

Mission Brook Sanitary District

P.O. Box 2362 Northbrook, IL 60065

Trustees:

Howard L. Wolfman
President

Judy Arvey
Clerk

Earle Greenberg
Treasurer

(847) 272-2956

(847) 272-8929

(847) 272-3146 Fax

Re: SEWER and / or WATER APPLICATION REQUIREMENTS

To Whom It May Concern,

The homeowner or contractor must come to the Mission Brook Sanitary District office and pick up a letter for the Village of Northbrook and / or Cook County Building and Zoning.

BEFORE "APPLICATION LETTER" WILL BE ISSUED

- A. Mission Brook must have a **PLAT of SURVEY**
- B. **\$1,000,000 CERTIFICATE of INSURANCE** (With a endorsement naming Mission Brook Sanitary District as additionally insured)
- C. **\$25,000 PERFORMANCE BOND** (Naming Mission Brook Sanitary District) from the contractor or homeowner.
- D. A check in the amount of **\$500.00** for the sewer permit and / or **\$500.00** for the water permit.
- E. When picking up the permit you will receive **MBSD Water & Sewer Specifications**

SEWER PERMIT "WILL NOT" BE ISSUED UNTIL HOUSE IS UNDER ROOF.

You must get your **PERMIT** from Mission Brook Sanitary District - **NOT Northbrook**

Once permit is issued, a time and date must be scheduled with the Mission Brook Office for an inspection.

Note: The cost of the water meter is extra and is determined by the size.

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Date: _____

ADDRESS: _____

I, the undersign, have received a copy of the Mission Brook Sanitary District Specifications and agree to follow them in the installation of the work performed at the address above and that I may be fined if not done so. I also understand that all work has to be inspected by Mission Brook Sanitary District authorized inspector before any work can be covered and that the District inspector has the final approval over any other governing body. Any variation to the specifications must be approved by Mission Brook Sanitary District in writing before the work is done.

Signature: _____

Title: _____

Company Name: _____

Address: _____

City: _____

Zip Code: _____

Phone #: _____

NOTICE

**ANYONE THAT CUTS A NEW CONNECTION INTO
THE MISSION BROOK SANITARY
DISTRICT ("DISTRICT") SANITARY SEWER MAIN
LINE WITHOUT WRITTEN PERMISSION FROM
THE DISTRICT WILL BE FINED**

\$1000.00

**YOU MUST OBTAIN WRITTEN APPROVAL FROM
THE DISTRICT PRIOR TO MAKING ANY CUTS
INTO THE DISTRICT'S SANITARY SEWER LINES**

PLEASE CONTACT:

**BOB BLACKSTONE, SUPERINTENDENT
(847) 272-2956**

**District office hours are Monday, Wednesday & Friday
10:00 a.m. – 1:00 p.m.**

**MISSION BROOK SANITARY DISTRICT
SECOND AMENDED STANDARDS
FOR UNDERGROUND IMPROVEMENTS
(July 2009)**

No project shall be approved without water supply and sanitary sewer facilities in accordance with the following minimum standards and the posting of security approved by the Mission Brook Sanitary District ("District") Board guaranteeing completion of said improvements.

GENERAL

1. All sewer and water main trenches shall be undercut four-inches (4") and the pipe laid on a four-inch (4") cushion of well-graded, washed, mixture of gravel or crushed stone aggregate free of clay loam, dirt, calcareous or other foreign matter conforming to the IDOT "Standard Specifications" gradation No. CA-11.
2. All underground improvements shall be completed prior to any surface improvement.
3. All surface restoration work shall conform to the requirements of the Illinois Department of Transportation ("IDOT") Standard Specifications for Road and Bridge Construction, latest edition, and the attached details.
4. All organic, soft, spongy, or otherwise unsuitable soils found at or below the bottom of the trench shall be excavated as necessary to meet firm subsoil. Whenever the trench is over-excavated due to the removal of unsuitable material, refill the excavated area to the bottom of the pipe bedding with material conforming to the IDOT "Standard Specifications" gradation No. CA-1. Install geotechnical fabric between native soil and granular material.
5. Trenches shall be backfilled immediately after underground pipeline have been installed and inspected, using suitable excavated subsoil materials with proper allowance for shrinkage and which will develop a compacted stability satisfactory to the District Inspector. Backfill for pipelines shall be carefully placed and compacted by hand around the sides of the pipe to a level of twelve inches (12") over the top of the pipe using five inch (5") layers of selected excavated material which is free of large stones, clod of turf, roots or using gravel, crushed stone, or other granular material as required by these Standards or approved by the District Engineer. Trenches under pavements shall be backfilled with compacted CA-6 granular or crushed stone trench backfill. Backfill material shall be compacted to a minimum 90 percent (90%) modified Proctor density.

The backfill surface of the trench shall be left smooth and sufficiently crowned to allow for settlement.

The top twelve inches (12") of the trench in streets, parking areas, driveways, or other paved areas shall be filled with approved road gravel or crushed stone as a temporary pavement, and shall be maintained level with adjoining pavement surfaces until the original type of pavement, or equal, is replaced.

Any trench, in which settlement occurs during the period of construction or within one year (1) of the date of acceptance of grade, will be restored to the accepted surface grade.

6. All manhole covers shall be embossed with a description of the particular utility.
7. All work must conform to Illinois Environmental Protection Agency ("IEPA") regulations and "Standard Specifications for Water and Sewer Construction in Illinois", except as noted herein.
8. For all Public Utilities an IEPA and/or a Metropolitan Water Reclamation District of Greater Chicago ("MWRDGC") permit shall be obtained prior to construction.
9. All public mains and sewers shall be located within dedicated right-of-way unless a variance is granted by the District Board to allow construction on a dedicated easement.
10. Underground construction shall not be allowed until all existing public and private utilities are field located. The Contractor shall assume all costs, charges, or claims resulting from the interruption and repair of utilities damaged as a result of the Contractor's operations.

