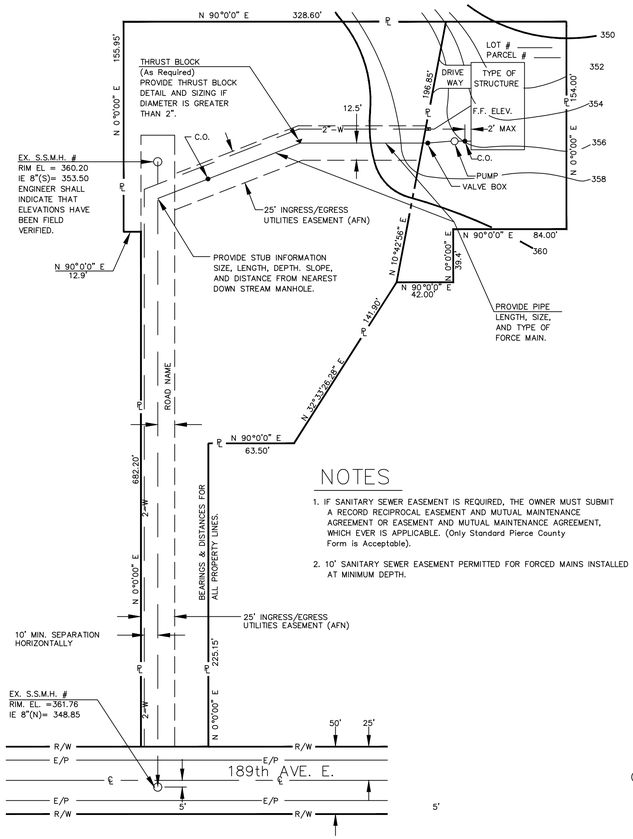
STANDARD PRIVATE GRINDER PUMP DETAIL

LEAVE THIS AREA BLANK
FOR APPROVAL STAMP
(1 1/2" X 4" Space – Minimum)

THIS CONSTRUCTION PLAN WILL EXPIRE
ONE YEAR FROM PLAN APPROVAL DATE.



NOTES

1. IF SANITARY SEWER EASEMENT IS REQUIRED, THE OWNER MUST SUBMIT A RECORD RECIPROCAL EASEMENT AND MUTUAL MAINTENANCE AGREEMENT OR EASEMENT AND MUTUAL MAINTENANCE AGREEMENT, WHICH EVER IS APPLICABLE. (Only Standard Pierce County Form is Acceptable).
2. 10' SANITARY SEWER EASEMENT PERMITTED FOR FORCED MAINS INSTALLED AT MINIMUM DEPTH.

SCALE: 1" = 50'

CONTOUR INTERVALS = 2 FT.
NORTH ARROW TO BE TOWARD TOP OF PAGE OR TO THE RIGHT OR LEFT.

DATUM – PROVIDE LOCATION AND ELEVATION (NO EXCEPTIONS) N.O.A.A. (U.S.C.G.S./ PIERCE COUNTY).

PROVIDE SOURCE OF TOPOGRAPHY AND ON SITE BENCH MARKS.

VICINITY MAP SCALE:

ELEVATIONS

FINISH FLOOR (FT)	WET WELL BASE (FT)	PUMP OFF (FT)	PUMP ON (FT)	ALARM ELEV. (FT)	INVERT IN ELEV (FT)	WET WELL TOP (FT)	INVERT OUT ELEV (FT)

