

TECHNICAL BULLETIN
FOR BUILDING SEWER AND WATER SERVICE

Building Sewers

1. BUILDING SEWER MATERIAL TYPES:

- a) Service-weight cast-iron soil pipe and fittings per Commercial Standard CS-188. The hub-and spigot cast-iron soil pipe and fittings shall be joined with a one-piece elastomeric compression type seal per ASTM C564.
- b) Polyvinyl chloride sewer pipe and fittings per ASTM D-3034-74, Type PSM (SDR-35). Polyvinyl chloride sewer pipe and fittings shall be joined using the gasketed jointed system using a one-piece elastomeric ring per ASTM D-3212-73T as specified and furnished by the pipe and fitting manufacturer.

2. PIPE SIZING:

Only cast-iron soil pipe or polyvinyl chloride sewer pipe encased in at least four inches of concrete shall be used where the building sewer does not have at least 2 1/2 feet of cover and/or passes under heavily loaded areas such as driveways or under areas not blocked by fencing, trees, shrubs or other reasonably permanent obstructions that would prevent vehicular use.

Size:

- a) The building sewer shall not be less than four inches nominal size and shall be installed at a uniform fall of not less than one-eighth-inch fall per foot. If one-eighth-inch fall per foot is not obtainable, the sewer size and fall shall be specified by the Engineer.
- b) Residential Laterals shall be 6" diameter minimum.
- c) Commercial Laterals should be 8" diameter (if zoning change occurred or commercial parcel was not provided with an 8" lateral then a Signed and Sealed request by an Engineer stating that the existing lateral is adequate for expected flows will be reviewed)
- d) Multi-Family Dwellings shall be as follows:
 - No. of Units – 1-2 Building sewer size 4" Lateral size 6"
 - No. of Units – 3-4 Building Sewer Size 6" Lateral Size 6"
 - No. of Units – 5 or more Building Sewer Size 8" Lateral Size 8"(See Detail **TB-9**)

3. PROPERTY OWNER CLEANOUTS:

- a) Cleanouts shall be not more than 75 feet apart in four-inch building sewers and not more than 100 feet apart in six-inch building sewers and shall be at each change of direction greater than 45°. There shall also be a cleanout at the juncture of the building sewer and street lateral consisting of a wye and a one-eighth bend piped to grade. This cleanout pipe and fittings shall conform to the sewer lateral size. (See Detail TB-1)
- b) Where applicable cleanouts shall be suitably protected from loading by passing through, with clearance for free movement, a casted concrete pad having minimum dimensions of 16 inches in diameter by eight inches thick. A standard approved cast-iron cleanout cover shall be cast in the concrete pad.
- c) There shall be a transition of building sewer and a cleanout within five feet of the building foundation, cleanout shall be similar to the cleanout located at the property.

- d) Where one building sewer connects to two or more building drains, there shall be at least a cleanout at the juncture of each building drain and building sewer and at the juncture of the building sewer and the street lateral. Additional cleanouts may be required by the Engineer if in his judgment, they are necessary.

4. COUNTY OWNED CLEANOUTS:

Support ring for metal frame and cover can be either concrete or a composite material. A concrete pad is required where subject to vehicle loading and shall have a minimum dimension of sixteen (16) inches in diameter and eight (8) inches thick. B-1140 or B-1180 metal frame and covers are required. The B-1140 for cleanouts 6 inches or smaller, and the B-1180 for cleanouts 8 inches or larger.

Where a Genco clean out was placed during original construction it may be left in place as the cap however, a B-1140 or approved equal must be installed.

If an under-sized clean was installed or no cleanout exists, at the time of a new connection or re-connection by the property owner, a cleanout matching the size of the County lateral shall be installed at the property owner's expense.

5. SUITABILITY OF BUILDING DRAIN VENT AND PLUMBING FIXTURE TRAPS:

- a) The building sewer must connect to a building drain that is properly vented, and those plumbing fixtures discharging to the building drainage system must be properly trapped. It shall be the responsibility of the licensed plumber installing the building sewer to determine if the building drain is properly vented and all plumbing fixtures are properly trapped in accordance with recognized plumbing codes, such as the Sanitary Plumbing Code for the State of Delaware and Southern Standard Plumbing Code. The building drain vent shall meet the recognized standards prior to connecting the building drain to the building sewer, or, in lieu of meeting such standards, a building trap shall be installed. If installed, the building trap shall be of building drain size and be provided with a cleanout and a relieving vent or fresh-air intake on the inlet side of the trap of at least 1/2 the diameter of the drain. The vent shall be located outside the building above the base flood elevation and terminated in a screened outlet. The plumbing fixtures connected to the building drainage system shall be trapped according to recognized standards prior to connecting the building drain to the building sewer.
- b) Note that it is the intent of these requirements regarding the suitability of the building vent and plumbing fixture traps to ensure that any gases or pressure transients in the public sewer will be relieved through the building vent system and no gases will be discharged to the building through plumbing fixtures with inadequate traps. Standard plumbing codes require that every building in which plumbing is installed have at least one main vent stack which shall run undiminished in size and as directly as possible from the building drain through to the open air above the roof and **in no case, be less than three (3) inches in diameter**. Standard plumbing codes require that each plumbing fixture shall be trapped. It shall be the responsibility of the installer of the building sewer to determine if the building drain is vented and, if vented, based on his experience and judgment, is adequate. It shall also be the responsibility of the installer of the building sewer to determine if all plumbing fixtures discharging to the building drainage system are properly trapped.

6. PRIVATE ON-SITE GRINDER/LIFT PUMP:

Building drains below a building sewer which cannot be discharged to the sewer by gravity flow shall be discharged into a water tight covered and vented sump from which the effluent shall be lifted and discharged into the building's gravity-drainage system by automatic pumping equipment or by any equally efficient method approved by the Engineer. Any private on-site grinder/lift pump is required to be industry rated for sewage and be equipped with high water level alarm.

7. TRENCHING, INSTALLATION AND BACKFILL FOR BUILDING SEWER:

- a) Trenching, installation and backfill shall be excavated to the proper depth and fall. A template shall be used to detect high spots and holes and fill depressions, and it shall be thoroughly tamped. Care should be taken during the excavation to provide as narrow a trench as practical at a point level with the top of the pipe. When the width of the trench at the base exceeds seven pipe diameters, selected stone backfill shall be used to embed the pipe and fill the trench to about one foot above the pipe.
- b) When mud or water is encountered in the trench, such as may be found by excavation below groundwater, additional precautions shall be taken appropriate to the trenching conditions encountered to ensure that the pipe is bedded true to line and grade with uniform and continuous support from a firm base. Where excessive groundwater conditions exist, the Engineer may require trench pumping, well pointing or other trench-stabilizing methods.
- c) Pipe and bed shall be laid in a selected backfill 1/4 to 1/3 of the pipe diameter. After the pipe is bedded and checked for fall, but not until inspected and approved, additional backfill shall be placed by shovel at the sides and over the top of the pipe and tamped carefully. Backfill free of all debris shall be placed and tamped in layers not to exceed six inches to a point 12 inches above the pipe.
- d) See Detail **TB-5** for Trench, Bedding and Backfill details, in the event it is to be a combined utility trench see Detail **TB-7**.

8. CONNECTION TO COUNTY OWNED GRINDER PUMP:

Some County owned systems utilize a grinder or lift pumps and require special connection procedures. See Grinder Pump Connection below.

GRINDER PUMP CONNECTION PROCEDURE

- A. Plumber applies for a standard connection permit.
- B. The plumber is notified by the Sussex County Utility Permit Technician that:
 - a) A grinder pump is required.
 - b) The property owner supplies an electrical connection which must be made prior to the pump being installed.
 - c) A 30 amp 240 VAC Circuit with Neutral shall be installed in accordance with the current version of NFPA 70 the National Electrical Code. If a duplex grinder is used, a separate service must be provided for each pump.
 - d) According to Delaware Administrative Code, Title 24, Professional Regulation Subsection 1400 Board of Electrical Examiners an electrical inspection shall be obtained, and inspection sticker placed in the disconnect box so that Sussex County Officials can, exam it.
 - e) The building sewer connection cannot be made until the plumber is advised by the Sussex County Utility Permits Division that the Grinder Installation has been completed.

- C. The Plumber's electrical contractor installs the wiring from the home to the control pedestal and calls a certified inspection agency for the inspection of the work.
- D. Once the electrical work has been inspected and the inspection sticker placed in the disconnect box, the plumber calls Sussex County Utility Permits at (302) 855-7719 to notify them the electrical work is complete.
- E. Utility Permits will advise plumber when the Grinder Pump Installation is complete and plumber can then schedule inspection for the building sewer connection as stated in (ITEM 17) of this document.
- F. Sewer hook-up is installed per Detail **TB-4** and inspected by Utility Engineering Division.

9. **ISSUING PERMITS:**

No permits for sanitary sewer connections will be issued unless an adequately sized lateral is available for the proposed construction.

10. **MULTIPLE UNIT CONSTRUCTION:**

In order to obtain the necessary permits for multiple family dwellings, a drawing must be presented to Utility Permits which indicates pipe sizes, wyes, cleanouts, angle sizes, etc.

11. **CLEANOUT LOCATION FOR ANGLES OF GREATER THAN 45 DEGREES:**

A drawing showing the proper location for a cleanout for servicing angles of greater than 45 degrees is attached. (See Detail **TB-11**)

12. **CLEANOUT SIZE:**

The property line cleanout shall match the county installed lateral size and must be installed or upgraded when the property is connected to the lateral. All other cleanouts used for the building sewer must be the same size as the building sewer.

13. **TEE-WYES:**

Tee-wyes may not be used for the building sewer drainage system. They may, however, be used for in-line cleanouts when placed in the vertical position only.

14. **FERN-CO TYPE COUPLINGS:**

Fern-co type couplings are not considered suitable unless no other transition from the building drain to the building sewer can be used. Dresser couplings must be used in all other areas where transition from one type of pipe to another must be made (i.e., SDR 35 PVC to cast iron for driveway conditions).

15. **BUILDING SEWER AND LATERAL SIZES:**

- a) The following chart will show minimum building sewer and lateral sizes for multiple family dwellings (i.e., townhouses and condominiums, See Detail TB-9):

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No. of Units	1-2	3-4	5 or More
Building Sewer Size	4"	6"	8"
Lateral Size	6"	6"	8"

b) All commercial properties will require 8" building sewer and laterals.

16. **TRENCH WIDTH:**

Excavation for connection to the sanitary sewer, governed by *Code of Sussex County*, will be required to be a minimum of 10-inches wide or 2 1/2 times the pipe diameter (whichever is greater) to facilitate proper pipe bedding and grading (See Detail TB-5).

17. **REQUESTS FOR INSPECTIONS:**

All requests for inspections must be made 24 hours in advance and by 3:30 p.m. on the day before needed. Scheduled inspections not cancelled within two (2) hours of the scheduled inspection time shall be charged a fee equal to 100% of the connection permit fee. Each re-inspection is subject to the additional fee.

18. **PARTIAL CONNECTION:**

- a) Residential – Written request with attached drawing must be submitted and approved by the Utility Engineering Division. The drawing must show the length and type of material as defined in the County standards. Any unique circumstances regarding the request must also be provided. The approved drawing will be filed with the original copy of the permit and a copy given to the inspector to verify upon the scheduled inspection. Approved residential partial connections are not permitted to connect to the structure or the County lateral.
- b) Commercial – Written request with attached drawing must be submitted and approved by the Utility Engineering Division. The drawing must show the length and type of material as defined in the County standards, with the location of the County's cleanout and the structure identified. Any other unique circumstances regarding the request must also be provided. The approved drawing will be filed with the original copy of the permit and a copy given to the inspector to verify upon the scheduled inspection. Approved commercial partial connections are not permitted to connect to the County lateral or the structure.
- c) Contractors shall field verify the depth of all connection points, any adjustments to the building sewer or County lateral will be at the property owners expense.
- d) The property owner must obtain (2) permits to cover the full installation of the building sewer. One permit will be required for the partial installation of the building sewer and the second permit will be required for the final connection. Two inspections will be performed, an inspection will be performed for the partial installation and the second inspection will be performed of the final connection. Partial permits are only granted in cases where special site conditions exist.

