

mo

✓ 9-11-06

13.4.2

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date	: March 6, 1990	13. Decision: <i>Denied</i>
2. Review Engineer	: Gabe Lee	Date: 3-6-90
3. Date Received	: February 21, 1990	
4. Facility Name	: Boyden	14. Appeal:
5. County Number	: 84	Date:
6. Program Area	: CP	
7. Facility Type	: CO2	
8. Subject Area	: 344	
9. Rule Reference	: 64.2(9)	
10. Design Std. Ref.	: 13.4.2	
11. Consulting Engr.	: DeWild Grant Reckert, Rock Rapids	
12. Variance Rule	: 64.2(9)c	

15. Description of Variance Request

Consulting engineer proposed a SSE to serve an unsewered 7 acres of residential and 18 acres of light industrial area. The project includes 535' 8-inch sanitary sewer, 500' 10-inch sewer, one lift station (two 200 gpm pumps) and 1,290' 4-inch force main. It was in made known that the SSE will also serve to relieve another collection system just north of the unsewered area. It is not known how many acres that this overloaded sewer system serves. The engineer assumes a full 8" sanitary sewer to be the PHWW flow. The lift station does not include any pump protection measures. Small lift station shall include bar screen or trash basket.

16. Consulting Engineer's Justification

1. According to engineer's experience, trash baskets themselves will become an operational problem and in many cases, operators will not use them.
2. Trash basket is not a guarantee to screen out everything that could plug or damage pumps. They have a natural tendency to screen

16. Consulting Engineer's Justification (cont.)

some materials that raw sewage can easily accumulate.

17. Department's Justification

1. Engineer's justification of operators not using trash basket is not a valid justification. Not using trash basket is not a design criteria but an operations problem.
2. This lift station could receive approx. 0.40 MGD during storm flow. At such flow, trash and debris could wash into the lift station. Therefore, it is prudent to install a trash basket. A trash basket does not significantly increase the cost of the lift station.
3. Engineer's justification does not show equivalent effectiveness which significantly reduce cost or increase effectiveness.

Staff reviewer recommends denial to variance request.

18. Precedents Used

19. Staff Reviewer

: *Gabe Lee*

Date: 2/6/90

20. Supervisor

: *[Signature]*

Date: 3/6/90

21. Authorized by

: *Shirley McAllister*

Date: 3/6/90



DeWild Grant Reckert and Associates Company
Consulting Engineers

315 First Avenue
Rock Rapids, Iowa 51246
(712) 472-2531

February 21, 1990

Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319

Attn: Gabriel Lee

Re: Southeast Sanitary Sewer
Boyden, Iowa
DGR File 39125

Dear Mr. Lee:

Enclosed are three (3) sets of revised plans and specifications for the above referenced project. We are also responding to your comment letter of February 16. Our responses will be numbered in the same sequence as utilized in your letter.

1. On behalf of the City of Boyden, we are hereby requesting a variance from the Chapter 13 requirement for a trash basket. In our experience, the trash baskets themselves become an operational problem and that in many cases, operators will not use them. Such a device is not guaranteed to screen out everything that could plug or damage pumps and they have a natural tendency to screen out some materials that raw sewage pumps can easily accommodate.
- 2., 3., 4. Changes have been made in the plans in response to these comments.
5. There is not a City Office or emergency center in Boyden that is maintained on a 24-hour basis. The lift station is in a very visible location, being fairly close to the City's Main Street and also Highway 18. The City already has one lift station with a local alarm system so we feel they are prepared to deal with the situation as specified.
6. The 100-year and 25-year flood elevations have not been established for the small tributary that flows through the project area. We, therefore, set the top of the lift station and valve vault approximately 1 foot above the Highway 18 grade immediately to the south of the lift station site.

3912518A.L21

Mr. Lee
Feb. 21, 1990
Page Two

- 7., 8. The project is being constructed to serve existing homes and businesses in the southeast corner of the community that presently have on-site facilities. The initial push for this project came about when the Department of Natural Resources strongly encouraged Dethmers Manufacturing to request sewer service from the City of Boyden. In addition to Dethmers Manufacturing, three other businesses and at least one home will be served by the project. The two residences east of Colfax Street may elect not to tie into the sewer system as they are outside the City Limits.

In addition, the 8" interconnection to the intersection of Railroad and Colfax Streets will intercept all wastewater flow from the north and relieve a hydraulic overload situation that the City experiences during wet weather. The area served is generally to the north and east. This is the newest portion of the community which has expanded gradually over the last 10-15 years.

