

This form has been completed by : \_\_\_\_\_ Date: \_\_\_\_\_  
(Form to be completed by the Consulting Engineer and included with plans on the initial submittal)

**UTILITIES DEPARTMENT**  
**ENGINEERING**  
**RESIDENTIAL GRINDER PUMP CHECKLIST**

SWSR# \_\_\_\_\_  
Utilities Staff \_\_\_\_\_  
Date \_\_\_\_\_

DISCLAIMER - This checklist is provided to Consulting Engineers for the express purpose of assisting them in compiling design plans for submittal to the Pierce County Utilities Department. This checklist is merely a guide to assist the design engineer in providing the minimum information required for plan submittal. This checklist should be utilized in conjunction with the residential grinder pump standard plans in completing your design. The complexity of your design may require additional information not included on this checklist. This checklist may be revised from time to time and the design engineer should insure that he/she has the most recent copy prior to compiling a design.

GENERAL

- |     | YES | NO  | (Items #1 - #9 must be on plans) |       |
|-----|-----|-----|----------------------------------|-------|
| 1.  | ___ | ___ | Project Name:                    | _____ |
| 2.  | ___ | ___ | Project Address:                 | _____ |
| 3.  | ___ | ___ | Engineer Name:                   | _____ |
| 4.  | ___ | ___ | Address:                         | _____ |
| 5.  | ___ | ___ | Phone:                           | _____ |
| 6.  | ___ | ___ | Owner Name:                      | _____ |
| 7.  | ___ | ___ | Address:                         | _____ |
| 8.  | ___ | ___ | Phone:                           | _____ |
| 9.  | ___ | ___ | Parcel No.(s)                    | _____ |
| 10. | ___ | ___ | Vicinity Map                     |       |

	YES	NO							
11.	—	—	Plans stamped, signed and dated by Engineer.						
12.	—	—	Plan sizes (18" x 24" minimum, 24" x 36" maximum).						
13.	—	—	Approval signature block in upper right hand corner.						
14.	—	—	"This construction plan expires one (1) year from date of approval", inside or under signature block.						
15.	—	—	Engineering scale and north arrow, north arrow to top, left or right of page. North arrow to the bottom of the page is unacceptable.						
16.	—	—	Adjacent roads identified. Include edge of pavement, road centerline, shoulders, ditches, other utilities, etc., if any side sewer work is required within existing right of way, easements or proposed right of way.						
17.	—	—	All buildings on parcel shown on plans.						
18.	—	—	All existing/proposed utilities in vicinity of force main building sewer shown on plans.						
19.	—	—	Contour interval two feet unless previously approved by the Utilities Department.						
20.	—	—	Pierce County Datum, location and elevation.						
21.	—	—	Bearing and distance for all property lines.						
22.	—	—	Pump design to be on one sheet if at all possible.						
23.	—	—	Standard Pierce County Utilities construction notes for grinder pumps shown on plans?						
24.	—	—	Correct invert elevation at point of connection(Field verified). If connection is between two existing manholes, invert and rim elevations of upstream and downstream manholes are required.						
25.	—	—	All existing and proposed manholes, cleanouts and sewer lines, located on or adjacent to parcel shown? (label existing sewer lines as dashed lines, and proposed sewer lines as solid lines).						
26.	—	—	Length, size, and type of pipe shown on plan and profile.						
27.	—	—	Minimum cover over pipe: <table border="0" style="margin-left: 40px;"> <tr> <td><u>Driving Area</u></td> <td><u>Non-Driving Area</u></td> </tr> <tr> <td>5 Feet (PVC)</td> <td>3 Feet (PVC)</td> </tr> <tr> <td>3 Feet (D.I.)</td> <td>3 Feet (D.I.)</td> </tr> </table>	<u>Driving Area</u>	<u>Non-Driving Area</u>	5 Feet (PVC)	3 Feet (PVC)	3 Feet (D.I.)	3 Feet (D.I.)
<u>Driving Area</u>	<u>Non-Driving Area</u>								
5 Feet (PVC)	3 Feet (PVC)								
3 Feet (D.I.)	3 Feet (D.I.)								

