



# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

September 17, 2014

Bill Cowell  
City of Fairbank  
116 East Main St.  
Fairbank, IA 50629

Re: Wastewater Treatment Improvements  
City of Fairbank  
DNR Project No. S2012-0184  
CWSRF No. CS1920700 01

Subject: Variance Request from 567 IAC 64.2(9a) and Design Standards Section 12.4  
(Materials) and 12.6 (Details of Construction).

Bill:

After careful and thorough consideration, the Department has approved your August 28, 2014 request for a variance from Iowa Administrative Code Sub Rule 567 IAC 64.2(9a) and Chapter 12.4 and 12.6 of the Iowa Wastewater Facilities Design Standards. The project will utilize HDPE pipe material that is not covered by Design Standard 12.4 and the method of installation is a trenchless method of installing sanitary sewer that is not covered by Design Standard 12.6.

Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of a variance for installing HDPE pipe via a trenchless method. The requested variance is deemed to be reasonable and necessary pursuant to the Iowa Code section 455B.181.

The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance is considered to be of a permanent nature. The validity of this variance approval shall last for a period of one year from the date of the construction permit in accordance with Rule 561 IAC 10.5.

This decision is based on our review of justification presented to support the request. Our concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness as would be provided by technical compliance with the design standard on this issue.

Please feel free to call James Oppelt at 515-281-8868 or email me at [james.oppelt@dnr.iowa.gov](mailto:james.oppelt@dnr.iowa.gov) if you have any further questions.

Sincerely,



Shelli Grapp  
Water Quality Bureau Chief

C: Lucas Elsbernd, P.E. / Fehr Graham  
DNR Field Office 1  
DNR Sewage File 6-10-25-0-01  
SRF File CS1920700 01  
DNR Legal Services

**VARIANCE REQUEST**  
Iowa Department of Natural Resources

<p>1. Date: 9/17/14</p> <p>2. Reviewer/Engr.: Jim Oppelt</p> <p>3. Date Received: 9/4/14</p> <p>4. Facility Name: Fairbank WWTF</p> <p>5. Facility Number: 6-10-25-0-01</p> <p>6. County Number: 10</p> <p>7. Program Area: CP (Wastewater Construction)</p> <p>8. Facility Type: C01 (Collection/Transport) 355 (Sewer pipe material) and 387</p> <p>9. Subject Area: (directional boring)</p> <p>10. Rule Reference: 567-64.2(9)a 12.4 (Materials); 12.6 (Details of</p> <p>11. Design Std. Ref.: construction)</p> <p>12. Consulting Engr.: Fehr Graham</p> <p>13. Variance Rule: 567-64.2(9)c</p>	<p>14a. Decision: <i>Approved</i></p> <p>Date: <i>9-19-14</i></p> <p>Expiration Date</p> <p>14b. (if any): Permanent</p> <p>15. Appealed:</p> <p>Date:</p>
<p>16. Description of Variance Request:</p> <p>The consulting engineer has requested a variance to directionally bore 651 feet of 8" diameter sewer. SDR 11 pipe thickness is proposed. Design standard 12.6 describes the requirements for installation of flexible pipe sanitary sewer using open cut methods including requirements for excavation, pipe bedding, and installation based on ASTM D 2321. The proposed method of installation is a trenchless method of installing sanitary sewer that is not covered by the IA standards and will utilize a pipe material not covered by Design Standard 12.4 (polyethylene pipe).</p>	
<p>17. Applicant's/Consulting Engineer's Justification:</p> <p>SDR 11 pipe will be used. Drilling allows the private property to remain undisturbed.</p>	
<p>18. Department's Justification:</p> <p>Recommend Variance Approval with the condition that design slopes and specified maximum installation tolerances for trenchless construction provide minimum installed grades greater than or equal to those required by the IWFDS for open trench construction. Deflection will be less than 5% for SDR 11 PE pipe at the proposed 6 foot depth of bury.</p> <p>(a) Substantially equivalent effectiveness. Directional boring is a proven method of installation for gravity sewers and appropriate materials are specified for the project (ASTM D3350).</p> <p>(b) Unique circumstances. The location of the project would disturb private property and cause costly restoration.</p> <p>(c) Application of established and acceptable technologies in an innovative matter not covered by current standards. Directional boring is an established technology for installation of gravity sewers (first used by the oil and gas industry in the 1920's). This, as well as other trenchless installation methods are not included in the IWFDS.</p>	
<p>19. Precedents Used:</p> <p>Cedar Rapids - Approved 4/8/13</p> <p>Cedar Rapids - Approved 12/10/13</p> <p>Altoona - Approved 5/10/13</p> <p>Ackley - Approved 4/24/14</p> <p>Allen Homes, Inc. - Approved 6/21/14</p>	
20. Staff Reviewer: <i>[Signature]</i>	Date: <i>9-18-14</i>
21. Supervisor: <i>[Signature]</i>	Date: <i>9/19/14</i>
22. Authorized by: <i>[Signature]</i>	Date: <i>9-19-14</i>

**DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL SERVICES DIVISION  
502 EAST 9TH STRET– DES MOINES, IOWA 50319-0034  
Telephone: 515-242-5851; 515-281-8986  
Fax: 515-281-8895**

**UNIFORM FORM FOR  
PETITIONS FOR WAIVERS FROM ADMINISTRATIVE RULES**

This form may be used to seek a waiver or variance from an administrative rule adopted by the Department listed above. A waiver, if granted, may excuse the petitioner from the requirements of a rule in its entirety or in part, or may modify the requirements of a rule, for a period of time or permanently. The process for seeking a waiver from an administrative rule and the standards under which the petition will be evaluated are described in 561 IAC Chapter 10. Please keep in mind that the Department is not allowed to waive or alter a statutory duty or requirement.

**Criteria for a waiver includes clear and convincing evidence that:**

1. The application of the rule would impose undue hardship on the person for whom the waiver is requested;
2. The waiver from the requirements of the rule in the specific case would not prejudice the substantial legal rights of any person;
3. The provisions of the rule subject to the petition for a waiver are not specifically mandated by statute or another provision of law; and
4. Substantially equal protection of public health; safety, and welfare will be afforded by a means other than that prescribed in the particular rule for which the waiver was requested.

**PETITION INFORMATION**

(please type or print clearly)

Your Name: Bill Cowell, Mayor Business Telephone: 319-635-2869  
Address: City of Fairbank Residence Telephone: \_\_\_\_\_  
116 E Main St., PO Box 447  
City, State, Zip: Fairbank, IA 50629

List the number and a description of the rule from which you are requesting a waiver: (i.e. 567 IAC Chapter 100-123) Iowa Wastewater Facilities Design Standards Chapter 12 section 12.4 - Material does not list High Density Polyethylene (HDPE) as an approved pipe material, and section 12.6.3 - Installation does not list "Horizontal Directional Drilling" (aka Directional Boring) as an approved installation method. Horizontal Directional Drilling is a trenchless construction method that is not explicitly covered by the current design standards.

**WAIVER REQUESTED**

Briefly describe the nature of the waiver that you are requesting and the period of time you want the waiver to last. **The City of Fairbank wishes to utilize the trenchless construction method known as "Horizontal Directional Drilling" along with HPDE pipe to install a gravity sanitary sewer main. Horizontal Directional Drilling was not an available construction method when the Iowa Wastewater Facilities Design Standards were adopted. The period of time the waiver would last would be during construction for the Horizontal Directional Drilling method, and would be the life of the pipe for the HDPE material. A useful life of 50 years is anticipated for the HPDE main.**

## SPECIFIC INFORMATION ABOUT THE WAIVER YOU ARE REQUESTING

What are the facts and reasons that, in your opinion, provide "clear and convincing evidence" supporting a waiver of the rule? Be sure to explain in your answer why you feel the rule poses an undue hardship on you.

