



COMMONWEALTH OF VIRGINIA
COUNTY OF FAIRFAX

OFFICE OF COMPREHENSIVE PLANNING
ZONING ADMINISTRATION DIVISION
4050 Legato Road, Suite 800
Fairfax, Virginia 22033



December 13, 1991

CERTIFIED MAIL, RETURN RECEIPT REQUESTED # P 826 399 434

John T. Ambrose
6867 Elm Street, Suite 102
McLean, Virginia 22101

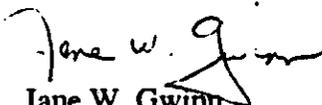
Re: Interpretation for RZ 81-P-116, Sutton Green, Trifam Systems Inc., Proffer
Number 2, Acoustic Barriers

Dear Mr. Ambrose:

Due to an administrative mixup, two separate versions of my letter in response to your request for an interpretation of Paragraph a of Proffer Number 2 were placed in the mail. The version which you received on December 12, 1991 was inadvertently mailed to you, does not constitute my official determination on this matter and therefore should be disregarded. The correct letter of interpretation is the letter dated December 13, 1991, which was mailed earlier today. A copy of that letter without attachments is appended to this letter for reference.

I apologize for any confusion which this may have caused. If you have any questions regarding this letter, please feel free to contact Peter Braham at (703) 246-1290.

Sincerely,


Jane W. Gwin
Zoning Administrator

JWG/PB

Attachments: A/S

cc: Katherine K. Hanley, Supervisor, Providence District
Patrick Hanlon, Planning Commissioner, Providence District
Barbara A. Byron, Director, Zoning Evaluation Division, OCP
Edward J. Jankiewicz, Director, Design Review Division, DEM
David T. Stoner, Assistant County Attorney
Donald Heine, Environmental and Heritage Resources Branch, OCP
Dan Nicholson, Public Utilities Branch, DRD, DEM
Bonds and Agreements Branch, DRD, DEM
File: RZ 81-P-116 (ZED & ZAD)



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John T. Ambrose
6867 Elm Street, Suite 102
McLean, Virginia 22101

**Re: Interpretation for RZ 81-P-116, Sutton Green, Trifam Systems Inc., Proffer
Number 2, Acoustic Barriers**

Dear Mr. Ambrose:

This is in response to your letter of October 31, 1991 requesting an interpretation of Paragraph a of Proffer Number 2 accepted by the Board of Supervisors in conjunction with the approval of RZ 81-P-116. As I understand it, the question is whether the stockade fences already constructed around the privacy yards for the townhouses in Sutton Green substantially conform with the provisions of Paragraph a of Proffer Number 2 by providing equivalent noise attenuation to the proffered noise wall. A corollary question is whether the existing stockade fences in combination with the noise wall to be constructed in 1992 by the Virginia Department of Transportation (VDOT) conform with the provisions of Proffer Number 2. Copies of the above referenced letter and your subsequent letter of November 13, 1991 are attached for reference.

Proffer Number 2 specifies the manner in which attenuation of the noise generated by I-66 will be provided for the townhouses in Sutton Green. These attenuation measures were to be provided in lieu of the 200 foot setback from the edge of an interstate right-of-way required pursuant to Section 2-414 of the Zoning Ordinance which was waived by the Board in conjunction with the approval of RZ 81-P-116. Paragraph a addresses noise in the privacy yards of the townhouses and Paragraph b addresses the attenuation of noise for the interior of the units. Paragraph a states that the applicant shall:

Construct privacy fences to seven (7) feet as shown on the Development Plan. Said fences shall be "acoustic barriers" as defined by the Federal Highway Administration in Noise Barrier Design Handbook (1976).

The Development Plan referenced by Proffer Number 2 shows that an "acoustic wall (wood or masonry)" would be provided along the side of the privacy yard for Lot Number 1, the rear of the privacy yards for Lots 1, 2, 3, 4, and 5 (the lots which back onto Sutton Road), and along the side of the yard for Lot 12 as identified on the proffered Development Plan. The proffered plan shows Lots 1 through 5 being located along Sutton Road and Lots 6 through 12 located along the northern property boundary separated from Sutton Road by Lots 4 and 5. However, on the approved site plan Lot 6 has been moved to be included in the stick of units which includes Lots 1 through 5 adjacent to Sutton Road.

