

✓ 9-11-06 13.10.4

# VARIANCE REQUEST 1

Iowa Department of Natural Resources

1. Date	: 6/29/90	13. Decision:	Approved
2. Review Engineer	: Fred Evans	Date:	7/10/90
3. Date Received	: 6/4/90		
4. Facility Name	: City of Johnston	14. Appeal:	
5. County Number	: 77	Date:	
6. Program Area	: CP		
7. Facility Type	: C02		
8. Subject Area	: 327		
9. Rule Reference	: 567-64.2(9)		
10. Design Std. Ref.	: 13.10.4		
11. Consulting Engr.	: Bishop Engineering Co.		
12. Variance Rule	: 567-64.2(9) C		

## 15. Description of Variance Request

The City of Johnston was issued a construction permit on April 6, 1990, for a trunk sewer along Beaver Creek starting at a location near the intersection of Merle Hay Road and Interstate 35-80 and extending in a northwesterly direction along the creek (see attached plat). The overall planning for providing service to the City of Johnston and The Urbandale Sanitary Sewer District requires the construction of an interceptor sewer to connect the above noted Beaver Creek Trunk Sewer to The City of Des Moines sanitary sewerage system. (continued on attached sheet)

## 16. Consulting Engineer's Justification

1. The lift station is only a temporary solution until the Beaver Creek Trunk Sewer is brought out to this area within the next 12-18 months.
2. The location of the valves within the wet well should not have any effect on the function and operation of the proposed (temporary) lift station.



16. Consulting Engineer's Justification (cont.)

17. Department's Justification

In view of the temporary nature of the proposed interim pumping facilities to serve the Best Inns Motel it is recommended that a variance be granted to locate the check valves and gate valves within the wet well. This recommendation is based upon the consulting engineer's justification and the following additional considerations:

1. The design total PHWW flow to be served by the pumping facilities is 25,300 gpd.
2. In view of the short period of usage of the pumping facilities, it is not likely that any valve failures will occur which will require removal of any of the valves from the wet well for servicing or replacement.
3. In the unlikely event that a valve failure should occur which will require entrance into the wet well, portable pumping will be provided for handling all sewage flows while the pumping station is taken out of service for any required maintenance work.

18. Precedents Used We have previously indicated to the City of Mount Vernon that we could allow check valves to be located in wet wells if designed as a component of submersible pumps which can be lifted out with the pump for servicing (see attached letter). Although we have not previously approved any variances for location of gate valves within wet wells for permanent pumping facilities, we feel that it is justified for this interim pumping facility.

19. Staff Reviewer	: Fred M. Evans	Date: July 7, 1990
20. Supervisor	: [Signature]	Date: 7/9/90
21. Authorized by	: [Signature]	Date: 7/10/90



Variance Request  
City of Johnston, Iowa  
Best Inns Lift Station

15. Description of Variance Request (continued)

It is anticipated that plans and specifications for the interceptor sewer will be submitted to DNR in the near future. It is also anticipated that the interceptor sewer will be constructed within the next 12 to 18 months. Inasmuch as sewer service will be required for the new Best Inns Motel now under construction near the termination of the Beaver Creek Trunk Sewer prior to completion of the Des Moines interceptor sewer, an interim pumping station will be constructed adjacent to the motel which will pump all wastewater to the existing Green Meadows wastewater treatment facilities in Johnston. Plans and specifications for a submersible pump type lift station have been submitted to this Department. In view of the low initial sewage flows and temporary nature of the pumping facilities, the engineer is proposing that both the check valves and gate valves be located within the wet well in lieu of providing a separate valve manhole as required by DNR standards. Therefore, a variance has been requested to locate the valves in the wet well.



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

July 13, 1990

Bishop Engineering Company, Inc.  
3501 104th Street  
Des Moines, IA 50322

ATTENTION: Charles J. Bishop, P.E.

SUBJECT: Request for a Variance  
Interim Pumping Station for Best Inns  
Johnston, Iowa

Gentlemen:

The Iowa Department of Natural Resources in accordance with subrule 567--64.2(9)c of the Iowa Administrative Code has approved your request for a variance from Iowa Wastewater Facilities Design Standard 13.10.4. This design standard requires that the check valves and shutoff valves for submersible pumping stations be located in a separate valve chamber. The approval of this variance request will permit the location of these valves in the pumping station wet well as proposed by your firm.

