pp	1 9-11-06		- ENTE	(1) 5/2	4/89 B:1/4 Chen
Date Received	FACILITY NAME	county No.	PROGRAM AREA CODE	FACILITY TYPE CODE	SUBJECT AREA 13.10.4 CODE
5/19/89	* Oak Ridgo Estate Mt. Ilemon	s 57	СР	7 COZ	8 327
Rule REFERENCE	DESIGN STANDARD REFERENCE	3	Decision	DATE	ATPEAL Action Date
4	13.10.4		Devied 3/24	0/89	12
Ensineer 13 MMS Co	nsultants, Inc.	VAR 14 6	4.2(9)		

15. DESCRIPTION OF VARIANCE REQUESTED: Chapter 13.10.4 of the design standards require that Values for submersible pumps shall be located in a separate value chamber. The engineer is proposing to use pumps with build-in check value to be located in the wet well and bury gate values adjacent to the wet well. This pump station will not have a separate value champer.

JUSTIFICATION: ENGINEERS station manufacturer DUMP has 50 recommende Elimination the separate value 0 chamber $\omega: \parallel$ Reduce y tial Vanda 0: problems Zm Eliminate 3 drainage Dololems with Valve assoc: ated chambers 17. DEPARTMENTS JUSTIFICATION: allow the check We could Value to be located in a Wet 401 Since specifically designed a component the submersible DUMD be cah u):th the DUMP Servicing houlover 5+1 Kequire Value chamb a Drouid tor the Values prevent the need d PAIPP lalups Maintenance the 4 . alle not Waive Jalve chau since Keguivemous keep 410 Variance request Fecord 01 Kelommenc th: c De regulat he denier 13. PRECEDENTS USED: of Mustic :tu 6-0-12-5 denied 7/11/86 . 19. STAFF REVIEWER: Billy C. Chen D. SUPERVISOR: U. AUTEORIZED BY:



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

H. Vernon, seulag

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 McALL'ISTER, CHIEF SURFACE & GROUNDWATER PROTECTION BUREAU

DM:BCC:pla/STEP

cc: Field Office 6 V.G. Stoner & Sons Corp.) 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 <u>wet</u> 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

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 GLUMRB Mtg 6/3-5/86

5/15/89 Fred-Pumping station value into from the 10- States meetings, MA

s)

- H₂S 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 revison 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 ot GLUMRB Mtg. of 9/28/82

MM

CTURE

MMS CONSULTANTS, INC. 465 IOWA HIGHWAY Nº 1 WEST · IOWA CITY · IOWA 52246-4205

319-351-8282

 Robert D. Mickelson
 L.S.

 Larry R. Schnittjer
 LA.

 Christopher M. Stephan
 P.E.

 Dean E. Beranek
 L.S.

 Dennis J. Keitel
 P.E.

May 17, 1989

Mr. Wayne Farrand, Supervisor Wastewater Permits Section Iowa Department of Natural Resources Henry A. Wallace Building 900 East Grand Avenue Des Moines, Iowa 50319

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

Dear Mr. Farrand:

Please find enclosed the following DNR Forms, along with two complete sets of plans and detailed specifications, for the above referenced project:

Wastewater Permit: Schedules A, C, E and form 29

With this letter, we are hereby applying for a variance to Paragraph 13.10.4 of the Iowa Wastewater Facilities Design Standards, concerning a separate valve chamber for the grinder pump lift station. Recent changes and improvements in design technology for small, package-type lift stations now utilize a submersible pump-ball check valve component system that can be easily removed from the wet well for maintenance/repair. Manufacturers of these component systems also advocate placement of the shut-off gate valve in the wet well chamber, but we believe that a buried gate valve and a valve box placed adjacent to the wet well would be more functional, and would not cause any operation or maintenance problems. This type of arrangement has been successfully utilized on past projects, such as the Scattergood School Wastewater system located near West Branch, Iowa. Elimination of the separate valve chamber will reduce potential vandalism problems and drainage problems associated with valve chambers.

If you should have any questions concerning this construction permit application, or the variance request, please do not hesitate to contact us.

Respectfully submitted, MMS CONSULTANTS INC. Christopher Mr Stephan .E.