**The City of Fairbank is upgrading the Grove Street lift station to handle PHWW flows. The existing collection system at First Street causes a bottle neck and bypassing of raw wastewater is required during peak flows. The most economical solution is to install a new gravity sewer main from the manhole on First Street one-half block north of Main Street to the Grove Street lift station. The new main will only carry wastewater during high flow periods. The alignment of the proposed main is through private property. Horizontal Directional Drilling of the proposed main allows the private property to remain undisturbed. An alternate solution is to upsize the existing gravity sewer main under First Street and to the Grove Street lift station, however, First Street is paved with concrete and replacement of the existing main would cost significantly more than installation of a new main. HDPE pipe would be the best material to use for Horizontal Directional Drilling due to its strength and flexibility, providing an economical means for the City to install a new main while minimizing the risk of damage to private property.**

List the name, address and telephone number of any person or entity that would be adversely affected by the granting of this waiver.

No person or entity would be adversely affected by the granting of this waiver.

List the name, address and telephone number of any other state or federal boards or agencies, or local governmental bodies, such as a city or county, which also regulates the area in question, or which might be affected by the granting of this waiver.

No other agency will be affected by the granting of this waiver.

How will the public health, safety and welfare be protected if your request for a waiver is granted?

Public health, safety, and welfare will be protected in the same manor as open trench construction; by utilizing proper traffic control for work on or near the street and placing safety fence around open excavations.



Provide a history of any prior contacts between you and the Department relating to the regulated activity or permit affected by the proposed waiver, including a description of each affected permit held by you, any notices of violation, contested case hearings, or investigative reports relating to the regulated activity or permit within the past five years.  
None

Do you know how the Department has treated similar situations? ☐ Yes ☒ No

If yes, describe how similar situations were handled.

While first hand knowlegde of how the Department has treated similar situations is unknown, Horizontal Directional Drilling method of construction has become widely used for installation of utilities in the last 20 years.

List the name, address and telephone number of any persons with knowledge of the relevant facts relating to the proposed waiver.

Lucas Elsbernd, P.E.

Fehr Graham

1919 210<sup>th</sup> Street

Manchester, IA 52057

563-927-2060

lelsbernd@fehr-graham.com

#### SIGNATURE

I attest to the accuracy and truthfulness of the information contained in this petition. I authorize any persons with knowledge of the relevant facts relating to the requested waiver to release any information to the Department to which this petition is directed.



Signature

7-14-14

Date

**FEHR GRAHAM**

ENGINEERING &amp; ENVIRONMENTAL

August 28, 2014

Mr. Chuck Gipp, Director  
 c/o: Mr. Satya Chennupati, P.E.  
 Iowa Department of Natural Resources  
 502 E 9<sup>th</sup> Street  
 Des Moines, IA 50131

Enclosed are two Uniform Form for Petitions for Waivers from Administrative Rules (waiver requests) submitted on behalf of the City of Fairbank for the Wastewater System Improvements project.

Chapter 12 of the Iowa Wastewater Facilities Design Standards does not explicitly cover the use of "Horizontal Directional Drilling" (aka Directional Boring) trenchless construction method with high density polyethylene (HDPE) pipe to install sanitary sewer gravity mains because it is a technology that was not available at the time the design standards were adopted. The justification to use this trenchless method, as noted in the enclosed waiver request, is because Horizontal Directional Drilling will prevent damage to private property and is the most economical option for the City. The use of Horizontal Directional Drilling and HDPE pipe will result in an equivalent product as compared to open trench construction method and materials as required by the Design Standards.

~~Chapter 12 of the Design Standards also requires that a manhole be placed at all changes in alignment for gravity sewers. The proposed outfall line will use existing and new piping to convey effluent from the proposed treatment plant to the discharge location. Because of the physical location and conflict with existing utilities multiple changes in alignment are required. As noted in the enclosed waiver request, the City wishes to not install a manhole at each bend to save cost. The outfall line will carry treated effluent and will have enough manholes to be able to clean the line if necessary.~~

VARIANCE NOT REQUIRED. JCO 9/17/14

This letter also certifies the technical and engineering portion of the enclosed waiver requests.



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Lucas J. Elsbernd*

Lucas J. Elsbernd, P.E.

License Number 18968

My license renewal date is December 31, 2015.

Pages covered by this seal: All Sheets

8/28/14

Date

Feel free to contact me if you have any questions.

Sincerely,



Lucas J. Elsbernd, P.E.  
Project Engineer

Cc: James Oppelt, P.E., IDNR Wastewater Permits Section