SANITARY SEWER MAIN LINES AND SERVICE CONNECTIONS

1. Only sanitary sewers shall be connected to the sanitary sewer system.
2. Sewage lift stations will not be permitted unless they are required in the opinion of the District Engineer and approved by the District Board.
3. The minimum size public sanitary sewer shall be eight inches (8") in diameter.
4. Sanitary sewers shall be designed to flow no more than sixty percent (60%) full. The sewers will be designed in such a way as to insure a minimum velocity of flow of two feet (2') per second and a maximum velocity of flow of eight feet (8') per second.

5. All sanitary sewers and services shall be constructed of PVC type PSM conforming to ASTM D-3034 and shall be SDR 35 or SDR 26, with electrometric gasket type joints complying with ASTM D-1869 and ASTM D-3212; or ductile iron pipe conforming to ANSI A-21.51, Class 50 per ANSI A-21.50 and tar (seal) coated and cement-lined per ANSI A-21.4.
6. Minimum cover of any sanitary sewer shall be three feet zero inches (3'-0"). PVC sewers in excess of twelve feet zero inches (12'-0") cover shall be SDR-26 and shall require eight-foot zero-inches (8'-0") of grade.
7. Pipe bedding shall be extended a minimum of twelve inches (12") above the crown of the pipe.
8. All sanitary sewer manholes shall be a minimum of four feet zero inches (4'-0") in diameter, of the pre-cast concrete type, with an electrometric band not more than four hundred feet (400') apart.
9. Maximum allowable infiltration shall be two hundred (200) gallons per day per inch per diameter per mile of sewer.
10. A six inch (6") diameter sanitary building sewer shall be installed near the center of each resident lot at the time of the sanitary sewer installation, and shall extend to within one foot (1') of the property line.
11. Building service pipe shall not be less than the diameter of the plumbing pipe from the building, but not less than six inches (6"). The pipe shall have a minimum slope of one-eighth inch (1/8") per foot, but not more than one-half inch (1/2") per foot. Riser pipe shall be provided at the main line sewer, where required, to assure that the slope of the service pipe is within minimum and maximum limits. Changes of direction of service pipe shall be made with combinations of twenty-two and one-half (22 1/2) degree bends wherever practicable, with not less than two feet (2') of straight pipe between such bends. Right angle (90 degree) bends will not be allowed.
12. Service connections to new sewers shall be made with wye branches. Wye branches shall be factory manufactured and permanently affixed to main sewer.
TEE BRANCHES ARE NOT ALLOWED.
13. Connection of service pipe or riser pipe to an existing sewer line shall be made with an existing wye or tee. If no wye exists at the connection point, the connection method shall conform to the following guidelines:

- a. If the main sewer line is vitrified clay, remove an entire section of the pipe and replace with a wye branch section for connection to the riser or service pipe, using rubber sewer repair couplings with stainless steel bands and shear ring.
- b. If the main sewer line is ABS (Arcylonitrile-Butadiene-Styrene) composite sewer pipe, branch fittings shall be either factory-fabricated type with attached main line coupling or the solvent welded saddle type attached to the pipe with cement and held in place with stainless steel bands.
- c. If the main sewer is PVC plastic sewer pipe, branch fittings shall be either factory fabricated type wye with attached main line band-seal couplings or solvent welded injection molded rubber gasket wye saddles.

BREAKING OF THE SEWER MAIN PIPE IS NOT ALLOWED AND COULD BE SUBJECT TO FINE. THE DISTRICT ENGINEER MUST APPROVE ANY VARIATION OF THE ABOVE METHODS.

14. A full size cleanout shall be installed in the building sewer of each structure approximately five feet (5') outside the foundation wall. The cleanout should be extended flush to the finished ground elevation.
15. All new buildings or additions with basements, floors, rooms or occupancy areas below ground level at the building site and served by a public or private sewer system, shall have **OVERHEAD PLUMBING**.
16. No sewer connection shall be made under the footing of an inhabitable basement area. Sewer connections are allowed under footings only where such structures lie at an elevation higher than inhabitable basement areas.
17. Whenever a building connected to the Sanitary Sewer System is demolished and a new building built, or if an addition is built which includes any additional sanitary sewer facilities, a new sanitary sewer line shall be constructed from the building to the sanitary sewer and connected using a new factory-made wye fitting. The existing connection may be used if inspected and approved by the District. The existing connection to the sanitary sewer shall be capped, if not used, with a watertight seal. The construction shall also include installation of overhead plumbing in the building.
18. All building sewer service connections shall be inspected by the District inspector prior to the filling of the trench by the contractor. The contractor shall give the inspector at least seventy-two (72) hours notice prior to the time the contractor is ready for said inspection.

19. Each Commercial or Industrial property shall be required to install a control manhole and, when required by the District, the owner of any property serviced by a building sewer carrying commercial or industrial wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of the wastes. Such manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the District Engineer. The manhole shall be installed by the owner at its expense, and shall be maintained by the owner as to be safe and accessible at all times. The manhole shall have a minimum diameter of forty-eight inches (48")
20. For all Public Utilities an IEPA and MWRDGC permit shall be obtained by the owner of the premises or its agent/contractor and copies provided to the District prior to any work beginning.
21. CURVILINEAR SANITARY SEWERS SHALL NOT BE ALLOWED.
22. The proper maintenance, operation and repair, including replacement, of a building service sewer, house connection or sanitary sewer line to the point of connection to the District sanitary sewer system shall be the responsibility of the owner or tenant of the premises serviced by said sanitary sewer. This shall also include any plumbing inside the building on the property. It is understood that the responsibility for maintenance shall run as a joint and several obligation against the property served, the owner and/or the operator or user of the property, and said responsibility shall not be discharged nor in any way affected by change of ownership of said property.

WATER SERVICE CONNECTIONS

1. Water service will be furnished to the owner or occupant of any premises connected to the water distribution system in the District, upon complying with the provisions of the District Regulations relating to the furnishing of such service. No water meter will be set until all charges or deposits required by the District have been paid, nor will any water meter be placed unless the service connection to which it is assigned is in good order and repair.
2. Charges for water service shall be billed in accordance with provisions of the District and such charges shall commence on the date when the meter is installed in accordance with written application for service, and shall continue until written notice is received by the District to discontinue the service and the meter removed or a final reading is taken. In the event of a change in owner or tenant, the District shall be promptly notified in writing.