CMS/cas (1579004C.07) Encls. cc: Steve Vanderah, w/Encls. Dan Stoner

LAND

VGINEERING

Mt Vernan seuk

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

CONSTRUCTION PERMIT

V.G. Stoner & Sons Corp. 1050 Linn Ridge Road Mt. Vernon, IA 52314 PERMIT NO.: 89-172-5

FILE: Mt. Vernon, Sewage

RE: Oak Ridge Estate Part I

PROJECT NO: 589-161

In accordance with the provisions of Section 455B.173.9 and 455B.174.4, Code of Iowa, and Rule 567--64.2(455B) or Rule 567--65.5(455B), or Rule 567--41.12(455B) of the Iowa Administrative Code, the Director of the Department of Natural Resources does hereby issue a permit for the construction of:

577 feet of 12 inch and 860 feet of 8 inch sanitary sewers, one 65 gpm pump station with two 3 Hp submersible pumps and 950 feet of 3 inch force main.

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 Billy C. Chen at 515/281-4305 with any questions or comments.

For the Department of Natural Resources

Larry J. Wilson, Director ENVIRONMENTAL PROTECTION DIVISION

me 6, 198 Dater

cc: City Clerk, Mt. Vernon MMS Consultants, Inc. - Iowa City Field Office 1

Plan Distribution

1 Field Office; 1 DNR File

BC-157.cef

MMS CONSULTANTS, INC. 465 IOWA HIGHWAY Nº 1 WEST . IOWA CITY . IOWA 52246-4205 319-351-8282

Robert D. Mickelson L.S. Larry R. Schnittler LA. Christopher M. Stephan PE Dean E. Beranek L.S. **Dennis J. Keitel**

P.E.

June 2, 1989

Mr. Billy Chen Iowa Department of Natural Resources Henry A. Wallace Building 900 East Grand Avenue Des Moines, Iowa 50319

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

Dear Mr. Chen:

In accordance with our telephone conversation on May 30, 1989 concerning the variance request for the grinder pump lift station, we are enclosing two copies of a revised drawing for this lift station.

is our understanding that the DNR will not allow the gate It valves to be buried, but that the integral ball check valves attached to the grinder pump assemblies are acceptable. Therefore, we have added a separate valve chamber for the gate valves, as required by Paragraph 13.10.4 of the Iowa Wastewater Facilities Design Standards.

We trust that the above revisions to the grinder pump lift station design for Oak Ridge Estates will now allow you to process the construction permit application.

If you have any further questions or comments concerning this construction permit application, please do not hesitate to contact us.

Respectfully submitted:

MMS CONSULTANTS, INC.

Net

Dennis J. Keifel, P.E.

DJK/dkm(1579004C.10) Encls. cc: Dan Stoner Steve Vanderah

SURVEYING

LAND

GINEERING

TA DEFANTMENT OF MATURAL RESUURCES WASTEWATER PERMITS SECTION CONSTRUCTION PERMIT APPLICATION

Sewage Treatment Agreement

1579-004

INSTRUCTIONS

The agreement must be executed for all projects where construction and water treatment will be provided by different parties; i.e., a private subdivison connecting to a municipal system. This agreement must be executed by the parties who are owners at the time the permit is issued, regardless of whether title to the proposed construction project will be transferred after completion of the project.

This agreement is not necessary when a contract for sewage treatment already exists; i.e., service contracts between municipalities. However, the Department of Natural Resources must be informed in writing that the contractual agreement does exist.