19. **CAMPER AND RV CONNECTIONS AT CAMPGROUNDS:**

All camper and RV connections within a campground or RV resort shall be foot operated, lockable flip top flip connection with seal. End of season closing procedures for campgrounds shall include securing all flip tops with zip ties or clips. Campers and RVs to provide their own flexible connection hose and use a donut seal/gasket. (See Detail **TB-10**)

20. SAND INTERCEPTORS:

Sand interceptors shall be placed at any facility used as a wash-down or shower area (such as campground or state park shower areas) where exists the high probability of increased amounts of sand/grit will be discharged into the sewer system. Such Sand Interceptors shall be per the size and quantity as determined by the Engineering Department. (See Detail **TB-18**)

21. COMMERCIAL PROPERTY CONNECTIONS:

A grease trap is required for any facility that will be discharging grease or a grease like product into a County sewer line. County inspectors will be checking the installation of the grease trap at the time of inspection to verify the existence and that the trap installed meets the current ASME standards. (See Detail **TB-17**)

22. DISCONNECT:

In the event an existing property requires temporary or permanent disconnect from a County Utility please see Detail **TB-2**.

23. ENCASEMENT:

Pipelines that do not have adequate cover or in heavy traffic areas will require concrete encasement, for encasement details see Detail **TB-3**.

WATER SERVICE PIPE

Minimum Depth of Water Service Pipe shall be below established freeze line of 24" from the top of finish grade, based on current building code.

1. **MATERIAL:** The water service pipe shall be either of the following:
 - a) Ultra-high-molecular-weight polyethylene pipe per ASTM D-2239 (SDR-7) meeting the requirements of Type III, Class C, Category P34, polyethylene as defined in ASTM D-1248 and rated at one hundred sixty pounds per square inch at 73.4° F. and approved by the National Sanitation Foundation for use as a carrier of potable water. The polyethylene pipe joint system shall be equal to the Ford Meter Box Company's "Pack Joint," the Hays Manufacturing Company's "Hays-Tite" or the Mueller Company's "110 Compression Connection." The connection shall be brass and assembled with a stainless-steel pipe liner as specified and furnished by the connector manufacturer.
 - b) Polyvinyl chloride Schedule-40 pressure pipe meeting ASTM D1785 and approved by the National Sanitation Foundation for use as a carrier of potable water. The polyvinyl chloride pipe joint system shall be with solvent-weld Schedule-40 polyvinyl chloride fittings using a polyvinyl chloride solvent cement as specified by the pipe and fitting manufacturer and approved by the National Sanitation Foundation for use with potable water.
 - c) Type K or L copper water tube per ASTM B88-66. The copper water tube joint system shall be bronze fittings for flared copper tube per ANSI B-16.26.
2. **SIZE:**
The water service pipe shall be 3/4-inch, one inch, 1 1/2 inches or two inches as required for the service and not less than the water meter outlet connection.
3. **HOMEOWNERS PIT:**
Should be placed adjacent to the County Meter Pit. This pit is on private property and the owner's responsibility.
4. **REQUIRED DEVICES:**
 - a) Manual Shut Off Valve
 - b) Check Valve
 - c) Pressure Relief Valve
 - d) Drain
5. **DISINFECTION OF WATER SERVICE PIPE:**
 - A. The Engineer or his authorized representative may require that the water service piping be disinfected before it is placed in service if, in his or her judgment, such action is necessary.
 - B. One of the following disinfecting methods shall be used:
 - a) The water service pipe shall be filled with a solution of 50 parts per million of available chlorine and allowed to stand six hours before flushing and placing in service.
 - b) The water service pipe shall be filled with a solution of 100 parts per million of available chlorine and allowed to stand two hours before flushing and placing in service.

6. **TRENCHING, INSTALLATION AND BACKFILL:**

The water service pipe shall not be less than five feet horizontally apart from the building sewer and shall be separated by undisturbed or compacted earth, unless all of the following conditions are met:

- a) The bottom of the water service pipe at all points shall be at least 12 inches above the top of the sewer line at its highest point.
- b) The water service pipe shall be placed on a shelf excavated at one side of the common trench.
- c) The number of joints in the water service pipe shall be kept to a minimum.
- d) Where the water service pipe must cross the sewer line, the bottom of the water service pipe, within five feet of the point of crossing, shall be at least 12 inches above the top of the sewer line. Joints shall not be used within five feet of the sewer line.
- e) The building sewer shall be at least 10 feet removed from all wells unless such wells are permanently abandoned.
- f) It shall be excavated to the proper depth and tamped to a uniform surface. When mud or water is encountered in the trench, such as may be found by excavation below groundwater, additional precautions shall be taken appropriate to the trenching conditions encountered to ensure that the pipe has a uniform and continuous support from a firm base. Where excessive groundwater conditions exist, the Engineer may require trench pumping, well pointing or other trench-stabilizing methods.
- g) The pipe shall be uniformly supported throughout the trench by tamped fill. Plastic pipe shall be snaked into the trench to allow for expansion and contraction.
- h) It shall be backfilled with the pipe at a temperature approximating normal operating, temperature of 40° F. to 60° F., running cool water through the pipe if necessary. It shall be backfilled with clean fill, free of all debris.
- i) See Detail **TB-5** for Trench, Bedding and Backfill details, in the event it is to be a combined utility trench see Detail **TB-7**.

Restaurants / Breweries / Distillers / Wineries

The following regulations apply to all food-producing facilities contributing to the Sussex County POTW:

FOOD SERVICES

- A. All food-producing facilities must have a FOG permit to discharge to the POTW. The Utility Compliance officer shall receive all FOG permit applications and issue appropriate renewal permits every three years.
- B. No food-producing facility shall contribute, or cause to contribute, any fats, oils and grease to the POTW. At the discretion of the Utility Compliance officer sampling of the discharge shall occur when the food producer is not complying with the requirements of this program. The food-producing facility shall be responsible for providing an adequate sampling port on the grease trap.
- C. The food-producing facility is responsible for cleaning and/or having the oil and grease interceptor cleaned on a quarterly basis so as not to contribute fats, oils and grease to the POTW. The frequency of cleaning shall be in accordance with the "25% Rule," as determined by the Utility Compliance officer and directed in the FOG permit. The "25% Rule" requires that the depth of oil and grease (floating and settled) in a trap shall not be equal to or greater than 25% of the total operating depth of the trap. The operating depth of a trap is determined by measuring the internal depth from the outlet water elevation to the bottom of the trap. In application of this Rule, the depth of floating oil and grease shall not be greater than 20% of the total operating depth of a trap since 5% of the oil and grease is generally settled at the bottom of the trap. The cleaning frequency shall also be determined by the size of the interceptor and inspection of the sewer lines.
- D. Existing food-producing facilities which currently have an internal grease trap shall be required to clean and maintain that trap in an efficient manner. The following are prohibited to be discharged to an internal grease trap:
 - a) Wastewater with a temperature greater than 140° F.
 - b) Wastewater from a food grinder/garbage disposal must go through a 14-mesh strainer before entering grease trap.
 - c) Acid or caustic trap cleaners. This may include enzymes and/or degreasers which liquefy the fats, oils and grease and allow them to pass from the grease interceptor and deposit in the POTW lines. Therefore, all enzymes and degreasers must be approved by the Utility Compliance officer or his/her duly authorized representative.
 - d) The discharge from a dishwasher must travel at least 5 feet and through a 14-mesh strainer prior to entering an internal grease trap.
- E. Newly built food-producing facilities or renovated existing ones shall install a properly sized oil and grease interceptor from the facility that is approved by the Sussex County Engineer. The sewer line oil and grease interceptor shall have the following design features (as a minimum): a tee inlet in which one tee branch extends a minimum of one foot below the liquid level, an outlet tee with a minimum submergence of two-thirds of the liquid depth, a baffle to separate the trap into two compartments, and two manhole access ways for inspection of inlet and outlet tees. The interceptor shall have cleanouts and be located for easy access for pump out and inspection. The following formula shall be used to determine the applicable size for the oil and grease interceptor:
- F. A properly sized interceptor or trap shall be considered first, in conformity with the sizing chart in accordance with PDI standard G101 Should space limitations or other exceptional circumstances

prevent their installation, SCED may grant exceptions to the requirement of grease traps or grease interceptors in this section.

- a) Connection to a properly sized grease trap/ interceptor is REQUIRED for all fixtures that discharge grease-laden waste, e.g. ware washing sinks, food prep sinks, pre-wash sinks for ware washers, woks, and other cooking equipment.
- b) Sizing Formula. The size of a grease trap or grease interceptor shall be as determined by PDI standard G101.
- c) All new food establishment construction shall be connected to an outside grease interceptor of no less than 1,500 gallons.

d) EXAMPLE OF SIZING FOR GREASE TRAP SELECTION

Select a grease trap for a three-compartment ware washing sink with bowl dimensions of 18" W x 24" L x 12" D

- 1. Volume = (18in x 24in x 12in) x 3 cmpts = (5,184 cu in) x 3 = 15,552 cubic inches
- 2. Capacity = Volume (cu in) / 231 (cu in/gal) = 15,552 / 231 = 67.3 gallons per min.
- 3. Drainage load = 67.3-gal x 0.75 = 50.4, or approximately 50 gallons per min. grease trap is the minimum flow rate. Divide by 2 for the allowed 2 min flow rate
- 4. The rated capacity in pounds is twice the flow rate. A 50 gallon per minute grease trap is equal to a 100-pound grease trap.
- 5. For multiple fixtures add together 100% of the largest flow rate, 50% of the 2nd largest flow rate and 25% of all others.

e) Training

All food establishments shall train and document employees in the Kitchen Best Management Practices in FOG disposal. This record shall include Employee name, Signature, date trained and retained for minimum of 1 year. KBMP' shall be posted near all service sinks.

G. All food-producing facilities shall be inspected by the Utility Compliance officer in the following way:

- a) CLASS 1 PRODUCER is defined as any producer who has an oil and grease interceptor on the sewer line and/or a grease trap on the sink discharge. The inspection frequency shall be quarterly.
- b) CLASS 2 PRODUCER is defined as any producer who collects fats, oils and grease and disposes of it into a grease barrel. The inspection frequency shall be semiannually.
- c) CLASS 3 PRODUCER is defined as any producer who creates minimal fats, oil and grease and/or has a seasonal operation. The inspection frequency shall be yearly. Seasonal Establishments will have their traps/interceptors cleaned before closing for the season, Documentation is required.
- d) Food-producing facilities violating any of the previous requirements are subject to more-frequent inspections, monetary penalties, as well as sampling of the discharge and administrative orders.

In all cases, the Utility Compliance officer may, at his/her discretion, increase or decrease the frequency of routine inspections for a facility. The FOG Administrator will consider the facility's past compliance history and its willingness to comply with the FOG Program. The frequency of inspections may not be decreased by more than 1/2 of the general requirements for the facilities class during each calendar year. Facilities which consistently comply with the requirements of the FOG Program may be permitted to complete a compliance record and return the form by mail to the Utility Compliance officer. The compliance record may not substitute for more than 1/2 of the required inspections as determined by the facilities class.

- H. Overflowing an oil and grease interceptor on the sewer line or on the sink discharge line is strictly prohibited. In such case, the food-producing facility shall be responsible for the subsequent containment, cleanup and disposal of the overflow material. It is the responsibility of the food-producing facility to immediately telephone the POTW of the incident. The notification shall include the location of the overflow, the type of material, the volume and corrective actions. Within five days of the overflow, the food producer shall submit to Sussex County a detailed written report describing the cause of the overflow, steps taken to contain the overflow, steps taken to prevent it from happening again and the cleanup of the overflow.
- I. The food-producing facility must keep on site a current grease interceptor cleaning log as provided by the County. Included on the cleaning log shall be the following information: date, time, who did the cleaning, volume of waste disposed of, location of disposal and manifest, if done by an outside hauler.

Licensed Class F haulers will provide Sussex County detailed monthly data on customers, trap/interceptor size, dated, condition and estimated gallons pumped. Haulers that are under contract to the food establishment/landlord will be held responsible for charges if they fail to maintain the contract schedule.

J. Responsibilities

The owner and operator of the establishment shall be wholly responsible for the maintenance, operation and cleaning of the trap/interceptor.

If a grease interceptor/trap is already in place the Tenant should make sure that the existing unit is of adequate size to meet its needs and that of any other occupants who may share the unit and that it is in good working order.

K. Fees and Rates

1. All FOG fees shall be payable quarterly for the previous three months. All bills are the responsibility of food-producing facility and must be paid within 30 days. Bills remaining unpaid after the due date will be charged additional interest at the rate of 6% per annum.
2. All fees for food-producing facilities contributing to the POTW shall be established as part of the annual budget.
3. Should the FOG inspectors need to sample any producer; the producer shall be responsible for the costs required for the analytical laboratory to perform the analysis of the sample.

L. Enforcement

Sussex County shall suspend any FOG permit in which the producer does not adhere to the requirements of the Program. Once the permit is suspended, the producer shall not discharge to the POTW until the permit is reinstated. The permit shall remain suspended until the producer shows proof that the noncomplying requirement was eliminated. The following shall be the methods of enforcement:

M. Violations and penalties

NOV (Notice of Violation). Necessary when the producer has violated any part of the FOG permit, the Utility Compliance officer may serve the producer with a notice of violation specifically citing the nature of the violation.