First, it is my determination that, with the shift of Lot 6 to be located along Sutton Road, an acoustical wall must be provided for Lot Number 6 as identified on the site plan since an acoustical wall is shown on the proffered development plan for all the units located along Sutton Road.

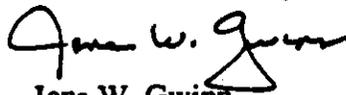
Second, it is my further determination that the stockade fences do not satisfy the requirements of Paragraph a of Proffer Number 2 for the construction of a seven foot privacy fence which is an acoustical barrier as defined by the Federal Highway Administration design handbook. The stockade fences include gaps up to one quarter inch in size between the individual boards which are 2 inches wide, are less than seven feet tall, and do not have the density of material (thickness of wood) specified in the design manual. I would note that Sheet 2 of the approved site plan states that the fence would be constructed in accordance with a detail on Sheet 5. That detail is a copy of one included in the design manual referenced by the proffer. That fence is comprised of two inch thick decking which is unbroken between the fence posts so that there would be no gaps where the pieces of decking meet.

Third, it is my further determination that the VDOT noise wall in conjunction with the existing stockade fences does not conform with the provisions of Paragraph a of Proffer Number 2 which specifies that seven foot privacy fences which are acoustical barriers will be provided in the locations shown on the proffered development plan. It should be further noted that, even if the provisions of Paragraph a permitted the substitution of the VDOT noise wall for the specified fences, the VDOT noise wall in combination with the existing stockade fences would not provide the equivalent noise attenuation to the proffered acoustical barrier for Lots 1 through 6 on the site plan. However, Lot 12 would be adequately protected under this scenario. A review of Appendix 8 of the Staff Report for RZ 81-P-116 shows that projected (1995) noise levels for the portion of the site within 120 feet of the edge of the right-of-way to be 77 to 75 dBA L_{dn} . It further states that noise attenuation should be provided to achieve a maximum exterior noise level in outdoor recreation areas such as the privacy yards of 65 dBA L_{dn} and recommends that "architecturally solid fencing at least 7 feet in height should be provided to shield privacy yards." The appendix goes on to note that the development plan indicates that the architecturally solid fence would be provided to protect the privacy yards. While the VDOT noise wall will, as noted in your letter, provide protection for the much of the site including areas that would not have been protected under Paragraph a, it terminates at Sta. 498 on I-66 leaving an open area which provides an unbroken line of sight to I-66 from the privacy yards for Lots 1 through 6 on the site plan which would have been broken if the proffered acoustical barrier had been constructed in lieu of the stockade fencing.

Jack T. Ambrose
Page 3

These determinations have been reviewed with the Environmental and Heritage Resources Branch, OCP. If you have any questions regarding this interpretation, please feel free to contact Peter Braham at (703) 246-1290.

Sincerely,



Jane W. Gwinn
Zoning Administrator

BAB/PB

Attachments: A/S

cc: Katherine K. Hanley, Supervisor, Providence District
Patrick Harlon, Planning Commissioner, Providence District
Barbara A. Byron, Director, Zoning Evaluation Division, OCP
Edward J. Jankiewicz, Director, Design Review Division, DEM
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File: RZ 81-P-116 (ZED & ZAD)



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December 13, 1991

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**Re: Interpretation for RZ 81-P-116, Sutton Green, Trifam Systems Inc., Proffer
Number 2, Acoustic Barriers**

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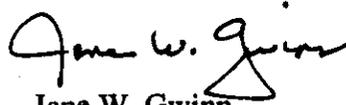
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Jack T. Ambrose
Page 3

These determinations have been reviewed with the Environmental and Heritage Resources Branch, OCP. If you have any questions regarding this interpretation, please feel free to contact Peter Braham at (703) 246-1290.

Sincerely,



Jane W. Gwinn
Zoning Administrator

BAB/PB

Attachments: A/S

cc: Katherine K. Hanley, Supervisor, Providence District
Patrick Hanlon, Planning Commissioner, Providence District
Barbara A. Byron, Director, Zoning Evaluation Division, OCP
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Bonds and Agreements Branch, DRD, DEM
File: RZ 81-P-116 (ZED, & ZAD)

John T. Ambrose, Esq.

