STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



GENERAL PERMIT for SEWER EXTENSION CONSTRUCTION

The Missouri Department of Natural Resources hereby issues a permit to:

Construction Permit ID:	MOGC00624
Title of Project:	Curry Street Sewer Connection
Owner:	EW Thompson Inc
Address:	906 Thompson Blvd SEDALIA, MO 65301
	general site work appropriate to the scope and purpose of the project and will include all the necessary plete and usable collection system. The construction of this project will be in the vicinity of the county
County:	Receiving Permit ID:
for the construction of (descri	ped construction project):
manholes. Design flow is 9 project is located between 1	tion-Construction of approximately 1931 If of 8 in. SDR 26 PVC gravity sewer and 10 500 gpd with a population equivalent of 120 people, peak flow is 1600 gph. The amm Dr and W 10th St in Sedalia, Pettis County and discharges to the Sedalia 19. Chris Davies, director of public works for the district, signed the continuing 1023
RSMo, and regulation promulass the Department does not expermit does not include approximately appro	I facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, gated thereunder, or this permit may be revoked by the Department of Natural Resources (Department) camine structural features of design or the efficiency of mechanical equipment, the issuance of this val of these features. The construction of water pollution control components; it does not apply to other environmentally
August 23, 2023	John John
Issue Date	John Hoke, Director
issue Bute	Water Protection Program
August 22, 2025	
Expiration Date	

APPLICABILITY

- 1. This permit authorizes the construction of gravity sewer extensions, force mains, and lift stations. Non-earthen flow equalization storage basins at lift stations and inline storage, which flows back into the lift station or collection system, are also included.
- 2. The Missouri Department of Natural Resources may require a site-specific sewer extension construction permit due to compliance and enforcement actions in accordance with 10 CSR 20-6.010(13)(C).
- 3. This permit does not apply to:
 - A. Earthen storage basins;
 - B. Exempt projects in accordance with 10 CSR 20-6.010(1)(B), 10 CSR 20-6.010(5)(B), and RSMo 644.051 unless requested by the applicant or required by enforcement.

PREREQUISITES:

- 1. The Sewer Extension Construction Permit application, appropriate fee, and documentation in accordance with 10 CSR 20-6.010(5)(G).
- 2. Submit the Sewer Extension Construction Permit application at least sixty (60) days in advance of the start of construction in accordance with 10 CSR 20-6.010(5)(F).
- 3. Submit an electronic copy of the construction permit application and documents to DNR.WPPEngineerSection@dnr.mo.gov in accordance with 10 CSR 20-6.010(5)(G)3.
- 4. The plans and specifications, each signed, sealed, and dated by a professional engineer registered in the State of Missouri in accordance with 10 CSR 20-8 and 10 CSR 20-6.010.
- 5. The Design Certification form, Engineering Report, or Summary of Design, signed, sealed, and dated by a professional engineer registered in the State of Missouri, certifying the design of the system is in accordance with 10 CSR 20-6 and 10 CSR 20-8.
- 6. A statement from the continuing authority, as defined in 10 CSR 20-6.010, accepting the wastewater for treatment and indicating the permitted treatment facility has the available capacity.
- 7. A statement from the continuing authority, as defined in 10 CSR 20-6.010, accepting responsibility for the operation and maintenance of these facilities.

PERMIT CONDITIONS:

- 1. This permit authorizes the activities and scope of work detailed in the plans and specifications submitted with the request.
- 2. The construction must be in accordance with the final plans and specifications received by the Department. Revisions that affect capacity, flow, or system layout must be approved by the Department prior to construction.

PERMIT CONDITIONS: (continued)

- 3. If construction will incorporate minor changes from previously submitted plans and specifications (i.e., changes that do not affect the capacity, flow, or system layout), submit an electronic copy of the as-built plans and specifications in accordance with 10 CSR 20-8.110(11).
- 4. State and Federal Law does not permit bypassing of raw wastewater; therefore, the applicant must take steps to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the Department's regional office per 10 CSR 20-7.015(9)(E) or through the Online Bypass/SSO Reporting service on the Missouri Gateway for Environmental Management (MoGEM) portal found at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem.

See https://dnr.mo.gov/document-search/missouri-gateway-environmental-management-mogem-frequently-asked-questions-pub2988/pub2988 for more information.

