

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: MOGC00842
Title of Project: Harper Ridge Subdivision Phase IV
Owner: Bester Properties, LLC
Address: 1051 West Cat Tail Court
Nixa, MO 65714

The project will also include general site work appropriate to the scope and purpose of the project and will include all the necessary appurtenances to make a complete and usable collection system. The construction of this project will be in the vicinity of the county below and discharge to Receiving Permit ID below:

County: Greene Receiving Permit ID: MO0022098

for the construction of (described construction project):

Project is in the vicinity of Interior Farm Road 81 and Farm Road 170 in the City of Republic, Greene County and discharges to an existing system to be treated at Republic WWTF, MO-0022098. Angel Falig, P.E., city engineer, with Republic WWTF provided an acceptance letter dated December 19, 2024. Construction of approximately 396 lf of 8-inch PVC SDR-26 and 2,422 lf of 8-inch PVC SDR 35 gravity sewer lines with approximately 13 manholes to serve a 172 PE and a design average flow of 17,257 gpd.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department). As the Department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features. This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

January 22, 2025
Issue Date


John Hoke, Director
Water Protection Program

January 21, 2027
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 <https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting>.

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 [statement of work complete](#) 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.

Rcvd 12/23/24



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT - SEWER EXTENSION

FOR DEPARTMENT USE ONLY
APP NO. CP NO.
FEE RECEIVED CHECK NO.
DATE RECEIVED

NOTE PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS 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?
1.2 Has the Department of Natural Resources approved the proposed project's engineering report?
1.3 Is a copy of the appropriate plans* and specifications* included with this application?
1.4 Is a summary of design* included with this application?
1.5 Is the appropriate fee or JetPay confirmation included with this application?

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT
Harper Ridge Subdivision Phase IV

Table with 5 columns: ADDRESS, CITY, STATE, ZIP CODE, COUNTY. Values: Int.Farm Rd. 81(Main St.) & Farm Rd. 170, Republic, MO, 65738, Greene

2.2 Legal Description: 1/4, 1/4, SW 1/4, Sec. 17, T 28, R 23

2.3 Project Components (check all that apply):
[checked] Gravity sewers [] Pumping stations [] Force mains [] Alternative sewer system [] Other (Describe below.)

2.4 PROJECT DESCRIPTION
Construction of +/- 396 l.f. of 8" sdr 26 gravity sewer, and +/- 2422 l.f. of 8" sdr 35 gravity sewer with 13 manholes connecting to existing MH A-2 (MH A-2 from Harper Ridge Phase I formerly Emerald Valley Phase IIA) serving 53 residential lots.

2.5 DESIGN INFORMATION
A. Population or number of lots to be served by this extension: 53 lots
B. Estimated flow to be contributed by this extension: Design Average Flow: 17257 gpd Design Peak Hourly Flow: 5,454 gph
C. Industrial Wastes: Type: Flow: gpd
D. Receiving Sewer: Size: g inches Capacity: gpm

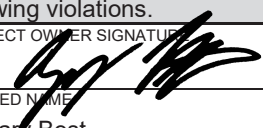
3.0 PROJECT OWNER

Table with 3 columns: NAME, TELEPHONE NUMBER WITH AREA CODE, E-MAIL ADDRESS. Values: Bester Properties, LLC, (417) 631-8564, besterpropertiesllc@gmail.com

4.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf. A continuing authority's name must be listed exactly as it appears on the Missouri Secretary of State's (SoS's) webpage: https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0, unless the continuing authority is an individual(s), government, or otherwise not required to register with the SoS.

Table with 3 columns: NAME, TELEPHONE NUMBER WITH AREA CODE, E-MAIL ADDRESS. Values: City of Republic, 417-732-3150, AFalig@republicmo.com

4.1 A letter from the continuing authority or the Continuing Authority and Receiving Wastewater Treatment Facility Acceptance form, if different than the owner, is included with this application. [checked] YES [] NO [] N/A

