

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

ENVIRONMENTAL IMPACT STATEMENT

FOR

Interstate Route 66, 1.3 Mile Section From Glebe Road to Lee Highway  
Arlington County, Virginia

Federal Project No. 1-66-1 (4675)  
State Project No. 0066-000-102, C506

PURSUANT TO SECTION 102 (2), (c), P. L. 91-190

THIS STATEMENT HAS BEEN COMPILED BY:

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Highway Research Analyst

For

The Environmental Quality Division  
Virginia Department of Highways

VIRGINIA HIGHWAY RESEARCH COUNCIL  
CHARLOTTESVILLE, VIRGINIA

August 1971  
VHRC 71-R5



## SUMMARY SHEET

## ENVIRONMENTAL IMPACT STATEMENT

Comments have been received from the following state and local agencies:

Arlington County Chamber of Commerce  
 Northern Virginia Planning District Commission  
 Mr. R. W. Schmidt, Transportation Planning Engineer, Fairfax County  
 Arlington County Department of Transportation  
 Mr. Joseph H. Clements, Fire Chief, Arlington County Fire Department  
 Arlington County Public Schools  
 Arlington County School Board  
 Director of Utilities, Arlington County  
 Department of Environmental Affairs, Arlington County

The proposed improvement will have a significant positive environmental effect on the following:

- (1) Employment and economic activity;
- (2) fire protection ;
- (3) bicycling and hiking paths, which will be provided for the entire length of the project ;
- (4) parking facilities at the Washington and Lee High School, which will be increased by use of air rights ;
- (5) the health and safety of the community ;
- (6) native plantings and arboretum provided for nature study ;
- (7) community focal points, which will be interconnected by greenways ; and
- (8) pathways, which will be separated from highway vehicles by earth forms and bunkers.

The proposed improvement will have a slight adverse environmental effect on the following:

- (1) The noise pollution in some residential areas;

- (2) nine streets , which will be severed;
- (3) a part of Spout Run stream, which is used as a biology study area, will be enclosed ;
- (4) air pollution in some areas;
- (5) a short-term adverse effect will be an inconvenience to local residents due to construction operations.

The proposed improvement will have a significant adverse environmental effect on the following:

- (1) The ambient noise level for some residential areas, which will possibly increase;
- (2) a part of Spout Run adjacent to Washington and Lee High School, which will be lost as a biology study area; and
- (3) traffic density on roads close to interchanges, which will increase.

A copy of the Draft environmental statement was not prepared since design approval was obtained prior to the Federal Aid Highway Act of 1970 becoming law.



## ENVIRONMENTAL IMPACT STATEMENT

## INTERSTATE ROUTE 66

Federal Project I-66-1 (4675)

State Project 0066-000-102, C506

Arlington County, Virginia

1. PROJECT DESCRIPTION

The project is located in Arlington County, Virginia, more particularly in the southeastern corner of the county, and is described further as follows:

This project includes a 1.3 mile section of the interstate highway system known as I-66. The proposed improvement begins at a point just east of Washington Boulevard (Virginia Route 237) and follows along the former right-of-way of the Washington and Old Dominion Railroad. The proposed highway will proceed eastward over Glebe Road as an elevated structure which will contain a sound wall.

The interchange at Glebe Road (Route 120) provides access to Interstate Route 66 for traffic movement to the east with access to Glebe Road on the return movement. Access to Glebe Road from the west will be provided at Fairfax Drive. Temporary connections to Washington Boulevard are incorporated in this project until such time as Route 66 is completed to the west. This provision will eliminate the need for motorists proceeding on Washington Boulevard to enter the signalized intersection at Glebe Road for access to Route 66 east. Existing Glebe Road will remain at its present elevation. Necessary widening to provide for four-lane divided highway with left turn lanes shall be accomplished on the west side from the intersection of Washington Boulevard tying to the existing facility just north of 14th Street North.

Upon crossing Glebe Road the roadway will be flanked by a well landscaped area that will resemble a linear park. The portion adjacent to the northwestern side will also include hiking and bicycle paths. As the road proceeds east, traffic circulation north of Route 66 has been maintained by connecting Wakefield Street with N. Vermont and N. Vernon Street by a new street running parallel to Route 66 then along 15th Street North to Quincy Street feeding the traffic to this access point. Continuation of the alignment to Lee Highway necessitates that N. Vermont, N. Utah, N. Taylor, N. Stuart and N. Stafford Street will be severed. Where necessary each of the severed streets will be provided with cul-de-sacs. As the alignment passes northwesterly behind Washington and Lee High School the proposed improvement will utilize air rights to provide the high school

