

✓ 9-15-06

**VARIANCE REQUEST**  
**Iowa Department of Natural Resources**

1. Date: November 21, 2003  
2. Review Engineer: Boris Eliosov  
3. Date Received: November 10, 2003  
4. Facility Name: Afton  
5. County Number: 88  
6. Program Area: CP (Wastewater Construction)  
7. Facility Type: C05 (Biological Treatment)  
8. Subject Area: 387, 310  
9. Rule Reference: 567-64.2(9)a  
10. Design Stds Ref: 12.5.1; 12.6  
11. Consulting Engr: Veenstra & Kimm, Inc.  
12. Variance Rule: 567-64.2(9)d

13. Decision: *approved*  
Date: *12/9/03*

14. Appeal:  
Date:

**15. Description of Variance Request:**

City of Afton has submitted a project for sanitary sewer extension that includes installation of 1,480 feet of 6-inch sewer at the minimum slope of 0.6%. Iowa Design Standard 12.5.1 requires the minimum pipe diameter of 8 inches for sewered communities. Also, 175 feet of the proposed extension will be installed by horizontal directional drilling (HDD).

**16. Consulting Engineer's Justifications**

1. 6-inch sewer: potential saving of approximately \$1,500. The proposed sewer will only serve 15 people. No further extensions are anticipated.
2. HDD installation is proposed to protect the existing street surfacing.

**17. Department's Justifications**

**1. 6-inch sewer: Recommend variance denial:**

Even in unsewered communities, 6-inch pipe can only be used for the last 800 feet, less than the length of the proposed extension. Engineer's justification does not provide any indication of unique circumstances: same justification could be applied to any other project.

**2. HDD installation: Recommend variance approval:**

1. The sewer will be installed at an increased slope (0.6%). Maximum vertical alignment tolerance of 0.5% of the grade and maximum horizontal deviation from plan alignment of 1% are specified. That will provide a full flow velocity of more than 2 feet/s.

2. Pipe material: SDR 26 and 21 PVC pipes have been previously approved for HDD installation. Proposed SDR 18 is more conservative and will result in a lower deflection than previously approved materials.

Iowa City (HDD)- Approved 12/10/2002; Cedar Rapids (HDD) - Approved 10/20/2003

19. Staff Reviewer:

Date: 11/21/03

20. Supervisor:

Date: *12/8/03*

21. Authorized by:

Date:



# STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR  
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
JEFFREY R. VONK, DIRECTOR

November 21, 2003

Kathy Flam  
City of Afton  
115 Kansas Street  
Afton, IA 50830

RE: Sullivan Sanitary Sewer Extension  
IDNR # 6-88-03-0-01

Dear Ms. Flam:

The Iowa Department of Natural Resources received two design variance requests for the referenced project:

1. October 28, 2003 variance request from Design Standard 12.5.1. This design standard defines minimum diameter of gravity sewers.
2. November 10, 2003 variance request from Design Standard 12.6 to use SDR 18 PVC pipe installed by horizontal directional drilling (HDD). Proposed trenchless installation method is not covered by Iowa Design Standards.

Variance request for 6-inch gravity sewer.

The proposed sewer diameter is less than the minimum diameter of 8 inches required by Iowa Design Standards. Based on your engineer's justification, the purpose of the requested variance is reduction of the project cost by approximately \$1,600.

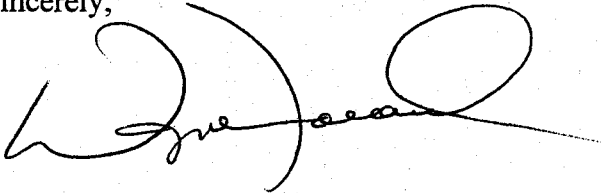
According to 567 IAC 64.2(9), design variances can only be approved if there are unique circumstances not found in most project. Our review has indicated that the requested design variance does not meet this requirement. Therefore, the variance request for installation of 6-inch gravity sewer is denied.

Variance request for HDD.

Our review has determined that, compared to the standard installation methods, the proposed installation technique will provide substantially equivalent or improved effectiveness. Therefore, the variance request for installation of 175 feet of SDR 18 PVC pipe using HDD is approved.

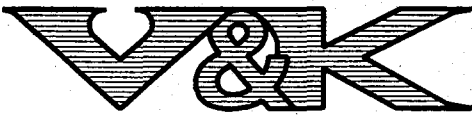
If you have any questions, please contact Boris Eliosov at 515/281-7953. My telephone number is 515/281-8877.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Farrand", with a large, stylized loop at the end.

Wayne Farrand, P.E.  
Wastewater Section Supervisor

cc.: Veenstra & Kimm, Inc., West Des Moines  
Field Office # 4



52004-0198  
**VEENSTRA & KIMM, INC.**

3000 Westown Parkway • West Des Moines, Iowa 50266-1320

515-225-8000 • 515-225-7848(FAX) • 800-241-8000(WATS)

October 28, 2003

Dick Sandal  
Iowa Department of Natural Resources  
Wallace State Office Building  
900 East Grand Avenue  
Des Moines, Iowa 50319

AFTON, IOWA  
SULLIVAN SANITARY SEWER EXTENSION  
CONSTRUCTION PERMIT APPLICATIONS

Enclosed are three sets of plans and specifications for the above referenced project for your review. Also enclosed is one set of Iowa Department of Natural Resources Schedules A, B and C for the project.

The project consists of approximately 1,480 linear feet of 6-inch sanitary sewer to serve seven existing residences currently on septic systems. The project is anticipated to begin construction in mid-November 2003.

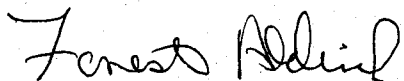
On behalf of the City of Afton, Iowa we request a variance from Section 12.5.1 of IDNR Water and Wastewater Facilities Design Standards. The proposed sanitary sewer improvements will serve 7 existing dwellings and a population of 15 people. No future development is expected in the area and the purpose of the improvements is to transfer the existing homes from septic tanks to the existing City sewer system.

We request your review of the plans, specifications and construction schedules and issuance of a construction permit for the project.

Dick Sandal  
October 28, 2003  
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If you have any questions or comments, please contact us at 225-8000.

VEENSTRA & KIMM, INC.

A handwritten signature in cursive script, appearing to read "Forrest Aldrich".

Forrest Aldrich

FSA  
21525  
Enclosures  
cc: Kathy Flam, City of Afton w/ enclosures



November 10, 2003

Boris Eliosov  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319

AFTON, IOWA  
SULLIVAN SANITARY SEWER EXTENSION  
VARIANCE REQUEST

On behalf of the City of Afton, we are requesting a variance from IDNR Design Standard 12.6 for the directional bored pipe on the above project. Design Standard 12.6 is for open cut trench installed pipe and is not applicable to directional bored pipe.

The pipe is proposed to be directional bored for 175 feet in two locations as shown on Drawing No. 1. The pipe is being directional bored to protect the existing street surfacing.

The specified pipe material is AWWA C900 pvc water main pipe as described on page 4-2 of the specifications. The pipe will be installed in accordance with paragraph 7 on page 4-3 of the specifications.

If you have any questions or comments, please contact us at 225-8000.

VEENSTRA & KIMM, INC.

Forrest Aldrich

FSA:jgt  
21525

cc: Kathy Flam, City of Afton