



RORY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

June 10, 1987

John W. Hesling, P.E.
Garden and Associates
P.O. Box 451
Oskaloosa, IA 52577

SUBJECT: Variance Requests to Design Standards
Wastewater Treatment System Improvements
Pleasantville, Iowa

Dear Mr. Hesling:

The Iowa Department of Natural Resources has received your request to vary from the Iowa Wastewater Facilities Design Standards and hereby notify you that we have taken the following actions:

Variance from Standard

Action

12.3.1.6

Approved

12.5.7.1.a.4

Approved

12.5.7.1(c)

Approved

18c.7.6.3

Approved

The variance to Chapter 12.3.1.6 permits the surcharging of the manholes immediately preceding the three (3) existing 12 inch aerial crossings in project 1-A. This, in effect, turns these three (3) gravity aerial crossings into pressure sewers at high flow values approaching the peak hourly wet weather flow of 1.35 mgd. The variance permits the existing aerial sewers to remain in service and operate at design depths greater than the two-thirds depth requirement at the peak hourly wet weather flow.

The variance to Chapter 12.5.7.1.a.4 permits two (2) sewer segments in project 1-A to exceed the 500 foot maximum spacing between manholes and waive the need for the City to acknowledge the availability of sewer cleaning equipment on a third sewer segment. The sewer segments granted a variance from this standard are from new manhole 16 to new manhole 15 comprising 590 L.F. and existing manhole F to new manhole 12 comprising 515 L.F. The third segment between new manhole 15 and new manhole 13 comprising 434 L.F. will flow at velocities in excess of four feet per second at peak hourly wet weather flows.

The variance to Chapter 12.5.7.1(c) permits the use of a clean out at the end of an 8-inch sewer 152 L.F. in length as part of project 1-B. The variance is

granted in accordance with the Technical Information Memorandum dated December 1986 and the conditions set forth in the memorandum.

The variance to Chapter 18c.7.6.3 permits the draw off of primary aerated cell effluent in project II at an elevation higher than the 2 to 3 vertical feet from the bottom required by the standard. The invert of this pipe is set at 2 feet below the pond operating level and should give the City operating personnel added flexibility in obtaining the highest quality effluent from the first aerated cell.

If you have any questions, please feel free to contact Bob Graf at 515/281-8779.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell McAllister". The signature is fluid and cursive, with the first name "Darrell" being more prominent than the last name "McAllister".

DARRELL MCALLISTER, CHIEF
SURFACE AND GROUNDWATER PROTECTION BUREAU

DMcA:BG:rag/SGPM160N02.01

cc: City of Pleasantville, Pleasantville, Iowa
Field Office 5

DATE RECEIVED	FACILITY NAME	COUNTY No.	PROGRAM AREA CODE	FACILITY TYPE CODE	SUBJECT AREA CODE
4/20/87 6/2/87 revised	4 Pleasantville	5 63	6 CP	7 C01	8 339
RULE REFERENCE	DESIGN STANDARD REFERENCE	DECISION		APPEAL ACTION	
9 64.2(9)a	10 12.3.1.6	11 Approved 6/6/87		12	
ENGINEER		VARIANCE RULE			
13 GARDEN and ASSOC.		14 64.2(9)c			

15. DESCRIPTION OF VARIANCE REQUESTED: The original proposal for the replacement of the existing interceptor requested a variance to five (5) standards. AFTER the engineer was notified that I could not recommend his design, be granted the five variances (engineer requested them as a package) we discussed other possibilities. The 6/2/87 proposal requests variance to chapter 12.3.1.6 of the design standards, regarding design depths in gravity sewers. IN an attempt salvage the three (3) existing aerial crossings, Est. to sale \approx \$40,000, the aeries must be pressurized by surcharging the upstream manhole. ALL of the surcharging is accomplished, in all 3 cases, in the manholes w/out effect on

The upstream sewer segments after rehabilitation
of the sewer system is completed.

16. ENGINEERS JUSTIFICATION: The Engineer states that the three aerial crossings are in excellent shape, even though they were constructed in 1962. The construction of new aerals would cost about \$40,000. All of the aerals have slopes built into them as they were designed 'as' gravity sewers. ALL OF the surcharging, necessary to convey the post rehabilitation flows, will occur in the manholes immediately preceding the existing aerals. The incoming sewer will be sufficiently higher in elevation so at PHWW (post Relab) no increase in the depths of the sewer ($\frac{2}{3}$ for the new 15") will occur. The existing aerals are 12"

17. DEPARTMENTS JUSTIFICATION: The engineer states that the existing PHWW Q is 1.73 mgd. The post rehab flow will be 1.35 mgd. The engineer, on behalf of the city has conveyed the city's commitment to reduce flows down to 1.35 mgd. The Engr. and region have concurred that the AWW₃₀, MWW and PHWW flows of 0.455, 1.25 and 1.35 mgd respectively will be part of the NPDES permit. The PHWW Q to be monitored and recorded daily. Although rehab is part of this project, further rehab. will be ongoing by the city and enforced through the permit.

The intercept is remote and has sufficient fall to convey wastewater even while surcharge w/out property damage. The manholes - can surcharge up to flows of 1.44 \rightarrow 1.61 mgd w/out sewer backups beyond the $\frac{2}{3}$ design depth. This is a worthy concept and will work fine. I recommend approval to

18. PRECEDENTS USED: Surcharging of the aerals to save the \$40,000 w/out effect on the remainder of the sewer system.
 \rightarrow NONE

19. STAFF REVIEWER:

20. SUPERVISOR:

21. AUTHORIZED BY:

David D. Giff

Larry Hodge approved 6/3/87

David D. Giff approved 6/3/87