with much needed parking for 350 cars. This project will include the construction of a one level parking deck which will span the full eight lanes and extend for 740 feet directly behind Washington and Lee High School. The footings, included as part of this project, will be sufficient to support additional construction above the one provided as part of this project. This multiple use of highway right-of-way will provide the community an opportunity to construct additional parking and/or a civic activity center in the space required for the proposed highway. In addition, this elevated structure will serve as an effective noise barrier for the high school. The proposed improvement will require the relocation of two streets, 15th Street and North Quincy Street, in this vicinity. After passing under relocated Quincy Street the alignment continues in an eastwardly direction past an industrial area on the south and a proposed linear park on the north side. The linear park, which is to be constructed as part of this project, will include a pond and hiking and bicycle paths. Across from the proposed linear park and directly east of the industrial area is Hays Park. The relocation of North Lincoln Street will provide easy access over the interstate highway between Hays Park and the proposed linear park. The proposed improvement will cross under North Lincoln Street past the Thomas Nelson Page School on the south side of the highway. Adjacent to Page School, the environmental designers have utilized the alignment bifurcation, the lowering of the grade coupled with special landscaping in the median, to help reduce the noise level and hasten the dispersion of air pollutants. The alignment gently turns in a northerly direction to parallel Kirkwood Road as it passes over Lee Highway where this project will terminate.

At Lee Highway (Route 29/211) a full interchange has been provided. The interchange at this location required rather extensive studies to fit the proposed alignment of the mainline and ramps within a narrow corridor.

The purpose of this project is to serve as a major element in the total transportation system of the Washington, D. C. metropolitan area. In addition it will offer safer and more efficient commuting to the nation's capital for area residents.

This corridor will not only divert the interstate through traffic from congested urban streets, but will substantially improve internal circulation between Glebe Road and Lee Highway by diverting commuter traffic originating west of Glebe Road and terminating east of Lee Highway.

The anticipated traffic in 1990, assuming the Washington Metropolitan Area Transit Authority's commuter rail system is in operation, is expected to range between 46,400 and 103,360 vehicles a day.



## 2. THE PROBABLE IMPACT OF THE PROPOSED PROJECT ON THE ENVIRONMENT

The Virginia Department of Highways has undertaken a comprehensive environmental study of a nine-mile section of interstate Route I-66. This precedent-setting study is the Department's attempt to make this a model highway to the nation's capital. The environmental features included in this specific project demonstrate clearly that a highway can be designed to complement the area it traverses.

### (a) Ambient Noise Level

The prospect of noise emission from motor vehicles on the section of interstate I-66 between Glebe Road and Lee Highway is one of the foremost problems in terms of community reaction. The community's concern was expressed by numerous persons at the public hearings on the project, and in letters from county agencies and civic groups. In response to this citizen feedback the Virginia Department of Highways employed the consulting firm Environmental Planning and Design (EPD). One of the major problems is well expressed in the EDP's report:

"In the design of noise abatement devices for highway-generated sound a first task must be to establish a criterion for acceptable levels. This is extremely difficult since in the United States neither legal standards nor generally agreed-upon ratings of permissible noise presently exist. It was therefore decided to consider the levels of sound which would be experienced by those who live and work adjacent to the proposed freeway and at the points at which the sound would be received. As a goal it was determined that a mean reading of 68dbA at a point five feet above grade at the nearest building walls would be considered maximum. Sound levels were to be reduced below the maximum as far as feasible."

The projected noise levels of the proposed highway were based on the results of a computer program developed by Bolt, Neranek and Newman under a research grant from the National Cooperative Highway Research Program. The projections were based on the design hour volume (DHV) of traffic, which should approximate the worst possible conditions. The projection assumed a DHV of 10,336 vehicles per hour operating at speeds of 55-65 mph; the traffic mix was 8% trucks and 92% cars. The projected noise levels that could be expected at specific adjacent buildings were estimated and then compared to measurements of noise currently experienced at these sites. Based on this procedure, portions of the roadway were lowered three feet and barriers were designed to reduce the noise to the lowest practical levels.

The data presented in this paragraph demonstrate the results of the projections before the noise abatement features were considered, the projections after the roadway was lowered and the barriers were considered, and the actual noise levels at these locations presently, where they are available.

Location	First Projections Without Noise Barriers	Second Projections With Noise Barriers	Actual Readings Taken
Glebe and Wakefield	70	52	79
N. Wakefield	70	52	70
N. Vermont	73	68	61
Utah	75	66	64
Utah	75	66	67
Taylor	74	61	62
Washington & Lee High School	74	62	76
Page Elementary School	70	49	75

The concerns expressed by the School Board of Arlington County were considered, since in all cases the present noise levels are greater than are projected for the schools and the Education Center. Some residential streets will experience slight increases in noise levels.

The proposed highway designs were adjusted until the desired degree of noise abatement was achieved. By the refinement of the noise control devices and by the use of landscape planting (which was not included as a factor in the computer simulation) the projected sound levels may be further reduced.