APPLICANT		ENGINEER				
OWNER V.G. STONER \$ 50	ONS CORP.	FIRM MMS CONSULTANTS, INC.				
MT. VERNON, IOL	= ROAD ~A 52314	ADDRESS 465 HWY #1 WEST IOWA CITY, IOWA 52246				
DAN STONER	TELEPHONE 319/895-6346	PROJECT OFFICER TELEPHONE CHRISTOPHER M. STEPHAN 319/351-8287				
OAK RIDGE ESTATE	S, PART ON	NE, MT. VERNON, IO	WA			
AND SYSTEM RECEIVING WASTES	NON, IOU	UA MUNICIPAL SEWAG	E TREATMENT			
am the authorized representative of acilities shall be constructed in acc his project shall be discharged to the	CERTIN the owner identific cordance with the he treatment syste	FICATE fied above and state that the prop plans and specifications and all em identified above.	osed sanitary sewerage wastes contributed by			
IGNATURE 6. Storen Efension	TITLE	ice - Pres.	DATE 5-15-89			
An am the authorized representative of the proposed sanitary severage fac ccepts_responsibility for providing cordance with the provisions of Cha isources. This agreement shall not reements, or fee systems entered in	GREEMENT TO PROVID the owner of the illities identifier adequate treatmen pter 455B, Code o be construed in a to between the pa	DE SEWAGE TREATMENT system identified above and state d above is approved by the owner, t of all wastes contributed by thi f lowa, and the rules of the Depar ny way to affect any local ordinan rties.	that the connection and that the owner s project, in tment of Natural aces, sewer service			
GUTURE ()	/	TYPED OR PRINTED NAME				

y ingelliela JAMES J. ENGELBRECHT PHONE NUMBER DATE TLE 895-8742 2521

R form 29 (Dec 86)

IOWA DEPARTMENT OF NATURAL RESOURCES WASTEWATER PERMITS SECTION CONSTRUCTION PERMIT APPLICATION

SCHEDULE A, Gen	eral Information #1579-004							
APPLICANT	ENGINEER							
OWNER U.G. STONER & SONS CORP. FIRM MMS CONSULTANTS, INC.								
DRESS 1050 LINN RIDGE ROAD MT. VERNON, JOWA 52314	ADDRESS 465 HWY #1 WEST IOWA CITY, IOWA 52246							
REPRESENTATIVE TELEPHONE NAN STONER 3A/895-6346	PROJECT OFFICER TELEPHONE CHRISTOPHER M. STEPHAN 319/351-8282							
PROJECT IDENTIFICATION ESTIMATED COMPLETION DATE								
CHECKLIST								
 Has an engineering report, facility plan or inform project? 	nation previously been submitted for this							
IF YES=> PROJECT IDENTITY								
2. Does the project, as submitted, follow the recomme report? IF NO=> Provide design basis and technical inform	andations and conclusions of the preliminary							
3. Are there two complete sets of plans accompanying The application must qualify as a 'minor	this application? project' within the meaning of §4558.183.3							
4. Are there two sets of specifications accompanying IF NO=> APPROVED STANDARD SPECIFICATIONS OF (mut MMS CONSULTANTS, IN	this application? nicipality 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 \$114.16, Code of lowa?								
IF NO=> specifications, or engineering report.	c+2							
IF YES=> A construction permit application for wa	ter supply must accompany this application.							
7. Is the applicant to provide treatment of effluent IF NO=> A Sewage Treatment Agreement (DNR Form 2 treatment must accompany this applicatio	9) executed by the authority providing							
8. Is any waterline located within 10 feet, or any private or public well 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.								
9. Will construction inspection be conducted by a registered engineer employed by the applicant?								
IF NO=> MMS CONSULTANTS, INC.								
APPLICANT CERTIFICATION 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 I am the authorized representative of the owner and state that the project identified above of the owner. I certify that all aspects of design included in this application conform to applicable standards contained in Rule 56764 i=A*C*, or that an explanation and justification for any proposed variations from such standards is attached. I am familiar with the infor- mation contained in this application, and to the best of my knowledge, such information is complete and accurate.								
SIGNATURE VOLTON Structure DATE Way Itone Vice the 5-15-89	STGNATURE DATE 5-17-89							
*If the project completion date is dependent on other reviews for completion of financing, indicate the comple- tion date on the basis of specified construction days following award of contract.								
PLEASE COMPLETE THE SCHEDULE CHECKLIST ON THE REVERSE OF THIS FORM								

WASTEWATER PERMITS SECTION CONSTRUCTION PERMIT APPLICATION SCHEDULE A, General Information

