

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date	:	7/31/92	13. Decision:	Denied
2. Review Engineer	:	Fred Evans	Date:	8/5/92
3. Date Received	:	7/20/92		
4. Facility Name	:	City of Rome	14. Appeal:	
5. County Number	:	44	Date:	
6. Program Area	:	CP		
7. Facility Type	:	CO2		
8. Subject Area	:	327		
9. Rule Reference	:	64.2(9)		
10. Design Std. Ref.	:	13.10.4		
11. Consulting Engr.	:	French-Beneker-Assoc.		
12. Variance Rule	:	64.2(9)C		

15. Description of Variance Request

Chapter 13.10.4 of the design standards requires that valves for submersible pumps shall be located in a separate valve chamber. The consulting engineer is proposing to use submersible grinder pumps. The check valves will be an integral part of the pumps which can be removed with the pumps for servicing. The engineer proposes to bury the positive closure valves adjacent to the pump station in lieu of providing a separate valve chamber; therefore, a variance has been requested to delete the valve chamber.

16. Consulting Engineer's Justification

1. The valve chamber is intended to house the check valve of a non-grinder pump station. For non-grinder type lift stations, as long as a separate chamber is necessary for the check valve, (which cannot be buried) it makes sense to also locate the shut off valves in

16. Consulting Engineer's Justification (cont.)

the chamber. The modern grinder pumps have the check valve as an integral part of the pump's lift out assembly.

Therefore, the chamber is not needed for these types of grinder pumps.

2. The ball valves on the force mains from the grinder pumps for this project are fully intended for direct bury.

They are the same valves as used on water systems where they are routinely buried.

17. Department's Justification

The location of the check valves in the wet well would be acceptable since these valves are an integral part of the pump assembly and can be removed with the pump for servicing. The most recent revision of the 10 States Standards approves the location of check valves in wet wells if they are removable with the pumps. However, if the positive closure valves for the pumps are buried, additional time would be required to uncover ^{the valves} for servicing, and therefore such a design would not provide for at least equivalent or improved effectiveness as required by our rules for variances.

Therefore, it is recommended that the requested variance to delete the separate valve chamber be denied.

18. Precedents Used

Star MHP - denied 11/30/84
City of Mystic - denied 7/16/86
Oak Ridge Estate - denied 5/26/89
City of Chillicothe - denied 5/10/90

19. Staff Reviewer

: Fred Evans

Date:

7/31/92

20. Supervisor

:

Don J. [Signature]

Date:

8/4/92

21. Authorized by

:

David W. [Signature]

Date:

8/15/92



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

August 6, 1992

The Honorable John Sammons
Mayor of Rome
City Hall
Rome, IA 52642

SUBJECT: Variance Request Denied
Rome Sewerage Facilities
Rome, Iowa

Dear Mayor Sammons:

The city's consulting engineer, in a letter dated July 16, 1992, requested on behalf of the city of Rome, a variance from Iowa Wastewater Facilities Design Standard 13.10.4. This standard requires a separate valve chamber outside submersible pump lift stations for the location of the check valves and shutoff valves on the discharge lines from the submersible pumps.

We could allow the check valves to be located in the wet well if they are specifically designed as a component of the submersible pump which can be lifted out with the pump for servicing. We would, however, still require a separate valve chamber be provided for the shutoff valves to prevent the need of digging valves out for maintenance. Your request of burying a shutoff valve and a valve box adjacent to the wet well has been denied. A separate valve chamber will be required for this project.

If you have any questions concerning this letter, please do not hesitate to contact Mr. Fred M. Evans of this office at 515/281-8995.

Sincerely,

DARRELL MCALLISTER, CHIEF
SURFACE & GROUNDWATER PROTECTION BUREAU

bkp/S&GWW219P01.01

cc: French-Reneker Associates, Inc., Fairfield, IA
Field Office 6

FRENCH - RENEKER - ASSOCIATES, Inc.

Donald E. French, (1921-1982)

1501 S. MAIN STREET

PO BOX 135

FAIRFIELD, IOWA 52556

515-472-5145

CONSULTING ENGINEERS

W. Daniel Reneker, PE

James I. Warner, PE

Kenneth D. Bucklin, PE-LS

David H. Fredericks, PE

Jerry W. Long, PE

July 16, 1992

Mr. Fred Evans
Wastewater Permits Section
Iowa Department of Natural Resources
900 East Grand
Des Moines, Iowa 50319

Re: Lockridge Sewerage System (91-55)
Rome Sewerage System (91-60)

Dear Mr. Evans:

On behalf of the Cities of Lockridge and Rome, Iowa, I request a variance to IDNR Design Chapter 13.10.4 dealing with valve chambers adjacent to pump stations. I request that a valve chamber not be required outside of a grinder pump station.