Mr. William L. Hughes, Director of Arlington County's Department of Environmental Affairs, suggested that the Highway Department consider the use of land fill berms to reduce highway noise. It would appear the the present design more than meets this suggestion.

The noise levels may be a problem in some residential areas, but the Department will continue to seek to reduce noise pollution as low as practical.

(b) Displacement

No individual homes will be displaced by the project since most of the right-of-way is owned by the Department at present. However, one service station will be displaced. This firm will be provided assistance.

(c) Disruption of an Established Community

The concern that the proposed interstate highway will disrupt an established community has been expressed by citizens both as individuals and collectively. This charge appears to stem from the following:

- (1) The proposed improvement will require that nine streets be severed. These are:

- N. Wakefield Street
- N. Vernon Street
- N. Vermont Street
- N. Utah Street
- N. Taylor Street
- N. Stuart Street
- N. Stafford Street
- N. Irving Street
- 18th Street North

However, traffic circulation north of Route I-66 has been maintained by connecting Wakefield Street with Vernon Street and Vermont Street by a new street running parallel to I-66, then along 15th Street North to Quincy Street to feed traffic to this crossing point. The remaining streets have been provided with cul-de-sacs where necessary. Traffic on the south side will have access to Washington Boulevard.

- (2) An additional reason for the citizens' concern about the possible disruption of an established neighborhood is that the route selected is along the Washington and Old Dominion Railroad, where right-of-way was acquired some eight years ago and since has remained as open space in the community. This abandoned railroad right-of-way has been cleared of all rails and other evidence of its former use and left as undeveloped land. During the period between acquisition and the present the community appears to have forgotten its former or future use and has taken over this space as an "adopted park."

Recognizing this adopted use of the proposed right-of-way, the designers have proposed to construct and landscape the highway in a manner that would provide the two communities with their own park. The special landscaping will extend the linear park and Hays Park for almost 1.3 miles (the entire length of this project). The construction of hiking and bicycling paths will enable the residents to travel through a very restful wooded area to their community parks.

(d) Effect Upon Areas of Unique Interest or Scenic Beauty

There are no historic structures or sites located within this corridor.

At the design public hearing, considerable discussion and objection was related to the necessary enclosure of a part of Spout Run stream, which the Washington and Lee High School biology class has been using as a biology laboratory study area. As a result areas adjacent to the school have been studied for replacement of the stream and to give consideration to all other values such as aesthetics, park environment, etc. The Virginia Department of Highways proposed to provide a linear park on the north side of I-66 east of Quincy Street with the provisions of a new channel. This is entirely compatible with Arlington County's master plan of development and also has been approved by the School Board.

(e) Impact on Recreation, Parks, and Other Public Facilities

There do not appear to be any adverse impacts on the recreational facilities of the area. Mr. William L. Hughes, Director of the Department of Environmental Affairs for Arlington County, commented as follows:

"The Hays Playground and the Page School will be better served by the realignment of Lincoln and Monroe Streets.

". . . the Department of Environmental Affairs supports the recommendation of the Virginia Department of Highways for a hiking and biking path between North Glebe Road and Spout Run Parkway. This path, with proposed extensions already included in the State's plan, will link with trails along the George Washington Parkway and Four Mile Run. (Near east Falls Church). This multiple use of land, plus the increased recreational potential, makes this proposal on

exciting and innovating one. In fact, when the project is completed, it will represent the first of its kind under a federal highway grant."

(f) Effect on Air and Water Pollution

Air pollution is generally heaviest on city streets, marked by tall buildings and clogged with slow moving, stop-and-go traffic. I-66, a limited access highway planned as an integral part of the total transportation system for Washington, D. C. , will carry traffic through a wide corridor descending to the Potomac River. High concentrations of air pollutants should be minimized or reduced since the interstate road should reduce congestion on the parallel arterial streets. Extensive landscape planting and screening can further hasten the dispersion of air pollutants. Trees act as filters, physically trapping dust and other particles, and also can modify prevailing wind currents and create updrafts.

Additionally, air pollution in the vicinity of other local streets can be minimized to the extent that I-66 reduces congestion and promotes free-flowing traffic on those streets. The estimated average daily trips in 1990 is 103,360 vehicles, most of which will be using local streets if I-66 is not built. The estimated number of trucks would be 8,300 per day. It is not possible to provide the gasoline engine/diesel engine ratio since Virginia does not maintain this type of data for specific highways.

In order to reduce the possible concentration of pollutants the proposed highway was designed considering the prevailing wind direction, which according to the Arlington County Transportation Department is in a westerly direction. However, it was necessary to make a tradeoff by channelling the highway in order to reduce noise pollution.

During the construction of the highway, stream pollution will be minimized by the use of siltation basins. Special provisions for temporary erosion and siltation control are made a part of every construction contract of the Department to minimize damage as much as possible. Examples of these provisions are shown in Appendices A, B and C.