[SCHEDULE A, General Information			
1.1.1		DOCUMENT CHECKLIST			
Identify a	11 categories	included in this project. Also, identify schedules	attached t	to this appli	cation.
	- SCHEDULE	TITLE .	INCLUDED	SUBMITTED	
	В	Collection System			
1	С	Lateral Sewer Extension		\boxtimes	
	D	Trunk & Interceptor Sewer			
	E	Wastewater Pump Station		X	
	F	Treatment Project Site Selection	EI	Ē	
	G	Treatment Project Design Data		Ē	
	H1	Schematic Flow Diagram	E	· Ei	
	H2	Treatment Process Removal Efficiency	E	Ē	
C. S. San	H3	Mechanical Plant Reliability	E	Ē	
	1	Screening, Grit Removal and Flow Measurement	E	Ē	
1.1.1	J	Septic Tank System		Ē	
	K1	Controlled Discharge Pond			
	K2	Aerated Pond			•
	К3	Anaerobic Lagoon			
	L	Settling Tanks			
	м	Fixed Film Reactor - Stationary Media			
P	N	Rotating Biological Contactor			
1. A. A.	0	Aeration Tanks or Basins			
	Р	Gas Chlorination		Ē	
	Q	Sludge Digestion & Holding			
· · · · ·	R1	Sludge Dewatering & Disposal			
1	R2	Low Rate Land Application of Sludge		Ē	

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

IOWA DEPARTMENT OF NATURAL RESOURCES WASTEWATER PERMITS SECTION CONSTRUCTION PERMIT APPLICATION

		SCHEDULE C, Lat	eral Sewer Exte	inston	#1579-004
DATE PREPARED	PROJECT I	DENTITY		0405 0 15	DNR USE
5-15-89	_ OAK	RIDGE E	STATES,	PARI ONE	PROJECT NO.
DATE REVISED	MT.	VERNON	, IOWA		PERMIT NO.
1. Design Basis		Initial		Design Year (2	010)
Population	ce area	50	Persons	180	Acres
Flow (100 GPCD		5,000	GPD -	18,000	GPD GPD
BOD5 (0.17 #/d	'cap)	8.5	#/day	30.6	#/day
Industrial servic	e area _	-	Acres		Acres
BODe	-		GPD		GPD
Other Harde	es Rest	-	Acres	-	Acres
Rated Flow -	Peak hr	21,600	GPD	21,600	GPD
BOD5	-		_ #/day _		#/day
Total Flow	-	76.600	#/day	39 600	#/day
Peak Hourly Flow		41,600	GPD	93,600	GPD
2. Pipe 😽					
Diameter		8 Inch	10 Incl	h 12	Inch
Material Joint	Ac	ESVCP	74	_ ESV	47 F av C 594
Minimum Slope	13	0.40 \$	· · ·	× 1.5	2 \$
Maximum Manhol	e Space	220 Ft.		.Ft. 2-	75 Ft.
Total Sewer Le	ngth -	860 Ft.			77 Ft.
Maximum Cover Minimum Cover	-	<u> </u>		Ft	F↑. -
description is r	equired in eac	ch part.	or other standa	ra includea in the	specifications). A Driet
A. Bedding clas	S AST W	$1 \subset \mathbb{Z}, C$	lass C or	- Class B	as required
B. Pipe laying	ASTN	N CIZ			
C. Compaction	ASTM	CIZFA	ASTM D	-1557	
D. Manhole	ASTM	C478			•
E. Specified ma	ximum infiltr	ation/exfiltration	rate	200	GPDPMP I
F. Infiltration	/exfiltration	test procedures _	DNR 12.	7.3.1, 12.7.	3.2, 12.7.3.3, 12.7.3.4
G. Alignment &	grade test pro	ocedures			
(1) During (2) After	construction:	Stake & batter b Lamping XX	oardOther	Laser X	×
H. Deflection t	est procedure	s_N/A			1-1-5-17-17-3*
4. Are detailed man	hole drawings	Included? Yes	No Refe	cal frame and cove	r assembly
Are manhole cove Manhole opening	rs nonvented? dlameter 22.	Yes No	Manhole diamet	er <u>48</u> in.	
5. Minimum sewer & included?	water main se eferen	paration: Horizon	Standard	vertical 18 Specificati	in. Are specifications
6. Stream, road, or Are specification	railroad cro	ssing protection	Reference	e MMS D	etailed specifications
And spectrication		103			