5.0 ENGINEER			
ENGINEER NAME / COMPANY NAME David Bodeen, Pinnacle Design Consultants		TELEPHONE NUMBER WITH AREA CODE 417-830-7480	E-MAIL ADDRESS bodeen@pinnacledc.com
ADDRESS 304 B W. Erie St.	CITY Springfield	STATE MO	ZIP CODE 65807
6.0 RECEIVING WASTEWATER TREATMENT FACILITY			
NAME Republic Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE 417-732-3460	E-MAIL ADDRESS jasondavis@republicmo.com
MISSOURI STATE OPERATING PERMIT # MO-0022098		REMAINING CAPACITY (GPD) 991,996	
6.1 Has the receiving treatment facility agreed to accept the additional wastewater flow? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
6.2 A letter from the receiving wastewater treatment facility, if different than the continuing authority, is included with this application. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			
7.0 Application Fee			
<input type="checkbox"/> Check Number		<input type="checkbox"/> JetPay Confirmation Number	
8.0 PROJECT OWNER: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
PROJECT OWNER SIGNATURE 			
PRINTED NAME Zachary Best		DATE 12/18/24	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (417) 631-8564	E-MAIL ADDRESS besterpropertiesllc@gmail.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176			

INSTRUCTIONS FOR COMPLETING APPLICATION FOR CONSTRUCTION PERMIT – SEWER EXTENSION

All blanks must be filled in when the application is submitted to the Missouri Department of Natural Resources. This includes the **required signature**.

In accordance with Missouri State law RSMo 644.051.3.(2), sewer extension projects installing up to a total of 1,000 linear feet of gravity sewer or force main with less than two pump stations are exempt from obtaining a construction permit. Since these projects are exempt, a construction permit will not be issued for this activity and completion of this form is not required.

Note: Use the form Application for Construction Permit – Wastewater Treatment Facility, MO 780-2189, if any wastewater treatment component(s) are to be constructed.

A land disturbance permit is required if construction will result in the disturbance of one or more acres of land. A land disturbance permit is available through the department's ePermitting system at dnr.mo.gov/env/wpp/epermit/help.htm. A permit fee in accordance with 10 CSR 20-6.011(2)(E) is required.

After receiving a complete application, the department enters the application information into the Missouri Clean Water Information System. You may search for the status of a construction permit online at dnr.mo.gov/mocwis_public/applicationInprocessSearch.do.

- 1.1 Check appropriate box. If the project is funded with federal or state monies, supply the funding agency name and project number.
 - 1.2 Check appropriate box and provide the date of department approval.
The department has developed a fact sheet to aid in the development of an approvable engineering report. This document is available online at dnr.mo.gov/pubs/pub2415.htm. Engineering report exemptions are listed in 10 CSR 20-6.010(4)(B). Per 10 CSR 20-8.110(2), engineering reports must be approved by the department prior to the submittal of plans and specifications and a construction permit application. The department has developed a fact sheet to aid in the development of an approvable engineering report, [Engineering Report Guidance for Collection Systems](#), Fact Sheet--PUB2415.
 - 1.3 Check appropriate box. Provide a copy of the appropriate plans and specifications for department review when applying for a construction permit per 10 CSR 20-8.110 and 10 CSR 20-6.010. A Missouri registered professional engineering seal, signature and date is required on each sheet of the plans and the cover of the technical specifications. An electronic copy of the construction permit application and the information listed below in Portable Document Format (PDF) searchable format or department approved equivalent per 10 CSR 20-6.010(5)(G), along with one (1) paper copy for projects not seeking department funding or two (2) paper copies for projects seeking department funding under 10 CSR 20-4.
 - 1.4 Check appropriate box. A summary of design shall accompany the plans and specifications when applying for a construction permit per 10 CSR 20-8.110. The department has developed a fact sheet to aid in the development of an acceptable summary of design, [Summary of Design Guidance](#), Fact Sheet--PUB2417.
 - 1.5 Check the appropriate box. Include fee with application per 10 CSR 20-6.011(2) and Wastewater Treatment Facility Permit Fees -- PUB2564.
- Note: The department returns incomplete construction permit applications and related engineering documents and the application forfeits the fees. See 10 CSR 20-6.011(5)(A). The applicant forfeits the fees when the applicant withdraws construction applications. See 10 CSR 20-6.011(5)(B).2.1 Provide the project name and location by street name or address.
- 2.2 Provide the project legal description. The department's mapping system is available online at dnr.mo.gov/gis/.
 - 2.3 Check all of the applicable boxes.
The department considers anything other than a gravity sewer system to be an alternative sewer system. Examples of these systems are grinder pump pressure sewers, septic tank effluent pump, or STEP, sewers, septic tank effluent gravity, or STEG, sewers or small diameter gravity sewers.
 - 2.4 Briefly describe the project by providing the following information:
 - A. Total number of manholes.
 - B. Size of sewers and the total linear feet of each size.
 - C. Number of lift stations and design average flow and peak hourly flow capacities of each lift station.
 - D. Size and length of force mains.
 - E. Alternative sewer size and length, plus the number of components (e.g. septic tanks, grinder pumps, etc.)
 - 2.5 Provide the project design information and when required in the units specified.
 - A. Provide the population or number of lots to be served by the proposed sewer extension.