In addition, the Department attempts to reduce the disturbance to local residents from construction noise by including the following provision in all contracts:

Sec. 107.13 Noise Control and Protection of Rivers, Streams, Impoundments, Forests and Archeological and Palentological Findings.

Noise Control: The Department reserves the right to prohibit or restrict to certain portions of the project, any work which produces objectionable noise during normal sleeping hours— 10 p. m. to 6 a. m. , unless other hours are established by local ordinance in which event the local ordinance shall govern.

In the winter months, there may be some pollution of streams from the chemicals used to deice the highway to maintain the roadway in a safe bare pavement condition. However, the Department is currently investigating other methods of deicing highways.

(g) Ecological Balance of Land Area

The construction will slightly disturb the ecological balance of the land adjacent to the highway. Within a short period of time the ecological balance will be stabilized. In addition the special landscaping should enhance the general environment of the community.

(h) Effect on Public Water Supply Sources

This alignment does not affect a public water supply source or treatment facility. All affected distribution systems will be relocated or adjusted to conform with the project.

(i) Effect on Public Utilities

The proposed highway will require some relocation of pipe lines, utility poles, and telephone facilities. All relocation will be without interruption of service; some additional easements may be required of individual property owners.

(j) Effect on Economic Activity and Employment

According to the Environmental Affairs Department of Arlington County "the new highway will open up greater employment opportunities for Arlington County residents. Travel time to and from the Rosslyn-Ballston Corridor will be cut, thus opening up new areas of employment for county residents, both within the county and to the west, and enhancing the status of the corridor as an employment center." In addition contractors will be required to use local labor and provide them with training.

(k) Fire Protection

Comments from the Arlington County Fire Department received as follows: "... we feel that the proposed changes will provide a much better cross-county movement."

(l) Public Health and Safety

The proposed highway will have a positive effect upon the general health and safety of the residents of the community by removing traffic from the existing streets and roads.

(m) Religious Institutions

From Glebe Road to Lee Highway, there are no religious institutions adjacent to the I-66 right-of-way. There are, however, a number of churches only a few blocks from the proposed interstate route. A review of the accessibility of each of these churches indicates the streets and highways designed to cross I-66 will provide adequate access.

(n) Multiple Use of Space

One of the primary purposes of employing the consulting firm of Environmental Planning Design was to identify the kinds of multiple uses most suitable for inclusion within the highway right-of-way and upon adjacent properties. The proposed multiple uses enhance the experiences of driving upon the highway and living and working within the freeway environs.

This project will utilize the following types of multiple uses:

- (1) The parking facility over the highway adjacent to Washington and Lee High School. This facility will enable the school to increase its parking space, which is now in very short supply. In addition it will offer an opportunity for further expansion in the air rights over the highway.
- (2) Areas within and contiguous to the right-of-way can be merged and planned together as park and recreation for community residents. Such landscape development will also provide a parkway setting for the enjoyment of the motorist.
- (3) Bicycle and hiking paths will be provided adjacent to the highway for the benefit of the community.

(o) Education

This highway has been designed to complement the two schools adjacent to the right-of-way. The special features have been discussed elsewhere in this report.

In addition comments were received from Arlington County School Board as follows:

" . . . Mr. Palmer has the prime responsibility for establishing attendance area boundaries. He was most interested in the location of over-passes as they related to school attendance areas and locations of school buildings.

" We are particularly pleased that there will be local streets bordering the north side of I-66 and this will enable us to establish very satisfactory routes for children to travel either by foot or by bus to reach their designated school. We view these as essential in setting forth attendance areas to be served by our elementary and secondary schools."

(p) Engineering, Right-of-Way and Construction Costs

The estimated cost for construction, right-of-way and engineering on this facility is \$12,720,000.

The estimated cost for the environmental considerations is \$3,743,600.

(q) Maintenance and Operating Costs

Maintenance and operating costs for the proposed highway will be the responsibility of the Virginia Department of Highways. However, the maintenance and operating costs of the linear park, air rights parking lot and bicycle and hiking paths will be the responsibility of Arlington County.

3. SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS

- (a) Increase in the ambient noise level for some residential areas.
- (b) Displacement of one service station.
- (c) Possible loss of a part of Spout Run Creek near Washington and Lee High School, which was used as a biology study area.
- (d) Increased traffic density on roads within close proximity to the interchanges.



#### 4. ALTERNATIVES TO THE PROPOSED PROJECT

There are two alternatives to the construction of Interstate Route 66 through Arlington County. One of these would be the abandonment of the project, and the other would be the selection of another route. The Department does not consider that either of these possible alternatives are realistic.

The abandonment of the route is not realistic in view of the fact that I-66 is an integral and vital component of the metropolitan transportation program for Washington, D. C. The highway system of this area is interlocked with programs for mass transit and therefore any major revision in any one element of the planned transportation system could seriously impair all phases of vehicular and pedestrian circulation. Many facets of the program have already been put into operation or are now under development. Major revisions at this time could represent a reduction in the effectiveness of the transportation programs serving the nation's capital and in all probability would result in adverse environmental impacts through additional future congestion.