8200 Greensboro Drive, Suite 1520, McLean, VA 22102 (703) 790-8487

October 31, 1991

Fairfax County
Zoning Administrator
Zoning Evaluation Division
Barbara Byron, Director
4050 Legato Road
Fairfax, Virginia 22033

RECEIVED
OFFICE OF COMPREHENSIVE PLANNING

NOV 5 1991

ZONING EVALUATION DIVISION

RE: Rezoning Application Number RZ-81-P-116

Dear Ms. Byron:

I am writing this letter on behalf of Trifam Systems, Inc., the applicant in the above-referenced rezoning application. David Stoner, Esquire, Assistant County Attorney, has suggested that we write to you concerning the matter described below.

Background

In the subject rezoning, Trifam Systems proffered in Item 2(a) to "[c]onstruct privacy fences to seven (7) feet as shown on the Development Plan. Said fences shall be 'accoustic barriers' as defined by the Federal Highway Administration in [its] Noise Barrier Design Handbook (1976)." The purpose of the proffer was to "address for noise attenuation from Interstate Route 66 traf- fic . . ."

By this letter, we are requesting a determination from your office pursuant to your authority under Section 15.1-491 et seq. of the Virginia Code and Section 18-204 of the Fairfax County Zoning Ordinance that Trifam has substantially conformed with that proffer. The reasons for substantial conformance are set forth below.

Reasons for Substantial Conformance

1. The existing 6 ft. high stockade fences provide essentially the same, and in some cases better, noise attenuation than the accoustic fences.

Attached as Exhibit A hereto and incorporated herein by reference is a letter, dated September 14, 1987, from the Poly-

Zoning Administrator
Attn: Ms. Barbara Byron
October 31, 1991
Page Two

sonics firm of accoustical consultants to the applicant. Polysonics' letter states that based on their professional analysis, "the existing 6 ft. high stockade fences provide substantially equivalent I-66 traffic noise attenuation."

This conclusion is based on the fact that, unlike the proposed location of the proffered accoustical fences, the existing stockade fences are located between the backyards of the various lots and in the line-of-sight from the source of the traffic noise. This locational advantage of the existing stockade fences over the proffered accoustical fences results in equivalent or improved noise reduction.

In fact, Polysonics concludes in Table 1 of their letter that for Lots 2 through 6 (five of the seven lots at issue), the existing stockade fences actually provide more noise attenuation than the proffered accoustical fences.

2. **The planned VDOT Sound Barrier Wall will adequately shield the entire Sutton Green site from the I-66 traffic noise.**

Attached as Exhibit B hereto and incorporated herein by reference is a letter, dated October 8, 1991, from the Miller Henning Associates, Inc. firm of accoustical engineers to the Virginia Department of Transportation (VDOT). Miller Henning's letter describes the planned VDOT sound barrier wall on the north side of I-66 between Blake Lane and the Vienna Metro Station.

Their letter describes a wall whose average height is 19 feet and whose completion date is July 4, 1992, about seven months away. This sound barrier will meet stringent VDOT noise standards and will shield from traffic noise not only the rear yards but the entire Sutton Green site. The VDOT sound barrier will offer additional noise attenuation and in combination with the existing stockade fences, will exceed the proffered noise attenuation.

Conclusion

Section 18-204 of the Fairfax County Zoning Ordinance defines "substantial conformance" to mean that conformance which leaves a reasonable margin for adjustment due to final engineering but conforms with the general nature of the development. The emphasis is on accomplishing the proffered objective rather than on technical adherence to the means of implementing the proffer.

Zoning Administrator
Attn: Ms. Barbara Byron
October 31, 1991
Page Three

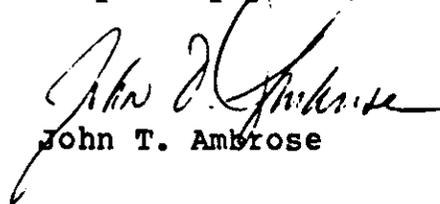
In applying this definition to the instant case, we note that the noise attenuation achieved by the existing stockade fences is certainly within a reasonable margin of (and in most cases superior to) the noise attenuation achieved through the accoustical fences. We note, further, that the VDOT sound barrier constitutes that sort of "final engineering" not contemplated at the time of the proffer that would permit some later adjustment in the means of achieving the proffer.