The engineering justification submitted substantially demonstrates that this variance will result in at least equivalent effectiveness during the interim operating period while significantly reducing costs.

Sincerely,

DARRELL MCALLISTER  
BUREAU CHIEF  
SURFACE AND GROUNDWATER PROTECTION BUREAU

DM:bkp/S&GW193P07.01

cc: Field Office 5



# Bishop Engineering Company, Inc.

3501 • 104th Street • Des Moines, Iowa 50322

(515) 276-0467 • FAX (515) 276-0217

May 31, 1990

Mr. Fred Evans  
Department of Natural Resources  
Wallace Building  
Des Moines, Iowa 50319

Re: Best Inns Lift Station  
Johnston, Iowa

Dear Mr. Evans:

We are hereby requesting a variance with regards to the lift station standards for the above referenced project. We are requesting that we be allowed to have the valves located within the pumping station wet well instead of a separate valve vault as required by your standards. The basis for this request is in the fact that this lift station is only temporary solution until the Beaver Creek Trunk Sewer is brought out to this area within the next 12 - 18 months. Therefore it doesn't seem that because of the temporary nature of this installation that this request is out of line. This revision should not have any effect on the function and operation of the proposed lift station.

If you have any questions please feel free to give me a call.

Sincerely,



Charles J. Bishop, P.E.

cc. Dan Brewer, Best Inns

Civil Engineers & Surveyors of Land  
Established 1959



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
LARRY J. WILSON, DIRECTOR

June 2, 1989

Mr. Christopher M. Stephan  
MMS Consultants, Inc.  
465 Iowa Highway No. 1 West  
Iowa City, Iowa 52246

RE: Oak Ridge Estates, Part One  
Mount Vernon, Iowa

Dear Mr. Stephan:

We have completed our review of the variance request of May 17, 1989 in regards to Chapter 13.10.4 of the Iowa Wastewater Facilities Design Standards. Our design standards require that valves for submersible pumps shall be located in a separate valve chamber while you are proposing to locate check valves in the wet well and to bury a gate valve and a valve box adjacent to the wet well.

We could allow the check valves to be located in the wet well since it is specifically designed as a component of the submersible pump which can be lifted out with the pump for servicing. We would, however, still require a separate valve chamber be provided for the gate valves to prevent the need of digging valves out for maintenance. Your request of burying a gate valve and a valve box adjacent to the wet well has been denied.

If you have any questions concerning this letter, please do not hesitate to contact Mr. Billy C. Chen of this office at 515/281-4305.

Sincerely,

DARRELL McALLISTER, CHIEF  
SURFACE & GROUNDWATER PROTECTION BUREAU

DM:BCC:pla/STEP

cc: Field Office 6  
V.G. Stoner & Sons Corp.



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s) Separate Valve Pits (34.4)

MN raised the question if it is always necessary to have a separate valve pit for a submersible pump station.

IL allowed a check valve of Myer submersible pump to be located in a wet well since it was specifically designed as a component of the submersible pump which can be lifted out with the pump from above ground for servicing. It was the consensus that a

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valve pit is still required by the Standards to house the gate valve and prevent the need for the worker to enter the raw sewage wet well.

*From Minutes of GLVMRB mtp 6/3-5/86*

7. H<sub>2</sub>S problems in long force mains and sewers--several States noticed the problem at certain locations. We agreed to address this item in the next 10-State rewrite.

F. The Minimum Depth of a Plastic Task Force Media

Mr. Blydenburgh raised a question on the justification of the 10' minimum depth for manufactured media in a trickling filter (Section 81.32). No justification for the minimum depth was offered. Will consider again during the next 10-State revision.

G. The Location of a Check Valve in a Submersible L.S.

Chairman Akers had distributed by mail (February 1981) the written request of Myers Pump Company, suggesting possible changes in Section 34.4 to allow locating a removable check valve (not a gate valve) inside a submersible lift station provided the valve is removable without personnel entering the wet well. It was the consensus of the committee that it should not rush to reduce the safety and ease of maintenance intent of the 1978 Edition, specifically, keeping operations from having to enter the wet well for maintenance of the check valve or other equipment. Ohio and Missouri were assigned to look into this matter (Check-valve Task Force). The Task Force will survey the use experience of such a check valve and propose a language for revision of Section 34.4 if the survey is favorable. Akers will distribute the report to the members for phone balloting so that the proposal could be reported to the April 1983 GLUMB meeting.

