

RE: City of Balltown VARIANCE REQUEST
Dubuque County Iowa Department of Natural Resources

2. Date: September 25, 1997
3. Review Engineer: Fred Evans
4. Date Received: 4/26/00
5. County Number: 31
6. Program Area: CP (Wastewater)
7. Facility Type: C05
8. Subject Area: 308
9. Rule Reference: 567-64.2(9)a
10. Design Stds Ref: 14.2.3
11. Consulting Engr: IIW Engineers
12. Variance Rule: 567-64.2(9)c

13. Decision: Approved
Date: 6/19/00

14. Appeal:
Date:

15. Description of Variance Request

The City of Balltown is planning to construct a new wastewater system. The consulting engineer has recommended 2 separate subsurface sand filter treatment facilities. A survey of the two treatment facility sites by the field office has determined that there are two public wells located within 1000 feet from the wells. One is a public deep well located more than 400 feet from either site and the other well serving the Balltown Church is classified as a public shallow well located 90+ feet from the North treatment site. The church well has a depth of 505 feet; however, the casing depth is only 20 feet and the well has experienced excessive levels of nitrates and fecal coliform in the past which resulted in a chlorination program. Since our department rules require a separation distance of 1000 feet for public shallow wells, a variance has been requested.

16. Consulting Engineer's Justifications

1. The Balltown Church well is currently and will continue to be chlorinated as long as testing results indicate that chlorination is necessary. Therefore, protection is being provided at the well.
2. Existing conditions are such that septic tanks are within 160 feet of the well, and discharges from these tanks are within 100 feet of the well. These tanks and discharges shall be removed and replaced the treatment facilities identified in the March 31, 2000 submittal. This would remove a major source of the possible contamination at the well.
3. Finally, the extreme topographic differences within and surrounding the city of Balltown dramatically limits the possible locations for the construction of a wastewater treatment facility. No other area would provide a cost-effective treatment facility location.

17. Department's Justifications

Approval is recommended based upon the engineer's justification and the following additional considerations:

1. The design loading on the North wastewater treatment facility is only 7,000 GPD.

Inasmuch as the separation distance between the North treatment site and the Balltown Church well is 904 feet and several individual on-site wastewater treatment facilities in close proximity to the well will be abandoned and removed, improved effectiveness against possible contamination of the well will be provided.

18. Precedents Used

Cockdins' RV Campsite - Approved 7/11/94

City of West Chester - Approved 12/17/91

19. Staff Reviewer: *Bud Evans*
20. Supervisor: Wayne Farand *Wayne Farand*
21. Authorized by: *J. Hession*

Date: 6/11/00
Date: 6/11/00
Date: 6/19/00

April 25, 2000

Iowa Department of Natural Resources
Waste Water Section
Attn: Fred Evans
Wallace State Office Building
900 E. Grand
Des Moines, IA 50319

2000 APR 26 P 1:03

DEPT. OF
NATURAL RESOURCES

Re: Balltown Waste Water Treatment Works
Variance Request for Balltown Church Well
IIW Project No. 98189-02



Dennis F. Waugh, PE/SE
Charles A. Cate, PE
Gary D. Sejkora, PE
Michael A. Jansen, PE/SE
Ronald A. Balmer, PE/SE*
John M. Tranmer, LS
Ross K. Abbott, LSIT
Timothy J. Tranel, PE
John F. Wandsnider, PE
Julie P. Neebel, PE
James P. Kaune, PE
Thomas J. Oster, LS
*Licensed Architect IL, WI, MN, SD

Dear Mr. Evans:

On March 31, 2000 IIW Engineers & Surveyors, PC submitted wastewater construction permit application forms A, F and G for the City of Balltown, Iowa. Due to the unique topographic constraints associated with Balltown, Iowa, two separate and distinct treatment facilities are required for the City. The treatment method for both the North and South Treatment Works is a Septic Tank and Intermittent Sand Filter combination.