Based on the definition of substantial conformance, and for the reasons set forth above, Trifam Systems, Inc. has substantially conformed with the proffer in question. The proffered noise reduction has been achieved through the existing stockade fences, and that noise reduction will only be improved by the VDOT sound barrier wall.

* * * * *

If you have any questions concerning this submission, please give me a call.

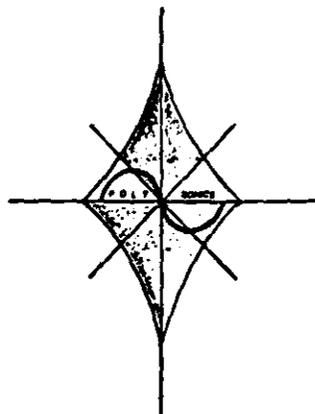
Very truly yours,



John T. Ambrose

cc: Trifam Systems, Inc.

David Stoner, Esq.,
Assistant County Attorney



POLYSONICS

5421 Sherier Place, N.W. Washington, D.C. 20016
(202) 244-7171

★ PLANNING
★ APPLIED RESEARCH
★ DEVELOPMENT

ACOUSTICAL CONSULTANTS

14 September 1987

Mr. Gary W. Weaver
Trifam Systems, Inc.
P.O. Box 696
Oakton, Virginia 22124

SUTTON GREEN
Backyard Noise Barrier

Dear Mr. Weaver:

For Lots #1-6 and 12 of the Sutton Green project located in Fairfax County, Virginia, Polysonics has determined the I-66 traffic noise attenuation provided by the existing 6 ft. high stockade fence. This attenuation is compared to the attenuation which would have been provided by the proffered 7 ft. high "acoustical fence".

The analysis of the noise attenuation provided by these noise barriers is based on sound propagation over a mostly soft site; the source point being located 8 ft. above the near lane elevation of I-66; and the receiving points being located 5 ft. above the centers of the townhouse backyards.

The stockade fence and the "acoustical fence" acoustically differ in three ways: (1) construction, (2) height, and (3) location. The "acoustical fence" construction consists of 16 gauge galvanized steel siding on structural metal tubing. We understand that the stockade fence consists of 1/2 in. thick wood boards with an average gap of 1/16 in. between boards. The height of the "acoustical fence" is 7 ft. The height of the stockade fence is 6 ft. On the site plan the "acoustical fence" is specified at the rear of Lots #1-6 and at the sides of Lots #1 and 12 (see Figure 1). The stockade fence surrounds each backyard.

Assuming the fence interrupts the line-of-sight from the source to the receiver, traffic noise can reach the townhouse backyards in two ways: (1) through the fence, and (2) diffraction over the fence.

Noise reduction analyses of the fence constructions show that the 16 gauge metal provides an estimated 26dBA reduction of traffic noise transmitted through the metal. The 1/2 in. thick wood provides an estimated 17dBA of traffic noise reduction transmitted through the wood. The open area due to the 1/16 in. gaps between boards lowers the acoustical performance of the stockade fence construction down to 14dBA. The traffic noise diffracted over a 6-7 ft. noise barrier around the townhouse backyards is reduced a maximum of 5-8dBA. As a result, the level of the noise diffracted over the fence is substantially higher

than the level transmitted through the fence. At the receiving points in the backyards the noise level transmitted through the "acoustical fence" would combine with the diffracted noise level resulting in a combined noise level less than 0.5dBA higher than the diffracted noise level. The noise level transmitted through the stockade fence would combine with the diffracted noise level resulting in a combined noise level of as much as 1dBA higher than the diffracted noise level. Therefore, in this case, the acoustical difference between the two fence constructions is about 0.5dBA.

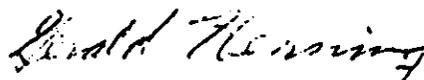
To provide some understanding of the decibel system, subjectively a 10dBA increase in a noise level is perceived to be approximately twice as loud. Conversely, a 10dBA decrease in a noise level is perceived to be approximately one-half as loud. A difference of 3dBA is generally the minimum perceivable difference between noise levels.

