

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date : 6/24/97 13. Decision: Approved
2. Review Engineer : Fred Evans Date: 6/27/97
3. Date Received : 6/19/97
4. Facility Name : Corning 14. Appeal:
5. County Number : 20 Date:
6. Program Area : CP
7. Facility Type : C01
8. Subject Area : 305
9. Rule Reference : 64.2(9)
10. Design Std. Ref. : 12.5.1
11. Consulting Engr. : Howard R. Green
12. Variance Rule : 64.2(9)C

15. Description of Variance Request

The City of Corning proposes to construct 240 feet of sanitary sewer to serve a maximum of 3 homes. In view of the limited development and since the proposed sewer will discharge into an existing 6-in. sanitary sewer, it is proposed to use 6-inch sewer for the new extension. Inasmuch as our design standards require a minimum diameter of 8-inch for sewered communities, a variance has been requested.

16. Consulting Engineer's Justification

- 1) The service area is for two homes with the possibility of only one more home to be added to the extension.
- 2) There is no possibility of extending the sewer in any other direction because all surrounding properties are currently served.
- 3) The receiving manhole for this extension is currently served with a six-inch effluent and is hydraulically capable of the expansion of the three potential sewer services as documented in Schedule B.
- 4) The maximum hydraulic capacity of the six-inch extension flowing full is approximately 470 GPM. The peak for three homes is well below 100 GPM.

16. Consulting Engineer's Justification (cont.)

17. Department's Justification

We concur with the engineer's proposal to use 6" diameter pipe for the proposed sanitary sewer extension based upon the above justification and the following additional considerations:

1. The proposed 6-inch sewer will discharge into an existing 6-inch sewer
2. The proposed sewer grades of 3.47% and 6.78% are considerably steeper than the minimum sewer grade of 0.34% for 6-inch sewer pipe which is approved for unsewered communities

18. Precedents Used

Variances for use of 6-inch diameter sewers in sewer communities have been previously approved for the following cities: Albion, Clermont, Fairfield, Keokuk, Leon, Lisbon, McGregor, Pleasantville, University Park, Nauvoo and West Union.

19. Staff Reviewer

: *Ed M. Irvine*

Date: 6/24/97

Date: 6/24/97



Howard R. Green Company
CONSULTING ENGINEERS

June 3, 1997

Iowa Department of Natural Resources
Wastewater Permits Division
Wallace Office Building
Des Moines, IA 50319

Re: Variance Request
Terrace Hills Sanitary Sewer Extension
Corning, Iowa


We are hereby requesting a variance to allow the use of six-inch sewer pipe for the above project. The following are items of justification for its use.

- 1) The service area is for two homes with the possibility of only one more home to be added to the extension.
- 2) There is no possibility of extending the sewer in any other direction because all surrounding properties are currently served.
- 3) The receiving manhole for this extension is currently served with a six-inch effluent and is hydraulically capable of the expansion of the three potential sewer services as documented in Schedule B.
- 4) The maximum hydraulic capacity of the six-inch extension flowing full is approximately 470 GPM. The peak for three homes is well below 100 GPM.

Based upon the proceeding items, please consider this request for a variance. If you have any questions, or need additional information, please contact our office.