3. Whenever a sprinkling system, either for lawn or fire protection, is installed a Backflow Preventer must be installed. It must be a reduced pressure type complete with air gap drain funnel and rest cock. For a size three-quarter inch ($\frac{3}{4}$ ") to two inches (2"), a Watts Series 009, or equal complete with two (2) unions and two (2) screwed-end gate or ball valves. For size two and one-half inches ($2 \frac{1}{2}$ ") to ten inches (10"), a Watts Series 909 or equal complete with two (2) flanged-end gate or ball valves.
4. Water service connection for any premises, between the street main and the building or premises to be supplied, shall be provided, owned, maintained, repaired and replaced by the owner of the property and shall be constructed only by licensed plumbers and inspected by the District Engineer.
5. Application for permits for water service connections shall be made at the office of the District on forms to be properly filled out and signed by the owner of the property or contractor authorized to perform the work. Permits will be issued only after payment of all fees and charges required herein, and no permit will be issued to any plumber who has not fully complied with the requirements of the District's rules and regulations.
6. A permit fee of three hundred fifty dollars (\$350.00) or such amount as indicated by the District to be the then current fee shall be paid for each water service connection to be installed even if the existing tap is re-used.
7. All corporation stops, curb stops and boxes for use in connection with services, shall be approved by the District and furnished by the plumber.
8. The District must approve the size of all water services, including taps and curb stops, and in no case shall the curb stop be smaller than the tap. No water service pipe shall be smaller than one inch (1") in diameter. Copper services may be installed up to and including two inches (2") in diameter. All services larger than two inches (2") in diameter must be constructed of ductile iron pipe.
9. Whenever a building connected to the Water System is demolished and a new building built, or if an addition is built which includes any additional water facilities, the existing water connection shall be capped and a new water service installed at a location to be determined by the District Engineer prior to construction. Construction shall include installation of a new water service line from the building to the water main including a new tap and buffalo box. If a building is demolished and no new building is being built, the existing water connection shall be turned off at the main and capped.

10. All service connections to the water main shall be made with a full circle repair sleeve and the appropriate size water tap, as determined by the District Engineer. If determined appropriate by the District Engineer, one (1) building may be served by two (2) connections, which would then be connected before the buffalo box in the parkway.

11. Any service abandoned or replaced by another service must be shut-off and disconnected at the main by the owner of the property.

12. Water service connections shall be constructed in accordance with the following classifications:

- a. Copper service pipe shall be cold drawn, soft annealed, seamless copper tubing, known to the trade as "Type K" having a purity of at least ninety-nine and eighty-eight one-hundredths percent (99.88%) copper as determined by electrolytic assay, and shall have the following wall thickness:

Equivalent Iron Pipe Size	Gauge B.W.G.
1"	16
1-1/4"	15
1-1/2"	15
2"	14

- b. Ductile iron pipe shall be cement-lined, class fifty-five (55) conforming to AWWA C-151.
- c. The District may require that all copper or ductile iron pipe used in connection with a water service connection shall be subject to such tests as may be imposed by the District.
- d. The fittings used in connection with copper service pipe shall be of the compression type.
- e. Taps in the street main shall be inserted at least eighteen inches (18") from the bell or hub of the main.
- f. Service pipe must be laid as to leave at least five feet (5') of earth over the top of the pipe at every point. Pipes must be laid on solid ground from the main to the meter in the premises to be supplied and must be installed below the footing of the building. Special cases should be referred to the District.
- g. The curb stops must be located in a direct line with the tap in the main and at right angles to the main, eighteen inches (18") from the street side of the

sidewalk in the parkway, having a cast iron cover with the letters "WATER" cast thereon. In special cases, where no parkway or sidewalk exists, the District shall determine the location of the curb stop.

- h. Before filling the trench, the corporation stop in the street main must be properly supported and the earth must be well rammed under and around the main to a level with the top thereof.
 - i. All water service connections shall be inspected by the District Inspector prior to the refilling of the trench by the contractor. The contractor shall give the inspector at least seventy-two (72) hours (three (3) working days) notice prior to the time the contractor is ready for said inspection.
13. The owner of the building or premises supplied by water service connections shall maintain such connections in good order, free from leakage of water. In case of leakage, the owner shall have the necessary repairs made promptly on notice from the District and within the time specified in such notice. Unless repairs are made within the time specified, water service to the building or premises supplied may be discontinued by the District and shall not be renewed until repairs are made and approved and a one hundred dollar (\$100.00) turn-on fee is paid.
14. The proper maintenance, operation and repair, including replacement, of a building water service, house connection or water line to the point of connection to the District water system (buffalo box) shall be the responsibility of the owner or tenant of the premises serviced by said water system. This shall also include any plumbing inside the building on the property. It is understood that the responsibility for maintenance shall run as a joint and several obligation against the property served, the owner and/or the operator or user of the property, and said responsibility shall not be discharged nor in any way affected by change of ownership of said property. The District shall maintain and repair the buffalo box, unless said maintenance or repair is required due to actions or inactions of property owners, tenants or their contractors or subcontractors, in which case said maintenance or repair shall be at the expense of the owner or tenant.
15. No water service connection shall be repaired or altered without first securing a permit from the office of the District.
16. Before opening any street for construction or repair of water service connections, application must be made for a street opening permit at the office of the Northfield Township Highway Department or appropriate authority. All such requirements must be fully complied with before construction is commenced.

17. A permanent record shall be kept at the office of the District, showing the exact location, number and size of taps inserted, the size and material of all service connections installed in the District.
18. All water services shall be supplied through meters, provided by and installed by the District.
19. Only one meter and one service will be permitted for each lot or separate piece of property. Parallel service pipes will not be allowed.
20. All water meters shall be furnished, installed and removed by the District. No meter shall be smaller than one inch (1").
21. Plumbing installations shall make provision for water meter as follows:
 - a. The house supply piping must be arranged so that the meter may be set at least one foot (1') above the floor of the basement or utility room with an intermediate support, unless specific permission is secured in writing from the District.
 - b. A "Ball Valve" on the street side of the meter must be the first connection inside of the building followed directly by the District water meter. Another "Ball Valve" must be installed directly after the meter.
 - c. Provision must be made for the meter in a location where it will be protected from freezing and where it will be accessible at all times for reading inspection, removal or testing.
22. Persons receiving water service from the District shall use every reasonable precaution to prevent damage to water meters from any cause. Failure to comply with this regulation after written notice from the District, and within the time specified in such notice, may result in a discontinuance of water service until such notice is fully complied with and a one hundred dollar (\$100.00) turn-on fee is paid.
23. The authorized agent of the District shall have free access at proper times of the day, to all parts of every building in which water is delivered and used, to inspect pipes and fixtures for the purpose of ascertaining whether there is any unnecessary waste of water, and for the purpose of meter reading, inspection, testing or removal. If access is denied, the District has the right to turn off the water and impose a daily fine, which has to be paid in full along with the one hundred dollar (\$100.00) turn-on fee before the water will be turned on.