- 5. Protection of drinking water supplies must meet the requirements of 10 CSR 20-8.120(5).
 - A. There shall be no physical connections between a public or private potable water supply system and a sewer or appurtenance that would permit the passage of any wastewater or polluted water into the potable supply.
 - B. Lay sewers at least 50 feet (50') in a horizontal direction from any existing or proposed public water supply well or other water supply sources or structures.
- 6. Position manholes so that the top access is at or above grade level.
- 7. In addition to the requirements for a construction permit, see 10 CSR 20-6.200 for land disturbance requirements to obtain a Missouri State Operating Permit to discharge stormwater. The permit requires Best Management Practices sufficient to control runoff and sedimentation to protect waters of the state. Applicants shall obtain land disturbance permits through the Department's ePermitting system, available online at <a href="https://dnr.mo.gov/data-e-services/water/electronic-permitting-ep

See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance for more information.

8. Entities applying for funding under 10 CSR 20-4, "Grants and Loans" will need to comply with those requirements in addition to the requirements of 10 CSR 20-8.

PERMIT CONDITIONS: (continued)

9. The Department may require a United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) or a permit waiver for the activities described in this permit. If construction activity will disturb any land below the ordinary high water mark of Jurisdictional Waters of the U.S., then a 404/401 is required. Fulfillment of these requirements is necessary before the permit is considered valid. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Operating Permits Section at 573-522-4502 for more information.

See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information.

- 10. If this project eliminates a wastewater treatment facility under the jurisdiction of the Department, then the applicant shall submit a full closure plan with a Facility Closure Request Form, Form MO 780-2512, to the Department's appropriate regional office for review and approval. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit. Closure shall not commence until the Department approves the submitted closure plan.
- 11. If this project is part of a project to resolve an enforcement action or is receiving funding from the Department, submit a <u>statement of work complete</u> following the completion of construction.
- 12. Applicants may submit, prior to the expiration date of this permit, a written request that additional time is needed in accordance with 10 CSR 20-6.010(5)(H)3.



MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – SEWER EXTENSION

FOR DEPA	RTMENT USE ONLY	
APP NO,	CP NO.	
FEE RECEIVED	CHECK NO.	
DATE RECEIVED		

NOTE ► Please Read the accompanying in	struction	s before	completing th	nis form			
1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)							
1.1 Is this a Federal/State funded project?	☐ YES	☑ N/A	Funding Ager	ncy:	Pro	ject #:	
1.2 Has the Department of Natural Resources approved the proposed project's engineering report*? ☐ YES Date of Approval: ☐ NO ☐ N/A						□ N/A	
1.3 Is a copy of the appropriate plans* and specifications* included with this application? ☑ YES ☐ NO							
If the project is using standard specifications, name of community: City of Sedalia							
1.4 Is a summary of design* included with thi			YES NC				
1.5 Is the appropriate fee or JetPay confirma See Section 7.0	tion includ	led with th	is application?	ZYES [□NO		
* Must be affixed with a Missouri registered p	rofessiona	l enginee	r's seal, signat	ure and date.			
2.0 PROJECT INFORMATION 2.1 NAME OF PROJECT	2000 2004 1200 420 420	a v v s v s v s () () () ()					
Curry Street Sewer Connection							
ADDRESS	CITY			STATE	ZIP CODE	COUNTY	
Lamm Drive	Sedalia			MO	65301	Pettis	
2.2 Legal Description: 1/4, 1/2	4 SW	1/4, Se	c. 1 ,	T 45N ,	R 22W		
2.3 Project Components (check all that apply	s	-	ic sewer to app		0 acres of vacant la	escribe below.)	
2.5 DESIGN INFORMATION A. Population or number of lots to be served B. Estimated flow to be contributed by this ex					Design Peak Hourl	y Flow 1600 anh	
C. Industrial Wastes: Type; NA			gpd	1600 gpa	Design Feak Hour	y Flow: 1600 gph	
C. Industrial Wastes: Type; NA Flow; gpd D. Receiving Sewer: Size: 8 inches Capacity: 80 gpm							
E. Does this project (check all that apply):							
☑ Connect to an existing treatment plant ☐ Resolve enforcement issue ☐ Eliminate or consolidate an existing treatment plant							
F. Estimated number of onsite systems being removed: 0							
G: Estimated costs associated with piping: \$	NA	Est	mated costs a	ssociated wit	h lift station(s): \$		
3.0 PROJECT OWNER	where each	nasayang si					
NAME EM/ Thompson Inc			E NUMBER WITH AR	EA CODE	EMAIL ADDRESS		
EW Thompson Inc.	CITY	660-851-	0008	STATE	dianne.slmon@ev	vinompson.com	
906 Thompson Blvd	Sedalla			MO	65301		
CHARTER NUMBER (SECRETARY OF STATE) or REGISTERED					T		
00069907							
MO 780-1632 (10-22)							