WINE, BEER and DISTILERY MAKING FACILITIES

Wastewater from Alcohol making operations can contain high levels of organic matter, solids and extremes in pH levels. These discharges can adversely impact wastewater treatment and the collection system.

Sussex County is issuing the following general requirements:

1. Install and maintain at owners expense a sampling port for the purpose of wastewater sample collection and pH measurement of wastewater being discharged. pH readings shall be taken daily when brewing or distilling process is discharging waste to the sanitary sewer. *follow BMP"
2. Wastewater volume flow will be calculated by using the Monthly Brew total submitted to the state with a ratio of 5 to 1 (EDU). Monthly Brew volume will be entered into the quarterly Brew spreadsheet.
3. Allow authorized representatives of the County access at all reasonable times to all parts of the premises where wastewater related facilities are located, including the sampling port and flow measuring device;
4. Install wastewater pretreatment facilities or make plan or process modifications, if deemed necessary by the County Engineer, to meet the pretreatment requirements outlined in the "Code of Sussex County, Chapter 110.
5. Liquid wastes from cleaning and sterilizing activities must be tested for pH and adjusted to a pH between 5.5 and 9.5 standard units before being discharged into sanitary sewers. A common approach to avoiding this violation is the installation of a holding tank in order to adjust the pH of the process wastewaters before discharging;
6. All solid waste (grape skins, stems, seeds, etc.) shall be collected and reused or recycled and not discharged into the sanitary sewer;
7. All records of information, including discharge flows, pH analyses shall be retained on site. Records shall include the date, exact place, method and time of sampling, the name of person(s) taking the samples and performing the analyses. This information shall be sent quarterly**

**Utility Compliance
Sussex County Engineering Department
33711 South Coastal Lane
Frankford, DE 19945**

8. The permit holder shall advise the Sussex County Engineer of any proposed changes (permanent or temporary) to the premises or operations that significantly change the quantity or quality of the wastewater discharge permit application submitted by the permit holder. The Sussex County Engineer shall be informed in writing 30 days prior to implementing the proposed change.
9. Permit holder shall notify the Division of Environmental Services (302) 855-7379 within twenty-four hours (24) of gaining knowledge of any event contributing to wastewater discharges in violation of this permit. Written notification detailing the violations must follow within five (5) days of initial notifications. Written notifications shall at a minimum, include causes of the discharge, contaminant identifications and concentrations, and immediate and preventative response actions. The notification shall be sent to Utility Compliance to the address, email noted above;
10. This authorization to discharge may be modified, suspended or revoked in whole or in part during its term for cause including but not limited to:

- 10.1 Violation, in any capacity or degree, of any terms or condition of this permit or the Code of Sussex County, Chapter 110;
- 10.2 A change in any condition that requires temporary or permanent reduction or elimination of the permitted discharge;
- 10.3 Non-compliance with Federal or State laws, rules or regulations;

Any discharges to the sanitary sewer must meet the requirements of the "Code of Sussex County," Chapter 110. The most relevant discharge prohibitions where waste is concerned are listed below:

- A. Solid or viscous substances, either whole or ground by garbage grinders, which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities, such as but not limited to grease, garbage with particles greater than 1/2 inch in any dimension, animal guts or tissues, paunch manure, bones, hair, hides or fleshing entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, wastepaper, wood, plastics, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, mud or glass grinding or polishing wastes.
- B. Any wastewater having a pH less than 5.5 or greater than 9.5 or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment and/or personnel of the POTW.
- C. Any substance which will cause the POTW to violate its NPDES and/ or state disposal system permit or the receiving water quality standards.

Recycled Water Usage by Car Washes

The following definitions govern the construction of this part:

- a) "Conveyor car wash" means a commercial car wash where the vehicle moves on a conveyor belt during the wash and the driver of the vehicle can remain in or wait outside of the vehicle.
- b) "In-bay car wash" means a commercial car wash where the driver pulls into a bay, parks the car, and the vehicle remains stationary while either a machine moves over the vehicle to clean it or one or more employees of the car wash cleans the vehicle, instead of the vehicle moving through a tunnel.
- c) "Self-service car wash" means a commercial car wash where a customer washes his or her own car with spray wands and/or brushes.
- d) "Water recycling system" means a water system at the car wash that captures and reuses water previously used in wash or rinse cycles.

An in-bay car wash or a conveyor car wash permitted and constructed after January 1, 2014, shall do either of the following:

- a) Install, use, and maintain a water recycling system that recycles and reuses at least 60 percent of the wash and rinse water.
- b) Use recycled water provided by a water supplier for at least 60 percent of its wash and rinse water.

This article shall apply to all new conveyor car washes permitted and constructed after January 1, 2017, regardless of water source. The provisions of this article do not apply to any car washes that were constructed prior to the effective date of this article, now do they apply to self-service car washes or in-bay car washes. Should an existing car wash remodel its facilities, it shall be subject to the provisions of this article if it utilizes conveyor technology.

Sediment Pits & Oil/Water Separators Standards

- a) The sedimentation pit shall be located upstream of the oil/water separator.
- b) The design shall ensure that all non-domestic waste from the vehicle wash operation is directed to one or more sedimentation pits and one or more oil/water separators before discharge to the sewer. (See Detail **TB-18**)

Inspection and Maintenance

The Owner / Operator of a car wash shall ensure that:

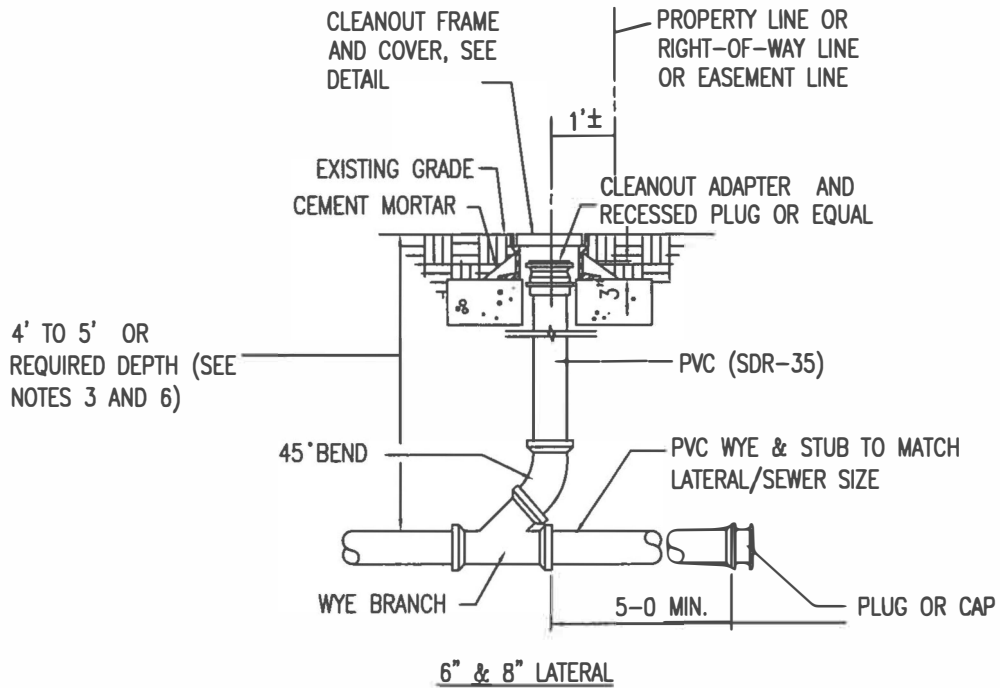
- a) The sampling ports shall be readily and easily accessible at all times. A sampling port may consist of a simple tee or an opening for a pump sampling tube.
- b) The sediment pits and oil/water separators shall be inspected once per month. The depth of bottom sludge and floating oils shall be measured.
- c) The solids in the sedimentation pit(s) shall not exceed 75 percent of the wetted height of the sedimentation pit. (As solids build up in the bottom of the pit, efficiency of the pit decreases and the chance of sludge passing through the interceptor increases.)

Commercial car wash water recycling requirement

- a) All new commercial conveyor car washes, permitted and constructed after January 1, 2017 and any car wash remodeled after that date utilizing conveyor car wash technology, shall install operational recycled water systems. A minimum of 50% of water utilized by such facilities shall be captured and recycled within the facility.
- b) Once installed, all operational recycled water systems shall be maintained in proper working order in accordance with manufacturer's specifications. Semi-annual or more frequent inspections of the system shall be performed by the owner, and records of all inspections shall be maintained at the place of business where they shall be available for inspection by city police officers during normal business hours.

Penalties

Failure of a conveyor car wash to capture and recycle its wastewater or to improperly maintain such facilities after installation, as required by this article, shall subject the owner and manager of the conveyor car wash, upon conviction, to the penalties prescribe of the Code of Ordinances.



NOTES:

1. C.O. NOT TO BE LOCATED IN DITCH, SWALE, ETC.
2. MAINTAIN 10' MIN. SEPARATION BETWEEN SEWER AND WATER LINES.
3. WHERE SEWER MAIN DEPTH IS TOO SHALLOW TO ACCOMMODATE 4' OF COVER SET LATERAL AT 2% FROM MAIN LINE SEWER TO THE PROPERTY LINE TO ACHIEVE THE MAXIMUM LATERAL DEPTH POSSIBLE AT THE PROPERTY LINE.
4. SIZE OF PVC LATERAL STUB TO MATCH LATERAL SIZE.
5. A MINIMUM OF 3" CLEARANCE SHALL BE PROVIDED BETWEEN CLEANOUT COVER AND CLEANOUT TOP.
6. ALL CLEANOUT DEPTHS LABELED AS CRITICAL DEPTH LATERALS SHALL BE INSTALLED AT THE DEPTH SCHEDULED ON THE PLAN SHEETS.



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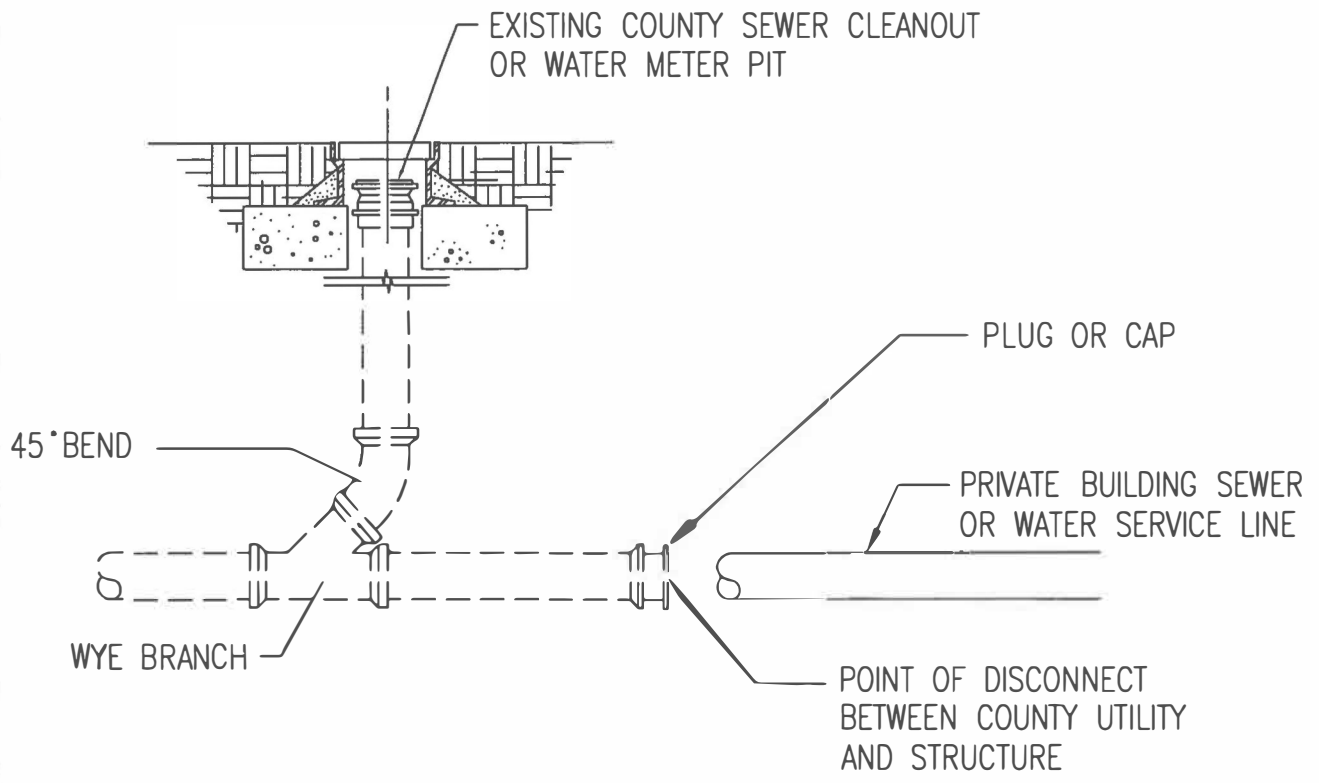
SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
SUSSEX COUNTY ENGINEER