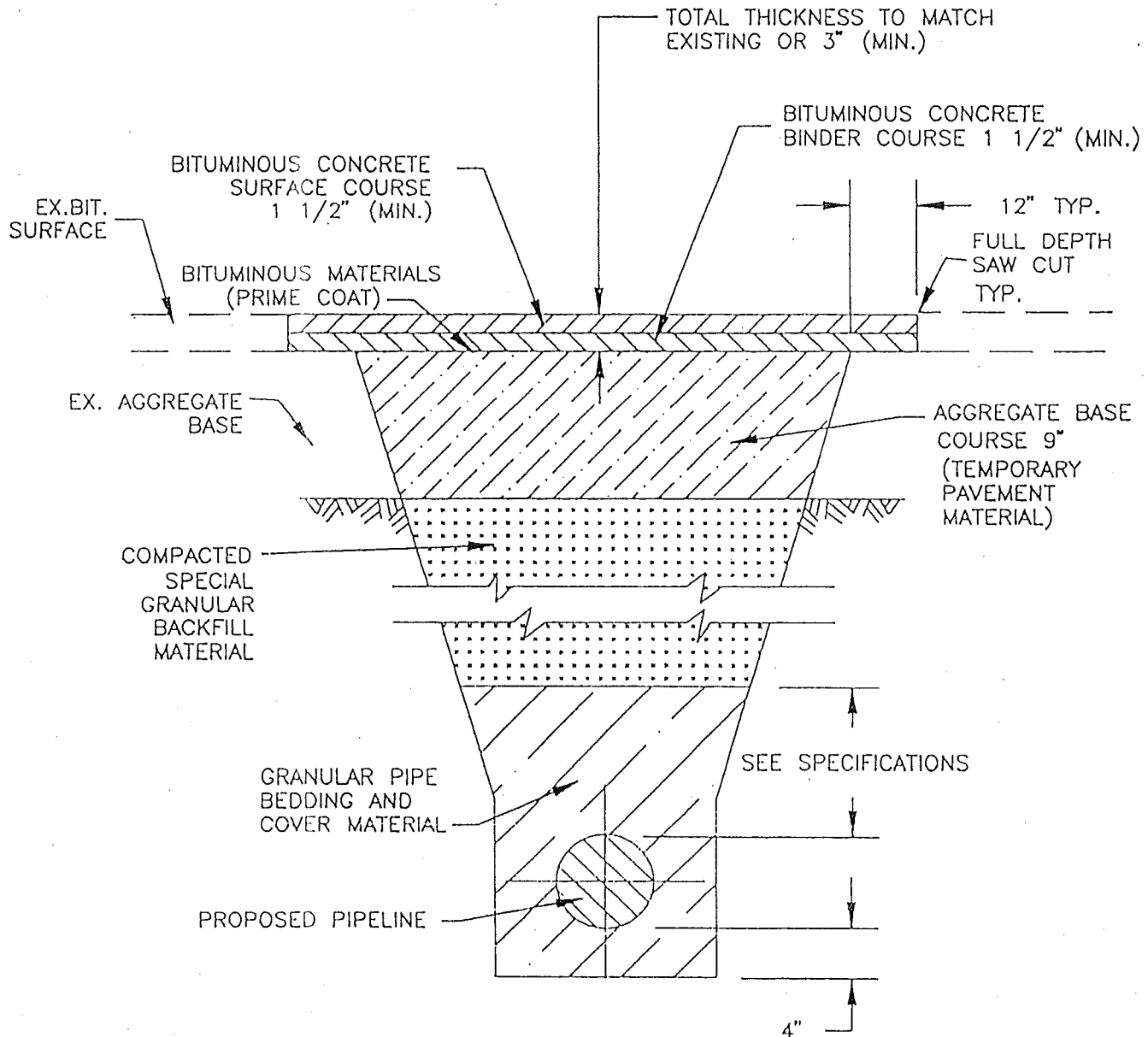
WATER MAINS

1. The water system shall be looped to eliminate dead end water mains.
2. Water main shall not be less than eight inches (8") internal diameter. Water mains of the larger diameter shall be installed where the District Engineer determines the need.
3. Valves should be located so that in the event of a single break not more than six hundred sixty feet (660') of main will be out of service and require the closing of not more than three (3) valves. Valves shall conform to the following requirements.
 - a. Valves up to and including ten inches (10") in diameter shall conform to the latest standards of AWWA C-509 for resilient seated gate valves.
 - b. Valves twelve inches (12") in diameter and larger shall conform to the latest standards of AWWA C-504, Class 150B for butterfly valves.
 - c. All gate valves shall be Mueller. All butterfly valves shall be Pratt.
 - d. All nuts and bolts shall be 304-stainless steel.
 - e. All valves shall be installed in pre-cast vaults. Vaults shall be forty-eight inches (48") in diameter for eight-inch (8") water main and smaller. Vaults shall be sixty inches (60") in diameter for ten-inch (10") water main and larger. Conform to ASTM C-478.
4. Fire hydrants shall be installed throughout the entire development, located at intervals not to exceed four hundred feet (400'). The property line of an occupied structure shall be no more than two hundred feet (200') from a hydrant.
 - a. Hydrants to be Traverse City type with breakaway flange with two (2) two and one-half inch (2-1/2") and one (1) four and one-half inch (4-1/2") fire hose connections with National Standard Threads. The seat valve shall be five and one-quarter inch (5-1/4"). A six inch (6") auxiliary valve, a box and cover (marked "WATER") shall be provided for each hydrant.
5. Water mains shall be constructed of ductile iron pipe conforming to ANSI A21.51 (AWWA C-151), to thickness class 55 per ANSI A21.50 (AWWA C-150), and cement-lined per ANSI A21.4 (AWWA C-104). Joints shall conform to ANSI A21.11 (AWWA C-111).