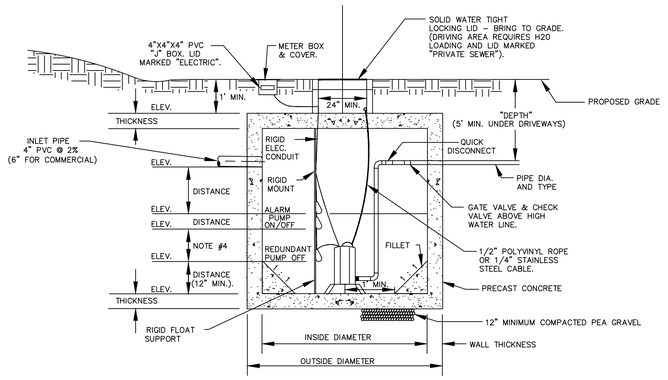
MINIMUM GRINDER PUMP REQUIREMENTS

PUMP CALCULATIONS SHOULD INCLUDE

1. Total dynamic head (TDH).
2. Size of pump:
   a. Size of impeller.
   b. Type of pump, manufacturer and model of pump.
   c. Pump performance curve.
   d. Provide catalog cut sheet of selected type of pump.
3. Size of pipe (for handling minimum velocity of 2.0 feet per sec).
4. Size of wet well:
   a. Selected type of wet well, manufacturer and model number of pumps.
   b. Determine holding capacity (wet well must have at least 24–hour holding capacity from alarm on to invert elevation at the building into the wet well).
   c. Specifications for wet well, pump and all appurtenances.
5. Cycle time for pump–on and pump–off at peak flow.
6. Specifications for control panel and alarm.
7. Must be grinder pump unless otherwise approved by W.D.O.E.
8. If more than one pump is connected into a common pressure main, an engineering analysis is required that addresses the probability and effect of more than one pump operating at one time.

CONSTRUCTION NOTES

1. EACH GRINDER SEWER PUMP AND FORCE MAIN SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL COUNTY CODES AND THE CONDITIONS OF THE APPROVED DESIGN.
2. HYDROSTATIC TEST OF FORCE MAIN SHALL BE TESTED AT 150 PERCENT OF THE WORKING PRESSURE OR 50 PSI HYDROSTATIC PRESSURE. WHICHEVER IS GREATER, FOR PIPE SIZE UP TO 2–INCH INSIDE DIAMETER. TESTING SHALL BE A MINIMUM OF 10 MINUTE DURATION WITH NO LOSS OF PRESSURE. HYDROSTATIC TESTING WILL INCLUDE THE PUMP CHECK AND BALL VALVES.
3. AN OPERATIONAL CHECK OF THE PUMP, ON/OFF SWITCH, FLOAT AND ALARM SHALL BE REQUIRED AS PART OF THE TESTING PROCEDURES.
4. ALL PIPES IN NON–DRIVING AREAS ARE REQUIRED TO HAVE A MINIMUM OF 3' COVER. ALL PVC GRAVITY MAINS IN RIGHT–OF–WAYS AND DRIVING AREAS ARE REQUIRED TO HAVE A MINIMUM COVER OF 5'. ALL D.I.P. AND CONCRETE PIPES IN DRIVING AREAS OR RIGHT–OF–WAYS ARE REQUIRED TO HAVE A MINIMUM COVER OF 3'.
5. GRAVITY SEWER PIPE SHALL BE CONSIDERED AS PART OF THE RESIDENTIAL SEWER PUMP INSTALLATION. TESTING OF GRAVITY LINES SHALL BE COMPLETED AT THE TIME THE FORCE MAIN IS TESTED.
6. PEA GRAVEL BEDDING WILL BE PLACED 4" BELOW AND 6" ABOVE PIPE. NO OTHER BEDDING MATERIAL IS ACCEPTABLE.
7. HYDROSTATIC TESTING WILL BE DONE IN ACCORDANCE WITH THE PIERCE COUNTY UTILITY SANITARY SEWER SPECIFICATIONS, LATEST EDITION.
8. INSPECTION SHALL INCLUDE THE RESIDENTIAL PUMP, FORCE, AND GRAVITY SEWER IN ACCORDANCE WITH THE APPROVED PLANS. NO DEVIATION FROM THE APPROVED PLANS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE UTILITIES DEPARTMENT ENGINEERING SECTION.
9. THE SEWER LINES, FORCE MAIN, AND GRINDER PUMP SHALL REMAIN UNDER THE OWNERSHIP OF THE PROPERTY OWNER WHO SHALL BE RESPONSIBLE FOR THEIR OPERATION AND MAINTENANCE.
10. THE ALARM MUST BE IN A CONSPICUOUS LOCATION AND MUST BE AUDIO VISUAL.
11. INTERIOR AND EXTERIOR OF WET WELL VAULT MUST BE WATERPROOFED BY THE MANUFACTURER AT THE PRODUCTION SITE. COATING IS TO BE COAL TAR EPOXY PER SECTION 5.3.9 OF PIERCE COUNTY UTILITY SPECIFICATIONS.
12. 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 OF SEWER LINES 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.
13. PARALLEL SEWER WATER LINES MUST HAVE 10 FEET OF HORIZONTAL SEPARATION.
14. THE GRINDER PUMP WET WELL SHALL BE INSTALLED ON LEVEL UNDISTURBED SOIL WITH A MINIMUM TOTAL LOAD BEARING CAPACITY OF 2000 POUNDS PER SQUARE FOOT. THE GRINDER PUMP WET WELL SHALL BE SET ON A LAYER OF PEA GRAVEL (per Pierce County Department of Utilities Standard Specifications) A MINIMUM OF 12 INCHES COMPACTED DEPTH.