Selection of another route would not be a realistic approach. A major portion of the present project site consists of an abandoned railroad right-of-way. This corridor was chosen because it consisted primarily of unused and undeveloped land and thus minimized the need for relocation of people and businesses. The least adverse environmental impact will result from use of this right-of-way alignment. Any other corridor selected in this populated area would involve substantial displacement of people and businesses.

#### 5. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Major highway systems represent long-term facilities and are related to long-range productivity. This is particularly true in regard to I-66 in Arlington County, Virginia, which is a vital segment in the development of a comprehensive transportation system for the Washington metropolitan area. This system must effectively integrate several modes of transportation including air, rail, highways and mass transit for many years to come.

Such a coordinated transportation system will produce savings in transportation costs and prove valuable in reducing accident rates and total travel time. All of these factors relate directly to savings of natural resources and improvement of environmental conditions.

6. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The resources used in constructing a highway are not considered irretrievable.

The selected alignment is a former transportation corridor and it will again function as such but with more intense use and change of mode from rail to vehicular. A substantial portion of this corridor was formerly the right-of-way of the Washington and Old Dominion Railroad which has been cleared and remained idle for the past eight years.

There do not appear to be any irretrievable commitments of resources. In spite of the permanent nature of highway construction, if the need for the facility ceases the highway corridor could be converted to other uses.

7. PROBLEMS AND OBJECTIONS

Representatives of the Department have met citizen groups, local and federal agencies in an effort to resolve as many objections as possible.

Arlington Coalition on Transportation (ACT)

On November 4, 1970, a group of concerned citizens formed an Arlington Coalition on Transportation (ACT) to oppose the construction of I-66 and the building of additional expressways in Arlington until fast, efficient and inexpensive public transportation--both rapid and bus--is available to move people through the metropolitan area. However, the Washington Metropolitan Area Transit Authority states that the highway is a vital part of overall transit planning and complements the system.

Primary concerns have been with pollution, both noise and air. Environmental planning activities have been initiated by the Virginia Highway Department to meet these concerns (See Item 8).

Selected Comments by Persons Who Gave Statements at Public HearingMr. Hal Gibson

Local resident, former Arlington Planning Commissioner, and Chairman of the Nonpartisan Arlingtonians for a Better County. Basically, his ideas included:

- a -- Earth banks on each side of expressway, 10 feet to 15 feet high.

- b -- Sound absorbing wall on top of earth mound.
- c -- Landscaping of earth wall on top of earth mound.

Mr. Scott Robinson

Department of Environmental Affairs and Economics, Arlington County.

- a -- Supported the Gibson Plan.
- b -- Suggested multi uses, such as, hiking and biking trails, parking garages over highways, recreation and park area.

Mr. Emerson F. Hunsberger

Assistant Engineer, Arlington County.

- a -- Route I-66 generally acceptable to the County. Noted need for environmental control.
- b -- Cautioned regarding new circulation routes prior to I-66 construction.

Mrs. Robert F. Kaufman

League of Women Voters.

- a -- Wanted environmental hazards and aesthetics considered very carefully.

Mrs. Laura Hutchins

Chairman, Conservation and Beautification Committee of Arlington County Civic Association.

- a -- Endorsed Mr. Gibson's Plan.
- b -- Demanded better highway maintenance.
- c -- Wants I-66 to be a beautiful entrance to the Capital City.

Mr. Leslie Logan

President, Arlingtonians for Preservation of the Potomac Palisades.

- a -- Requested that the idea of constructing I-66 in this corridor be restudied since I-266 would be stopped.

Mr. Walter Sheppard

- a -- Agrees with the Gibson plan.
- b -- Wants road depressed with park above.

Mr. Robert Wineberg

- a -- Supports the Gibson plan.
- b -- I-66 should be a model of environmental protection due to its proximity to the Capitol.

Mrs. Elva Aukland

Biology teacher, Washington and Lee High School.

- a -- "Save Our Creek" behind Washington and Lee High School. Used as a biological study area.
- b -- Noise and air pollution at school cited.

Mr. Johann Schacan

Washington Area Transportation System.

- a -- Highways are needed with rapid transit systems.
- b -- Planning for metro and the highway system were coordinated and based on the 1980 system which includes I-66.
- c -- Metro physical and financial plans were based on I-66 being built.
- d -- Rapid transit will lessen highway problems but will not take the place of highways.

The special environmental considerations that have been included as a part of this project are discussed in number 8.