The valve chamber is intended to house the check valve of a non-grinder type pump station. For non-grinder type lift stations, as long as a separate chamber is necessary for the check valve, (which cannot be buried), it makes sense to also locate the shut off valves in the chamber. The modern grinder pumps have the check valve as an integral part of the pump's lift out assembly. Therefore, the chamber is not needed for these types of grinder pumps. The ball valves on the forcemains from the grinder pumps for these projects are fully intended for direct bury. They are the same valves as used on water systems where they are routinely buried.

Thank you for your prompt response to this variance request.

Very truly yours,

Kent O. Rice

Kent O. Rice, P.E.

KOR/jc

cc: William Luzadder, Mayor of Lockridge
John Sammons, Mayor of Rome
Jim Carroll, FmHA

FRENCH - RENEKER - ASSOCIATES, Inc.

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CONSULTING ENGINEERS

Kenneth D. Bucklin, PE-LS

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James I. Warner, PE

Jerry W. Long, PE

April 24, 1992

Mr. Fred Evans
Wastewater Permits Section
Iowa Department Natural Resources
Wallace State Office Bldg.
900 E. Grand
Des Moines, IA 50319

Re: Hillsboro Sewerage System (91-52)
Rome Sewerage System (91-58)

Dear Mr. Evans:

This letter is in response to recent communication concerning your review of the Rome and Hillsboro sewerage systems. Although there were several items to resolve, as Chief Engineer of our firm, there are three in particular I would like to discuss.

First, we have revised the drawings to put the valves for the grinder pump station in a "valve chamber" as referenced in IDNR Design Chapter 13.10.4. However, we do not feel you are interpreting the 10 State Standards for a valve chamber correctly.

The valve chamber is intended to house the check valve of a non-grinder type pump station. For non-grinder type lift stations, as long as a separate chamber is necessary for the check valve, (which cannot be buried), it makes sense to also locate the shut off valves in the chamber. The modern grinder pumps have the check valve as an integral part of the pump's lift out assembly. Therefore, the chamber is not needed for these types of grinder pumps. The ball valves on the forcemains from the grinder pumps for these projects are fully intended for direct bury. They are the same valves as used on water systems where they are routinely buried.

A drawing (sheet 16 of 16) of the proposed valve chamber is enclosed. We have designed a small chamber inaccessible to man for safety reasons. A valve chamber becomes an area of stagnant air that could collect sewer gases. Requiring an unnecessary chamber, and furthermore requiring that someone enter the chamber to operate the valves creates unsafe conditions unnecessarily. The valve chamber will incorporate granular material to allow drainage of any accumulated water.

Second, Section 13.11 of the Design Chapter states that consideration should be given to providing a high level wet well overflow. The purpose of the overflow, as we designed it, is to supplement alarm systems and standby facilities just as your Design Chapter reads.

We are eliminating the overflow pipes as you recommended. However, in so doing, we feel you have again forced an unsafe situation. In Hillsboro, if standby equipment fails, sewage will back into a house basement before it overflows the pump station. In Rome, sewage will float off the lid of manhole number 1, creating a place for flood water to enter the sewer system and leaving an unsafe open manhole. We do not understand your insistence to disregard your own regulations to create an unsafe and unsanitary condition.

Finally, we are changing the designed gradation of the river rock for the sand filter to comply with Chapter 69 of the Iowa Administrative Code as you recommended. The revised river rock will grade between 3/4" and 1 1/2".

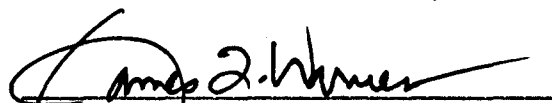
We feel you are incorrectly using the standards. Chapter 69 is entitled "On-Site Wastewater Treatment and Disposal Systems" and is applicable for individual home disposal systems. We feel it can be used as a good reference, but is not a standard for a municipal system being designed by Registered Professional Engineers. A typical "on-site" sand filter is designed for continuous waste discharges. The dosing siphons change the operation of the filters completely. The smaller rock we had previously specified would provide better distribution of waste than the larger rock. There is no danger of the rock clogging because it has significantly larger pore space than the sand below it. The vent pipes will provide adequate ventilation to maintain an aerobic condition.

4/24/92

We are concerned about these items. They affect not only the Rome and Hillsboro projects, but also our designs for other sewerage projects. It would be in everyone's best interest for you to reconsider these items. I will call you next week to confirm your thoughts. A separate letter is being provided to respond to your other comments for the Rome system just as was done for the Hillsboro system.

Very truly yours,

FRENCH-RENEKER-ASSOC., INC.


James I. Warner, P.E.
Project Engineer

JIW/jc

Enclosures

cc: Roberta Boitscha, Mayor of Hillsboro
John Sammons, Mayor of Rome
Jim Becker, Attorney
Jim Carroll, FmHA
Wayne Farrand, IDNR