Table 1 shows the differences in noise attenuation provided by the two fences as a result of the heights and locations of the fences. A positive value indicates that the existing 6 ft. high stockade fence provides more attenuation than the proffered 7 ft. high "acoustical fence". A negative value means the opposite.

The "acoustical fence" has the advantage of being 1 ft. higher which makes the most difference for Lot #1 (see Figure 1). However, the 6 ft. high stockade fence has the advantage of being located between each backyard. Figures 1 and 2 show that line-of-sight along Section A is not interrupted by the "acoustical fence" for Lots #3-6. The stockade fence between lots does interrupt this line-of-sight. Figure 3 shows that line-of-sight along Section B is interrupted by a 6 ft. fence as well as a 7 ft. fence. It is noted that shielding from townhouses themselves provides 3-7dBA of noise attenuation to the backyards depending on the location of the lots (Lot #1 receives the least, Lots #6 and 12, receive the most).

Table 1 shows that the 7 ft. high "acoustical fence" provides more noise attenuation for Lots #1 and 12. Because of its location between townhouse backyards, the 6 ft. high stockade fence provides more noise attenuation for Lots #3-6. Therefore, on the average, the proffered 7 ft. high "acoustical fence" and the existing 6 ft. high stockade fence provide substantially equivalent I-66 traffic noise attenuation.

Sincerely,



Gerald Henning
Acoustical Engineer

TABLE 1

**DIFFERENCES IN NOISE ATTENUATION
DUE TO HEIGHT AND LOCATION
OF NOISE BARRIERS**

<u>Lot #</u>	<u>The Attenuation of 6 ft. High Stockade Fence Surrounding Each Lot Minus the Attenuation of 7 ft. High "Acoustical Fence"</u>
1	-(3-5) dBA
2	+(0-1) dBA
3	+(1-3) dBA
4	+(1-3) dBA
5	+(1-2) dBA
6	+(1-2) dBA
12	-(0-2) dBA

EXHIBIT B

**MILLER HENNING ASSOCIATES, INC.**

CONSULTANTS IN ACOUSTICS, VIBRATION, & A/V DESIGN

October 8, 1991

Mr. A.V. Baily
Virginia Department of Transportation
3565 Chain Bridge Road
Fairfax, Virginia 22030

Re: VDOT SOUND BARRIER WALL
I-66 Traffic Noise Shielding for Sutton Green

Dear Mr. Baily:

Miller Henning Associates has ascertained the location, elevation, and completion date of the VDOT Sound Barrier Wall #8 on the north side of I-66 between Blake Lane and the Vienna Metro Station. Mr. Gary Weaver of Trifam Systems, Inc. has requested that you incorporate this information into a letter from your office to him. The information is as follows.

The western terminus of the barrier is approximately 75 ft from the centerline of Sta 498 of WB I-66. Its top elevation is 386.6 ft. Travelling eastward in 50 ft increments (+50 Sta increments), the barrier's top elevations are: 387, 387.1, 387.5, 387.8, 388, 387.8, 387.4, 386, 384.5, 384.2, 384, 384, and 383.5. The barrier remains at approximately 75 ft from WB I-66's centerline for all of the preceding points. At the next point which is opposite Sta 504+70, and top elevation 382±.5 ft, the barrier takes a 50 ft absolute north jog away from I-66 toward Ramp A, ending up 20 ft away from Ramp A's centerline at its Sta 12+50. Its top elevation here is 382±.5 ft. Proceeding in 50 ft increments westward (+50 Sta increments), its elevations in feet are 381.5±.5, 381.5, 379. It remains at approximately 20 ft from Ramp A's centerline, ending at its Sta 14+00.

The ground elevation for 90% of all preceding locations is 366-368 ft. The ground elevation for 100% of all preceding locations is 364.5-368.5 ft. This means that its average height is approximately 19 ft. The barrier completion date is July 4, 1992.

Please address your letter to:

Mr Gary Weaver
Trifam Systems, Inc.
P.O. Box 696
Oakton, Virginia 22124

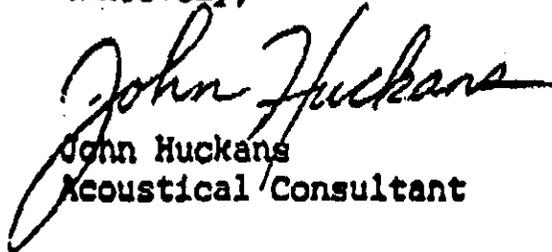
Mr. A.V. Baily

2

October 8, 1991

Thank you for your attention to this matter. Please call us if you have any questions.