The City's only flow data is derived from the elapsed time meters in the main lift station. Obviously, this does not generate factors such as peak hour wet weather, nor do we have any actual flow data at the intersection of Railroad and Colfax Streets. Based upon the fact they have had surcharging problems in wet weather, we simply assumed a full 8" pipe at that location and designed the downstream sewer capacity accordingly. The flow contribution from the new homes and businesses being served was based on metered water data since they all use City water.

9. This test was added to the specifications.
10. We understand this comment is no longer a problem.
11. We have added a standard manhole drawing to the Standard Drawings section of the project manual.

Please review at your earliest convenience.

Very truly yours,

DEWILD GRANT RECKERT
& ASSOCIATES COMPANY



Thomas E. Wall, P.E.

TEW:jkv
Enclosures
cc: Logan Vanden Brink,
w/encl.

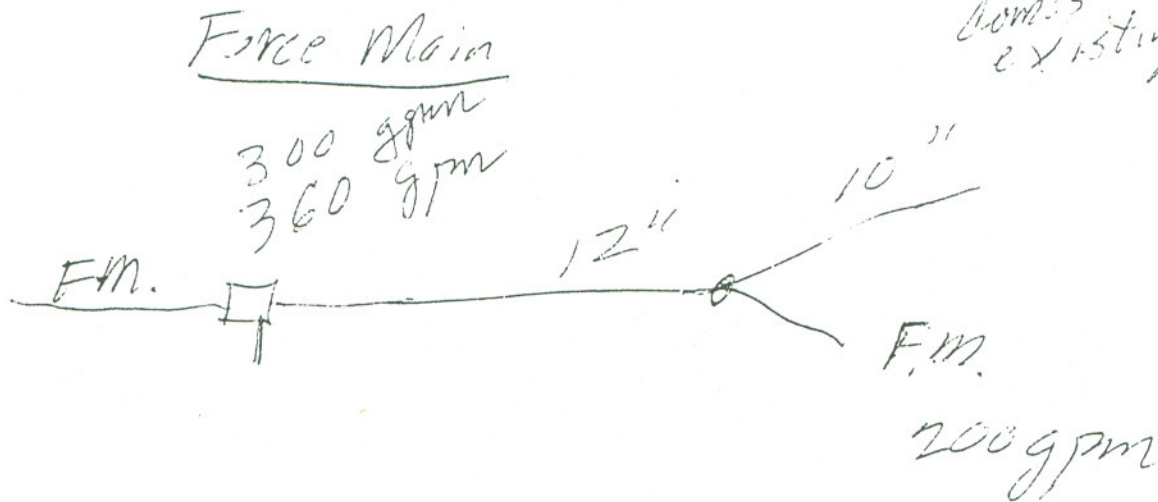
3912518A.L21

Tom Wall, DGR

TC 3/16/90

Boydlen - SSE, L.S. & FM.

now all flow
down
existing 10"



Will send in addendum for trash
basket — wants to use audio-
visual alarm system — no station
with 24 hour attendance — L.S. will
be located adjacent to Hwy. No. 18



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

File: Boyden-WW
GSL

March 13, 1990

City of Boyden
City Hall
821 Main Street
P.O. Box 219
Boyden, IA 51234

Attn: The Honorable Mayor John Doorenbos

RE: Southeast Sanitary Sewer
Boyden, Iowa

Subject: Variance request

Dear Mayor Doorenbos:

We have received a variance request from your consulting engineer, DeWild Grant Reckert and Associates (DGR) on behalf of the City dated February 21, 1990. This request asked for a variance to Iowa Wastewater Facilities Design Standards Chapter 13.4.2. Chapter 13.4.2 addresses pump protection against clogging in lift stations.

Your variance request includes reasons to justify for granting a variance. It stated that the trash baskets themselves can become an operational problem and in many cases, operators will not use them. The request also includes that trash basket is not a guarantee to screen out debris that could plug or damage the pumps.

The Iowa Administrative Code, Chapter 567--64.2(9)c allows for a variation from design standards when it will result in at least equivalent effectiveness while significantly reducing cost or improved effectiveness.

We have reviewed your request and have decided to deny your request for a variance. I have included the following reasons for the denial. They are as follows:

1. Trash baskets removed by operators is not a valid reason of not installing it. This is an operational problem, not a design basis. Trash baskets are designed to be cleaned occasionally and lack of cleaning will cause the screen to plug up.

City of Boyden
March 13, 1990
Page 2

2. It is true that a trash basket itself does not guarantee to screen out all debris that cause malfunctions at lift stations. However, it does offer some protection to the pumps.
3. It was understood that this lift station is designed to relieve part of the overloaded sewer system north of Taft Street. It was estimated that this lift station could receive 0.4 MGD during peak hourly wet weather flow. At such flow a plugged lift station could cause surcharge into homeowner's basements.

