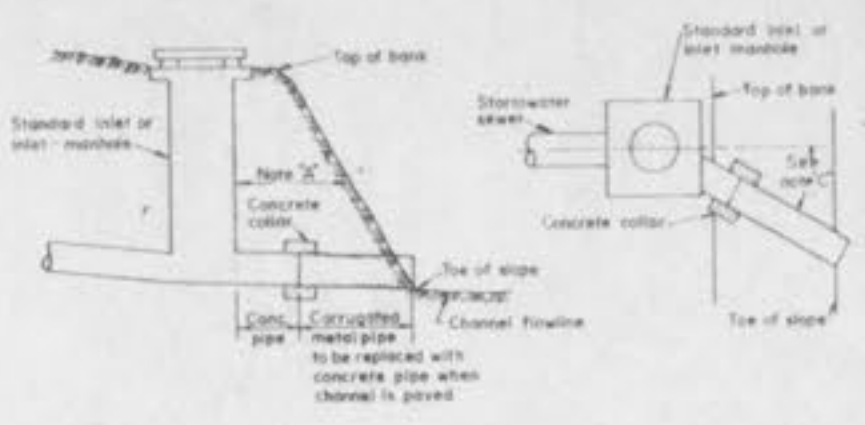
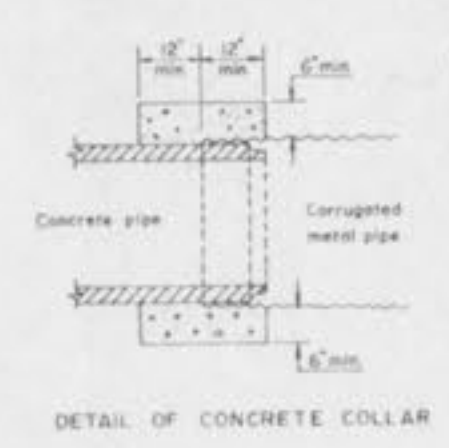