On April 18, 2000 I met with Ron Stellick of the Iowa Department of Natural Resources to perform a site survey of both facilities. On April 19, 2000 Ron contacted me stating that he believes that the originally submitted Schedules A, F and G do not correctly classify the Balltown Church Well (Well #12516), nor the well located at Breitbach Country dining (Well # Not Found). Mr. Stellick said that he would discuss the situation with Mike Wade of the Iowa DNR Water Quality Department and then contact me.

On April 19, 2000, Mr. Wade, Mr. Stellick and myself discussed the current circumstances of the mistakenly identified wells. The original submittal of Schedules A, F and G were prepared under the assumption that both wells would be classified as private wells. However, upon further review of the Environmental Protection Commission (Section 567) of the Iowa Administrative Code, specifically Chapter 40, which provides definitions involved with drinking water regulations, it appears that the wells would be classified as public wells.

Both Mr. Stellick and Mr. Wade informed me that the Breitbach Country Dining well should be classified as a public deep well, according to the information that they had. This classification was due to the depth of the casing at the well. Therefore, the minimum separation distance for the Breitbach Country Dining well should be 400 feet (according to Chapter 64.2(3)c). The actual distance from the Breitbach well to the north treatment site is 802 feet, and 1,950 feet to the south treatment site. Since the actual distance is greater than the required 400 feet to either treatment site, we do not believe a variance is required for this well. We apologize for the misunderstanding in incorrectly classifying this well.

Concerning the Balltown Church Well (Well #12516), both Mr. Stellick and Mr. Wade stated that the well should be classified as a public well. Both Mr. Stellick and Mr. Wade believe that the well regularly serves more than 25 year round residents (which meets the definition of a community water system contained within Chapter 40 of Section 567 of the Iowa Administrative Code).

Civil Engineering
Structural Engineering
Environmental Engineering
Land Surveying
Architectural Engineering
Material Testing
Transportation
Computer Services

IIW Engineers & Surveyors, P.C.
Dubuque, IA Guttenberg, IA Hazel Green, WI

4155 Pennsylvania Avenue
Dubuque, Iowa 52002-2628
319.556.2464
319.556.7811 fax

Upon further research of the Iowa Geological Survey Bureau, the total depth of the well is identified as 505 feet. Mr. Wade stated that according to the information he had the casing depth for this well is 20 feet. Also, this well has experienced excessive levels of nitrates and fecal chloroform in the past. After these excessive levels were observed, the church implemented a chlorination program at the well. Due to the casing depth, and the fact that nitrates and fecal chloroform have been observed in the past, Mr. Wade stated that this well should be classified as a public shallow well.

Chapter 64.2(3)b of the Environmental Protection Commission (Section 567) of the Iowa Administrative Code states that the minimum separation distance from a public shallow well is 1,000 feet. The actual distance from Well #12516 to the South Treatment site is 1,102 feet and to the North Treatment Site is 904 feet. Which means that the North Treatment Site does not comply with a strict interpretation of this regulation.

Chapter 64.2(9)c of Section 567 of the Iowa Code states, "variances from the design standards and siting criteria which provide in the judgment of the department for substantially equivalent or improved effectiveness may be requested when there are unique circumstances not found in most projects. The director may issue variances when circumstances are appropriate."

Both Mr. Stellick and Mr. Wade were of the opinion that a variance from the 1,000-foot separation distance from the Balltown Church well would be appropriate in this matter. Mr. Wade believed that equivalent or greater protection to the environment would be provided by the construction of the north treatment site. This opinion was based upon the following:

- The Balltown Church well is currently and will continue to be chlorinated as long as testing results indicate that chlorination is necessary. Therefore, protection is being provided at the well.
- Existing conditions are such that septic tanks are within 160 feet of the well, and discharges from these tanks are within 100 feet of the well. These tanks and discharges shall be removed and replaced the treatment facilities identified in the March 31, 2000 submittal. This would remove a major source of the possible contamination at the well.
- Finally, the extreme topographic differences within and surrounding the city of Balltown dramatically limits the possible locations for the construction of a wastewater treatment facility. No other area would provide a cost-effective treatment facility location.

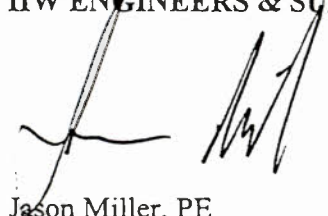
Due to these facts, we would like to formally request a variance from the separation criteria identified in Chapter 64.2(3)b for the north treatment facility from the Balltown Church Well (Well #12516).

