIABLE 2: Determining Food SI in Urban, Agricultural, and Rangeland Habitats

A = Deciduous forest and/or wetlands
0.5 miles or more distant

B = Deciduous forest and/or wetlands
0.25 to 0.5 miles distant

C = Deciduous forest and/or wetlands
less than 0.25 miles distant

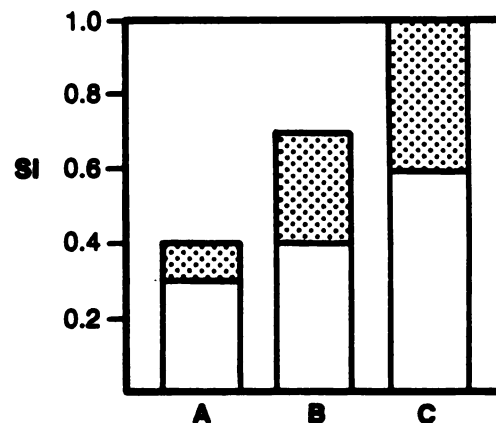


VARIABLE 3: Determining Food SI in
Deciduous Forest and Wetland Habitats

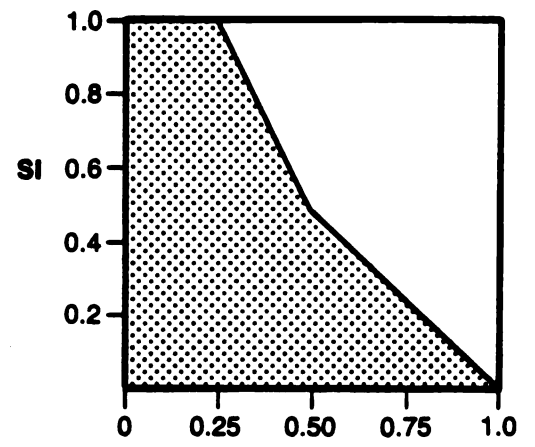
A = Wetland (deciduous forest) 0.5
miles or more distant

B = Wetland (deciduous forest) 0.25
to 0.5 miles distant

C = Wetland (deciduous forest) less
than 0.25 miles distant



VARIABLE 4: Distance to permanent water



PAM HEP HSI MODEL

Species: Red-tailed Hawk (Buteo jamaicensis)

Project: Route 33 Extension

Cover Types: Argicultural Land
Herbaceous Rangeland

Life History Synopsis:

Cover--The red-tailed hawk (Buteo jamaicensis) is a widely distributed raptor associated with open areas and woodland margins. Throughout the Appalachian Oak Forest within southern Pennsylvania, the red-tailed hawk is found most often in agricultural areas, grasslands, and old fields.

The red-tailed hawk inhabits open areas closely associated with wooded areas. Fields with some vegetative cover are preferred to plowed fields (Schnell, 1968). Old fields with extensive shrub growth will probably not be used extensively.

Breeding--Nests of red-tailed hawks are usually along the margins of mature wooded areas (Hagar 1957, Orians 1955), or in large isolated trees (Hagar 1957, Orians and Kuhlman 1956). The nest is usually built in a crotch or fork of the tree (Bent 1937). Orians and Kuhlman (1956) found nest heights between 30 and 90 feet (9 and 27 meters) and an average of 57 feet (17m). Nests are usually built of sticks less than 1 inch in diameter and may be used in successive years (Jackman and Scott 1975). Food availability may affect the nest location.

Food--Small mammals are the major food items, especially meadow voles (Microtus pennsylvanicus) and mice (Peromyscus spp.) (Craighead and Craighead 1956, Schnell 1968). Birds (including poultry), rabbits, shrews, squirrels, reptiles, and amphibians are also taken (Bent 1937, McAtee 1935, Orians and Kuhlman 1956). Hagar (1957) found red-tailed hawks in New York to feed extensively on woodchucks (Marmota monax).

Feeding is most often done from a perch or by flying low over fields (Fitch et al 1946). Schnell (1968) found that red-tailed hawks prefer perches over 30 feet (9m).

Perches are essential for red-tailed hawks (Fitch et al 1946). Trees over 30 feet (9m) with horizontal limbs or utility poles are frequently used (Schnell 1968). Isolated or small groups of trees are better than a dense clump of trees.

The red-tailed hawk requires both open and wooded areas. Craighead and Craighead (1956) found a daily range of 2 miles (3.2km). Fitch et al (1946) found territories between 80 and 200 acres (32 and 80 hectares) in size.

Water--No specific water requirements were found.

Life Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Food	1. Herbaceous Ground Cover	
	0-10% > 10 inches in height	0.1
	10-40% or 70-100% 6-10 inches in height	0.5
	40-70% < 6 inches in height	1.0
	2. Perch Availability	
	No perches visible	0.1
	< 2 perches visible	0.4
	> 2 but concentrated	0.8
	> 2 and scattered	1.0
	Food SI = $\frac{2(V_1) + V_2}{3}$	
Breeding	3. Average height of visible trees (adjacent forest lands)	
	0-14'	0.1
	14-25'	0.5
	>25'	1.0

HSI Determination: HSI equals the lower of food or breeding values.

References: Bent, ALC. 1937. Life histories of North American birds of prey: part 1. U.S. Natl. Bull. 167, 409pp.

Craighead, J.J., and F.C. Craighead. 1956. Hawks, owls, and wildlife, Stackpole Co., Harrisburg, 443pp.

Fitch, H.S., F. Swenson, and D.F. Tillotson. 1946. Behavior and food habitats of the red-tailed hawk. Condor 48(5): 205-237.

Hagar, D.C. Jr., 1957. Nesting populations of red-tailed hawks and horned owls in central New York State. Wilson Bull 69(3): 263-272.

Jackman, S.M. and J.M. Scott. 1975. Literature review of twenty-three selected forest birds of the Pacific Northwest. Region 6. U.S. For. Serv., pp. 68-84.

McAtee, W.L. 1935. Food habitats of common hawks. U.S. Dept. of Agric. Circu. No. 370, 36 pp.

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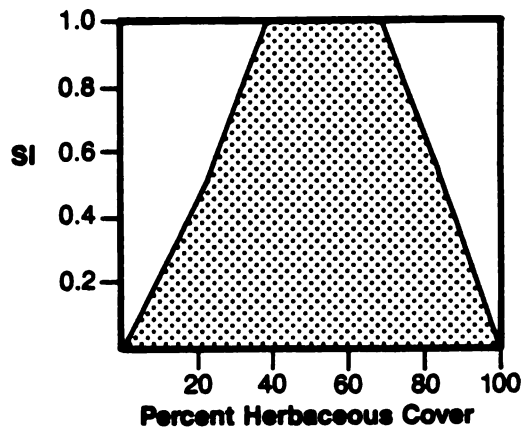
Orians G., and F. Kuhlman. 1956. Red-tailed hawk and horned owl populations in Wisconsin. Condor 58(5):371-385.

Schnell, G.D. 1968. Differential habitat utilization by wintering roughlegged and red-tailed hawks. Condor 70(4):373-377.

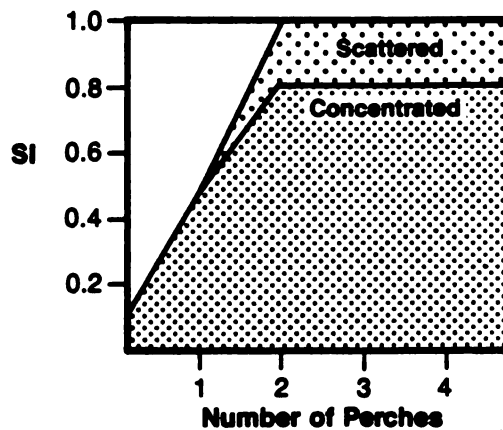
Developed: October 1987, Boswell Yule Jordan.

RED-TAILED HAWK

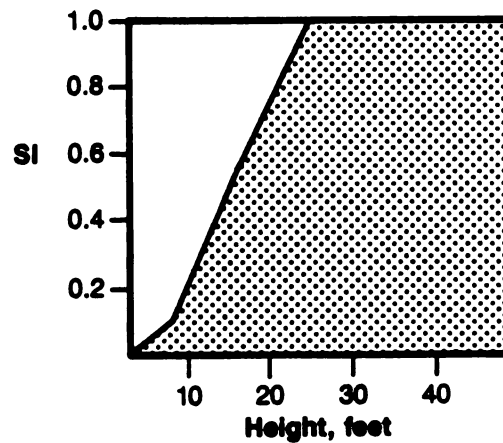
VARIABLE 1: Percent of herbaceous ground cover



VARIABLE 2: Number of perches available



VARIABLE 3: Average height of visible trees



PAM HEP HSI MODEL

Species: Red-winged Blackbird (Agelaius phoeniceus)

Project: Generic model for Pennsylvania

Cover Types: Emergent Wetland
 Scrub-Shrub Wetland*
 Forested Wetland*

Note: These wetland types are evaluated only if they contain a significant emergent component.

Life History Synopsis:

The red-winged blackbird is both a summer and winter resident in Pennsylvania. They occur in a diversity of habitat types including shrub and herbaceous wetlands, old fields, grain and hay fields, and pasture.

Breeding--Red-winged blackbirds prefer wetland habitat for nesting, but can also successfully nest in upland habitats. Optimal wetland nesting is in broad-leaved monocotyledons (primarily Typha spp. and Carex spp.), 1 to 2 feet tall located over water that is deeper than 10 inches.

An additional requirement for nesting habitat is the presence of elevated song perches needed in territory selection and establishment. Territory size ranges from 0.37 to 0.52 acres in wetlands.

Food--Is generally not a limiting factor if breeding/nesting and cover requirements are met. Red-winged blackbirds are opportunistic feeders and consume vegetative matter (herbaceous fruits including grain, softwood and hardwood fruits), animal matter (insects, arthropods, worms, snails, crustaceans, and other invertebrates), and grit.

Cover--If breeding/nesting requirements are met, then cover will not be a limiting factor.

Water--Water is a factor which enhances breeding potential and decreases the degree of predation, and is considered a function of the breeding/nesting requirements. Drinking water is not a limiting factor.

Life Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding /Nesting	1. Area in herbaceous canopy cover	
	0% of area in herbaceous canopy cover	0.0
	15% of area in herbaceous canopy cover	0.5
	30% or more of area in herbaceous canopy cover, especially dense stands that would more readily support nests.	1.0
	2. Area of <u>Typha</u> and/or <u>Carex</u>	
	0% of area in <u>Typha</u> and/or <u>Carex</u>	0.0
	50% of area in <u>Typha</u> and/or <u>Carex</u>	0.5
	70% or more of area in <u>Typha</u> and/or <u>Carex</u>	1.0

3. Average height of herbaceous canopy during breeding season

Average height of herbaceous canopy 10" or less	0.0
Average height of herbaceous canopy 25"	0.5
Average height of herbaceous canopy 30" or greater	1.0

4. Water depth beneath herbaceous canopy during breeding season

No water	0.0
Average water depth beneath herbaceous canopy 6"	0.5
Average water depth beneath herbaceous canopy 10" or greater	1.0

$$\text{Breeding/Nesting SI} = \frac{1 + 2 + 3 + 4}{4}$$

Note: 0.0 value for either Variable 1 or Variable 2 is limiting and resulting Breeding/Nesting SI will be 0.0

Food	Is not a limiting factor.
Cover	Integrated with Breeding/Nesting requirements.
Water	Integrated with Breeding/Nesting requirements.

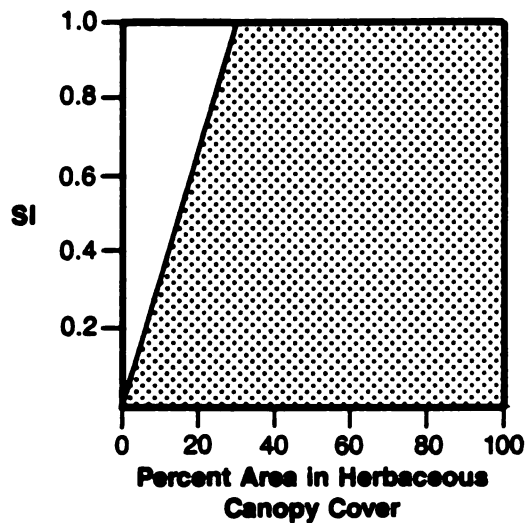
HSI Determination: HSI is equal to Breeding/Nesting SI.

References: WELUT HSI Model, R.-w. Blackbird, April 1980.
PA Fish and Wildlife Data Base.

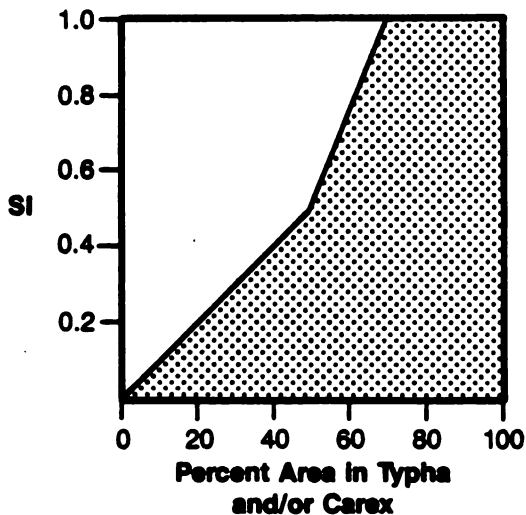
Developed: April 12, 1983, by Calvin W. DuBrock, Data Base Manager, PA Game Commission
Revised December 10, 1987, by J. Hugh Palmer, Game Biologist, PA Game Commission

RED-WINGED BLACKBIRD

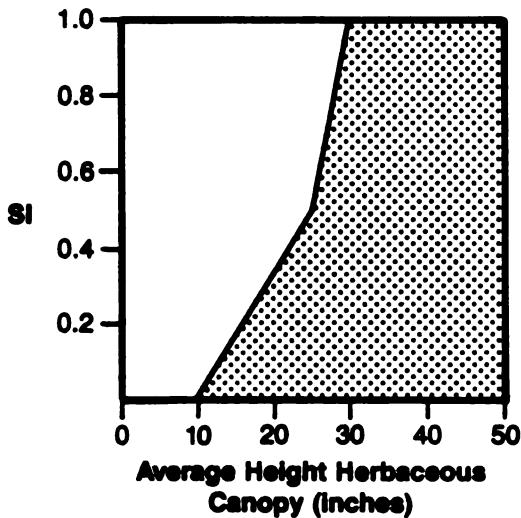
VARIABLE 1: % of area in herbaceous canopy cover.



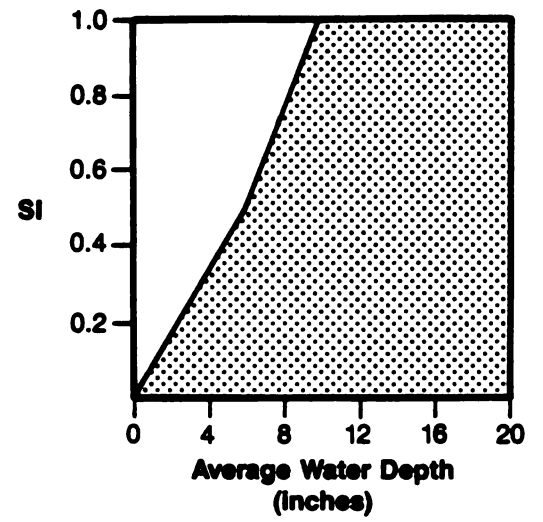
VARIABLE 2: % of area in Typha and/or Carex.



VARIABLE 3: Average height of herbaceous canopy during breeding season.



VARIABLE 4: Average water depth beneath herbaceous canopy during breeding season.



PAM HEP HSI MODEL

Species: Song Sparrow (Melospiza melodia)

Project: Route 33 Extension

Cover Types: Urban Land
 Argicultural Land
 Herbaceous Rangeland
 Shrub-Brush Rangeland
 Mixed Rangeland
 Deciduous Forest
 Mixed Forest

Life History Synopsis:

The song sparrow inhabits brushy cover in moist rangeland, woodland edges, fence and hedgerows, and other shrubby areas near water. Home range or territory is 0.3 to 1.0 acre in favorable habitat, but can be as large as 5 acres in average or below-average sites.

Most song sparrow nests are found at ground level or within two to three feet of ground level in grass tufts, sedges, shrubs, brushpiles, and cattails. Some nesting also occurs in trees up to a height of 27 feet. Breeding requirements are met by the general cover requirements.

One-third of the song sparrow's diet is made up of animal matter (mainly insects), and the other two-thirds are vegetable matter (mainly seeds and berries). Acceptable cover provides an adequate food supply.

Song sparrows require a significant brushy component in their habitat. The complete absence of brush and shrubs means the area is unsuitable for this species. Areas with scattered clumps of shrubs or moderate woody understory provide optimum cover. Fairly open areas are preferred; when tree canopy cover exceeds 50%, the habitat suitability decreases.

Although there is no drinking water requirement, song sparrows prefer cover within one-half mile of water.

Limiting Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding	Is not a limiting factor	
Food	Is not a limiting factor	
Cover	1. No shrubs or woody understory	0.0
	Continuous dense shrubs	0.5
	Scattered clumps of shrubs or moderate woody understory	1.0
	2. 100% tree canopy cover	0.0
	75% tree canopy cover	0.5
	50% or less tree canopy cover	1.0

Cover SI is the numerical average of 1 and 2. If the SI for either factor is 0.0, the cover SI is also 0.0

Water	3. No water within 1.5 miles	0.0
	Water within 1.0 miles distant	0.5
	Water within 0.5 miles	1.0

HSI Determination: HSI is equal to the lowest life requisite value.

References: WELUT Draft HSI Model, July 1978.
Anonymous. 1965. Audubon Nature Encyclopedia. Vol. 10, pp.
1897-1899. Copylab Publishing Counsel, NY.

Developed: July 9, 1984, by J. H. Palmer, PA Game Commission

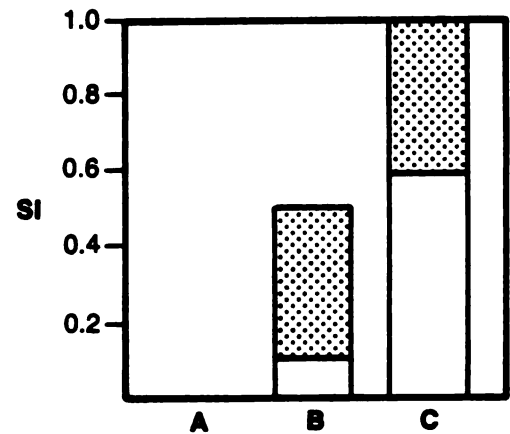
SONG SPARROW

VARIABLE 1: Occurrence of shrubs or woody understory.

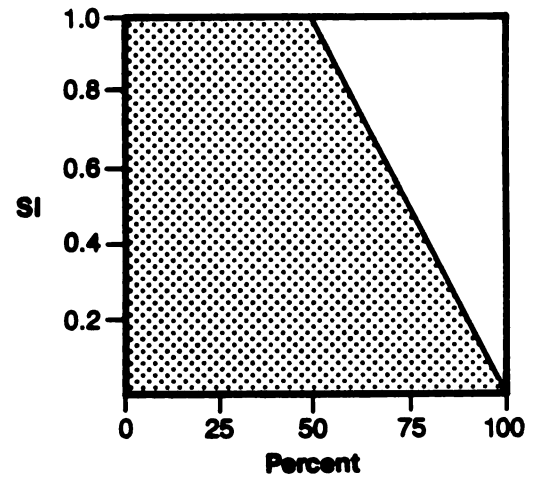
A = No shrubs or woody understory present.

B = Continuous dense shrubs.

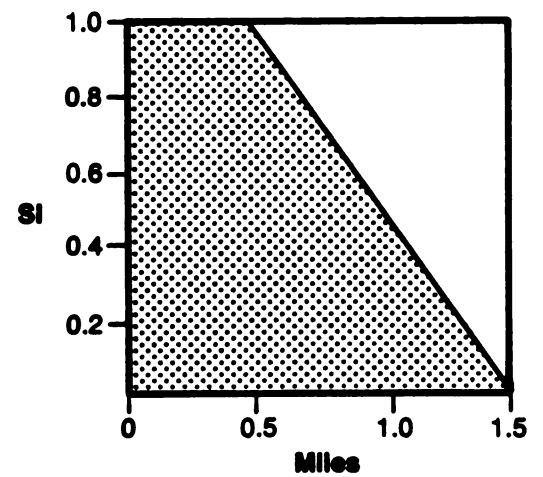
C = Scattered clumps of shrubs or moderate woody understory.



VARIABLE 2: Percent of tree canopy cover.



VARIABLE 3: Distance to water (streams, ponds, lakes, etc.)



PAM HEP HSI MODEL

Species: White-tailed deer (Odocoileus virginianus)

Project: Generic model for areas of mixed oak and northern hardwood forest along or interspersed with agricultural and/or rangeland in areas where winter thermal cover is not required, and for agricultural areas in the Piedmont and Coastal Plain physiographic regions of Pennsylvania.

Cover Types: Agricultural Land
Herbaceous Rangeland
Shrub-Brush Rangeland
Mixed Rangeland
Deciduous Forest
Coniferous Forest
Mixed Forest
Scrub-Shrub Wetland*
Forested Wetland*
Transitional Areas (with appropriate vegetation)

Note: These types assessed only where they fulfill the habitat functions of shrub, brush, rangeland, and forestland

Life History Synopsis:

The white-tailed deer is a common and economically important game animal in Pennsylvania. It adapts well to a variety of conditions and cover types.

White-tail home ranges vary from 320 acres upwards to 1,920 acres with an average of approximately 640 acres (1 square mile).

Breeding--There are no specific breeding habitat requirements. These are adequately provided by normal vegetative features of the species' habitat.

Food--Deer feed on a variety of food sources such as browse, fruits, herbaceous vegetation, and agricultural crops. Acorns and other mast are a major supplemental food supply except in the agricultural areas of the Piedmont and Coastal Plain. Mast is provided by appropriate tree species with a dbh of 12 inches or greater. Shrub thickets and understory provide browse. Shrub cover should constitute 30 percent to 40 percent of the woody vegetation. Woodland openings, agricultural land, and herbaceous fields are important grazing areas. Herbaceous openings should make up 15 to 30 percent of the forest area. Agricultural crops, when available, will make up a significant portion of the diet. Food values of cropland and pasture vary greatly with the types of crops or cover present, but optimum food value exists if herbaceous cover is 50 percent or greater.

Cover--White-tailed deer use shrub and conifer areas for escape cover. The combination of conifer stands and/or shrub thickets should comprise at least 10 percent of the area.

Water--Deer require one water source per square mile. In Pennsylvania, this is not a limiting factor.

Limiting Requisite Factors:

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
Breeding	Is not a limiting factor. Needs are met by food and cover requirements.	

In Deciduous Forest, Coniferous Forest, Mixed Forest, Shrub-Brush Rangeland, Mixed Rangeland (predominantly shrub), Scrub-Shrub Wetland, and Forested Wetland Cover Types:

Food	1.	Mast producing trees with dbh 12 inches or greater	
	A.	Mixed oak forest (oaks and hickories evaluated)	
		No mast trees present	0.0
		2 mast trees present	0.5
		4 or more mast trees present	1.0
	B.	Northern hardwood forest (cherry, beech, and red oak evaluated)	
		No mast trees present	0.0
		5 mast trees present	0.5
		10 or more mast trees present	1.0
	2.	Browse	
		No shrub crown cover less than 5 feet high	0.0
		20% of area in shrub crown cover less than 5 feet high	0.5
		40% or more of area in shrub crown cover less than 5 feet high	1.0
	3.	Herbaceous vegetation	
	A.	Herbaceous vegetation within forest/shrub land	
	No herbaceous cover in openings 0.1 to 9.0 acres in size	0.0	
	15% of area in herbaceous cover in openings 0.1 to 9.0 acres	0.5	
	30% or more of area in herbaceous cover in openings 0.1 to 9.0 acres	1.0	
B.	Herbaceous vegetation adjacent to forest/shrub land		
	Average distance of forest/shrub land to agricultural or herbaceous rangeland 1.0 mile or greater	0.0	
	Average distance of forest/shrub land to agricultural or herbaceous rangeland 0.75 mile	0.5	
	Average distance of forest/shrub land to agricultural or herbaceous rangeland 0.5 mile	1.0	

For Deciduous Forest, Coniferous Forest, Mixed Forest, and Forested Wetland:

$$\text{Food SI} = \frac{1 \text{ A or B (as applicable)} + 2 + 3 \text{ A or B (whichever is higher)}}{3}$$

<u>FACTOR</u>	<u>CONDITION</u>	<u>VALUE</u>
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For Shrub-Brush Rangeland, Mixed Rangeland, and Scrub-Shrub Wetland or Forested tracts (Deciduous, Coniferous, or Mixed) in agricultural areas in the Piedmont and Coastal Plain physiographic regions:

$$\text{Food SI} = \frac{2 + 3 \text{ A or B (whichever is higher)}}{2}$$

Note: 0.2 SI values for any food variable are not limiting and are averaged into the overall Food SI.

Cover	4.	Conifer stands and shrub thickets 5 feet or more high providing cover to the ground.	
		No conifer stands and/or shrub thickets 0.1 acre or larger	0.0
		5% of area in conifer stands and/or shrub thickets 0.1 acre or larger	0.5
		10% or more of area in conifer stands and/or shrub thickets 0.1 acre or larger	1.0

Note: Escape cover outside sample compartment meeting the area criteria and located within an average distance of 0.5 mile or less are rated as an adjacent value if the SI exceeds that within compartment. In determining values for cover areas outside of compartment, area of cover within the 0.5 mile boundary is evaluated as a percentage of the area of the sample compartment. If sample compartment is 20 acres, and there is 1 acre of escape cover outside the compartment but within the 0.5 mile boundary, this constitutes 5% of the sample compartment and receives an SI value of 0.5.

In Agricultural Land, Herbaceous Rangeland, Mixed Rangeland (predominantly herbaceous), and Transitional Cover Types:

Food	5.	Herbaceous cover (average annual conditions)	
		No herbaceous cover	0.0
		30% of area in herbaceous cover	0.5
		60% or more of area in herbaceous cover	1.0
Cover	4.	Conifer stands and shrub thickets 5 feet or more high providing cover to the ground.	
	6.	Distance to forest land	
		Average distance of agricultural/herbaceous rangeland/other herbaceous land to adjacent forest land 1.0 mile or greater	0.0
		Average distance of agricultural/herbaceous rangeland/other herbaceous land to adjacent forest land 0.75 mile	0.5
		Average distance of agricultural/herbaceous rangeland/other herbaceous land to adjacent forest land 0.5 mile or less.	1.0

$$\text{Cover SI} = \frac{4 + 6}{2}$$

Note: Variables 4 and 6 are limiting, and a 0.0 value for either will result in an 0.0 SI.

In All Applicable Cover Types:

Water: Is not a limiting factor in Pennsylvania.

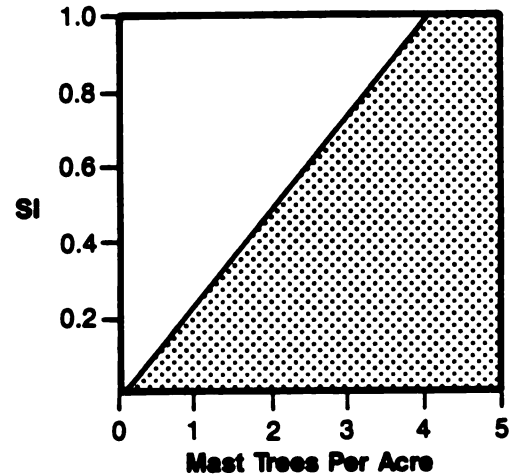
HSI Determination: HSI is equal to the lowest life requisite value.

References: Ecoregion 2213 Draft Model, w.-t. Deer, June, 1978.
Ecoregion 2211 Draft Model, w.-t. Deer, July, 1978.
Ecoregion 2214 Draft Model, w.-t. Deer, 1979.
WELUT Draft Model w.-t. Deer, February 1980.
Little Calumet HSI Model, w.-t. Deer, April, 1980.
W.-t. Deer Model in: Urick, D.L., J.P. Graham, & C.C. Cook, 1983.
A Handbook for Habitat Evaluation in Missouri.

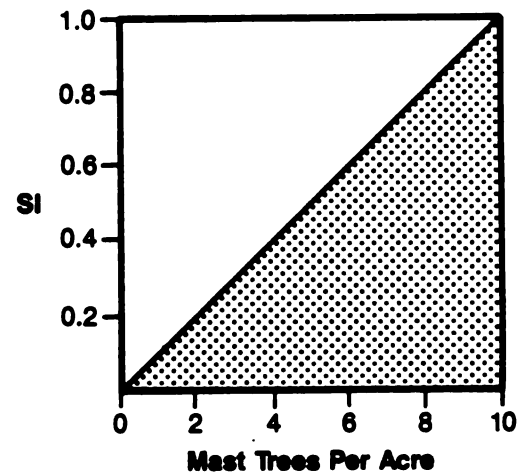
Developed: August 19, 1987, by J. Hugh Palmer and Lincoln M. Lang, Game Biologist, PA Game Commission
Revised September 22, 1987, by J. Hugh Palmer and Lincoln M. Lang.

WHITE-TAILED DEER

VARIABLE 1A: Number of mast producing trees (12 inches or greater dbh) per acre in mixed oak forest. Species evaluated are oaks and hickories.

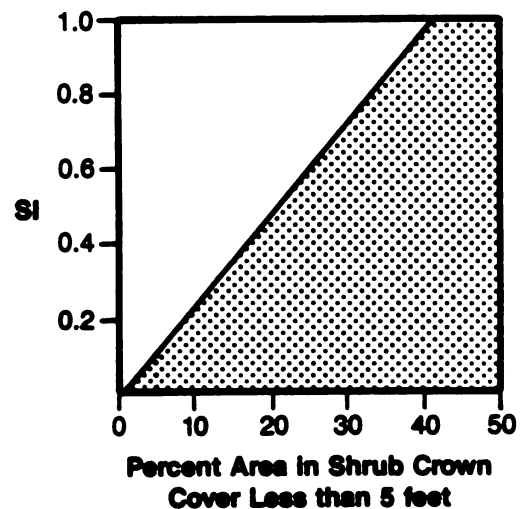


VARIABLE 1B: Number of mast producing trees (12 inches or greater dbh) per acre in northern hardwood forest. Species evaluated are cherry, beech, and red oak.



VARIABLE 2: Percent of area in shrub crown cover less than five feet in forest and shrub land.

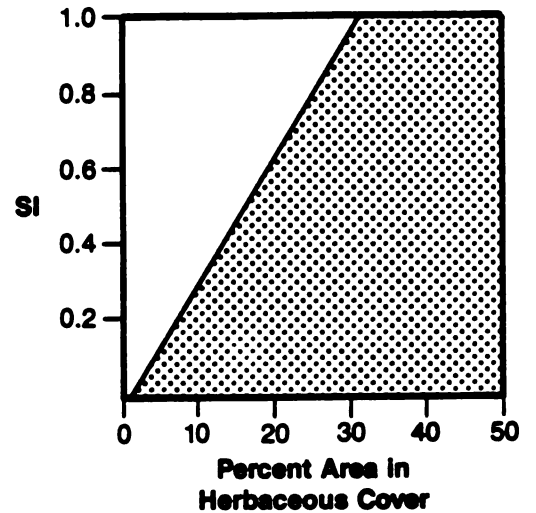
Note: Graphed values end at 50 percent. All values in excess of 50 percent receive a 1.0 SI rating.



WHITE-TAILED DEER

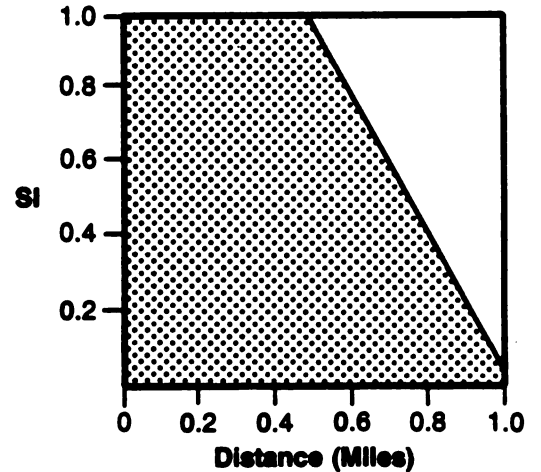
VARIABLE 3A: Percent of area in herbaceous cover in openings 0.1 to 9.0 acres in forest and shrub land.

Note: Graphed values end at 50 percent. All values in excess of 50 percent receive a 1.0 SI rating.



VARIABLE 3B: Average distance of forest/shrub land to agricultural and herbaceous rangeland.

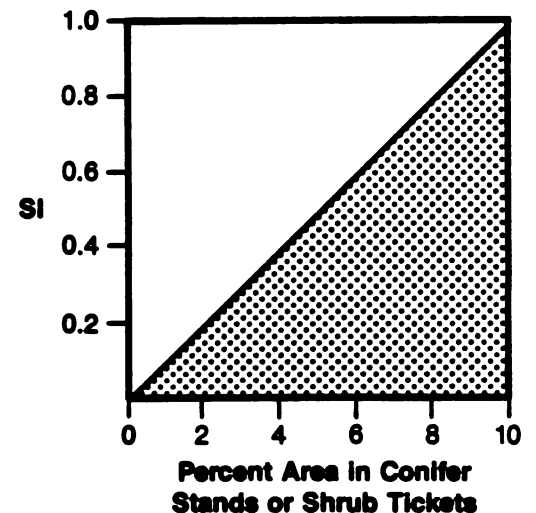
VARIABLE 5: Average distance of agricultural/herbaceous rangeland to forest land.



VARIABLE 4: Percent of area in conifer stands and/or shrub thickets 0.1 acre or larger providing cover to the ground.

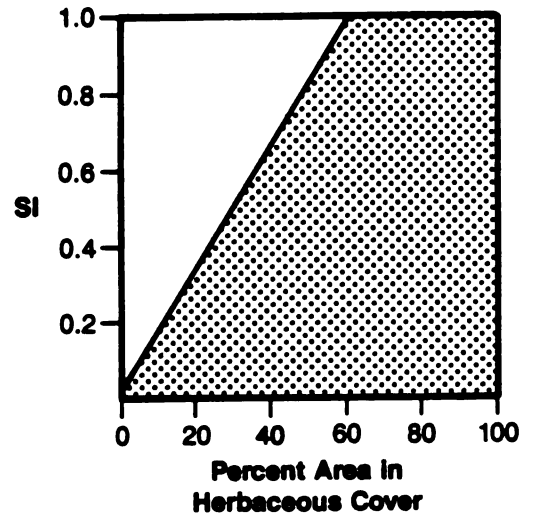
Note: Graphed values end at 10 percent. All values in excess of 10 percent receive a 1.0 SI rating.

Note: When rating as an adjacent value, determine amount of cover within 0.5 mile boundary as a percentage of evaluation compartment area.



WHITE-TAILED DEER

VARIABLE 5: Percent of area in herbaceous cover in agricultural or herbaceous rangeland (average annual conditions).