B. Provide the estimated design flow information in accordance with 10 CSR 20-8.110(4)(C)4.A.

Design average flow – The design average flow is the average of the daily volumes to be received for a continuous 12 month period expressed as a volume per unit time. However, the design average flow for facilities having critical seasonal high hydraulic loading periods (e.g., recreational areas, campuses and industrial facilities) shall be based on the daily average flow during the seasonal period.

Design peak hourly flow – The design peak hourly flow is the largest volume of flow to be received during a one hour period expressed as a volume per unit time.

C. Provide the type and flow in gallons per day of industrial wastes received by the propose sewer extension.

D. Provide the receiving sewer size in inches and capacity in gallons per minute.

3.0 Complete Project Owner information. Include the legal name and address.

4.0 Continuing Authority – A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit

<http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>. A continuing authority's name must be listed exactly as it appears on the Missouri Secretary of State's (SoS's) webpage:

<https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0>, unless the continuing authority is an individual(s), government, or otherwise not required to register with the SoS. If same as the Project Owner, write "Same as above".

4.1 Check appropriate box. Include a letter signed by the continuing authority (if not same as the project owner) stating they will "accept, operate and maintain" the sewer extension. The continuing authority may also complete the Continuing Authority and Receiving Wastewater Treatment Facility Acceptance form in lieu of a letter. If the continuing authority will not accept and agree to operate and maintain the sewer extension, this application will be considered incomplete.

5.0 Complete Engineer contact information.

6.0 Complete Receiving Wastewater Treatment Facility information. Include the Missouri State Operating Permit number and the available remaining capacity in gallons per day, or gpd.

6.1 Check appropriate box. The receiving wastewater treatment facility must be notified and agree to the proposed sewer extension and additional flow, prior to submitting a construction permit to the department. If the receiving wastewater treatment facility will not accept the wastewater, this application will be considered incomplete.

6.2 Check appropriate box. Include a letter from the receiving wastewater treatment facility (if not same as the continuing authority) acknowledging and accepting the additional flow from the proposed sewer extension.

7.0 Check the appropriate box and include check or confirmation number. Applicants can pay fees online by credit card or eCheck through a system called JetPay.

- Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
- Be sure to select the correct fee type and corresponding URL to ensure your payment is applied appropriately. If you are unsure what type of fee to pay, please contact the Water Protection Program's Budget, Fees, and Grants Management Unit by phone at (573) 522-1485 for assistance.
- Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
- If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, to WPPFEES@dnr.mo.gov. The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. **Please do not include your credit card information in the email.**
- Applicants can find fee rates in 10 CSR 20-6.011 and Wastewater Treatment Facility Permit Fees -- PUB2564 (<https://dnr.mo.gov/pubs/pub2564.htm>).

WP 04 Construction Permits: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/>

8.0 The owner of the construction project must sign the application.

Mail the completed form and applicable fee to the department.

If there are any questions concerning this form, please contact the Department of Natural Resources, Water Protection Program at 800-361-4827 or 573-751-1300 or visit dnr.mo.gov/env/wpp/permits/ww-construction-permitting.htm.

SEWER EXTENSION DESIGN CERTIFICATION

Answer all questions yes, no, or N/A. Answer N/A only if the question is clearly not applicable to the design of the proposed sewer extension **OR** if a deviation was previously allowed by the Department in the approval of Standard specifications or Standard Detail Sheets.

