

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

CONSTRUCTION PERMIT

City of Sigourney
City Hall
Sigourney, IA 52591

PERMIT NO.: 95-22-S
FILE: Sigourney-Sewage
RE: Industrial Park
PROJECT NO: S94-392

In accordance with the provisions of Section 455B.173.3 and 455B.174.4, Code of Iowa, and Rule 567--64.2(455B) or Rule 567--65.6(455B), or Rule 567--43.3(455B) of the Iowa Administrative Code, the Director of the Department of Natural Resources does hereby issue a permit for the construction of:

1,870 feet of 8-inch sanitary sewer and appurtenances; wet well type pump station including two 50 gpm submersible grinder pumps, valves, electrical, controls, piping, alarm system, 2,500 feet of 3-inch and 4-inch force main, air release riser, and miscellaneous associated work and appurtenances to complete project in accordance with the approved plans and specifications.

The requested variance from our wastewater design standards to permit use of buried shut-off valves in lieu of a separate valve manhole has been approved and is hereby granted. This variance is granted on the basis that the pump station will be serving an industrial area, and, therefore, there should be adequate non-use periods to permit maintenance or replacement of the buried shut-off valves whenever necessary.

The construction of the project shall be initiated within one year of issuance of this permit or this permit is no longer valid.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 Fred M. Evans at 515/281-8995 with any questions or comments.

For the Department of Natural Resources

LARRY J. WILSON, DIRECTOR

By: Fred M. Evans
Environmental Protection Division

Date: October 13, 1994

fea286.mc

cc: French-Reneker-Associates, Inc., Fairfield, IA
Field Office #6

Plan Distribution

[1] Engineer; [1] DNR File

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date : 10/4/94 13. Decision: *Approved*
2. Review Engineer : Fred Evans Date: 10/11/94
3. Date Received : 9/30/94
4. Facility Name : City of Sigourney 14. Appeal:
5. County Number : 54 Date:
6. Program Area : CP
7. Facility Type : CO2
8. Subject Area : 327
9. Rule Reference : 562-64.2(9)
10. Design Std. Ref. : 13.10.4
11. Consulting Engr. : French-Beneker-Assoc.
12. Variance Rule : 562-64.2(9) c

15. Description of Variance Request

The City of Sigourney is proposing a small industrial park located East of the municipal aerated lagoon. In order to provide for treatment of wastewater collected from the industrial park, the designing engineer is proposing a wet well type pumping station with submersible pumps for pumping the wastewater directly to the municipal lagoon. In the design of the pump station it is proposed that the pump shut off valves be buried in lieu of providing a separate valve manhole as required by section 13.10.4 of our wastewater design standards.

16. Consulting Engineer's Justification

On behalf of the owner, we request that a variance be granted to allow the pump shut off valves to be buried outside of the wet well rather than to have them in a separate valve pit. We believe that burying these valves is inherently safer since they do not create a confined space that someone can enter. If valve maintenance is required, they can be excavated very quickly. With either method, the system would need to be temporarily shut down for valve repair. Of course, the check valve for each pump will be attached to the pump lift out assembly so that its maintenance can be conducted outside of the wet well (or valve pit).

16. Consulting Engineer's Justification (cont.)

17. Department's Justification

We are not in agreement with the engineers justification based upon safety considerations and do not consider that access to buried valves is equivalent to access to such valves located in valve manholes; therefore, we have denied previous variance requests for use of buried valves for pump stations serving residential population. However, since the proposed pump station will serve only industries which will operate for 8-10 hours per day and 5 days per week, this should provide adequate non-use periods to permit maintenance or replacement of the buried shut off valves. Therefore, it is recommended that the requested variance be approved.

18. Precedents Used We have not previously approved any variances for burying the shut off valves for submersible pump type pump stations; however in July 1990 we approved a variance request to locate shut off valves inside the wet well for a temporary pump station to serve a motel in Johnston until an interceptor sewer was constructed from Des Moines to Johnston.

19. Staff Reviewer

: Fred M. Evans

Date: 10/4/94

20. Supervisor

: [Signature]

Date: 10/4/94

21. Authorized by

: [Signature]

Date: 10/11/94

We have reviewed the pump and forcemain hydraulics and although there are some minor differences in TDH, they are not very significant. Basically, we did not revise the hydraulics after the final dimensions and elevations were determined and we used a more realistic value of $C=140$ rather than $C=120$. After reviewing our calculations, we agree with your static head of 54 feet. We have determined friction head of 17.2 feet (rather than your 22 feet) based upon the following:

1. Forcemain ID of 3.23 inches
2. $C = 120$
3. Station losses equivalent to 65 feet of forcemain
4. Forcemain length of 2435 feet for a total equivalent length of 2500 feet

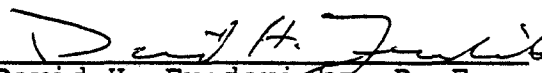
In conclusion, our revised TDH @ 50 GPM is 71.2 feet as compared to our original value of 68 feet and your number of 76 feet. Have revised Schedule E to read 71.2 feet. A standard impeller size will be chosen to deliver at least 50 GPM at this computed TDH.