APPENDIX P
PAM HEP FORMS 1-11

GDI HEP - HEP TEAM COMPOSITION

Project ROUTE 33

Designated HEP Team Members

U.S. Fish & Wildlife Service

Name Unable to participate
Title (letter of December 9, 1987)
Address _____

PA Game Commission

Name Mr. Robert Culp
Title _____
Address 2001 Elmerton Avenue
Harrisburg, PA 17110-9797
(717) 783-5957

PA Fish Commission

Name Not willing to participate
Title (letter of December 9, 1987)
Address _____

Action Agency/Applicant

PA Dept. of Transportation
Lehigh-Northampton Cos. JPC

Name Mr. Robert Keller
Title _____
Address 1712 Lehigh Street
Allentown, PA 18103
(215) 791-6021

Additional Participating Personnel

Name	Agency	Address
<u>Mr. Stuart Kehler, PADOT Central Office, (717) 787-9659</u>		
<u>Mr. F. Stephen Goodyear, Gannett Fleming, (717) 763-7211</u>		
<u>Mr. Ted Fridirici, PADOT Central Office, (717) 787-0457</u>		
<u>Mr. Edd Manges, PADOT 5-0, (215) 791-6021</u>		
<u>Ms. Susan Scaer, Gannett Fleming, (717) 763-7211</u>		
<u>Mr. Roland Bergner, PA Game Commission, (717) 783-5957</u>		

LAND USE/COVER TYPE
CLASSIFICATION OF PROJECT STUDY AREA

GDI/HEP
FORM 2

Project: ROUTE 33 Alternative: Base mapping
Target Year: B Study Area Size: 1423.30 Acres

Compart. Number	Sample Site	Description	Mitigation Category	Acres
<u>11-2</u>	-	<u>Residential</u>	<u>4</u>	<u>3.30</u>
<u>11-3</u>	-	<u>Residential</u>	<u>4</u>	<u>1.80</u>
<u>11-4</u>	-	<u>Residential</u>	<u>4</u>	<u>1.60</u>
<u>11-6</u>	-	<u>Residential</u>	<u>4</u>	<u>7.00</u>
<u>11-7</u>	-	<u>Residential</u>	<u>4</u>	<u>28.70</u>
<u>11-11</u>	-	<u>Residential</u>	<u>4</u>	<u>12.40</u>
<u>11-12</u>	-	<u>Residential</u>	<u>4</u>	<u>1.50</u>
<u>11-13</u>	-	<u>Residential</u>	<u>4</u>	<u>6.50</u>
<u>11-14</u>	-	<u>Residential</u>	<u>4</u>	<u>1.10</u>
<u>11-15</u>	-	<u>Residential</u>	<u>4</u>	<u>9.40</u>
<u>11-16</u>	-	<u>Residential</u>	<u>4</u>	<u>5.40</u>
<u>11-17</u>	-	<u>Residential</u>	<u>4</u>	<u>7.30</u>
<u>11-22</u>	-	<u>Residential</u>	<u>4</u>	<u>1.50</u>
<u>11-24</u>	-	<u>Residential</u>	<u>4</u>	<u>1.80</u>
<u>11-25</u>	-	<u>Residential</u>	<u>3</u>	<u>2.90</u>

LAND USE/COVER TYPE
CLASSIFICATION OF PROJECT STUDY AREA

GDI/HEP
FORM 2

Project: ROUTE 33 Alternative: 3
Target Year: 0 Study Area Size: 1278.45 Acres

Compart. Number	Sample Site	Description	Mitigation Category	Acres
<u>11-26</u>	-	<u>Residential</u>	<u>4</u>	<u>3.00</u>
<u>11-30</u>	-	<u>Residential</u>	<u>4</u>	<u>1.40</u>
<u>11-32</u>	-	<u>Residential</u>	<u>4</u>	<u>0.40</u>
<u>11-34</u>	-	<u>Residential</u>	<u>4</u>	<u>0.70</u>
<u>11-35</u>	-	<u>Residential</u>	<u>4</u>	<u>3.30</u>
<u>11-38</u>	-	<u>Residential</u>	<u>4</u>	<u>2.30</u>
<u>11-40</u>	-	<u>Residential</u>	<u>4</u>	<u>2.30</u>
<u>11-42</u>	-	<u>Residential</u>	<u>4</u>	<u>1.10</u>
<u>11-43</u>	-	<u>Residential</u>	<u>4</u>	<u>1.50</u>
<u>11-44</u>	-	<u>Residential</u>	<u>4</u>	<u>1.60</u>
<u>11-45</u>	-	<u>Residential</u>	<u>4</u>	<u>0.40</u>
<u>11-46</u>	-	<u>Residential</u>	<u>4</u>	<u>1.40</u>
<u>11-47</u>	-	<u>Residential</u>	<u>4</u>	<u>2.00</u>
<u>11-48</u>	-	<u>Residential</u>	<u>4</u>	<u>0.60</u>
<u>11-49</u>	-	<u>Residential</u>	<u>4</u>	<u>2.60</u>

GDI/NEP
IDENTIFICATION OF CRITICAL AND UNIQUE HABITAT

Form 3
Page 1

Project: ROUTE 33

Habitat Type	Compartment Numbers	Acres Present	Mitigation Category
Wetlands (list each classification separately)			
<u>616</u>	<u>1</u>	<u>6.20</u>	<u>2</u>
<u>618</u>	<u>1, 2, 3, 4</u>	<u>8.80</u>	<u>2</u>
<u>65</u>	<u>1</u>	<u>66.10</u>	<u>3</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Special Protection Waters			
DER High Quality	<u>none</u>	_____	_____
DER Exceptional Value	<u>none</u>	_____	_____
PFC Wilderness Trout	<u>none</u>	_____	_____
Diedromous Fish	<u>none</u>	_____	_____
Reptile and Amphibian Natural Areas			
_____	<u>none</u>	_____	_____
_____	_____	_____	_____
Special Wildlife Areas			
Wintering (indicate species)			
_____	<u>none</u>	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Colony Nest Sites (indicate species)			
_____	<u>none</u>	_____	_____
_____	_____	_____	_____
Bear Refuge Swamps	<u>none</u>	_____	_____
Woodcock Habitat			
Resident	<u>none</u>	_____	_____
Migratory	<u>none</u>	_____	_____

GDI/NEP
IDENTIFICATION OF CRITICAL AND UNIQUE HABITAT

Form 3
Page 2

Project: ROUTE 33

Habitat Type	Compartment Numbers	Acres Present	Mitigation Category
Federal Endangered and Threatened Species (indicate species)			
	<u>none</u>		—
			—
State Endangered Species (indicate species)			
	<u>none</u>		—
			—
			—
			—
State Threatened Species (indicate species)			
<u>Ammodramus henslowii</u>	<u>31-3, 31-6, 31-15, 31-16,</u>	<u>71.80</u>	<u>3</u>
	<u>31-17, 33-1, 33-2, 33-3,</u>	<u>29.00</u>	<u>3</u>
	<u>33-4, 33-5, 33-6.</u>	<u>25.10</u>	<u>3</u>
			—
			—
State Species of Concern (indicate species)			
<u>Myotis keenii</u>	<u>41-9, 41-27, 41-33, 41-34,</u>	<u>89.50</u>	<u>3</u>
	<u>41-35, 41-36, 41-37, 41-39,</u>	<u>97.40</u>	<u>3</u>
	<u>41-50.</u>	<u>25.60</u>	<u>3</u>
			—
			—
			—
			—
			—
			—
			—
			—
Miscellaneous (critical habitat not listed or cont. of any prev. category)			
	<u>none</u>		—
			—
			—
			—
			—
			—
			—
			—
			—
			—

GDI - NEP
EVALUATION SPECIES SELECTION

FORM 4A

TERRESTRIAL COVER TYPES

Project: ROUTE 33

Date: 04-28-92

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)					FEEDING SITE (Primary Adult)					BREEDING SITE (Primary)					LAND USE/COVER TYPE									Model Avail able
		1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8	9		

*	<u>American Toad</u>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*
-	<u>Black-Capped Chickadee</u>	-	X	-	-	-	X	X	-	-	-	-	-	X	-	-	-	-	-	X	X	X	-	-	-	*
-	<u>Black Rat Snake</u>	-	-	X	-	X	X	X	X	-	X	-	-	-	-	X	X	X	X	-	-	-	-	-	-	*
-	<u>Catbird</u>	X	-	-	-	-	-	X	-	-	-	-	X	-	-	-	-	X	X	X	-	-	-	-	-	*
-	<u>Cooper's Hawk</u>	-	-	X	-	X	X	X	X	-	-	-	-	X	-	-	-	-	-	X	-	X	-	-	-	*
-	<u>Downy Woodpecker</u>	-	X	-	-	-	-	X	X	-	-	-	-	X	-	-	-	-	-	X	X	X	-	-	-	*
-	<u>Eastern Box Turtle</u>	X	X	-	-	X	-	-	-	-	X	-	-	-	-	-	-	-	-	X	-	X	-	-	-	*
*	<u>Eastern Cottontail</u>	X	-	-	-	X	X	-	-	-	X	X	-	-	-	X	X	X	-	X	-	-	-	-	-	*
-	<u>Eastern Garter Snake</u>	-	-	X	-	X	X	-	-	-	X	-	-	-	-	X	X	X	-	X	X	-	X	-	-	*
-	<u>Eastern Gray Squirrel</u>	X	-	-	-	X	-	X	X	-	-	-	-	X	-	X	-	-	-	X	-	X	-	-	-	*
-	<u>Eastern Meadowlark</u>	-	X	-	-	X	-	-	-	-	-	X	-	-	-	X	X	X	-	-	-	-	-	-	-	*
-	<u>Field Sparrow</u>	X	X	-	-	X	-	-	-	-	-	X	X	-	-	X	X	X	-	X	-	-	-	-	-	*
-	<u>Great Horned Owl</u>	-	-	X	-	X	X	X	X	-	X	-	-	X	-	-	X	X	X	X	X	X	-	-	-	-

LEGEND:

FEEDING BEHAVIOR

- 1=Herbivore
- 2=Insectivore
- 3=Omnivore
- 4=Carnivore

FEEDING SITE

- 1=Water
- 2=Ground
- 3=Herb. Layer
- 4=Shrub Layer
- 5=Tree Layer

BREEDING SITE

- 1=Water
- 2=Ground
- 3=Herb. Layer
- 4=Shrub Layer
- 5=Tree Layer

LAND USE/COVER TYPE

- 1=Urban Land
- 2=Agricultural Land
- 3=Herbaceous Rangeland
- 4=Shrub-Brush Rangeland
- 5=Mixed Rangeland
- 6=Deciduous Forest
- 7=Coniferous Forest
- 8=Mixed Forest
- 9=Barran Land

GDI - HEP
EVALUATION SPECIES SELECTION

FORM 4A

TERRESTRIAL COVER TYPES

Project: ROUTE 33

Date: 04-28-92

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)				FEEDING SITE (Primary Adult)					BREEDING SITE (Primary)					LAND USE/ COVER TYPE									Model Avail able
		1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8	9	
-	<u>White Footed Mouse</u>	X	-	-	-	X	X	-	-	-	X	-	-	-	-	-	-	X	X	X	-	X	-	-	*
-	<u>Wild Turkey</u>	X	X	-	-	X	X	X	-	-	X	X	-	-	-	-	-	-	-	X	-	X	-	-	*
-	<u>Wood Thrush</u>	X	X	-	-	X	X	-	-	-	-	-	X	X	-	-	-	-	-	X	-	-	-	-	*
-	<u>Yellow Warbler</u>	-	X	-	-	-	X	X	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	*
*	<u>RT Hawk</u>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

LEGEND:

FEEDING BEHAVIOR	FEEDING SITE	BREEDING SITE	LAND USE/COVER TYPE
1=Herbivore	1=Water	1=Water	1=Urban Land
2=Insectivore	2=Ground	2=Ground	2=Agricultural Land
3=Omnivore	3=Herb. Layer	3=Herb. Layer	3=Herbaceous Rangeland
4=Carnivore	4=Shrub Layer	4=Shrub Layer	4=Shrub-Brush Rangeland
	5=Tree Layer	5=Tree Layer	5=Mixed Rangeland
			6=Deciduous Forest
			7=Coniferous Forest
			8=Mixed Forest
			9=Barren Land

GDI - HEP
EVALUATION SPECIES SELECTION

FORM 48

WETLAND TERRESTRIAL COVER TYPES

Project: ROUTE 33

Date: 04-28-92

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)					FEEDING SITE (Primary Adult)					BREEDING SITE (Primary)					LAND USE/COVER TYPE									Model Avail. able
		1 2 3 4			1 2 3 4 5		1 2 3 4 5			1 2 3 4			5 6 7 8 9													
		1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8	9		
-	<u>American Woodcock</u>	-	-	X	-	-	X	X	-	-	-	X	X	-	-	X	-	-	-	-	-	-	X	-	*	
-	<u>Belted Kingfisher</u>	-	-	X	-	X	-	-	-	-	-	X	-	-	-	-	X	X	-	-	-	-	X	X	*	
-	<u>Bullfrog</u>	-	X	-	-	X	X	-	-	-	X	-	-	-	-	X	X	X	X	X	-	X	X	X	*	
-	<u>Canada Goose</u>	X	-	-	-	X	X	X	-	-	X	-	X	-	-	X	X	-	-	-	-	X	-	X	*	
-	<u>Common Yellowthroat</u>	-	X	-	-	-	-	X	-	-	-	-	X	-	-	X	-	-	-	-	-	-	X	-	*	
-	<u>Green Heron</u>	-	-	X	-	X	X	-	-	-	-	X	X	-	-	X	X	X	-	-	-	X	-	X	-	
-	<u>Mallard</u>	X	X	-	-	X	X	-	-	-	-	X	-	-	-	X	X	X	X	X	-	X	-	-	*	
-	<u>Muskrat</u>	X	-	-	-	X	X	X	-	-	-	X	-	-	-	X	X	X	-	-	-	X	-	X	*	
-	<u>Northern Snapping Turt</u>	-	X	-	-	X	X	-	-	-	-	X	-	-	-	X	X	X	-	-	-	X	-	X	*	
*	<u>Raccoon</u>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	
*	<u>Red-Winged Blackbird</u>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	
-	<u>Snowshoe Hare</u>	X	-	-	-	-	X	X	-	-	-	X	X	-	-	X	-	-	-	-	-	-	X	X	*	
-	<u>Wood Duck</u>	X	X	-	-	X	-	-	-	-	-	-	X	-	-	X	X	X	-	-	-	X	-	X	*	

LEGEND:

FEEDING BEHAVIOR	FEEDING SITE	BREEDING SITE	LAND USE/COVER TYPE
1=Herbivore	1=Water	1=Water	1=Palustrine
2=Insectivore	2=Ground	2=Ground	2=Leoustrine
3=Omnivore	3=Herb. Layer	3=Herb. Layer	3=Riverine
4=Carnivore	4=Shrub Layer	4=Shrub Layer	4=Estuarine
	5=Tree Layer	5=Tree Layer	5=Emergent (Persistent)
			6=Rocky Shore
			7=Unconsolid. Shore
			8=Scrub-Shrub
			9=Forested

GDI - HEP
EVALUATION SPECIES SELECTION

FORM 48

WETLAND TERRESTRIAL COVER TYPES

Project: ROUTE 33

Date: 04-28-92

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)				FEEDING SITE (Primary Adult)					BREEDING SITE (Primary)					LAND USE/ COVER TYPE									Model Avail able	
		1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8	9		
-	<u>Wood Frog</u>	X				X	X	X			X														X	*
-	<u>Yellow Warbler</u>	X					X	X					X			X	X								X	*
-	<u>Common Yellowthroat</u>	X				X	X	X					X	X		X	X			X					X	*
*	<u>deer</u>																									*
-	<u> </u>																									
-	<u> </u>																									
-	<u> </u>																									
-	<u> </u>																									
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LEGEND:

FEEDING BEHAVIOR	FEEDING SITE	BREEDING SITE	LAND USE/COVER TYPE
-----	-----	-----	-----
1=Herbivore	1=Water	1=Water	1=Palustrine
2=Insectivore	2=Ground	2=Ground	2=Lacustrine
3=Omnivore	3=Herb. Layer	3=Herb. Layer	3=Rivoline
4=Carnivore	4=Shrub Layer	4=Shrub Layer	4=Estuarine
	5=Tree Layer	5=Tree Layer	5=Emergent (Persistent)
			6=Rocky Shore
			7=Unconsolid. Shore
			8=Scrub-Shrub
			9=Forested

GDI - HEP
EVALUATION SPECIES SELECTION

FORM 4C

AQUATIC COVER TYPE

Project: ROUTE 33

Date: 04-28-92

Type Fishery: (Cold /Cool /Warm)

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)					SPAWNING SUBSTRATE (Primary Adult)					WATER USE / COVER TYPES (LEVEL II, LEVEL III)							Model Available			
		1	2	3	4	5	1	2	3	4	5	LEVEL II			LEVEL III							
												1	2	3	4	5	6	7				
-	<u>Black Crappie</u>	-	X	-	X	-	-	X	X	-	X	X	-	X	-	X	X	X	X	-	-	*
-	<u>Black-Nosed Dace</u>	X	X	-	-	-	-	-	-	-	-	-	-	X	-	-	X	X	-	-	-	*
-	<u>Bluegill</u>	X	X	-	-	-	-	X	X	-	-	X	-	X	-	X	-	-	-	-	-	*
-	<u>Brook Trout</u>	-	X	-	-	-	-	X	-	X	-	X	-	X	-	X	X	-	X	X	-	*
-	<u>Brown Bullhead</u>	X	-	-	-	-	-	X	X	X	-	X	-	X	-	X	-	X	X	X	-	*
-	<u>Brown Trout</u>	-	-	-	X	-	-	X	-	X	-	X	-	X	X	-	X	X	-	X	X	-
-	<u>Creek Chub</u>	-	X	-	X	-	-	-	-	-	-	-	-	X	X	-	-	X	X	-	-	*
-	<u>Largemouth Bass</u>	-	-	-	X	-	X	X	X	-	-	X	X	X	-	X	-	X	X	-	-	*
-	<u>Northern Hogsucker</u>	X	X	-	-	-	-	X	-	-	-	-	X	X	-	X	X	-	-	-	-	*
-	<u>Smallmouth Bass</u>	-	-	-	X	-	-	X	X	-	-	X	-	X	-	X	X	X	X	-	-	*
-	<u>Stocked Trout</u>	-	-	-	X	-	-	-	-	X	-	X	-	X	X	-	-	X	X	-	X	*
-	<u>Tessellated Darter</u>	-	X	-	-	-	-	X	X	-	-	-	X	X	-	X	X	-	X	-	-	*
-	<u>Walleye</u>	-	-	-	X	-	-	-	-	X	-	X	-	X	-	X	X	X	X	X	-	*

LEGEND:

FEEDING BEHAVIOR

- 1=Herbivore
- 2=Insectivore
- 3=Omnivore
- 4=Carnivore

SPAWNING SUBSTRATE

- 1=Aquatic bed
- 2=Rock/Gravel/Sand
- 3=Debris/Structure
- 4=Mud

WATER USE /COVER TYPES

- | | |
|-----------------------|--|
| LEVEL II | LEVEL III |
| 1=Lacustrine-limnetic | 1=Aquatic bed-rooted/floating |
| 2=Lacustrine-littoral | 2=Rock bottom-bedrock/rubble |
| 3=Riverine-tidal | 3=Uncons.bottom-mud/sand/gravel |
| | 4=Riverine-lower perennial or 66' wide |
| | 5=Riverine-upper perennial or 66' wide |

GDI - HEP
EVALUATION SPECIES SELECTION

FORM 4C

AQUATIC COVER TYPE

Project: ROUTE 33

Date: 04-28-92

Type Fishery: (Cold /Cool /Warm)

Sel. Eval. Species	CANDIDATE EVALUATION SPECIES	FEEDING BEHAVIOR (Primary Adult)				SPAWNING SUBSTRATE (Primary Adult)				WATER USE / COVER TYPES						Model Avail able				
		LEVEL II		LEVEL III		LEVEL II		LEVEL III		LEVEL II		LEVEL III		LEVEL III						
		1	2	3	4	1	2	3	4	5	1	2	3	4	5		6	7		
-	<u>Yellow Perch</u>	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	*
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	_____	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

LEGEND:

FEEDING BEHAVIOR

- 1=Herbivore
- 2=Insectivore
- 3=Omnivore
- 4=Carnivore

SPAWNING SUBSTRATE

- 1=Aquatic bed
- 2=Rock/Gravel/Sand
- 3=Debris/Structure
- 4=Mud

WATER USE /COVER TYPES

- | LEVEL II | LEVEL III |
|-----------------------|---|
| 1=Lacustrine-limnetic | 1=Aquatic bed-rooted/floating |
| 2=Lacustrine-littoral | 2=Rock bottom-bedrock/rubble |
| 3=Riverine-tidal | 3=Uncons.bottom-mud/sand/gravel |
| | 4=Riverine-lower perennial
or 66' wide |
| | 5=Riverine-upper perennial
or 66' wide |

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-6 Area 27.90 Mitigation Category 4
 Site Description Topography: flat; Tree cover: silver maple, sugar maple;
Shrub cover: sumac, dogwood, sugar maple; Herbaceous cover:
corn, crown vetch.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.1</u>		<u>0.1</u>	<u>0.2</u>	<u>0.2</u>
	<u>Cover 2</u>		<u>0.5</u>	<u>0.3</u>		<u>0.4</u>	<u>0.3</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.2</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.5</u>	<u>0.3</u>		<u>0.5</u>		

Limiting Factors none

<u>Reccoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.7</u>	<u>0.6</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.6</u>		<u>0.6</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 9
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-6 Area 27.90 Mitigation Category 4
 Site Description Topography: flat; Tree cover: silver maple, sugar maple;
Shrub cover: sumac, dogwood, sugar maple; Herbaceous cover:
corn, crown vetch.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.4</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.6</u>		<u>0.7</u>		
	<u>Water 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.6</u>		<u>0.7</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 4</u>		<u>0.7</u>	<u>0.6</u>		<u>0.8</u>	<u>0.7</u>	
	<u>Cover 6</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-10 Area 64.90 Mitigation Category 4
 Site Description Topography: flat; Tree cover: sumac, hickory, walnut; Shrub
cover: cherry, sumac; Herbaceous cover: corn, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.7</u>	
	<u>Cover 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>		
	<u>Cover 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.6</u>		<u>0.8</u>	<u>0.7</u>	<u>0.4</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.5</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-10 Area 64.90 Mitigation Category 4
 Site Description Topography: flat; Tree cover: sumac, hickory, walnut; Shrub
cover: cherry, sumac; Herbaceous cover: corn, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	<u>0.7</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Water 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.4</u>	<u>0.4</u>		<u>0.6</u>	<u>0.5</u>	<u>0.5</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.8</u>	<u>0.7</u>		<u>0.9</u>	<u>0.6</u>	
	<u>Cover 6</u>		<u>0.5</u>	<u>0.4</u>		<u>0.4</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-19 Area 55.20 Mitigation Category 4
 Site Description Topography: gently sloped; Tree cover: none; Shrub cover:
none; Herbaceous cover: soybean, corn, barley.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	<u>0.2</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.3</u>		<u>0.2</u>	<u>0.2</u>	

Limiting Factors none

<u>Eastern G. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.4</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.4</u>	<u>0.4</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-34</u>	<u>0.9</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 2
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-19 Area 55.20 Mitigation Category 4
 Site Description Topography: gently sloped; Tree cover: none; Shrub cover:
none; Herbaceous cover: soybean, corn, barley.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.1</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 4</u>	<u>41-34</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GD1/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-26 Area 26.30 Mitigation Category 4
 Site Description Topography: sloped; Tree cover: walnut; Shrub cover: sumac,
ash, blackberry, black cherry; Herbaceous cover: corn,
goldenrod, queen anne's lace.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.5</u>		<u>0.3</u>	<u>0.4</u>	<u>0.4</u>
	<u>Food/Cover 2</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.3</u>	<u>0.3</u>	<u>0.3</u>
	<u>Cover 2</u>		<u>0.4</u>	<u>0.3</u>		<u>0.3</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.5</u>	<u>0.4</u>		<u>0.3</u>		
	<u>Cover 4</u>		<u>0.4</u>	<u>0.5</u>		<u>0.4</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>0.8</u>	<u>0.9</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-26 Area 26.30 Mitigation Category 4
 Site Description Topography: sloped; Tree cover: walnut; Shrub cover: sumac,
ash, blackberry, black cherry; Herbaceous cover: corn,
goldenrod, queen anne's lace.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.9</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.4</u>	<u>0.6</u>		<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
	<u>Cover 4</u>		<u>0.7</u>	<u>0.5</u>		<u>0.6</u>	<u>0.8</u>	
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-6 Area 13.30 Mitigation Category 3
 Site Description Topography: flat; Tree cover: black cherry, white oak,
walnut; Shrub cover: sumac; Herbaceous cover: grasses

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	<u>0.1</u>
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	
	<u>Water 4</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-6 Area 13.30 Mitigation Category 3
 Site Description Topography: flat; Tree cover: black cherry, white oak,
walnut; Shrub cover: sumac; Herbaceous cover: grasses

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
<u>Sparrow</u>	<u>Cover 3</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>		
	<u>Water 3</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.5</u>	<u>0.4</u>		<u>0.5</u>	<u>0.5</u>	<u>0.0</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>0.9</u>		<u>0.9</u>		

Limiting Factors disturbance by man

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>		
	<u>Breeding1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-15 Area 27.10 Mitigation Category 3
 Site Description Topography: flat; Tree cover: none; Shrub cover: none;
Herbaceous cover: hay.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.2</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.2</u>		<u>0.2</u>	<u>0.2</u>	

Limiting Factors _____

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.4</u>		<u>0.3</u>	<u>0.4</u>	<u>0.1</u>
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	
	<u>Cover 3</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-15 Area 27.10 Mitigation Category 3
 Site Description Topography: flat; Tree cover: none; Shrub cover: none;
Herbaceous cover: hay.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.5</u>	<u>0.5</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 4</u>	<u>41-39</u>	<u>0.8</u>	<u>0.7</u>		<u>0.8</u>	<u>0.9</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	<u>0.9</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>		
	<u>Breeding1</u>		<u>0.9</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-16 Area 11.50 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree cover: apple, cherry, ash; Shrub cover: wineberry; Herbaceous cover: ragweed, mixed grasses, foxtail.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.3</u>
	<u>Food/Cover 2</u>		<u>0.4</u>	<u>0.3</u>		<u>0.3</u>	<u>0.3</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.5</u>	<u>0.4</u>	<u>0.4</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.4</u>	
	<u>Cover 2</u>		<u>0.3</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-16 Area 11.50 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree cover: apple, cherry,
ash; Shrub cover: wineberry; Herbaceous cover: ragweed,
mixed grasses, foxtail.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.2</u>	<u>0.6</u>	<u>0.6</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
<u>Deer</u>	<u>Cover 4</u>	<u>33-4</u>	<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.9</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.3</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food2</u>	<u>41-39</u>	<u>0.4</u>	<u>0.3</u>		<u>0.4</u>		
	<u>Breeding1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-17 Area 24.00 Mitigation Category 3
 Site Description Topography: slightly sloped, disturbed; Tree cover: none;
Shrub cover: locust, sumac; Herbaceous cover: wild carrot,
mixed grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food/Cover 2</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.7</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	<u>0.4</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.2</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-17 Area 24.00 Mitigation Category 3
 Site Description Topography: slightly sloped, disturbed; Tree cover: none;
Shrub cover: locust, sumac; Herbaceous cover: wild carrot,
mixed grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.6</u>	<u>0.9</u>	<u>0.9</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.6</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.2</u>	<u>0.2</u>		<u>0.2</u>	<u>0.6</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>0.9</u>		<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Food2</u>	<u>41-39</u>	<u>1.0</u>	<u>0.9</u>		<u>1.0</u>		
	<u>Breeding1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-2 Area 2.10 Mitigation Category 3
 Site Description Topography: sloped, adjacent to highway; Tree cover: sumac,
wild cherry, sycamore, conifers; Shrub cover: cherry,
sumac;Herbaceous cover: crown vetch, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>	<u>0.8</u>	
	<u>Cover 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>		
	<u>Cover 4</u>		<u>0.8</u>	<u>0.7</u>		<u>0.9</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>21-6</u>	<u>0.5</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	<u>0.4</u>
	<u>Food 2</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	
	<u>Water 4</u>		<u>0.5</u>	<u>0.4</u>		<u>0.5</u>	<u>0.5</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-2 Area 2.10 Mitigation Category 3
 Site Description Topography: sloped, adjacent to highway; Tree cover: sumac, wild cherry, sycamore, conifers; Shrub cover: cherry, sumac; Herbeceous cover: crown vetch, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.8</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	<u>0.0</u>
	<u>Cover 4</u>		<u>0.3</u>	<u>0.4</u>		<u>0.3</u>	<u>0.0</u>	
	<u>Cover 3</u>		<u>0.6</u>	<u>0.5</u>		<u>0.4</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
	<u>Food2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Breed ng1</u>	<u>21-6</u>	<u>0.6</u>	<u>0.6</u>		<u>0.4</u>	<u>0.5</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-4 Area 7.50 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree cover: none; Shrub
cover: cherry, poplar; Herbaceous cover: foxtail, poison
ivy, smartweed.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	
	<u>Cover 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>		
	<u>Cover 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-4 Area 7.50 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree cover: none; Shrub
cover: cherry, poplar; Herbaceous cover: foxtail, poison
ivy, smartweed.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>0.8</u>	<u>0.8</u>	<u>0.8</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.8</u>	<u>0.8</u>	<u>—</u>	<u>0.8</u>	<u>0.9</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.6</u>	<u>0.7</u>	<u>—</u>	<u>0.7</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	
	<u>Breeding1</u>		<u>0.9</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>0.9</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-5 Area 4.50 Mitigation Category 3
 Site Description Topography: gently rolling; Tree cover: cherry; Shrub
cover: poplar; Herbaceous cover: ragweed, goldenrod, mixed
grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

<u>Eastern G. Tail</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	
	<u>Cover 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Food 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-5 Area 4.50 Mitigation Category 3
 Site Description Topography: gently rolling; Tree cover: cherry; Shrub
cover: poplar; Herbaceous cover: ragweed, goldenrod, mixed
grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.9</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.8</u>
	<u>Cover 4</u>		<u>0.6</u>	<u>0.6</u>		<u>0.6</u>	<u>0.8</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTMK</u>	<u>Food1</u>		<u>0.0</u>	<u>0.1</u>		<u>0.1</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>		
	<u>Breeding1</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-4 Area 13.10 Mitigation Category 3
 Site Description Topography: gently sloped; Tree cover: none; Shrub cover:
ash, box elder; Herbaceous cover: queen anne's lace,
foxtail, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>		<u>0.6</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

<u>Eastern G. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Cover 3</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-6 Area 13.10 Mitigation Category 3
 Site Description Topography: gently sloped; Tree cover: none; Shrub cover:
ash, box elder; Herbeceous cover: queen anne's lace,
foxtail, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.8</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>Cover 4</u>		<u>0.8</u>	<u>1.0</u>		<u>0.9</u>	<u>1.0</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Breeding1</u>		<u>0.6</u>	<u>0.5</u>		<u>0.6</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-33 Area 11.40 Mitigation Category 3
 Site Description Topography: flat; Tree cover: oak, red maple; Shrub cover: red maple, cherry, balckberry; Herbaceous cover: Impatiens, mixed grasses, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.4</u>		<u>0.2</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>0.9</u>		<u>1.0</u>	<u>1.0</u>	<u>0.7</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>	<u>0.7</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.6</u>	<u>0.7</u>		<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 3</u>		<u>0.5</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-33 Area 11.40 Mitigation Category 3
 Site Description Topography: flat; Tree cover: oak, red maple; Shrub cover:
red maple, cherry, balckberry; Herbaceous cover: impatiens,
mixed grasses, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
<u>Deer</u>	<u>Food 2</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	_____	_____
	<u>Food 3A</u>	_____	<u>0.3</u>	<u>0.4</u>	_____	<u>0.5</u>	_____	_____
	<u>Food 3B</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	_____	_____
	<u>Cover 4</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	_____
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

Limiting Factors none

_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Limiting Factors _____

_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-34 Area 70.40 Mitigation Category 3
 Site Description Topography; steep slope; Tree cover: oak, maple; Shrub
cover: sumac, spicebush, wineberry, multiflora rose,
sycamore; Herbaceous cover: goldenrod, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>0.7</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.8</u>	<u>—</u>	<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.9</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food 3</u>		<u>0.7</u>	<u>0.9</u>	<u>—</u>	<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.7</u>	<u>0.8</u>	<u>—</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.5</u>	<u>0.6</u>	<u>—</u>	<u>0.6</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GD1/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-34 Area 70.40 Mitigation Category 3
 Site Description Topography: steep slope; Tree cover: oak, maple; Shrub
cover: sumac, spicebush, wineberry, multiflora rose,
sycamore; Herbaceous cover: goldenrod, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.7</u>	<u>0.9</u>	<u>0.9</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>		
	<u>Food 3A</u>		<u>0.7</u>	<u>0.8</u>		<u>0.7</u>		
	<u>Food 3B</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

Limiting Factors _____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-35 Area 9.10 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree cover: sycamore; Shrub
cover: ash, box elder, sycamore; Herbaceous cover: poison
ivy, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>0.8</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food/Cover 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>	<u>—</u>	<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.7</u>	<u>0.7</u>	<u>—</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.6</u>	<u>0.5</u>	<u>—</u>	<u>0.6</u>	<u>—</u>	
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

HABITAT COMPARTMENT NSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-35 Area 9.10 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree cover: sycamore; Shrub
cover: ash, box elder, sycamore; Herbaceous cover: poison
ivy, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	NSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>	<u>0.7</u>	<u>0.7</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>		
	<u>Food 3A</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Food 3A</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Cover 4</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	

Limiting Factors none

Limiting Factors _____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year 8
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-36 Area 16.50 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree cover: sycamore, ash,
locust; Shrub cover: spicebush, dogwood, oak, walnut;
Herbaceous cover: impatiens, ferns, wild grape.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>	<u>—</u>	<u>0.6</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.8</u>	<u>—</u>	<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.9</u>	<u>0.9</u>	<u>—</u>	<u>0.9</u>	<u>0.9</u>	<u>0.9</u>
	<u>Food 3</u>		<u>1.0</u>	<u>0.9</u>	<u>—</u>	<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.7</u>	<u>—</u>	<u>0.7</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.6</u>	<u>0.6</u>	<u>—</u>	<u>0.5</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-36 Area 16.50 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree cover: sycamore, ash,
locust; Shrub cover: spicebush, dogwood, oak, walnut;
Herbaceous cover: impatiens, ferns, wild grape.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>0.8</u>	<u>0.9</u>	<u>0.9</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>0.9</u>	<u>—</u>	
	<u>Food 3A</u>		<u>0.8</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	
	<u>Food 3B</u>		<u>0.9</u>	<u>1.0</u>	<u>—</u>	<u>0.9</u>	<u>—</u>	
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors _____

			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative Base mapping Target Year B
 Land Use/Water Use/Cover Type Palustrine Wetland

Compartment Number 616-1 Area 6.20 Mitigation Category 2
 Site Description Topography: gently sloped; Tree cover: none; Shrub cover:
none; Herbaceous cover: cattails, sedges.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Raccoon</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 3</u>		<u>0.8</u>	<u>0.8</u>		<u>1.0</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>R-Winged</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.6</u>	<u>0.6</u>
<u>Blackbird</u>	<u>Breeding 2</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>		
	<u>Breeding 3</u>		<u>0.5</u>	<u>0.5</u>		<u>0.5</u>		
	<u>Breeding 4</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>		

Limiting Factors none

<u>ddd</u>	<u>food 1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-6 Area 22.80 Mitigation Category 4
 Site Description Topography: flat; Tree Cover: silver maple, sugar maple;
Shrub Cover: sumac, dogwood, sugar maple; Herbaceous Cover:
corn, crown vetch.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.1</u>		<u>0.1</u>	<u>0.2</u>	<u>0.2</u>
	<u>Cover 2</u>		<u>0.5</u>	<u>0.3</u>		<u>0.4</u>	<u>0.3</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.2</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.5</u>	<u>0.3</u>		<u>0.5</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.7</u>	<u>0.6</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.6</u>		<u>0.6</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GD1/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year 0
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-6 Area 22.80 Mitigation Category 4
 Site Description Topography: flat; Tree Cover: silver maple, sugar maple;
Shrub Cover: sumac, dogwood, sugar maple; Herbaceous Cover:
corn, crown vetch.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.4</u>	<u>0.6</u>	<u>0.6</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>0.7</u>	<u>0.6</u>		<u>0.7</u>		
	<u>Water 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.6</u>		<u>0.7</u>	<u>0.6</u>	<u>0.6</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.7</u>	<u>0.6</u>		<u>0.8</u>	<u>0.7</u>	
	<u>Cover 6</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-10 Area 64.90 Mitigation Category 4
 Site Description Topography: flat; Tree Cover: sumac, hickory, walnut; Shrub
Cover: cherry, sumac; Herbaceous Cover: corn, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>Cover 6</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.7</u>	
	<u>Cover 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>		
	<u>Cover 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.6</u>		<u>0.8</u>	<u>0.7</u>	<u>0.4</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.5</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-10 Area 64.90 Mitigation Category 4
 Site Description Topography: flat; Tree Cover: sumac, hickory, walnut; Shrub
Cover: cherry, sumac; Herbeceous Cover: corn, poison ivy.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	<u>0.7</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Water 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 3</u>		<u>0.4</u>	<u>0.4</u>		<u>0.6</u>	<u>0.5</u>	<u>0.5</u>
	<u>Cover 6</u>		<u>0.8</u>	<u>0.7</u>		<u>0.9</u>	<u>0.6</u>	
	<u>Cover 6</u>		<u>0.5</u>	<u>0.4</u>		<u>0.4</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year 0
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-19 Area 55.20 Mitigation Category 4
 Site Description Topography: gently sloped; Tree Cover: none; Shrub Cover: none; Herbaceous Cover: soybean, corn, barley.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	<u>0.2</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.3</u>		<u>0.2</u>	<u>0.2</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.4</u>
	<u>Cover 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.4</u>	<u>0.4</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-34</u>	<u>0.9</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-19 Area 55.20 Mitigation Category 4
 Site Description Topography: gently sloped; Tree Cover: none; Shrub Cover:
none; Herbaceous Cover: soybean, corn, barley.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.1</u>	<u>0.6</u>	<u>0.6</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed</u>	<u>Food 3</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
<u>Deer</u>	<u>Cover 4</u>	<u>41-34</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-26 Area 18.20 Mitigation Category 4
 Site Description Topography: sloped; Tree Cover: walnut; Shrub Cover: sumac,
ash, blackberry, black cherry; Herbaceous Cover: corn,
goldenrod, queen anne's lace.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.5</u>		<u>0.3</u>	<u>0.4</u>	<u>0.4</u>
	<u>Food/Cover 2</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	

Limiting Factors none

<u>Eastern G. Tail</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.3</u>	<u>0.3</u>	<u>0.3</u>
	<u>Cover 2</u>		<u>0.4</u>	<u>0.3</u>		<u>0.3</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.5</u>	<u>0.4</u>		<u>0.3</u>		
	<u>Cover 4</u>		<u>0.4</u>	<u>0.5</u>		<u>0.4</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>0.8</u>	<u>0.9</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GD1/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Cropland/Pasture

Compartment Number 21-26 Area 18.20 Mitigation Category 4
 Site Description Topography: sloped; Tree Cover: walnut; Shrub Cover: sumac,
ash, blackberry, black cherry; Herbaceous Cover: corn,
goldenrod, queen anne's lace.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.9</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.4</u>	<u>0.6</u>		<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
	<u>Cover 4</u>		<u>0.7</u>	<u>0.5</u>		<u>0.6</u>	<u>0.8</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-6 Area 13.20 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: cherry, walnut, white oak,
Shrub Cover: sumac; Herbaceous Cover: grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	<u>0.1</u>
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	
	<u>Water 4</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

HABITAT COMPARTMENT NSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-6 Area 13.20 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: cherry, walnut, white oak,
Shrub Cover: sumac; Herbaceous Cover: grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	NSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>		
	<u>Water 3</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	

Limiting Factors distance to water/disturbance by man

<u>W-Tailed</u>	<u>Food 5</u>		<u>0.5</u>	<u>0.4</u>		<u>0.5</u>	<u>0.5</u>	<u>0.0</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>0.9</u>		<u>0.9</u>		

Limiting Factors disturbance by man

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>		
	<u>Breeding1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-15 Area 21.20 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: none; Shrub Cover: none;
Herbaceous Cover: hay.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.2</u>
	<u>Food/Cover 2</u>		<u>0.2</u>	<u>0.2</u>		<u>0.2</u>	<u>0.2</u>	

Limiting Factors _____

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.4</u>		<u>0.3</u>	<u>0.4</u>	<u>0.1</u>
	<u>Cover 2</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>	<u>0.1</u>	
	<u>Cover 3</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.1</u>		<u>0.1</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GD1/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year 0
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-15 Area 21.20 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: none; Shrub Cover: none;
Herbaceous Cover: hay.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.0</u>	<u>0.0</u>	<u>—</u>	<u>0.0</u>	<u>0.5</u>	<u>0.5</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	<u>—</u>
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 4</u>	<u>41-39</u>	<u>0.8</u>	<u>0.7</u>	<u>—</u>	<u>0.8</u>	<u>0.9</u>	<u>—</u>
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>0.9</u>	<u>0.9</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.8</u>	<u>—</u>	<u>0.9</u>	<u>—</u>	<u>—</u>
	<u>Breeding1</u>		<u>0.9</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>0.9</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-16 Area 8.30 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree Cover: apple, cherry,
ash; Shrub Cover: wineberry; Herbaceous Cover: grasses,
ragweed, foxtail.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.3</u>
	<u>Food/Cover 2</u>		<u>0.4</u>	<u>0.3</u>		<u>0.3</u>	<u>0.3</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.5</u>	<u>0.4</u>	<u>0.4</u>
	<u>Cover 2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.3</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-16 Area 8.30 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree Cover: apple, cherry,
ash; Shrub Cover: wineberry; Herbaceous Cover: grasses,
ragweed, foxtail.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.3</u>	<u>0.2</u>		<u>0.2</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 4</u>	<u>33-4</u>	<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.9</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTMK</u>	<u>Food1</u>		<u>0.6</u>	<u>0.4</u>		<u>0.4</u>	<u>0.5</u>	<u>0.5</u>
	<u>Food2</u>	<u>41-39</u>	<u>0.4</u>	<u>0.3</u>		<u>0.4</u>		
	<u>Breeding1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year 0
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-17 Area 24.00 Mitigation Category 3
 Site Description Topography: slightly sloped; Tree Cover none; Shrub Cover:
locust, sumac; Herbaceous Cover: wild carrot, grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food/Cover 2</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.7</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>1.0</u>		<u>1.0</u>	<u>0.9</u>	<u>0.4</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.4</u>	
	<u>Cover 3</u>		<u>0.2</u>	<u>0.1</u>		<u>0.1</u>		
	<u>Cover 4</u>		<u>0.1</u>	<u>0.2</u>		<u>0.3</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food 2</u>		<u>0.7</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Herbaceous Rangeland