9.0 SEWER EXTENSION CHECKLIST					
	REGULATION		YES	NO	N/A
1.	8.110(9)(B)	Is there a detailed plan showing tributary area, boundaries, pertinent elevations, topography, existing and proposed facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	8.110(3)(A)(B)	Is the design flow based on actual flow data for an existing system? Is the design flow based on the design peak hourly flow for a new collection system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	8.120(2)	Does the sewer receive only sewage and not combined sewage?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	8.120(3)(C)	Are the joints sealed to prevent infiltration or exfiltration > 100 gal/inch of pipe dia/mile/day for receiving WWTF with a design flow > 22,500 gpd, and >200 gal/inch of pipe dia/mile/day for any section between manholes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	8.120(4)(A)	Are manholes located at all changes in grade, size or alignment, at all intersections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	8.120(3)(A)2	Is the pipe covered with at least 36" of soil or sufficiently insulated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	8.120(3)(A)	Is the pipe installation, embedment, and backfill designed to prevent damage to the pipe and its joints?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	8.120(3)(B)	Is pipe being tested to ensure it does not exceed a deflection of 5% of the inside diameter?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	8.120(4)(C)	Are manholes at least 48 inches in diameter with a clear opening of 22 inches on sewer line larger than 8"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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"?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12.	8.120(4)(E)	Are the manholes watertight, constructed, installed in accordance with the manufacturer's recommendations and procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	8.120(4)(F)	Do the specifications include a requirement for inspection and testing for manholes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	8.120(5)(B)	Are sewers and manholes located at least 50 feet horizontally from any existing or proposed water supply well, sources, structures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.0 PRESSURE SEWERS, GRINDER PUMP, STEP AND STEG SEWER CHECKLIST					
	REGULATION		YES	NO	N/A
16	8.125(5)(A)	Does the cleaning velocity of ≥ 2 ft/s happen more than once per day when the minimum diameter sewer main pipe is at least 1.5"?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17	8.125(5)B	Are appurtenances compatible with the piping system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	8.125(5)(C)	Is the minimum diameter service line pipe at least 1.25"?			
19	8.125(5)(D)1A	Are no multiple equivalent dwelling units (EDUs) or commercial facilities served by simplex grinder pump stations?			
20	8.125(5)(D)1B	Are multiple unit pump stations owned, operated, maintained by an approved continuing authority.			
21	8.125(5)(D)3	Is there at least 70 gallons of storage in the grinder pump unit ?			
22.	8.125(5)(D)4	is shutoff valve accessible from the ground? Is there a check valve? Is there an anti-siphon valve where siphoning could occur ?			
23	8.125(5)(D)7 8.130(3)(B)2	Are units serviceable and replaceable under wet conditions without electrical hazard to repair personnel and electrical equipment suitable for hazardous locations (National Electrical Code, Class I, Group D, Division 1 location).			

24	8.125(6)(D) 8.180(2)	Does at least 1 septic tank (1,000 gallons or more) provide to each EDU?			
25	8.125(6)(F)	Are duplex pumps provided for the design flow of 1,500 gallons or more STEP sewer?			
26	8.125(7)(A) 8.125(7)(C)	Is the minimum diameter sewer main pipe and service line of STEG sewer at least 4"?			
27	8.125(5)(D)8 8.125(8)	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?			

11.0 PUMP STATION CHECKLIST

	REGULATION		YES	NO	N/A
28.	8.130(2)(A) 8.140(2)(B)	Is the pump station designed to withstand the 100-year flood?			
29.	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?			
30.	8.130(3)(B)	If the design flow is 1,500 gpd or more, are there at least 2 pumps or pneumatic ejectors?			
31	8.130(3)(D)	Are valves outside wet well unless integral to a pump or its housing?			
32.	8.130(3)(F) 8.140 (8)(J)	Is interconnection between wet and dry well ventilation system?			
33	8.130(3)(G)	Does all potable water at station comply with 8.140 (7) D?			
34	8.130(6)	Is an alarm system provided an uninterrupted power?			
35.	8.130(7) (A)	is there 2 hrs 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?			
36	8.130(7)(B)	Is there independent utility substations?			
37	8.130(8)(A)	Is the force main velocity of ≥ 2 ft/s maintained?			
38.	8.130	Instructions and Equipment. Sewage pumping stations and their operators should have a complete set of operational instructions, including emergency procedures, maintenance schedules, special tools and spare parts as may be necessary.			

12.0 SUCTION LIFT PUMP AND SUBMERSIBLE PUMP STATION CHECKLIST

	REGULATION		YES	NO	N/A
39.	8.130(4)	Are the suction lift pumps of the self priming or vacuum priming type?			
40.	8.130(4)(A)	The combined total of dynamic suction lift at the "pump off" elevation and required net positive suction head at design operating conditions shall not exceed twenty-two feet (22').			
41	8.130(4)(B)	Is there dual vacuum pumps capable of removing air from the suction lift pump.			
42	8.130(5)(A)	Are submersible pumps readily removable and replaceable without personel entering, or disconnecting any pipe in the wet well?			

12.0 CERTIFICATION STATEMENT

I hereby certify that the design plans and specifications for this project, to the best of my knowledge, conform to the requirements listed above. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I hereby certify that this plan, specification, and/or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Missouri.

Missouri Professional Engineer's Seal:



Name: David Bodeen, PE
Street Address: 304B W. Erie St.
City: Springfield

State: MO

Zip Code: 65807

Phone Number: (417) 501-8820

Email: bodeen@pinnacledc.com