

VARIANCE REQUEST

Iowa Department of Natural Resources

13.11

Duplicate

1. Date	: 10/2/95	13. Decision:	Approved
2. Review Engineer	: Billy Chen	Date:	12/5/95
3. Date Received	: 9/19/95		
4. Facility Name	: Missouri Valley	14. Appeal:	
5. County Number	: 43 Harrison	Date:	
6. Program Area	: CP		
7. Facility Type	: C02		
8. Subject Area	: 345		
9. Rule Reference	: B-11 64.2(9)		
10. Design Std. Ref.	: 13.11		
11. Consulting Engr.	: Olmsted & Perry		
12. Variance Rule	: 64.2(9)c		

15. Description of Variance Request

Chapter 13.11 of Iowa Design Standard requires that all pump stations be provided an emergency means of operation. The proposed pump station has none.

16. Consulting Engineer's Justification

1. The City of Missouri Valley currently has three existing lift stations and none has a standby power source.
2. Power supplied by commercial has been very reliability. The city could not recall any backup

16. Consulting Engineer's Justification (cont.)

instance in the past.

3. Installing of emergency operation will inundate next pump station since no emergency operation means is provided in next pump station.

17. Department's Justification

We will recommend that this variance be approved for the major reason of:

This pump station will serve only a few commercial establishments, and when power is out. All shops should also be closed too. No wastes will likely be generated during power outage.

18. Precedents Used

S. Panorama S.D. 11/07/87 Approved

19. Staff Reviewer

: *Billy C. Chen*

Date: 10/2/95

20. Supervisor

: *John P. ...*

Date: 12/5/95

21. Authorized by

: *Bill ...*

Date: 12/5/95

September 13, 1995

Mr. Billy Chin
IOWA DEPT. OF NATURAL RESOURCES
Henry A. Wallace Building
900 Est Grand Avenue
Des Moines, Iowa 50319-0034

Re: U.S. Hwy. 30 Water and Sewer Extensions
Missouri Valley, Iowa
OPCE Project No. 95056

Dear Mr. Chin:

The City of Missouri Valley, Iowa, is requesting a variance in the requirement to install a standby generator with their proposed new sewage lift station on Highway 30. The City Council met to discuss your Department's requirement and the overall issue of standby power on September 12, 1995, and asked our firm to request the variance on their behalf due to the following reasons:

1. The City currently has three (3) existing lift stations in their sewage collection system. Two (2) of these stations serve individual sections of the collection system and one (1) station is the main overall lift station which pumps all of the City's collected sewage into the treatment system. None of these existing lift stations has a standby power source.
2. All of the existing lift stations in Missouri Valley are dependent on the reliability of commercial power to operate. Past history shows this reliability to be excellent. Power outages have been rare and if they have occurred, they were for short durations and did not cause any interruptions in service. The City could not recall any past instance where power outages were long enough to cause any backups in the sewer system.
3. The City feels that it would not make sense to install a standby generator at the proposed new lift station when no other lift stations have standby power sources. There would be no increase in system reliability since a power outage would prevent the other stations from operating anyway. In fact, if a power outage occurred, and if a standby generator allowed the proposed new lift station to operate, sewage from this lift station would inundate the next lift station downstream that would be inoperable because of the power outage, and the result would be backed up sewers into other businesses and homes. This condition would cause liability concerns to the City and risks that they have been advised not to take.

OLMSTED & PERRY CONSULTING ENGINEERS INC.

10730 Pacific Street • Suite 232 • Omaha, Nebraska 68114-4722

Phone: 402-399-8552 Fax: 402-399-9852

Mr. Billy Chin
September 14, 1995

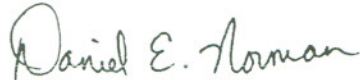
Page 2

Based upon the foregoing, the City of Missouri Valley requests that your requirement of a standby power source be waived and that the project be approved as submitted. The City is willing and has decided to install a high level alarm and automatic telephone dialer in the new lift station to notify the City in the event of a problem at the lift station.

If you have any questions, please do not hesitate to contact our office.

Sincerely,

OLMSTED & PERRY CONSULTING ENGINEERS INC.

A handwritten signature in cursive script that reads "Daniel E. Norman".

Daniel E. Norman, P.E.