Compartment Number 31-17 Area 24.00 Mitigation Category 3
 Site Description Topography: slightly sloped; Tree Cover none; Shrub Cover:
locust, sumac; Herbaceous Cover: wild carrot, grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.7</u>	<u>—</u>	<u>0.6</u>	<u>0.9</u>	<u>0.9</u>
<u>Sparrow</u>	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	<u>0.6</u>
<u>Deer</u>	<u>Cover 4</u>		<u>0.2</u>	<u>0.2</u>	<u>—</u>	<u>0.2</u>	<u>0.6</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>		
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>1.0</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Food2</u>	<u>41-39</u>	<u>1.0</u>	<u>0.9</u>	<u>—</u>	<u>1.0</u>		
	<u>Breeding1</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors none

HABITAT COMPARTMENT NSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-2 Area 2.10 Mitigation Category 3
 Site Description Topography: sloped; Tree Cover: sumac, conifers, cherry,
sycamore; Shrub Cover: cherry, sumac; Herbaceous Cover:
crown vetch, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	NSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.0</u>	<u>0.0</u>		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	<u>Food/Cover 2</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>	<u>0.8</u>	
	<u>Cover 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>		
	<u>Cover 4</u>		<u>0.8</u>	<u>0.7</u>		<u>0.9</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>21-6</u>	<u>0.5</u>	<u>0.4</u>		<u>0.4</u>	<u>0.4</u>	<u>0.4</u>
	<u>Food 2</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	
	<u>Water 4</u>		<u>0.5</u>	<u>0.4</u>		<u>0.5</u>	<u>0.5</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-2 Area 2.10 Mitigation Category 3
 Site Description Topography: sloped; Tree Cover: sumac, conifers, cherry,
sycamore; Shrub Cover: cherry, sumac; Herbaceous Cover:
crown vetch, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.8</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.6</u>	<u>0.5</u>		<u>0.5</u>	<u>0.5</u>	<u>0.0</u>
	<u>Cover 4</u>		<u>0.3</u>	<u>0.4</u>		<u>0.3</u>	<u>0.0</u>	
	<u>Cover 6</u>		<u>0.6</u>	<u>0.5</u>		<u>0.4</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.4</u>	<u>0.3</u>		<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
	<u>Food2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Breeding1</u>	<u>21-6</u>	<u>0.6</u>	<u>0.6</u>		<u>0.4</u>	<u>0.5</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-4 Area 7.30 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree Cover: none; Shrub
Cover: cherry, poplar; Herbaceous Cover: foxtail, poison
ivy, smartweed.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>		<u>0.7</u>	<u>0.5</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	
	<u>Cover 3</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GD1/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-4 Area 7.30 Mitigation Category 3
 Site Description Topography: moderately sloped; Tree Cover: none; Shrub
Cover: cherry, poplar; Herbaceous Cover: foxtail, poison
ivy, smartweed.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>0.8</u>	<u>0.9</u>		<u>0.8</u>	<u>0.8</u>	<u>0.8</u>
	<u>Cover 4</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.9</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTNK</u>	<u>Food1</u>		<u>0.6</u>	<u>0.7</u>		<u>0.7</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food2</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>		
	<u>Breeding1</u>		<u>0.9</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-5 Area 3.50 Mitigation Category 3
 Site Description _____

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>	_____	<u>0.8</u>	<u>0.8</u>	_____	<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>	_____	<u>0.7</u>	<u>0.5</u>	_____	<u>0.5</u>	<u>0.6</u>	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Cover 2</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>0.9</u>	
	<u>Cover 3</u>	_____	<u>0.7</u>	<u>0.7</u>	_____	<u>0.6</u>	_____	
	<u>Cover 4</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
	<u>Food 2</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	
	<u>Water 4</u>	_____	<u>1.0</u>	<u>1.0</u>	_____	<u>1.0</u>	<u>1.0</u>	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	
	_____	_____	_____	_____	_____	_____	_____	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-5 Area 3.50 Mitigation Category 3
 Site Description Topography: gently rolling; Tree Cover: cherry; Shrub
Cover: poplar, tulip tree; Herbaceous Cover: ragweed,
goldenrod, grasses.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.9</u>	<u>0.9</u>
	<u>Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>W-Tailed Deer</u>	<u>Food 5</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.8</u>
	<u>Cover 4</u>		<u>0.6</u>	<u>0.6</u>		<u>0.6</u>	<u>0.8</u>	
	<u>Cover 6</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>RTHK</u>	<u>Food1</u>		<u>0.0</u>	<u>0.1</u>		<u>0.1</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food2</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>		
	<u>Breeding1</u>		<u>0.7</u>	<u>0.5</u>		<u>0.7</u>	<u>0.6</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-6 Area 12.30 Mitigation Category 3
 Site Description Topography: gently sloped; Tree Cover: none; Shrub Cover:
ash, boxelder; Herbaceous Cover: queen anne's lace,
foxtail, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>
	<u>Food/Cover 2</u>		<u>0.6</u>	<u>0.6</u>		<u>0.5</u>	<u>0.6</u>	

Limiting Factors none

<u>Eastern C. Tail</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>	<u>0.7</u>	<u>0.7</u>
	<u>Cover 2</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Cover 3</u>		<u>0.8</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>	<u>41-39</u>	<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Mixed Rangeland

Compartment Number 33-6 Area 12.30 Mitigation Category 3
 Site Description Topography: gently sloped; Tree Cover: none; Shrub Cover:
ash, boxelder; Herbaceous Cover: queen anne's lace,
foxtail, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>Song</u>	<u>Cover 1</u>	_____	<u>1.0</u>	<u>1.0</u>	___	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
<u>Sparrow</u>	<u>Cover 2</u>	_____	<u>1.0</u>	<u>1.0</u>	___	<u>1.0</u>	___	___
	<u>Water 3</u>	_____	<u>1.0</u>	<u>1.0</u>	___	<u>1.0</u>	<u>1.0</u>	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___

Limiting Factors none

<u>W-Tailed</u>	<u>Food 5</u>	_____	<u>0.8</u>	<u>0.7</u>	___	<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
<u>Deer</u>	<u>Cover 4</u>	_____	<u>0.8</u>	<u>1.0</u>	___	<u>0.9</u>	<u>1.0</u>	___
	<u>Cover 6</u>	_____	<u>1.0</u>	<u>1.0</u>	___	<u>1.0</u>	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___

Limiting Factors none

<u>RTNK</u>	<u>Food1</u>	_____	<u>0.4</u>	<u>0.3</u>	___	<u>0.3</u>	<u>0.4</u>	<u>0.4</u>
	<u>Food2</u>	_____	<u>0.7</u>	<u>0.5</u>	___	<u>0.6</u>	___	___
	<u>Breeding1</u>	_____	<u>0.6</u>	<u>0.5</u>	___	<u>0.6</u>	<u>0.6</u>	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___
	_____	_____	___	___	___	___	___	___

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-33 Area 6.00 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: oak, red maple; Shrub Cover: red maple, cherry blackberry; Herbaceous Cover: impatiens, grasses, poison ivy

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.3</u>	<u>0.4</u>		<u>0.2</u>	<u>0.3</u>	<u>0.3</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>0.9</u>		<u>1.0</u>	<u>1.0</u>	<u>0.7</u>
	<u>Food 3</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	
	<u>Water 4</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>	<u>0.7</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.6</u>	<u>0.7</u>		<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.5</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year 0
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-33 Area 6.00 Mitigation Category 3
 Site Description Topography: flat; Tree Cover: oak, red maple; Shrub Cover:
red maple, cherry blackberry; Herbaceous Cover: impatiens,
grasses, poison ivy

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.7</u>	<u>0.8</u>	<u>—</u>	<u>0.6</u>	<u>0.9</u>	<u>0.9</u>
<u>Deer</u>	<u>Food 2</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>		
	<u>Food 3A</u>		<u>0.6</u>	<u>0.6</u>	<u>—</u>	<u>0.7</u>		
	<u>Food 3B</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

Limiting Factors _____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-34 Area 68.40 Mitigation Category 3
 Site Description Topography: steep slope; Tree Cover: oak, maple; Shrub
Cover: sumac, spicebush, sycamore, rose, wineberry,;
Herbaceous Cover: honeysuckle, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.9</u>	<u>0.9</u>		<u>1.0</u>	<u>0.9</u>	<u>0.8</u>
	<u>Food 3</u>		<u>0.7</u>	<u>0.9</u>		<u>0.7</u>	<u>0.8</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.5</u>	<u>0.6</u>		<u>0.6</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION FORM 5

Project ROUTE 33 Date 04-28-92
Alternative 3 Target Year C
Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-34 Area 68.40 Mitigation Category 3

Site Description Topography: steep slope; Tree Cover: oak, maple; Shrub
Cover: sumac, spicebush, sycamore, rose, wineberry,;
Herbaceous Cover: honeysuckle, goldenrod.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.8</u>	<u>0.7</u>	<u>—</u>	<u>0.7</u>	<u>0.9</u>	<u>0.9</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.9</u>	<u>0.9</u>	<u>—</u>	<u>0.9</u>	<u>—</u>	
	<u>Food 3A</u>		<u>0.7</u>	<u>0.8</u>	<u>—</u>	<u>0.7</u>	<u>—</u>	
	<u>Food 3B</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>—</u>	
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>	<u>—</u>	<u>1.0</u>	<u>1.0</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Limiting Factors none

			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors _____

			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
			<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-35 Area 9.10 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree Cover: sycamore; Shrub
Cover: ash, boxelder, sycamore; Herbaceous Cover: poison
ivy, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.8</u>	<u>0.9</u>		<u>0.8</u>	<u>0.8</u>	<u>0.8</u>
	<u>Food/Cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Recoon</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.7</u>	<u>0.7</u>		<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.6</u>	<u>0.5</u>		<u>0.6</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

GDI/HEP
 HABITAT COMPARTMENT HSI DETERMINATION FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-35 Area 9.10 Mitigation Category 3

Site Description Topography: flat floodplain; Tree Cover: sycamore; Shrub
Cover: ash, boxelder, sycamore; Herbaceous Cover: poison
ivy, honeysuckle.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>	<u>0.7</u>	<u>0.7</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.8</u>		
	<u>Food 3A</u>		<u>0.7</u>	<u>0.7</u>		<u>0.8</u>		
	<u>Food 3A</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		
	<u>Cover 4</u>		<u>0.8</u>	<u>0.8</u>		<u>0.9</u>	<u>0.8</u>	

Limiting Factors none

Limiting Factors _____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-36 Area 15.20 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree Cover: sycamore, ash,
locust; Shrub Cover: spicebush, dogwood, walnut, oak,
Herbaceous Cover: impatiens, ferns, wild grape.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>American Toad</u>	<u>Breeding 1</u>		<u>0.7</u>	<u>0.8</u>		<u>0.6</u>	<u>0.7</u>	<u>0.7</u>
	<u>Food/Cover 2</u>		<u>0.8</u>	<u>0.8</u>		<u>0.7</u>	<u>0.8</u>	

Limiting Factors none

<u>Raccoon</u>	<u>Breeding 1</u>		<u>0.9</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	<u>0.9</u>
	<u>Food 3</u>		<u>1.0</u>	<u>0.9</u>		<u>0.9</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>Song Sparrow</u>	<u>Cover 1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.7</u>	<u>0.6</u>	<u>0.6</u>
	<u>Cover 2</u>		<u>0.6</u>	<u>0.6</u>		<u>0.5</u>		
	<u>Water 3</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

HABITAT COMPARTMENT HSI DETERMINATION

GDI/HEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Deciduous Forest

Compartment Number 41-36 Area 15.20 Mitigation Category 3
 Site Description Topography: flat floodplain; Tree Cover: sycamore, ash,
locust; Shrub Cover: spicebush, dogwood, walnut, oak,
Herbaceous Cover: impatiens, ferns, wild grape.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FWS	PGC	PFC	AA/A		
<u>W-Tailed</u>	<u>Food 1</u>		<u>0.8</u>	<u>0.9</u>		<u>0.8</u>	<u>0.9</u>	<u>0.9</u>
<u>Deer</u>	<u>Food 2</u>		<u>0.8</u>	<u>0.9</u>		<u>0.9</u>		
	<u>Food 3A</u>		<u>0.8</u>	<u>0.9</u>		<u>1.0</u>		
	<u>Food 3B</u>		<u>0.9</u>	<u>1.0</u>		<u>0.9</u>		
	<u>Cover 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

Limiting Factors _____

Limiting Factors _____

HABITAT COMPARTMENT HSI DETERMINATION

GDI/NEP
FORM 5

Project ROUTE 33 Date 04-28-92
 Alternative 3 Target Year C
 Land Use/Water Use/Cover Type Palustrine Wetland

Compartment Number 616-1 Area 6.20 Mitigation Category 2
 Site Description Topograaphy: sloped; Tree Cover: none; Shrub Cover: none;
Herbaceous Cover: cattails, sedges.

Evaluation Species	Life Requisite	A.V. Site	Requisite Rankings				Avg.	HSI
			FVS	PGC	PFC	AA/A		
<u>Raccoon</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	<u>0.9</u>
	<u>Food 3</u>		<u>0.8</u>	<u>0.8</u>		<u>1.0</u>	<u>0.9</u>	
	<u>Water 4</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	

Limiting Factors none

<u>R-Winged</u>	<u>Breeding 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>0.6</u>	<u>0.6</u>
<u>Blckbird</u>	<u>Breeding 2</u>		<u>0.4</u>	<u>0.4</u>		<u>0.4</u>		
	<u>Breeding 3</u>		<u>0.5</u>	<u>0.5</u>		<u>0.5</u>		
	<u>Breeding 4</u>		<u>0.3</u>	<u>0.3</u>		<u>0.3</u>		

Limiting Factors none

<u>ddd</u>	<u>food 1</u>		<u>0.8</u>	<u>0.7</u>		<u>0.7</u>	<u>0.7</u>	<u>0.7</u>
	<u>cover 1</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>	<u>1.0</u>	
	<u>cover 2</u>		<u>1.0</u>	<u>1.0</u>		<u>1.0</u>		

Limiting Factors none

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date: 04/28/92
 Alternative: Base mapping Target Year: B
 Land Use/Cover Type: 21 - Cropland and Pasture

Evaluation Species

Sample Sites		Evaluation Species				
		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Raccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.2</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
Area	<u>27.90</u>	<u>0.00</u>	<u>5.58</u>	<u>16.74</u>	<u>16.74</u>	<u>16.74</u>
<u>2</u>	HSI	<u>0.0</u>	<u>0.7</u>	<u>0.4</u>	<u>0.7</u>	<u>0.5</u>
Area	<u>64.90</u>	<u>0.00</u>	<u>45.43</u>	<u>25.96</u>	<u>45.43</u>	<u>32.45</u>
<u>3</u>	HSI	<u>0.2</u>	<u>0.4</u>	<u>0.8</u>	<u>0.6</u>	<u>0.6</u>
Area	<u>55.20</u>	<u>11.04</u>	<u>22.08</u>	<u>44.16</u>	<u>33.12</u>	<u>33.12</u>
<u>4</u>	HSI	<u>0.4</u>	<u>0.3</u>	<u>0.8</u>	<u>0.9</u>	<u>0.5</u>
Area	<u>26.30</u>	<u>10.52</u>	<u>7.89</u>	<u>21.04</u>	<u>23.67</u>	<u>13.15</u>
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
Total						
Area	<u>174.30</u>					
Total HU		<u>21.56</u>	<u>80.98</u>	<u>107.90</u>	<u>118.96</u>	<u>95.46</u>
Mean HSI		<u>0.1</u>	<u>0.5</u>	<u>0.6</u>	<u>0.7</u>	<u>0.5</u>

DETERMINING MEAN SPECIES HSI PER COVER TYPE

Project: ROUTE 33 Date : 04/28/92
 Alternative: Base mapping Target Year: B
 Land Use/Cover Type: 31 - Ungrazed Herb. Rangeland

Evaluation Species

Sample Sites		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Raccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>	<u>RTHK</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.8</u>
Area	<u>13.30</u>	<u>0.00</u>	<u>1.33</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>10.64</u>
<u>2</u>	HSI	<u>0.2</u>	<u>0.1</u>	<u>0.9</u>	<u>0.5</u>	<u>0.9</u>	<u>0.9</u>
Area	<u>27.10</u>	<u>5.42</u>	<u>2.71</u>	<u>24.39</u>	<u>13.55</u>	<u>24.39</u>	<u>24.39</u>
<u>3</u>	HSI	<u>0.3</u>	<u>0.4</u>	<u>0.9</u>	<u>0.6</u>	<u>0.6</u>	<u>0.3</u>
Area	<u>11.50</u>	<u>3.45</u>	<u>4.60</u>	<u>10.35</u>	<u>6.90</u>	<u>6.90</u>	<u>3.45</u>
<u>4</u>	HSI	<u>0.7</u>	<u>0.4</u>	<u>0.6</u>	<u>0.9</u>	<u>0.6</u>	<u>1.0</u>
Area	<u>24.00</u>	<u>16.80</u>	<u>9.60</u>	<u>14.40</u>	<u>21.60</u>	<u>14.40</u>	<u>24.00</u>
Area							
Area							
Area							
Area							
Area							
Total Area	<u>75.90</u>						
Total HU		<u>25.67</u>	<u>18.24</u>	<u>49.14</u>	<u>42.05</u>	<u>45.69</u>	<u>62.48</u>
Mean HSI		<u>0.3</u>	<u>0.2</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.8</u>

DETERMINING MEAN SPECIES HSI PER COVER TYPE

Project: ROUTE 33 Date: 04/28/92
 Alternative: Base mapping Target Year: B
 Land Use/Cover Type: 33 - Mixed Range >1/3 shrub/br

Evaluation Species

Sample Sites		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Raccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>	<u>RTHK</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.6</u>	<u>0.4</u>	<u>0.8</u>	<u>0.0</u>	<u>0.5</u>
Area	<u>2.10</u>	<u>0.00</u>	<u>1.26</u>	<u>0.84</u>	<u>1.68</u>	<u>0.00</u>	<u>1.05</u>
<u>2</u>	HSI	<u>0.6</u>	<u>0.9</u>	<u>0.9</u>	<u>1.0</u>	<u>0.8</u>	<u>0.8</u>
Area	<u>7.50</u>	<u>4.50</u>	<u>6.75</u>	<u>6.75</u>	<u>7.50</u>	<u>6.00</u>	<u>6.00</u>
<u>3</u>	HSI	<u>0.6</u>	<u>0.9</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.3</u>
Area	<u>4.50</u>	<u>2.70</u>	<u>4.05</u>	<u>4.50</u>	<u>4.05</u>	<u>3.60</u>	<u>1.35</u>
<u>4</u>	HSI	<u>0.6</u>	<u>0.6</u>	<u>0.9</u>	<u>1.0</u>	<u>0.7</u>	<u>0.3</u>
Area	<u>13.10</u>	<u>7.86</u>	<u>7.86</u>	<u>11.79</u>	<u>13.10</u>	<u>9.17</u>	<u>3.93</u>
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
Total							
Area	<u>27.20</u>						
Total MU		<u>15.86</u>	<u>19.92</u>	<u>23.88</u>	<u>26.33</u>	<u>18.77</u>	<u>12.33</u>
Mean HSI		<u>0.6</u>	<u>0.7</u>	<u>0.9</u>	<u>1.0</u>	<u>0.7</u>	<u>0.5</u>

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date: 04/28/92
 Alternative: Base mapping Target Year: B
 Land Use/Cover Type: 41 - Deciduous Forest

Evaluation Species

Sample Sites		Evaluation Species					
		American Toad	Raccoon	Song Sparrow	W-Tailed Deer		
<u>1</u>	HSI	<u>0.3</u>	<u>0.7</u>	<u>0.6</u>	<u>1.0</u>		
Area	<u>11.40</u>	<u>3.42</u>	<u>7.98</u>	<u>6.84</u>	<u>11.40</u>		
<u>2</u>	HSI	<u>0.8</u>	<u>0.8</u>	<u>0.6</u>	<u>0.9</u>		
Area	<u>70.40</u>	<u>56.32</u>	<u>56.32</u>	<u>42.24</u>	<u>63.36</u>		
<u>3</u>	HSI	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>	<u>0.7</u>		
Area	<u>9.10</u>	<u>7.28</u>	<u>6.37</u>	<u>5.46</u>	<u>6.37</u>		
<u>4</u>	HSI	<u>0.7</u>	<u>0.9</u>	<u>0.6</u>	<u>0.9</u>		
Area	<u>16.50</u>	<u>11.55</u>	<u>14.85</u>	<u>9.90</u>	<u>14.85</u>		
—	HSI	—	—	—	—		
Area	—	—	—	—	—		
—	HSI	—	—	—	—		
Area	—	—	—	—	—		
—	HSI	—	—	—	—		
Area	—	—	—	—	—		
—	HSI	—	—	—	—		
Area	—	—	—	—	—		
Total							
Area	<u>107.40</u>						
Total HU		<u>78.57</u>	<u>85.52</u>	<u>64.44</u>	<u>95.98</u>		
Mean HSI		<u>0.7</u>	<u>0.8</u>	<u>0.6</u>	<u>0.9</u>		

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date : 04/28/92
 Alternative: Base mapping Target Year: B
 Land Use/Cover Type: 616 - Palustr. Wtind emergent

Evaluation Species

Sample Sites		Evaluation Species					
		<u>Raccoon</u>	<u>R-Winged Bckbird</u>	<u>ddd</u>			
<u>1</u>	HSI	<u>0.9</u>	<u>0.6</u>	<u>0.7</u>			
Area	<u>6.20</u>	<u>5.58</u>	<u>3.72</u>	<u>4.34</u>			
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
Total							
Area	<u>6.20</u>						
Total HU		<u>5.58</u>	<u>3.72</u>	<u>4.34</u>			
Mean HSI		<u>0.9</u>	<u>0.6</u>	<u>0.7</u>			

GDI/NEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date : 04/28/92
 Alternative: 3 Target Year: C
 Land Use/Cover Type: 21 - Cropland and Pasture

Evaluation Species

Sample Sites		Evaluation Species				
		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Raccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.2</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
Area	<u>22.80</u>	<u>0.00</u>	<u>4.56</u>	<u>13.68</u>	<u>13.68</u>	<u>13.68</u>
<u>2</u>	HSI	<u>0.0</u>	<u>0.7</u>	<u>0.4</u>	<u>0.7</u>	<u>0.5</u>
Area	<u>64.90</u>	<u>0.00</u>	<u>45.43</u>	<u>25.96</u>	<u>45.43</u>	<u>32.45</u>
<u>3</u>	HSI	<u>0.2</u>	<u>0.4</u>	<u>0.8</u>	<u>0.6</u>	<u>0.6</u>
Area	<u>55.20</u>	<u>11.04</u>	<u>22.08</u>	<u>44.16</u>	<u>33.12</u>	<u>33.12</u>
<u>4</u>	HSI	<u>0.4</u>	<u>0.3</u>	<u>0.8</u>	<u>0.9</u>	<u>0.5</u>
Area	<u>18.20</u>	<u>7.28</u>	<u>5.46</u>	<u>14.56</u>	<u>16.38</u>	<u>9.10</u>
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
—	HSI	—	—	—	—	—
Area	—	—	—	—	—	—
Total						
Area	<u>161.10</u>					
Total HU		<u>18.32</u>	<u>77.53</u>	<u>98.36</u>	<u>108.61</u>	<u>88.35</u>
Mean HSI		<u>0.1</u>	<u>0.5</u>	<u>0.6</u>	<u>0.7</u>	<u>0.5</u>

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date: 04/28/92
 Alternative: 3 Target Year: C
 Land Use/Cover Type: 31 - Ungrazed Herb. Rangeland

Evaluation Species

Sample Sites		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Reccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>	<u>RTHK</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.8</u>
Area	<u>13.20</u>	<u>0.00</u>	<u>1.32</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>10.56</u>
<u>2</u>	HSI	<u>0.2</u>	<u>0.1</u>	<u>0.9</u>	<u>0.5</u>	<u>0.9</u>	<u>0.9</u>
Area	<u>21.20</u>	<u>4.24</u>	<u>2.12</u>	<u>19.08</u>	<u>10.60</u>	<u>19.08</u>	<u>19.08</u>
<u>3</u>	HSI	<u>0.3</u>	<u>0.4</u>	<u>0.9</u>	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>
Area	<u>8.30</u>	<u>2.49</u>	<u>3.32</u>	<u>7.47</u>	<u>4.98</u>	<u>4.98</u>	<u>4.15</u>
<u>4</u>	HSI	<u>0.7</u>	<u>0.4</u>	<u>0.6</u>	<u>0.9</u>	<u>0.6</u>	<u>1.0</u>
Area	<u>24.00</u>	<u>16.80</u>	<u>9.60</u>	<u>14.40</u>	<u>21.60</u>	<u>14.40</u>	<u>24.00</u>
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
Total							
Area	<u>66.70</u>						
Total HU		<u>23.53</u>	<u>16.36</u>	<u>40.95</u>	<u>37.18</u>	<u>38.46</u>	<u>57.79</u>
Mean HSI		<u>0.4</u>	<u>0.2</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.9</u>

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date: 04/28/92
 Alternative: 3 Target Year: C
 Land Use/Cover Type: 33 - Mixed Range >1/3 shrub/br

Evaluation Species

Sample Sites		Evaluation Species					
		<u>American Toad</u>	<u>Eastern C. Tail</u>	<u>Raccoon</u>	<u>Song Sparrow</u>	<u>W-Tailed Deer</u>	<u>RTHK</u>
<u>1</u>	HSI	<u>0.0</u>	<u>0.6</u>	<u>0.4</u>	<u>0.8</u>	<u>0.0</u>	<u>0.5</u>
Area	<u>2.10</u>	<u>0.00</u>	<u>1.26</u>	<u>0.84</u>	<u>1.68</u>	<u>0.00</u>	<u>1.05</u>
<u>2</u>	HSI	<u>0.6</u>	<u>0.9</u>	<u>0.9</u>	<u>1.0</u>	<u>0.8</u>	<u>0.8</u>
Area	<u>7.30</u>	<u>4.38</u>	<u>6.57</u>	<u>6.57</u>	<u>7.30</u>	<u>5.84</u>	<u>5.84</u>
<u>3</u>	HSI	<u>0.6</u>	<u>0.9</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.3</u>
Area	<u>3.50</u>	<u>2.10</u>	<u>3.15</u>	<u>3.50</u>	<u>3.15</u>	<u>2.80</u>	<u>1.05</u>
<u>4</u>	HSI	<u>0.6</u>	<u>0.7</u>	<u>0.9</u>	<u>1.0</u>	<u>0.7</u>	<u>0.4</u>
Area	<u>12.30</u>	<u>7.38</u>	<u>8.61</u>	<u>11.07</u>	<u>12.30</u>	<u>8.61</u>	<u>4.92</u>
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
—	HSI	—	—	—	—	—	—
Area	—	—	—	—	—	—	—
Total							
Area	<u>25.20</u>						
Total HU		<u>13.86</u>	<u>19.59</u>	<u>21.98</u>	<u>24.43</u>	<u>17.25</u>	<u>12.86</u>
Mean HSI		<u>0.6</u>	<u>0.8</u>	<u>0.9</u>	<u>1.0</u>	<u>0.7</u>	<u>0.5</u>

GDI/NEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33
 Alternative: 3
 Land Use/Cover Type: 41 - Deciduous Forest

Date : 04/28/92
 Target Year: C

Evaluation Species

Sample Sites		Evaluation Species					
		American Toad	Raccoon	Song Sparrow	W-Tailed Deer		
<u>1</u>	HSI	<u>0.3</u>	<u>0.7</u>	<u>0.6</u>	<u>0.9</u>		
Area		<u>6.00</u>					
	HU	<u>1.80</u>	<u>4.20</u>	<u>3.60</u>	<u>5.40</u>		
<u>2</u>	HSI	<u>0.8</u>	<u>0.8</u>	<u>0.6</u>	<u>0.9</u>		
Area		<u>68.40</u>					
	HU	<u>54.72</u>	<u>54.72</u>	<u>41.04</u>	<u>61.56</u>		
<u>3</u>	HSI	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>	<u>0.7</u>		
Area		<u>9.10</u>					
	HU	<u>7.28</u>	<u>6.37</u>	<u>5.46</u>	<u>6.37</u>		
<u>4</u>	HSI	<u>0.7</u>	<u>0.9</u>	<u>0.6</u>	<u>0.9</u>		
Area		<u>15.20</u>					
	HU	<u>10.64</u>	<u>13.68</u>	<u>9.12</u>	<u>13.68</u>		
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
	HSI						
Area							
Total							
Area		<u>98.70</u>					
Total HU		<u>74.44</u>	<u>78.97</u>	<u>59.22</u>	<u>87.01</u>		
Mean HSI		<u>0.8</u>	<u>0.8</u>	<u>0.6</u>	<u>0.9</u>		

GDI/HEP
 DETERMINING MEAN SPECIES HSI PER COVER TYPE

FORM 6

Project: ROUTE 33 Date: 04/28/92
 Alternative: 3 Target Year: C
 Land Use/Cover Type: 616 - Palustr. Wtind emergent

Evaluation Species

Sample Sites		Evaluation Species					
		Raccoon	R-Winged Blckbird	ddd			
<u>1</u>	HSI	<u>0.9</u>	<u>0.6</u>	<u>0.7</u>			
Area		<u>6.20</u>					
	HU	<u>5.58</u>	<u>3.72</u>	<u>4.34</u>			
	HSI						
Area	HU						
	HSI						
Area	HU						
	HSI						
Area	HU						
	HSI						
Area	HU						
	HSI						
Area	HU						
	HSI						
Area	HU						
Total							
Area		<u>6.20</u>					
Total	HU	<u>5.58</u>	<u>3.72</u>	<u>4.34</u>			
Mean	HSI	<u>0.9</u>	<u>0.6</u>	<u>0.7</u>			

GDI/HEP - COMPARISON OF BASELINE (TYB) AND CONSTRUCTION
(TYC) AREA, HSI AND HU BY LAND USE/COVER TYPE

FORM 7

Project: ROUTE 33
Alternative: 3

Land Use Cover Type	Evaluation Species	Bsline TYB		Cons TYC		HU Change
		Mean HSI	HU	Mean HSI	HU	
<u>Ungrazed Herb.</u>	<u>American Toad</u>	<u>0.3</u>	<u>44.43</u>	<u>0.4</u>	<u>53.32</u>	<u>8.89</u>
<u>Rangeland</u>	<u>Eastern C. Tail</u>	<u>0.2</u>	<u>29.62</u>	<u>0.2</u>	<u>26.66</u>	<u>-2.96</u>
	<u>Raccoon</u>	<u>0.6</u>	<u>88.86</u>	<u>0.6</u>	<u>79.98</u>	<u>-8.88</u>
TYB Acres <u>148.10</u>	<u>Song Sparrow</u>	<u>0.6</u>	<u>88.86</u>	<u>0.6</u>	<u>79.98</u>	<u>-8.88</u>
	<u>W-Tailed Deer</u>	<u>0.6</u>	<u>88.86</u>	<u>0.6</u>	<u>79.98</u>	<u>-8.88</u>
TYC Acres <u>133.30</u>	<u>RTHK</u>	<u>0.8</u>	<u>118.48</u>	<u>0.9</u>	<u>119.97</u>	<u>1.49</u>
	Sub-total HU		<u>459.11</u>		<u>439.89</u>	<u>-19.22</u>
<u>Mixed Range</u>	<u>American Toad</u>	<u>0.6</u>	<u>18.06</u>	<u>0.6</u>	<u>16.86</u>	<u>-1.20</u>
<u>>1/3 shrub/br</u>	<u>Eastern C. Tail</u>	<u>0.7</u>	<u>21.07</u>	<u>0.8</u>	<u>22.48</u>	<u>1.41</u>
	<u>Raccoon</u>	<u>0.9</u>	<u>27.09</u>	<u>0.9</u>	<u>25.29</u>	<u>-1.80</u>
TYB Acres <u>30.10</u>	<u>Song Sparrow</u>	<u>1.0</u>	<u>30.10</u>	<u>1.0</u>	<u>28.10</u>	<u>-2.00</u>
	<u>W-Tailed Deer</u>	<u>0.7</u>	<u>21.07</u>	<u>0.7</u>	<u>19.67</u>	<u>-1.40</u>
TYC Acres <u>28.10</u>	<u>RTHK</u>	<u>0.5</u>	<u>15.05</u>	<u>0.5</u>	<u>14.05</u>	<u>-1.00</u>
	Sub-total HU		<u>132.44</u>		<u>126.45</u>	<u>-5.99</u>
<u>Deciduous</u>	<u>American Toad</u>	<u>0.7</u>	<u>148.75</u>	<u>0.8</u>	<u>161.28</u>	<u>12.53</u>
<u>Forest</u>	<u>Raccoon</u>	<u>0.8</u>	<u>170.00</u>	<u>0.8</u>	<u>161.28</u>	<u>-8.72</u>
	<u>Song Sparrow</u>	<u>0.6</u>	<u>127.50</u>	<u>0.6</u>	<u>120.96</u>	<u>-6.54</u>
TYB Acres <u>212.50</u>	<u>W-Tailed Deer</u>	<u>0.9</u>	<u>191.25</u>	<u>0.9</u>	<u>181.44</u>	<u>-9.81</u>
	Sub-total HU		<u>637.50</u>		<u>624.96</u>	<u>-12.54</u>
	Project Area Totals		<u>3210.45</u>		<u>2893.46</u>	<u>-316.99</u>

GDI/HEP - COMPARISON OF BASELINE (TYB) AND CONSTRUCTION
(TYC) AREA, HSI AND HU BY LAND USE/COVER TYPE

FORM 7

Project: ROUTE 33
Alternative: 3

Land Use Cover Type	Evaluation Species	Bsline TYB		Cons TYC		HU Change
		Mean HSI	HU	Mean HSI	HU	
<u>Riverine wtlnd</u>	_____	_____	_____	_____	_____	_____
<u>lower peren.</u>	_____	_____	_____	_____	_____	_____
TYB Acres <u>66.10</u>	_____	_____	_____	_____	_____	_____
TYC Acres <u>66.10</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	Sub-total HU		<u>0.00</u>		<u>0.00</u>	<u>0.00</u>
Palustr. Wtlnd	<u>Raccoon</u>	<u>0.9</u>	<u>5.58</u>	<u>0.9</u>	<u>5.58</u>	<u>0.80</u>
emergent	<u>R-Winged Blackbird</u>	<u>0.6</u>	<u>3.72</u>	<u>0.6</u>	<u>3.72</u>	<u>0.00</u>
	<u>ddd</u>	<u>0.7</u>	<u>4.34</u>	<u>0.7</u>	<u>4.34</u>	<u>0.00</u>
TYB Acres <u>6.20</u>	_____	_____	_____	_____	_____	_____
TYC Acres <u>6.20</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	Sub-total HU		<u>13.64</u>		<u>13.64</u>	<u>0.00</u>
Palustr. Wtlnd	_____	_____	_____	_____	_____	_____
forested	_____	_____	_____	_____	_____	_____
TYB Acres <u>8.80</u>	_____	_____	_____	_____	_____	_____
TYC Acres <u>8.80</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	Sub-total HU		<u>0.00</u>		<u>0.00</u>	<u>0.00</u>
Project Area Totals			<u>3210.45</u>		<u>2893.46</u>	<u>-316.99</u>

Project ROUTE 33

Alternative 3

FWS Mitig. Category	Land Use/ Cover Type	Compartment Numbers	Area		MU loss Due to Project	MU gain Due to Project	MU Mit. Requirements
			TYB	TYC			
2	Palustr. Wetland emergent	616-1	6	6	0	0	0
	Palustr. Wetland forested	618-1 2 3 4	9	9	0	0	0
Mit. Category Totals			15	15	0	0	0
Project Area Totals							
3	Residential	11-25	3	3	0	0	0
	Ungrazed Herb. Rangeland	31-3 6 7 8 9 11 13 15 16 17	148	133	-19	0	-19
	Mixed Range >1/3 shrub/br	33-1 2 3 4 5 6	30	28	-6	0	-6
	Deciduous Forest	41-9 27 33 34 35 36 37 39 50	213	202	-13	0	-13
	Riverine wetland lower peren.	65-1	66	66	0	0	0
Mit. Category Totals			460	432	-38	0	-38
Project Area Totals							

GDI - HEP - MITIGATION OVERVIEW MATRIX

FORM 11

Project: ROUTE 33

Alternative: 3

Evaluation Species	Life Limiting Requisites(s)	Specific Needs	Possible Mitigation Techniques
<u>American Toad</u>	<u>breeding</u>	<u>ponds, temp. pools</u>	<u>build ponds or temporary pools; locating mitigation sites near existing water</u> <u>man-made brush and rock piles; planting herbaceous vegetation to encourage invert. populations</u>
	<u>food/cover</u>	<u>rock piles, brush piles, invertebrate populations</u>	
<u>Eastern C. Tail</u>	<u>breeding</u>	<u>short grass areas</u>	<u>plant appropriate species adjacent to escape cover</u> <u>plant appropriate in a diversified spatial pattern</u> <u>plant short grasses adjacent to existing shrub cover</u>
	<u>cover</u>	<u>herbaceous cover shrub clumps & rows</u>	
<u>Raccoon</u>	<u>breeding</u>	<u>den trees</u>	<u>plant appropriate species</u> <u>locate mitigation sites adjacent to existing dens</u> <u>log and brush piles</u> <u>girdling and hollowing trees</u> <u>creating and planting forest and wetland species</u> <u>build ponds, use existing, adjacent water sources</u>
	<u>food</u>	<u>forest & wetlands</u>	
	<u>water</u>	<u>permanent</u>	
<u>Song Sparrow</u>	<u>cover</u>	<u>shrub clumps</u> <u>limited tree canopy</u>	<u>planting appropriate species in scattered clumps</u> <u>build small ponds, use existing adjacent water sources</u>
	<u>water</u>	<u>water source within 0.5 to 1.0 miles</u>	
<u>W-Tailed Deer</u>	<u>food</u>	<u>mast producing trees</u> <u>shrub crown cover</u> <u>herbaceous veg.</u>	<u>plant appropriate species</u> <u>locate near existing veg.</u>
	<u>cover</u>	<u>conifer stands, shrub thickets</u>	<u>plant appropriate species</u>

APPENDIX Q
FORM AD-1006

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request February 7, 1989	
Name Of Project Route 33 Extension		Federal Agency Involved Federal Highway Administration	
Proposed Land Use Transportation		County And State Northampton County, PA	
PART II (To be completed by SCS)		Date Request Received By SCS 2-09-89	
Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form).</i>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Average Farm Size 172
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 164,215 % 68.6	Acres Irrigated 0	Amount Of Farmland As Defined in FPPA Acres: 146,305 % 61.1
Name Of Land Evaluation System Used NORTHAMPTON CO.	Name Of Local Site Assessment System NIA	Date Land Evaluation Returned By SCS 2-13-89 RC	
PART III (To be completed by Federal Agency)		Alternative Site Rating	
		Site A *	Site B **
A. Total Acres To Be Converted Directly		20.29	29.38
B. Total Acres To Be Converted Indirectly		0	0
C. Total Acres In Site		20.29	29.38
PART IV (To be completed by SCS) Land Evaluation Information			
A. Total Acres Prime And Unique Farmland		14	25
B. Total Acres Statewide And Local Important Farmland		1.0	0
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		<0.001	<0.001
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		22.6	7.2
PART V (To be completed by SCS) Land Evaluation Criterion			
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		91	96.8
PART VI (To be completed by Federal Agency)			
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points		
1. Area In Nonurban Use	15	11	11
2. Perimeter In Nonurban Use	10	10	10
3. Percent Of Site Being Farmed	20	15	17
4. Protection Provided By State And Local Government	20	0	0
5. Distance From Urban Builtup Area	n/a	--	--
6. Distance To Urban Support Services	n/a	--	--
7. Size Of Present Farm Unit Compared To Average	10	0	0
8. Creation Of Nonfarmable Farmland	25	0	0
9. Availability Of Farm Support Services	5	5	5
10. On-Farm Investments	20	10	10
11. Effects Of Conversion On Farm Support Services	25	3	3
12. Compatibility With Existing Agricultural Use	10	5	5
TOTAL SITE ASSESSMENT POINTS	160	59	61
PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)	100	91	96.8
Total Site Assessment (From Part VI above or a local site assessment)	160	57	61
TOTAL POINTS (Total of above 2 lines)	260	150	157.8
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Reason For Selection			

- * Alternative 1
- ** Alternative 2

APPENDIX R

**CORRESPONDENCE FROM BETHLEHEM TOWNSHIP
CONCERNING CROSSING OF
BETHLEHEM-PALMER TOWNSHIP BIKE TRAIL**



TOWNSHIP OF BETHLEHEM

Board of Commissioners

RECEIVED

Alan J. Robertson,
President

Larry Spinato,
Vice President

Leonard J. Hudak,
Commissioner

Louis A. Gallucci,
Commissioner

Robert W. Birk,
Commissioner

MUNICIPAL OFFICES
2740 Fifth Street
Bethlehem, Pennsylvania 18017

Phone: (215) 865-5563

Fax: (215) 865-2211

SEP 28 1992

September 22, 1992

Mr. William Plumpton
Gannett Fleming Engineers & Planners
P. O. Box 1963
Harrisburg, PA 17105-1963

Dear Mr. Plumpton:

The Board of Commissioners reviewed your letter of May 11, 1992 and are not opposed to the alternate chosen.