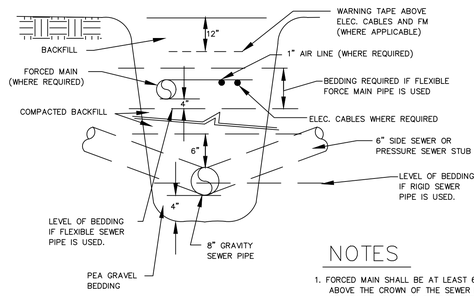
NOTES

1.) THE WET WELL IS TO HAVE A REDUNDANT OFF FLOAT OR VENTED FOR D.O.E. MINIMUM REQUIREMENTS.

2.) TYPE OF PUMP, MANUFACTURER AND MODEL OF PUMP IS TO BE PROVIDED.

3.) TYPE OF WET WELL, MANUFACTURER AND MODEL NUMBER FOR PREFABRICATION FIBERGLASS OR SHOP DRAWINGS FOR CONCRETE WET WELL IS TO PROVIDED.

4.) SEPARATION BETWEEN PUMP ON AND PUMP OFF:
- * <_0.5' = UNACCEPTABLE
- * > 0.5' < 1.0' = PROVIDE SUPPORT LETER = FROM PUNP/FLOAT MANUFACTURER.
- * >_1.0' = ACCEPTABLE

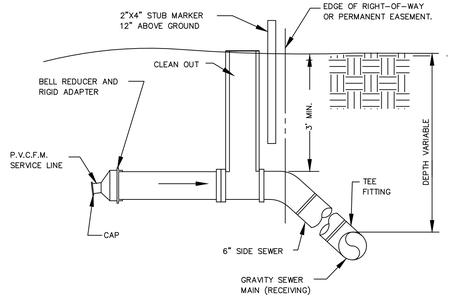


NOTES

1. FORCED MAIN SHALL BE AT LEAST 6 INCHES ABOVE THE CROWN OF THE SEWER PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OR HIS DULY AUTHORIZED REPRESENTATIVE.
2. FORCE MAIN, AIRLINE AND ELECTRICAL CABLES WHERE APPLICABLE SHALL SKIRT AROUND MANHOLE.

NOTES

1. WHERE PRESSURE SIDE SEWER STUBS ARE INDICATED ON THE PLANS, EITHER A TYPE 1 OR A TYPE 2 SHALL BE INSTALLED DEPENDING UPON THE TYPE OF RECEIVING PIPE.
2. SERVICE LINE IN BOTH TYPE 1 AND 2 STUBS SHALL BE INSTALLED, SO AS TO PROVIDE A POSITIVE SLOPE UPWARD TOWARD ITS TERMINUS AT EITHER THE 6" GRAVITY PIPE IN TYPE 1 OR THE FORCE MAIN IN TYPE 2.
3. IF FORCE MAIN RECEIVING PIPE DEPTH IS 4' OR GREATER USE PRESSURE SIDE SEWER STUB OPTION 2. IF DEPTH IS LESS THAN 4' USE PRESSURE SIDE SEWER OPTION 1.



PRESSURE SIDE SEWER STUB TYPE 1

N.T.S.

ENGINEER STAMP SIGNATURE AND DATE

6/6/2018

NO.	REVISION	DATE	APPD.

PROJECT NAME, SITE ADDRESS AND PARCEL NUMBER

ENGINEER OR FIRM NAME:
ADDRESS AND PHONE NUMBER
(Plans to be stamped, signed & dated by Professional Engineer)

DESIGN	DRAWN A.F.C.	CHECKED	JOB NO.	APPE. BY

HORIZ: SCALE: VERT:	DATE	SHT. OF SHTS.

OWNER'S NAME, ADDRESS & PHONE NUMBER.