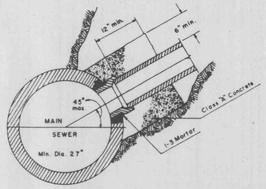
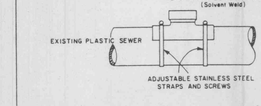


Note: The opening shall be cut by the contractor to a sufficient size to permit inserting a tee saddle or short length of pipe of the required elevation and angle to allow at least two (2) inches space around the pipe. This space will be solidly filled with 1:3 cement-sand mortar and the new pipe neatly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

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

HOUSE CONNECTIONS ALLOWED BY TEE SADDLE	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. A.E.S. Ch. J.C.K.	April 1978	Sheet 52

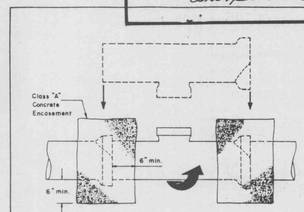


When a connection to a plastic pipe is allowed and a connection is larger than 6" in diameter, a solvent weld wye or tee fitting of a similar material must be used. (Example: 10"x 8").

This is accomplished by carefully cutting a hole with a saw in the main at the required location. After cutting and shaping the hole to the size of the fitting, the following steps should be taken:

1. Clean and dry both inside saddle wye surface and pipe surface to be solvent cemented.
2. Important! Apply a liberal, heavy coat of a ONE-STEP SOLVENT CEMENT to the inside surface of the saddle wye and to the exterior welding surface to the pipe.
3. Without delay, mate the the surfaces and strap down tightly. A bead of solvent should appear after saddle has been strapped down tightly.
4. Using a rag or paper towel, wipe bead and any excess solvent cement off pipe and saddle.
5. Allow 30-60 minutes for set-up time before backfilling. Cure time depends on size and fit of materials being installed and various cold damp conditions.
6. Discard old solvent if it becomes jelled or lumpy.
7. A clean, dry bedding material is required around the completed connection before backfilling. The bedding material should be one of the following:
   - A. M.S.D. #1 Bedding
   - B. 1 to 3 Cement to Sand Mix
   - C. "Pre-Mix" Concrete

8" (& LARGER) CONNECTION TO PLASTIC MAIN	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. A.E.S. Ch. J.C.K.	JUNE, 1985	SHEET 53

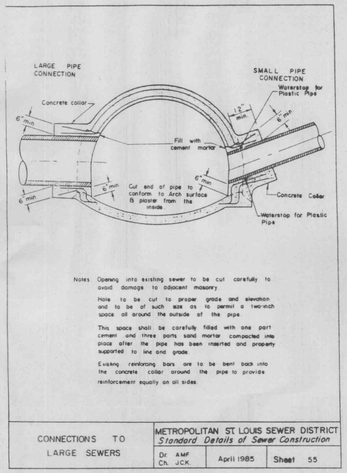


When a connection is allowed larger than 6" diameter a saddle may be used if the I.D. of the connection pipe is not greater than one-half (1/2) the I.D. of the main sewer. (Example: 24"x 10")

If the I.D of the connection pipe is greater than one-half (1/2) the I.D. of the main sewer the wye or tee must be "rolled-in". (Example: 15"x 8")

This is accomplished by breaking away and removing one section of pipe. The top half of the bell on the pipe lying adjacent to the gap is carefully broken off. The top half of the bell on the main replacement section (with a "tee" or "wye" fitting) is also broken off. The replacement pipe is then placed in the line gap with the stub pointed in the wrong direction. The broken bells on the replacement and the adjoining pipe make it possible for the replacement section to fit into the sewer line without disturbing the adjoining pipe sections. The replacement section is then rotated to the desired position and the broken bells are encased with a 6" Class "A" concrete encasement.

"ROLL-IN" (FOR EXISTING CLAY OR CONCRETE PIPE)	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. A.E.S. Ch. J.C.K.	April 1985	Sheet 54



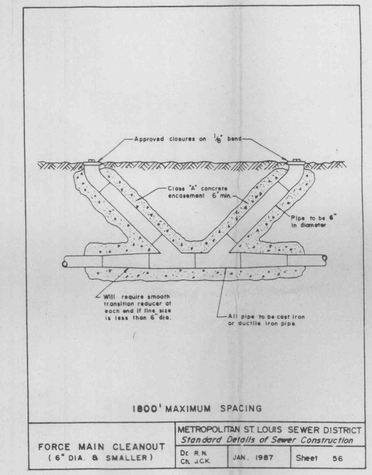
Notes: Opening into existing sewer to be cut carefully to avoid damage to adjacent masonry.

Hole to be cut to proper grade and elevation and to be of such size as to permit a two-inch space all around the outside of the pipe.