Very truly yours,

Paul J. Paslawsky
Township Manager

PJP/jat

corresp\1992\alternat

Public Works
865-0471

Recreation
865-9729

Sewer Department
865-3977

Earned Income Tax
865-4012

Police
691-0700

APPENDIX S

**CORRESPONDENCE FROM PALMER TOWNSHIP
CONCERNING CROSSING OF
BETHLEHEM-PALMER TOWNSHIP BIKE TRAIL**



OFFICE OF THE SECRETARY

TOWNSHIP OF PALMER · NORTHAMPTON COUNTY, PA.

MUNICIPAL BUILDING, Tel. 215-253-7191, 3245 Freemansburg Ave., P. O. Box 3039, Palmer, PA 18043-3039

May 19, 1992



Charles M. Bingham
Project Manager
Gannett Fleming, Inc.
P O Box 1963
Harrisburg, Pa. 17105-1963

RE: Route 33 Extension FEIS
Bethlehem and Lower Saucon Townships
Northampton County

Dear Mr. Bingham:

In response to your letter of May 11, 1992 in regards to the alternative routes for the referenced Route 33 extension through Bethlehem and Lower Nazareth Townships; please be advised that Palmer Township does not have a specific preference for any of the indicated alternative Routes. However, if the Route that is finally chosen is one that crosses the existing Bikeway or one that crosses the proposed bikeway along the abandoned railroad right of way that parallels the Canal; Palmer Township wishes to make note of the importance of these recreational opportunities to the citizens of the area. Therefore, precautions should be exercised during both the design and the construction phases of the Route 33 Extension Project that recognize the importance of these recreational facilities.

Yours truly,

A handwritten signature in cursive script, reading "Theodore T. Borek". The signature is written in dark ink and is positioned above the typed name.

Theodore T. Borek
Director of Planning and Public Works

CC: Brd of Suprs.
Atty Himmilreich
R. Keller, PennDOT

APPENDIX T

**MINUTES OF MEETING WITH
PENNSYLVANIA FISH AND BOAT COMMISSION**



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
BUREAU OF PROPERTIES & FACILITIES MANAGEMENT
450 ROBINSON LANE
BELLEFONTE, PA 16823-9616
(814) 359-5152

Engineering & Technical Services
(814-359-5127)
Construction & Maintenance Section
(814-359-5128)
Property Services
(814-359-5149)

April 2, 1992

Robert Keller, Project Development Mgr.
PA Department of Transportation
Engineering District 5-0
1713 Lehigh Street
Allentown, PA 18105

Subject: Potential Boat Launch Site, Traffic Route 33 Extension
Northampton County

Dear Mr. Keller:

I have recently become aware of a potential highway project that will extend Traffic Route 33 to Interstate 78. This project would include a bridge crossing the Lehigh River, upriver from the Chain Dams, near the Bethlehem Boat Club.

It is my understanding that for such a project, the Department of Transportation would need to purchase considerable property adjacent to the river, develop a staging area, and construct a causeway for the construction of the bridge.

Due to these items having to be undertaken, I believe the development of a boat launch facility could be very easily incorporated into the construction of the bridge and subsequently turned over to the Fish and Boat Commission. Such action would greatly benefit the public and retain title to the property in the Commonwealth of Pennsylvania for any future maintenance or inspection activities the Department of Transportation might have to undertake at the site.

Therefore, I would ask if it is possible for the Department of Transportation to include a boat launch facility in the design and construction of the said highway project.

I look forward to your response, and if you need to contact me to discuss this matter or set up a meeting, my number is 814-359-5108.

Very truly yours,

Bernard J. Kiesnoski, Chief
Real Estate Section

c: E. Banker
File



MINUTES OF MEETING

PA ROUTE 33 EXTENSION

**Bethlehem and Lower Saucon Townships
Northampton County, Pennsylvania**

Subject: Boat Launch

Attendees: Bernard Kienoski, PA Fish and Boat Commission
Thomas Snyder, PA Fish and Boat Commission
Robert Keller, PennDOT 5-0
Jack Porter, PennDOT 5-0
Jerry Neal, PennDOT 5-0
William Plumpton, Gannett Fleming, Inc.

Prepared by: William Plumpton, Gannett Fleming, Inc.

Date: June 23, 1992

The purpose of the meeting held June 22, 1992, was to discuss the possibilities of siting a public boat launch along the northern shore of the Lehigh River in the vicinity of the proposed Route 33 Extension. The following is a summary of the major items discussed.

1. Given the existing topography and access to this portion of the Lehigh River, it is more desirable to site the boat launch in Palmer Township than Bethlehem Township.
2. Any boat launch facility should provide space and parking facilities for approximately 50 vehicles and boats. The proposed facilities should include a fishing pier for handicapped persons. The facilities should not include restrooms or trash cans.
3. The PA Fish and Boat Commission would provide guidance and input into the design of the facility to the extent possible; the Commission does not have the resources to design or construct the facility or access road.
4. The PA Fish and Boat Commission would assume ownership of the constructed facility if Palmer Township or another local body is willing to provide for routine maintenance and policing.

MINUTES OF MEETING

PA ROUTE 33 EXTENSION

**Bethlehem and Lower Saucon Townships
Northampton County, Pennsylvania
(continued)**

5. The access road should have an inside turning radius of at least 25 feet. The Commission provided two guidance documents for designing facilities: PA Fish Commission Access Area Standards, and the Handbook for the Location, Design, Construction, Operation, and Maintenance of Boat Launching Facilities.
6. Boat launches should be no greater than 15%. The end of the boat launch must have a minimum of three feet of water.

WMP/jh

pc: C. Bingham
R. Pugh
J. Smyth
All Attendees
File 28171

APPENDIX U
SECTION 4(f) COORDINATION



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Notes: JH

In reply refer to:
ER 90/0122

Copy
APR 23 1991
L. Keeney
J. Poole

Mr. Manuel A. Marks
Division Administrator
Federal Highway Administration
P.O. Box 1086
Harrisburg, Pennsylvania 17108

Dear Mr. Marks:

This is in response to a request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for the proposed TR-33 (TR-22 to I-78), Northampton County, Pennsylvania.

SECTION 4(f) STATEMENT COMMENTS

We do not concur that there are no feasible and prudent alternatives to the use of the Lehigh Navigation Canal, the Hugh Moore Park and other cultural and recreation resources in the area. In our judgement, further consideration should be given to the No Build Alternative. In the event that it can be shown that the No Build Alternative is neither feasible nor prudent, our preferred alternative would be for a modified version of Alternative 1, in which the road alignment and right-of-way will further reduce impacts to the significant cultural, archaeological and recreational resources on Oberly Island and on lands adjacent to the Lehigh River and the Lehigh Navigation Canal and Towpath.

With respect to the second proviso of Section 4(f), measures to minimize harm, we recommend that special attention be given to the architectural design of any proposed bridge over the Lehigh River and Lehigh Canal in order to provide aesthetic compatibility with the historic ambience of the site. Specifically, we recommend the use of special steel and stone facing for any proposed bridge in order to minimize any visual impacts to this area crossing the Lehigh River. We also recommend that as small a right-of-way as possible be used in the construction of any bridge. Following construction, we recommend appropriate landscape restoration to bring the site back to near-original conditions using indigenous woody plants rather than simply seeding with grasses and mulching. We also recommend appropriate measures for noise mitigation.

Cultural Resources

Twenty-one miles of the Lehigh Navigation Canal are currently on the National Register of Historic Places, including Oberly Island. Public Law 100-692 established the Delaware and Lehigh Navigation Canal National heritage Corridor and the National Heritage Corridor Commission in order "to preserve...certain historic and cultural lands, waterways and structures within and surrounding the Delaware and Lehigh Navigation Canal."

The draft statement also states that five farm sites and two historic districts, all eligible for the National Register of Historic Places, in the area may suffer either visual or noise impacts, or both. In addition, three potentially significant archeological sites could be impacted by the project.

We recommend coordination with the National Heritage Corridor Commission regarding decisions about the form and surface of any bridge, restoration of the disturbed landscape, grading and drainage.

We also recommend continued coordination and consultation with the Pennsylvania State Historic Preservation Office (SHPO). A letter documenting the SHPO's concurrence with the project planning for all aspects of cultural and archeological resources management should be incorporated into the final document. The SHPO for Pennsylvania is Dr. Brent Glass, Pennsylvania Historical and Museum Commission, P.O. Box 1026, Harrisburg, Pennsylvania 17120.

Recreational Resources

In 1979, the Lehigh Navigation Canal Heritage Trail was designated a National Recreation Trail. The Lehigh River is a Priority 1-C river in the Pennsylvania Scenic Rivers Inventory and is thus recognized as a resource of statewide importance.

The draft statement indicates that Oberly Island, part of Hugh Moore Park, would have 0.32 acres of land directly impacted by support piers in Alternative 1, or would be visually impacted in both Alternatives 1 and 2.

Possible access to the Lehigh River suggests that a measure worthy of implementation as part of the project may be the provision of a public boat launching area with access ramps in accordance with Section 147 of the Federal Aid Highway Act of 1976 (Public Law 94-280). This possibility should be explored with the Pennsylvania State Liaison Officer (SLO), the Pennsylvania Fish Commission, the City of Easton and Bethlehem Township.

We recommend that coordination be continued with the SLO, Easton City, and Hugh Moore Park Commission in resolution of replacement

and/or compensation for any land that may be taken from Hugh Moore Park for project purposes. Where lands will be taken by fee or easement, we request replacement in order to maintain the recreational land resource base in this rapidly urbanizing area. Should suitable replacement lands not exist, compensation tendered should be put in an escrow account for the respective authority to have the funds for expenditure for capital improvements which would enhance the public's recreational opportunities on the residual lands. All evidence of coordination with these agencies should be documented in the final statement. The SLO's for Pennsylvania are Mr. James R. Grace, Deputy Secretary of Environmental Resources, P.O. Box 1467, Harrisburg, Pennsylvania 17120 and Mr. Earl F. Gohl, Jr., Deputy Secretary of Community Affairs, P.O. Box 155, Harrisburg, Pennsylvania 17120.

ENVIRONMENTAL STATEMENT COMMENTS

We believe the document underestimates the full impact of the presence of a new highway within a nationally significant historic cultural landscape. The destruction of long views, the addition of noise, air pollution and water pollution, increases in traffic on rural roads, and increased development pressure on historic farms and properties in the area will have serious impacts on the integrity of the landscape.

The study area is the only large area of land in the Allentown-Easton corridor which retains its traditional and characteristic rural uses. The section of the Lehigh River which is proposed to be crossed by the highway is the only stretch on the lower Lehigh which is not paralleled by or crossed by a road. The river and the landscape possess high visual quality and rural values which are now unique in the area, and which will be severely impacted by the proposed highway and bridge.

The draft statement does not deal with the issue of secondary threats to historic and cultural sites which is engendered by highway construction: increased pressures for development. Plans for the proposed project have given care to protection of historic farms on Freemansburg Road from destruction by the proposed highway interchange. We recommend, however, that in order to preserve this unique cultural landscape the proposed interchange on Freemansburg Road be eliminated.

The draft statement also states that although the highway bridge will alter the integrity of the historic setting of the canal, this section of the canal is "overgrown by vegetation and not visited by the public." The current and transient condition of a National Register property cannot be used to justify altering the integrity of its setting. The National Heritage Corridor Commission will soon begin consideration of restoration of the canal and towpath, as well as a full range of recreational uses.

We do not agree with the statement, on page IV-27, that "because pier placement would not occur within the river, the natural, cultural and recreational values of the river would not be affected by either alternative." Piers placed on Oberly Island, within Hugh Moore Park, could have an impact on future recreational development being considered by the park. They will also destroy a significant archaeological site which has been inadequately excavated. The draft statement documents potential water pollution from the highway, and the cultural values of the river landscape are negatively affected by the visual intrusion of the highway, as the draft statement notes on page V-18. In addition, a bridge pier proposed to be placed on the Central Railroad of New Jersey right-of-way interferes with a proposal that this right-of-way be used as a future National Heritage Corridor park road.

Fish and Wildlife Resources

Both Alternative 1 and 2 will directly or indirectly impact riverine wetland areas from the proposed bridge. Terrestrial habitat losses should be compensated for on land purchases as part of the project as far away as possible from the highway.

Endangered Species Act

Except for occasional transient species, no other federally listed or proposed threatened or endangered species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the Fish and Wildlife Service. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

Water Quality

The draft statement notes, on page IV-27, that Nancy Run, a tributary of the Lehigh River, supports a diverse benthic community including species indicative of good water quality, and that increases in pollutants from highway runoff may result in a decrease/loss of the less pollution tolerant species and a subsequent increase in more tolerant species. We recommend that additional mitigative measures be built into the project that will minimize any negative impacts from pollution and concentrated storm water runoff on Nancy Run or any other surface waters.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

Federal Permits may be required from the U.S. Army Corps of Engineers to conduct fill activities for project construction. In reviewing the application(s), unless activities fall under the

general or nationwide permits, the Fish and Wildlife Service may concur, with or without stipulations, or object to the proposed work, depending on project effects on fish and wildlife resources which may be identified and evident at that time. Based on the Service's knowledge of the project area, it does not appear that the project, as proposed, would have significant adverse impacts to fish and wildlife resources. However in our comments on permits applications, we will likely require features to reduce turbidity and sedimentation during project construction to avoid adverse impacts to aquatic resources downstream.

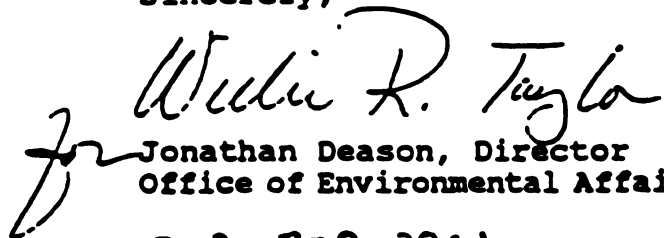
SUMMARY COMMENTS

The Department of the Interior objects to Section 4(f) approval at this time. We would be willing to reconsider this position upon receipt of a further evaluation of the No Build Alternative, or a modified version of Alternative 1 that reduces impacts to Section 4(f) resources and incorporates the measures to minimize harm cited above.

As this Department has a continuing interest in this project, we are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to recreational and cultural resources, please contact the Regional Director, National Park Service, Mid-Atlantic Region, 143 South Third Street, Philadelphia, Pennsylvania 19106 (telephone FTS 597-7013, commercial 215/597-7013). For matters pertaining to fish and wildlife resources, please contact the Field Supervisor, Fish and Wildlife Service, Suite 322, 315 South Allen Street, State College, Pennsylvania 16801 (telephone: 814/234-4090).

Thank you for the opportunity to provide these comments.

Sincerely,

 Jonathan Deason, Director
Office of Environmental Affairs

202-208-3891

cc:
Mr. P. Thomas Barilar, P.E.
District Engineer
Pennsylvania Department of Transportation
1713 Lehigh Street
Allentown, Pennsylvania 18103

Dr. Brent Glass
Pennsylvania Historical and Museum Commission
P.O. Box 1026
Harrisburg, Pennsylvania 17120

Mr. Earl F. Gohl, Jr.
Deputy Secretary of Community Affairs
P.O. Box 155
Harrisburg, Pennsylvania 17120

Mr. James R. Grace
Deputy Secretary of Environmental Resources
P.O. Box 1467
Harrisburg, Pennsylvania 17120

Mr. J. Steven Humphrey, Executive Director
Hugh Moore Park Commission
200 S. Delaware Drive
P.O. Box 877
Easton, Pennsylvania 18044-0877



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUN 3 1990

In reply refer to:
ER 90/0122

Mr. Manuel A. Marks
Division Administrator
Federal Highway Administration
P.O. Box 1086
Harrisburg, Pennsylvania 17108

Dear Mr. Marks:

This letter is to provide supplemental comments to the Department of the Interior's April 26, 1990, comments on the draft environmental/Section 4(f) statement for the proposed TR-33 (TR-22 to I-78), Northampton County, Pennsylvania.

SECTION 4(f) STATEMENT COMMENTS

As we stated in our previous comments, we do not concur that there are no feasible and prudent alternatives to the use of Section 4(f) resources. In our judgement, further consideration should be given to the No Build Alternative. In the event that it can be shown that the No Build Alternative is neither feasible nor prudent, our preferred alternative would be for a modified version of Alternative 1, in which the road alignment and right-of-way will further reduce impacts to the significant cultural, archaeological and recreational resources under the purview of Section 4(f).

Recreational Resources

In 1983, the Bethlehem-Palmer Township Bike Trail was designated a National Recreational Trail by the Secretary of the Interior. This trail is used by an estimated 70,000 people each year, and connects the communities of Palmer, Bethlehem, Easton, Wilson and West Easton. The trail also provides a link to the 32-mile Lehigh Canal Heritage National Recreation Trail.

The Bethlehem-Palmer Bike Trail is also a project that was acquired and developed with funds from the federal rails-to-trails grant program authorized by the Railroad Revitalization and Regulation Reform Act of 1976 (Public Law 94-210). Section 809(b) of this Act authorized the establishment of a funding program to provide assistance to state and local governments to acquire and develop abandoned railroads for recreation or conservation purposes.

The Department of the Interior regulations for the implementation of the federal rails-to-trails grant program, published in 42 FR 196 of October 11, 1977, state that, "property acquired by State and local governments with Section 809(b) assistance will be available to the general public and retained for recreation/conservation use. The acquiring agency will cause to have placed in the legal title to the property a restriction which precludes its conversion to other than public recreation/conservation use without the consent of the Secretary of the Interior. The Secretary shall not permit conversion to any use that would preclude future reactivation of rail transportation on such right-of-way." The National Park Service would be willing to consider an application for a proposed conversion from the trail owners after Section 4(f) approval.

We cannot agree with FWHA's determination, on Page V-1, of the non-applicability of Section 4(f) to the National Trails Towpath Bike Trail of Palmer and Bethlehem Townships (Bethlehem-Palmer Township Bike Trail). The draft statement acknowledges, on page IV-16, that the trail is likely to suffer visual impacts if Alternative 1 is implemented. In addition, it is logical to assume that the noise impacts from Alternative 1 will negatively impact the experience of trail users because the trail is located in an undeveloped, heavily forested topographic depression. Moreover, the draft statement needs to address the taking, in two places, of aerial easements for the trail right-of-way. This taking has the potential to negatively impact the "open air" quality of the trail by means of a reduction in horizontal and vertical clearances. Finally, the draft statement should address the negative impacts that Bethlehem Township may suffer from the presence of two separate four-lane bridge crossings above the trail, including increased maintenance for drainage and runoff problems, as well as additional safety hazards and liability risks.

With respect to the second proviso of Section 4(f), measures to minimize harm, we recommend that special attention be given to the architectural design of any proposed bridge over the Bethlehem-Palmer Township Bike Trail in order to provide aesthetic compatibility with the ambience of the site. Specifically, we recommend the use of special steel and stone facing for any proposed bridge in order to minimize any visual impacts to this area crossing the Lehigh River. We also recommend that as small a right-of-way as possible be used in the construction of any bridge. Following construction, we recommend appropriate landscape restoration to bring the site back to near-original conditions using indigenous woody plants rather than simply seeding with grasses and mulching. Design and engineering of any proposed bridge should take into account minimizing or eliminating any drainage or runoff impacts to the trail, and minimizing any safety hazards. For a typical four-lane bridge crossing, we recommend a minimum vertical clearance of 16 feet and a minimum horizontal clearance of 18 feet from the trail right-of-way. We also

recommend appropriate measures for noise mitigation, such as noise barriers on the bridges.

We recommend that coordination and consultation be continued with the National Park Service, the Pennsylvania State Liaison Officers (SLO), and the Bethlehem Township Board of Commissioners in resolution of mitigation for any negative impacts that may result from implementation of Alternative 1. Where air rights will be taken by fee or easement, we request that compensation should be put in an escrow account for the respective authorities to have the funds for expenditure for capital improvements which would enhance the public's recreational opportunities on the trail. All evidence of coordination with these agencies should be documented in the final statement. The SLO's for Pennsylvania are Mr. James R. Grace, Deputy Secretary of Environmental Resources, P.O. Box 1467, Harrisburg, Pennsylvania 17120 and Mr. Earl F. Gohl, Jr., Deputy Secretary of Community Affairs, P.O. Box 155, Harrisburg, Pennsylvania 17120.

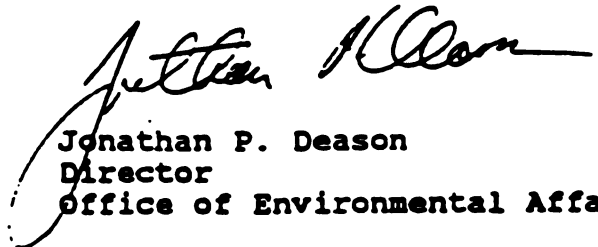
SUMMARY COMMENTS

The Department of the Interior objects to Section 4(f) approval at this time. We would be willing to reconsider this position upon receipt of a further evaluation of the No Build Alternative, or a modified version of Alternative 1 that reduces impacts to Section 4(f) resources and incorporates the measures to minimize harm cited above and in our letter of April 26, 1990.

As this Department has a continuing interest in this project, we are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to recreational and cultural resources, please contact the Regional Director, National Park Service, Mid-Atlantic Region, 143 South Third Street, Philadelphia, Pennsylvania 19106 (telephone FTS 597-7013, commercial 215/597-7013).

Thank you for the opportunity to provide these supplemental comments.

Sincerely,



Jonathan P. Deason
Director
Office of Environmental Affairs

cc:

Mr. P. Thomas Barilar, P.E.
District Engineer
Pennsylvania Department of Transportation
1713 Lehigh Street
Allentown, Pennsylvania 18103

Mr. Earl F. Gohl, Jr.
Deputy Secretary of Community Affairs
P.O. Box 155
Harrisburg, Pennsylvania 17120

Mr. James R. Grace
Deputy Secretary of Environmental Resources
P.O. Box 1467
Harrisburg, Pennsylvania 17120

Secretary, Board of Supervisors
Bethlehem Township Board of Commissioners
c/o Township Manager
2740 Fifth Street
Bethlehem, PA 18017

Mr. J. Steven Humphrey, Executive Director
Hugh Moore Park Commission
200 S. Delaware Drive
P.O. Box 877
Easton, Pennsylvania 18044-0877

Eric Bugaile, Director
Rails-to Trails Conservancy, PA Chapter
209 Senate Avenue, Suite 670
Camp Hill, PA 17011

**Minutes of Meeting of Interested Parties and District 5-0
for PA Route 33**

Date: February 3, 1992

Place: PennDot District 5-0 Office, Allentown, PA

Attendees: See attached list

Bob Keller, District 5-0 opened the meeting and gave a brief history of the PA Route 33 project. He explained the Section 106 and Section 4(f) process and passed out a diagram of the Section 106 process. He explained the concerns of the Department of the Interior (DOI), and handed out copies of two letters from DOI dated April 26, 1990 and June 3, 1990. The meeting was held as part of the continued coordination of issues contained in the DOI letters.

Will Rivinus talked about the National Heritage Corridor of the Delaware and Lehigh Canals. He distributed literature on the Corridor. The National Heritage Corridor Commission's concern is the ability to maintain the corridor with as little disruption as possible.

Steven Humphrey expressed the concerns of Hugh Moore Park. The concerns being primarily visual, stormwater from the bridge, noise, and a design that is sensitive to the Heritage Corridor. Visual being the main concern, both from the bridge and of the bridge. He inquired about Federal Highway Demonstration Projects and Transportation Enhancement monies. The park is interested in providing a public boat access somewhere in the area of the proposed Route 33. There is currently no public access for a 12 mile stretch along the River.

Isidore Mineo discussed Northampton County's desire to establish a bikeway on the Jersey-Central RR Right of Way to tie the three cities together. It would like to leave the option of establishing light rail on the ROW. The County is also trying to restart a fishery. as the Lehigh River has special habitat. He proposed the idea of a boat launch under the bridge. The Lehigh Valley Partnership and the Lehigh River Foundation are contributing private funds to preserve the valley as a greenway. The County is concerned with subsidiary aspects of construction and how construction might affect migratory patterns and the biodiversity linkages.

The Build alternative versus the No-build; using the 25th street Bridge as a connector to I-78; vertical clearances for the bike path, Hope Road, and the Emrick Farm were also discussed.

Using the Railroad ROW as a construction access road with the abandoned bed as a staging area was suggested by Steven Humphrey and Isidore Mineo. This area then could be paved as part of the bike trail when construction is completed. Palmer Township currently owns this property.

The next meeting will be held March 6, 1992 at 9:30 a.m. in the District 5-0 office.

2-3-92: _____ Traffic Route 33
 _____ Northampton County
 _____ Coordination Mtg.

Delaware and Lehigh Canal National Heritage Corridor

ATTENDANCE LIST

NAME	Organization	Phone
1. Bob Keller	Penn DOT 50	215-791-6000 215-791-6021
Will Rivinus	NHC Comm	215-297-5409
STEVEN Huxley	High Water Park	215 250-0700
DAVID WITWER	NHC COMMISSION	215-861-9345
Allen Sachse	Pa DCA Scranton	717-863-4577
Kurt Zwickl	PA Historical & Mus. Commission	215-821-7241
Russell Sogel	Federal Emergency Admin	717-763-7500
Lynn Bortel	Gannett Fleming, Inc.	717, 831-4500
Charles Bingham	Gannett Fleming, Inc.	717-763-7511
Jack Smyth	Boles, Sup't. Assoc	215-561-3647
Loiselle Gorman	Northampton City Park	215-796-1975
BUD HACKETT	Congressman Dan Rosten	866-0916

MINUTES OF MEETING
PA ROUTE 33 EXTENSION
Bethlehem and Lower Saucon Townships,
Northampton County, Pennsylvania

Subject: DOI DEIS Comments and Concerns

Attendees: Robert Gift, National Park Service
Robert Keller, PADOT 5-0
Dan Johnson, FHWA
Renee Sigel, FHWA
Jack Smyth, Boles, Smyth Associates, Inc.
Sam Little, Boles, Smyth Associates, Inc.
M. Lynn Bortel, Gannett Fleming, Inc.
William Plumpton, Gannett Fleming, Inc.

Prepared by: William Plumpton, Gannett Fleming, Inc.

Date: March 2, 1992

The purpose of the meeting held in the offices of the National Park Service on February 28, 1992, was to discuss the comments and concerns of the DOI on the DEIS. Comments and concerns were detailed in letters to FHWA dated April 26, 1991, and June 3, 1991. The following is a summary of the major items discussed.

1. The No-Build Alternative will be discussed in detail in the FEIS. The No-Build Alternative and its consequences will be clearly defined.
2. Close coordination with interested agencies will be maintained throughout the FEIS process. A meeting with the Natural Heritage Corridor Commission, Hugh Moore Park, Northampton City Park and Federal Highway was held on February 3, 1992; a second meeting is scheduled for March 6, 1992. An agency field view of the study area including DOI was scheduled for April 9, 1992. A meeting with Bethlehem Township will be held on March 3, 1992. Coordination with the SHPO will be performed.
3. During design, the crossing of the Lehigh River will be examined in detail. Items under consideration will include reducing the right-of-way at the river, the architectural treatment of the structure, and the placement of piers. Recreation will be maintained to the extent possible during construction.

4. An abandoned railroad siding area in the vicinity of the 25th Street Bridge may be used as a construction staging area. The crossing of the New Jersey Railroad may have to maintain sufficient vertical and horizontal clearance in the event the railroad is ever re-introduced to the area.
5. The restoration of disturbed areas will become part of the Administrative record and discussed in the FEIS. Areas to be disturbed and restored will be identified. The contractors limits of disturbance will be clearly defined.
6. The FEIS will discuss the aerial easements. The aerial easements will be addressed in accordance with the Uniform Act.
7. The primary environmental impacts from the proposed project were discussed. The majority of noise in the study area is generated by I-78; the Route 33 Extension, as proposed, would contribute little additional noise. Single versus dual spans would be examined with respect to noise. Different pavement surfaces will be evaluated.
8. The Route 33 Extension project may include data recovery from an archaeological site in proximity to I-78.
9. Two fish ladders are currently under construction to aid in re-introducing shad to this portion of the Lehigh River. Various pavement surfaces for the structure may be evaluated with respect to minimizing the amount of de-icing salt used. Piers will be placed in a sensitive manner.
10. No toll plaza will be proposed.
11. Secondary impacts will be examined in the FEIS. Wetlands will be identified throughout the study area.
12. Eliminating the Freemansburg Avenue interchange would create a traffic imbalance on William Penn Highway. During the preliminary alternatives analysis, a one-half diamond interchange and collector roads were examined; this alternative was dismissed in favor of interchanges at both roadways. The interchanges proposed consist of a diamond interchange at William Penn Highway and a modified diamond interchange at Freemansburg Avenue.
13. The recreational resources and opportunities of the Lehigh River will be addressed in the FEIS. Access to the river will be evaluated. The possibility of providing a public boat launch will be examined. Factors affecting this boat launch include depth of water and the presence of cultural and historic resources and wetlands. The possibility of maintaining recreational access to the river during construction will be examined.

14. PADOT will meet with Bethlehem Township on March 3, 1992 to discuss the bike trail. The Section 4(f) evaluation will include a discussion of impacts to the bike trail. The aerial easement over the bike trail may require compensation.

W. M. Plumpton

WMP/jh

**cc: All Attendees
C.M. Bingham
R.A. Pugh**

MINUTES OF MEETING

PA ROUTE 33 EXTENSION Bethlehem and Lower Saucon Townships Northampton County, Pennsylvania

Subject: Route 33 Crossing of the Lehigh River

Attendees: Robert Keller, PADOT 5-0
Isidore Mineo, Natural Heritage Corridor Commission
David Witwer, Natural Heritage Corridor Commission
Steve Humphrey, Hugh Moore Park
Karl Kroboth, PADOT 5-0
Lynn Bortel, Gannett Fleming, Inc.
Jack Smyth, Boles, Smyth Associates, Inc.
Charles Bingham, Gannett Fleming, Inc.
William Plumpton, Gannett Fleming, Inc.

Prepared by: William Plumpton, Gannett Fleming, Inc.

Date: March 8, 1992

The purpose of the meeting held on March 6, 1992, was to discuss the Route 33 Extension crossing of the Lehigh River. The meeting was the second meeting held with representatives of the Natural Heritage Corridor Commission and Hugh Moore Park. Minutes from the first meeting held on February 3, 1992 were distributed and reviewed; no changes were requested. The following is a summary of the major items discussed.

1. The crossing of the New Jersey Railroad will require maintaining sufficient vertical and horizontal clearance in the event the railroad is ever re-introduced to the area. The required vertical clearance is 22 feet, 6 inches. The railroad is part of a National Historic Trail under the Rails to Trails program. Funding may be available under the new highway act for mitigation of impacts at railroads.
2. The five primary concerns of the Department of the Interior (DOI) were identified, as detailed in the letters dated April 26, 1991, and June 3, 1991. These concerns include: 1) identification and detailed description of the No-Build Alternative and its consequences, 2) design of the bridge and the placement of piers, 3) potential impacts to cultural and historic resources, 4) elimination of the Freemansburg Avenue interchange, and 5) stormwater runoff and its impacts to surface water quality.

3. **The No-Build Alternative will be discussed in detail in the FEIS. The No-Build Alternative and its consequences will be clearly defined. A position paper describing the No-Build Alternative will be prepared. This position paper will include: 1) a description of local planning efforts and the projects consistency with those efforts, 2) a description of how vehicles traveling eastbound on I-78 get to the airport, 3) a description of the Route 33 extension and how the project was once proposed to extend to State Route 611 near Lake Nockamixon, and 5) a description of the terminus of the project at I-78 with no intention of extension beyond the limits presently proposed.**
4. **The possibility of providing a public boat launch in the vicinity of the river crossing will be examined and evaluated. Coordination with interested agencies will be performed. Any future public boat launch must be sited on the north shore of the river; a launch on the south shore would require an at grade crossing of a ConRail railroad track. The Pennsylvania Fish and Boat Commission uses the US Fish and Wildlife design and criteria for boat launches. Factors affecting the siting of a boat launch along the north shore include access, depth of water, and its resultant adverse environmental impacts to wetlands and cultural and historic resources.**
5. **The potential secondary impacts of the project will be discussed in detail in the FEIS. A position paper describing secondary impacts will be prepared. The evaluation of secondary impacts will include a discussion of impacts at interchanges within the study area and on the cities of Bethlehem and Easton. The Township of Bethlehem is willing to change the zoning of the areas adjacent to the interchanges to zoning more consistent with that normally found at interchanges. The proposed project has the potential to impact urban housing in Bethlehem and Easton; housing in these urban centers is cheaper than housing in proximity to the Route 33 extension.**
6. **In the County Farmland Preservation Act, six primary areas and eight secondary areas have been designed for preservation. The Northampton County Parks - 2000 study identifies five primary actions. Those two items may be used in the secondary impact analysis. Public utilities already exist in proximity to the Route 33 Extension. The secondary impacts analysis will include a discussion of the existing facilities.**
7. **A meeting was held with the DOI on February 28, 1992. The purpose of the meeting was to discuss the comments and concerns of the DOI, as detailed in letters to FHWA dated April 26, 1991, and June 3, 1991.**
8. **The crossing of the Lehigh River will be designed to minimize adverse impacts. Piers will be placed in a sensitive manner. One pier may be situated between the canal and the railroad. A cross section of this area may be prepared; the topography of this area will be verified.**

9. The visual appearance of the structure and piers was discussed. The Natural Heritage Corridor Commission will contact the DOI in an attempt to have DOI designate an expert in aesthetics and aesthetic impacts assist in the evaluation of the proposed crossing. This individual should have the authority to both make decisions and assist in resolving the visual concerns of DOI, as detailed in the letters dated April 26, 1991 and June 3, 1991.

10. A Joint Agency field view of the study area was tentatively scheduled for April 9, 1992 at 9:30 am. An alternate date of April 16 was reserved. The DOI will be represented at this field view. If possible, the DOI's expert on aesthetics and aesthetic impacts should be present. Bob Keller will confirm the date and time of this field view.

W.M. Plumpton

WMP/jh

**pc: All attendees
R.A. Pugh**

RTE 33 MTG

MARCH 6, 1992

ATTENDEE FIRM PHONE

Charles M. Bingham	Gannett Fleming	717-763-7211 EXT 2310
William M. Fluckert	GANNOTT FLEMING	717/763-7211 EXT. 214
Isidore C. Minceo	Heritage Corridor Commission	215 746-1975
Rynn Bartel	Gannett Fleming	417-763-7211 x2659
David Wittwer	NATURAL HERITAGE COMM.	215-861-9345
Steve Humphrey	Hugh Moore Park	215 250-6700
Karl Kroboth	Penn DOT - Bridge - Dist 5-0	215 798-4159
Bob Keller	Penn DOT - Dist 5	215 - 791-6000
Jack Supta	Edes, Supta Assoc.	215-561-2644

Minutes of Meeting for Route 33

Date: April 9, 1992
Place: Lehigh Canal/River/Bike Path Area
Attendees: See attached list

The participants met at the Lehigh Canal area at the end of Hope Road. Bob Keller distributed minutes of a field view meeting conducted April 1, 1992 which primarily addressed possible locations for a boat ramp. Jack Smyth distributed aerial views of the River/Canal study area.

The group then conducted a field view of three areas of concern as follows.

AREA 1 - ROUTE 33 CROSSING OF HOPE ROAD AND THE BIKE PATH

The following items were discussed for this area:

- 1) The vertical clearance over the bike path should be a minimum of 22'-6".
- 2) The location of the pier between the bike path and Hope Road should be located in the slope area between the two features. This will require additional study and further refinement in Final Design.
- 3) The layout of the field access drive for Emrick should keep the driveway outside the bike path right of way. However some grading on the bike path ROW may be required. The vertical clearance under the bridge for the field access drive should be about 18 feet. Gannett Fleming will contract the Township and obtain plans for the bike path that show its right of way. These plans will be used to lay out the field access drive and set the approximate pier location between the bike path and Hope Road.

AREA 2 - ROUTE 33 CROSSING OF THE BIKE PATH ADJACENT TO THE CANAL & RIVER

- 1) The bike path in this area will be spanned by Route 33. The vertical clearance at this location is in excess of 70 feet and the horizontal clearance to the bridge piers/abutment is greater than 75 feet.
- 2) The participants did not express concerns relative to the proposed design to this area.