Mr. Fred Evans
April 25, 2000
Page 3 of 3

Again, we apologize for any misunderstanding caused from the incorrect classification of both previously mentioned wells. If you would like to discuss this situation further, please do not hesitate to contact me at (319) 556-2464.

Sincerely,

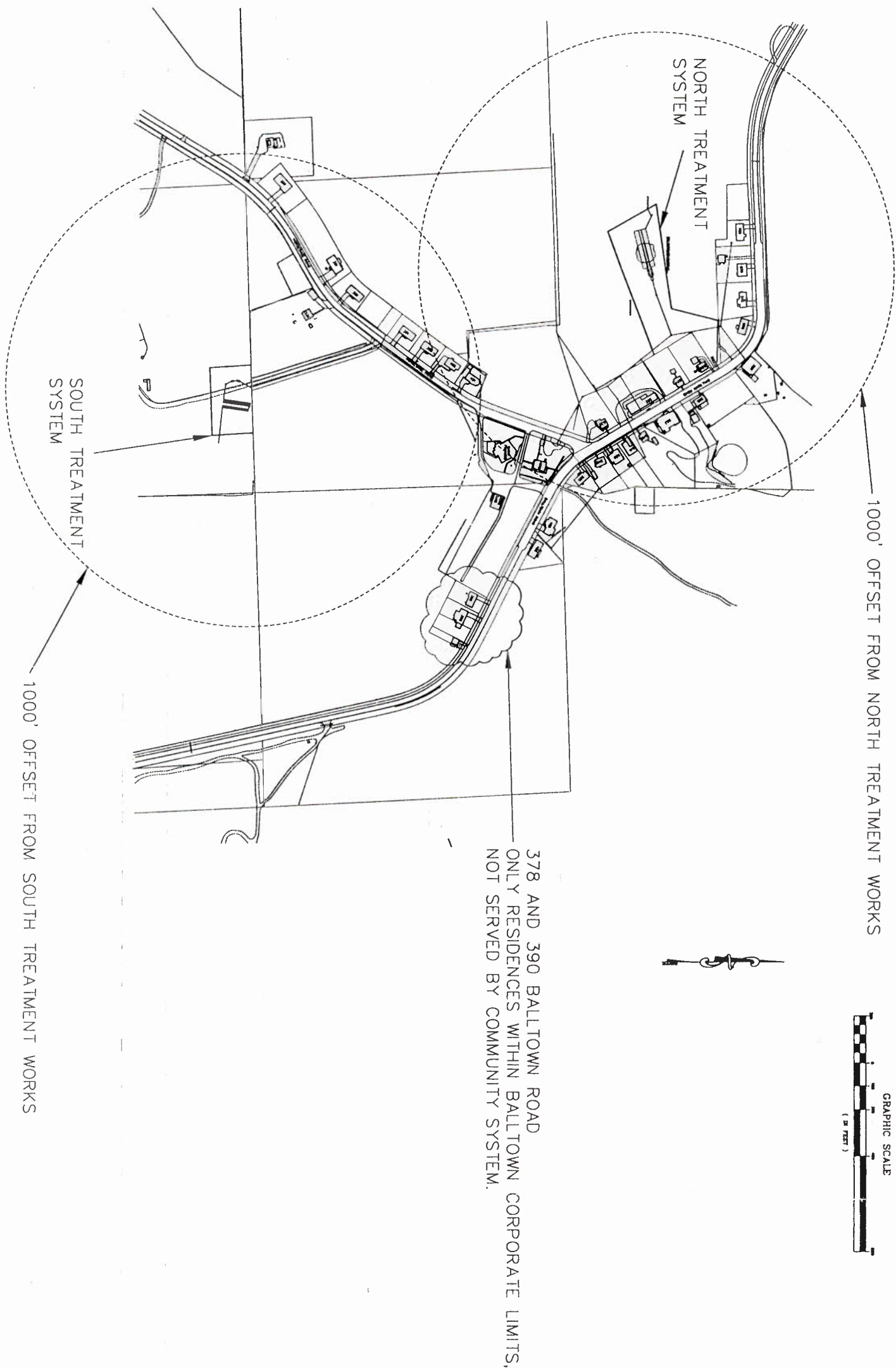
IHW ENGINEERS & SURVEYORS, P.C.