6. Class 55 ductile iron pipe is required when pipe is installed outside of the right-of-way or when it is installed in a casing pipe longer than twenty feet (20').
7. The depth between the finished grade and the top of the water main shall be not less than six-feet (6') or more than seven feet (7'). Where conflicts arise with other underground improvements, greater depths may be allowed, but only with the written consent of the District.
8. Water mains and fittings shall be wrapped with polyethylene sheet, tied or taped securely in place, with a thickness of eight (8) mils, and complying with ASTM D-1248.
9. All fitting and valve Joints shall be restrained with retainer glands. All bends and tees shall also be restrained with concrete thrust blocks.
10. Mechanical joint fittings shall conform to ANSI A21.10 or A21.53 (AWWA C-110). Flange joints shall conform to ANSI B-16.1, class 125 (AWWA C-110).
11. All connections to existing mains shall be under pressure and provided with a tapping tee and valve. The District Engineer may allow non-pressure connections if no existing customers are left without service during the connection work.
12. All water main work shall be pressure tested. The system shall hold one hundred twenty-five pounds per square inch (125 psi) for one (1) hour with no loss of pressure. All piping shall be subject to a leakage test at system pressure for twenty-four (24) hours.
13. All water main work shall be disinfected in accordance with AWWA C-651 and IEPA regulations.