AREA 3 - ROUTE 33 CROSSING OF THE CANAL AND THE ABANDONED RAILROAD

- 1) The group reviewed this area and discussed the location of the piers for the Route 33 bridge.

A profile of this area was presented to the group which showed the location of the pier between the Canal and the railroad. Based upon field observations and the profile presented, it was noted that the pier could be placed at the top of slope at the abandoned railroad. This would place the face of pier approximately 32' from the Canal's Towpath. Temporary sheeting would be required for construction and the slope could be restored once the pier is constructed. The group general concurred with the pier placement. Further refinement to pier placement and design should be performed in Final Design. The criteria for pier placement at this location should be:

- ▶ Place piers at top of slope between abandoned railroad and Canal towpath.
- ▶ Pier should allow about 40-foot width on the abandoned railroad to permit future construction of a bike path and the potential for a rail line.
- ▶ The set back from the tow path to the face of piers should be no less than twenty feet.

In addition to the above areas there was considerable discussion regarding construction access to the bridge site and the potential staging areas.

Much of the discussion focused on construction access from 25th Street via the abandoned railbed which is a distance of about 2.5 miles to the bridge site. Using this access, the contractor would be required to grade an access road on the railbed and construct a staging area in the vicinity of the bridge. Also, for access to Oberly Island the contractor would need to construct a temporary road from the railbed across the canal and towpath at the eastern end of the island. Temporary drainage at the canal crossing using multiple pipes may be appropriate. On Oberly Island, the staging area could serve a dual purpose in that it could later be developed by Hugh Moore Park as a parking area in conjunction with a boat launching facility. The use of geotextile matting or similar materials should be considered for the staging areas to protect wetland areas.

The group also discussed the possibility of construction access from Hope Road. The stone railroad arch at the end of Hope Road presents a barrier for construction equipment. However it is a shorter distance to the bridge site than the 25th Street access (about 1/4 miles vs 2 1/2 miles). If access were from this area, a means to bypass the stone railroad arch would have to be constructed, together with an access road across the Bethlehem Boat Club property adjacent to the canal bed. It is our understanding that Hugh Moore Park has a 30-foot wide right of entry across the boat club to its property at the eastern portion of the island. This access road could be constructed to the bridge site and left in place for the Park's use. It appears that additional study should be performed to determine the most feasible access.

There is a possibility that removal of silt deposits where the river and canal meet could be a mitigation commitment. The mitigation commitment between Federal Highway and Hugh Moore Park needs to be determined.

The next meeting has not been scheduled. Bob Keller will coordinate the date for the next meeting.

A project status meeting is scheduled for April 28, 1992 at the District 5-0 office at 9:30 AM.

April 9, 1992

Alan Tabachnick

CHRS Inc.

David Witwer

Donna & Lonnie Cline UHCC

Rynn Baitel

Gannett Fleming

Steve Humphrey

Hugh Moore Park

Jack Smyth

Wider, Smyth Assoc

PAUL S. PASLANSKY

Bethlehem Twp

Cherie & Karanough

Palmer Twp

Bob Keller

Penn DOT

Charles Brizler

Gannett Fleming

MINUTES OF MEETING

PA ROUTE 33 EXTENSION

**Bethlehem and Lower Saucon Townships
Northampton County, Pennsylvania**

Subject: Route 33 Construction and Construction Access

Attendees:	Donald Lerch	PADOT 5-0
	Jack Porter	PADOT 5-0
	Robert Keller	PADOT 5-0
	Judy Haas	Bethlehem Township
	Theodore Borek	Palmer Township
	Jack Smyth	Boles, Smyth Associates
	Ken Kugel	Bethlehem Township
	William Plumpton	Gannett Fleming, Inc.

Prepared by: William M. Plumpton, Gannett Fleming, Inc.

Date: June 19, 1992

The purpose of the meeting held on May 14, 1992, was to discuss construction and construction access of the Route 33 Extension. The following is a summary of the major items discussed.

1. The Route 33 Extension would be constructed by two separate contractors: one for the improvements from the existing stub adjacent to Route 22 to the Lehigh River, the second for structure and the improvements south of the river.
2. The contractor constructing the improvements to the north of the river would be provided access and a staging area from the existing stub adjacent to Route 22. The contractor constructing the structure and improvement to the south of the river is afforded two possibilities for construction access: 1) from Hopeville Road, or 2) from the former New Jersey Railroad right-of-way to the north and parallel to the Lehigh River. Access from Hopeville is restricted by the stone arch beneath the Bethlehem Township Bikeway, involves the Hopeville Historic District, and does not offer a staging area. Access along the former New Jersey Railroad right-of-way via the 25th Street bridge provides access to the river (approximately 2.5 miles in length) and offers a staging area within a former railroad siding area.

3. As part of Palmer Township's overall plan, Palmer Township would like to relocate a portion of the biketrail from Chaindam Road to the former New Jersey Railroad right-of-way.
4. Palmer Township would like the contractor to restore and pave the portion of the former New Jersey Railroad right-of-way affected by construction and construction access.
5. Palmer Township endorses the concept of a boat launch. It was recommended by Palmer Township that the boat launch be situated in Palmer Township due south of the railroad siding area. The contractor constructing the structure and improvements to the south of the Lehigh River could construct the boat launch as it would be adjacent to the construction staging area. Upon the completion of construction and restoration, the staging area could be used as a parking area in support of the boat launch.
6. Palmer Township recommends access to the proposed boat launch from Stones Crossing Road. This would require only a short extension of Stones Crossing Road in Palmer Township and Bethlehem Township.
7. Palmer Township would not permit access to the proposed boat launch via the improved New Jersey Railroad right-of-way. The improved right-of-way would not be wide enough to allow a parallel occupation of trucks/cars and boats and bikes and pedestrians.

W. M. Plumpton

WMP/jh

pc: All Attendees
C.M. Bingham
R.A. Pugh

ROUTE 33 MEETING 5/14/92

ATTENDANCE SHEET

WILLIAM PLUMPTON
Donald Lerch
Jack Porter
Bob Keller
Judy Haas
THEODORE BUREK
Jack Smyth
Ken Kugel

GRANNETT FLEMING, INC.
Penn DOT 5-0
Penn DOT 5-0 PAW MUR
Penn DOT 5-0
Bethlehem Twp. Parks & Rec
PALMER TOWNSHIP
Bob & Smith Assoc
Bethlehem Twp

(717) 763-7211/21
(215) 798-4221
215-798-4148
215-791-6021
215-865-9729
215-253-7191
215-561-2644
215-865-5563

**MEETING
HUGH MOORE PARK COMMISSION
LEHIGH NAVIGATION CANAL
NATIONAL HERITAGE CORRIDOR COMMISSION**

OCTOBER 8, 1992

PURPOSE:

**Coordination for Traffic Route 33 Extension
S.R. 0033, Section 001**

MEMORANDUM OF AGREEMENT:

Historical, Archaeological, Construction Impacts

PRESENT STATUS:

**Bridge Studies
Girders
Truss
Piers**

FUTURE ACTIVITIES:

**Alignment
Respond to Concerns
Environmental Impact Statement**

OCTOBER 8, 1992

Memorandum of Agreement

One of the primary historical features in the area of the Lehigh River Bridge is the Lehigh Canal. A pier is positioned south of the canal to minimize impacts. North of the canal a second pier is necessary and this occurs in the vicinity of the Central Railroad of New Jersey right-of-way. The position of this pier is affected by topography, the Bethlehem-Palmer Bike Trail, and the position of other piers.

Archaeological considerations involve two (2) sites, (36 NM 140) and (36 NM 116). Phase III data recovery will be performed prior to construction of piers and following the determination of pier excavation limits.

Other construction impacts include temporary roads and crossings of the canal and river. Under consideration is an access from Palmer Township along an abandoned railroad right-of-way. Bridge erection will require large cranes with long booms. Girder pieces 16 foot deep and up to 150 foot long must be delivered to the island and river. Temporary false work in the river and at some other locations is necessary for the safe erection of structural elements. Erection studies will follow decisions on bridge types.

Present Status

Topographic mapping at 50 scale has been completed. The preferred alignment following the Environmental Impact Statement (EIS) is being surveyed. Bridge studies are progressing according to State and Federal guidelines.

With the attachments, pier sections are shown that support one combined structure. Dual structures were proposed in the EIS. The combined structure provides both environmental and structural improvements as compared to dual structures. Under consideration is either a single shaft pier or a two (2) column pier for either superstructure type. The orientation of the piers is perpendicular to the structure which helps to minimize the width of pier at ground level. Piers are located outside of the river bank and should not be affected by a 100 year flood.

Bridge studies presently include a six (6) span structure using either girders or a truss system. Due to the cost of this bridge, constrained alternate designs must be considered as mandated by State and Federal policy. The constraints are:

- Bridge Alignment
- Bridge Vertical Profile
- Pier Position
- Specifications Related to the Memorandum of Agreement
- Established and Approved Design Criteria.

OCTOBER 8, 1992

Memorandum of Agreement (Continued)

Presently anticipated six (6) span girder alternates are:

- Constant Depth Steel Girders
(two (2) depths, parallel flanges)
- Constant Depth Concrete Girders
- Haunched Steel Girders

Presently anticipated truss alternates are:

- Constant Depth Truss

For the foregoing, contractor alternates may result in changes that should not affect appearance from the ground level. Examples of possible changes are:

- Fewer Girder Lines
- Change in Depth of Girders
- Change in Truss Pattern
- Pier Elimination

These variations would require design review and acceptance in order for construction to be allowed.

Future Activities

The alignment has been set graphically and survey controls are established. Coordinate based alignment work must be accomplished to tie Sections 001 and 002 together north of the bridge.

Following this presentation, questions or concerns may require added study. With agreement on pier positions study will begin on costs and foundation issues. A geotechnical program will be necessary to determine the extent of disturbance for foundations.

The EIS will be released shortly. Further design activities will help to quantify measures necessary to meet the mitigations outlined in the document.

APPENDIX V
DEIS AGENCY AND PUBLIC CORRESPONDENCE

VIII. COMMENTS AND COORDINATION (FROM DEIS)

A. PUBLIC INVOLVEMENT

Public participation was an important part of the study and thus was initiated early in the study process to allow incorporation of public concerns into the development of project alternatives. Four public workshop sessions offered a large number of individuals and groups the opportunity to express their opinions and concerns.

An introductory public review meeting was held on November 18, 1987 in the Bethlehem Township Municipal Building. The purpose of the meeting was to introduce the Design and Environmental Studies for the Route 33 Extension project and to collect public comments and concerns. Staff members of Gannett Fleming (GF) gave brief overview of the project. Key members of the GF staff explained the design, traffic, and environmental analysis to be conducted for the project. The Design Location Study was presented. Three alternatives--two build alternatives and the No-Build--were discussed. A toll bridge option and traffic studies also were explained. Environmental studies addressing locally important issues including Section 4(f), Section 106, economic development, farmland, and noise were discussed. Public comments and questions were addressed following the meeting. Public opinion survey forms were distributed and collected. The following table summarized the responses received to the public opinion questionnaire regarding issues considered sensitive or warranting exceptional consideration:

		Yes	No	Noncommittal
a	Traffic	16	0	2
b	Location of Interchanges	17	0	1
c	Relocation of Homes or Businesses	8	4	6
d	Economic Development	9	2	7
e	Land Use	11	2	5
f	Air Quality	11	2	5
g	Noise	14	2	2
h	Water Quality	11	1	6
i	Vegetation	8	3	7
j	Agricultural Farmlands	8	3	7
k	Wetlands and Floodplains	8	4	6

		Yes	No	Noncommittal
l	Accessibility to Community Facilities	8	2	8
m	Visual Impacts	13	0	5
n	Parkland and Recreational Resources	6	4	8
o	Historical and Archeological Resources	5	4	9

Additional comments received included:

- Freemansburg Avenue should be improved.
- Impact of traffic on William Penn Highway and Freemansburg Avenue, Palmer-Wilson to Easton through Bethlehem Township should be studied.
- Impact on traffic on local roads should be addressed.
- If a split interchange design is utilized, a service road should be constructed between Freemansburg Avenue and William Penn Highway.
- Bethlehem Township has utilities in place to serve 600 acres of businesses and industries.
- Bethlehem Township has rezoned most agricultural land to business/industrial use.
- Preserve Canal to greatest extent possible.
- Locate the road lower than Country Club Road because of noise and air pollution.
- Toll will curtail development and reduce convenience of the bypass.
- Access to Route 33 from Island Park Road should be restricted to cars only.

The second public informational meeting was held in the Farmersville Elementary School on Wednesday, February 24, 1988. The purpose of the meeting was to update the status of engineering studies and various interchange options as well as to answer questions concerning the project addressed in the public opinion surveys collected at the first public meeting. Preliminary designs, alignment grades, and approximate right-of-way requirements for the alternatives were on display. The progress of an evaluation studying the feasibility of a local connection to Route 33 at Island Park Road was presented. Items discussed included local access at Island Park Road to Route 33, core borings, bridge designs, interchange designs, funding sources, project scheduling and environmental studies. Public opinion questionnaires were distributed requesting an indication of preference regarding the proposed build alternatives and providing additional opportunity to comment on the project. The following summarizes the responses received from the survey.

Alternative Presence	Preferred By	Group Ranking
Alternative 1, Option A	7	1
Alternative 1, Option B	5	2
Alternative 2, Option A	0	4
Alternative 2, Option B	1	3
Noncommittal	3	--
Total	16	

Additional comments and questions included:

- Why build any interchanges at all? (2 responses)
- Why not build an interchange only at Freemansburg Avenue? (1 response)
- Why not build Route 33 under the William Penn Highway? (1 response)
- Will stormwater runoff affect local properties? (1 response)
- Alternative 2 is too close to a dangerous curb on Freemansburg Avenue. (2 responses)
- The William Penn Highway bridge will cause excessive noise. (1 response)
- Definitely want the interchanges at both Freemansburg Avenue and William Penn Highway. (1 response)
- Prefer only one interchange at either William Penn Highway or Freemansburg Avenue. (3 responses)
- Route 33 is a necessary evil to help the area be more competitive commercially. (1 response)
- Not in favor of service roads. (1 response)
- Opposed to local access from Route 33 to Island Park Road. (1 response)
- Change meetings to Tuesday or Thursday during the week. (1 response)

A third public informational meeting was held Thursday, May 19, 1988 at the Farmersville Elementary School. The meeting presented additional information on the study effort. The topics discussed included:

- Traffic projections for the study area roads for both 1995 and year 2010 for alternatives and options.
- Preliminary results, as available on environmental issues such as noise, historic resources, socioeconomic and natural resource impacts.
- Engineering aspects, including interchange locations and design (Route 33 over or under the William Penn Highway and Freemansburg Avenue).

Questions and comments addressed after the formal presentation included noise, cut and fill areas, scheduling, emergency access, local access at Island Park Road, and widening of access roads. Public opinion questionnaires were distributed requesting an opinion regarding the construction of interchanges and any additional comments. Fifteen responses were received. Of the responses, 10 preferred full interchanges at both William Penn Highway and Freemansburg Avenue. Four favored construction of service roads between William Penn Highway and Freemansburg Avenue and construction of partial interchanges. Three preferred construction of an interchange only at Freemansburg Avenue.

Additional comments included:

- Concerned about noise levels on Country Club Road west of Route 33 and south of Church Road.
- Upgrade Freemansburg Avenue and William Penn Highway to handle projected traffic volume increases.
- Will there be sound barriers on Country Club Road and Freemansburg Avenue?
- Service Roads would provide additional access to developments.
- What can be done to prevent people from exiting at William Penn Highway or Freemansburg Avenue to avoid the toll and thereby increasing traffic south to Hellertown?
- Interchange at Freemansburg Avenue makes more sense.
- Hope Road considered too small to handle traffic. Why does traffic on Hope Road get higher with service roads than without, assuming the same development? Doubts validity of traffic studies.
- Partial interchanges will cause problems as traffic increases.
- Preference of Alternative 2.

The fourth public meeting was held at Farmersville Elementary School on September 15, 1988. The purpose of the meeting was to update the status of engineering analysis, present the results of environmental studies, and answer questions pertaining to the project. Public comments and questions also were addressed. Two public opinion comment forms were received. Both responses preferred Alternative 1.

Input by the public has been an important part of the process of evaluating the alternatives for the Route 33 Extension. Numerous meetings have been conducted for analysis of the project alternatives by the citizens in the project area.

B. AGENCY INVOLVEMENT

In accordance with the implementation procedures of the National Environmental Policy Act (NEPA) and PADOT's list for early coordination, letters were sent to various federal, state, and local agencies at the beginning of the environmental study. General early coordination letters were mailed to 56 agencies and officials on November 16, 1987 to notify them of the proposed project, to request specific information, and to encourage participation in the study by

identifying initial concerns. A Plan of Study (POS) also was sent with the early coordination letter. The POS described the engineering and environmental studies that were required to adequately support the Environmental Impact Statement. Information requested and information received are summarized on the following pages. Copies of correspondence are included at the end of this section.

As impact results became available, additional coordination was conducted with the State Historic Preservation Officer regarding historical and archaeological resources, and State and Federal natural resources agencies regarding wetlands. Copies of these letters are also included at the end of this Section.

Early coordination also was initiated with the natural resource agencies to solicit input for the habitat analysis and to form a Pennsylvania Modified Habitat Evaluation Procedure (PAM HEP) study team. The team assessed baseline wildlife habitat conditions, determined direct impacts of project construction on these conditions, and developed a conceptual mitigation plan to offset these impacts. A separate PAM HEP report was prepared.

Agency Name	Received General Early Coord. Letter	Received General Early Coord. Letter Special Consultation	Response Received
U.S. Army Corps of Engineers		X	X
U.S. Dept. of Agriculture SCS		X	X
SCS - Northampton County		X	X
U.S. Coast Guard		X	X
U.S. Dept. of Commerce	X		X
U.S. Geological Survey		X	X
U.S. Dept. of Health and Human Services	X		X
U.S. Dept. of Housing and Urban Development	X		X
U.S. Dept. of Interior	X		X
U.S. Dept. of Interior National Park Service Interagency Resources Div.	X		
U.S. Dept. of Interior National Park Service Fish/Wildlife and Parks	X		
U.S. DOT - Fed. Aviation Administration	X		X
U.S. DOT - Fed. Railroad Administration	X		
U.S. DOT - UMTA	X		
U.S.E.P.A.		X	X
U.S.E.P.A. - Site Investigation and Support Section		X	X
USFWS		X	X
Governor's Energy Council	X		

Agency Name	Received General Early Coord. Letter	Received General Early Coord. Letter Special Consultation	Response Received
PA Council of the Arts	X		
PA Dept. of Aging	X		X
PA Dept. of Agricultural Farmland Preservation Division		X	X
PA Dept. of Commerce	X		
PA Dept. of Community Affairs	X		
PADER - Norristown		X	X
PADER - Bureau of Forestry		X	X
PADER - Scenic Rivers Division		X	X
PADER - Division of Facilities Waste Management		X	
PADER - Bureau of Waste Management		X	X
PADER - Division of Water Quality		X	X
PADER - Environmental Protection	X		
PADER - Office of Policy	X		X
PADOT	X		
PA Fish Commission		X	X
PA Game Commission		X	X
PA Historical and Museum Commission		X	X
PA Housing Finance Agency	X		

Agency Name	Received General Early Coord. Letter	Received General Early Coord. Letter Special Consultation	Response Received
PA Human Relations Commission - Bureau of Affirmative Action	X		
Bethlehem Area School District		X	X
Bethlehem Township Board of Commissioners	X		
Bethlehem Township Fire Company		X	
Bethlehem Township Police Department		X	
County Executive Northampton County	X		
Executive Director Bethlehem Area Chamber of Commerce	X		
Hugh Moore Park Director	X	X	X
Lehigh University		X	X
Leithsville Volunteer Fire Company		X	X
Lower Saucon Township	X		X
Lower Saucon Police Dept.		X	
Lower Saucon Valley School District		X	
Lower Saucon Volunteer Fire Company		X	X
Mayor Salvatore Panto	X		
Nancy Run Fire Co.		X	X
Northampton County Development Corp.	X		

Agency Name	Received General Early Coord. Letter	Received General Early Coord. Letter Special Consultation	Response Received
SE-WY-CO-Volunteer Fire Company		X	
Southeastern Volunteer Fire Company		X	
Steel City Fire Company		X	
Two Rivers Area Chamber of Commerce	X		

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

Agency	Information Requested	Information Received
U.S. Army Corps of Engineers November 16, 1987	Section 404 Permit	December 11, 1987 - Enclosed a Section 404 Permit Jurisdiction Package. Notified that final determination of wetlands and boundaries belongs to the Corps. April 3, 1989 - Provided concurrence on wetland boundaries.
U.S. Dept. of Agriculture Soil Conservation Service (SCS) Northampton County November 16, 1987	Requested prime farmlands, soils of statewide importance, and hydric soils information. Requested AD 1006 as necessary.	December 10, 1987 - Provided map of prime an unique farmlands and a County Soil Survey for Northampton County. Provided hydric soils list for County.
U.S. Coast Guard November 16, 1987	Requested determination of bridge if structure over the Lehigh River would be located in waters used for commercial navigation thereby requiring a USCG permit.	November 24, 1987 - Request was forwarded to Bridge Section (USCG). December 31, 1987 - No Coast Guard Permit required determined.
U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration November 16, 1987	General Information Request	December 21, 1987 - National Atmospheric Oceanic Administration (NOAA) states that Geodetic control survey movements may be located in project area. There is a 90 day notification period prior to the disturbance of markers. Relocation costs must be paid for markers moved.

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

(continued)

Agency	Information Requested	Information Received
U.S. Geological Survey November 16, 1987	Requested Water Quality Data	January 21, 1988 - Provided 2 books; a) <u>Water Resources Data, PA Water Year 1985, Volume 1 Delaware River Basin</u> ; b) <u>Water Resources Activities of the U.S. Geological Survey in PA, 1986-1987.</u>
U.S. Dept. of Health and Human Services November 16, 1987	General Information	November 27, 1987 - Dept. suggests inclusion of impacts on air, water, solid waste, noise, radiation, hazardous wastes, wetlands, occupational health and safety, and land use in Health and Safety Section of the Environmental Impact Section.
U.S Housing and Urban Development	General Information	December 16, 1987 - Approved Plan of Study. Would like to review EIS.
U.S. Dept. of Interior November 16, 1987	General Information	December 18, 1987 - Dept. forwarded the letter to the USFWS and the National Park Service as well as the United States Geological Survey.
U.S. Dept. of Transportation Aviation Administration November 16, 1987	General Information	December 12, 1987 - Project will not impact operations of nearby airports or affect use of navigable air space. There are regulations for bridges that are 200' or more above ground level.
U.S. Environmental Protection Agency (EPA) November 16, 1987	Request information on aquatic communities, wetlands, ecologically sensitive areas	January 31, 1988 - Gave specific comments on surface water, ground water, wetlands, and secondary development investigations.

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

(continued)

Agency	Information Requested	Information Received
<p>U.S. Environmental Protection Agency Site Investigation and Support Section November 16, 1987</p>	<p>CERCLIS listing and a copy of the National Priority Listing for PA.</p>	<p>December 29, 1987 - Provided cover letter but attachment was not included. January 6, 1988 - Received attachment which was a printout of known, alleged or potential hazardous waste sites (CERCLIS) and a National Priority Listing (NPL) of sites.</p>
<p>U.S. Fish and Wildlife Service November 16, 1987</p>	<p>Requested verification that no federally listed threatened or endangered species were in the project area. Requested agencies participation in PAM HEP study.</p>	<p>December 9, 1987 - There are no threatened or endangered species. The agency cannot participate in the PAM HEP study. The agency requests a copy of the PAM HEP study when completed. The agency indicated willingness to participate in wetlands field views within the project area. March 8, 1989 - Concerned about wetland impacts. Suggested alignment modifications.</p>
<p>PA Department of Aging November 16, 1987</p>	<p>General Information</p>	<p>November 27, 1987 - Agency expressed concern about impacts on elderly relocations.</p>
<p>PA Department of Agriculture Farmland Preservation Division</p>	<p>Mapping for soils of statewide importance, hydric soils and prime and unique farmlands. Also information on farms participating under Acts 43, 319 or 515.</p>	<p>November 20, 1987 - Agency says to direct questions to Soil Conservation Services (SCS) in Northampton County, PA. PA Department of Agriculture (DOA) is satisfied that all concerns for preservation of agricultural land have been taken into account.</p>

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**
(continued)

Agency	Information Requested	Information Received
PA Department of Environmental Resources (DER) Norristown November 16, 1987	Requested consistency determination with 208 Water Quality and Management Plan.	December 16, 1987 - The project is consistent with 208 Water Quality Management Plan. DER staff should be added to the study committee to coordinate water quality oriented issues.
PA Department of Environmental Resources Bureau of Forestry November 16, 1987	Requested special features and species of special concern from PA Natural Diversity Inventory (PNDI)	December 22, 1987 - Four historical records of species of special concern may exist in the project area. The PNDI inventory should be informed and credited as a source if data is to be incorporated. Contact the Fish and Game Commission.
PA Department of Environmental Resources (DER) Bureau of Water Resources Management/Scenic Rivers Div. November 16, 1987	Information regarding status of Lehigh River on listing of National Wild and Scenic Rivers. Also, the status of the River on the State inventory was requested.	December 8, 1987 - The Lehigh River is not included on the National Listing of Wild and Scenic Rivers. The river is a PA State priority 1, Group C candidate in the Scenic River Inventory.
PA Department of Environmental Resources (DER) Division of Water Quality November 16, 1987	Requested information on aquatic habitats and communities in the Lehigh River, Nancy Run and Bull Run. Copies of available aquatic biology reports at stations 123 and 124 were requested. Comments on wetlands and ecologically sensitive areas were requested.	November 27, 1987 - Copies of printouts for stations WQN 123 and WGN 124 were provided. Portion of 1986 Priority Water Body Survey and the Delaware River Basin Water Quality Study were provided.

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

(continued)

Agency	Information Requested	Information Received
PA Dept. of Environmental Resources, Office of Policy November 16, 1987	General Information	December 24, 1987 - The project may be subject to DER regulations. Contact the Norristown Office.
PA Fish Commission November 16, 1987	Requested copies of special stream studies, surveys or ambient sampling programs. Information on aquatic habitats, communities, wetlands and ecologically sensitive areas was requested.	December 2, 1987 - Will not participate in PAM HEP. Enclosed information on Nancy Run and Lehigh River. February 7, 1989 - No listed endangered or threatened fishes, amphibians, or reptiles known to occur in study area.
PA Game Commission November 16, 1987	State threatened or endangered species or species of special concern and critical habitats. Requested that they be a PAM HEP team member.	December 22, 1987 - Inform the Commission in advance of the field view so that the impacts to wildlife habitats can be studied. February 8, 1989 - Project would not affect endangered or threatened birds or mammals. March 30, 1989 - Stated concern about mitigation. April 6, 1989 - Wetland boundaries properly identified.
PA Historical and Museum Commission November 16, 1987	Identified CHRHS, Inc., as a subconsultant	January 21, 1988 - Identified 4 sites located on or near the project which should be considered. March 1, 1989 - Provided list of eligible properties for National Register of Historic Places. October 4, 1989 - Oberly Island prehistoric site is eligible for the National Register of Historic Places.

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

(continued)

Agency	Information Requested	Information Received
Bethlehem Area School District November 16, 1987	Requested information on the number of students, and the locations of schools and their busing routes.	November 27, 1987 - There are 518 school children in the district attending 24 schools that are bused along 27 bus routes. The Farmersville Elementary School is the closest to the project area.
Hugh Moore Park (Director) November 16, 1987 December 14, 1988	General Information Review of Section 4(f) discussion regarding the Park.	December 1, 1987 - Expressed concern about air quality and noise, visual impacts to the Park from the Lehigh River bridge and disturbances to archaeological and historical resources. December 29, 1988 - Primary impact to Park would be visual. May impact future development of Oberly Island. October 31, 1989 - Expressed concern about pier location, archaeological documentation, visual impacts, historic preservation, bridge considerations, bird populations, and mitigation.
Lehigh University November 16, 1987	Request research data on ambient water quality and aquatic biota	November 25, 1987 - Data not forwarded. University requests consulting fee of \$60/hour for work.
Lower Saucon Township November 16, 1987	General Information	December 7, 1987 - Does not support an interchange of Route 33 at the intersection of Route 378 and I-78. October 31, 1989 - Supports the extension of Route 33 to I-78.

**SUMMARY OF INFORMATION REQUEST
AND RECEIVED FROM AGENCIES RECEIVING
EARLY COORDINATION LETTERS**

(continued)

Agency	Information Requested	Information Received
Leithsville Volunteer Fire Co. November 16, 1987	Description of type of services and number of volunteers	December 8, 1987 - Information on the location, equipment types, and number of volunteers was provided. The company has 20 personnel for emergency response. The company provides backup for other companies areas.
Lower Saucon Township Volunteer Fire Company of Steel City November 16, 1987	Description of type of services provided and the number of volunteers.	January 6, 1988 - Route 33 and I-78 not their responsibility because of lack of access.
Nancy Run Fire Company November 16, 1987	Description of type of services provided and the number of volunteers.	December 20, 1987 - The Nancy Run Fire Company is staffed by volunteers. It is the company of primary response for Bethlehem Township and provides support service to Bethlehem Township Fire Co. and Ambulance Corps. There is a working staff of 30 and 50 others for support. The Company would like consideration to emergency accessways for north and south bound lanes, specifically at William Penn Highway and Freemansburg Avenue. Emergency call boxes were suggested especially at the Lehigh River Bridge.



DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE-2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106-2901

RECEIVED

DEC 14 1987

DEC 11 1987

REPLY TO
ATTENTION OF

Environmental Resources Branch

Ms. Betty Bowers
Gannett Fleming Transportation Engineers, Inc.
P. O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Ms. Bowers:

As requested in your November 16, 1987 letter, the Plan of Study for the proposed Route 33 Extension, Bethlehem and Lower Saucon Townships, Northampton County, Pennsylvania was reviewed.

The primary concern of the U. S. Army Corps of Engineers (Corps) with respect to this project is impacts on waters of the United States (which includes wetland areas). This topic is addressed in the Plan of Study. Please be advised that for 404 permit purposes the final determination of wetland boundaries and therefore Corps' jurisdiction must be by the Corps. To facilitate this determination an information package on jurisdiction determinations is provided as Enclosure 1. Also be advised that if the proposed bridge spans a navigable water of the United States it will be subject to approval of the U. S. Coast Guard under Section 9 of the River and Harbor Act of 1899. For additional information on this topic or other regulatory matters, please contact Mr. Richard A. Hassel, Chief, Application Section, Regulatory Branch at 215-597-4723.

Thank you for the opportunity to comment on the Plan of Study for this project. The Corps has no further comments to offer at this time. The Corps would like to receive any additional documents, such as the Environmental Assessment, that are produced in connection with this project. If you have any questions regarding the above, please contact Mr. Roy E. Denmark, Jr., Chief, Environmental Resources Branch at the above address or at 215-597-4833.

Sincerely,

for John A. Buser

Robert M. Callegari
Chief, Planning Division

—
Enclosure



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE—2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106-2901

RECEIVED

APR 5 1989

APR 03 1989

Regulatory Branch

SUBJECT: CENAP-OP-R-88-1802-1(JD)

Mr. Edward S. Gabsewics, C.E.P.
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Mr. Gabsewics:

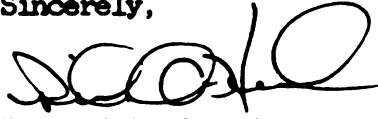
This is in regard to your letters of June 27, 1988 and February 17, 1989, on behalf of the Pennsylvania Department of Transportation, concerning Department of the Army jurisdiction over the proposed extension of Route 33 over the Lehigh River and Canal, between Route 22 and Interstate 78, near Bethlehem, Northampton County, Pennsylvania.

The areas within the proposed roadway alignments, alternatives 1 and 2, were examined during a site inspection by our office on March 23, 1989. Based upon our site inspection and information contained in the wetland delineation report prepared by Gannett Fleming, dated June 7, 1988, we offer the following comments with regard to our regulatory authority:

1. The wetland boundaries identified in your wetland report are an accurate delineation of federally regulated wetlands on the project site. This delineation represents an examination of vegetation, soils and hydrology. These wetland areas are adjacent to the Lehigh River and Canal.
2. The project site also contains two intermittent streams. These streams are characterized by well-defined stream banks, and do not contain any adjacent wetlands. As such, our regulatory jurisdiction on these headwater streams is limited to discharges of dredged or fill material within the ordinary high water marks of the streams.
3. The Lehigh River and Canal are considered navigable waters of the United States. Pursuant to the Department of Transportation Act of 1966, the responsibility for regulation of bridge and causeway structures over navigable waters has been delegated to the U.S. Coast Guard. Our regulatory authority is limited to discharges of dredged or fill materials in accordance with Section 404 of The Clean Water Act.

A more specific comment concerning our permit authority will be provided as soon as more detailed construction drawings are available. If you should have any further questions regarding this matter, please contact Mr. Edward Bonner of this office at (215) 597-4722 between 1:00 PM and 3:30 PM or write to the above address.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Hassel', written in a cursive style.

Richard A. Hassel
Chief, Application Section



Northampton County Conservation District
R.R. #4 - Nazareth, Pennsylvania 18064-9211 - Phone (215) 759-0323

RECEIVED

DEC 10 1987

December 9, 1987

Gannet Fleming
Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105
Attn: Betty Bowers

RE: Environmental Studies
Route 33 Extension
Northampton County, PA

Dear Ms. Bowers:

In response to your letter of November 16, 1987,
enclosed please find a map of prime and unique farmland,
the County Soil Survey and Hydric Soils List for Northampton
County.

If the Conservation District can be of any further
assistance, please do not hesitate to contact this office.

Sincerely,

Roslyn M. Kahler
District Manager

RMK/seb

Enclosures

U.S. Department
of Transportation

United States
Coast Guard



Commander
Fifth Coast Guard District

Federal Building
431 Crawford Street
Portsmouth, VA 23705-5004
Staff Symbol: (2229)
Phone: (804) 398-6620

16450
24 NOV 1987

Gannett Fleming Transportation Engineers, Inc.
Attn: Ms. Betty Bowers,
Manager, Environmental Studies
P.O. Box 1963
Harrisburg, PA 17105

Re: Environmental Studies
Route 33 Extension
Northampton County, PA

Dear Ms. Bowers:

Your letter of November 16, 1987 was received by this office on 24 November 1987 and forwarded to the Bridge section. They will be responding to your questions.

Future questions regarding navigability determinations or bridge permits should be directed to:

Ms. A. B. Deaton
Chief, Bridge Section
Aids to Navigation Branch
Fifth Coast Guard District (oan)
431 Crawford Street
Portsmouth, VA 23705-5004

Telephone: (804) 398-6222

Please feel free to contact my office regarding any other environmental questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "J. C. Clow".

J. C. Clow
Commander, U.S. Coast Guard
Chief, Environmental Protection Branch
By direction of the District Commander
Fifth Coast Guard District

Copy: CGD5(oan)

U.S. Department
of Transportation

**United States
Coast Guard**



Commander (oan)
Fifth Coast Guard District
c/o Commander (obr)
First Coast Guard District
Bldg 135A

Governors Island
New York, NY 10004
(212) 668-7994

16211/NV-455

DEC 31 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Re: Route 33 Extension across
Lehigh River and Canal, PA

Dear Ms. Bowers:

This letter is in response to your letter of 16 November 1987 asking whether the Coast Guard will require permits for the referenced bridge project. We have examined Lehigh River and Lehigh Canal with regard to their status as navigable waters of the United States for purposes of Coast Guard bridge jurisdiction.

Our examination indicates that there is sufficient factual support for concluding that the bodies of water are navigable waters of the United States for purposes of Coast Guard bridge permit requirements. Although navigable waters of the United States and subject to Coast Guard jurisdiction, we have found that the waterways fall under the Coast Guard Authorization Act of 1982. Since this is the case, a Coast Guard bridge permit will not be required for the referenced bridge project.

Although this project will not require a bridge permit, other areas of Coast Guard jurisdiction apply. The following stipulations must be met:

a. Upon completion of design and finalization of the location, the Third Coast Guard District bridge staff shall be contacted regarding approval of lights and other signals that may be required under 33 CFR 118. Approval of said lighting or waiver of same shall be obtained prior to construction.

b. Contact Coast Guard Captain of the Port Philadelphia, (telephone 609-456-1370) regarding possible application of other Coast Guard responsibility under the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1973.

c. Any spillage of oil or oil base products during construction must be promptly reported to the Coast Guard by calling 1-800-424-8802.

If you have any questions, please call this office at the above telephone number.

Sincerely,

for *Ray Kassof*

W.C. Fleming
Bridge Administrator - NY
Fifth Coast Guard District
By direction of the District Commander



UNITED STATES DEPARTMENT OF COMMERCE
The Chief Scientist
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

RECEIVED

December 14, 1987

DEC 31 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Ms. Bowers:

This is in reference to your Environmental Impact Statement for the proposed extension of Route 33. Enclosed are comments from the National Oceanic and Atmospheric Administration.

We hope our comments will assist you. Thank you for giving us an opportunity to review your Plan of Study.

Sincerely,

David Cottingham

David Cottingham
Ecology and Environmental
Conservation Office

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

DEC 9 1987

N/CGx11:GTE

MEMORANDUM FOR: David Cottingham
Ecology and Environmental Conservation Office
Office of the Chief Scientist

FROM: *Wesley V. Hull*
Rear Admiral Wesley V. Hull, NOAA
Director, Charting and Geodetic Services

SUBJECT: Proposed Extension of Route 33, Northampton
County, Pennsylvania

The Plan of Study for this project has been reviewed within the areas of the National Ocean Services' Office of Charting and Geodetic Services' (C&GS) responsibility and expertise and in terms of the impact of the proposed actions on C&GS activities and projects.

Geodetic control survey monuments may be located in the proposed project area. If there are any planned activities which will disturb or destroy these monuments, C&GS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. C&GS recommends that funding for this project include the cost of any relocation required for C&GS monuments. For further information about these monuments, please contact the National Geodetic Information Branch, N/CG17, Rockwall Bldg., Room 20, National Geodetic Survey, NOAA, Rockville, Maryland 20852, telephone (301) 443-8631.

Attachment

cc:
N/CG17 - Spencer



Pennsylvania District

RECEIVED

JAN 21 1968

- Knowing of your interest in water resources in the Commonwealth of Pennsylvania, we are enclosing a copy of our latest State and Federal cooperative publication.
- Knowing of your interest in water resources in the Commonwealth of Pennsylvania, we are enclosing a copy of our latest publication.
- In response to your recent request, we are forwarding the enclosed information.