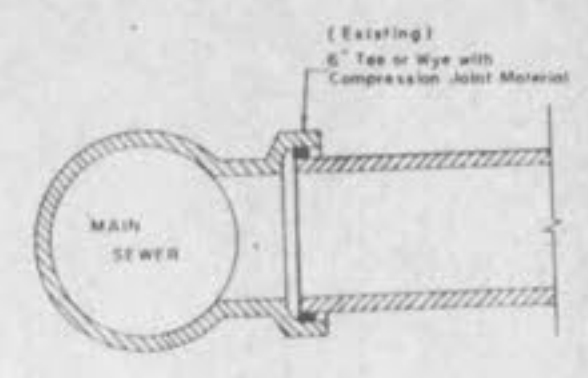
PAYLINE LIMITS FOR EXCAVATION



TYPICAL PLAN & SECTION AT SEWER LINE DISCHARGING INTO CHANNEL



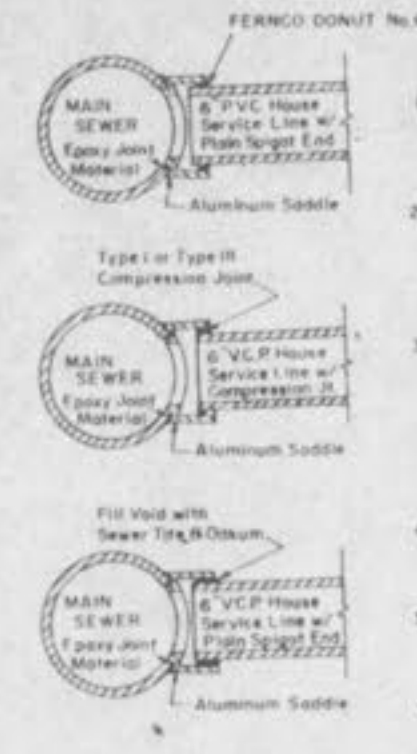
STORMWATER CHANNELS



HOUSE SERVICE

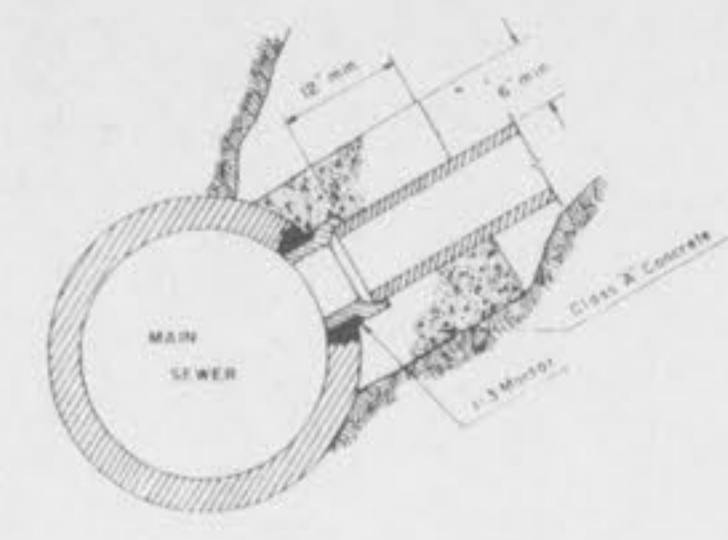
1. 4" V.C.P. with compression joint
2. 4" V.C.P. without compression joint. The sewer file and bottom is required.
3. If 4" house connection is approved, a 4" to 6" increaser is required.
4. If 4" V.C.P. is used a Fernco Adapter or sewer file and bottom may be used to make the joint.
5. A clean, dry bedding material is required around the completed connection before back filling. The bedding material shall be one of the following:
  - A. M.S.D. No. 1 Bedding
  - B. 1 1/2 cement and sand
  - C. PORT MIX concrete

HOUSE CONNECTION TO EXISTING TEE OR WYE



MACHINE TAP

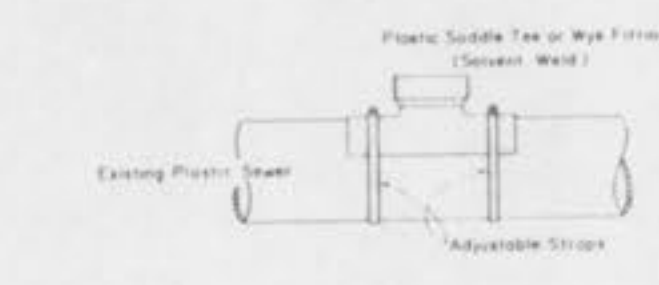
- General Notes**
1. 4" V.C.P. or 6" V.C.P. House connection into public V.C.P. or public P.V.C. main 8" to 24" diameter and no wye or tee is required, a machine tap is required.
  2. The District will cut the hole in the main, provide and epoxy the saddle to the main. All other material and labor are the responsibility of the contractor.
  3. A clean, dry bedding material is required around the completed connection before back filling. The bedding material shall be one of the following:
    - a. M.S.D. No. 1 Bedding
    - b. 1 1/2 cement to sand
    - c. PORT MIX concrete
  4. If 4" house connection is approved, a 4" to 6" increaser is required at machine tap.
  5. In order that the inspector make an inspection, an excavation must be adequately formed.
  6. All material required to make an approved connection must be on the connection site at the time of arrival of the bid team. If the material is not available, the tap must be rescheduled.



HOUSE CONNECTIONS ALLOWED BY TEE SADDLE

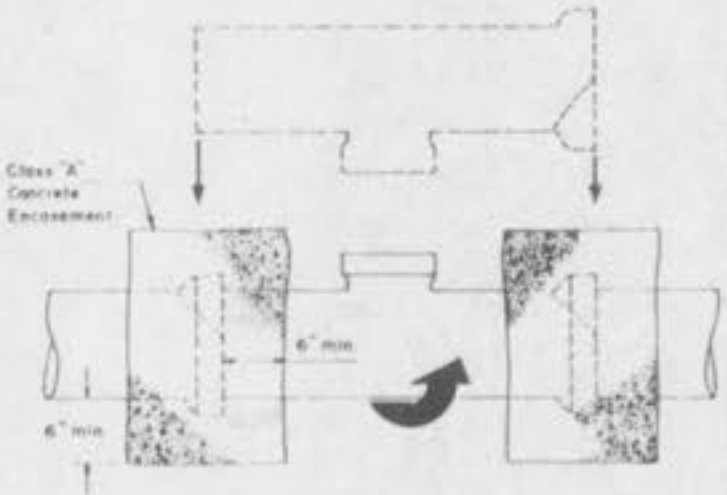
Note: The spacing shall be cut by the contractor to a sufficient size to permit shearing a tee saddle or short length of pipe at the required excavation and depth to allow at least two (2) inches space around the pipe. This space will be suitably filled with 1:3 cement sand mortar and the new pipe neatly trimmed and pointed up flush with the inside of the main sewer.