8. STEPS TAKEN TO MINIMIZE HARM FROM UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The State Highway Commission has directed the engineers of the Department to include in the final project plans refinements being developed by John O. Simonds, a consultant assisting the Department in environmental protection features of the highway. Simonds is directing his attention to steps to minimize noise and air pollution and to take greater advantage of landscaping and architectural concepts in structural and lighting design. The consultant and the Department expect I-66 in Arlington to become a model for the nation in urban highway construction.

In response to the citizen comments the Department, working closely with Mr. John Simonds, has included the following environmental considerations:

- 1 — Linear Park — At the Design Public Hearing considerable discussion and objection was directed to the necessary enclosure of a part of Spout Run stream, which the Washington and Lee High School biology class has been using as a biology laboratory study area. As a result, areas adjacent to the school have been studied for replacement of the stream as well as all other values such as aesthetics, park environment, etc. The Department has included a Linear Park on the north side of I-66 east of Quincy Street with the provisions of a new channel. This is entirely compatible with Arlington County's master plan of development and, also has been approved by the school board.
- 2 — Highway Design — Excess right-of-way was acquired through the purchase of the Old Rosslyn Spur in the vicinity of Thomas Nelson Page School. The plans as originally designed provide for a continuous 24' median from Glebe Road to Rosslyn. The consultant's environmental studies have revealed that this excess right-of-way can be utilized to a good advantage for highway purposes by bifurcating the alignment. We feel that in conjunction with the alignment bifurcation the lowering of the grade coupled with special landscaping in the median will help to eliminate some of the objections regarding the complaints of the highway design. Special landscaping in the median can further hasten the dispersion of air pollutants. The lowering of the grade will help to reduce the noise level at the school.

- 3 -- Air Rights -- The Department's interest and enthusiasm to make this a model highway to the Nation's Capital has prompted the consultant to consider air rights at the Washington and Lee High School to alleviate the parking problems now experienced by the school. This will also serve as a community related project. In view of this, the Department proposes to construct one (1) parking deck at project expense with foundations designed and constructed to support additional decks and the sports pavilion as proposed by Arlington County. The parking deck will span the entire eight (8) lanes and extend 740 feet along the roadway. Mr. John Simonds, the consultant, indicates in his report that an additional benefit in noise reduction at Washington and Lee High School would be achieved.
- 4 -- Noise Reduction -- Since noise pollution received so much emphasis at the public hearing, the consultant was instructed to investigate all possibilities without limitations. The consultant's studies have revealed that with special earth moundings, precast rock embedded concrete bunkers, and sound barrier walls the noise level can be reduced to a satisfactory level. Three (3) alternative designs are suggested for the walls -- it is the Department's idea that possibly all three types should be used on this project.
- 5 -- Special Landscaping -- The consultant has recommended that special landscaping be included as part of the overall environmental considerations.
- 6 -- Illumination Concept Study -- This study is now underway by Hayes, Seay, Mattern and Mattern and has not been finalized. However, it is recommended that the highway, hiking and biking trails as well as the Linear Park be illuminated. Of course, this consideration will be closely coordinated with the Environmental Consultant.
- 7 -- Type of Pavement -- An investigation has been made as to the comparative desirability of various paving types in relation to their environmental impact. Mr. Simonds' conclusion is that bituminous concrete pavement is preferred over concrete pavement.

## APPENDIX A

Reissued 1-4-71

VIRGINIA DEPARTMENT OF HIGHWAYS  
SPECIAL PROVISIONS FOR  
TEMPORARY EROSION AND SILTATION CONTROL

Description -- This work shall consist of the application of temporary measures throughout the life of the project to control erosion and to minimize the siltation of rivers, streams and impoundments (lakes, reservoirs, etc.). Such measures shall include, but are not limited to, the use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel or crushed stone, mulch, grasses, slope drains and other methods. Temporary erosion and siltation control measures as described herein shall be applied to erodible material exposed by any activity associated with the construction of this project, including local material sources and waste areas and all haul roads.

Temporary measures shall be coordinated with the construction of permanent drainage facilities and other contract work to the extent practicable to assure economical, effective and continuous erosion and siltation control.

Materials -- Materials used for temporary control of erosion and siltation shall conform to the requirements of the 1970 Specifications and Supplementals therefor for the applicable material unless otherwise approved by the Engineer.

Erosion and Siltation Control Plan -- At the time of the preconstruction conference or prior to the start of the work, the Contractor shall prepare and submit a plan for applying temporary and permanent erosion and siltation control measures. The plan shall include, but is not limited to, the operations of clearing and grubbing, stripping of topsoil, grading and the construction of structures at water courses. Construction work shall not commence until the schedule of work and the methods of operations have been reviewed and approved by the Engineer. The plan described herein for implementing temporary control measures is not to be confused with the plan required for permanent restoration of local material sources and waste areas as specified in Sections 106.03 and 106.04.