This space shall be carefully filled with one part cement and three parts sand mortar compacted into place after the pipe has been inserted and properly supported to line and grade.

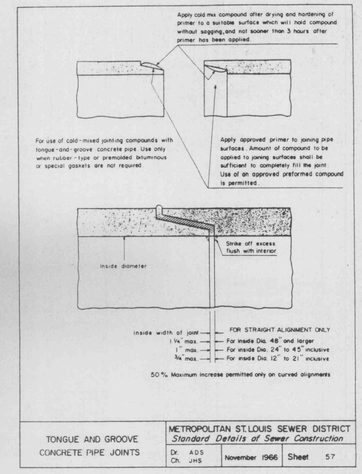
Existing reinforcing bars are to be bent back into the concrete collar around the pipe to provide reinforcement equally on all sides.

CONNECTIONS TO LARGE SEWERS	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. AMF Ch. JCK.	April 1985	Sheet 55

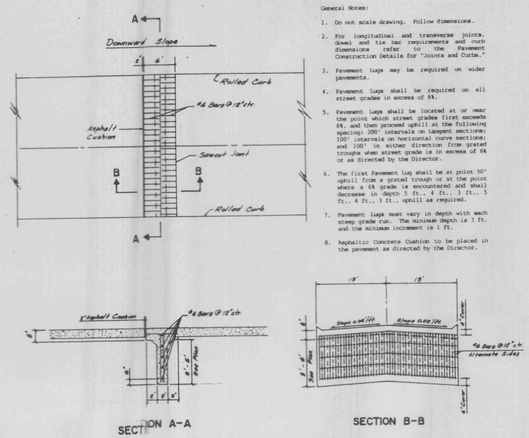


1800' MAXIMUM SPACING

FORCE MAIN CLEANOUT (6" DIA. & SMALLER)	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. R.N. Ch. JCK.	JAN. 1987	Sheet 56



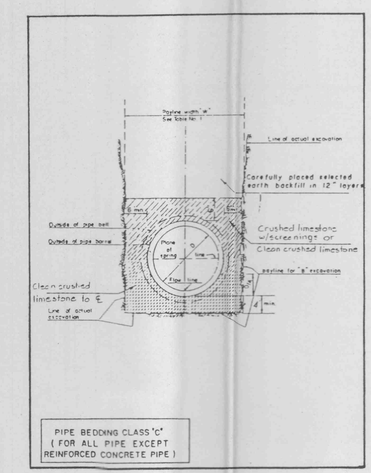
TONGUE AND GROOVE CONCRETE PIPE JOINTS	METROPOLITAN ST. LOUIS SEWER DISTRICT *Standard Details of Sewer Construction*		
	Dr. AOS Ch. JHS	November 1966	Sheet 57



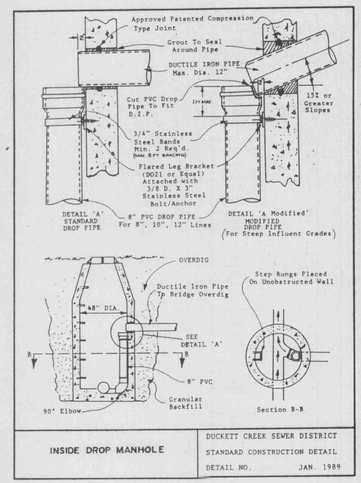
General Notes:

1. Do not scale drawing. Follow dimensions.
2. For longitudinal and transverse joints, dowels and tie bar requirements and curb dimensions refer to the Pavement Construction Details for "Joints and Curbs."
3. Pavement Lugs may be required on wider pavements.
4. Pavement Lugs shall be required on all street grades in excess of 6%.
5. Pavement Lugs shall be located at or near the point which street grades first exceeds 6%, and then proceed uphill at the following spacing: 200' intervals on tangent sections; 100' intervals on horizontal curve sections; and 100' in either direction from grated troughs when street grade is in excess of 6% or as directed by the Director.
6. The first Pavement Lug shall be at point 50' uphill from a grated trough or at the point where a 6% grade is encountered and shall decrease in depth 5 ft., 4 ft., 3 ft., 5 ft., 4 ft., 3 ft., uphill as required.
7. Pavement Lugs must vary in depth with each steep grade run. The minimum depth is 3 ft. and the minimum increment is 1 ft.
8. Asphaltic Concrete Cushion to be placed in the pavement as directed by the Director.

PAVEMENT LUG



PIPE BEDDING CLASS 'C' (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)



INSIDE DROP MANHOLE	DUCKETT CREEK SEWER DISTRICT STANDARD CONSTRUCTION DETAIL DETAIL NO. JAN. 1989

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