If there are reinforcing bars in the sewer wall, only those preventing installation of the pipe may be cut. All others shall be bent into a Class 'X' concrete collar at the junction of the connection pipe and the main sewer.



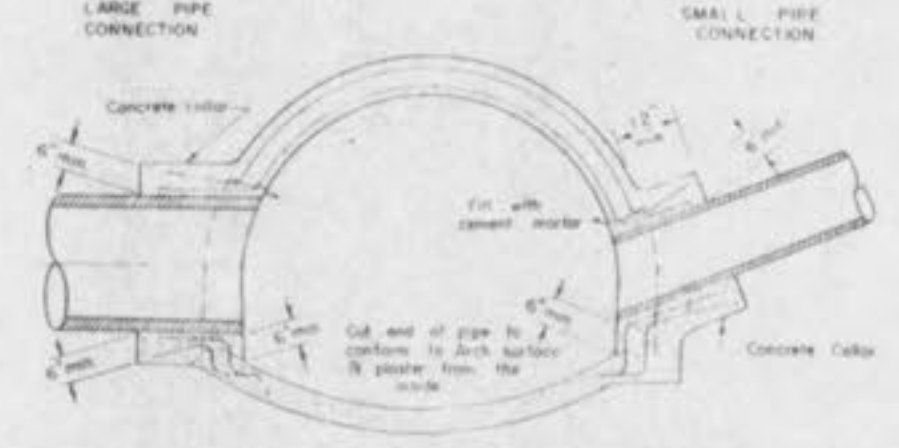
1. When a connection to a plastic pipe is allowed and the connection to a sewer 8" or larger, a minimum 24" x 24" x 2" concrete collar must be used (Example: 24" x 24").
2. When an 8" or larger pipe is connected to a 4" or 6" pipe, the connection shall be made with a plastic saddle tee or wye fitting. The following steps should be taken:
  - a. Clean and dry both pipes, saddle tee or wye fitting and connection to the sewer.
  - b. Apply a liberal amount of approved grease to the inside surface of the saddle tee or wye fitting and the inside of the pipe.
  - c. Without using any tools, the saddle tee or wye fitting should be slipped over the pipe.
  - d. Push a ring of paper, cloth, wire wool, and any other material around the pipe and saddle.
  - e. Allow 30' to 40' minutes for the grease to set and the fitting to bond. The pipe should be moved 180° to approximate degree indicated on the collar and the pipe should be moved 180° to approximate degree indicated on the collar.
  - f. Clean the collar of all grease and oil.
  - g. Apply a liberal amount of approved grease to the inside of the collar and the inside of the pipe.
  - h. Apply a liberal amount of approved grease to the inside of the collar and the inside of the pipe.
3. M.S.D. #1 Bedding
4. 1 1/2 cement and sand
5. PORT MIX concrete