MISSION BROOK SANITARY DISTRICT
COOK COUNTY, ILLINOIS

STANDARD DETAIL



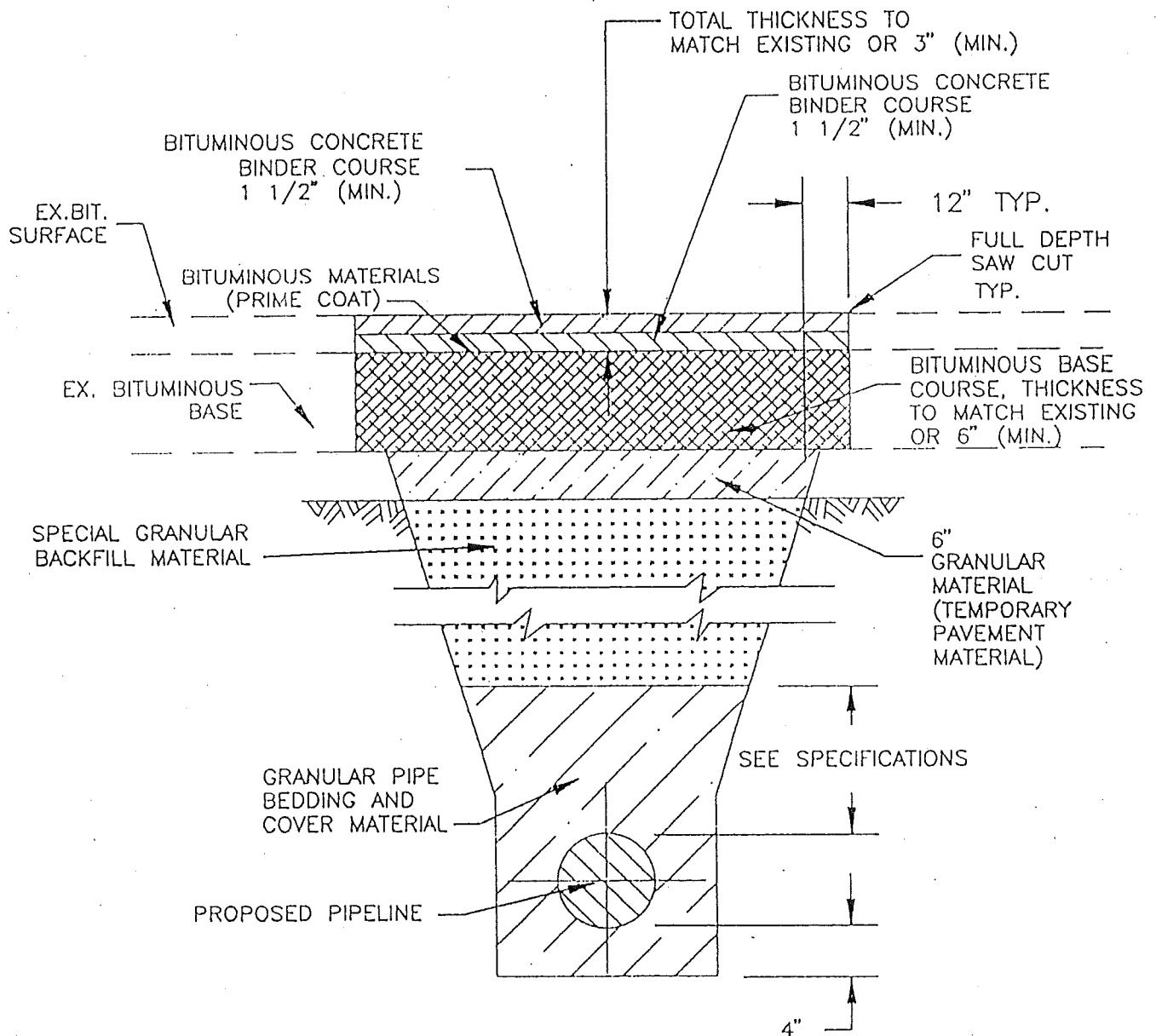
TYPICAL TRENCH DETAIL

NO SCALE

FOR PAVEMENT WITH AGGREGATE BASE AND
COMPACTED SPECIAL GRANULAR BACKFILL MATERIAL

MISSION BROOK SANITARY DISTRICT
COOK COUNTY, ILLINOIS

STANDARD DETAIL



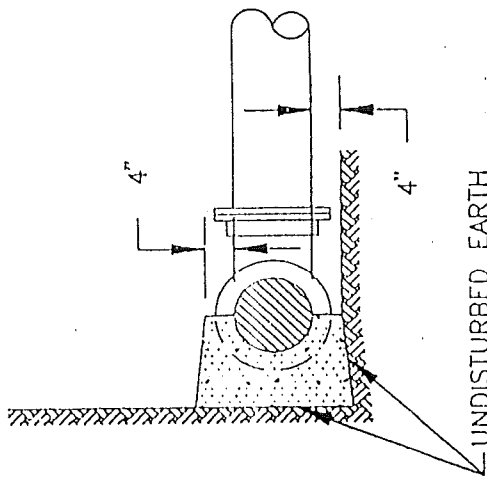
TYPICAL TRENCH DETAIL

NO SCALE

FOR PAVEMENT WITH BITUMINOUS BASE
AND SPECIAL GRANULAR BACKFILL MATERIAL

MISSION BROOK SANITARY DISTRICT COOK COUNTY, ILLINOIS

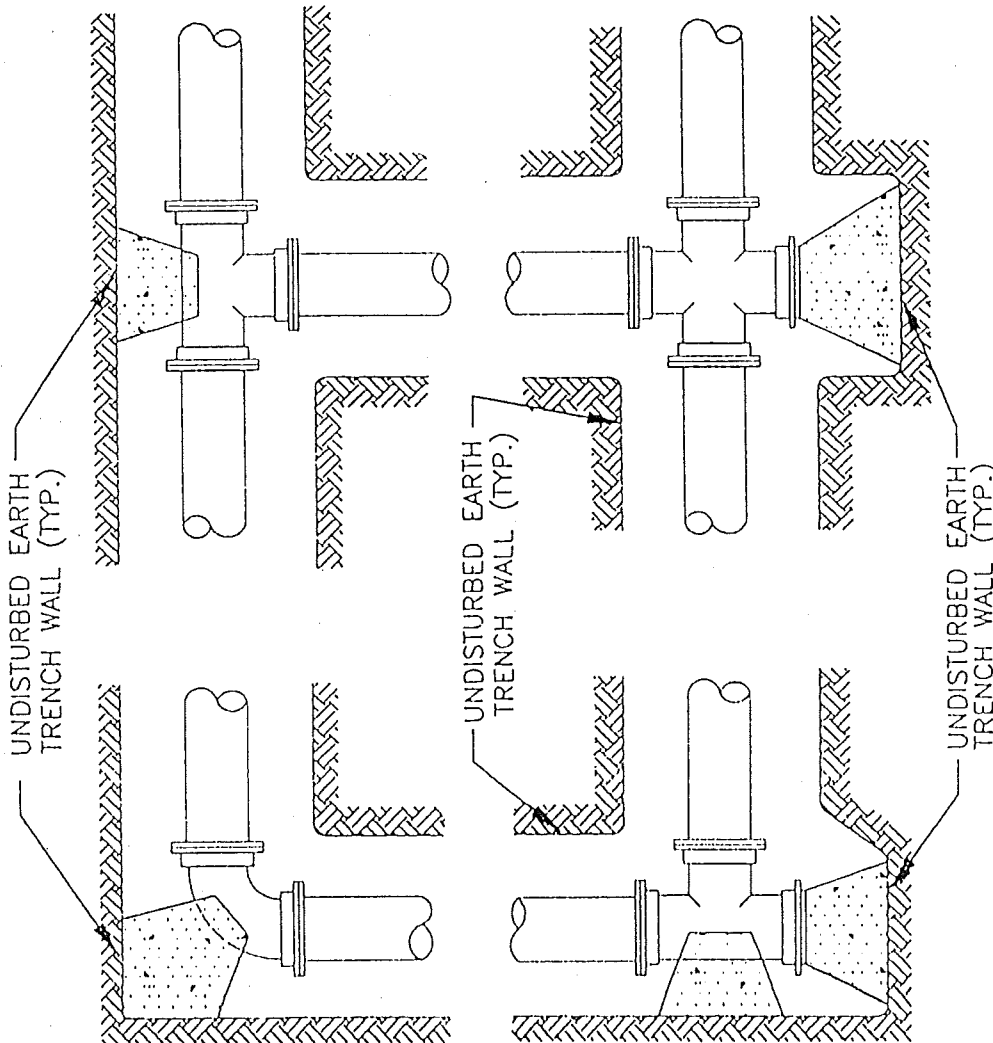
STANDARD DETAIL



SECTIONS

NOTES:

1. PROVIDE PRECAST OR CAST-IN-PLACE CONCRETE THRUST BLOCKS OF ADEQUATE SIZE AND THRUST BEARING SURFACE TO PREVENT MOVEMENT OF PIPELINE UNDER PRESSURE.
2. PLACE THE BASE AND THRUST BEARING SIDES OF THRUST BLOCK DIRECTLY AGAINST UNDISTURBED EARTH.
3. PLACE THRUST BLOCKING SO THE FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIR.