4.0 CONTINUING AUTHORITY: A continuing for ensuring compliance with the permit requirement continuing authority should be a relatively permit when needed, of the permitted facility or active hired by the permittee to sample or operate a analytical laboratory. To access the regulator water Commission Chapter 6, A continuing a (SoS's) webpage: Missouri Secretary of State required to register with the SoS.	rements ar rmanent e ity, A cont nd maintai y requirem uthority's i	nd provide contity respons inuing autho in the systement regarding name must be	ontinuous s sible for the rity is not, h n for a defin g continuin pe listed exa	table oversig ongoing ope owever, an e ed time periog authority, 1 actly as it app	ht of the permitted facility or activity. The ration, maintenance and modernization, intity or individual that is contractually od, such as a certified operator or 0 CSR 20-6.010(2), please visit Clean pears on the Missouri Secretary of State's
NAME			JMBER WITH A	REA CODE	EMAIL ADDRESS
City of Sedalia		660-827-30	00		jstone@sedalia.com
ADDRESS	CITY			STATE	ZIP CODE
200 S Osage	Sedalia			МО	65301
4.1 Has appropriate continuing authority access A letter from the continuing authority accepting different than the original owner of the construction that the continuing authority accepting the construction of the constructio	ng respons uction), or	sibility for cor a properly e	ntinued mai xecuted "C	ntenance of t	he sewer (if the continuing authority is hority and Receiving Wastewater
ENGINEER NAME / COMPANY NAME		TELEPHONE N	UMBER WITH A	REA CODE	EMAIL ADDRESS
Greg Nehring		573-529-96			greg@grameng.com
ADDRESS 111 W 3rd St	CITY Sedalia			STATE MO	ZIP CODE 65301
6.0 RECEIVING WASTEWATER TREATME		ITY		avasteakteisky	
NAME Sedalia Central Wastewater Treatment Facili Missouri state operating permit # MO-0023019			UMBER WITH A 145	REA CODE	EMAIL ADDRESS jstone@sedalia.com REMAINING CAPACITY (GPD) 1,23 MGD
6.1 If different from the owner, has a letter be	an provide	1	oppining tro	atmont facili	
accept the expanded flow or has a properly of MO 780-2584 form been provided? YE 6,2 A letter from the receiving wastewater tre	executed 0 S	Continuing A Community N/A cility, if different	uthority and ent than the	Receiving V	Vastewater Treatment Facility Acceptance authority, is included with this application.
6.3 If the receiving treatment plant or continu Certificate of Convenience and Necessity ha	s been rec	ceived?	ed by the P Yes – Date	ublic Service :	Commission (PSC) for sewer activities, a No NA
OPTIONAL QUESTIONS REGARDING MIL					
Have you or an immediate family member ev U.S. Armed Forces?				es es	☑ No
If yes, would you like information about milita in Missouri?	ry-related	services		/es	☑ No
7.0 Application Fee					
☐ Check Number			☐ JetPay	Confirmation	n Number
8.0 PROJECT OWNER: I certify under pena supervision in accordance with a system des submitted. Based on my inquiry of the perso gathering the information, the information su aware there are significant penalties for subr	igned to a n or perso bmitted is.	nssure qualifi ns who man to the best	ed personn age the sys of my know	el properly g tem, or those ledge and be	ather and evaluate the information persons directly responsible for lief, true, accurate and complete. I am
francin. Semi					
PRINTED NAME					DATE
E. W. Thompson, Inc. by Dianne M. Simon					6/26/2023
TITLE OR CORPORATE POSITION Vice President		1660-826-48	NUMBER WITH A	AREA CODE	dianne.simon@ewthompson.com
		000-020-40			and the control of th
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM PO BOX 176			Submit completed electronic copy to: Missouri Department of Natural Resources at DNR.WPPEngineerSection@dnr.mo.gov		
JEFFERSON CITY MO 6510	2-0176		ľ		

MO 780-1632 (10-22)