In conclusion, justifications submitted could not meet the requirements to grant a variance. A request, as mentioned earlier, needs either to improve effectiveness or have equivalent effectiveness while significantly reduce cost.

Should you have any questions please call Gabriel Lee at (515) 281-6253.

Sincerely,



DARRELL McALLISTER, BUREAU CHIEF
SURFACE and GROUNDWATER PROTECTION BUREAU
ENVIRONMENTAL PROTECTION DIVISION

DM:GSL:gsl

cc: Dewild Grant Reckert & Assoc., Rock Rapids, IA
Field Office 3



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

File: Boyden-WW
GSL

March 13, 1990

City of Boyden
City Hall
821 Main Street
P.O. Box 219
Boyden, IA 51234

Attn: The Honorable Mayor John Doorenbos

RE: Southeast Sanitary Sewer
Boyden, Iowa

Subject: Variance request

Dear Mayor Doorenbos:

We have received a variance request from your consulting engineer, DeWild Grant Reckert and Associates (DGR) on behalf of the City dated February 21, 1990. This request asked for a variance to Iowa Wastewater Facilities Design Standards Chapter 13.4.2. Chapter 13.4.2 addresses pump protection against clogging in lift stations.

Your variance request includes reasons to justify for granting a variance. It stated that the trash baskets themselves can become an operational problem and in many cases, operators will not use them. The request also includes that trash basket is not a guarantee to screen out debris that could plug or damage the pumps.

The Iowa Administrative Code, Chapter 567--64.2(9)c allows for a variation from design standards when it will result in at least equivalent effectiveness while significantly reducing cost or improved effectiveness.

We have reviewed your request and have decided to deny your request for a variance. I have included the following reasons for the denial. They are as follows:

1. Trash baskets removed by operators is not a valid reason of not installing it. This is an operational problem, not a design basis. Trash baskets are designed to be cleaned occasionally and lack of cleaning will cause the screen to plug up.

2. It is true that a trash basket itself does not guarantee to screen out all debris that cause malfunctions at lift stations. However, it does offer some protection to the pumps.
3. It was understood that this lift station is designed to relieve part of the overloaded sewer system north of Taft Street. It was estimated that this lift station could receive 0.4 MGD during peak hourly wet weather flow. At such flow a plugged lift station could cause surcharge into homeowner's basements.

In conclusion, justifications submitted could not meet the requirements to grant a variance. A request, as mentioned earlier, needs either to improve effectiveness or have equivalent effectiveness while significantly reduce cost.

Should you have any questions please call Gabriel Lee at (515) 281-6253.

Sincerely,



DARRELL McALLISTER, BUREAU CHIEF
SURFACE and GROUNDWATER PROTECTION BUREAU
ENVIRONMENTAL PROTECTION DIVISION

DM:GSL:gsl

cc: Dewild Grant Reckert & Assoc., Rock Rapids, IA
Field Office 3

Code # 344 (pump clogging protection)
Ankeny - app'd 11/13/87
Ankeny - app'd 3/13/90
Boyden - denied 2/6/90
Johnston - app'd 3/10/93

Code #372 - buried discharge valves

STATE OF IOWA
DEPARTMENT OF NATURAL RESOURCES
HENRY A. WALLACE BUILDING
DES MOINES, IOWA 50319

File: Boyden - WW
num GSC

CONSTRUCTION PERMIT

City of Boyden
821 Main Street
P.O. Box 219
Boyden, Iowa 51234

PERMIT NO.: 90-111-S

FILE: Boyden-1-WW

RE: Southeast SSE & Lift Station

PROJECT NO: S90-75

In accordance with the provisions of Section 455B.173.9 and 455B.174.4, Code of Iowa, and Rule 567--64.2(455B) or Rule 567--65.5(455B), or Rule 567--41.12(455B) of the Iowa Administrative Code, the Director of the Department of Natural Resources does hereby issue a permit for the construction of:

1. Sanitary sewer:
 - a. 2860 feet of 8-inch sanitary sewer and appurtenances.
 - b. 1300 feet of 10-inch sanitary sewer and appurtenances.
2. Lift Station:
 - a. Two new submersible pumps each with a capacity of 200gpm and accessories.
 - b. Trash basket for pump protection as specify in the specifications.
 - c. An audio-visual alarm system.
 - d. All the control, structural, earth, electrical and piping work as specify in the plans and specification of this project.

The construction of the project shall be initiated within one year of issuance of this permit or this permit is no longer valid. Within thirty days after completion of construction, the permit holder shall submit a certification by a registered professional engineer that the project was completed in accordance with the approved project documents.