TYPICAL COUNTY
PROPERTY-LINE SEWER
LATERAL CLEANOUT

DETAIL

TB-1



EXISTING PROPERTY DISCONNECT DETAIL

NOTE: DISCONNECT LOCATION SHALL BE 5' FROM COUNTY UTILITY



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APPROVED	

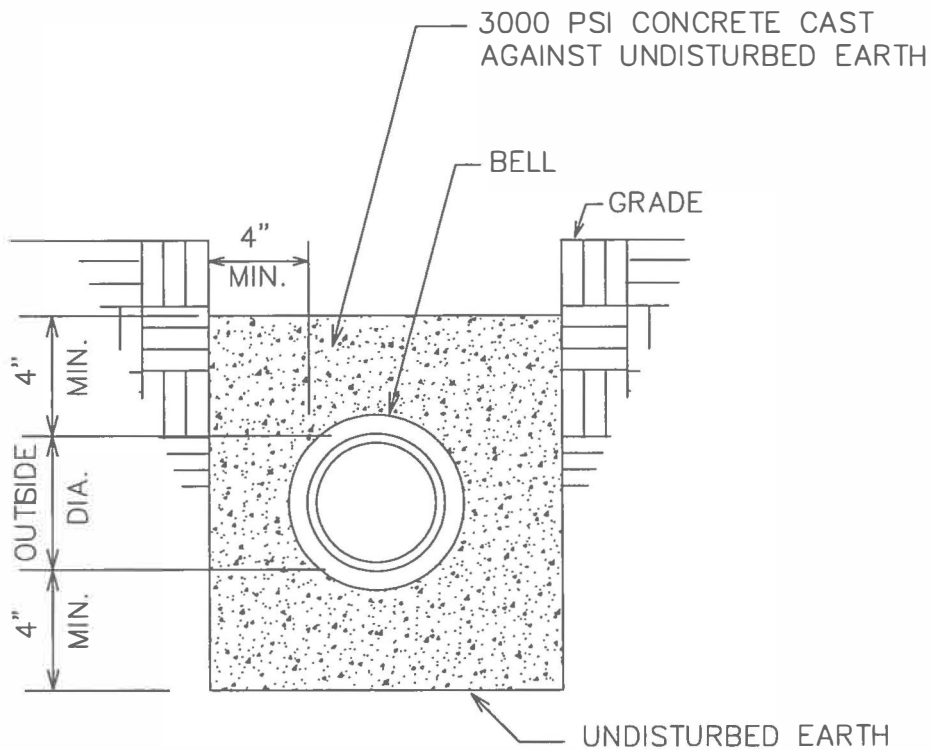
SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
SUSSEX COUNTY ENGINEER

EXISTING PROPERTY DISCONNECT

DETAIL

TB-2



ENCASEMENT DETAIL

NO SCALE

NOTE: SEWER ENCASEMENT SHALL BE A MINIMUM OF 10 FEET IN LENGTH OR AS DIRECTED BY THE ENGINEER.

CROSSINGS: THE CROSSING SHALL BE ARRANGED SUCH THAT THE SEWER JOINTS WILL BE EQUAL DISTANCES AND AS FAR AS POSSIBLE FROM WATER MAIN JOINTS.



SCALE NTS

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APPROVED

SUSSEX COUNTY
ENGINEERING DEPARTMENT

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SUSSEX COUNTY ENGINEER

ENCASEMENT DETAIL

DETAIL

TB-3

TYPICAL HOUSE ELECTRICAL PANEL

GRINDER PUMP REQUIRES A 30 AMP 240 VAC CIRCUIT WITH NEUTRAL IN EITHER DIRECT BURIAL CABLE OR CONDUIT SHALL BE BURIED THE APPROPRIATE DEPTH TWO FEET FROM THE HOMES LATERAL.

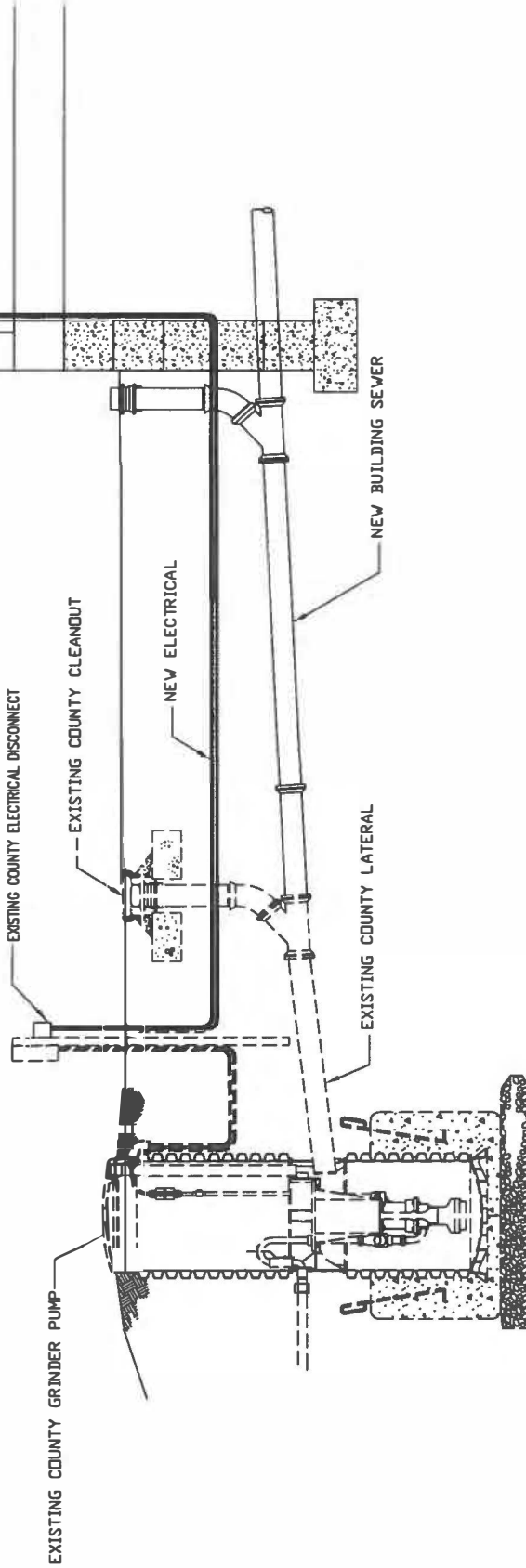
10 AWG. COPPER CONDUCTOR SHALL BE ALLOWABLE UP TO A DISTANCE OF 200 FEET FROM THE SERVICE POINT.

#8 AWG. COPPER CONDUCTORS SHALL BE ALLOWABLE UP TO A DISTANCE OFF 300 FEET FROM THE SERVICE ENTRANCE POINT.

DIRECT BURIAL CABLE SHALL BE BURIED A MINIMUM OF 24" BELOW FINAL GRADE.

CONDUIT SHALL BE BURIED A MINIMUM OF 18" BELOW FINAL GRADE WHEN REQUIRED.

ALL ELECTRICAL CONNECTIONS FROM THE HOUSE TO THE COUNTY ELECTRICAL DISCONNECT ARE THE RESPONSIBILITY OF THE HOMEOWNER.



DETAIL FOR CONNECTION TO A COUNTY MAINTAINED GRINDER PUMP
NO SCALE



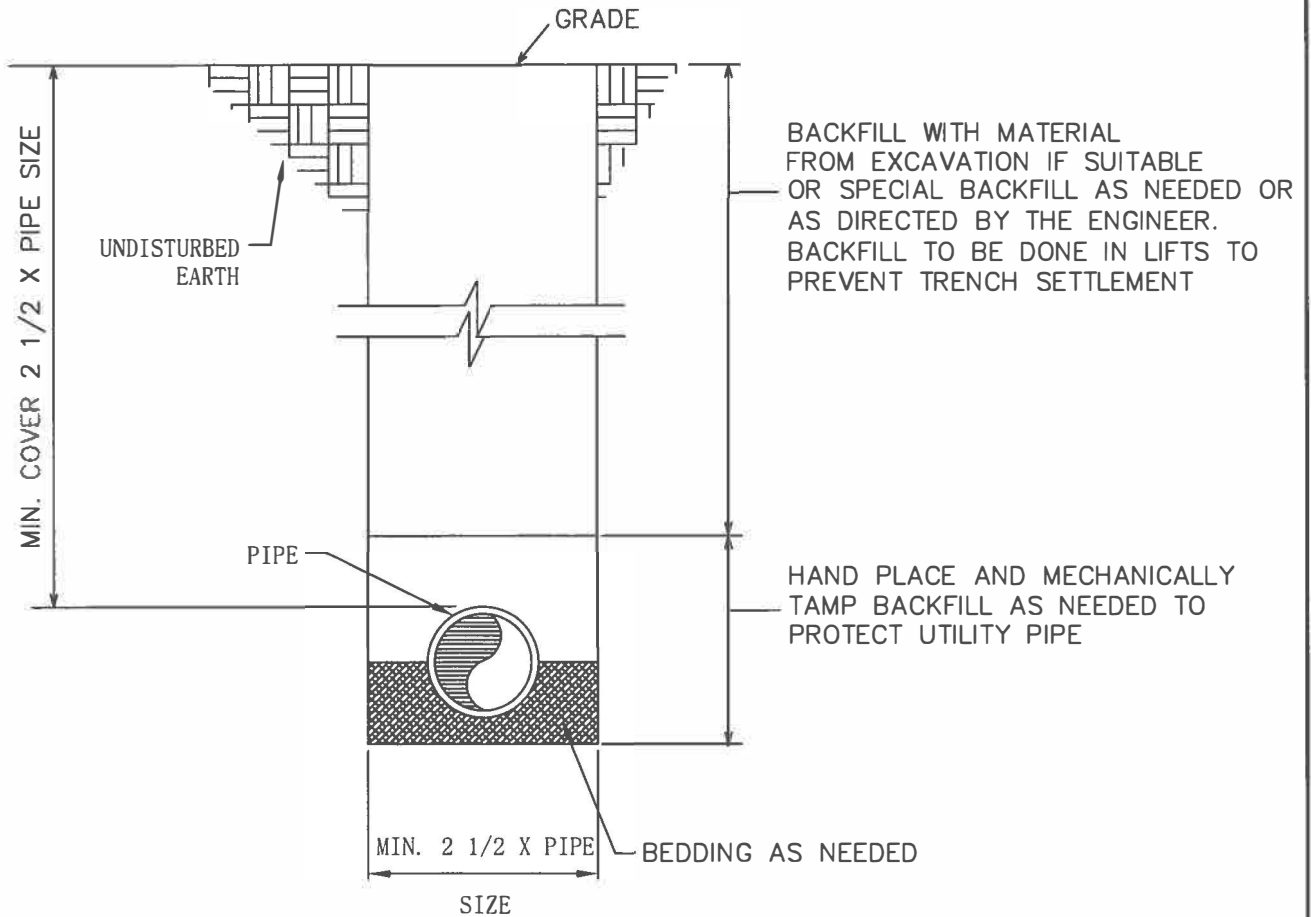
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 APPROVED:

SUSSEX COUNTY
 ENGINEERING DEPARTMENT

 SUSSEX COUNTY ENGINEER
 APPROVED: _____

CONNECTION TO COUNTY MAINTAINED
 GRINDER PUMP

DETAIL
 TB-4



UTILITY TRENCH DETAIL

NO SCALE

- NOTE: 1) BUILDING SEWER SHALL HAVE 5' MIN. SEPARATION TO WATER SERVICE LINE. IF A COMBINED TRENCH UTILITY TRENCH IS USED SEE DETAIL FOR COMBINE UTILITY TRENCH.
- 2) MINIMUM COVER OF 30" WHERE SUBJECT TO VEHICLE LOADING.