SEWER EXTENSION DESIGN CERTIFICATION: Answer all questions yes or N/A. Answer N/A only if the question is applicable to the design of the proposed sewer extension. REGULATION	YES YES V V V V V V V V V V V V V	N/A N/A D D D D D D D D D D D D D
1. 8.110(3)(A) Is the design flow based on actual flow data for an existing system? 2. 8.110(3)(B) Are average design flows, peak hourly flows and I&I contributions for new systems calculated? 3. 8.110(9)(B) Is there a detailed plan showing tributary area, boundaries, pertinent elevations, topography, existing and proposed facilities? 4. 8.120(2) Does the sewer exclude water from roofs, streets, groundwater from foundation drains and combined wastewater? 5. 8.120(3)(A) Is the pipe installation, embedment and backfill designed to prevent damage to the pipe and its joints? 6. 8.120(3) (A)1 Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Are manholes are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
2. 8.110(3)(B) Are average design flows, peak hourly flows and l&l contributions for new systems calculated? 3. 8.110(9)(B) Is there a detailed plan showing tributary area, boundaries, pertinent elevations, topography, existing and proposed facilities? 4. 8.120(2) Does the sewer exclude water from roofs, streets, groundwater from foundation drains and combined wastewater? 5. 8.120(3)(A) Is the pipe installation, embedment and backfill designed to prevent damage to the pipe and its joints? 6. 8.120(3)(A)1 Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(B) Are sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 16. 9.120(D)(B) PRESSURE SEWERS, GRINDER PUMP; STEP AND STEG SEWER CHECKLIST		
a. 8.110(9)(B) Is there a detailed plan showing tributary area, boundaries, pertinent elevations, topography, existing and proposed facilities? 4. 8.120(2) Does the sewer exclude water from roofs, streets, groundwater from foundation drains and combined wastewater? 5. 8.120(3)(A) Is the pipe installation, embedment and backfill designed to prevent damage to the pipe and its joints? 6. 8.120(3)(A)1 Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP; STEP AND STEG SEWER CHECKLIST		
topography, existing and proposed facilities? Does the sewer exclude water from roofs, streets, groundwater from foundation drains and combined wastewater? Is the pipe installation, embedment and backfill designed to prevent damage to the pipe and its joints? Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? Are the manholes undertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? On PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
combined wastewater? Is the pipe installation, embedment and backfill designed to prevent damage to the pipe and its joints? 8.120(3) (A)1 Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
and its joints? 8.120(3) (A)1 Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soll or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
per second? 7. 8.120(3)(A)2 Is the pipe covered with at least 36" of soil or sufficiently insulated to prevent freezing? 8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
8. 8.120(3)(B) Is deflection testing specified to ensure no pipe exceeds a deflection of 5% of the inside diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
diameter? 9. 8.120(4)(A) Are manholes located at the end of each line, at all changes in grade, size or alignment and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
and at all intersections? 10. 8.120(4)(C) Are manholes at least 42 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
line larger than 8"? 11. 8.120(4)(C) Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST		
diameter of 8 inches or larger and equal to the diameter for pipes < 8"? 12. 8.120(4)(E) Are the manholes watertight, constructed and installed in accordance with the manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST	\[\sqrt{\sq}}}}}}}\sqrt{\sq}}}}}}}}}\signt{\sqrt{\sq}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	
manufacturer's recommendations and procedures? 13. 8.120(4)(F) Do the specifications include a requirement for inspection and testing for manholes? 14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST	V	
14. 8.120(5)(A) Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole? 15. 8.120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST REGULATION	1	
pipes come in contact with a sewer manhole? 15. 8,120(5)(B) Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST REGULATION	7	
proposed water supply well, sources, structures? 10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST REGULATION	1 —	
REGULATION	V	
	EMINE A	
48 I D 405/5/A)4 I Dood the elegating valentity of > 2 ft/s honnon more than once not day?	YES	N/A
16. 8.125(5)(A)1. Does the cleaning velocity of ≥ 2 ft/s happen more than once per day?		
17. 8.125(5)(A)2. Is the diameter of the pressure sewer main pipe at least 1,5"?		V
18. 8.125(5)(B) Are appurtenances compatible with the piping system?		V
19. 8.125(5)(B)2. Are isolation valves located: upstream of major pipe intersections; both sides of stream, bridge and RR crossings; at terminal end of system?		V
20. 8.125(5)(C) Do service line pipes have a minimum diameter of 1.25"?		V
21. 8.125(5)(D)1.A Do simplex grinder pump stations service only a single equivalent dwelling unit (EDU)? i.e. 1 residence – 1 grinder pumpt.		V
22. 8.125(5)(D)1.B Are multiple unit pump stations owned, operated and maintained by an approved continuing authority?		V
23. 8.125(5)(D)3. Is there at least 70 gallons of storage in the grinder pump unit?		V
24. 8.125(5)(D)4. Do grinder pump stations have shutoff valves, check valves and anti-siphon valves (where siphoning could occur) that are accessible from the ground surface?		V
25. 8.125(5)(D)7., 8.130(3)(B)2. Are units serviceable and replaceable under wet conditions without electrical hazard and is electrical equipment suitable for hazardous locations (National Electrical Code, Class I, Group D, Division 1 location)?		V
26. 8.125(5)(D)8., 8.125(2)(F)6. Are provisions in place to avoid interruption of service due to mechanical or power failure by providing standby power, storage capacity, or interconnection with another disposal system?		V
27. 8.125(6)(D) In a STEP system is at least one septic tank (1,000 gallons or more) provided for each EDU with 20% of tank volume dedicated to freeboard and ventillation?		V
28. 8.125(6)(F) Are duplex pumps provided for the design flow of 1,500 gallons or greater?	+	1