*Re: Rt. 33 Extension
Northampton Co.*

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Bob Helm

OFFICES

- | | |
|---|--|
| <input checked="" type="checkbox"/> Room 450
FEDERAL BUILDING
717-782-4514
Harrisburg, Pa. 17108 | <input type="checkbox"/> Great Valley Corp. Center
111 Great Valley Parkway
215-647-9008
Malvern, Pa. 19355 |
| <input type="checkbox"/> Room 2204
FEDERAL BUILDING
412-644-2863
Pittsburgh, Pa. 15222 | <input type="checkbox"/> Room 301
Federal Building
717-323-7736
Williamsport, Pa. 17701 |



Centers for Disease Control
Atlanta GA 30333

November 20, 1987

RECEIVED

NOV 27 1987

Betty Bowers
Manager, Environmental Studies
Gannett Fleming
Transportation Engineers Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Sir:

Thank you for sending the announcement of forth coming environmental studies for the Route 33 Extension, Northhampton County, PA. While we have no specific comments on the proposed project we would like to suggest inclusion of a specific section addressing any perceived safety and health impacts posed by this project. This section could include, but not be limited to, reference to any of the following:

I. AIR QUALITY:

- A. Dust control measures during construction.
- B. Open burning.
- C. Indoor Air Quality.
- D. Compliance with air quality standards.

II. WATER QUALITY:

- A. Potable water (chemical, microbiological, and radiological quality).
- B. Body contact recreation.
- C. Compliance with waste water treatment standards.

III. NON-HAZARDOUS SOLID WASTE:

- A. Any unusual or suspected health effects associated with solid waste disposal.
- B. Effects of littering and provisions for cleanup, particularly conditions which might lead to vector harborage.

IV. NOISE:

- A. Ambient noise levels during construction, implementation, etc.
- B. Effectiveness of any proposed noise reduction measures following construction, implementation, etc.

V. RADIATION:

- A. Exposures to ionizing and non-ionizing radiation which may adversely affect human health.

VI. HAZARDOUS WASTES:

- A. Solid, liquid or gaseous wastes which because of their physical, chemical or infectious characteristics pose a substantial threat to human health.

VII. WETLANDS AND FLOODPLAINS:

- A. Contamination of the food chain.
- B. Construction in floodplain which may endanger human health.

VIII. OCCUPATIONAL HEALTH AND SAFETY:

- A. Evaluation of the occupational and public health hazards associated with the construction and operation of the proposed project.
- B. Evaluation of any occupational and public health hazards associated with the operation of a proposed program (e.g. pesticide application, disposal of toxic chemicals, etc.).
- C. General worker safety/injury control provisions.

VIII. LAND USE AND HOUSING:

- A. The provision of adequate ventilation, heating, insulation and lighting.
- B. Vector control provisions.

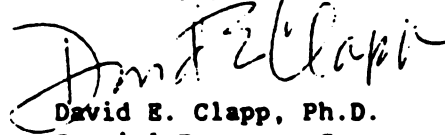
Page 3 - Betty Bowers

C. Impacts of a project upon the displacement and/or relocation of persons.

Again, thank you for sending this advance notification for our review. We hope these suggestions may be helpful in developing your analysis of potential environmental impacts associated with your proposed project.

Please insure that we are included on your mailing list for further documents which are developed under the National Environmental Policy Act (NEPA).

Sincerely yours;

A handwritten signature in black ink, appearing to read "David E. Clapp". The signature is written in a cursive style with a large initial "D".

David E. Clapp, Ph.D.
Special Programs Group
Center for Environmental Health
and Injury Control



U.S. Department of Housing and Urban Development
Philadelphia Regional Office, Region III
Liberty Square Building
105 South Seventh Street
Philadelphia, Pennsylvania 19106-3392

RECEIVED

DEC 21 1987

16 DEC 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation
Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

Thank you for the opportunity to review the Plan of Study for the Environmental Impact Statement (EIS) proposed for the Route 33 Extension in Northampton County.

Your Plan of Study seems to be well thought out. We have no comments or concerns at this time.

Please keep us informed of your progress. Of course, we would appreciate an opportunity to review the draft EIS.

Very sincerely yours,

Margaret A. Krengel
Regional Environmental Officer



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
CUSTOM HOUSE, ROOM 502
SECOND AND CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

December 8, 1987



RECEIVE

DEC 10 1987

Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Dear Ms. Bowers:

This is in response to your November 16, 1987, letter to the Department of the Interior requesting our comments concerning the proposed extension of Route 33, located in Bethlehem and Lower Saucon Townships, Northampton County, Pennsylvania.

We have forwarded the information you provided to the following offices, which will contact you directly if they have any comments on the project.

Mr. Charles Kulp
U.S. Fish and Wildlife Service
315 South Allen Street
State College, Pennsylvania 16801
Telephone (814) 234-4090

Mr. Robert Gift
National Park Service
143 South Third Street
Philadelphia, Pennsylvania 19106
Telephone (215) 597-3503

Mr. David Click
U.S. Geological Survey
P.O. Box 1107
228 Walnut Street
Harrisburg, Pennsylvania 17108
Telephone (717) 782-4514

Thank you for notification of the proposed project.

Sincerely,

Don Henna

for Anita J. Miller
Regional Environmental Officer



U.S. Department
of Transportation
**Federal Highway
Administration**

Region 3
Pennsylvania Division

Courthouse and Federal Building
228 Walnut Street
P O Box 1086
Harrisburg, Pennsylvania
17108-1086

117
E

C-FLW'S
C - WRM
C - GEA

JAN 30 1989

IN REPLY REFER TO:

HE-PA.2

I-78/TR 33 Interchange
Northampton County
Point-of-Access Approval

Mr. William R. Moyer, P.E.
Chief Engineer, Highway Administration
Pennsylvania Department of Transportation
Harrisburg, Pennsylvania

Attention: Fred W. Bowser

Dear Mr. Moyer:

We are pleased to inform you of our agency's approval of the I-78/TR 33 point-of-access, as requested in your October 19, 1988 submittal.

It is evident that the addition of the interchange will result in some degradation of operational characteristics and level of service on the Interstate facility. This approval is therefore subject to the following conditions:

1. The south to west entrance shall be provided with an added lane to at least the end of the upgrade. This free flow added lane will eliminate the conflict point of the merge condition.
2. An alternative of providing a semi-direct connection for the east to north heavy movement, rather than the proposed loop, will be considered.

In addition to the foregoing design related comments, it is of course understood that the environmental document will be completed in accordance with applicable federal requirements.

We fully support your proposal for the extension of TR 33 and will continue to offer our assistance in advancing the development of the project.

Sincerely,

Manuel A. Marks
Manuel A. Marks
Division Administrator

RECEIVED

DEC 16 1987



U.S. Department
of Transportation
Federal Aviation
Administration

Eastern Region

Fitzgerald Federal Building
John F. Kennedy
International Airport
Jamaica, New York 11430

. DEC 12 1987

Ms. Betty Bowers
Gannett Fleming Transportation
Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers,

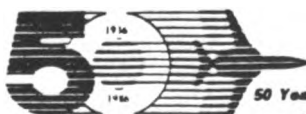
This responds to your letter of November 16, 1987. We have reviewed the Environmental Study Plan for the Route 33 extension, Northampton County, Pennsylvania. From the information presented, we believe that this project will not impact the operations of nearby airports or effect the use of navigable airspace.

As a point of information, any structure associated with this highway extension must satisfy the requirements of Federal Aviation Regulation Part 77, "Objects Affecting Navigable Airspace." For example, if the proposed bridge structure that will span the Lehigh River is over 200 feet above the ground elevation, it will be necessary for you to file FAA Form 7460-1, "Notice of Proposed Construction" with the FAA for an aeronautical study to determine the effect of the proposal upon the operation of air navigation facilities and the safe and efficient use of the navigable airspace. If needed copies of FAA Form 7460-1 may be obtained upon request from our Regional Office.

Should you have any questions, please contact our office at (718) 917-0798.

Sincerely,

John Glynn,
Program Analyst



50 Years of Air Traffic Control Excellence
- A Standard for the World -



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

**841 Chestnut Building
Philadelphia, Pennsylvania 19107**

JAN 31 1988

Betty Bowers, Manager
Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Re: Route 33 Extension
Northampton County, PA (88-11-165)

Dear Ms. Bowers:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, EPA has reviewed the Plan of Study (POS) for the above referenced project. The proposed engineering and environmental studies are comprehensive and address major areas of concern to EPA. The following comments are provided for your consideration in the Environmental Impact Statement (EIS).

Consideration of Alternatives

The EIS must evaluate all reasonable and feasible alternatives to the proposed project, including the "No Build" Alternative. An alternative is "reasonable" and "feasible", if it is practical in the technical, economic and social sense, even if it is outside the jurisdiction of the lead agency. For those alternates that are eliminated from consideration, the reasons for their elimination should be given. Furthermore, the preferred option should be specified, along with the rationale for its selection.

Environmental Impacts

The EIS should examine the potential direct and indirect impacts of the project on the environment. In addition, mitigation measures for any adverse environmental impacts must be described. Areas for which you requested specific comments are described below.

Surface Water:

The EIS should evaluate the aquatic ecosystem and outline measures to protect surface waters, especially at stream crossings. This includes a detailed discussion of runoff, sediment and erosion control measures. Such mitigation measures must address both short term construction impacts and long term project impacts. Construction measures that may be implemented include:

- time of year restrictions on construction to accommodate aquatic life cycles and recreational activities;
- disposal of construction debris at an approved upland site to reduce the risk of contamination to surface water;
- use of barriers and depressions to slow and impound precipitation;
- straw bale barriers, brush barriers or filter berms to trap sediment.

The area should be revegetated immediately after construction. Vegetated swales, treatment systems and other stormwater management controls should be implemented as necessary.

Any stream relocations necessitated by the project should be kept to a minimum and designed to simulate the original stream as closely as possible. This will require the construction of riffles, pools, meanders, natural stream bank vegetation and provisions for low flow in times of drought. In addition, all culverts should be countersunk to provide a contiguous natural stream bottom for the fish and benthic community. Despite such safeguards, EPA prefers the use of bridges, rather than culverts, to further reduce in-stream impacts.

In addition, the EIS must identify the location of any downstream drinking water supplies and assess the impacts of the project, and its construction, on water quality.

Groundwater:

The carbonate geology of the project area makes the groundwater especially susceptible to contamination from highway runoff. As stated in the POS, a general evaluation of the potential impacts of each alternative on groundwater will be completed. Information that could be provided in relation to each alignment includes:

- Types and locations of geologic formations;
- Types of aquifers (e.g. confined, unconfined);
- Soil types and depth of horizons;
- Potential infiltration of various chemicals, including de-icing compounds, heavy metals, etc.;
- Locations of wells in the area and whether they are public or private;
- Depth of wells;
- Groundwater quality.

Sources of this information could include the Department of Environmental Resources, the Department of Health, the U.S. Geological Survey, the Soil Conservation Service and the U.S. Environmental Protection Agency.

These agencies may even provide additional data, such as the existing quality and production capacity of wells, and the transmissivity and specific capacity of aquifers, in the study area.

Wetlands:

The size and functional value of all impacted wetlands must be evaluated. The EIS should offer assurances that impacts to wetlands will be avoided, where possible. If it is not possible to avoid impacts to wetlands, it is EPA's policy that they be replaced on at least a 1:1 basis.

In addition, the type and abundance of other wetlands in the study area should be provided, in order to assess the relative impacts the project will have on the local wetland system.

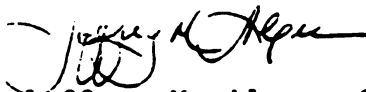
Secondary Development

It is necessary to discuss any secondary development that may result from the project (i.e. potential residential, commercial and industrial development and the concurrent increase in utilities and public services). The growth of these facilities poses potential threats to the environment and deserves attention in the EIS.

The project must also be compatible with local and regional master plans for land use and development.

Thank you for including EPA in the early coordination of this project. Please advise us of the time and location of any coordination meetings that are scheduled. Should you have any questions or if we can be of further assistance, please contact Lynn Rothman at 215/597-7336.

Sincerely,



Jeffrey M. Alper, Chief
NEPA Compliance Section

RECEIVED

DEC 29 1987



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107

TO: Ms. Betty Bowers
Gannett Fleming Transportation Engineers, Inc. DEC 29 1987
P.O. Box 1963
Harrisburg, Pa. 17105

Dear Ms. Bowers:

The following information and disposition are furnished concerning your request made under the Freedom of Information Act.

Date Request Received	<u>12/10/87</u>
Request Identification Number	<u>3 RIN-1709-87</u>
(Estimated) cost	<u>N/A</u>

- Positive Determination (Material enclosed).
- Holding Material pending Receipt of Payment (estimated cost over \$100) or arrangement for payment.
- Fee Waiver under \$25.00.
- Processing Request: Partial information included. Remaining information to be forwarded by _____.
- Processing Request: Extension until _____ needed due to _____
- Please see attached bill. Make check payable to U.S. Environmental Protection Agency. Put Request Identification Number (RIN) on check and mail to EPA-Region III, P.O. Box 360515M, Pittsburgh, PA 15251.

Remarks: Enclosed is a printout of known, alleged, or potential hazardous waste sites in Lehigh and Northampton Counties, as listed on the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS). Included is an explanaton of the CERCLIS data element codes. Also enclosed is a listing of NPL sites in Pennsylvania.

Sincerely,

Charles L. Kleeman, Chief
Site Support Section
Superfund Branch

Enclosure



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Suite 322
315 South Allen Street
State College, Pennsylvania 16801

December 7, 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming
Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

This is in response to your letter of November 16, 1987, concerning the proposed Route 33 Extension in Bethlehem and Lower Saucon Townships, Northampton County, Pennsylvania.

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (97 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the Fish and Wildlife Service. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of federally listed endangered and threatened species in Pennsylvania is enclosed for your information. Requests for information regarding State-listed endangered or threatened species should be directed to the Pennsylvania Game Commission (wildlife), the Pennsylvania Fish Commission (fish, reptiles and amphibians) and the Pennsylvania Department of Environmental Resources (plants).

The Plan of Study appears to be adequately designed to address fish and wildlife resources in the project area. Due to staffing and funding limitations, we will be unable to participate in the proposed Pennsylvania Modified Habitat Evaluation Procedure (PAMHEP). We request that this office be sent a copy of the PAMHEP report when it is completed. We also wish to participate in the field review of wetlands within the project area.

Please keep us informed of any further developments regarding this project.

Sincerely,

Charles J. Kulp
Supervisor

Enclosure

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN PENNSYLVANIA

Common Name	Scientific Name	Status	Distribution
<u>FISHES:</u>			
Sturgeon, shortnose*	<u>Acipenser brevirostrum</u>	E	Delaware River and Other Atlantic Coastal waters
<u>REPTILES:</u>			
NONE			
<u>BIRDS:</u>			
Eagle, bald	<u>Haliaeetus leucocephalus</u>	E	Entire state
Falcon, American peregrine	<u>Falco peregrinus anatum</u>	E	Entire state - re-establishment to former breeding range in progress
Falcon, Arctic peregrine	<u>Falco peregrinus tundrius</u>	E	Entire state migratory - no nesting
<u>MAMMALS:</u>			
Bat, Indiana	<u>Myotis sodalis</u>	E	Entire state
Cougar, eastern	<u>Felis concolor cougar</u>	E	Entire state - probably extinct
<u>MOLLUSKS:</u>			
NONE			
<u>PLANTS:</u>			
Pogonia, small whorled	<u>Isotria medeoloides</u>	E	Berks, Centre, Chester, Greene, Monroe, Montgomery, Philadelph Venango Counties

* Principal responsibility for this species is vested with the National Marine Fisheries Service.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Suite 322
315 South Allen Street
State College, Pennsylvania 16801

March 8, 1989

RECEIVED

MAR 10 1989

Mr. Edward S. Gabsewics
Gannett Fleming Transportation
Engineers
P.O. Box 1963
Harrisburg, PA 17105

Dear Mr. Gabsewics:

We have reviewed the Wetland Delineation Report for the proposed Route 33 Extension project in Northampton County. You sent us a copy of the report with your February 17, 1989 letter.

The report indicated that both alternatives (Alignment 1 and Alignment 2) involved construction of bridge piers on the banks of the Lehigh River rather than in the channel itself; that the alignments cross approximately equal expanses of prime farmland; and that the alignments cross approximately equal widths of forested wetland parcels near the river. Although the wetland crossings are relatively minor (125 feet for Alternate 1 and 150 feet for Alternate 2), it appears they can be avoided by slight shifts in the alignments (600 feet eastward for Alternate 1, 400 feet westward for Alternate 2). These modifications should be carefully considered as design progresses.

Sincerely,

Philip H. Edmunds

Philip H. Edmunds
Acting Supervisor



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF AGING
Harrisburg, Pa. 17101

November 23, 1987

RECEIVED
NOV 27 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation
Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

Reference your letter dated November 16, 1987, regarding the Environmental Studies for the Route 33 Extension in Northampton County.

We have reviewed the Plan of Study and have found no mention that the elderly will be included in the Environmental Impact Statement. As an advocate for older Pennsylvanians, we would be concerned about the kind of impact the proposed highway construction would have upon them. Would it cause relocation of older persons from their homes or disruption of services to them? We hope the detailed report will at a minimum address the above concerns.

Thank you for giving us the opportunity to comment on the Plan of Study.

Sincerely,

A handwritten signature in black ink, appearing to read "Glen L. Dunbar", enclosed in a large, loopy oval.

Glen L. Dunbar
Director

Bureau of Policy, Planning and Research

GLD/SL/pr/3



RECEIVED

NOV 26 1987

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL DEVELOPMENT

November 19, 1987

OFFICE OF THE DIRECTOR

Betty Bowers
Gannett Fleming Transportation
Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

Your request for verification of prime farmland soils in regard to the Route 33 extension in Northampton County, PA should be directed to the United States Department of Agriculture's Soil Conservation Service. Since the proposed project is in Northampton County, you should direct your question to Barry L. Frantz, District Conservationist, 1068 Bushkill Center Road, Nazareth, PA 18064.

With regard to comments about your Plan of Study, the Pennsylvania Department of Agriculture is satisfied that you have taken all concerns for the preservation of agricultural land into account in your proposed study.

Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Fred Wertz".

Fred Wertz, Chief
Resource Development Division

RECEIVED

DEC 16 1987



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, PA 19401
215 270-1975

December 8, 1987

Ms. Betty Bowers, Manager
Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

This will confirm my recent telephone conversation with you regarding the Environmental Studies for the extension of Route 33.

The 208 Water Quality Management Plan provides area wide goals and objectives for maintaining and improving water quality. The proposed project is not inconsistent with that plan.

The proposed scope of work appears to address our areas of concern. I would recommend that Dan Regan, of my staff, be added to the study committee to coordinate any water quality oriented issues. Dan is responsible for the setting of water quality based effluent limitations in the Lehigh basin, has participated in recent stream surveys, does the 401 certifications and completes the water quality reviews for any stream encroachment.

Very truly yours,

CHARLES REHM
Chief, Planning Section

cc: Mr. Regan
Re 30 (SMC)342.5

Pennsylvania Natural Diversity Inventory

Bureau of Forestry — Forest Advisory Services
PNDI Coordinator
P.O. Box 1467, Harrisburg, PA 17120
717-787-3444

WESTERN PA CONSERVANCY
PNDI—Western Office
316 Fourth Avenue
Pittsburgh, PA 15222
412-288-2777

The Nature Conservancy
PNDI — Eastern Office
34 Airport Drive
Middletown, PA 17057
717-783-1712

Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, Pa. 17105

December 21, 1987

Dear Ms. Bowers,

Your request for information from the Pennsylvania Natural Diversity Inventory has been forwarded to me from Kathy McKenna.

A review of the files of the Pennsylvania Natural Diversity Inventory (PNDI) for the proposed extension of Route 33 in Northampton County, indicates that there are four historical records of Species of Special Concern in Pennsylvania recorded from the project vicinity.

The information we have on these species is recorded from the museum labels of the species which were collected. The location information is not specific, but indicates that these species could have been collected from the area you are reviewing. These records have not been searched for by members of the PNDI staff and may exist within the project boundary.

I am enclosing a listing which includes the species, their Federal and State statuses, and the date the species was last observed at this site. This list can serve as a guideline for field work conducted for this project review.

The Pennsylvania Natural Diversity Inventory has compiled data on Pennsylvania's rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features. While this information is available for preparation and review of environmental assessments, it is not a substitute

for on-site surveys. The quantity and quality of data collected by the Inventory are dependent on the research and observations of many individuals and organizations. In most cases, information on environmental elements is not the result of comprehensive field surveys. For this reason, the Pennsylvania Natural Diversity Inventory cannot provide a definitive statement on the presence, absence, or degree of health of environmental elements in any part of Pennsylvania. The Inventory welcomes coordination with individuals or organizations proposing environmental alteration, and/or conducting environmental assessments; however, the information, or lack thereof, provided by the Inventory should never be regarded as a complete statement on the elements being considered. If data provided by the Pennsylvania Natural Diversity Inventory are to be published in any form, the Inventory should be informed at the outset and credited as the source. Please take note that the Pennsylvania Game Commission has statutory authority for birds and mammals and the Pennsylvania Fish Commission has statutory authority for herptiles, fishes, and aquatic organisms. These agencies should be notified to insure a complete review of the project area.

Thank you for using PNDI as part of your environmental review procedure. Partial Support for PNDI is derived from the Wild Resource Conservation Fund, which accumulates from the Pennsylvania State Income Tax check-off and from direct donations. Enclosed is a flyer which explains the procedure whereby a donation can be made to the fund, should your firm wish to contribute.

Sincerely,

Kathy Regan

Kathy Regan
Data Manager/Botanist

enclosure: Statutory Authority and as stated
cc: Kathy McKenna, Botanist, Bureau of Forestry
Jack Miller, Pa Fish Commission
Jake Sitlinger, Pa Game Commission

ELEMENT OCCURRENCE DATA FROM THE PROJECT VICINITY

12/21/87

PA NATURAL DIVERSITY INVENTORY-TMC

1

NAME/COMMON-NAME	FEDERAL-STATUS	STATE-STATUS	COUNTY	QUAD-NAME	LAST-SEEN
PARIDRAPUS HEISLOWII HEISLOW'S SPARROW	N	LT	MOBT	HAZARETH	1884
ELEOCHARIS INTERMEDIA MATTED SPIKE-RUSH	N	PT	MOBT	HAZARETH	1963-07-01
HELIANTHEMUM BICKNELLII BICKNELL'S HOARY ROCKROSE	N	TU	MOBT	HAZARETH	1888 LATE
MYOTIS KEENII KEEN'S BAT	N	PT	MOBT	HAZARETH	1931-11-22

MEMORANDUM OF PHONE CONVERSATION

DATE: Feb. 2, 1989
RE: Route 33 Extension
Species of Special Concern
Between
Sue Seaver
and
Dick Croop - Bureau of Forestry

GANNETT FLEMING TRANSPORTATION ENGINEERS
P. O. BOX 1963
HARRISBURG, PA 17105
Phone: (717) 763-7211

787-3444

DISCUSSION

I called requesting further information on species of special concern identified through coordination with PNDI.
1. Natted spike-rush was a threatened listing in PA. It was identified outside of but close to the study area. Field work should include surveying wetland areas along Lehigh River banks.
2. Picknell's hoary rockrose - historical record only. It would not be impacted by the project.

Memorandum Prepared by Susan Seaver

cc: _____

File 25179



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Post Office Box 1467
Harrisburg, Pennsylvania 17120

December 3, 1987

RECEIVE
DEC 8 1987

Bureau of Water Resources Management

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Re: Environmental Studies
Route 33 Extension
Northampton County, PA

Dear Ms. Bowers:

Upon review of the Plan of Study for the Route 33 extension in Northampton County, we would offer the following comments:

1. The area of the Lehigh River in the vicinity of the Route 33 extension is not included in, nor is it a candidate for the national system of wild and scenic rivers at this time.
2. You have correctly described the current state status of the Lehigh River in that it is a First Priority-Group C candidate in the Pennsylvania Scenic Rivers Inventory. The First Priority candidacy ranking recognizes that the Lehigh River in this area is of statewide importance, further, the C grouping indicates that when the inventory was developed and this segment of the Lehigh River was not in immediate need of study or designation due to resource endangerment. The status of the Lehigh has been unchanged since the original inventory date and, therefore, remains a candidate.
3. Recognizing the Lehigh in this area is a heavily used recreational resource, it will be important that the bridge design and pier placement do not obstruct the Lehigh channel or, at the very least, impact the channel as little as possible. We recommend that consideration be given to a bridge design which allows piers to be placed on either side of the river, thereby allowing the maximum channel span to accommodate continued boating and recreation use.
4. In the visual assessment which is described on page 11 of the Plan of Study, we would request that one of the six artistic renderings be developed as the viewer on the river might see the bridge crossing. These sketches should subsequently be utilized to establish the maximum site rehabilitation, and minimize the impact on the Lehigh and its scenic river candidacy.
5. The National Park Service has in past years worked with Northampton County in the assessment of the Lehigh and its resources, particularly the Lehigh canal in terms of recreation use and, therefore, should be consulted during this Plan of Study Phase. Likewise, the Department of Community Affairs has been involved in the funding of recreation resource development along the Lehigh River and they ought to be consulted to determine if this bridge adversely impacts any of their program areas.

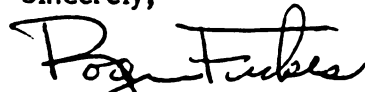
Ms. Betty Bowers

- 2 -

December 3, 1987

Thank you for the opportunity for this early coordination and comment on the Plan of Study. We look forward to continued coordination throughout the study.

Sincerely,

A handwritten signature in cursive script that reads "Roger Fickes". The signature is written in black ink and is positioned above the typed name.

Roger Fickes, Chief
Division of Scenic Rivers
Bureau of Water Resources Management



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Post Office Box 2063
Harrisburg, Pennsylvania 17120

Bureau of Water Quality Management

November 25, 1987

717-787-9633

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Fleming, Inc.
P. O. Box 1963
Harrisburg, PA 17105

RECEIVED
NOV 27 1987

Re: DER File No. 18-1.1

Dear Ms. Bowers:

This is in response to your letter dated November 16, which requested information on the Lehigh River, Nancy Run, and Bull Run. Enclosed for your information and use are the following:

1. A printout of Water Quality Network routine ambient monitoring data for the Lehigh River at Bethlehem (WQN124) and Easton (WQN 123).
2. A copy of portions of a 1986 Priority Water Body Survey report on the lower Lehigh River. The portions provided list the sampling station locations, chemical data, and biological data. The stations of most interest for your project are highlighted.
3. A copy of the Delaware River basin study conducted by the Department in 1974. That report contains data for the lower Lehigh and Nancy Run. The Nancy Run portions are highlighted.

No information is available in this office for Bull Run. You may wish to contact our Reading District Office in an attempt to secure data on Bull Run or more recent information on Nancy Run. I suggest you contact Richard Pfaehler at 215-378-4175.

I hope this information is useful in your project. Feel free to contact me if you have additional questions.

Sincerely,

Robert F. Frey
Quality Assessment Unit
Division of Water Quality

Enclosures



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Post Office Box 2063
Harrisburg, Pennsylvania 17120

RECEIVED

DEC 24 1987

Secretary's Office of Policy

December 21, 1987

Betty Bowers
Manager, Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

We have reviewed the Plan of Study for the Route 33 Extension, Northampton County, Pennsylvania.

Activities addressed by this project may be subject to regulation by the Pennsylvania Department of Environmental Resources. Any questions regarding DER requirements should be directed to the DER Regional Office in Norristown at telephone number (215) 270-1900.

Thank you for the opportunity to review this project.

Sincerely,

Frederick G. Carlson
Director
Office of Policy



RECEIVED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES DEC 24 1987
1875 New Hope Street
Norristown, PA 19401
215 270-1948

December 17, 1987

Ms. Betty Bowers
Manager of Environmental Studies
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

This is in reply to your November 16, 1987 letter to Mr. Wayne Lynn regarding the proposed corridor of the Route 33 extension.

After review of our waste management files and discussions with staff familiar with Northampton County, we have found no evidence of existing or proposed solid waste sites within the corridor. You may want to consider a fly over of the area to verify that there are no unreported dump sites. If any potential sites would be identified, the Department will be glad to investigate.

Very truly yours,

BRUCE D. BEITLER
Operations Supervisor

cc: Mr. Kunkle
Re 30 (SMC)351.8



814-359-5147

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
Fisheries Environmental Services Section
450 Robinson Lane
Belleville, PA 16823-9616

RECEIVED

DEC 10 1987

December 2, 1987

Ms. Betty Bowers
Gannett Fleming
P.O. Box 1963
Harrisburg, PA 17105

Re: Environmental Studies
S.R. 0033 (L.R. 1098)
Extension
Northampton County

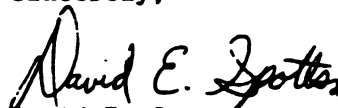
Dear Ms. Bowers:

The Pennsylvania Fish Commission has received and reviewed the subject environmental study. The proposed study will adequately address all of the environmental issues needed for proper review. We will not name a PAMHEP contact person since we normally do not participate in terrestrial studies.

I have included information on Nancy Run and the Lehigh River. There is a cost (attached) that we charge consultants for copying requested information.

If you have any questions, please feel free to contact me.

Sincerely,


David E. Spotts
Fisheries Biologist

DES:dms

Attachments



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
Division of Fisheries Management
450 Robinson Lane
Belleville, PA 16823-9616

February 7, 1989

RECEIVED

FEB 8 1989

Gannett Fleming Transportation Engineers, Inc.
Susan Scaer, Environmental Scientist
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Scaer:

I have examined the maps accompanying your recent correspondence which show the location of the proposed engineering and environmental studies for the construction of the Route 33 extension in Bethlehem and Lower Saucon townships, Northampton County, Pennsylvania.

Presently, none of the fishes, amphibians, or reptiles we list as endangered or threatened are known to occur at or in the immediate vicinity of study area.

Enclosed is some information concerning endangered and threatened species under our jurisdiction and that of the Game Commission.

Sincerely,

Clark N. Shiffer, Coordinator
Herpetology and Endangered Species

mam

Encl.

cc: R. Snyder





COMMONWEALTH OF PENNSYLVANIA
**PENNSYLVANIA
GAME COMMISSION**

P.O. BOX 1567
HARRISBURG, PENNSYLVANIA 17105-1567

December 21, 1987

ADMINISTRATIVE BUREAUS

ADMINISTRATION	787-5670
LICENSE DIVISION	787-2084
PERSONNEL	787-7836
GAME MANAGEMENT	787-5529 787-6711
INFORMATION & EDUCATION	787-6286
LAW ENFORCEMENT	787-5743
LAND MANAGEMENT	787-6818
REAL ESTATE	787-6568

Ms. Betty Bowers
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

RECEIVE

DEC 22 1987

In re: Northampton County
Rt. 33 Extension

Dear Ms. Bowers:

We have received your plan of study and cover letter requesting our review and comments to the above referenced project.

The plan of study appears to be adequate to the task of describing the environmental effects of the project.

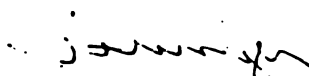
We are requesting that we be informed in advance, of any field review of this project. This will enable us to participate in the review and to conduct a wildlife habitat impact study.

Also, upon completion, please provide us with a copy of the Environmental Assessment. We wish the opportunity to review and possibly comment on the findings of this document.

Please keep us informed of any further progress on this project and feel free to contact us for any needed assistance.

Inquiries should be directed to the attention of Mr. Gregory Grabowicz or Mr. Robert Culp at (717) 783-5957.

Very truly yours,


Jacob I. Sitlinger, Director
Bureau of Land Management



COMMONWEALTH OF PENNSYLVANIA
**PENNSYLVANIA
GAME COMMISSION**

2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

February 8, 1989

Ms. Susan Scaer
Gannett Flemming Transportaion Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

In re: Route 33 Extension
Northampton County, PA

Dear Ms. Scaer:

This is in response to your letter requesting information concerning endangered and threatened species of birds and mammals as related to the above project.

We have completed an office review and determined that except for occasional transient individuals, this project should not affect any endangered or threatened species of birds and mammals protected by the Federal Endangered Species Act of 1973 or recognized by the Pennsylvania Game Commission.

This response is related only to endangered species, it does not address other concerns of the Game Commission. If, in the normal review process, it is determined that the project may impact critical or unique habitats such as wetlands, wintering areas, or nesting cover, etc., you may be requested to conduct additional studies.

If you have any questions, or if we can be of further assistance, please contact Mr. Gregory Grabowicz or Mr. Roland Bergner of my staff at (717) 783-4919.

Very truly yours,

Jacob I. Sitlinger, Director
Bureau of Land Management

ADMINISTRATIVE BUREAUS

ADMINISTRATION 787-5670
AUTOMOTIVE AND
PROCUREMENT DIVISION 787-6564
LICENSE DIVISION 787-2084
PERSONNEL DIVISION 787-7836
WILDLIFE MANAGEMENT 787-5529
INFORMATION & EDUCATION 787-6286
LAW ENFORCEMENT 787-5470
LAND MANAGEMENT 787-6818
REAL ESTATE DIVISION 787-6566
MANAGEMENT INFORMATION
SYSTEMS 787-4076

RECEIVED
FEB 14 1989



COMMONWEALTH OF PENNSYLVANIA

PENNSYLVANIA GAME COMMISSION

2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

March 30, 1989

Copy to Bob Keller 12/2/89

ADMINISTRATIVE BUREAUS

ADMINISTRATION	787-5670
AUTOMOTIVE AND PROCUREMENT DIVISION	787-6504
LICENSE DIVISION	787-2084
PERSONNEL DIVISION	787-7836
WILDLIFE MANAGEMENT	787-5529
INFORMATION & EDUCATION	787-6288
LAW ENFORCEMENT	787-5470
LAND MANAGEMENT	787-8818
REAL ESTATE DIVISION	787-6568
MANAGEMENT INFORMATION SYSTEMS	787-4076

Mr. Thomas P. Barilar, P.E.
District Engineer
PennDOT District 5-0
1713 Lehigh St.
Allentown, PA 18103

In re: Route 33 Extension
Northampton County

Dear Mr. Barilar:

On March 20, 1989, Mr. Robert Culp and Mr. Roland Bergner of my staff met with PennDOT personnel in Harrisburg to discuss proposed mitigation for the Route 33 Extension project in Northampton County. It was determined that cropland and residential and urban/built-up are the major land uses in the area. These uses reduce habitat quality for wildlife. According to Mr. Robert Keller, Environmental Manager, PennDOT District 5-0, the area will continue to be developed which will further reduce or eliminate wildlife habitat.

Based on this, the group discussed resource categories for the project. Categories 3 and 4 were mentioned as possible ratings. If a rating of 3 is chosen, PennDOT can satisfy all terrestrial mitigation within the proposed right-of-way. A rating of 4 will require that additional acreage be acquired off-site to satisfy mitigation.

Because the area will continue to be developed, the possibility of purchasing a tract of land as a set aside within the proposed corridor in lieu of mitigating within the right-of-way was discussed. A possible site is a property immediately south of the Lehigh River identified as the First Valley Bank (Trustees) and Kenneth G. Fahs tract. Doing this would satisfy mitigation requirements within one large area and would also serve to protect existing terrestrial habitat.

Mr. Thomas P. Barilar

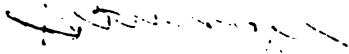
-2-

March 30, 1989

Therefore, the Pennsylvania Game Commission recommends that habitat within the project area be rated as Category 4 and that PennDOT mitigate terrestrial losses off-site on one area.

If you have any questions or if we can be of further assistance, please contact Mr. Gregory Grabowicz or Mr. Roland Bergner of my staff at (717) 783-4919.

Very truly yours,


Jacob I. Sitlinger, Director
Bureau of Land Management



COMMONWEALTH OF PENNSYLVANIA
**PENNSYLVANIA
GAME COMMISSION**

2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

April 6, 1989

Mr. Thomas P. Barilar, P.E.
District Engineer
PennDOT Engineering Dist. 5-0
1713 Lehigh St.
Allentown, PA 18103

In re: Route 33 Extension
Northampton County

Dear Mr. Barilar:

On March 23, 1989, Mr. Roland Bergner of my staff participated in an interagency field view of the above referenced project to verify wetland boundaries.

Based on that review, it is the opinion of this agency that the wetland boundaries have been properly delineated within the corridor.

Please keep us informed of any further progress on this project and feel free to contact us for any needed assistance.

Inquiries should be directed to the attention of Mr. Gregory Grabowicz or Mr. Roland Bergner at (717) 783-4919.

Very truly yours,


Jacob I. Sitlinger, Director
Bureau of Land Management

*copy to [unclear]
[unclear] Keller*
ADMINISTRATIVE BUREAUS

ADMINISTRATION	787-6670
AUTOMOTIVE AND PROCUREMENT DIVISION	787-6684
LICENSE DIVISION	787-2084
PERSONNEL DIVISION	787-7838
WILDLIFE MANAGEMENT	787-6829
INFORMATION & EDUCATION	787-6288
LAW ENFORCEMENT	787-6470
LAND MANAGEMENT	787-6816
REAL ESTATE DIVISION	787-6666
MANAGEMENT INFORMATION SYSTEMS	787-4078



COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
 BUREAU FOR HISTORIC PRESERVATION
 BOX 1026
 HARRISBURG, PENNSYLVANIA 17108-1026

RECEIVED

JAN 21 1988

January 15, 1988

Betty Bowers, Manager
 Environmental Studies
 Gannett Fleming Transportation
 Engineers, Inc.
 P.O. Box 1963
 Harrisburg, PA 17105

TO EXPEDITE REVIEW
 USE BHP REFERENCE NUMBER

Re: File No. ER 88-0224-095-A
 Environmental Studies
 Route 33 Extension
 Northampton County, PA

Dear Ms. Bowers:

The above named project has been reviewed by the Bureau for Historic Preservation (the State Historic Preservation Office) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

A preliminary review of this project indicates that there are archaeological resources (see attached list) located in or near the project area that should be considered in the planning process. If you need information or if you have any questions concerning your responsibilities in regard to these resources, please contact our office. In addition, project planners should conduct surveys to identify all possible historic resources before final plans are formulated. For assistance in conducting and organizing a survey, please contact the Bureau for Historic Preservation.

Nm75, Nm76, Nm116 & Nm117

If you need further information in this matter please consult Kurt Carr at (717) 783-8946 or 8947.

Sincerely,

Dan G. Deibler, Chief
 Division of Planning & Protection

DGD/lw

No attachment received.
BB



COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
 BUREAU FOR HISTORIC PRESERVATION
 BOX 1026
 HARRISBURG, PENNSYLVANIA 17108-1026

TO: ~~COMM-LIC~~
 BINGHAM
 FROM: JACK PORTER
 PENDOT 5-0

13 February 1989

Mr. Fred Bowser
 Director, Bureau of Design,
 Dept. of Transportation
 1118 T & S Building
 Harrisburg, PA 17120

Re: ER#88-0224-095A
 Cultural Resources Survey
 Route 33 Extension

Dear Mr. Bowser:

The Bureau for Historic Preservation has reviewed this State funded, assisted or licensed project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 507 et. seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources. Our comments are listed below.

1) The Background Research section is too generalized and contains little of the relevant archaeological data available for the region. For instance, no mention is made in this section of the Hardeston Jasper quarries which are located near the project area and there is only passing mention of Kinsey's work.

2) Throughout the document, the maps and plans of the project area are of poor quality and exclude a great deal of relevant information. Maps should be clearly identified, such as "Nazareth Quadrangle" for Figure 2.