Sincerely,

HOWARD R. GREEN COMPANY



Greg Shawler

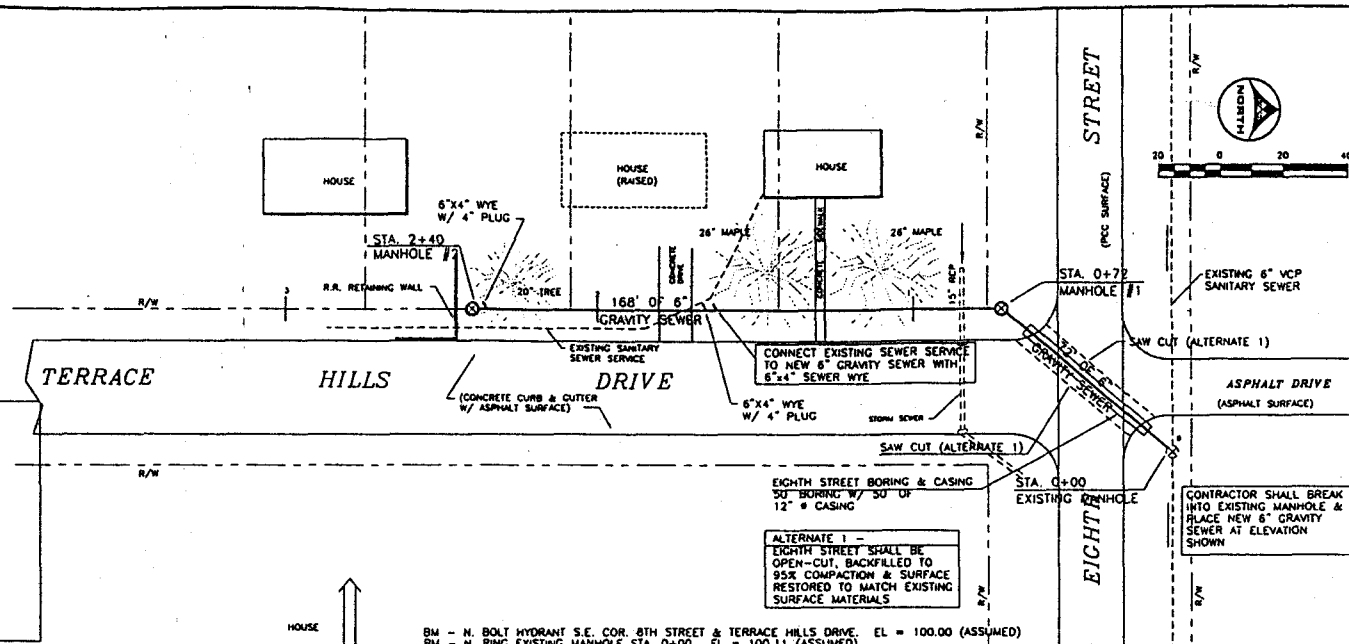
GCS/djw



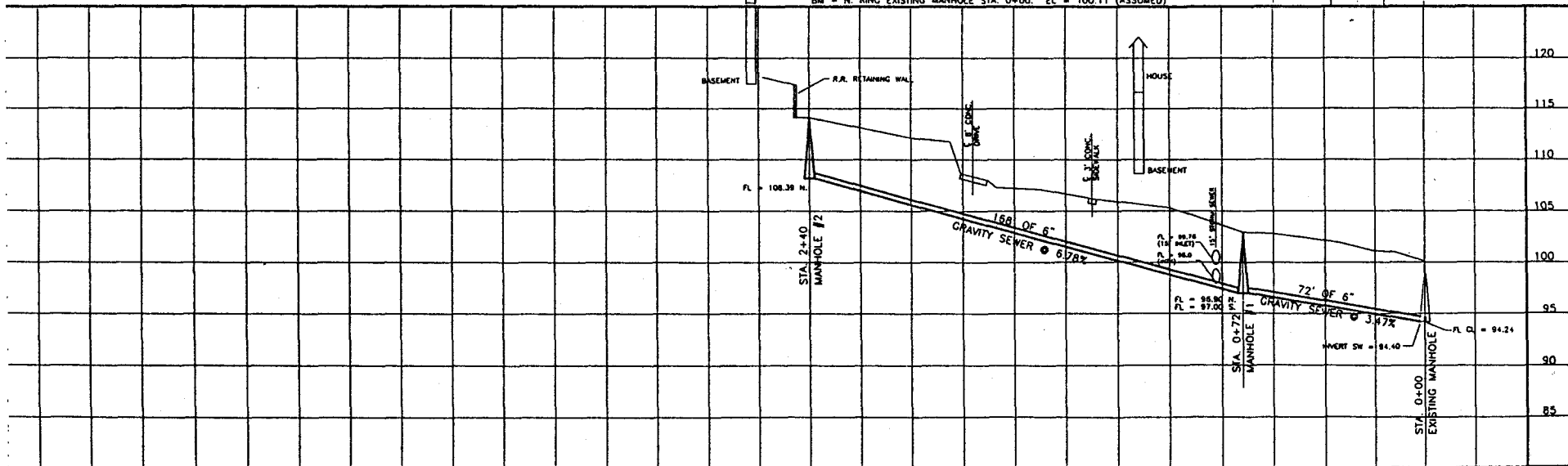
I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Thomas R. Evans
THOMAS R. EVANS P.E. DATE **5-20-97**

LICENSE NUMBER 9223
MY LICENSE RENEWAL DATE IS DECEMBER 31, 1998
PAGES OR SHEETS COVERED BY THIS SEAL: SHEETS 1 OF 1



BM - N. BOLT HYDRANT S.E. COR. 8TH STREET & TERRACE HILLS DRIVE. EL = 100.00 (ASSUMED)
BM - N. RING EXISTING MANHOLE STA. 0+00. EL = 100.11 (ASSUMED)



3+00

2+00

1+00

0+00

JOB DATE:
JOB NUMBER:

NO.	DATE	BY	REVISION DESCRIPTION

Howard R. Green Company
CONSULTING ENGINEERS

SANITARY SEWER EXTENSION
CORNING, IOWA 1997

TERRACE HILLS DRIVE

SHEET NO.
1

IOWA DEPARTMENT OF NATURAL RESOURCES

WASTEWATER SECTION

CONSTRUCTION PERMIT APPLICATION



SCHEDULE A, General Information

APPLICANT		ENGINEER	
OWNER CITY OF CORNING		FIRM HOWARD R. GREEN COMPANY	
ADDRESS 6TH & BENTON, CORNING, IA 50841-9998		ADDRESS P.O. BOX 39, CRESTON, IA 50801	
REPRESENTATIVE MARVIN STEFFEN, MAYOR	TELEPHONE 515-322-3410	PROJECT OFFICER TOM NEVINS, P.E.	TELEPHONE 515-782-5154
PROJECT IDENTIFICATION SANITARY SEWER EXTENSION-TERRACE HILLS DRIVE		ESTIMATED START DATE* JUNE 1997	ESTIMATED COMPLETION DATE AUG. 1997

PLEASE RESPOND TO ALL QUESTIONS

		YES	NO
1. Has an engineering report, facilities plan or other information previously been submitted for this project?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If Yes=>	PROJECT IDENTITY DATE SUBMITTED		
2. Does the project and construction permit application, as submitted, follow the recommendations, design loadings, construction schedule, permit limits, and conclusions of the approved engineering report or facilities plan?		<input type="checkbox"/>	<input type="checkbox"/>
If No=>	Provide the design basis and technical information justifying all changes.		
3. Are there two complete sets of plans and specifications accompanying this application? For a minor gravity sewer extension within the meaning of §455B.183.3 Code of Iowa and Design Standard 11.1, two complete sets will be adequate for expeditious approval. For more complex projects, four sets of plans and specifications may be requested once the initial review is complete.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Are approved standard specifications a part of this application?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
If Yes=>	APPROVED STANDARD SPECIFICATIONS OF (municipality or firm) DATE APPROVED		
5. Does each set of plans and specifications or engineering report accompanying this application contain an "engineer's certificate" executed in conformance with §542B.16, Code of Iowa?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
If No=>	Processing will be delayed pending receipt of applicable design schedules and certified plans, specifications, or engineering report.		
6. Is this a joint wastewater and water supply project?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If Yes=>	A construction permit application for the water supply project should be submitted separately to the Water Supply Section. A water supply permit fee may be required.		
7. Is the applicant to provide treatment of effluent resulting from this construction?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
If No=>	A Sewage Treatment Agreement (DNR Form 29) executed by the authority providing treatment must accompany this application.		
8. Is a new or amended operation permit necessary to use the facilities described in this application?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If Yes=>	A new or amended permit to operate may be requested prior to the receipt of a construction permit.		
9. Is any waterline located within 10 feet; or any private or public well, lake, or public recreation area located within 400 feet of the proposed construction?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If Yes=>	Identify and locate the facility(s) relative to the proposed construction.		
10. Will construction inspection be conducted by a registered engineer employed by the applicant?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If No=>	NAME OF ENGINEERING FIRM CONDUCTING INSPECTION HOWARD R. GREEN COMPANY		

CERTIFICATION

APPLICANT	ENGINEER
I certify that I am the authorized representative of the owner and state that the project identified above is approved by the owner.	I certify that all aspects of design included in this application conform to applicable standards contained in Rule 567-64 I.A.C., or that an explanation and justification for any proposed variations from such standards is attached. I am familiar with the information contained in this application, and to the best of my knowledge, such information is complete and accurate.
 SIGNATURE	 SIGNATURE
5/21/97 DATE	5-20-97 DATE

*Estimated Construction Start Date: Complete applications must be submitted at least 120 days in advance of the date for starting construction in accordance with §567-60.4 and 64.2 of the Iowa Administrative Code.

PLEASE COMPLETE THE SCHEDULE CHECKLIST ON THE REVERSE OF THIS FORM



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IOWA DEPARTMENT OF NATURAL RESOURCES
WASTEWATER PERMITS SECTION
CONSTRUCTION PERMIT APPLICATION

SCHEDULE B, Collection System

DATE PREPARED 5-9-97	PROJECT IDENTITY SANITARY SEWER EXTENSION TERRACE HILLS DRIVE EXTENSION CORNING, IA 51197	DNR USE PROJECT NO.
DATE REVISED		PERMIT NO.

1. Identify proposed construction which is subject to flooding and explain what is proposed to prevent water from entering the system. If no portion is subject to flooding, state none.