Construction Requirements -- The Contractor shall limit the surface area of earth material exposed by grubbing, stripping and topsoil and excavation to that which is necessary to perform the next operation within a given area. Unless specifically authorized by the Engineer, the grubbing of root mat and stumps shall be confined to the area over which excavation is to be actively prosecuted within 30 days following the grubbing operation; the stripping of topsoil shall be confined to the area over which excavation is to be actively prosecuted within 15 days following the stripping operations; and, excavation and embankment construction shall be confined to the

minimum area necessary to accommodate the Contractor's equipment and work force engaged in the earth moving work.

The Contractor shall shape the top earthwork in such a manner as to permit the runoff of rainwater and shall construct earth berms along the top edges of embankments to intercept runoff water. Temporary slope drains shall be provided to carry runoff from cuts and embankments. The slope drains may be of flexible or rigid construction but shall be capable of being readily shortened or extended as the cut or fill advances. A portable flume shall be provided at the entrance to the temporary slope drains.

Cut slopes shall be shaped, topsoiled where specified, seeded and mulched as the work progresses in accordance with the following sequence unless otherwise directed by the Engineer.

- (a) Slopes whose vertical height is 20 feet or greater shall be seeded in 3 approximately equal increments of height. Slopes whose vertical height exceeds 75 feet shall be seeded in approximately 25 foot increments of height.\*
- (b) Slopes whose vertical height is less than 20 feet but more than 5 feet shall be seeded in 2 approximately equal increments of height.\*
- (c) Slopes whose vertical height is 5 feet or less may be seeded in one operation.\*

\* Note: The dressing, preparing and seeding of slopes shall be performed immediately following the completion of each increment of height stated and immediately following the suspension of grading operations in which the suspension is to have a duration greater than 15 days.

Fill slopes shall be shaped, topsoiled where specified, seeded and mulched in accordance with the procedure hereinbefore described except that extra care shall be taken to protect previously seeded area from spill over materials placed in the upper lifts of the embankment.

The seed mixture shall be as specified on the plans for the area of the State in which the project lies and the season of the year during which the seeding is to be performed.

Whenever rock excavation is available on the project, an 8 to 15 inch layer of such materials shall be dump spread over the lower region of embankments in the immediate vicinity of stream crossings and shall be used to cover ditches, channels, and other drainage ways leading away from cuts and fills;



however, all drainage ways shall be prepared to receive the rock excavation to the extent necessary to avoid reducing their cross-section. In the event rock excavation is not available on the project, jute mesh or soil retention mats shall be used as the covering material and shall be installed in accordance with the applicable specifications for such materials. The limits of the area to be covered will be as directed by the Engineer.

As one of the initial items of work, the Contractor shall construct silt settlement basins at approximately 25 foot intervals in the stream bed below the outfall end of drainage structures where directed by the Engineer. When the bed and banks of the stream are composed primarily of sand and gravel, the basins shall be formed by excavating depressions in the stream bed 3-5 feet in depth; 20-30 feet in length; and shall have a width equal to the average bank to bank width of the stream. When the bed and banks are composed of rock or extremely erodible material (clay or silts) the basin shall be constructed by installing check type log or rock dams at approximately 25 foot intervals. The dams shall be constructed to such height as to form settling pools approximately 4 feet in depth. Settling basins shall be cleaned regularly and the material removed shall be transported and deposited at such location as not to reenter the stream.

The Department reserves the right to order the performance of other temporary measures not specifically described herein to correct an erosion or siltation condition.

Method of Measurement — Temporary erosion and siltation measures required to correct conditions created due to the Contractor's negligence, carelessness or failure to install permanent controls in accordance with the approved plan and sequence for performance of such work, will not be measured for payment. In the event the Contractor repeatedly fails to satisfactorily control erosion and siltation, the Department reserves the right to employ outside assistance or to use its own forces to provide the corrective measures indicated; the cost of such work, plus engineering costs, will be deducted from monies due the Contractor for other work.

The cost of limiting the scope of construction operations, shaping the top of earthwork, constructing temporary earth berms, slope drains and portable flumes will not be measured for payment, but shall be included in other appropriate pay items in the contract.

Except as otherwise provided hereinbefore, seeding will be measured in pounds of seed, tons of fertilizer, tons of lime, and acres of surface areas of mulch; temporary protective coverings will be measured in units of 100 square feet and erosion control riprap (dumped rock excavation) will be meas-

ured in square yards of surface area; and temporary settlement basins will be measured in units of one each.

Basis of Payment — The accepted quantities of both temporary and permanent seeding will be paid for at the contract price per pound of seed, per ton of fertilizer, per ton of lime and per acre of mulch, which prices shall be full compensation for the preparation of the seed bed, furnishing and applying all materials, labor, tools, equipment and incidentals necessary to complete the work. When restoration or replacement of seeded areas is necessary because of the use of improper materials or construction methods or because of damage inflicted by construction activities, the corrective work shall be performed at the Contractor's expense, however, once the seeding work within a given area of the project has been satisfactorily performed and accepted by the Engineer, subsequent restoration and replacement work directed by the Engineer during the life of the contract will be paid for at contract unit prices for the seeding materials used.