3) High, moderate and low potential test areas are based on overly generalized notions of aboriginal settlement patterns and are not defensible in light of currently available data. The test intervals of 30 meters and 45 meters for moderate and low potential areas respectively, are not acceptable for identifying archaeological sites. Consequently, more shovel tests should be placed in these areas to provide better subsurface testing coverage.

4) In the report there should be good quality photographs of surface collected areas, i.e. freshly plowed fields, demonstrating that surface visibility was adequate for identifying artifacts. It is unlikely that surface visibility was 100 per cent during the fall to winter period when the research was conducted. This needs to be clearly documented.

5) In areas where only surface collections were carried out, there seems to have been no subsurface testing to determine

the depth of the archaeological components. It is possible that buried sites were missed in areas which were only surface collected. In many upland areas this is obviously not necessary, however, locations near streams, floodplains, and near the base of slopes need to be shovel tested for buried archeological components. This applies particularly to areas such as H-2. If an area is only surface collected, then a clearly stated justification with supporting environmental information must be provided.

6) High potential areas such as locations overlooking the Lehigh River (Section H) should be more intensively shovel tested.

7) In Section I, tests should be taken to the depth of Pleistocene gravels in all units. The use of an auger to achieve this depth for the purpose of retrieving cultural data is not acceptable. More profiles should also be provided.

8) Backhoe trenches in floodplain soils should be supplemented in all cases with test units (in the walls or adjacent to the trench) excavated to retrieve artifact data and contextual information.

9) More testing should have been conducted at 36NM116 to provide sufficient data for the Phase II workplan.

10) In the Phase II workplan, the research questions are very unimaginative and show cursory use of the available archaeological data for the region.

11) Overall, the report is very unclear as to exactly what was done in the field. Surface collections and subsurface testing activities should be very clearly documented with maps, photographs, and profiles. In our opinion, the identification of archaeological resources in the project area has not been completed due to inadequate subsurface testing efforts. Before the survey effort is considered acceptable, the above comments need to be addressed and additional fieldwork must be carried out as outlined above.

It is the opinion of the State Historic Preservation Officer that the following properties are not eligible for listing in the National Register of Historic Places:

Unangst (Seiple) Farm
Mrs. Unangst Farm
Coch Farm
Davis House
Frankenfield Farm
O. Richards Farm
W.H. Clause Barn

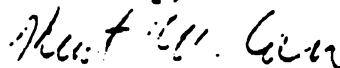
It is the opinion of the State Historic Preservation Officer that the following properties are eligible for listing in the National Register of Historic Places:

W.H. Clause House
Anthony Oberly House
J. Oberly Farm District
Unangst (Wirth) Farm
D. Bayer Farm
Hopeville Village

All federal agency project assessments requiring the comments of the Pennsylvania State Historic Preservation Officer should include the funding program, a project description, project location, and cultural resource site information as outlined in 36 CFR Part 800.4 (Identifying Historic Properties). Because your finding does not include sufficient information, we are unable to agree. Please provide this office with the information listed on the attached sheet for the Redington Works/Proving Grounds in order to proceed with the Section 106 review procedure.

If you need further information in this matter please consult Bob Wall or Joanne Keim at (717) 783-6099.

Sincerely,



Kurt Carr, Chief
Division of Archaeology &
Protection

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION

Section 106 Review
Information Request (36 CFR 800.4)

() A. FUNDING PROGRAM

- 1. federal and/or state agency
- 2. type of assistance (grant, loan, permit, etc.)
- 3. name of assistance program
- 4. name and address of office at which application has been/will be filed

() B. PROJECT DESCRIPTION

- 1. narrative/description of assisted and related work including:
 - a. new construction, demolition or rehabilitation
 - b. size of project (# buildings, # units, # stories, acreage)
 - c. use or purpose
 - d. extent and nature of ground disturbing activities (trenching, grading, foundation excavation, etc.)
- 2. annotated site plan/map
- 3. architectural plans and specifications
- 4. 3" x 5" black & white photographs
 - a. exterior
 - b. interior
 - c. surrounding environment

() C. PROJECT LOCATION

- 1. map
 - a. U.S.G.S. 7.5 min. series (topographic) with project location(s) and limits clearly marked. If you send a copy, be sure to identify quadrangle name.
 - b. street map (for projects in populated areas)
- 2. identify project address

() D. PROJECT SITE

- 1. describe all buildings on site - complete Bureau for Historic Preservation Resource Form (attached with instructions) for each building built before 1940. *show proximity of company now with location by mile*
- 2. describe previous land uses *Also describe*
- 3. what National Register listed or potentially eligible sites (buildings, historic districts, archaeological sites) are known to be in the area? Tell us what sources were consulted (local historical societies, local or county planning agencies, previous historic site surveys, etc.). *what remains of the mill ruins*



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
WILLIAM PENN MEMORIAL MUSEUM AND ARCHIVES BUILDING
BOX 1026
HARRISBURG, PENNSYLVANIA 17108 1026

4 October 1989

Mr. Fred W. Bowser, Director
Bureau of Design
Dept. of Transportation
1118 T & S Building
Harrisburg, PA 17120

RECEIVED
OCTOBER 10 1989

Re: ER# 88-0224-095D
SR 0033, Summary Phase II
Archaeological Report
Route 33 Extension
Northampton County

Dear Mr. Bowser:

The Bureau for Historic Preservation has reviewed the above referenced summary report. We agree that the Oberly Island prehistoric site is eligible for the National Register. However, we have some comments on the summary report and on the project in general.

- 1) The revised Phase I investigations report has not yet been submitted to our office for final comments. This should be submitted with consideration of our comments dating to June 16, 1989.
- 2) Errors in the text of the Phase II summary report reflect a basic unfamiliarity with regional sequences (e.g. "Brewertown preform") and a misuse of basic archaeological terminology. A Brewerton "preform" implies a lack of stylistic attributes necessary to identify a specific type category.
- 3) Usage of terminology such as "territorial and ecological focus" should be clarified and referred to specific and observable cultural patterns, not simply inserted as a vague generality. The context in which these and other terms are used provides very little meaning.
- 3) The profile descriptions from the test units are too generalized. Considering that the site is stratified, a qualified pedologist should have been used to describe the soil profiles. In the future, a pedologist or geomorphologist should always be used when investigating deep sites.

page 2
F. Bowser

4) The research questions outlined in the summary report are acceptable, in general, however, vague and overly generalized statements describing cultural activities should be either expanded or eliminated. These have very little useful meaning in their present form.

If you need further information in this matter please consult Bob Wall at (717) 787-9121.

Sincerely,



Kurt Carr, Chief
Division of Archaeology &
Protection

cc: K. Quinn



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
BOX 1026
HARRISBURG, PENNSYLVANIA 17108-1026

Nov. 14, 1989

Fred W. Bowser, Director
Bureau of Design
Department of Transportation
1118 Transportation & Safety Bldg.
Harrisburg, PA 17120

Re: ER 88-0224-095-E
Northampton County
S.R. 0033, Sections A09 & A10
(T.R. 33 Extension Project)
Final Cultural Resources
Report

Dear Mr. Bowser:

Based on the supplemental information recently submitted to the Bureau for Historic Preservation concerning the above referenced project, the Bureau has re-evaluated the effect of this activity on cultural resources. Your cooperation in dealing with this matter has been appreciated.

As previously outlined in our letter of Feb. 13, 1989 it is the opinion of the State Historic Preservation Officer that the following properties are not eligible for listing in the National Register of Historic Places:

1. Unangst (Seiple) Farm: Locus 12, Seiple Farm District, Island Park Road, Williams Twp.
2. Mrs. Unangst Farm: Locus 13, Conchado District, Island Park Road, Williams Twp.
3. Coch Farm: Locus 1: Uhler Farm District, 3103, 3117 Hope Road. Bethlehem Twp.
4. Javis House: Locus 5, Cimino Lane, Bethlenem Twp.
5. Frankenfield Farm: Locus 3, Joseph Emick Farm District, 4135, 4525 Freemansburg Ave., Bethlehem Twp.
6. O. Richards Farm: Locus 6, George Emerick Farm District, 4500 Freemansburg Ave., Bethlehem Twp.

It is the opinion of the State Historic Preservation Officer that the following properties are eligible for listing in the National Register of Historic Places:

7. W.H. Clouse Farm: Locus 4, Walter Wagner Farm District, 4175 Freemansburg Ave., Bethlehem Twp.
8. Anthony Oberly House: Locus 9, William Baker Farm District, Redington Road, Lower Saucon Twp.
9. J. Oberly Farm District: Locus 10, Kenneth Fahs Farm District, Redington Road, Lower Saucon Twp.

10. Unangst (Wirth) Farm: Locus 11, Wirth Farm, Island Park Road, Williams Twp.
11. D. Bayer Farm: Locus 2, George Emerick Farm District, 4329 Freemansburg Ave., Williams Twp.
12. Hopeville Village Historic District: Locus 7b, Hopeville Historic District, Hope Road, Bethlehem Twp.
13. The Lehigh Canal: the canal was listed on the National Register of Historic Places on 10/2/78 and 12/17/89. Enclosed is a map of the official NR boundaries for the canal. Included in the nomination and boundaries are the Lock Keepers House at Hopeville and Oberly and Turkey Islands.

In our Feb. 13, 1989 letter, we requested additional information on the Redington Historic District/Coleraine Iron Company/Bethlehem Steel's Proving Grounds and Shell Filling Site. We have not yet received the information needed to evaluate the National Register eligible of the area. Please submit the following:

1. A district/site map with the identified buildings labeled by number.
2. Photos showing the industrial site; the industrial site in relationship to the workers housing and streetscapes of the workers housing.
3. Description of the ruins on the industrial site with accompanying photographs.

The final cultural report also included these sites.

14. Locus 14: Hopeville Tavern Site: this structure is located in the determined eligible Hopeville Village Historic District. It appears to meet National Register criteria A and C. The final cultural report also questions its eligibility under Criterion D for its archaeological significance. Limited Phase I testing was reported in the final cultural report and in the author's opinion the site was not eligible under Criterion D. It is our opinion that the testing at this site was too limited to verify this eligibility. Therefore, if this property is to be affected by the proposed highway a more extensive Phase II level testing must be performed. Please submit a Phase II workplan for the site if affected by the proposed roadway.

15. Locus 15: Floodplain Deposit, Oberly Island Site. This area is already listed on the National Register of Historic Places as part of the Lehigh Canal nomination. As per our Oct. 4, 1989 letter this site appears also to individually eligible under criterion D. If the site is to be affected by the project a Memorandum of Agreement for the project would have to include mitigation for this site.

16. Locus 16: Site 36NM116, Prehistoric Site. This site was determined eligible for the National Register as part of the I-78 project. If the site is to be affected by the project additional archaeological investigations must be completed.

17. Locus 17: Fahs Site, 36NM135. This historic farmstead was determined eligible for the National Register under Criteria A and C. The final cultural report also addresses its eligibility under Criterion D. We agree that the site may also possess significance under this criterion and a Phase II level investigation must be completed. A more detailed Phase II workplan must be submitted to the Bureau for review. The workplan should include maps of the site showing the proposed locations for test pits and sections.

18. Locus 18: Seiple Lime Kiln Site. While the farmstead associated with this site was determined not eligible, we agree with the conclusions of this report that the lime kiln site may be eligible for the National Register under Criterion D. If the site is to be affected by the highway project, a Phase II workplan must be submitted to the Bureau for review.

The Bureau for Historic Preservation did not receive an official alternatives report. We were given a handout at the July 26, 1989 Interagency Coordination Meeting entitled: Presentation of Preliminary Alternatives Analysis. While this does not substitute for an official alternatives analysis report we offer the following comments based on the limited mapping in the July 26th handout.

Alternative 1: From the maps this alternative may affect the following cultural resources.

1. D. Bayer Farm: Locus 2, George Emrick Farm District, 4329 Freemansburg Ave., Bethlehem Twp.
2. The Lehigh Canal
3. Locus 15: Floodplain archaeological site
4. Locus 16: Site 36NM116

Alternative 2: From the maps this alternative may affect the following cultural resources.

1. W.H. Clouse House: Locus 4, Walter Wagner Farm District, 4175 Freemansburg Ave., Bethlehem Twp.
2. The Hopeville Village Historic District: Locus 7a
3. Locus 14: The Hopeville Tavern Site
4. The Lehigh Canal
5. Locus 16: Site 36NM116
6. Locus 17: Fahs Site, 36NM135

Page 4
F. Bowser
Nov. 14, 1989

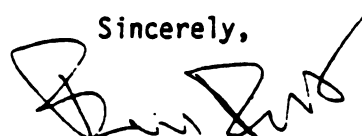
Please address the affect of the selected alternative on the cultural resources in your Phase 2 Alternatives Analysis Report for our review.

In reviewing the Cultural Resource Survey document the following items still need to be addressed in the final addition:

1. Provide original photographs for Plates 1, 2, and 3. The photocopies are of poor quality and provide no useful information.
2. On Figure 8 and 9, the USGS maps are not identified, nor is a scale provided. Please correct this in the final version.

If you need further information in this matter please consult Susan M. Zacher or Bob Wall at (717) 783-8946 or 783-8947.

Sincerely,



Brenda Barrett
Director

Enclosures
cc: R. Leister, PDOT, Bur. of Design
BB/smz

Bethlehem
Area
School District
Pennsylvania



TRANSPORTATION DEPARTMENT

East Hills Depot
2005 Chester Avenue
Bethlehem, Pennsylvania 18017
TELEPHONE: (215) 861-0360

November 24, 1987

RECEIVED

NOV 27 1987

Betty Bowers
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers,


Thank you for considering the Bethlehem Area School District in your Environmental Studies for the Route 33 extension. We have reviewed the entire area in Bethlehem Township, east of Farmersville Road. There are five hundred and eighteen (518) school age children residing in this area. These students attend twenty-four different schools and require twenty-seven separate bus routes to transport them to and from their respective school locations. Since this area is situated in the eastern end of our district most of our routes are of a "looping" nature and travel on both the Freemansburg and William Penn Highways.

The greatest concern for our district is the location of Farmersville Elementary School to the possible interchange on the William Penn Highway. This public elementary school (grades K to 5) has an enrollment of three hundred seventy-six (376) students and requires five (5) school bus routes to serve this school. There are only fourteen (14) "walk-in" children who reside in the apartment complex located immediately across the street. The building was constructed in 1954 and does not have air conditioning.

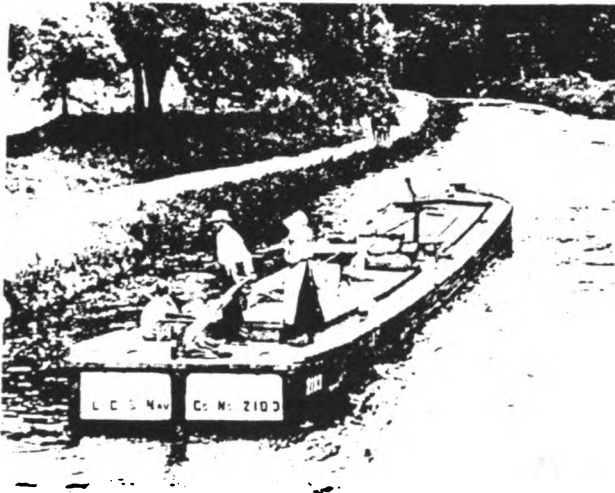
The next closest school location is Notre Dame High School, on Church and Farmersville Roads. This campus is part of the Diocese of Allentown. Their Department of Education administrative offices are at Dewberry and Madison Streets, P.O. Box 2607, Lehigh Valley, PA 18001.

Please let us know if there is any way in which we may be of further assistance.

Sincerely,


David C. Himmelberger
Supervisor of Transportation

cc: Thomas Doluisio, Superintendent of Schools
Louis Molnar, Director of Pupil Services/Data Processing



HUGH MOORE HISTORICAL PARK AND MUSEUMS CANAL MUSEUM

200 S. DELAWARE DRIVE - P.O. BOX 877
EASTON, PENNSYLVANIA 18044-0877
(Area Code 215) 250-6700

November 30, 1987

RECEIVED

DEC 1 1987

Ms. Betty Bowers
Manager, Environmental Studies
Gannett Flemming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Ms. Bowers:

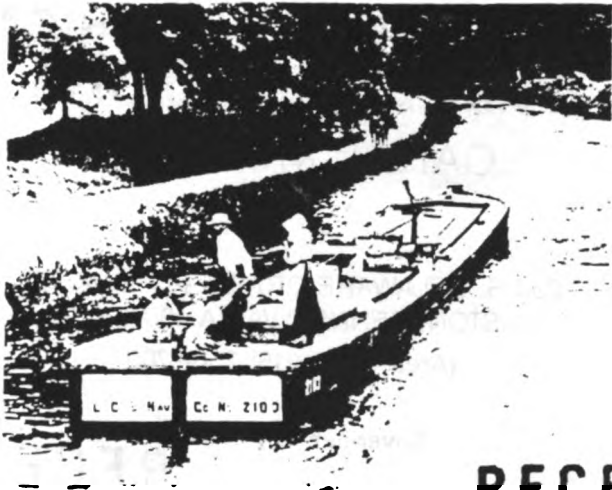
In reply to your letter of November 16, 1987, I would like to make the following comments regarding your environmental studies for the proposed Route 33 extension.

1. We are concerned with the impact of the highway over an environmentally sensitive area such as the Park as relates to air quality and noise.
2. We are concerned as to the impact on the visual resource of the Lehigh River corridor in this area and the extent to which the structure will be visible upstream and downstream of the crossing. Since this area except for one operating railroad has no roads or other access to it along the river corridor, except by trail or boat, the visual characteristics of the area as it relates to our long term plans for this area are of special significance to us.
3. The effect of the proposed project on the archeological and historic resources of the area are also of concern as are the mitigation of any Section 4F involvement.

From the standpoint of the proposed alternatives, it appears from our viewpoint that alternative 2 is the preferential alternative because of the shorter span over land on the north side of the river, its avoiding crossing of the Bethlehem-Palmer Township bikepath, and its more westerly alignment, thus minimizing visual impact downstream from the project site which also allows for little upstream visual impact because of the curvature of the river, also its distance from Island Park and Turkey Island which are utilized by the Park as natural wildlife refuges. The design of the bridge itself is of concern to the Park. Since a high level crossing cannot be avoided, it is in our best interest to be sure that the bridge is as aesthetically designed as possible, possibly using steel materials instead of concrete as these are more fitting with the historic time period that we are dealing with. Our office has already been working with some of the subconsultants on your project and have supplied them with copies of our Park master plan and other information. If we can be of further service to your firm, please feel free to contact me at the above address.

Sincerely yours,

J. Steven Humphrey
Executive Director



CANAL MUSEUM
HUGH MOORE PARK
200 S. DELAWARE DRIVE - P.O. BOX 877
CITY OF EASTON, PENNSYLVANIA 18044-0877
(Area Code 215) 250-6700

RECEIVED

JAN 03 1989

December 29, 1988

Miss Sue Scaer
Environmental Scientist
Gannet Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105


Dear Miss Scaer:

I have reviewed your 4(f) evaluation for the Route 33 extension.

The description seems to be fairly accurate. The only two problems I see are that the Park master plan does propose the possibility of putting camping facilities on Oberly Island and you mentioned that Oberly Island only has access by boat which is not true since we have a 33 ft. easement along the canal side of the Bethlehem Boat Club property which gives us vehicular access or walking access over the causeway across the canal and along the backside of the Bethlehem Boating Club property. This easement would also probably be the same right-of-way that would be used for access to Oberly Island for construction purposes. As you state, the primary impact is of a visual nature, although the span could have some impact on future development of Oberly Island.

If you have any questions regarding these items, please feel free to call me.

Sincerely yours,

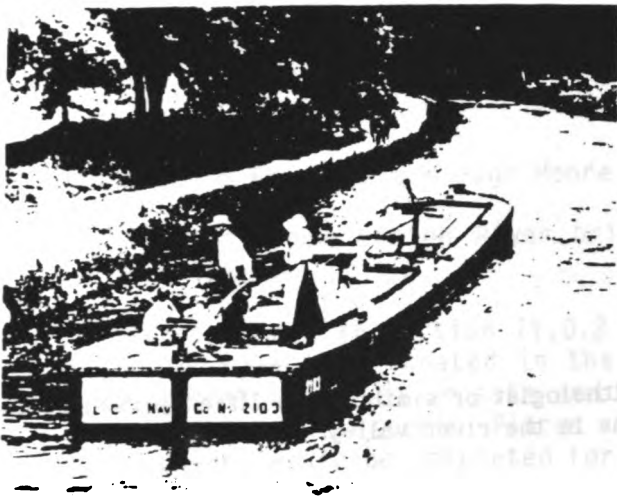

J. Steven Humphrey
Executive Director

JSH/ssb

ATTRACTIONS:

Canal Museum, Locktender's House, Canal Boat, Lehigh Canal, Canoes and Pedalboats,
Picnic Areas, Picnic Pavilions, Playground, Trails, Bike Paths

NOV 1 1989



CANAL MUSEUM HUGH MOORE PARK

200 S. DELAWARE DRIVE - P.O. BOX 877
CITY OF EASTON, PENNSYLVANIA 18044-0877
(Area Code 215) 250-6700

October 31, 1989

Mr. Glenn M. Taggart
Joint Planning Commission
ABE Airport Government Building
Allentown, PA 18103

Dear Glenn:

To follow-up on our meeting of October 5, I would like to reiterate some of the concerns that I have with the Route 33 project as it impacts on Hugh Moore Park in the Oberly Island area. The following are a listing of some of our primary concerns:

1. That the location of piers on both the Oberly Island side of the canal and on the towpath side of the canal adjacent to the Central Railroad of New Jersey right-of-way be placed as far as possible from the canal and towpath.
2. That proper archaeological work and documentation be done in any areas that will be disturbed by excavation or construction. This would include Phase III archaeological work.
3. That the bridge be designed to be as aesthetically pleasing as possible to the canoeists, boaters, hikers and joggers who will be forever seeing the underside and profile of the bridge.
4. That full consideration be given to all possible impacts as relate to the area under the bridge being not only a National Recreation Trail, a National Register Historic Site but also a National Heritage Corridor as designated by Congress and signed into law by the President November 18, 1988. A Heritage Corridor Commission is in the process of being appointed and funds have been appropriated to allow this Commission to plan for the enhancement, preservation and utilization of the Delaware and Lehigh canals, to enhance the quality of life in the Delaware and Lehigh valleys and promote compatible economic development and historic preservation.
5. That the drainage from the bridge and the bridge scuppers be piped to ground level and not be allowed to be open or free-fall and that these be controlled in such a way as to minimize erosion and if a chemical spill or toxic spill should occur on the bridge that it would be easy to contain at the outlets.
6. That any bridges over Hope Road or the bikeways be given similar considerations as to design, drainage and archaeological work.

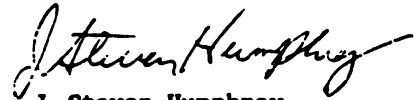
ATTRACTIONS:

Canal Museum, Locktender's House, Canal Boat, Lehigh Canal, Canoes and Pedalboats, Picnic Areas, Picnic Pavilions, Playground, Trails, Bike Paths

7. That a study be done by a qualified ornithologist or similarly qualified person as to any impact regarding the bird populations in the river valley.
8. Because of the impact on the park and canal, some thought should be given to possible mitigations. This might include the stabilization of the center pier for the Change Bridge, an 1850's cable suspension bridge with the world's oldest machine-made wire rope cables, approximately one mile downstream from this site or other similar form of mitigation to offset the negative impact with possible positive impact.
9. The eastern alignment appears to have more visual impact on the Corridor while the western alignment would tend to have more impact on the Hope Lock and Hope Village area.

I hope that these comments will be helpful as part of the design and environmental considerations for the Route 33 project and I look forward to continuing to work with you on this project.

Sincerely yours,



J. Steven Humphrey
Executive Director

cc: Tom Jones, Preservation Planner

JSH/ssb

Response to Canal Museum Hugh Moore Park letter dated October 31, 1989

1. Piers for the Lehigh River bridge will not be located in the Lehigh Canal and Towpath.
2. As discussed in Section IV.D.2 (Archeological Impacts), three archeological sites have been located in the study area and may be impacted by the Build Alternatives. If a site which is eligible for listing in the National Register of Historic Places is impacted by the proposed project, data recovery would be completed for the site during final design.
3. During final design, bridge treatments will be considered to minimize the visual impact created by the bridge. Renderings of the bridge from the river and river bank have been prepared and are included in Section IV (Figures IV-5 and IV-6). Architectural treatments will be used on bridge piers. The piers will be developed using form liners. If steel is used for bridge construction, a rust coating will develop which seals the bridge and would result in an earth tone appearance.
4. Because the Lehigh Canal and Towpath is listed on the National Register of Historic Places, is a National Recreation Trail, and is a National Heritage Corridor, compliance with Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act of 1966 will be completed. Coordination with the President's Advisory Council on Historic Preservation and the State Historic Preservation Officer will continue throughout the study and implementation periods. All reasonable efforts will be made to retain the historic features, setting, and use of the Canal and Towpath. Mitigation measures will be ascertained when a Preferred Alternative is selected. A Memorandum of Agreement will be prepared for the site.
5. Runoff from the Lehigh River bridge may fall directly into the River or may be collected and discharged on the River bank before entering the River. If runoff is collected, proper controls would be implemented at the outlets to minimize erosion potential. The possibility of a detention area at the outlets to contain chemical or toxic spills will be considered during final design.
6. Design and drainage considerations similar to those given to the Lehigh River bridge will be given to the bridges over Hope Road and the Bethlehem-Palmer Township Bike Trail. Archeological sites have not been identified at the Hope Road crossing. Should a site be uncovered during construction, studies would be done to determine if the site would be eligible for listing on the National Register, and data recovery would be completed as necessary.
7. According to a qualified ornithologist on our staff, it is not expected that the proposed bridge over the Lehigh River would have a permanent adverse impact on the bird populations in the river valley. Because of the height of the proposed bridge and the distance between piers, the natural flyway along the River would not be restricted.

8. Because the proposed extension of Route 33 would not impact the Change Bridge, the Pennsylvania Department of Transportation would not stabilize this bridge as a mitigation measure for the Route 33 project.
9. While the eastern alignment (Alternative 1) would have a greater visual impact to Hugh Moore Park, the bridge proposed in Alternative 1 would be 15 feet lower, would require 3 less piers, and would be 810 feet shorter than the bridge proposed in Alternative 2.

Lehigh University



Environmental Studies Center
Irwin J. Kugelman, Director
telephone (215) 758-3651, 758-3670

RECEIVED

NOV 25 1987

Chandler-Ullmann Hall 17
Bethlehem, Pennsylvania 18015

Ms. Betty Bowers, Manager
Environmental Studies
Gannett Fleming Transportation Engineers
P. O. Box 1963
Harrisburg, PA 17105

November 23, 1987

Dear Ms. Bowers:

Thank you for your letter of November 23 concerning the Route 33 Extension Environmental Studies. I understand that you would like data on the Lehigh River and appropriate comments on additional environmental concerns. However, compiling such data and concerns would require a considerable amount of time. At the present moment I am involved in a long-term research project and do not have much unallocated time.

At most I could devote four to eight hours to the project and my consulting fee would be \$60.00 per hour.

If I can be of service, please let me know. Good luck in your compilation of data.

Sincerely yours,

A handwritten signature in black ink that reads "Patricia T. Bradt".

Patricia T. Bradt, Ph.D.
Research Scientist

File -> file

**GANNETT FLEMING
TRANSPORTATION ENGINEERS, INC.**



P O BOX 1963
HARRISBURG, PA 17105
(717) 763-7211
CABLE ADDRESS GANFLEC • TELEX 84-2375

November 25, 1987

Ms. Patricia T. Bradt, Ph.D.
Environmental Studies Center
Chandler-Ullman Hall 17
Bethlehem, PA 18015

Dear Ms. Bradt:

Thank you for your prompt response to our early coordination letter on the Route 33 Extension Environmental Studies. Unfortunately, we do not customarily purchase information from private sources, but rely on readily available information from the US Geological Survey, US EPA, PA DER, PA Game Commission, and PA Fish Commission. We contacted your facility to obtain available data you may have collected through research projects and may be willing to contribute. At this time, we feel the expenditure of funds at the rate of \$60/hour would not be the most cost-effective method of obtaining water quality and aquatic biota.

Again, thank you for your response and interest in the Route 33 project.

Very truly yours,

Betty Bowers,
Manager, Environmental Studies

BCB/rw
cc: 25179 File

*Lower Saucon Township Council
Lower Saucon Town Hall
R. D. 3, Bethlehem, Pa. 18015*

RECEIVED
DEC 4 1987

December 3, 1987

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
1713 Lehigh Street
Allentown, Pennsylvania 18105

ATTN: Matthew F. Mazza, District Engineer
REF: Environmental Impact Statement for the Proposed Extension of
Route 33.

Dear Mr. Mazza:

Lower Saucon Township has received the "Plan of Study" for above referenced subject.

Please consider this letter a point of record. Since the planning of Interstate 78 and the beginning of construction, the Township Council has expressed strongly, then and up to this current date, that the Township does not want an interchange constructed anywhere in the Township. Copy of Resolution enclosed.

Thank you for your consideration.

Sincerely,



James L. McCann, Manager
LOWER SAUCON TOWNSHIP

Res. # 6-84

JLMC:jfw ✓

cc: (1) Gannett Fleming
Transportation Engineering, Inc.
(2) Michael Kaiser, JPC
(3) Bruce Davis, Esq.

Enclosure (1)

DEC 16 1987

Lower Saucon Township Council
Lower Saucon Town Hall
R. D. 3, Bethlehem, Pa. 18015

December 14, 1987

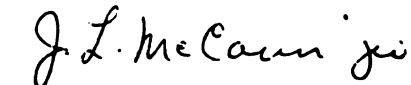
GANNETT FLEMING
P.O. Box 1963
Harrisburg, PA 17105

ATTN: Cheryn Fogarty

Dear Ms. Fogarty:

Reference telephone call today from your office, enclosed is Resolution #6-84, as requested.

Sincerely,



James L. McCann, Manager
LOWER SAUCON TOWNSHIP

JLMC:jfw
Enclosure ✓

LOWER SAUCON TOWNSHIP

RE: I-78/378 INTERCHANGE

WHEREAS, Lower Saucon Township desires always to protect all possible options for future planning and development within the community; and,

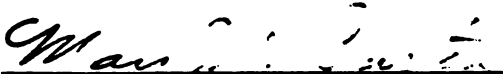
WHEREAS, proposed Interstate 78 is nearing final design; and,

NOW, THEREFORE, BE IT RESOLVED, that Lower Saucon Township will straightforward request The Pennsylvania Department of Transportation to incorporate into its final right-of-way design whatever is necessary to accommodate future, but presently undesired construction of a highway interchange at the intersection of Route 378 and proposed Interstate 78 in the Township.

RESOLVED AND ENACTED INTO A RESOLUTION THIS 1ST DAY OF FEBRUARY, 1984.

ATTEST:

LOWER SAUCON TOWNSHIP
NORTHAMPTON COUNTY



SECRETARY



MAYOR

*Lower Saucon Township Council
Lower Saucon Town Hall
R. D. 3, Bethlehem, Pa. 18015*

October 31, 1989

GANNETT FLEMING ENGINEERS
P.O. Box 1963
Harrisburg, PA 17105

RE: Route 33 Extension

ATTN: RENEE NORTHCRIST

Dear Ms. Northcrist:

Enclosed is a copy of Resolution #15-86 which was adopted and enacted by the Lower Saucon Township Council on October 15, 1986.

Sincerely,



James L. McCann, Manager
LOWER SAUCON TOWNSHIP

JLMC:jfw
Enclosure ✓

LOWER SAUCON TOWNSHIP
SUPPORTING THE CONNECTION OF RTE. 33
BETWEEN U.S. RTE. 22 & I-78

WHEREAS, it is projected that the connection of Rte. 33 between U.S. Rte. 22 and I-78 would be exceedingly beneficial in the reduction of heavy traffic; and

WHEREAS, it is projected that the Rte. 33 corridor may open the door to tremendous economic growth; and

WHEREAS, a portion of this extension would involve Lower Saucon Township; now

THEREFORE BE IT RESOLVED by the Council of Lower Saucon Township that Route 33 extend into I-78 and be supported by resolution.

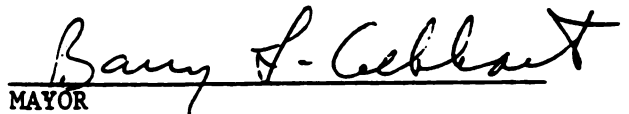
RESOLVED AND ENACTED WITH A RESOLUTION ON THIS 15TH DAY OF OCTOBER, 1986.

ATTEST:

LOWER SAUCON TOWNSHIP



ACTING SECRETARY



MAYOR

MEMORANDUM OF TELEPHONE CONVERSATION

DATE: August 25, 1989
RE: Route 33 Extension
CONTRACT #:
BETWEEN: Susan Scaer
AND: Mr. Senich

GANNETT FLEMING TRANSPORTATION ENGINEERS, INC.
POST OFFICE BOX 1963
HARRISBURG, PA 17105
PHONE: (717) 763-7211

DISCUSSION (215) 865-3291

I contacted Mr Senich in the Lower Saucon Township Office requesting information on landfills or dumps in the study area. The Township Office is not aware of any known hazardous or solid waste sites within the project area. The closest landfill is located outside the project area, approximately 1 mile ^{west of} ~~from~~ Ridington Road.

Memorandum Prepared by: Susan S. Scaer

cc: _____

File 25179

MEMORANDUM OF TELEPHONE CONVERSATION

DATE: August 25, 1989
RE: Route 33 Extension
CONTRACT #:
BETWEEN: Susan Scaer
AND: Carl Dicello

GANNETT FLEMING TRANSPORTATION ENGINEERS, INC.
POST OFFICE BOX 1963
HARRISBURG, PA 17105
PHONE: (717) 763-7211

DISCUSSION (215) 865-6563

I contacted Mr. Dicello, the Bethlehem Township manager, requesting information on landfills or dumping areas in the study area. The Township Office is not aware of any hazardous or solid waste sites in the project area.

Memorandum Prepared by: Susan Scaer

cc: _____

File 25119

Leithsville Volunteer Fire Co. No. 1



607 LEITHSVILLE ROAD • HELLERTOWN, PA. 18055-2514

SOCIAL 838-0062

BOOKINGS 797-6922

EMERGENCY 694-0290

RECEIVED

DEC 8 1987

December 7, 1987

Gannett Fleming
Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105
Attention: Betty Bowers, Manager

Re: Environment Studies
Route 33 Extension
Northampton County
(Response to November 16 inquiry)

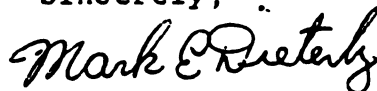
Dear Ms. Bowers:

Your request for information of our facilities is as follows:

1. Our location from I-78 is 3 miles on Route 412 South of Hellertown, Pennsylvania.
2. Our location from proposed 33/78 interchange is 5 air miles or approximately 7-10 land miles via 412 North, 78 East.
3. Our facility includes 1 class A pumper, 2 tankers (3000 gallons of water combined) 25 gallons of foam to be mixed with water ratio of 94 parts water to 6 parts foam - 6%, 1 4x4 brush truck (filed fires) including 110V. generator and 2 110V. lights (500 watts each) used at accident scenes or night time emergency calls.
4. We are now in the process of equipping one 1984 van (Hi-Cube) with rescue equipment including "The Jaws of Life". Hydraulic rams will follow in approximately one year.

5. Our membership roster shows approximately 20 personnel responding to emergency calls (night) and 5-7 during daylight hours, due to personnel's employment. Roster includes 1 fire chief, 3 assistant fire chiefs, 6 people certified on accident rescue.
6. We are located in Lower Saucon Township (south end). Three other fire companies service remaining areas of Township, SE-WY-CO services, Western sector, Southeastern services Eastern Sector, Steel City services Northern sector. We join together for calls of mutual-aid. Lower Saucon Township surrounds the Borough of Hellertown. Hellertown is serviced by Dewey Fire Company. Ambulances are supplied by SE-WY-CO and Dewey.
7. Dewey Fire Company appears to be closest company to respond to calls on I-78 due to location of 412 and 78.
8. City of Bethlehem also may be selected as primary response. Our company should be selected as second, third, etc. company in under a mutual-aid agreement. Un-determined at this time.
9. We would be willing to leave our area under mutual-aid to any other company designated to service 412 and 78 or 33 and 78.
10. We should not be primary response company to incidents on I-78.

Sincerely,



Mark E. Dieterly
Chief

MED/jlb

Lower Saucon Township Volunteer
Fire Co. of Steel City

P.O. BOX 781 R.D. #5
BETHLEHEM, PENNSYLVANIA 18016

~~728~~
25179/70
B.C.B.
RECEIVED
JAN 06 1989

January 4, 1988

To whom it may concern:

In response to your study on Route 33 extension.

Our company is about 4 miles from the proposed 33 and I78 interchange. We are a small company with only about 12 active members. Our equipment consists of one engine/pumper with a 1000 gallon tank and a 1000 gallon per minute pump. We have a tank truck holding 2200 gallons of water, and a light rescue with a 4KW generator, portable lights, 10 ton portapower, air chisel, jacks and cribbing.

We welcome the extension of route 33 in the name of progress for the Lehigh Valley. We're not sure how this will effect us as an emergency unit. We are always ready to respond to an emergency situation, but don't feel that either 33 or I78 will be our responsibility since there won't be any access to the highways in our territory.

Please keep us advised as to the results of your study and the progress of the highway.

Sincerely yours,

Allen Bontrager
Allen Bontrager
Fire Chief



NANCY RUN FIRE CO., INC.

3564 Easton Ave., Bethlehem Township
BETHLEHEM, PENNSYLVANIA 18017

PHONE: (215) 868-2244 Emergency
(215) 861-0234 Non-Emergency
(215) 691-2021 Social Hall



December 20, 1987

Gannett Fleming Trans. Engineers, Inc.
P. O. Box 1963
Harrisburg, PA 17105

Dear Sir:

In reference to your recent correspondence, the following is a short description of our organization.

The Nancy Run Fire Company is a community organization that was founded over fifty years ago by a group of public spirited residents. Our fire station and social quarters are located at the southwest corner of Easton Avenue (William Penn Highway) and Seventh Street in Bethlehem Township. The entire staff of our fire company consists of dedicated volunteers which each year donate over 1,400 man-hours in training and education, and numerous additional hours spent on fund-raising, fire prevention, station maintenance, and apparatus maintenance. Our fire company operates two modern, custom built, attack engines and an 85-foot aerial ladder/pumper combination truck. These apparatus carry an enormous array of modern firefighting and rescue equipment. Our company provides the primary fire suppression, fire control, and hazard mitigation services for any emergency arising within the boundaries of the Township of Bethlehem. In addition, our company provides back-up and support service to the primary rescue agency on all vehicle accident alarms; the Bethlehem Township Volunteer Fire Co. and Ambulance Corps. Our fire company operates with a working staff consisting of 30 designated firefighters, which are required to maintain minimal training and participation requirements, and 50 other members which provide various types of support service.