11.0 P	UMP STATION C	HECKLIST	:5000;	(nemph)					
	REGULATION		YES	N/A					
29,	8.125(7)(C)	Is the minimum diameter sewer main pipe and service line of STEG sewer at least 4"?	П	V					
30.	8.130(2)(A) 8.140(2)(B)	Is the pump station designed to withstand the 100-year flood?		V					
31.	8.130(3)(A)	Is the dry well completely separate from the wet well and is a suitable and safe means of access provided to each?		V					
32.	8.130(3)(B)	If the design flow is 1,500 gpd or more, are there at least 2 pumps or pneumatic ejectors provided?		V					
33	8.130(3)(D)	Are valves located outside wet well unless integral to a pump or its housing?		V					
34.	8.130(3)(F) 8.140(8)(J)	Do wet and dry wells have separate ventilation systems?		<u></u>					
35.	8.130(3)(G)	Does all potable water brought to pump stations comply with 8.140(7)(D)?	П	V					
36.	8.130(6)	Is an alarm system provided with uninterrupted power?							
37.	8.130(7)(A)	Is there 2 hours retention of the peak hourly flow for a design flow > 100,000 gpd or 4 hrs retention of the peak hourly flow for a design flow < 100,000 gpd?							
38.	8.130(7)(B)	Are there independent utility substations provided for emergency power capable of starting and operating the pump station at its rated capacity?		V					
39.	8.130(8)(A)	Is the force main velocity of ≥ 2 ft/s maintained?	П	V					
40.	8.130	Are there complete operation instructions for the pumpting stations provided that include emergency procedures, maintenance schedules, special tools and spare parts that may be necessary?		V					
12.0 S	UCTION LIFT PU	MP AND SUBMERSIBLE PUMP STATION CHECKLIST	impaija						
	REGULATION		YES	N/A					
41.	8.130(4)	Are the suction lift pumps of the self priming or vacuum priming type?		V					
42.	8.130(4)(A)	Is the combined total of dynamic suction lift at the "pump off" elevation and required net positive suction head at design operating conditions less than or equal to 22 feet?		V					
43.	8.130(4)(B)	Are there dual vacuum pumps capable of removing air from the suction lift pump?		7					
44.	8.130(5)(A)	Are submersible pumps readily removable and replaceable without personnel entering, or	-						
-1-4.	44. 8.130(5)(A) Are submersible pumps readily removable and replaceable without personnel entering, or disconnecting any pipe in the wet well?								
		ON CHECKLIST CERTIFICATION STATEMENT							
		ered "N/A" provide an explanation. Also provide any useful general comments regarding desig	n for rev	iew					
	engineer.								
Only th	Only the first section applies to this project.								
Item 1,	Item 1, No existing flow is present. I used 80 gallons per person/day, 60 units, 2 people per unit and a peak flow factor of 4.								
Item 11	Item 11, No clean outs are being used.								
ł	OF MISSON								
	OREGORY R. NAMENG								
Misso	uri Professional E	ngineer's seal, signature and date:							
	N_t	NOTIMBER 128							
	7/20/2623								
Name	Name: Name: Name:								
Addre	Address: 111 W 300 51								
City:	Sc 19.64	State: MTO ZIP Code: 65301							
Telep	City: Scalaba State: MO ZIP Code: 65301 Telephone Number with Area Code: 573-579 Email: 9729 B GRAMENE, On								
MO 780-16	322 /40.22)		11	/					

 $e^{-\epsilon^{-2}}$

9154