H. NEC Code and Submersible L.S.

In relation to Section 34.3, the Chairman asked Mr. Bruce to check the latest development of NEC code revision (also check with Warren Schickenreider, the former vice chairman) and report back to the Chairman.

I. Rectangular Clarifiers

Illinois related their survey of traveling bridge and/or suction-type sludge collection devices (Clear-Vac) for rectangular clarifiers in Indiana and Illinois and emphasized the need for the lower overflow rates than the normal criteria in view of high rates of floc carry-over. The hydraulics (density currents) of the device was considered as the major cause of the problem.

J. M.H. Spacing and Minimum Sewer Sizes

Mr. Evans requested canvassing of each State on the subject matter. It was shown that some States allow flexibility in the M.H. spacing as well as minimum sewer sizes for small towns. The Chairman appointed Iowa and Missouri to the M.H.

Minutes  
of GLVMB  
Mtg. of  
9/28/82



## IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

## WATER QUALITY

## PROGRAM

## CONSTRUCTION PERMIT APPLICATION

## SCHEDULE E, WASTEWATER PUMP STATION

DATE PREPARED

PROJECT IDENTITY

WAWM USE

PROJECT NO.

DATE REVISED

BEST INNS

PERMIT NO.

1.

Design Basis

Initial

Design Year ( )

Residential Area, Acres		
Population, Persons		
PiDW Flow, MGD		
Industrial Area, Acres		
PiDW Flow, MGD		
Other <u>Commercial</u> , Acres	<u>12.33</u>	<u>12.33</u>
PiDW Flow, MGD		
Peak Hourly Infiltration, MGD	<u>0.0003</u>	<u>0.0003</u>
Peak Hourly Inflow, MGD	<u>0.025</u>	<u>0.025</u>
Total PiDW Flow, MGD	<u>0.025</u>	<u>0.025</u>
Total PiMW Flow, MGD	<u>0.0253</u>	<u>0.0253</u>

2. Provide pump information

(GORMAN-RUPP 362A-E3)

Pump No.	Type	Opening (in)	HP	Capacity GPM	TDH (ft.)		Operating Level	
					Computed	Rated	On	Off
No. 1	GRINDER	2"	3	70	65	95	22.5	21.5
No. 2	GRINDER	2"	3	70	65	95	23.0	21.5
No. 3								
No. 4								
No. 5								
Sump								

Are pumps specified as being capable of passing 3 in. diameter spheres? Yes ☒ No ☒Can remaining pumps handle PiMW flow with largest pump out of service? Yes ☒ No ☒3. Wet-well effective volume 1760 gallons. Retention time: Initial Flow 25 minutes. Design Flow: 25 minutes.4. Is forced air ventilation provided? NOContinuous: wet-well ☐ dry-well ☐ Intermittent: wet-well ☐ dry-well ☐  
wet-well ☐ air changes/hour dry-well ☐ air changes/hourAre spark-proof materials specified? Yes ☐ No ☐5. Force main: Is profile of force main provided? Yes ☐ No ☐Size 3 in. Length 2260 ft.Pipe Material PVC SDR 21 joint Solvent weldMinimum cover 5 ft. Minimum velocity 3 fpsNumber of high points 0 Are air relief valves provided? Yes ☐ No ☐Number of thrust blocks provided? 3 At location(s) Cleanout manholes/BandsIs pressure test specified? Yes ☒ No ☐ Does installation conform to AWWA C600?Yes ☐ No ☐ If no, explain6. Are valves provided on the suction & discharge lines? Yes ☒ No ☐Type: Discharge ☐ Suction ☐7. Is an alarm system provided? Yes ☒ No ☐ Type LightIndicate where audio/visual warning signals will be located In Motel office

8. Method of pump control

9. Are the pumps protected from clogging? Yes ☒ No ☐

Method of cleaning

Method of pump removal Slide Ramps Are lifting hooks/arms provided? ☐10. Are permanent emergency piping bypass connections provided? YES Is an emergency power supply available? ☐ Describe station operation in an emergency (equipment, piping, bypass, etc.)PORTABLE Pumps11. Is the wastewater pump station located in a flood plain? Yes ☒ No ☐ Elevation of 100 yearflood (MSL) 808.5 Elevation of 25 year flood (MSL) 807.5(34.66 City Datum)(33.66 City Datum)