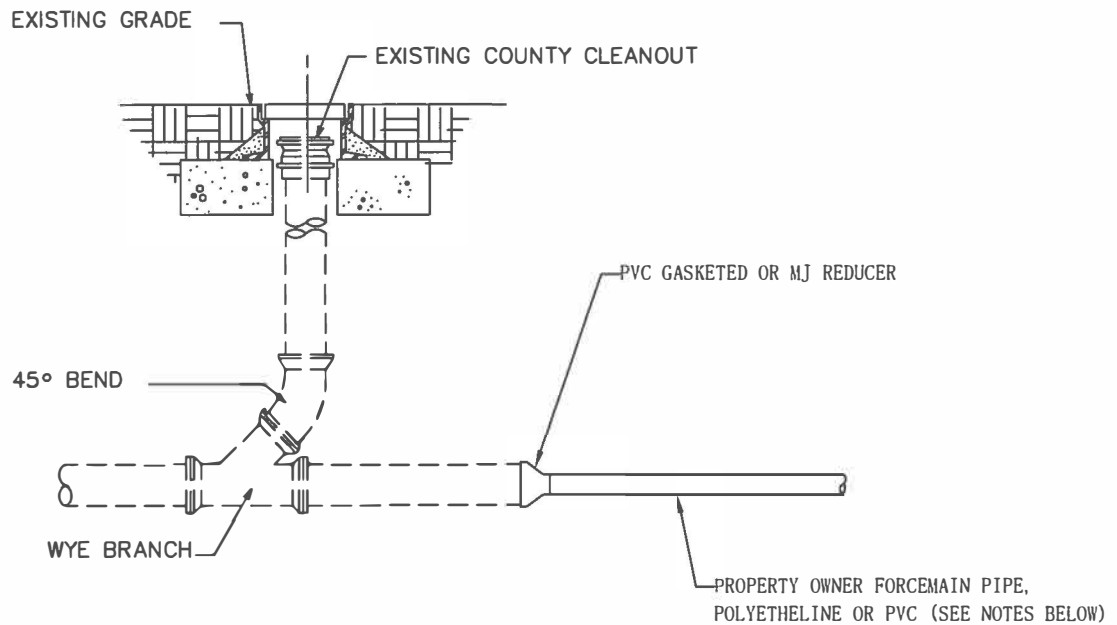
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REVISED:
APPROVED

SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
SUSSEX COUNTY ENGINEER

PIPE BEDDING AND
BACKFILL DETAIL

DETAIL
TB-5



FORCEMAIN CONNECTION TO GRAVITY SEWER

NOT TO SCALE

NOTE: NO GALVANIZED METAL FITTINGS MAY BE USED IN FORCEMAIN PIPE.

ALL PIPE SHALL HAVE A PRESSURE RATING 1.5 TIMES INTENDED OPERATING PRESSURE.

PVC PIPE SHALL BE MANUFACTURED WITH INTEGRAL WALL BELL AND SPIGOT WHICH SHALL UTILIZE A FLEXIBLE O-RING GASKET CONFORMING TO ASTM F-477.



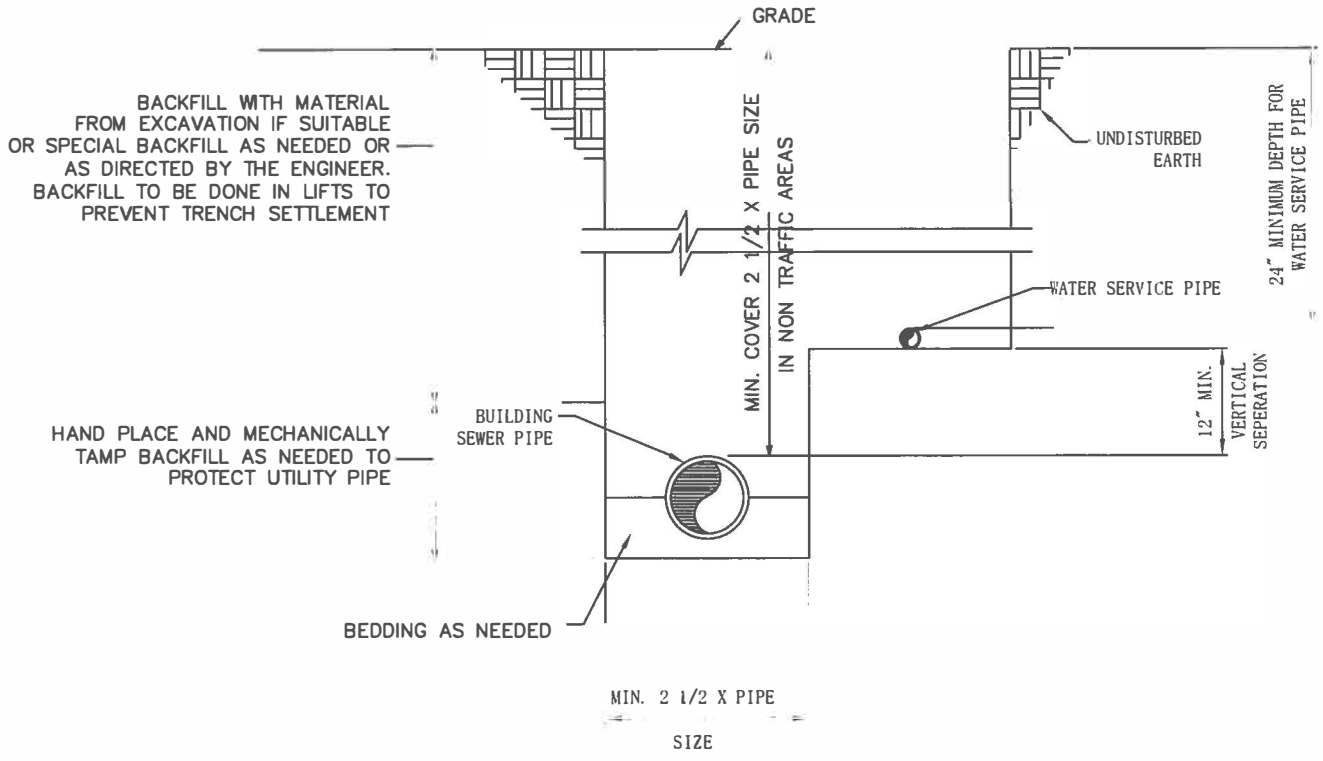
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SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
SUSSEX COUNTY ENGINEER


FORCEMAIN CONNECTION
TO GRAVITY SEWER

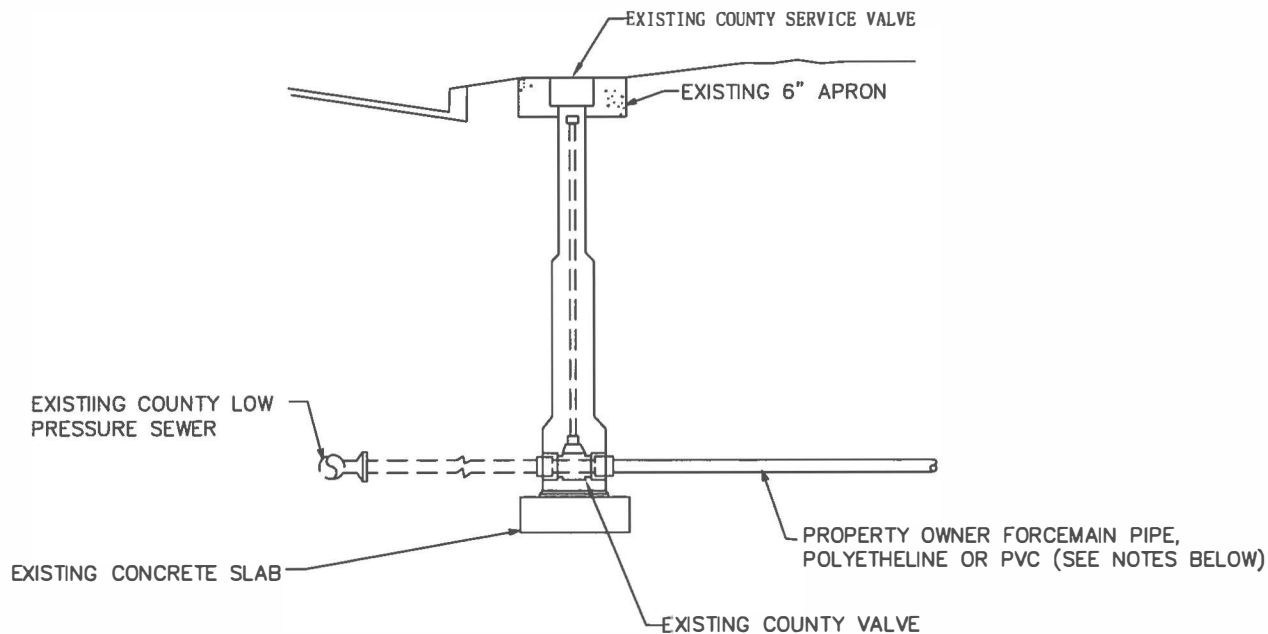
DETAIL
TB-6



COMBINED UTILITY TRENCH DETAIL
NO SCALE

NOTE: IF INDEPENDENT UTILITY TRENCHES FOR SEWER AND WATER ARE USED THERE SHALL BE 5' MIN. SEPARATION BETWEEN THE PIPES. (SEE UTILITY TRENCH DETAIL)

	SCALE: NTS	SUSSEX COUNTY ENGINEERING DEPARTMENT APPROVED: _____ SUSSEX COUNTY ENGINEER	COMBINED UTILITY TRENCH DETAIL	DETAIL
	REVISED 1/12/18			TB-7
	REVISED			
	REVISED			
	APPROVED			



LPS CONNECTION TO FORCEMAIN
NOT TO SCALE

NOTE: NO GALVANIZED METAL FITTINGS MAY BE USED IN FORCEMAIN PIPE.

ALL PIPE SHALL HAVE A PRESSURE RATING 1.5 TIMES INTENDED OPERATING PRESSURE.

PVC PIPE SHALL BE MANUFACTURED WITH INTEGRAL WALL BELL AND SPIGOT WHICH SHALL UTILIZE A FLEXIBLE O-RING GASKET CONFORMING TO ASTM F-477.

MAINTAIN 2' MIN. COVER OVER PRESSURE SEWER



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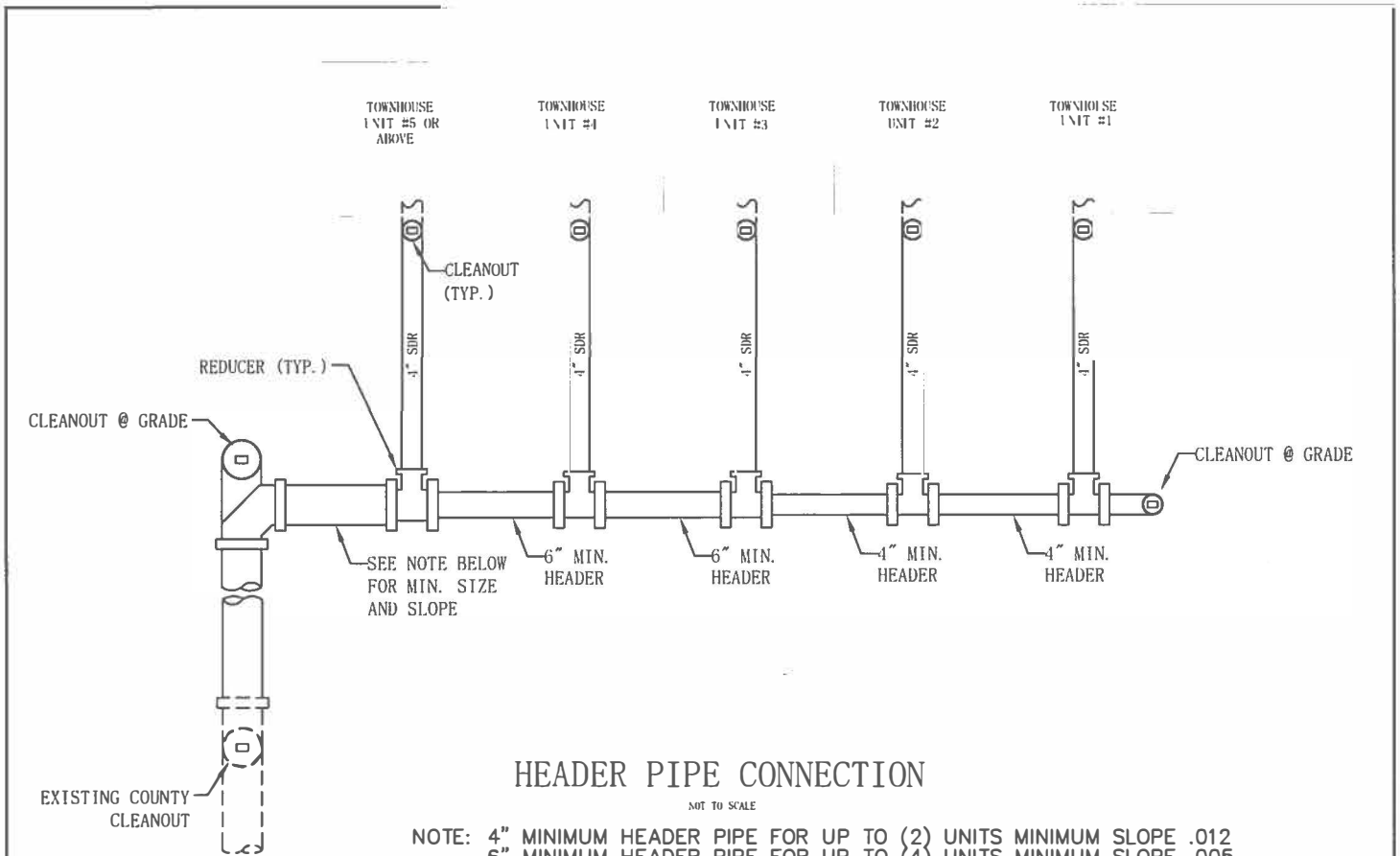
SUSSEX COUNTY
 ENGINEERING DEPARTMENT