Sincerely,



John Huckans
Acoustical Consultant

lr

John T. Ambrose

Attorney and Counselor At Law

6867 Elm Street, Suite 102, McLean, VA 22101 * Phone: (703) 790-8487 * FAX: (703) 790-9468

November 13, 1991

Fairfax County
Zoning Administrator
Zoning Evaluation Division
Barbara Byron, Director
4050 Legato Road
Fairfax, Virginia 22033

RECEIVED
OFFICE OF COMPREHENSIVE PLANNING

NOV 18 1991

RE: Rezoning Application Number RZ-81-P-116

ZONING EVALUATION DIVISION

Dear Ms. Byron:

This letter supplements my earlier letter to you, dated October 31, 1991, concerning the same matter.

As you may recall, we are requesting a determination from your office that Trifam Systems, Inc. has substantially conformed with the noise attenuation proffer in the subject rezoning.

Attached as Exhibit C is a letter, dated October 30, 1991, from the Virginia Department of Transportation to Trifam, certifying VDOT's plans regarding the sound wall along I-66. The letter confirms VDOT's plans to build the wall, describes the characteristics of the wall, and states that July 1992 is the completion date for its construction.

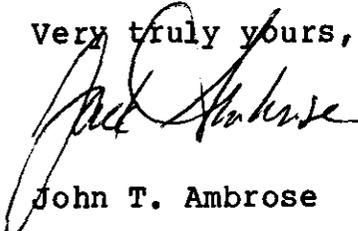
Attached as Exhibit D is a letter, dated November 1, 1991, from Miller Henning Associates, Inc. to Trifam, analyzing the noise abatement impact of VDOT's sound barrier wall. Miller Henning's letter concludes that the existing 6 ft. stockade fence in conjunction with the VDOT wall provides more noise attenuation than the proffered fences for all of the lots at issue at Sutton Green.

In conclusion, we note that the noise attenuation achieved by the existing stockade fences and the VDOT wall is not only within a reasonable margin of the noise attenuation achieved through the proffered fences (see the definition of substantial conformance), it is actually superior. Based on the definition of substantial conformance, therefore, Trifam has substantially conformed with the noise attenuation proffer.

Zoning Administrator
Attn: Ms. Barbara Byron
November 13, 1991
Page Two

Thank you for the opportunity to present our request. If you have any questions concerning this submission, please give me a call.

Very truly yours,

A handwritten signature in black ink, appearing to read "John T. Ambrose". The signature is written in a cursive style with a large, looping initial "J".

John T. Ambrose

cc: Trifam systems, Inc.

David Stoner, Esq.,
Assistant County Attorney

EXHIBIT C



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
3585 CHAIN BRIDGE ROAD
FAIRFAX, VIRGINIA. 22030

RAY D. PETHTEL
COMMISSIONER

A. V. BAILEY, II
RESIDENT ENGINEER

October 30, 1991

Mr. Gary Weaver
Trifam Systems, Inc.
Post Office Box 696
Oakton, Virginia 22124

Re: I-66 Sound Barrier Wall

Dear Mr. Weaver:

This is in response to a letter dated October 8, 1991, from Miller Henning Associates, Inc. regarding sound walls on I-66. As per your request, the information is as follows:

The western terminus of the barrier is approximately 75 ft. from the centerline of STA 498 of westbound I-66. Its top elevation is 386.6 ft. traveling eastward in 50 ft. increments, the barrier's top elevations are: 387, 387.1, 387.5, 387.8, 388, 387.8, 387.5, 386, 384.5, 384.2, 384, 384, and 383.5. The barrier remains at approximately 75 ft. from westbound I-66's centerline for all the proceeding points. At the next point which is opposite STA 504+70, and top elevation 382±.5, the barrier takes a 50 ft. absolute north jog away from I-66 toward Ramp A, ending up 20 ft. away from ramp A's centerline at its STA 12+50. Its top elevation here is 382±.5 ft. Proceeding in 50 ft. increments westward, its elevations in feet are 381.5±.5, 381.5, and 379. It remains at approximaely 20 ft. from ramp A's centerline, ending at its STA 14+00.