A handwritten signature in black ink, appearing to read 'Jason Miller', is written over the company name.

Jason Miller, PE
Civil / Environmental Engineer

cc: Ron Stellick, Iowa DNR
Mike Wade, Iowa DNR
Herb Sigwarth, Mayor Balltown

P:\90\109-02\90189-02\dwg\BASEMAP.dwg



 IIW ENGINEERS & SURVEYORS, P.C. <small>INDIANAPOLIS, IN 46102-0000 4155 PENNSYLVANIA AVE. DUBUQUE, IA 52002 (319) 556-2464</small>	Project Description	FIELD BOOK: 000	Issued For:	Drawn By:
	1000' TREATMENT SITE OFFSETS			JEM
	WASTEWATER COLLECTION AND TREATMENT FACILITY			Checked By:
	BALLTOWN, IOWA			JEM
Project Number: 88109-02			Item: _____ Date: _____	

IOWA DEPARTMENT OF NATURAL RESOURCES**ENVIRONMENTAL PROTECTION DIVISION**

Field Office 1

909 West Main - Suite 4, Manchester, Iowa 52057

Phone: (319) 927-2640 FAX: (319) 927-2075

REPORT OF INVESTIGATION

INVESTIGATION DATE 4-18-00

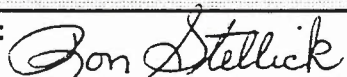
TO: Dick Sandal
Wastewater Permits Section, DNR, Des Moines

SUBJECT: City of Balltown site survey

PERSONS CONTACTED: Jason Miller, P.E., IIW Engineers & Surveyors, P.C., Dubuque, Iowa

AUTHENTICATION

INSPECTOR:



Ron Stellick, Environmental Specialist

File Name: Balltownss.rks.bjs

OBSERVATIONS/RECOMMENDATIONS:

A site survey for two septic tank and sand filter (subsurface) systems for the City of Balltown was made on April 18, 2000. Jason Miller accompanied me on this site survey. The topography of Balltown dictates the use of two treatment facilities (referred to as North and South treatment sites).

South Treatment Site:

The proposed site is located southeast of Balltown. The site is not farm ground, but on a high point of a bluff area. There are 29 homes that will have city sewer available to them. Some of these homes will be served by the south treatment site, and some by the north site. All of the 29 homes are closer than the required 1,000 ft. separation distance from one of the sites. A written agreement will be needed from the owners of all 29 homes. The nearest private well is 550 ft. from the site of the proposed sand filter.

The effluent from the sand filter will be discharged into an unnamed drainageway, which is a tributary of the North Fork of the Little Maquoketa.

The proposed site for the south treatment facility meets the separation distances listed in IAC 567—64.2(3), except for the 1,000 ft. separation distance from inhabitable residences. Written agreements from the owners will need to be obtained.

North Treatment Site:

The proposed site is located northwest of Balltown. This site is on farmland. All property to the west of the site is farmland, and Balltown is east and northeast. There are several homes that will be within 1,000 ft. of the site. A written agreement will be needed from the owners.

The public well that serves the church and school is a shallow well. This proposed site is 904 ft. from this well. This is just short of the 1,000 ft. separation required from public shallow wells. I believe we should wave this 1,000 ft. separation for 2 reasons:

1. They are continuously chlorinating this water supply.
2. There are presently several existing septic tanks that are within 100 ft. of this well that will be removed when a city system becomes available.

The effluent from the sand filter will be discharged into an unnamed drainageway which is a tributary to the North Fork of the Little Maquoketa.

The proposed site for the north treatment facility meets the separation distances listed in IAC 567—64.2(3), except for separation distances from inhabitable residences and from a shallow public well. Written agreements from the owners of the residences will need to be obtained. I recommend we wave the separation distance from the shallow public well for the reasons listed above.