Pursuant to Section 455B.174.4, Code of Iowa, you have the right to appeal any condition of this permit by filing with the Director of the Department of Natural Resources a notice of appeal and request for administrative hearing within thirty days of receipt of this permit.

Contact Gabriel Lee at 515/281-6253 with any questions or comments.

For the Department of Natural Resources

Larry J. Wilson, Director

By:

Joel M. Evans
ENVIRONMENTAL PROTECTION DIVISION

Date:

March 23, 1990

cc: DeWild Grant Reckert & Assoc., Rock Rapids, IA
Field Office 3

Plan Distribution

[1] Engineer; [1] Field Office; [1] DNR File

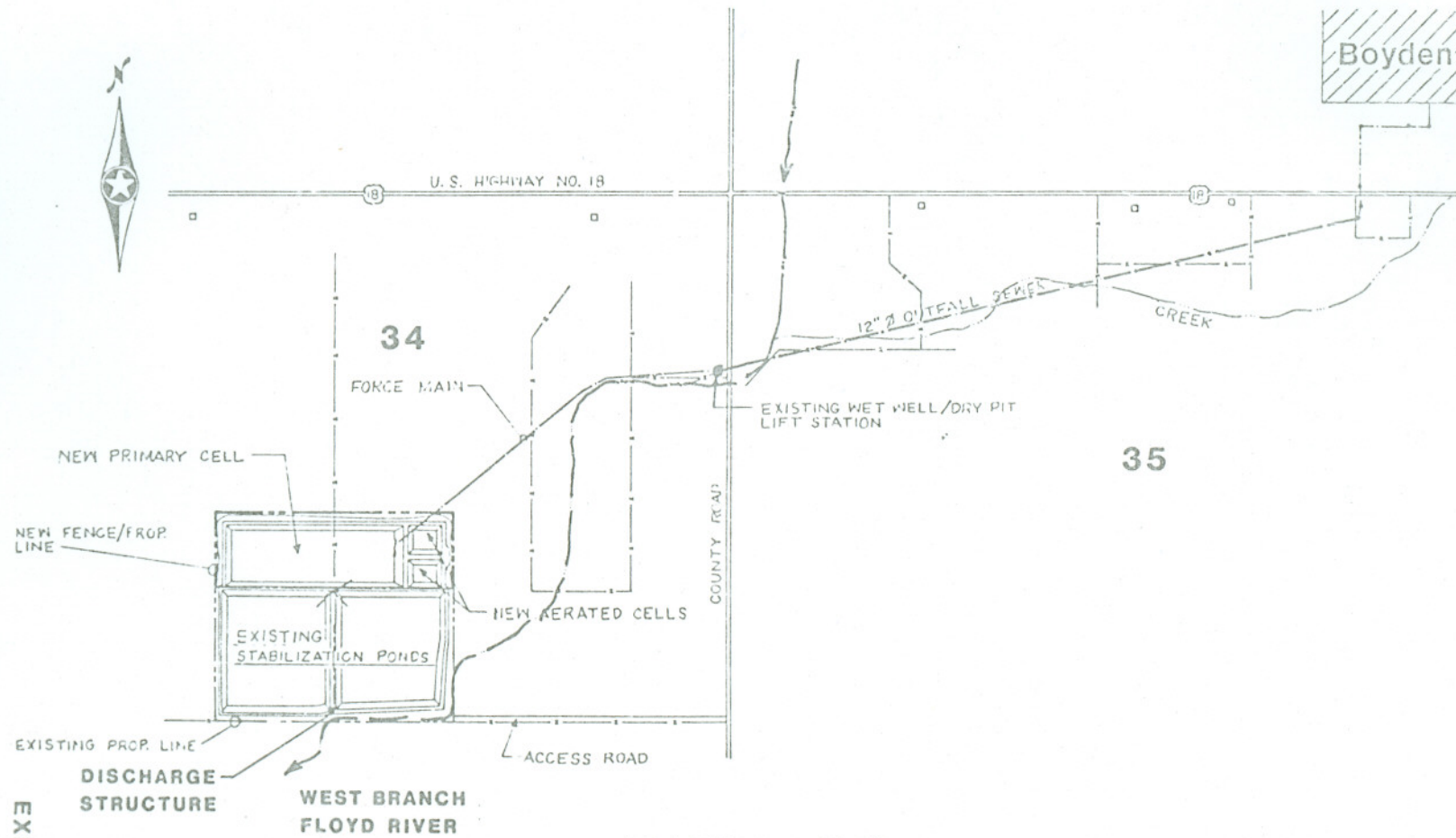
R 44 W

27

26

Boyden

T 97 N



LOCATION PLAN

600 0 600 1200
scale feet

EXHIBIT A