Segment

Flooding Protection

- *2. Indicate hydraulic capacity of: 1) the nearest downstream main or interceptor, 2) the nearest downstream lift station, and 3) all downstream segments where flow restriction may occur. Indicate the source and accuracy of numerical data.

	Segment	Segment	Segment
Location	DOWNSTREAM SEGMENT		
Design Capacity, MGD	0.89		
Peak Hourly Dry Weather Flow MGD (actual)	0.029		
Peak Hourly Wet Weather Flow MGD (actual)	0.029		

- *3. Identify treatment facility, the design loadings and present raw waste loadings. Indicate source and accuracy of numerical data.

Facility name and number CITY OF CORNING, IOWA - 0027375

Facility Loading

Design

Average Wet Weather (actual)

Peak Hourly Wet Weather (actual)

MGD	#BOD ₅ /day
0.5	2100
0.309	----
0.40	----

Provide projected design loading increase which will be added to this facility as a result of this project.

Design Loading	Initial	Design Year (2015)
Residential service area	1.0 Acres	1.0 Acres
Population	8 Persons	8 Persons
Flow (100 GPCD)	800 GPD	800 GPD
BOD ₅ (0.17 #/d/cap)	1.36 #/day	1.36 #/day
Industrial service area	0 Acres	0 Acres
Rated Flow	0 GPD	0 GPD
BOD ₅	0 #/day	0 #/day
Other	0 Acres	0 Acres
Rated Flow	0 GPD	0 GPD
BOD ₅	0 #/day	0 #/day
Total BOD ₅	1.36 #/day	1.36 #/day
Total Flow	800 GPD	800 GPD
Peak Hourly Flow	3440 GPD	3440 GPD

*Include a written explanation of Items 2 and 3 if the sewer system and/or treatment facility are overloaded.



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IOWA DEPARTMENT OF NATURAL RESOURCES
WASTEWATER PERMITS SECTION
CONSTRUCTION PERMIT APPLICATION

SCHEDULE C, Lateral Sewer Extension

DATE PREPARED 5-9-97	PROJECT IDENTITY SANITARY SEWER EXTENSION TERRACE HILLS DRIVE EXTENSION CORNING, IA - 1997	DNR USE PROJECT NO. PERMIT NO.
DATE REVISED		

1. Design Basis	Initial		Design Year (2015)	
Residential service area	1.0	Acres	1.0	Acres
Population	8	Persons	8	Persons
Flow (100 GPCD)	800	GPCD	800	GPCD
BOD ₅ (0.17 #/d/cap)	1.36	#/day	1.36	#/day
Industrial service area	0	Acres	0	Acres
Rated Flow	0	GPCD	0	GPCD
BOD ₅	0	#/day	0	#/day
Other	0	Acres	0	Acres
Rated Flow	0	GPCD	0	GPCD
BOD ₅	0	#/day	0	#/day
Total BOD ₅	1.36	#/day	1.36	#/day
Total Flow	800	GPCD	800	GPCD
Peak Hourly Flow	3400	GPCD	3400	GPCD

2. Pipe	6 Inch	10 Inch	12 Inch
Diameter			
Material	PVC-SDR 35		
Joint	RUBBER GASKET		
Minimum Slope	3.47 %		
Maximum Manhole Space	168' Ft.		
Total Sewer Length	240 Ft.		
Maximum Cover	6.5 Ft.		
Minimum Cover	4.0 Ft.		

3. Construction specifications (Indicate ASTM No. or other standard included in the specifications). A brief description is required in each part.

- A. Bedding class HOWARD R. GREEN SPECIFICATION 02221
- B. Pipe laying HOWARD R. GREEN SPECIFICATION 02730
- C. Compaction 90% STANDARD PROCTOR DENSITY
- D. Manhole HOWARD R. GREEN SPECIFICATION 02730
- E. Specified maximum infiltration/exfiltration rate 200 GPD/MP1
- F. Infiltration/exfiltration test procedures HOWARD R. GREEN SPECIFICATION 02730
- G. Alignment & grade test procedures
 (1) During construction: Stake & batter board X Laser _____
 (2) After construction: Lamping X Other _____
- H. Deflection test procedures HOWARD R. GREEN SPECIFICATION 02730

4. Are detailed manhole drawings included? Yes ☐ No ☒ Typical frame and cover assembly FERROUS CASTING
 Are manhole covers nonvented? Yes ☒ No ☐ Manhole diameter 48 in.
 Manhole opening diameter 22 in. Material PORTLAND CEMENT CONCRETE - PRECAST
5. Minimum sewer & water main separation: Horizontal 10 ft. Vertical 18 in. Are specifications included? YES
6. Stream, road, or railroad crossing protection N/A
 Are specifications included? _____