The height of the wall depends on the existing ground elevations. Since ground elevations were taken from aerial photography, the actual elevations may differ, therefore the exact height of the wall may not be determined until construction is complete. The completion date for the barrier is early July, 1992.

If you have any further questions, please feel free to contact me at 934-5686.

Very truly yours,

Pedro L. Capestany
Transportation Engineer Trainee

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EXHIBIT ①

**MILLER HENNING ASSOCIATES, INC.**

CONSULTANTS IN ACOUSTICS, VIBRATION, & A/V DESIGN

November 1, 1991

Mr. Gary W. Weaver
Trifam Systems, Inc.
P.O. Box 696
Oakton, Virginia 22124

Re: SUTTON GREEN
Barrier Performance Comparison

Dear Mr. Weaver:

The following two noise abatement methods are compared in terms of their effectiveness at reducing the noise from highway traffic along Interstate 66 at the rear yards of Units #1-6 and 12 of the Sutton Green development in Fairfax County, Virginia.

- 1) A 7 ft high fence composed of horizontally running boards that is located at the rear of Lots #1-6 and at the sides of Lots #1 and 12 (see Figure 1).
- 2) A 6 ft high stockade fence surrounding each backyard of Units #1-6 and 12 in conjunction with the Virginia Department of Transportation's Sound Barrier Wall #8 which will be installed between Sutton Green and I-66.

Miller Henning Associates obtained detailed information concerning the VDOT wall's location and elevations along its length by visiting VDOT's offices and reading the information directly off of the construction drawings. In addition, a site investigation of Sutton Green was conducted to determine whether the VDOT wall in conjunction with the topography between Sutton Green and I-66 would block the view of the road from the rear yards of Units #1-6 and 12. Based on these investigations, it was discovered that the wall is approximately 19 ft high and that although it provides excellent attenuation (≈ 15 dBA) when it blocks sight of I-66, its western terminus stops short of providing complete shielding of I-66 and thus there is an angle of approximately 30° which subtends the portion of I-66 that is visible from Units #1-6.

To determine the amount of insertion loss (IL) provided by the VDOT wall at the rear yards of Units #1-6 and 12, it is necessary to calculate the attenuation of traffic noise it provides which is in excess of the current attenuation at these locations. The

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Mr. Gary W. Weaver

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building stops some of the traffic noise from reaching the rear yards of Units #1-6.

Based on comparative noise attenuation calculations, the insertion losses provided by the VDOT wall for Lots #1-6 and 12 are as follows:

TABLE 1. Insertion loss provided by VDOT Sound Barrier Wall #8

Lot	#1	#2	#3	#4	#5	#6	#12
IL _{VDOT}	5 dBA	3 dBA	2 dBA	2 dBA	2 dBA	2 dBA	3 dBA

The above insertion loss values may be added directly to the noise attenuation differences between the 6 ft stockade fence and the 7 ft horizontal board fence. These differences were calculated in an earlier study. The results are as follows:

TABLE 2. Amount by which the insertion loss provided by 6 ft stockade fence and the VDOT wall exceeds that provided by 7 ft horizontal board fence

Lot	#1	#2	#3	#4	#5	#6	#12
IL _{DIFF}	+(0-2) dBA	+(3-4) dBA	+(3-5) dBA	+(3-5) dBA	+(3-4) dBA	+(3-4) dBA	+(1-3) dBA

As can be seen, the combined insertion loss of the VDOT wall and the 6 ft stockade fence is greater than that of the 7 ft fence alone for every one of the lots considered. In addition, the VDOT wall provides noise attenuation for the upper stories of the Sutton Green residences as well as the front yards which the 7 ft wall does not.

Thus, the 7 ft high horizontal board fence, by itself, is not able to provide as much noise reduction at any location on the Sutton Green development as the combined noise reduction of VDOT Sound Barrier Wall #8 and the 6 ft stockade fence. Moreover, because the VDOT wall runs along the shoulder of I-66 at an approximate 19 ft height, it is able to provide large area noise reduction as opposed to the limited area reduction provided by the 7 ft high wall by itself.

Sincerely,