APPROVED: _____
 SUSSEX COUNTY ENGINEER

LPS CONNECTION
 TO FORCEMAIN

DETAIL

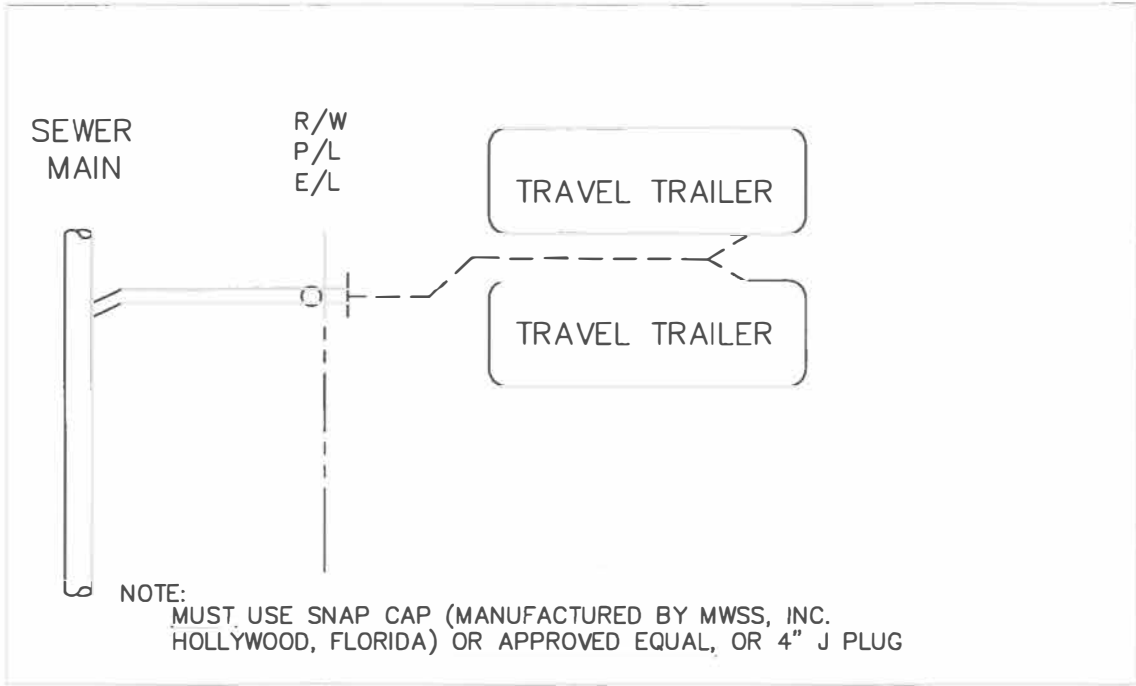
TB-8



HEADER PIPE CONNECTION
NOT TO SCALE

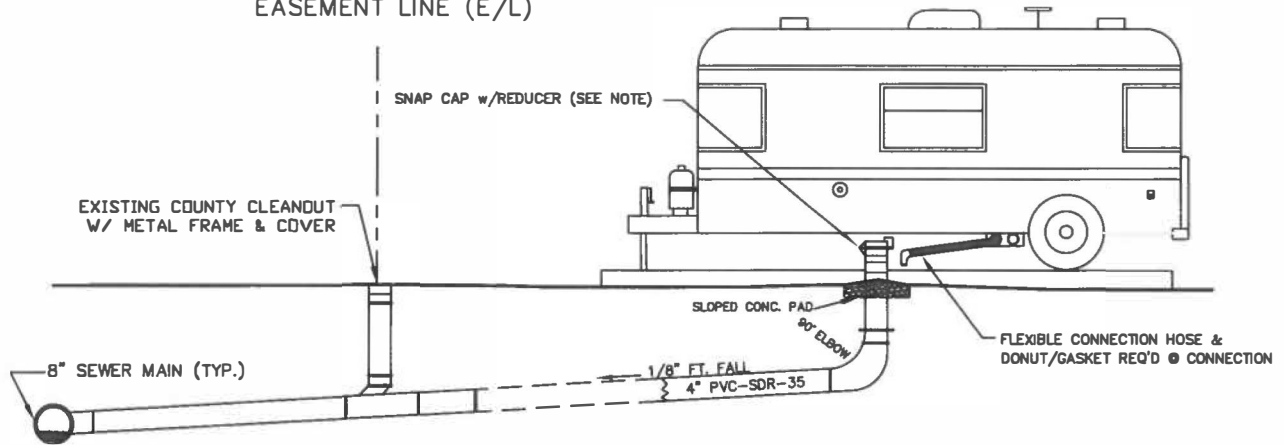
NOTE: 4" MINIMUM HEADER PIPE FOR UP TO (2) UNITS MINIMUM SLOPE .012
 6" MINIMUM HEADER PIPE FOR UP TO (4) UNITS MINIMUM SLOPE .005
 8" MINIMUM HEADER PIPE FOR ABOVE (4) UNITS MINIMUM SLOPE .0028

	SCALE NTS	SUSSEX COUNTY ENGINEERING DEPARTMENT	<h2 style="margin: 0;">HEADER PIPE CONNECTION DETAIL</h2>	DETAIL	
	REVISED 1/19/18			APPROVED: _____	<h1 style="margin: 0;">TB-9</h1>
	REVISED			SUSSEX COUNTY ENGINEER	
	REVISED				
APPROVED					



END OF SUSSEX COUNTY MAINTENANCE ⇌ END OF PARK OWNER MAINTENANCE

RIGHT OF WAY (R/W)
PROPERTY LINE (P/L)
EASEMENT LINE (E/L)



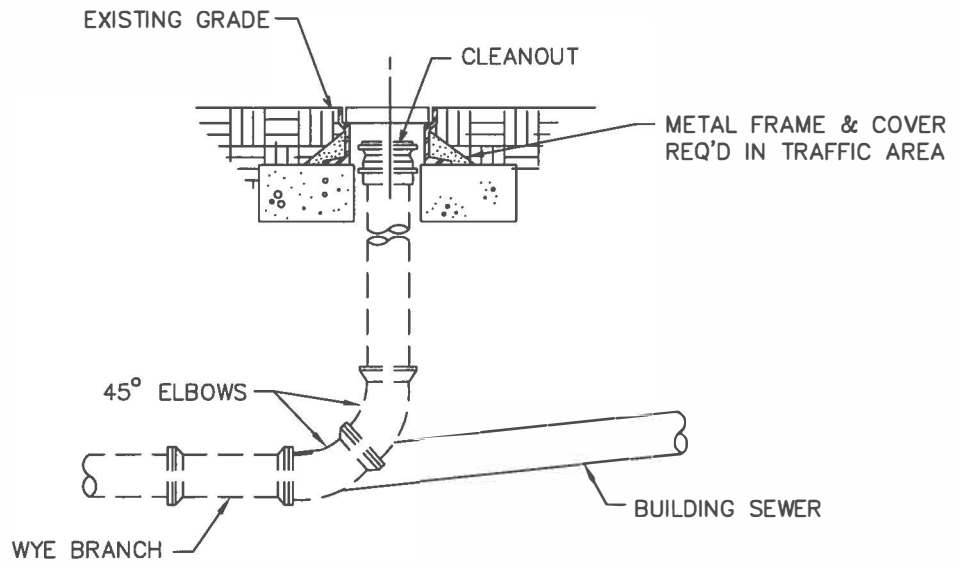
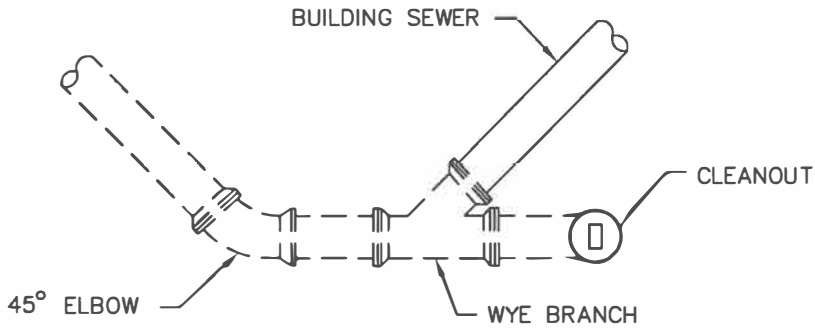
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ENGINEERING DEPARTMENT

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SUSSEX COUNTY ENGINEER

CONNECTION FOR
CAMPGROUNDS

DETAIL
TB-10



CHANGE IN DIRECTION GREATER THAN 45°

NOT TO SCALE



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 APPROVED

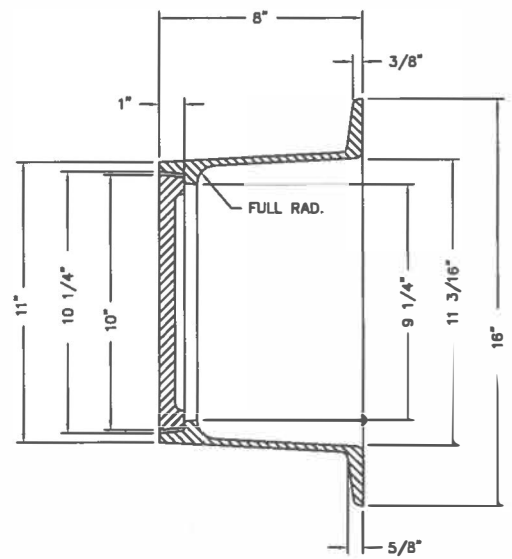
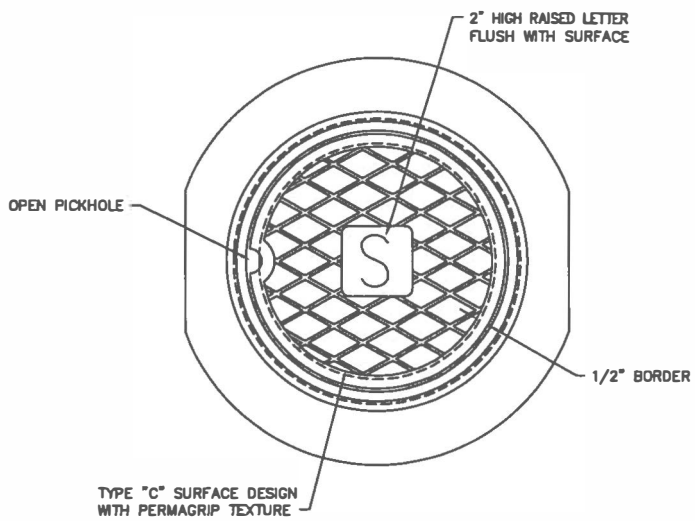
SUSSEX COUNTY
 ENGINEERING DEPARTMENT

APPROVED: _____
 SUSSEX COUNTY ENGINEER

BUILDING SEWERS
 GREATER THAN 45°

DETAIL

TB-11



SEWER CLEANOUT B-1140

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
 FINISH: NOT PAINTED
 WEIGHT: FRAME - 35#, LID - 14#