- |     | YES                      | NO                       |  |
|-----|--------------------------|--------------------------|--|
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | All gravity building sewers 2% slope minimum.  |
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | All utilities crossing sewer lines must have proper vertical clearance. The standard vertical separation for water lines is 3 feet above the sewer line and 1.5 feet for all other utilities. Concrete encasement will be allowed for water mains crossing at less than 3 feet but no closer than 1.5 feet. The sanitary sewer encasement shall be 10 feet on each side of the crossing. |
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Parallel sewer and water lines must have ten (10) feet of horizontal separation.   |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Straight alignment between manholes and/or cleanouts.  |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Is an easement and/or mutual maintenance agreement required? If so, it shall be executed and provided prior to final plan approval. Only standard Pierce County form is acceptable.  |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | Pump calculations shall be provided with the construction plans. Calculations shall include:   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | a. Total dynamic head (TDH) (Static head and friction loss calculated to point of discharge into gravity system).  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | b. Size of pump.   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | c. Size of impeller.   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | d. Type of pump, manufacturer and model number.  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | e. Pump curve with the appropriate flow rate and head characteristics plotted.   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | f. Catalog cut sheet of selected type of pump.   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | g. Size of pipe (for handling minimum velocity of 2 fps velocity).   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | h. Size and dimensions of wet well.  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | i. Type of wet well, manufacturer and model number for prefabricated fiberglass or provide shop drawings for concrete wet wells. (Septic tanks not allowed.)   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | j. 24-hour holding capacity (from alarm-on to invert elevation of the building sewer into the wet well).   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | k. Specifications for wet well, pump and all appurtenances.  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | l. Cycle time for pump-on and pump-off at peak flow.   |

	YES	NO	
	—	—	m. Number of pump cycles per 24-hour period (minimum of 3 cycles per day suggested).
	—	—	n. Specifications for control panel and alarm.
	—	—	o. Supporting documentation for calculations, i.e., tables, charts, references.
34.	—	—	If more than one pump is connecting to a common pressure main, an engineering analysis is required that addresses the probability and effect of more than one pump operating at one time.
35.	—	—	Pressure side sewer stub detail (Type 1 for connecting to gravity line, Type 2 for connecting to existing pressure line).
36.	—	—	Standard trench detail shown on the plans.
37.	—	—	The wet well detail must show the following:
	—	—	a. Pump installation and elevations (wet well base, pump off, pump on, alarm elevation, top of wet well, finished floor elevation etc.).
	—	—	b. Dimensions of wet well.
	—	—	c. One (1) foot minimum separation between the bottom of wet well and pump off.
	—	—	d. 24" minimum access hole into wet well.
	—	—	e. Separation between pump on and pump off. * $\leq 0.5'$ : unacceptable * $> 0.5' < 1.0'$ : provide support letter from pump/float manufacturer * $\geq 1.0'$ : acceptable
	—	—	f. Show bracket assembly used to attach float switch cables. The float switch cables shall not be attached to the discharge pipe. PVC or stainless steel fixtures must be used. Nylon wire ties, velcro straps or predrilled holes shall be used to secure the float cables to the bracket assembly.
	—	—	g. The junction box shall be located outside wet well. It shall be a corrosion resistant application. Use PVC type meter box as the junction box with the lid marked ELECTRIC.
	—	—	h. Rigid electrical conduit to be used from wet well to junction box.
	—	—	i. A waterproof seal on all lids is required.

- |     | YES | NO |   |
|-----|-----|----|---|
|     | —   | —  | j. One half inch polyvinyl rope or stainless steel cable must be attached to the pump and secured to wet well for pump removal.   |
|     | —   | —  | k. A quick disconnect inside the wet well is required for the pump system.  |
|     | —   | —  | l. A check valve and gate valve shall be provided inside of the wet well.   |
|     | —   | —  | m. Concrete wet wells will be waterproofed with coal tar epoxy per Section 5.3.9 of Pierce County Utilities Specifications.   |
| 38. | —   | —  | If the pump system is in a traffic area or loading area, the structure shall be design to accommodate HS20 loading standards.   |
| 39. | —   | —  | A \$50.00 non-refundable deposit review fee for plan review and inspection plus \$140.00 for a sewer service permit for a total of \$190.00 must be paid at the time of plan submittal. The check shall be made out to Pierce County. |
| 40. | —   | —  | Submittal is to include a completed current Time and Materials Account Information Form to designate who will be responsible for additional time and materials should they exceed the amount of the deposit.                          |
| 41. | —   | —  | Two (2) sets of plans are required for the initial submittal. Once the plans are ready for approval, the Utilities Department will require five (5) sets of plans for signature.  |

(revised May 19, 1992; minor revision May 23, 2002)

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