DEN:jb

cc: Robert J. Alborn, City Administrator

October 27, 1995

Mr. Billy Chin
IOWA DEPARTMENT OF NATURAL RESOURCES
Wallace State Office Building
Des Moines, Iowa 50319

Re: Missouri Valley, Iowa
Highway 30 Water and Sewer Extensions
OPCE Project No. 95056

Dear Mr. Chin:

As a follow-up to our letter of September 13, 1995, and to our recent telephone conversation, we are providing you with the following additional information regarding the above referenced project:

1. The proposed sewage lift station and related sewer collection system will only be serving commercial businesses. No residential areas will be served by this system. The entire service area is zoned for commercial and industrial activity only.
2. The force main has been over sized intentionally. Boring any sewer line under the interstate highway system is expensive and the City does not want to have to do it again in the future. Therefore, they have oversized the main at this time to hopefully take care of any unexpected need in the future.

On behalf of the City of Missouri Valley, we trust that the above information will allow you to approve the plans and issue the necessary construction permit for the project.

Thank you for your assistance.

Sincerely,

OLMSTED & PERRY CONSULTING ENGINEERS INC.



James J. Olmsted, P.E.

JJO:jb

cc: Robert J. Alborn, City Administrator

OLMSTED & PERRY CONSULTING ENGINEERS INC.

10730 Pacific Street • Suite 232 • Omaha, Nebraska 68114-4722

Phone: 402-399-8552 Fax: 402-399-9852

Call Jim Olmsted

on Missouri Valley project L.S.
Will

① provide plower intake on
the bottom of L.S.

② provide automatic dialer
to operator
will not

③ provide emergency operation
through force main but through
pump & truck.

Call Daniel Noman 9/8/95 ③ is not good enough
need to meet standard
will submit revisions soon

Call 10/2/95 about

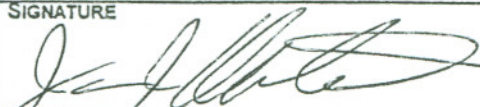
pump capacity will
call back

Billy Chen
8/21/95

IOWA DEPARTMENT OF NATURAL RESOURCES
WASTEWATER SECTION
CONSTRUCTION PERMIT APPLICATION
SCHEDULE A, General Information

APPLICANT		ENGINEER	
OWNER CITY OF MISSOURI VALLEY		FIRM OLMSTED & PERRY CONSULTING ENGINEERS INC.	
ADDRESS City Hall, 223 E. Erie Street Missouri Valley, Iowa 51555		ADDRESS 10730 Pacific Street, Suite 232 Omaha, Nebraska 68114-4722	
REPRESENTATIVE Robert J. Alborn	TELEPHONE (712) 642-3502	PROJECT OFFICER James J. Olmsted, P.E.	TELEPHONE (402) 399-8552
PROJECT IDENTIFICATION U.S. HIGHWAY 30 WATER & SEWER EXTENSIONS		ESTIMATED START DATE* September 1, 1995	ESTIMATED COMPLETION DATE March, 1996

PLEASE RESPOND TO ALL QUESTIONS		YES	NO
1. Has an engineering report, facilities plan or other information previously been submitted for this project? 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? If No=> Provide the design basis and technical information justifying all changes.		☐	N/A ☐
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.		☒	☐
4. Are approved standard specifications a part of this application? 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? 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? 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? 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? 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? If Yes=> Identify and locate the facility(s) relative to the proposed construction. Private Water Wells Along U.S. Highway 30 Will Be Eliminated As Part of This Project.		☒	☐
10. Will construction inspection be conducted by a registered engineer employed by the applicant? If No=> NAME OF ENGINEERING FIRM CONDUCTING INSPECTION		☒	☐

CERTIFICATION	
APPLICANT I certify that I am the authorized representative of the owner and state that the project identified above is approved by the owner.	ENGINEER 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 
DATE 7/25/95	DATE 7/28/95

*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

IOWA DEPARTMENT OF NATURAL RESOURCES

WASTEWATER SECTION

CONSTRUCTION PERMIT APPLICATION

SCHEDULE A, General Information

DOCUMENT CHECKLIST

Identify all categories included in this project. Also, identify schedules attached to this application.