IOWA DEPARTMENT OF NATURAL RESOURCES WASTEWATER PERMITS SECTION CONSTRUCTION PERMIT APPLICATION

SCHEDULE E, Wastewater Pump Station											
DATE	PREPARED PROJECT IDENTITY									DNR USE	
5-	- 15	5-89 OAK RIDGE ESTATES, PART ONE							PROJECT NO.		
UNTE	REVISED . MT. VERNON, IOWA								PERMIT NO.		
1.											
			Residential Area, Acres			6.5		29.0	-		
			Population, Persons			50	1	80			
			PHDW Flow, MGD			0.02	C	0.07			
			Industrial Area, Acres								
			PHDW Flow, MGD			-					
			Other	-Hard	12.25	_, Acres				_	
			PH	DW Flow, N	4GD		0.02	0	. 02	_	
			Peak	Hourly In	filtra	tion, MGD				_	
			Peak	HOUFIY I	iflow, N	MGD	-			-	
			Tota	I PHUN FIC	DW, MGU		0.07	0	.09	-	
		a farmer -	10 18	I PHWW FIG	DW, MGU					_	
2.	Provid	le pump info	ormatio	on		1					
	Pump	Туре		Opening	HP	Capacity		TDH	(ft.)	Operating Level	
	NO.	<u> </u>	-	(1n)	2	GPM	Compu	Ted	Rated	On Off	
	2	Pub. Gri	herr		2	65	40	-		768.00 766.75	
	3	Dub. Gri	nder		5	65	TO			169.00 166.15	
	5										
	Sump										
6	Are n	mos specifi	led as	being ca	nable o	f passing	three Inch	diame	ter spheres?	AS NO TYL GRINDER	
	0			adla DUNN	61em m	the lance					
7	Vat w	emaining pur	nps na	Indie Phin	TION W		st pump out	TOT Se	tal Flow 12		
5.	Decie	Flow	2 -	toutos	yann	0115. 10 10	Billion time				
4.	le for	cced air ve	ntilat	ion provi	ded? N	00					
	Conti	nuous: wat-	well	d d	rv-well		In term1 t	tent: w	et-vell X	dry-yell N/A	
		wet-	well	a	Ir chan	ges/hour		d	ry-well	air changes/hour	
	Are s	park-proof	materl	als spect	fled?	Yes 🕅	No			_	
5.	Force	main: Is	profil	e of forc	e main	provided?	Yes				
	Size	3 In.	1	ength 9	50 ft						
	Pipe	Material	50	R-25	PVC			Joint	Rubber	gasket	
	Minim	um cover 5	5.0	ft. M	Inimum	velocity	2.9 1	ps -			
	Numbe	r of high p	oints		Are al	r, relief	valves pro	fbebly	Yes No		
	Numbe	r of thrust	block	s provide	d? 6	5 At	location(s) all	Bends		
	Is pressure test specified? Yes No Does installation conform to AWWA C600? Yes No Linko Le. applicable										
6.	Are v	alves provi	ded or	the suct	ion & d	lischarge	lines? Ye	s 🖂	No	/.	
	Type: Discharge Ball check & Gate Valves Suction N/A										
7.	Is an	alarm syst	em pro	ovided? Y	es 🔀	NO	Туре				
8.	Indic Metho	ate where a	udlo/	isual war	ning si	Ignals will	I be locat	ed ma	ounted on	service pole	
0.	110	o or pump c			Uaj	Juli	L No TVI	Grin	lov Piamo	<	
9.	Are T	ne pumps pr	O TOC TO	P	ogging	Tes	MO AL-	Orin	all for		
	Metho	d of cump	ng	1 mm	10 P	comple	CTELP	remo	lifting books	larms provided? Vac	
1	Are	ermanent er	ercent		bypass	connection	DIS DEONIDE	17	Ves 1	s an emergency power supply	
	avall	able? No		Describe	tation	operation	in an eme	rgency	(equipment, pi	ping, bypass, etc.)	
	avail	BUDGE	-01	4 ha 0 in	0 1	with	portal	le	emergen	cy pump	
	by pass pumping with potrable concrycity pump.										
1	Elevation of 100 year flood (MSL) Elevation of 25 year flood (MSL)										