

## HOUSE SERVICE NOTES

- MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES. MINIMUM SIZE PIPE FOR COMMERCIAL, INDUSTRIAL AND COMBINED HOUSE SERVICES SHALL BE SIX INCHES UNLESS APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
- PIPE AND JOINT MATERIALS:
  - CAST-IRON PIPE, FITTINGS AND JOINTS
    - CAST-IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN NATIONAL STANDARD INSTITUTE:
 

A21.1	THICKNESS DESIGN OF CAST-IRON PIPE
A21.3	CEMENT MORTAR LINING FOR CAST-IRON PIPE AND FITTINGS
A21.6	CAST-IRON PIPE CENTRIFUGALLY CAST IN METAL MOLD FOR WATER OR OTHER LIQUIDS
A21.8	CAST-IRON PIPE CENTRIFUGALLY CAST IN SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS
A21.10	CAST-IRON FITTINGS, 2 INCHES THROUGH 48 INCHES, FOR WATER AND OTHER LIQUIDS
    - JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
 

A21.11	RUBBER GASKET JOINTS FOR CAST-IRON PRESSURE PIPE AND FITTINGS
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  - DUCTILE IRON PIPE, FITTINGS AND JOINTS
    - DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
 

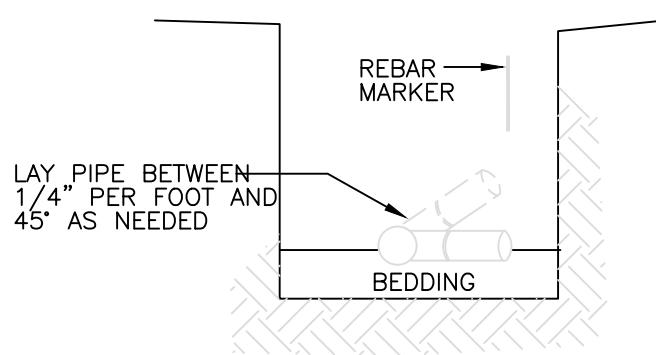
A21.50	THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS
A21.51	DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS
  - PVC PIPE
    - APPROVED FOR DOMESTIC SEWAGE SERVICE
    - PVC PIPE AND FITTINGS SHALL BE TYPE SDR-36 HAVING BELL AND SPIGOT JOINTS CONFORMING TO ASTM SPECIFICATIONS D-3034
    - JOINTS SHALL BE BELL AND SPIGOT TYPE HAVING ELASTOMERIC GASKETS CONFORMING TO ASTM SPECIFICATION D-3212
  - DAMAGE PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
  - JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
  - TEES OR WYES. WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE FOLLOWING MANUFACTURER'S INSTRUCTIONS USING A CLAMPED SADDLE OR APPROVED FITTING TAPPED INTO A SMOOTHLY DRILLED OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THESE INSTRUCTIONS DO NOT APPLY TO INSTALLATIONS WHERE TEES OR WYES ARE USED.
  - PIPE INSTALLATION. THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 12-INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT FOR 4 INCH PIPE. LARGER DIAMETER PIPE AS REQUIRED BY ENGINEER. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

- TESTING. THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS, PRIOR TO BACKFILLING:
  - AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
  - THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUNDWATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
  - DRY FLUORESCENT DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER OR, IF THE TRENCH IS WET, GROUNDWATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE.
- LEAKAGE OBSERVED IN ANY OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP, IF NECESSARY, AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.
- ILLEGAL CONNECTION. NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY, ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS, OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUNDWATER, SHALL NOT BE PERMITTED.
- HOUSE WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
- BEDDING. SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C-33 STONE SIZE NO. 67.
 

100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	3/8 INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE
- WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
- LOCATION. THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE.
- CONCRETE. CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AS FOLLOWS:
 

CEMENT:	6.5 BAGS PER CUBIC YARD
WATER:	5.23 GALLONS PER BAG CEMENT
MAX. SIZE OF AGGREGATE:	1 INCH
- NO OUTSIDE CLEAN OUTS WILL BE ALLOWED. MAXIMUM OF 2 45 DEG BENDS ON A SERVICE.



WYE-BRANCH INSTALLATION



DETAIL S-8  
HOUSE SERVICE