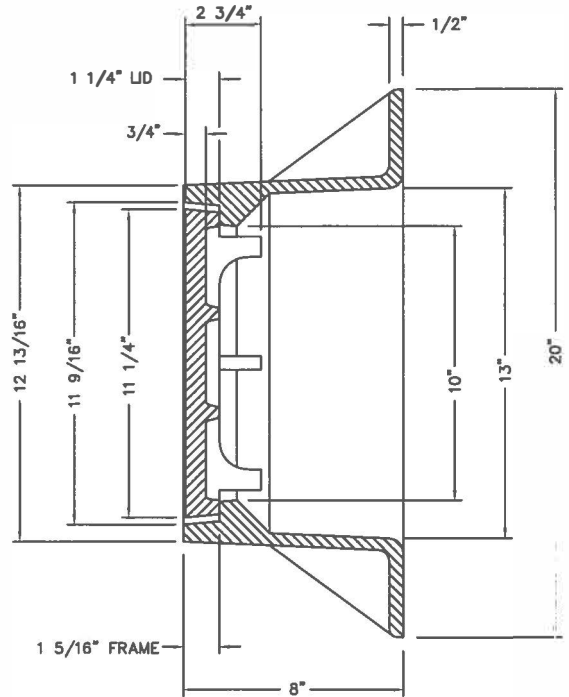
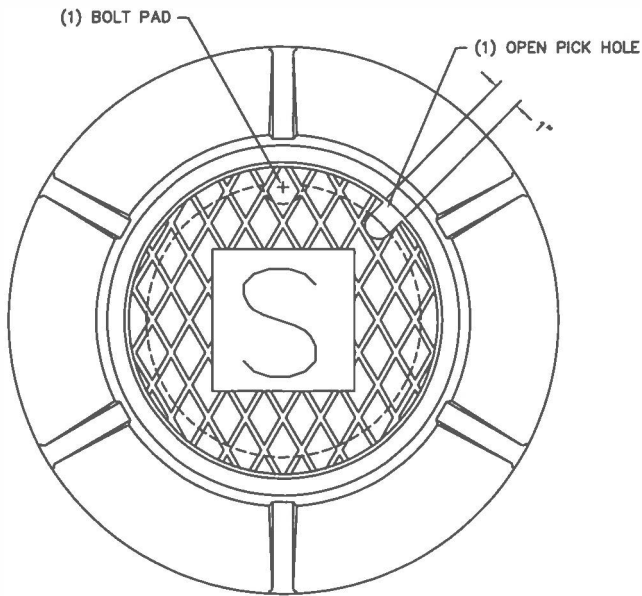
SCALE: NTS
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 APPROVED

SUSSEX COUNTY
 ENGINEERING DEPARTMENT

APPROVED: _____
 SUSSEX COUNTY ENGINEER

SEWER CLEANOUT
 B-1140

DETAIL
 TB-12



SEWER CLEANOUT B-1180

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
 FINISH: NO PAINT
 WEIGHT: FRAME 76#, LID 25#



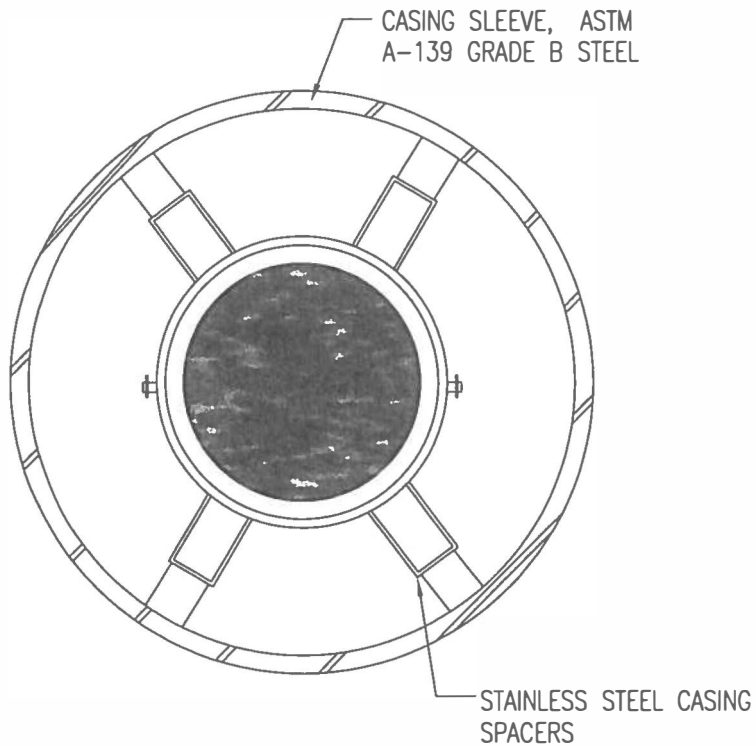
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SUSSEX COUNTY
 ENGINEERING DEPARTMENT
 APPROVED: _____
 SUSSEX COUNTY ENGINEER

SEWER CLEANOUT
 B-1180

DETAIL
 TB-13

CARRIER PIPE (IN)	CASING PIPE (IN)
4	10
6	12
8	16
10	18
12	20
14	24
15	26
16	30
18	32
20	34
21	36
24	36
30	42



NOTE:

1. END SEAL SHALL BE INSTALLED ON EACH END OF CASING PIPE.
2. CASING SPACERS SHALL BE INSTALLED 1' (MAX.) FROM EACH SIDE OF ANY CARRIER ALONG PIPE POINTS AND A MINIMUM OF 6' ON CENTER ALONG THE CARRIER PIPE.
3. CARRIER PIPE SHALL BE CENTERED IN THE CASING PIPE.
4. SEE TABLE THIS DRAWING FOR MINIMUM CASING PIPE SIZE. IF RESTRAINED JOINTS ARE USED, CASING PIPE DIAMETER SHALL BE MODIFIED AS REQUIRED TO ACCOMMODATE THE PIPE RESTRAINTS.

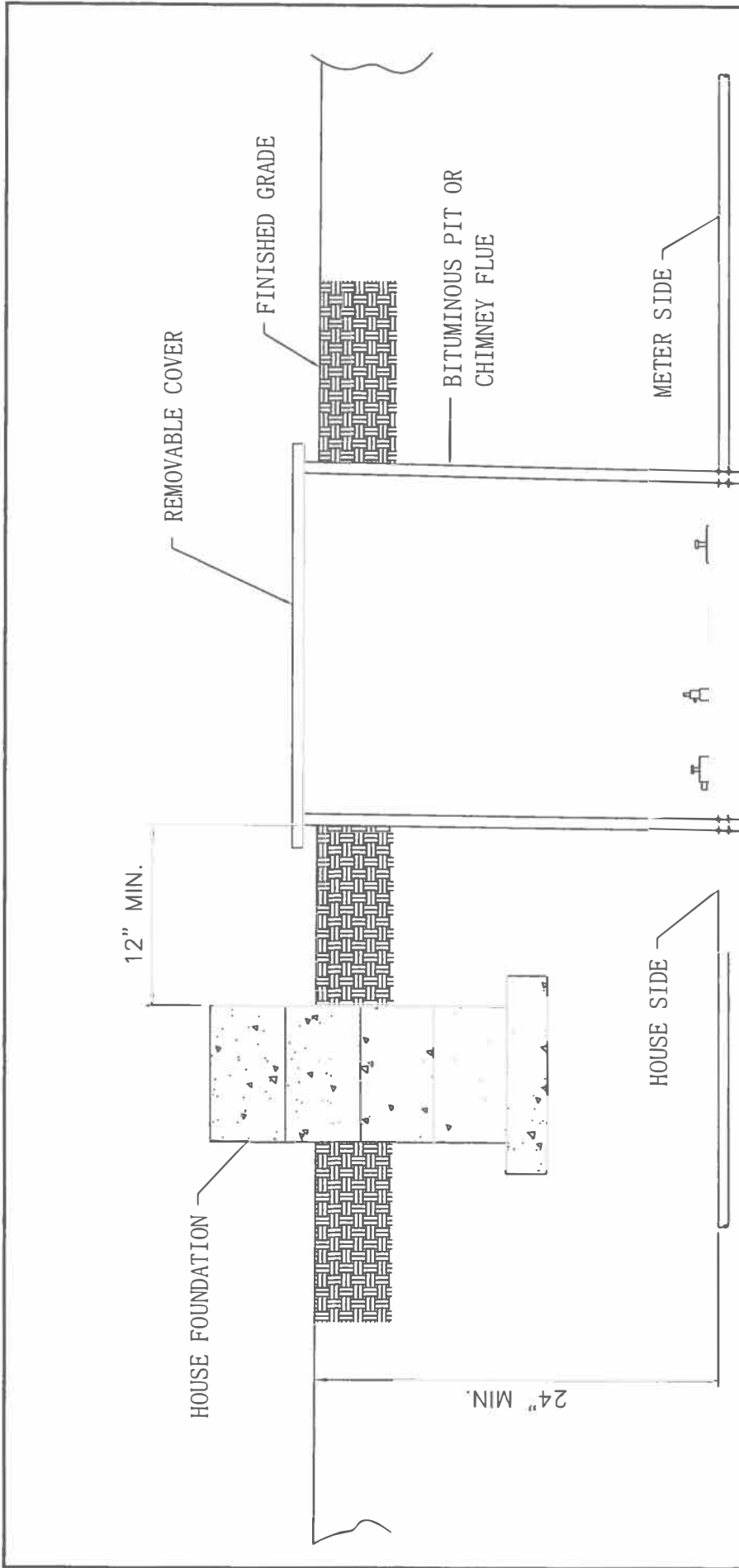


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SUSSEX COUNTY
 ENGINEERING DEPARTMENT
 APPROVED: _____
 SUSSEX COUNTY ENGINEER

JACK & BORING
 INSTALLATION

DETAIL
 TB-14



1. MANUAL SHUT OFF
2. CHECK VALVE
3. PRESSURE RELIEF
4. DRAIN (OPTIONAL)

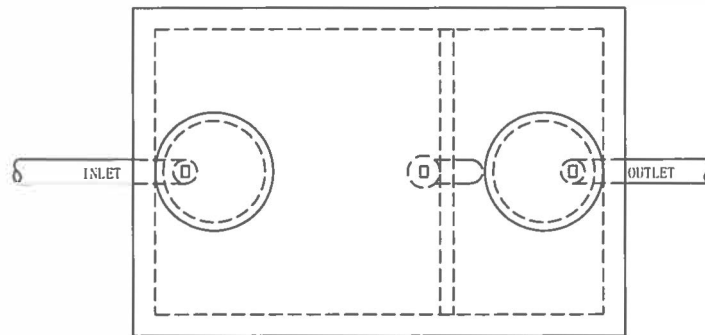


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 SUSSEX COUNTY ENGINEER

BACK FLOW PREVENTION

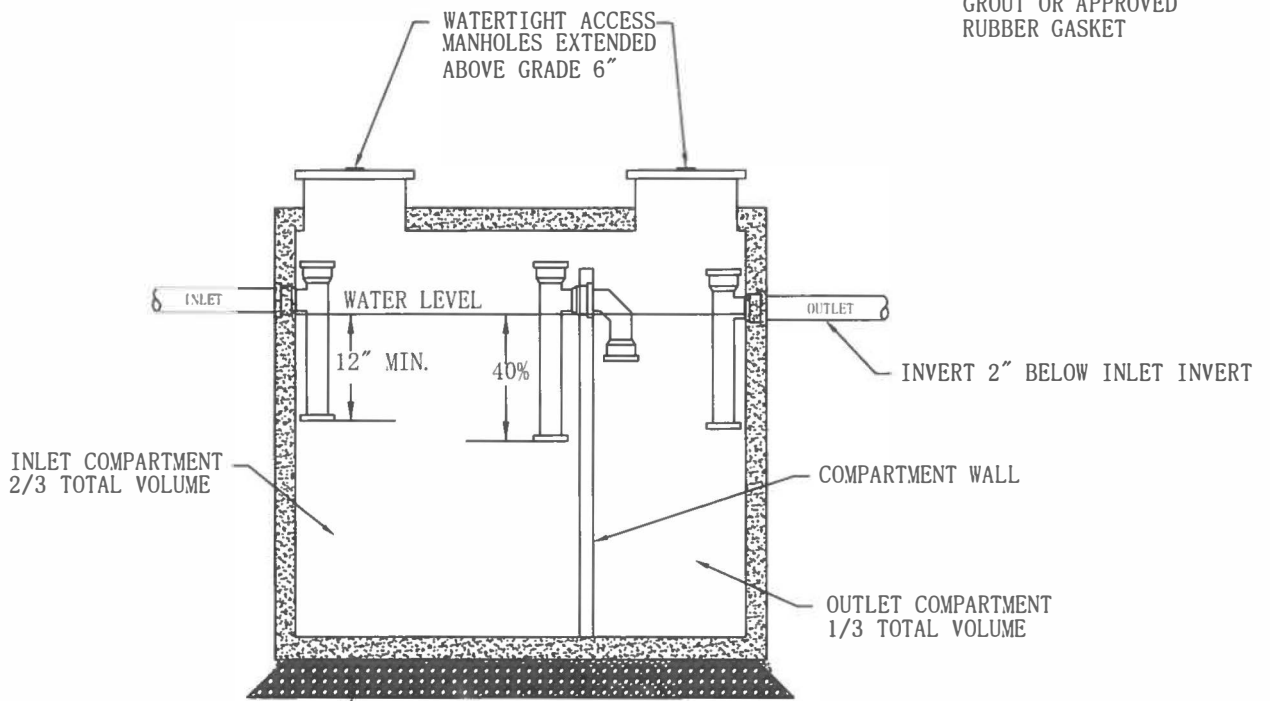
DETAIL
 TB-15



PLAN

NOTES:

1. ALLOW 2' CLEARANCE IN EXCAVATION AROUND TANK FOR TAMPING
2. ALL PIPE CUTOUTS TO BE SEALED WITH WATERTIGHT GROUT OR APPROVED RUBBER GASKET



SECTION

6" COMPACTED WASHED AGGREGATE BED (WHEN REQUIRED)

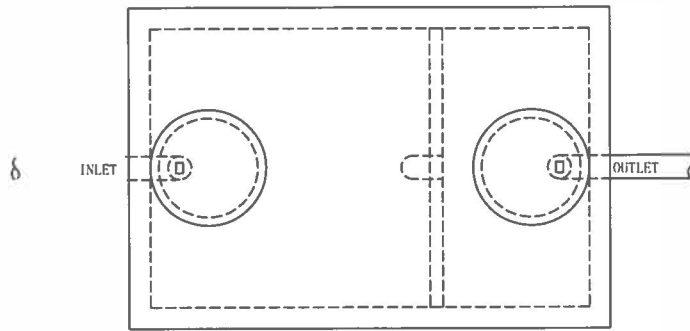


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 REVISED
 REVISED
 APPROVED

SUSSEX COUNTY
 ENGINEERING DEPARTMENT
 APPROVED: _____
 SUSSEX COUNTY ENGINEER

TWO-COMPARTMENT
 CONCRETE SEPTIC TANK

DETAIL
 TB-16

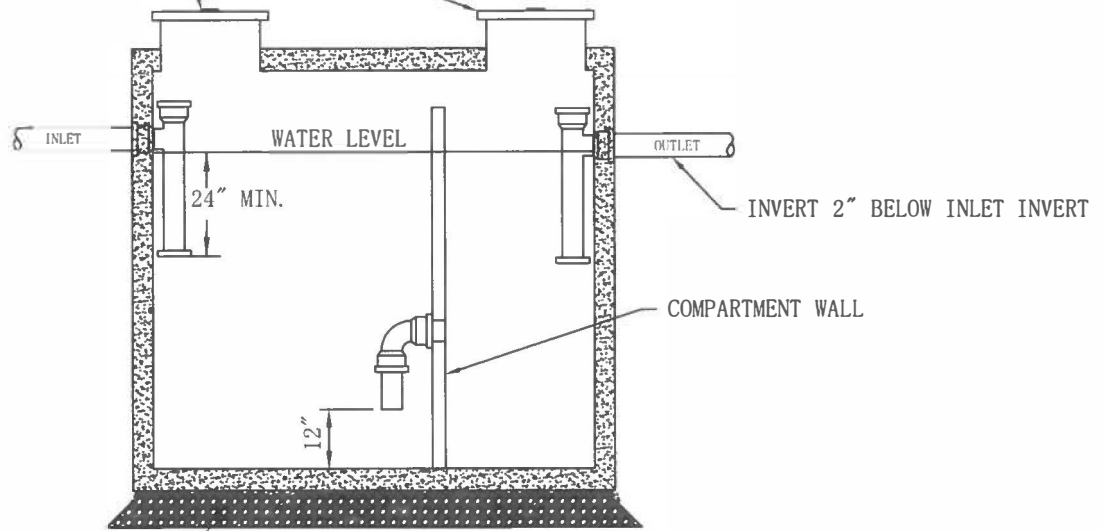


PLAN

NOTES:

1. EXCAVATION LIMITS SHALL EXTEND A MIN. OF 24" BEYOND TANK PERIMETER
2. ALL PIPE CUTOUTS TO BE SEALED WITH WATERTIGHT GROUT OR APPROVED RUBBER GASKET

WATERTIGHT ACCESS MANHOLES EXTENDED ABOVE GRADE MIN. 2" MAX. 6"



SECTION

6" COMPACTED WASHED AGGREGATE BED (WHEN REQUIRED)

TYPICAL GREASE TRAP



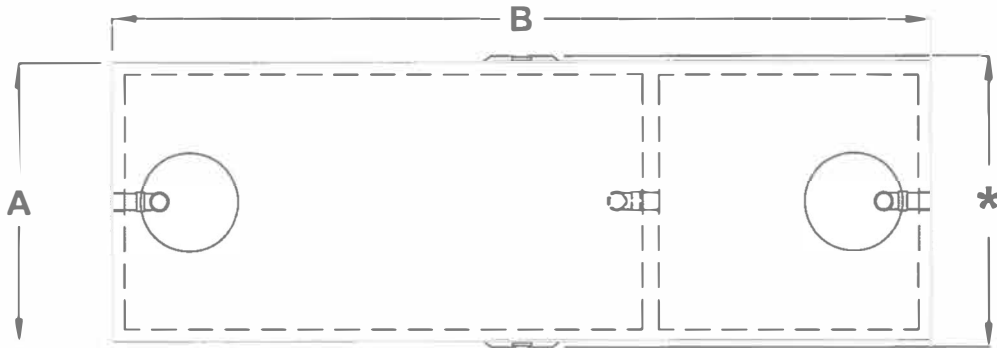
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 APPROVED: _____
 SUSSEX COUNTY ENGINEER

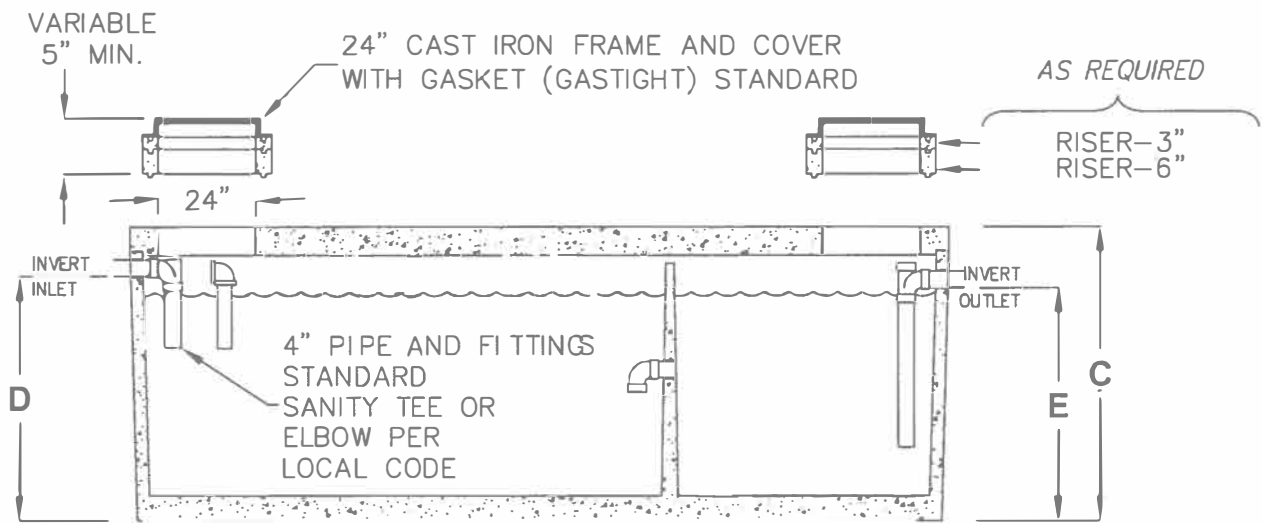
TYPICAL GREASE
 TRAP

DETAIL
 TB-17

320-5000 GALLON INTERCEPTORS



PLAN VIEW (COVERS REMOVED)



SIDE SECTION VIEW

LIQUID CAPACITY (GALLONS)	DIM A	DIM B	DIM C	DIM D	DIM E	MINIMUM EXCAVATION WIDTH	MINIMUM EXCAVATION LENGTH	DEPT OF BURY
320	3'-0"	7'-0"	4'-6"	3'-7"	3'-4"	4'-0"	8'-0"	1' TO 8'
500	4'-0"	6'-0"	5'-10"	4'-10"	4'-7"	5'-0"	7'-0"	1' TO 6'
750	4'-3"	8'-1"	6'-3"	5'-0"	4'-9"	5'-3"	9'-1"	1' TO 6'
1000	5'-4"	8'-2"	6'-3"	5'-0"	4'-9"	6'-4"	9'-2"	1' TO 6'
1200	6'-0"	8'-6"	6'-6"	5'-0"	4'-9"	7'-0"	9'-6"	1' TO 6'
1500	5'-10"	10'-8"	6'-3"	5'-0"	4'-9"	6'-10"	11'-8"	1' TO 6'
2000	4'-11"	15'-11"	6'-0"	5'-0"	4'-9"	5'-11"	16'-11"	1' TO 6'
2500	5'-9"	16'-10"	6'-0"	5'-0"	4'-9"	6'-9"	17'-10"	1' TO 5'
3000	5'-9"	16'-10"	6'-9"	5'-9"	5'-6"	6'-9"	17'-10"	1' TO 5'
4000	7'-8"	16'-7"	6'-9"	5'-6"	5'-3"	8'-8"	17'-7"	1' TO 5'
5000	7'-8"	16'-7"	7'-11"	6'-9"	6'-6"	8'-8"	17'-7"	1' TO 4'



SCALE
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SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
 SUSSEX COUNTY ENGINEER

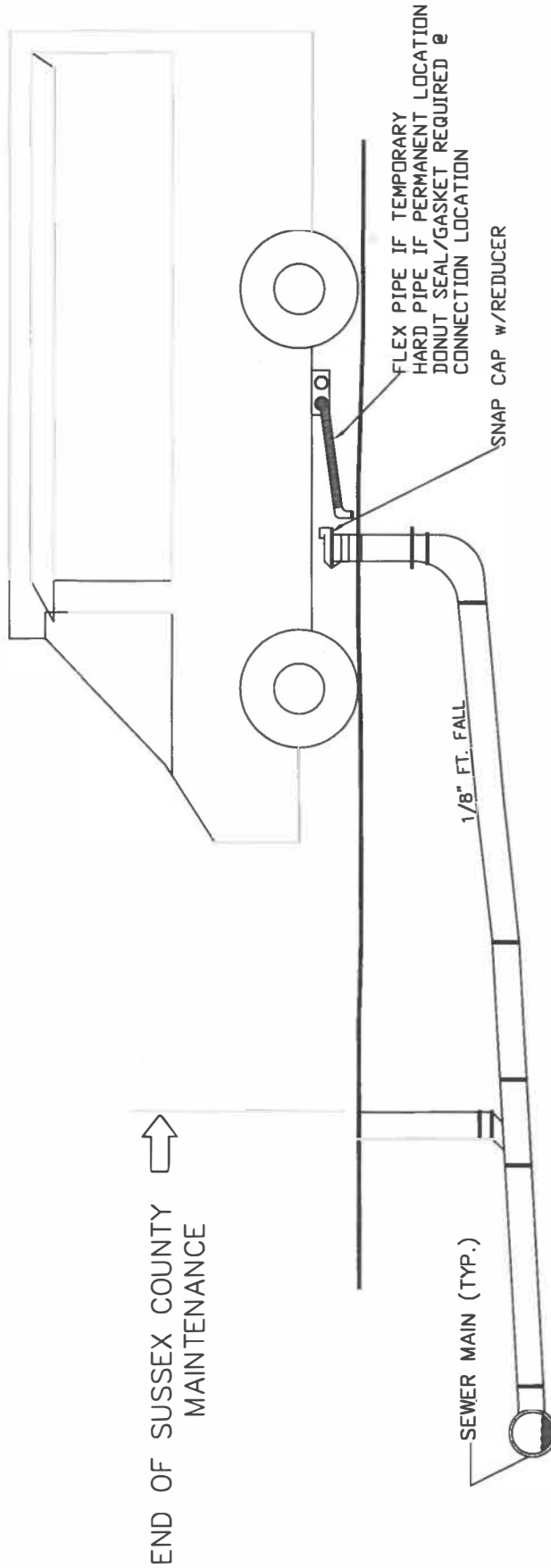
SAND/GREASE
INTERCEPTOR

DETAIL

TB-18

NOTES:

1. MUST USE SNAP CAP (MANUFACTURED BY MWSS, INC., HOLLYWOOD, FLORIDA OR APPROVED EQUAL OR 4" J PLUG.
2. GREASE TRAP IS REQUIRED EITHER INSIDE TRUCK OR PRIOR TO CLEANOUT.
3. A SYSTEM CONNECTION CHARGE (SCC) MUST BE PAID TO RECEIVE A PERMIT TO CONNECT.



END OF SUSSEX COUNTY
MAINTENANCE →



SCALE:
REVISED:
REVISED:
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APPROVED:

SUSSEX COUNTY
ENGINEERING DEPARTMENT

APPROVED: _____
SUSSEX COUNTY ENGINEER

FOOD TRUCK CONNECTION

DETAIL

TB - 19