On behalf of the owner, we request that a variance be granted to allow the pump shut off valves to be buried outside of the wet well rather than to have them in a separate valve pit. We believe that burying these valves is inherently safer since they do not create a confined space that someone can enter. If valve maintenance is required, they can be excavated very quickly. With either method, the system would need to be temporarily shut down for valve repair. Of course, the check valve for each pump will be attached to the pump lift out assembly so that its maintenance can be conducted outside of the wet well (or valve pit).

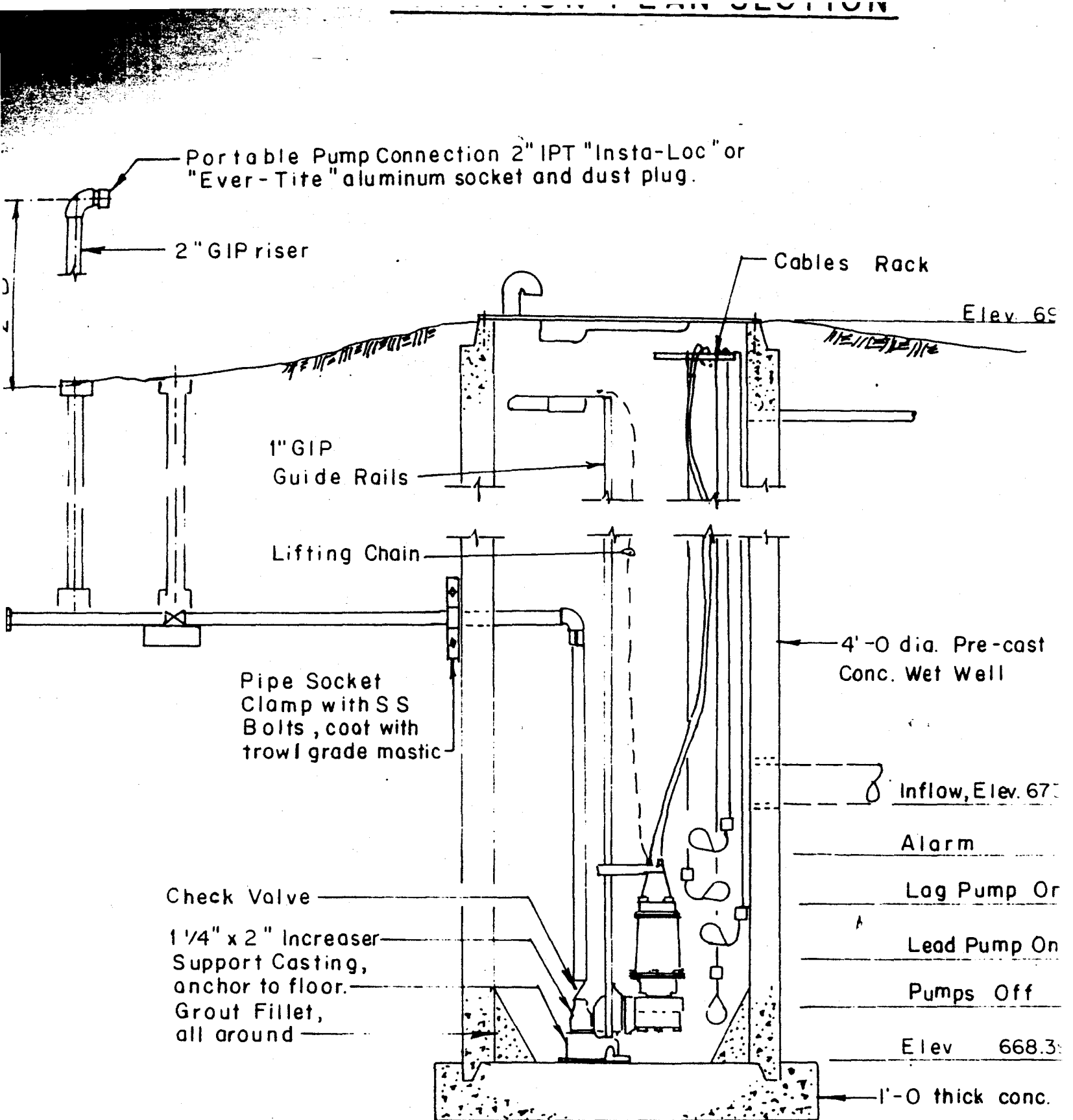
Thanks for your comments, Fred. We trust that our reply and schedule revisions will enable you to issue a construction permit soon.

Very truly yours,

FRENCH-RENEKER ASSOC. INC.


David H. Fredericks, P. E.

DHF/jah
Enclosures



VERTICAL SECTION
GRINDER PUMP STATION DETAILS

92

92

TIE-IN

SEABA

FRITCHEN

CITY OF SIGOURNEY
AERATE

sting & PVC
termain
(900)

PROPOSED
FORCEMAIN

PROPOSED
LIFT STATION

PROPOSED
STORM
SEWER

PROPOSED
SANITARY
SEWER

Morse
Feed &
Grain

SEABA

PROPOSED
PAVEMENT

Schott's

3

Benders

INDUSTRIAL
PARK

"EXPO"

CO. ROAD

STRE

PLEASANT VALLEY (CONC.)

PROPOSED
WATERMAIN

STREIGL

KERR