The accepted quantity of temporary protective covering will be paid for at the contract price per unit of surface area of jute mesh or soil retention mat placed. The accepted quantity of erosion control riprap will be paid for at the contract price per square yard of surface area of rock excavation placed. The prices paid shall be full compensation for furnishing and placing the respective materials, stapling jute mesh and soil retention mats, and the furnishing of all labor, tools, equipment and incidentals necessary to complete the work. When restoration or replacement of protective coverings or erosion riprap is necessary because of the use of improper materials or construction methods or because of damage inflicted by construction activities, the corrective work shall be performed at the Contractor's expense; however, once the protective coverings and erosion control riprap have been satisfactorily placed and accepted by the Engineer, subsequent restoration and replacement work directed by the Engineer during the life of the contract will be paid for at the contract unit prices for temporary protective covering and erosion control riprap.

The accepted quantity of temporary silt settlement basins will be paid for at the contract price per basin, which price shall be full compensation for excavation, materials and maintenance; except, that each cleanout operation directed by the Engineer will be paid for at a rate of 20 percent of the unit price bid for construction of the basin, which price for cleanout will include the removal, hauling and acceptable disposal of silt.

Payment will be made under:

Pay Item

Pay Unit

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Seed	Pound
Fertilizer	Ton
Lime	Ton
Mulch	Acre
Protective Covering	Unit
Erosion Control Riprap	Square Yard
Silt Settlement Basin	Each



## APPENDIX B

## SEC. 107.13

Erosion and Siltation Control: The Contractor shall exercise every reasonable precaution throughout the duration of the project to prevent silting of rivers, streams and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities as well as performance of other contract work which will contribute to the control of siltation shall be carried out in conjunction with earthwork operations or as soon thereafter as is practical.

Prior to suspension of embankment construction for the winter or any similar length of time, the Contractor shall shape the top of earthwork in such a manner as to permit the runoff of rainwater and shall construct earth berms along the top edges of embankments to intercept runoff water. Temporary slope drains shall be provided to carry rainwater and groundwater from cuts and from embankments which are located in the immediate vicinity of rivers, streams and impoundments. Slope drains shall be stabilized by paving or covering with waterproof materials. Should such preventive measures fail, and an appreciable amount of material begins to erode into a river, stream or impoundment, the Contractor shall act immediately to bring the siltation under control.

The erosion control measures described herein shall be continued until the permanent drainage facilities have been constructed and until the grass on seeded slopes is sufficiently established to be an effective erosion deterrent.

Unless otherwise approved in writing by the Engineer, construction operations in rivers, streams and impoundments shall be restricted to those areas where channel changes are shown on the plans and to those areas which must be entered for the construction of temporary or permanent structures. Rivers, streams and impoundments shall be promptly cleared of all falsework, piling, debris or other obstructions placed therein or caused by the construction operations.

Excavation from the roadway, channel changes, cofferdams, and other structures shall not be deposited in or so near to rivers, streams or impoundments that it will be washed away by high water or runoff.

Frequent fording of live streams with construction equipment will not be permitted; therefore, temporary bridges or other structures shall be used wherever an appreciable number of stream crossings will be made. Unless otherwise approved in writing by the Engineer, mechanized equip-

ment will not be operated in live streams except as may be required to construct channel changes and temporary or permanent structures.

In the performance of work within or adjacent to any State or National forest, park or other public or private lands, the Contractor shall comply with all of the regulations of the appropriate authorities having jurisdiction over such forest, park or lands. He shall keep the areas embraced by his construction operations in an orderly condition and shall satisfactorily dispose of all refuse and discarded material.

He shall obtain any construction permits which may be required for his operations, not a part of the project in accordance with the requirements of the regulations of the appropriate authorities.

**Pollution:** The Contractor shall exercise every reasonable precaution throughout the duration of the project to prevent pollution of rivers, streams or impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage, paints, and other harmful waste shall not be discharged into or alongside of rivers, streams, impoundments or into natural or manmade channels leading thereto. The Contractor's attention is also directed to the applicable provisions of the Code of Virginia which relate to the protection of fish, to the prevention and abatement of pollution and the constriction of stream flow.

**Burning:** All materials resulting from clearing and grubbing, demolition or other operations, except materials to be retained by the Department or others, shall be removed from the project, burned, or otherwise disposed of by the Contractor. Care shall be exercised to see that the burning of materials does not destroy or damage public or private property, or cause excessive air pollution. The Contractor shall not burn rubber tires, asphaltic materials, used crankcase oil, or similar materials which produce dense smoke, either to dispose of such materials or as an ignitor or promoter in the burning of other materials. Burning shall be performed under the constant surveillance of competent watchmen.