8" (8" LARGER) CONNECTION TO PLASTIC MAIN



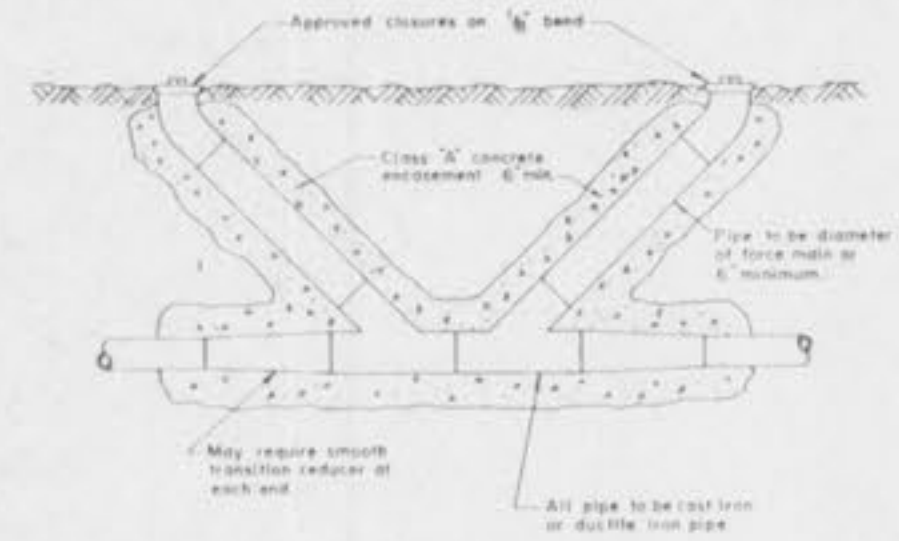
1. When a connection is allowed larger than 6" diameter, a saddle may be used if the I.D. of the connection pipe is 1/2" greater than one-half (1/2) the I.D. of the main sewer. (Example: 24" x 10")
2. If the I.D. of the connection pipe is greater than one-half (1/2) the I.D. of the main sewer, the pipe is to be "rolled in". (Example: 15" x 6")
3. This is accomplished by breaking away and removing one section of pipe. The top half of the bottom pipe lying adjacent to the gap is carefully broken off. The top half of the bell on the main replacement section falls in "roll in" fitting is also broken off. The replacement pipe is then placed in the gap with the stub pointed in the wrong direction. The top half of the replacement and the adjoining pipe make a piece. This for the replacement section to fit into the sewer line without disturbing the adjoining pipe sections. The replacement section is then raised to the desired position and the broken bits are encased with a 6" Class "X" concrete encasement.

ROLL-IN FOR EXISTING CLAY OR CONCRETE PIPE

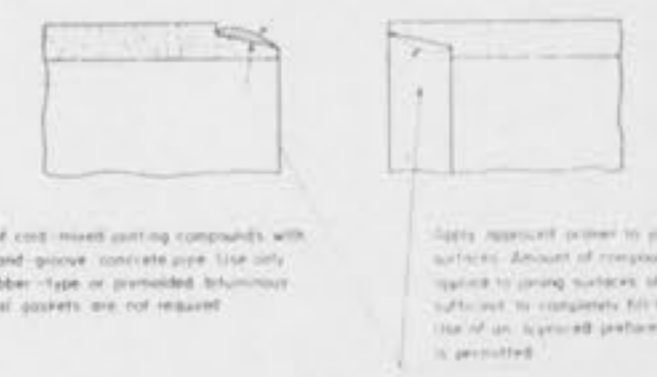


- Note: Opening into existing sewer to be cut exactly to match diameter to adjacent sewer.
- Note: Hole to be cut to proper grade and diameter and to be of such size as to permit a trench space of around the outside of the pipe.
- The space shall be carefully filled with one part cement and three parts sand mortar compacted and pointed after the pipe has been inserted and properly supported to the full grade.
- Existing reinforcing bars are to be bent over the concrete collar around the pipe to provide reinforcement equally in all directions.

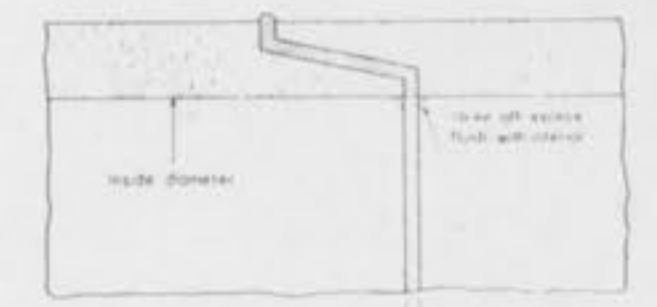
CONNECTIONS TO LARGE SEWERS



700' MAXIMUM SPACING FORCE MAIN CLEANOUT



- Note: Apply one coat compound after drying and finishing of primer to a surface surface which will not compound without sagging and not apply more than 3 hours after primer has been applied.
- For use of cast-in-place concrete pipe joints with tongue and groove concrete pipe. Use only when rubber ring or gaskets are not required.
- Apply approved primer to piping pipe surface. Amount of compound to be applied to joints should be sufficient to completely fill the joint. Use of an approved preformed compound is prohibited.



- Inside width of joint
- 1 1/2" min. - For straight to straight only
  - 2" min. - For straight to 45° and larger
  - 3" min. - For straight to 75° to 45° and larger
  - Note: - For straight to 90° to 27° reduce
- 50% Maximum increase permitted only on curved alignments

TONGUE AND GROOVE CONCRETE PIPE JOINTS