In reference to the proposed Route 33 extension, our fire department would appreciate special consideration be given for the provision of emergency accessways for both the northbound and southbound lanes. This will be especially important if either the William Penn Highway or Freemansburg Avenue don't provide for both northbound and southbound entrance ramps. The provision of such accessways will greatly enhance a quick response to any resulting fire or emergency situations. Emergency call boxes or telephones will also be an asset, especially in the area of the Lehigh River bridge.

On behalf of the Nancy Run Fire Company, I would like to thank you for your interest in our service and if any further and/or more specific information is required, please do not hesitate to request same.

Sincerely,

Wayne C. Bonney
President

MEMORANDUM OF PHONE CONVERSATION

DATE: November 3, 1989
RE: Route 33 Extension
Between Richard Jones
and Susan Scaer

GANNETT FLEMING TRANSPORTATION ENGINEERS
P. O. BOX 1963
HARRISBURG, PA 17105
Phone: (717) 763-7211

DISCUSSION

I talked with Mr. Jones of the Easton City Water Bureau Filtration Office to determine whether any locations along the Lehigh River downstream of the project are used for water supply. Mr. Jones said that there are no Water Treatment Facilities located along the Lehigh River from Route 33 to Easton. The Delaware River is used a water supply for the City of Easton.

Memorandum prepared by Susan S. Scaer

cc: _____

File 25179

Commonwealth of Pennsylvania
Environmental Resources
April 14, 1989
717-783-0471

In reply refer to
WO:5

Subject: Minutes of the Environmental Review Committee Meeting
March 28, 1989

To: Members of the Environmental Review Committee

From: Khervin D. Smith, Chief
Environmental Review Section
Division of Rivers and Wetlands Conservation
Bureau of Water Resources Management

At 10:00 a.m. on March 28, 1989 the members of the Environmental Review Committee listed on the attached sheet held their monthly meeting in the second floor main conference room of the Evangelical Press Building, Third and Reily Streets, Harrisburg, Pennsylvania.

I. The minutes of the February 28, 1989 meeting were modified to read as follows:

Page 2, Item 3, PennDOT SR0011, Routes 11 and 15. The Corps has already been on-site, and they will review the report and provide comments.

Page 4, Item 2, PennDOT SR0033, Alternative 1 impacts a wetland through the placement of a bridge pier; Alternative 2 has no wetland impacts.

II. DER Bureau of Water Projects

A. Old Business

1. DER Project S18:13, Beech Creek, Beech Creek Township, Clinton County. The project scope has been modified to include the construction of a channel block only, eliminating the filling of the old channel. The side channels (tributaries) will not be impacted. The U.S. Fish and Wildlife Service and Pennsylvania Fish Commission have no objections. The Environmental Review Committee recommends approval.
2. DER Project S40:85, Gardner Creek, Borough of Laffin, Luzerne County. The U.S. Fish and Wildlife Service has no comments. The Pennsylvania Fish Commission and Corps of Engineers have no objections. The Environmental Review Committee recommends approval.

3. DER Project S59:3, Tioga River, Covington Township, Tioga County. The U.S. Fish and Wildlife has no comment. The Pennsylvania Fish Commission and Corps of Engineers have no objections. The Environmental Review Committee recommends approval.

B. New Business

1. DER Project S2:4, West Little Pine Creek, Shaler Township, Allegheny County. Project includes approximately 150 feet of channel improvements including riprap, bank stabilization and a gravel removal (via the elevated floodplain concept). The U.S. Fish and Wildlife Service will conduct an on-site inspection. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
2. DER Project S13:3, Hunter and Buckwa Creeks, Lower Towamensing Township, Carbon County. Project includes channel realignment through gravel removal (project will restore flood damages). No vegetation removal will occur. The U.S. Fish and Wildlife Service will conduct an on-site inspection. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
3. DER Project S58:36, Tunkhannock Creek, Lenox Township, Susquehanna County. Project includes the placement of rock fill for approximately 200 feet to prevent the collapse of the existing streambank. The U.S. Fish and Wildlife Service indicated that it will concur with the Pennsylvania Fish Commission. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
4. DER Project S67:61, South Branch Codorus Creek, Borough of Seven Valleys, York County. This project proposes the construction of an embankment to eliminate/control a chronic flooding problem. The U.S. Fish and Wildlife Service and Corps of Engineers will conduct a joint on-site inspection. The agencies expressed concern that some form of bank stabilization may also be needed based upon photographs submitted at this meeting. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
5. DER Project S67:61, Cherry Run, Codorus Township, York County. Project proposes the removal of approximately 300 feet of channel deposits with the concurrent removal of a badly undersized bridge by the local government. The agencies will conduct an on-site inspection. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
6. DER Project S22:42, Asylum Creek, City of Harrisburg, Dauphin County. Project proposes removal of channel deposits for approximately 440 feet in addition to approximately 175 feet of removal into Paxton Creek. The U.S. Fish and Wildlife Service has no comment. The Pennsylvania Fish Commission, Corps of Engineers and the DER have no objections. The Environmental Review Committee recommends approval.

III. COE- Baltimore District

A. Pre-Application

1. PennDOT SR0222, Warren Street Bypass, Berks County, concurrence in the wetland identification and delineation report. The resource agencies (DER, COE, BGC) met on-site March 22, 1989 and based upon that meeting concur with the wetland delineation and identification; and alternatives analysis (Brown alternative is the preferred alternative). The U.S. Fish and Wildlife Service concurs with DER. The Environmental Review Committee concurs with the wetland delineation and identification report and that the Brown alternative is the best alternative. The committee further indicated that barring no major alterations, this concurrence is valid for three years after which a desk top review will be required.
2. PennDOT SR0309, Cross Valley Expressway, Luzerne County, preliminary alternative analysis. Four wetland areas were determined to exist, two of which will be impacted. Impacts will be mitigated through enlarging an existing wetland area on the site. The U.S. Fish and Wildlife Service and Corps of Engineers has been on-site and indicate that wetland B is a critical wetland and should be preserved. The U.S. Fish and Wildlife Service, Pennsylvania Fish Commission, Corps of Engineers and DER concur with the alternative analysis (alternative B is the preferred alternative). The Environmental Review Committee concurs with the alternatives analysis and the location of the mitigation site.
3. PennDOT, Route 11 and 15. The agencies expressed concern over the piecemealing of such a large project. The current proposal is for the northern 8 miles, with 6 acres of wetlands to be impacted. DER, U.S. Fish and Wildlife Service and the Fish Commission want to see the project evaluated as a whole.
4. PennDOT, S.R. 0006, Wysox Bridge replacement Bradford County. The Corps of Engineers concur with the wetlands delineation, therefore, based upon the minutes of the February 28, 1989 Environmental Review Committee meeting the Environmental Review Committee concurs with delineation. This item will be placed on the April 25, 1989 Environmental Review Committee agenda for discussion of alternatives analysis.

B. Old Business

1. E 14-133, Clark Motor Company Inc. To dredge the channels of Walnut Creek and Mill Race and construct and maintain a levee along the bank of Walnut Creek located at a point on the south side of Pennsylvania Route 26 (East College Avenue) and approximately 800 feet west of Route 26 and S.R. 3012, College Township, Centre County. The Pennsylvania Fish Commission objects due to the lack of information. The U.S. Fish and Wildlife Service and Corps of Engineers have no objections. DER will contact the applicant to obtain the necessary information. The Department will forward that information to the Pennsylvania Fish Commission and act upon receipt of their comments.
2. E 14-135, DER; Bureau of State Parks. To construct and maintain a camp site and access road in a wetland at a point approximately 1500 feet south of the intersection of T-471 and U.S. Route 22, Liberty Township, Centre County. The Pennsylvania Fish Commission and U.S. Fish and Wildlife Service have no objections. However, the Fish and Wildlife Service recommends mitigation for the wetland

losses. The Corps of Engineers issued a nationwide permit with a mitigation request. The Environmental Review Committee recommends conditional approval with mitigation.

3. E 28-136, Leah M. Dull/Robert Crider. To remove channel deposits from and to maintain 2300 feet of a tributary to the Conococheaque Creek beginning upstream of Lincoln Terrace Road in Gilford Township, Franklin County. The Pennsylvania Fish Commission recommends denial. The U.S. Fish and Wildlife Service will forward their comments in writing, pending the results of an on-site inspection. The Corps of Engineers indicates that a letter of no objection may have been issued. DER will hold and act upon the receipt of the U.S. Fish and Wildlife Service comments.
4. E 41-218, Lycoming County Board of Commissioners. To excavate approximately 0.7 acres of wetlands adjacent to a tributary to Black Run located at a point on the west side of Pennsylvania Route 15 approximately 1800 feet south of the intersection of T-409 and PA Route 15, Brady Township, Lycoming County. The U.S. Fish and Wildlife Service needs additional information. DER will contact the applicant and request that a set of plans be sent directly to the Fish and Wildlife Service. The Pennsylvania Fish Commission was on-site and have no objections. They indicated that the project site is adjacent to an existing landfill. The Corps of Engineers issued a Nationwide Permit 26. The U.S. Fish and Wildlife Service will conduct an on-site inspection and forward those comments to DER. DER will act upon receipt of those comments.
5. E 55-082, Cletus Clotfelter. To remove silt and debris from and maintain the channel of a tributary to Middle Creek located at a point approximately 1300 feet southeast of the intersection of T-399 and U.S. Route 522 Franklin Township, Snyder County. The Corps of Engineers has no jurisdiction but questions the need for the project. The Pennsylvania Fish Commission objects indicating that the project will defeat it's purpose and will actually worsen bank erosion. The U.S. Fish and Wildlife Service concurs with the Pennsylvania Fish Commission. The Environmental Review Committee recommends denial.
6. E 60-078, Alvin M. Reiff. To maintain an existing drainage ditch near the north branch of Buffalo Creek located at a point along L.R. 59017 just northeast of the existing bridge, Buffalo Township, Union County. The Pennsylvania Fish Commission indicates that the stream is a dry ditch, that work has been done and that all that remains is stabilization. The U.S. Fish and Wildlife Service will conduct an on-site investigation. DER will hold for the U.S. Fish and Wildlife Service and Corps of Engineers comments based upon their inspections. Based upon photographs in the file, the Environmental Review Committee recommends tentative denial due to wetlands impacts, all of which will be verified by field views.

C. New Business

1. D 01-093, Albert Bair/Littlestown Community Park. To construct, operate and maintain a dam across Piney Creek approximately 7 miles upstream of the confluence of Piney Creek with the Monocacy River in Jermyn Township, Adams County. The U.S. Fish and Wildlife Service recommends denial. The Pennsylvania Fish Commission recommends approval with modifications. This item will be placed on April 25, 1989 Environmental Review Committee meeting agenda for further considerations.

2. D 08-071, Michael J. Pona. To construct, operate and maintain a dam across an unnamed tributary of Sugar Run approximately 2.5 miles upstream of the confluence of the unnamed tributary with Sugar Run in Terry Township, Bradford County. The Pennsylvania Fish Commission objects and indicates that alternatives exist to eliminate wetland impacts. Furthermore, the wetland impacts are purported to be greater than shown in application materials. The U.S. Fish and Wildlife Service concurs and recommends denial. The Environmental Review Committee recommends denial based upon the presences of alternatives to eliminate wetland impacts.
3. D 24-057A, Jay Township Water Authority. To construct, operate and maintain an intake dam located across Byrnes Run in Jay Township, Elk County. The Pennsylvania Fish Commission will not object based upon maintenance of a minimum release. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
4. E 50-114, Spring Lake Development Incorporated (Fred Thebes). To remove the existing structure and to construct and maintain twin 7.9 foot by 5.58 foot CMP arch culverts across Little Juniata Creek located at points south of S.R. 274 approximately 1100 feet south of the intersection Route 274 and Locust Street, Center Township and New Bloomfield Borough, Perry County. The Corps of Engineers issued a Nationwide Permit #14. The U.S. Fish and Wildlife Service and Pennsylvania Fish Commission have no objections. The Environmental Review Committee recommends tentative approval contingent upon resolution of outstanding EPA enforcement action.
5. E 67-328, Springettsbury Township. To place and maintain 200 linear feet of fill in wetlands for a public road associated with the Memory Lane extension in the "Livingston Pond" located at a point on Pleasant Valley Road approximately 50 feet west of the intersection of Memory Lane (T-980) and Pleasant Valley Road, Springettsbury Township, York County. This project is associated with the "Gallarea at York." The Pennsylvania Fish Commission objects. The Corps of Engineers issued a Nationwide Permit #26. The agencies expressed concerns over the existence of less damaging alternatives. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.

IV. COE - Buffalo District

- A. Pre-Application
- B. Old Business
- C. New Business

V. COE - Philadelphia District

A. Pre-Application

1. PennDOT TR 33, S.R. 0033 extension, Northampton County. Concurrence in the wetlands identification delineation plan. The Pennsylvania Fish Commission, the Pennsylvania Game Commission, Corps of Engineers, and U.S. Fish and Wildlife Service concur with the delineation. The Pennsylvania Fish Commission and U.S. Fish and Wildlife Service concur with the alternatives analysis (alternative 1 is the preferred alternative). DER concurs with both the wetland identification and delineation report and alternative analysis. The Environmental Review Committee concurs with the wetland identification delineation document and the alternative analysis.
2. Schuylkill Haven Casket Company, Borough of Schuylkill Haven, Schuylkill County. The representative for this project could not attend this meeting therefore based upon his request this item will be rescheduled for the April 25, 1989 Environmental Review Committee meeting.
3. The Warner Company, Falls Township, Bucks County. Request for environmental concurrence on a revised proposal for an existing sand and gravel mining permit. The current proposal leaves two island areas with small ponds intact. However the project consultant feels that these areas will be of little environmental value. The Warner Company now proposes a plan which eliminates these area (impacting 0.3 acres of wetlands) however will allow for, through construction methods, the creation of approximately 9 acres of wetland edge along the shoreline. Lake depth after mining will vary to 15 feet. The agencies recommended that the Warner Company get back to the mining people and determine first if they are willing to accept this proposal. The agencies then wish to further review the T & E reports and alternatives analysis before making any recommendations.

B. Old Business

1. E 06-2bd, Jacob Finkelstein. To place and maintain fill in wetlands for 3 driveway crossings at a point approximately 500 feet north of the intersection of Delong Road (T-876) and Bitting Road (S.R. 1026), District Township, Berks County. The applicant proposes 3 driveway crossings through wetlands. The lots which need the crossings have not yet been sold. DER expressed concern over the accuracy of the wetland line. The U.S. Fish and Wildlife Service indicated that they were involved 2 to 3 years ago at which time no lots had been subdivided and/or sold and this situation could have been avoided. The applicant claims that no alternative access exists. DER and U.S. Fish and Wildlife Service will make a coordinated on-site inspection and resolve this situation.

2. E 09-367, Main Street Associates. To remove an existing structure and to construct and maintain two 14.5 foot box culverts in Silver Creek located at a point 1750 feet upstream from its confluence with Cooks Creek in Springfield Township, Bucks County. The Pennsylvania Fish Commission objects to the culvert as proposed due to its potential inability to pass fish. Conversations between the applicant and DER have indicated that a bridge structure is being considered. The Corps of Engineers issued a nationwide permit. U.S. Fish and Wildlife Service needed additional information, the applicant was requested to provide the service with plans for the project. This item will be held in advance until: (1.) the bridge issue is resolved and (2.) the U.S. Fish and Wildlife Service has an opportunity to review the project proposal.
3. E 09-380, Otilia and Robert Rutherford. To place and maintain fill (0.86 acres) and a driveway culvert in a wetland located at a point approximately 850 feet northeast of the intersection of Landsville Road (T-399) and Stoney Road (T-376), Buckingham Township, Bucks County. The Pennsylvania Fish Commission indicates that no alternative accesses exist and recommend relocating the road to one edge of the property to minimize the adverse impacts to the wetland in question. The U.S. Fish and Wildlife Service recommends denial as proposed and further recommends evaluating other alternative access. DER will contact the applicant in an attempt to resolve.
4. E 09-389, Faulkner Organization. To place and maintain fill in the wetlands and to construct and maintain a stream enclosure in a tributary to Neshaminy Creek located at a point approximately 1000 feet west of the intersection of Stree Road and Old Lincoln Highway, Bensalem Township, Bucks County. The Pennsylvania Fish Commission objects indicating that there is no justification or alternatives analysis. The U.S. Fish Wildlife Service needs additional information. The consultant for the project was contacted and requested to provide plans for the U.S. Fish and Wildlife Service. DER will contact the applicant pending receipt of U.S. Fish and Wildlife comments to resolve agency concerns.
5. E 09-393, The Cutler Group Inc. To place and maintain fill and a 30 inch diameter culvert in a tributary to Neshaminy Creek and associated wetlands located in the southern corner of Lower State Road and Wells Road, Doylestown Township, Bucks County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service needs additional information. DER contacted the applicant and requested that plans be sent directly to the Service. DER will handle upon receipt of U.S. Fish and Wildlife Service comments.
6. E 09-397, H & L Development Company to construct and maintain a driveway crossing and to place and maintain fill within the wetland (0.3 acres) located at a point approximately 2000 feet southeast of Redwing Road and southwest of Swank Mill Road, Hilltown Township, Bucks County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service will call with comments. DER will act upon receipt of U.S. Fish and Wildlife Service comments.
7. E 09-398, H & L Development Company to place and maintain fill in a wetlands (0.3 acres) and to extend an existing 8 foot by 2 foot RC box culvert located at a point approximately 2600 feet southwest of the intersection of Doorum Road (PA Route 413) with Mechanicsville Road, Buckingham Township, Bucks County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service will call with comments. DER will act upon receipt of U.S. Fish and Wildlife Service comments.

8. E 15-221, Caln Township. To relocate and maintain 2000 feet of Valley Run and place and maintain fill in associated wetlands associated with the extension of G. O. Carson Boulevard from Municipal Drive to Bonnsville Road, Caln Township, Chester County. Revised plans have been drawn up but have not yet been sent to resource agencies. The plans are to show no relocation of the stream. This item will be held in abeyance until those plans are received and the agencies have had an opportunity to review said plans.
9. E 15-233, Bernard Hankin. To place fill within a wetland area of 0.64 acres associated with the extension of two roads and an apartment building located within the Gertrude D. McDaniel Estate - North Side and East Goshen and Westtown Townships, Chester County. The Pennsylvania Fish Commission has no objections due to the small impact (800 square feet) for the building. The U.S. Fish and Wildlife Service needs additional information. The applicant was contacted and requested to forward plans directly to the Service. The Corps of Engineers issued a Nationwide Permit 26. DER will handle upon receipt of U.S. Fish and Wildlife Service comments.
10. E 15-179, PennDOT, State Route 0029, Route 29-202 project, final wetland mitigation plan. PennDOT distributed the final mitigation plan for the project and furthermore indicated that one plate of the plans needs some additional revisions regarding plant spacing to reduce the cost (densities are too high). The overall concept will not change. The Pennsylvania Fish Commission is satisfied with the plan, their previous comments have been incorporated. Agencies will review the plan and forward comments to PennDOT. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
11. E 15-238, Greenridge Development Corporation. To construct and maintain an 8 foot by 3 foot RC box culvert in a tributary channel to Blackhorse Creek on Shea Lake and to place and maintain fill in 0.5 acres of wetlands and an 18 inch water-line under the bed and across the channel located at a point approximately 7500 feet northwest of the intersection of Front Road and Route 100, Upper Uwchlan Township, Chester County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service needs additional information to review the project. DER contacted the applicant and requested the plans be sent directly to the Fish and Wildlife Service. DER will handle upon receipt of U.S. Fish and Wildlife Service comments.
12. E 15-240, Margusity and Associates. To drain and fill an existing manmade pond within the Barley Green subdivision for lots 29, 30, 31 and 32 on north Barleysheaf Road locate approximately 1100 feet north of its intersection with Barleysheaf Road, Caln Township, Chester County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service needed additional information to review the project. DER contacted the applicant and requested the plans be sent directly to the Fish and Wildlife Service. DER will handle upon receipt of U.S. Fish and Wildlife Service comments.

13. E 15-243, P & M Land Management Company. To construct and maintain Oak Drive through a wetland area beginning on the east side of the intersection of Newcomen Road and Martins Lane for the Oakfield Subdivision, Charlestown Township, Chester County. The U.S. Fish and Wildlife Service was on-site and recommended denial pending analysis of alternatives. The Fish Commission tentatively has no objections, pending consultation with the Fish and Wildlife Service. DER will contact the applicant to further explore alternatives.
14. E 23-184, Glen Eagle Square Inc. To place and maintain fill in approximately 0.8 acres of wetlands located on the east side of Route 202 south of the intersection of Springhill Road in Concord and Birmingham Townships, Delaware County. The U.S. Fish and Wildlife Service objects to the placement of buildings and parking areas in wetlands and the Pennsylvania Fish Commission concurs. Concerns were expressed by the agencies over the accuracy of wetland line. DER and the U.S. Fish and Wildlife Service will conduct a joint on-site inspection to verify the wetland boundaries.
15. E 23-187, Riddle Memorial Hospital. To place and maintain fill in the wetland and to construct and maintain a 72 inch diameter pipe culvert in a tributary to Chrome Run located at a point approximately $\frac{1}{2}$ mile east of the intersection of U.S. Route 1 and State Route 452 Middletown Township, Delaware County. The U.S. Fish and Wildlife Service was on-site and indicates that the wetland in question is mostly phragmites and subsequently of low value. The U.S. Fish and Wildlife Service and the Pennsylvania Fish Commission have no objections to the wetland encroachment. Concerns were expressed however over the presence of a federally listed plant species and 4 state listed plants (T & E) and a serpentine barrens. The resource agencies will coordinate closely with the applicant in an attempt to resolve concerns over the T & E species.
16. E 45-099, Royal Oaks Development Limited. Department comments based upon comments received on its record of decision, Price Township, Monroe County. The applicant has been in contact with DER and indicated that they will relocate the road crossings on narrow point of the wetlands. This item will be placed on hold until such revisions are received.
17. E 45-133, Shawnee Development Incorporated. To construct and maintain stream and wetland encroachments (culverts, fills and roadway crossings) associated with the proposed Shawnee Valley Development located along Shawnee Creek and tributaries thereto, Smithfield Township, Monroe County. The U.S. Fish and Wildlife Service and Pennsylvania Fish Commission have no objections. DER indicated they will conduct an on-site inspection to evaluate potential impact. DER will handle based upon the result of their field investigation.
18. E 46-388, Pennsylvania Turnpike Commission, Mid County Expressway, final comments on the mitigation plan, Montgomery County. The consultants for the project was present to discuss the wetland mitigation plan for the project. There will be a 3.6 acre replacement site, replacement wetlands will be emergent, emergent/scrub shrub and shrub scrub wetlands adjacent to an existing wetland. Groundwater will provide the hydrology for the new wetlands; if however for some reason ground water is not adequate an alternative source does exist. The agencies have no objections to the conceptual plan. The Environmental Review Committee concurs with the conceptual wetland mitigation plan pending verification of adequate hydrology.

19. E 46-414, PennDOT. To widen the existing road from 2 lanes to 4 lanes including the filling of wetlands and waterways, relocation of channels and extensions of 10 foot by 5 foot culvert along and in the tributaries to Park Creek at a point on S.R. 0463, Horsham Road between Privet and Babylon Roads, Horsham Township, Montgomery County. The plans for the relocated stream channel have been revised to include random boulder placement, and riprap placement will be limited to the outside of bends on the streambank. Planting densities will also be increased and plantings will continue onto the elevated floodplain. The Pennsylvania Fish Commission indicates that their concerns have been addressed. The Environmental Review Committee recommends approval pending receipt of final revised plans.
20. E 46-392, Maurie and Rina Fox. To place and maintain fill in the wetlands located at a point along Springmount Road approximately 2000 feet north of the intersection of Route 29/73 and Springmount Road, Lower Frederick Township, Montgomery County. The Pennsylvania Fish Commission has no objection to the regulated aspects. The U.S. Fish and Wildlife Service has no objections given litigation. DER expressed concerns over the basin being located in the wetlands. DER will contact the applicant in an attempt to resolve their concerns.
21. E 48-121, Gary Strausser. To construct and maintain three 48 inch CMP culverts in a tributary to Schoeneck Creek and to place fill in associated wetlands and to relocate and maintain the channel of said tributary located at a point approximately 900 feet north of L.R. 48020, Palmer Township, Northampton County. The U.S. Fish and Wildlife Service was on-site and indicated that no wetlands are present. The U.S. Fish and Wildlife Service has no objection. The Pennsylvania Fish Commission concurs. The Environmental Review Committee recommends approval.
22. E 48-125, City of Bethlehem. To construct and maintain a 6 foot by 16 foot box culvert and an 8 foot by 18 foot box culvert in and to relocate and maintain an existing sanitary sewer line and a portion of the channel of a tributary to Lehigh River located at a point along the east side of Stefko Boulevard (L.R. 48129) south of the intersection of Pembroke Road, (L.R. 48011) and Stefko Boulevard, City of Bethlehem, Northampton County. The U.S. Fish and Wildlife Service has no comments. The Pennsylvania Fish Commission has no objections. The Environmental Review Committee recommends approval.
23. E 51-096, Liberty Marina Inc. To construct and maintain a marina and cleanup, place riprap and maintain the existing shoreline starting at a point near the Taconey - Palmyra Bridge and extending approximately 1300 feet downstream, City of Philadelphia, Philadelphia County. The Pennsylvania Fish Commission and U.S. Fish and Wildlife Service have no objections. DER has no objection pending the Corps approval that the project will not adversely impact navigation. The Environmental Review Committee recommends conditional approval pending no adverse effects upon navigation.
24. E 52-055, David Katz. To maintain an existing 8 foot diameter culvert in Rosetown Creek located at a point approximately 1200 feet northwest of the intersection of Rosetown Trail and S.R. 1010 and to construct and maintain an 8 foot diameter culvert in said stream located at a point on Rosetown Trail approximately 200 feet northeast of Overlook Trail, Milford Township, Pike County. The Pennsylvania Fish Commission expressed concerns over fish passage

through the existing structures. U.S. Fish and Wildlife Service has advised the applicant to have the wetlands on the proposed development site delineated.

- The Environmental Review Committee recommends denial for the culverts and recommends that bridges be constructed in place of those culverts. DER will investigate the waivers which have been issued for the project.

C. New Business

1. **E 06-283, Ciotti Construction Company.** To place and maintain fill in the wetland area (least than 1 acre) and to construct and maintain an 8 inch and 12 inch water and sewer line across a tributary to Antietam Creek relative to the Hunters Run subdivision located 300 feet southeast of the intersection of Shelbourne Road and Route 562 Exeter Township, Berks County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
2. **E 15-237, KPR Associates.** To construct and maintain two 36 inch by 22 inch CMP arch culverts and a 3.8 foot by 3 foot box culvert in Hunters Run and through 0.95 acres of wetlands on a tributary channel to the West Branch Brandywine Creek and 8 inch sanitary sewer line under the tributary channel and a 4 inch forcemain with outfall headwalls located between Hibernia Road and Manor Road for the Ridings of Hibernia, West Brandywine Township, Chester County. Pennsylvania Fish Commission objects and recommends that the proposed pond be relocated offstream. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
3. **E 23-175, The Basile Corporation.** To construct and maintain a 14 foot 1 inch by 8 foot 1 inch CMP culvert in Spring Run at a point approximately 400 feet north of Larkin Road and Naamans Creek Road (Route 491) intersection Upper Chichester Township, Delaware County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
4. **E 23-181, Rouse and Associates** to construct and maintain a detention basin embankment and a loading dock along the right bank of Bezor's Run and to place and maintain fill in the wetlands located at a point on the north side of Route 322 (Conchester Road) and east of Chichester Road, Upper Chichester Township, Delaware County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
5. **E 23-183, Furguson & Flynn Enterprises.** To place and maintain fill in approximately 4.7 acres of wetlands for the construction of access roads, detention basins and residences at the Chartwell Subdivision in Bethel Township, Delaware County. The U.S. Fish and Wildlife Services been involved with this project for quite some time. Recommendations include eliminating one detention basin, eliminating a cul-de-sac and several lots and pulling one cul-de-sac back several feet. These revisions will lower the wetland impacts to less than 1.5 acres. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.

6. E 23-186, Edward J. McErlean. To place and maintain fill in approximately 0.4 acres of wetlands located at a point between Pennel Road (Route 452) and the Franklin Center, Middletown Township, Delaware County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
7. E 46-413, Appaloosa Development Corporation. To place and maintain fill and to recreate approximately 0.19 acres of wetlands adjacent to Arrowmink Creek located at a point north of the intersection of Wesley's Run and Conshohocken State Road, Lower Merion Township, Montgomery County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
8. E 64-078, Floyd Yamilkowski to excavate a pond in the wetlands associated with a tributary to Headley Brook located at a point approximately 2000 feet northeast of the intersection of T-453 and Route 943 Canaan Township, Wayne County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
9. E 06-280, Donald J. Whitman. To place and maintain fill along, construct gabion bank protection, a pedestrian bridge and a pond along Wyomissing Creek in Shillington Boro and Cumru Township, Berks County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.

VI. COE - Pittsburgh District

A. Pre-Application

1. PennDOT S.R. 6119, Section A08, Chadville demonstration project, Fayette County. Presentation of alternatives analysis. The wetland identification and delineation document was concurred with at the February 28, 1989 Environmental Review Committee meeting. The road alignment has been shifted to miss wetlands WS-8 however wetland WS-2 cannot be avoided. The Pennsylvania Fish Commission concurs with the preferred alternative (alternative 2) however they still recommend further evaluation of the no action alternative. Concerns were expressed by the agencies over the piece-mealing effect of highway projects given that this is a small portion of the Mon Valley Expressway project. This item will be held in abeyance until separate meetings for this project and others like it (small part of large project) is held. PennDOT will contact the agencies.
2. PennDOT, Uniontown bypass. DER, U.S. Fish and Wildlife Service and Pennsylvania Fish Commission concur with the wetland identification and delineation. The Environmental Review Committee concurs with the wetland identification and delineation document.

B. Old Business

1. - D 02-081, Pittsburgh North Golf Club Inc. To construct, operate and maintain an earthen dam (Bakerstown Dam No. 6) across a tributary to Deer Creek at a point 6500 feet upstream from the West Deer boundary, Richland Township, Allegheny County. The Pennsylvania Fish Commission has no comment. The U.S. Fish and Wildlife Service is conducting an on-site inspection. DER will handle upon receipt of Fish and Wildlife Service comments.
2. E 02-758, Brennan Builders Inc. To construct and maintain a 72 inch diameter RC stream enclosure and a detention pond in a channel of a tributary to Girty's Run at a point west of Thompson Run Road and 0.5 miles north of Babcock Boulevard, Ross Township, Allegheny County. The Pennsylvania Fish Commission has no comment. The U.S. Fish and Wildlife Service will conduct an on-site inspection. DER will handle upon receipt of Fish and Wildlife Service comments.
3. E 02-759, Pittsburgh Sand and Gravel Incorporated to perform commercial dredging in the Allegheny River by the Dredge Thaddeus Carr (on board processing) in pool #3 between mile point 17.75 and 18.3; 18.4 and 18.8; 19.5 and 20.9; and in pool #4 between mile points 24.9 and 28.5 and Plum Borough, City of Lower Burrell, City of New Kensington, City of Arnold and Allegheny Township, Westmoreland County and Springdale Township, East Butler Township and Harrison Township, Allegheny County. The Pennsylvania Fish Commission objects to the project. The Bureau of Water Quality Management concurs. Objections focus primarily upon the impacts from suspended solids to overall water quality and aquatic habitat. The Pennsylvania Fish Commission recommends that monitoring restrictions be imposed upon ongoing onboard processing operations to determine if adverse impacts are occurring. DER will continue to coordinate activities with the Pennsylvania Fish Commission.
4. E 03-255, Pittsburgh Sand and Gravel Inc. To perform commercial dredging in the Allegheny River by the Dredge Thaddeus Carr (on board processing) in pool #5 between mile points 31.6 and 32.4; and 32.45 and 34.0, South Buffalo and Gilpin Township, Armstrong County. The Pennsylvania Fish Commission objects to the project. The Bureau of Water Quality Management concurs. Objections focused primarily upon the impacts of suspended solids to overall water quality and aquatic habitat. The Pennsylvania Fish Commission recommends monitoring restrictions be imposed upon ongoing onboard processing operations to determine if adverse impacts are occurring. DER will continue to coordinate activities with the Pennsylvania Fish Commission.
5. E 10-131, Pennsylvania Services Corporation. To construct and maintain approximately 800 feet of 36 inch RC pipe culvert in a tributary channel to Brush Creek and place fill within 0.2 acres of wetlands located between Route 19 and Old Route 19 (T-315) Cranberry Township, Monroe County. The Pennsylvania Fish Commission objects to the enclosure due to adverse aquatic impacts. The U.S. Fish and Wildlife Service will conduct an on-site inspection. DER handle based upon receipt of U.S. Fish and Wildlife Service comments.
6. E 43-173, Greenville Reynolds Development Corporation. To relocate and maintain the channel of a tributary to Big Run for a length of approximately 750 feet, to construct and maintain a sewer pipeline across the same tributary channel and to fill a wetland area of approximately 0.9 acres relative to the expansion of a Reynolds Industrial Park located on the east side of State Route 18

- just south of West Salem Township boundary line, Pymatuning Township, Mercer County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service has no additional comments. DER will conduct an on-site inspection due to (1.) lack of other agency time, (2.) lack of clarity of a file photograph and (3.) lack of project justification. DER will conduct an inspection within 3 weeks of this meeting and report back to the agencies.
7. E 56-177, Southern Allegheny Disposal Service Inc. To construct a soil storage stockpile area within 0.3 acres of wetlands as part of landfill expansion for a solid waste facility located east of U.S. Route 19 along a tributary to Stoney Creek, Conemaugh Township, Somerset County. The Pennsylvania Fish Commission has no objections. The U.S. Fish and Wildlife Service will conduct an on-site inspection and DER will act upon the receipt of those comments.
 8. D 63-118, Nema colon Country Club. To operate and maintain a Nema colon Dam across a tributary to Pike Run at a point 900 feet west of the West Pike Run Township boundary between Beallesville and Richieville, West Pike Run Township, Washington County. The Pennsylvania Fish Commission indicates that the stream is degraded by acid mine drainage, furthermore the Pennsylvania Fish Commission indicated that Nema colon has not settled with the Commission over the last fish kill that they caused. Current proposal includes elimination of bottom discharge from the impoundment which will improve water quality. DER will determine how to resolve and coordinate with the resource agencies.
 9. D 63-119, Ryan Homes Inc. To construct, operate and maintain a dam (Timber Lake) across a tributary to Peters Creek, Peters Township, Washington County. The Pennsylvania Fish Commission has objections from its Waterways Conservation Officer. The U.S. Fish and Wildlife Service has no comments. It was determined that wetlands exist downstream of the project. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further clarification of agencies comments.

C. **New Business**

1. E 37-070, Mahoning Valley Sand Company. To perform commercial dredging in the Beaver River beginning at a point 500 feet north of the State Route 288 Bridge to a point 500 feet south of State Route 168 by the use of a barge mounted clam shell, Wampum and New Beaver Boroughs and Taylor, North Beaver and Wayne Townships, Lawrence County. The Pennsylvania Fish Commission has strong objections. The current standard dredging conditions prevent the Beaver River from being dredged commercially.. This item will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
2. E 43-178, Sharon Steel Corporation. To perform maintenance dredging in front of an existing raw water intake structure located along the east bank of the Shenango River approximately 1 mile southwest of the intersection of Broadway Avenue and Roemer Boulevard in the City of Farrell, Mercer County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
3. E 61-148, Pleasantville Borough. To perform site grading and to construct and maintain chlorine contact tanks and outfall structures and stream channel improvements associated with the proposed Pleasantville waste water treatment

plant located along a tributary to West Pithole Creek approximately one quarter of a mile south of the intersection of State Routes 27/277 and 36 in the Borough of Pleasantville, Venango County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.

4. E 65-372, DER; Bureau of Abandoned Mine Reclamation. To reclaim two abandoned mine refuse piles, backfill two abandoned mine shafts and install riprap along Andrews Run in Hempfield Township, Westmoreland County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.
5. E 65-376, Prime Choice V, Inc. To relocate and maintain a channel of an unnamed tributary to Spurrs Run, Rostraver Township, Westmoreland County. This item was introduced and will be placed on the April 25, 1989 Environmental Review Committee meeting agenda for further consideration.

VII. Old Business

VIII. New Business

Attachment

ERC

Rick SHANNON
 * * * * *
 Tom Pluta
 Patricia H. Strong
 Ed PERRY
 Ron Tillott
 James Aronson
 Tom Proch
 Jim Satter
 Ed Francis
 MIKE CONWAY
 John B. Blumstein
 Sandra Frey
 Jocelyn Kelley
 Rick Coleman
 Edward R. Oslick
 Brian A. McLoon
 Bill Jenkins
 Chuck Zelaski
 WIM LINDEBOOM
 JOSEPH PINTO
 Dave Painter
 Steve Jones
 Bob Keller
 * * * * *
 Jacob Finkelstein

MARCH 28, 1989

DER - Rivers & Wetlands
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 C.O.E. - Balt.
 " " "
 FWS
 Pa. Fish Comm.
 PFC
 DER - PGH
 BWOM
 Penn DOT - EQG
 " " "

DER - WATER PROJECTS

DER - DURRIN
 Boswell Yule Jordan
 BCM Engineers
 STV/Sanders & Thomas
 Pa DOT District
 PENNCO, Bureau of Design
 COE, Phila.
 Tins Netrick & Pierce
 PICKERING, CARTS & SUMMERSON
 WARNER Co.
 " " "
 Bm
 Penn DOT, Dist 5-0
 Jacob Finkelstein

The following is an excerpt from the Minutes of the July 26, 1989 Transportation Project Development Interagency Coordination Meeting.

District 5-0

1. T.R. 33 Extension (Northampton): Copies of a preliminary alternatives analysis overview handout were distributed to meeting attendees. District staff provided a brief discussion of project background, project purpose and need. Lehigh-Northampton Joint Planning Commission staff then provided a detailed discussion of the project planning background and history, study area conditions as well as potential project benefits. The planning commission's consultant staff then presented a detailed discussion of the environmental and engineering consideration/constraints utilized in the development and/or dismissal of various project alternatives that were evaluated. This information and the results of the evaluation are presented on Tables 1 and 2 of the handout. Based on the information presented, the agencies did not express any objections to the alternatives analysis process and the evaluation performed to date. The agencies did however request that certain information be contained in the draft EIS. This information includes whether or not causeway construction is required to construct the proposed bridge structure and any impacts associated with such construction; potential for secondary development and associated impacts (to the extent possible). Also, the alternatives analysis contained in the DEIS must address all alternatives that were considered during project development including those evaluated in previous studies and the reasons for their continued study and/or dismissal. It was noted that the DEIS for this project will be available in the Fall of 1989. Copies of the document will be provided to each agency for their review and comment.