SCHEDULE	TITLE	ATTACHED	INCLUDED IN PROJECT	SUBMITTAL DATE
B	Collection System	☒	☒	<u>7/28/95</u>
C	Lateral Sewer Extension	☒	☒	<u>7/28/95</u>
D	Trunk & Interceptor Sewer	☐	☐	_____
E	Wastewater Pump Station	☒	☒	<u>7/28/95</u>
F	Treatment Project Site Selection	☐	☐	_____
G	Treatment Project Design Data	☐	☐	_____
H1	Schematic Flow Diagram	☐	☐	_____
H2	Treatment Process Removal Efficiency	☐	☐	_____
H3	Mechanical Plant Reliability	☐	☐	_____
I	Screening, Grit Removal and Flow Measurement	☐	☐	_____
J	Septic Tank System	☐	☐	_____
K1	Controlled Discharge Pond	☐	☐	_____
K2	Aerated Pond	☐	☐	_____
K3	Anaerobic Lagoon	☐	☐	_____
L	Settling Tanks	☐	☐	_____
M	Fixed Film Reactor - Stationary Media	☐	☐	_____
N	Rotating Biological Contactor	☐	☐	_____
O	Aeration Tanks or Basins	☐	☐	_____
P	Gas Chlorination	☐	☐	_____
Q	Sludge Digestion and Holding	☐	☐	_____
R1	Sludge Dewatering and Disposal	☐	☐	_____
R2	Low Rate Land Application of Sludge	☐	☐	_____
R3	Land Application of Sewage Sludge (To be developed)	☐	☐	_____
S	Land Application of Wastewater (To be developed)	☐	☐	_____
	Sewage Treatment Agreement	☐	☐	_____

Identify any categories included in this project which are not provided in the above list of schedules.

WATER QUALITY

CONSTRUCTION PERMIT APPLICATION

PROGRAM

SCHEDULE B, COLLECTION SYSTEM

WAWM USE

DATE PREPARED

July 28, 1995

PROJECT IDENTITY

U.S. HIGHWAY 30 WATER & SEWER EXTENSIONS
MISSOURI VALLEY, IOWA

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.

SegmentFlooding Protection

All Segments

Manholes to have solid covers

- *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	24" Main	Proposed Lift Station	Main Lift Station
Design Capacity, MGD	2.3	0.44	4.0
Peak Hourly Dry Weather Flow MGD (actual)	0.01	0.01	0.8
Peak Hourly Wet Weather Flow MGD (actual)	0.01	0.01	1.6

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

Facility name and number Missouri valley Waste Stabilization Lagoon . 43-44-0-01

Facility Loading

Design

Average Wet Weather (actual)

Peak Hourly Wet Weather (actual)

	MGD	#BOD ₅ /day
Design	0.432	735
Average Wet Weather (actual)	0.310	527
Peak Hourly Wet Weather (actual)		

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

Design LoadingInitialDesign Year (2015)

Residential service area	-	Acres	-	Acres
Population	-	Persons	-	Persons
Flow (100 GPCD)	-	GPCD	-	GPCD
BOD ₅ (0.17 #/d/cap)	-	#/day	-	#/day
Industrial service area	-	Acres	-	Acres
Rated Flow	-	GPCD	-	GPCD
BOD ₅	-	#/day	-	#/day
Other Commercial	40	Acres	210	Acres
Rated Flow	4500	GPCD	24000	GPCD
BOD ₅	8	#/day	41	#/day
Total BOD ₅	8	#/day	41	#/day
Total Flow	4500	GPCD	24000	GPCD
Peak Hourly Flow	9000	GPCD	48000	GPCD

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

WATER QUALITY PROGRAM		CONSTRUCTION PERMIT APPLICATION SCHEDULE C, LATERAL SEWER EXTENSION		WAWM USE
DATE PREPARED July 28, 1995	PROJECT IDENTITY U.S. HIGHWAY 30 WATER & SEWER EXTENSIONS MISSOURI VALLEY, IOWA		PROJECT NO.	
DATE REVISED			PERMIT NO.	

1. Design Basis

	<u>Initial</u>		<u>Design Year</u> (2019)
Residential service area	-	Acres	-
Population	-	Persons	-
Flow (100 GPCD)	-	GPCD	-
BOD ₅ (0.17 #/d/cap)	-	#/day	-
Industrial service area	-	Acres	-
Rated Flow	-	GPCD	-
BOD ₅	-	#/day	-
Other <u>Commercial</u>	40	Acres	210
Rated Flow	4500	GPCD	24000
BOD ₅	8	#/day	41
Total BOD ₅	8	#/day	41
Total Flow	4500	GPCD	24000
Peak Hourly Flow	9000	GPCD	48000

2. Pipe

	8 inch	10 inch	12 inch
Diameter	-	-	-
Material	-	-	ABS Truss
Joint	-	-	Solvent Weld
Minimum Slope	-	-	0.22 %
Maximum Manhole Space	-	-	400 Ft.
Total Sewer Length	-	-	2491.5 Ft.
Maximum Cover	-	-	16 Ft.
Minimum Cover	-	-	8.7 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 ASTM C12 Class B Shaped Bottom, Granular Bed, Tamped Backfill

B. Pipe laying ASTM C 2680 & ASTM C361 (See Section 2700 of Specifications)

C. Compaction 90 - 95% maximum (See Section 2200 of Specifications)

D. Manhole ASTM C 478, 48" Dia. Precast Concrete Manholes

E. Specified maximum infiltration/exfiltration rate 200 GPD/MP1

F. Infiltration/exfiltration test procedures See Section 2700 of Specifications

G. Alignment & grade test procedures

(1) During construction: Stake & batter board Laser X

(2) After construction: Lamping Other T.V. Inspection

H. Deflection test procedures Madrel

4. Are detailed manhole drawings included? Yes X No . Typical frame and cover assembly Deeter #1005. Are manhole covers nonvented? Yes X No . Manhole diameter 48 in. Manhole opening diameter 26 in. Material Concrete

5. Minimum sewer & water main separation: Horizontal 10 ft. Vertical 12 in. Are specifications included? Yes

6. Stream, road, or railroad crossing protection See Drawings. Are specifications included? Yes

WATER QUALITY

CONSTRUCTION PERMIT APPLICATION

PROGRAM

SCHEDULE E, WASTEWATER PUMP STATION

WAWM USE

DATE PREPARED

PROJECT IDENTITY

PROJECT NO.

July 28, 1995

U.S. HIGHWAY 30 WATER & SEWER EXTENSIONS

DATE REVISED

MISSOURI VALLEY, IOWA

PERMIT NO.

1. Design Basis Initial Design Year (2015)

Residential Area, Acres		
Population, Persons		
PHDW Flow, MGD		
Industrial Area, Acres		
PHDW Flow, MGD		
Other Commercial, Acres	40	210
PHDW Flow, MGD	0.005	0.024
Peak Hourly Infiltration, MGD		
Peak Hourly Inflow, MGD		
Total PHDW Flow, MGD	0.005	0.024
Total PHWW Flow, MGD	0.005	0.024

2. Provide pump Information

Pump No.	Type	Opening (in)	HP	Capacity GPM	TDH (ft.)		Operating Level	
					Computed	Rated	On	Off
No. 1	Vert.-Non-Clog	3	10	300	56	80	3'	2'
No. 2	Vert.-Non-Clog	3	10	300	56	80	3.5'	2.5'
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 PHWW flow with largest pump out of service? Yes ☒ No ☐3. Wet-well effective volume 900 gallons. Retention time: Initial Flow 3 minutes. Design Flow: 3 minutes.4. Is forced air ventilation provided? Yes ☐Continuous: wet-well ☐ dry-well ☐ Intermittent: wet-well ☐ dry-well ☒wet-well N/A air changes/hour dry-well 60 air changes/hourAre spark-proof materials specified? Yes ☒ No ☐5. Force main: Is profile of force main provided? Yes ☒ No ☐Size 6 in. Length 4138.5 ft.Pipe Material Ductile Iron Joint Push-on, gasketedMinimum cover 5 ft. Minimum velocity 3.4 fpsNumber of high points 2 Are air relief valves provided? Yes ☒ No ☐Number of thrust blocks provided? Yes ☐ At location(s) See DrawingsIs pressure test specified? Yes ☒ No ☐ Does installation conform to AWWA C500?Yes ☒ No ☐ If no, explain _____6. Are valves provided on the suction & discharge lines? Yes ☒ No ☐Type: Discharge Gate & Check Suction Gate7. Is an alarm system provided? Yes ☒ No ☐ Type Audible and VisualIndicate where audio/visual warning signals will be located On top of lift station8. Method of pump control Float switches9. Are the pumps protected from clogging? Yes ☒ No ☐Method of cleaning ManualMethod of pump removal Hoist Are lifting hooks/arms provided? Yes10. Are permanent emergency piping bypass connections provided? No Is an emergency power supply available? No Describe station operation in an emergency (equipment, piping, bypass, etc.) Portable Pumping11. Is the wastewater pump station located in a flood plain? Yes ☒ No ☐ Elevation of 100 year flood (MSL) 1004 Elevation of 25 year flood (MSL) _____