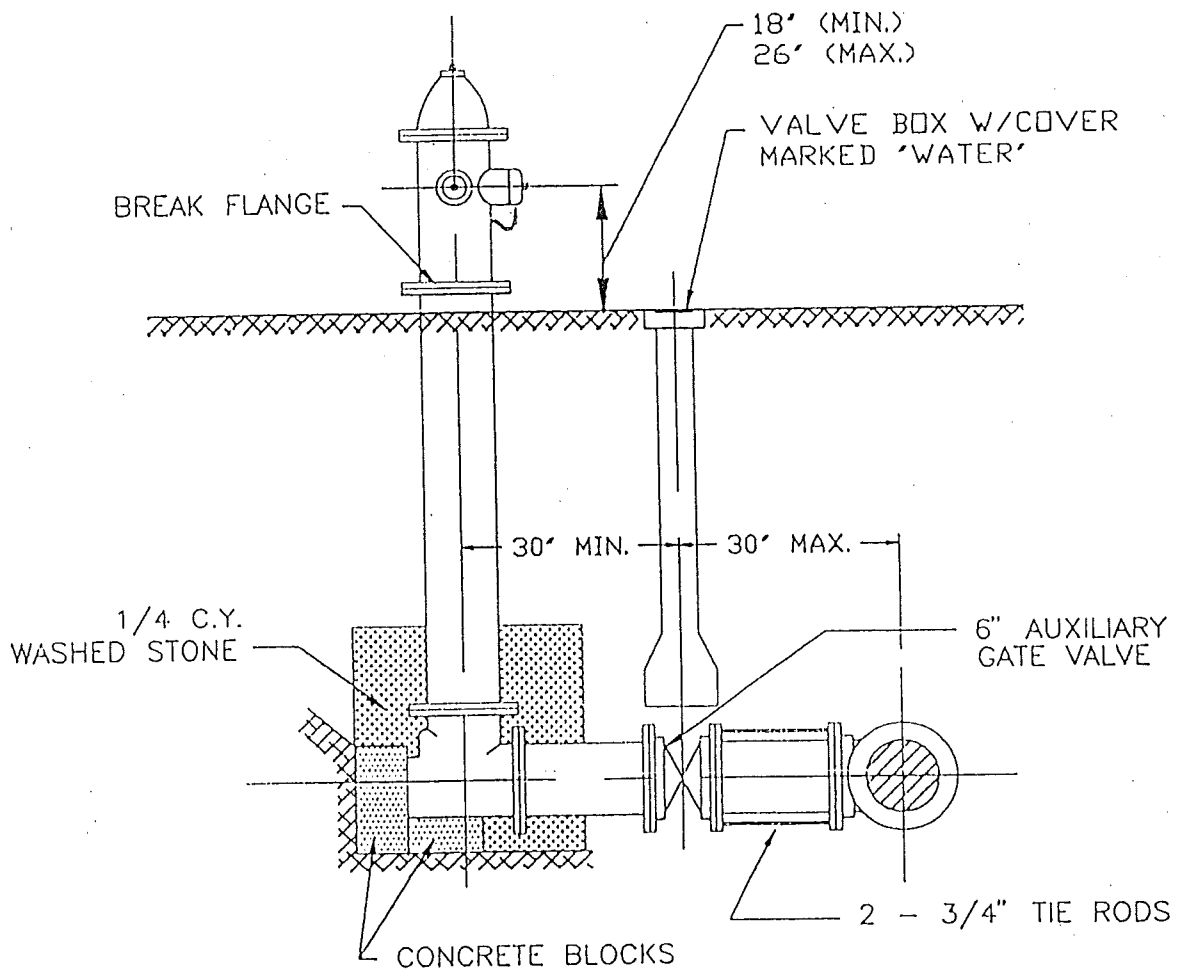
PLANS

TYPICAL THRUST BLOCK INSTALLATIONS

NO SCALE

MISSION BROOK SANITARY DISTRICT
COOK COUNTY, ILLINOIS

STANDARD DETAIL



STANDARD FIRE HYDRANT INSTALLATION

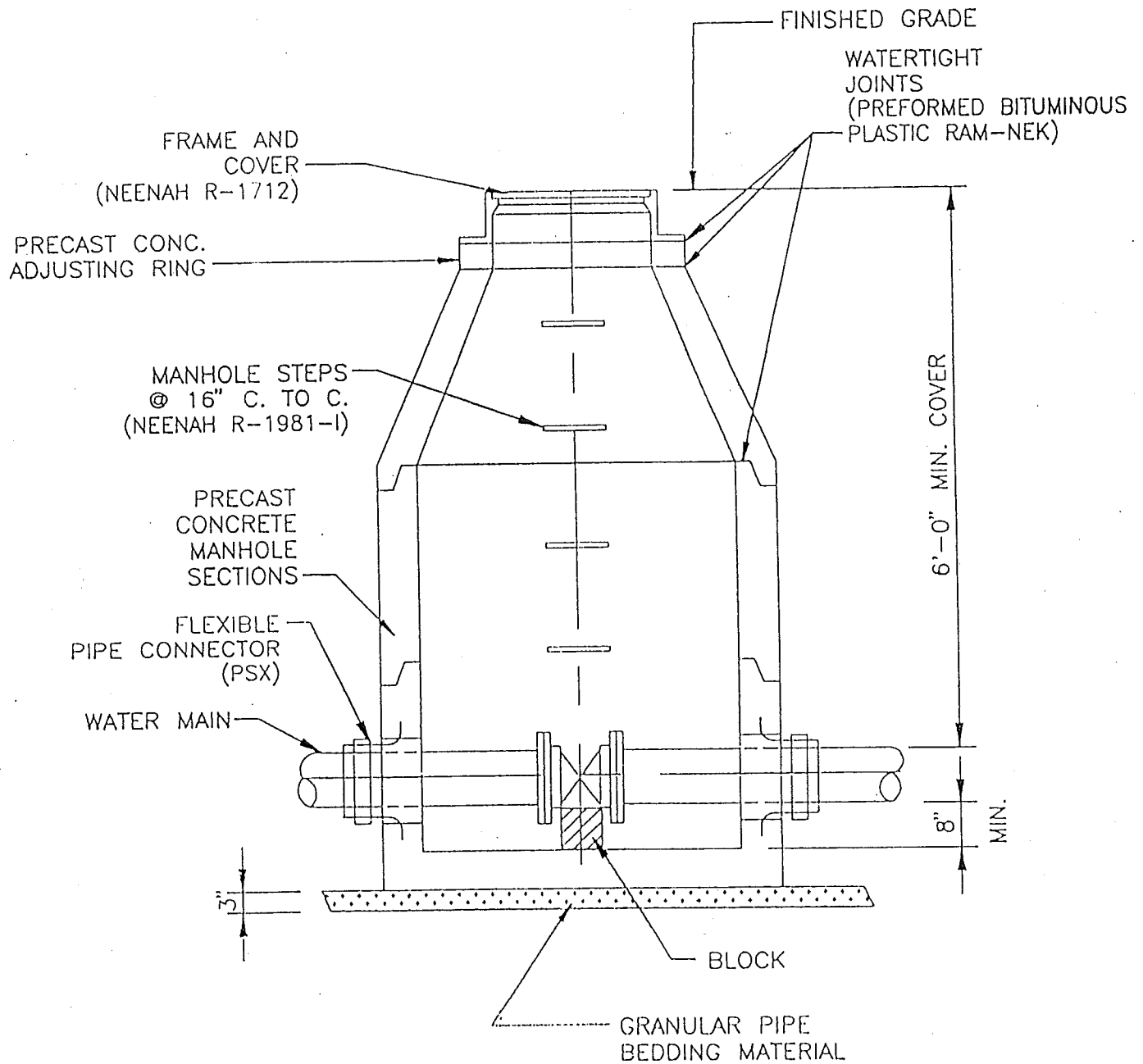
NO SCALE

MISSION BROOK SANITARY DISTRICT COOK COUNTY, ILLINOIS

STANDARD DETAIL

NOTES:

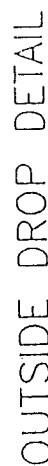
1. CONCENTRIC CONE REQUIRED



VALVE VAULT DETAIL

NO SCALE

STANDARD DETAIL

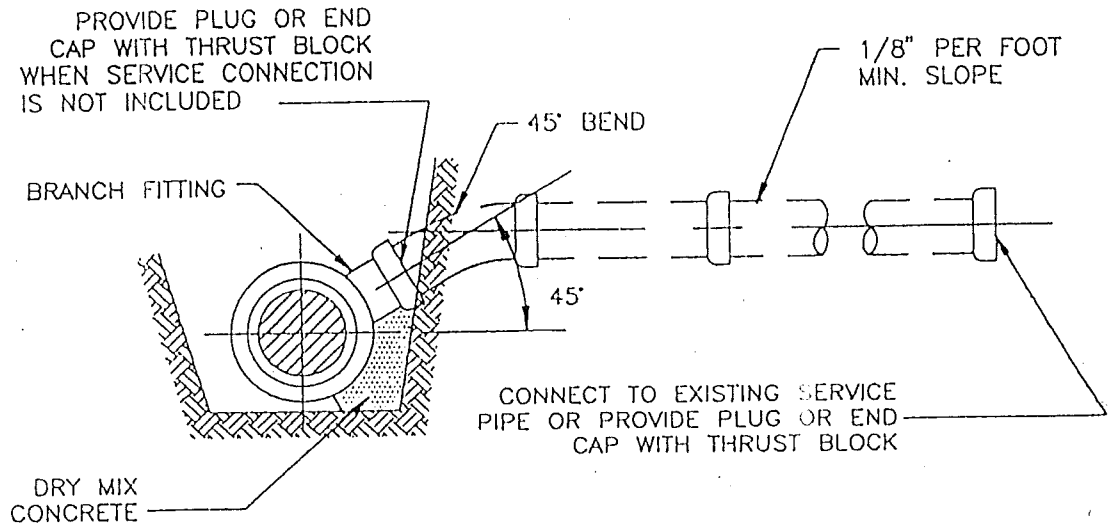


SANITARY MANHOLE DETAIL

NO SCALE

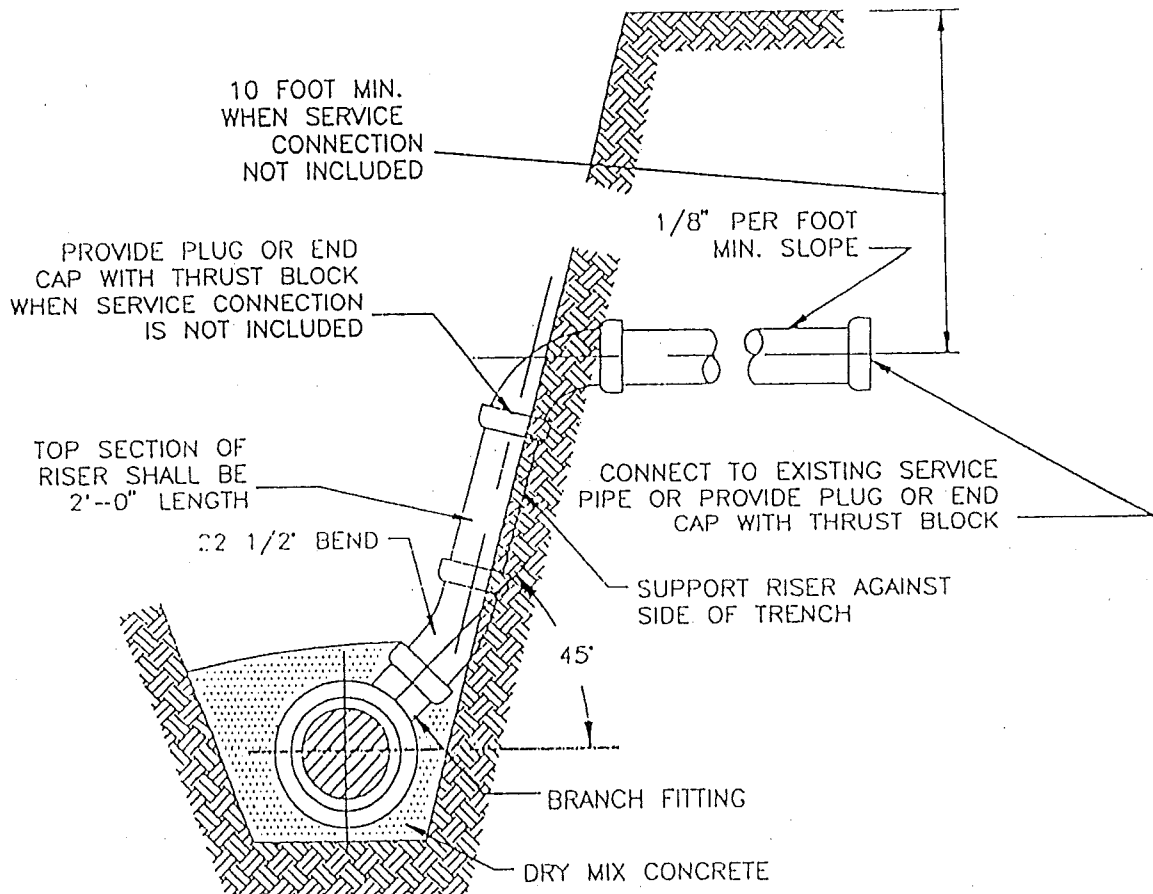
MISSION BROOK SANITARY DISTRICT COOK COUNTY, ILLINOIS

STANDARD DETAIL



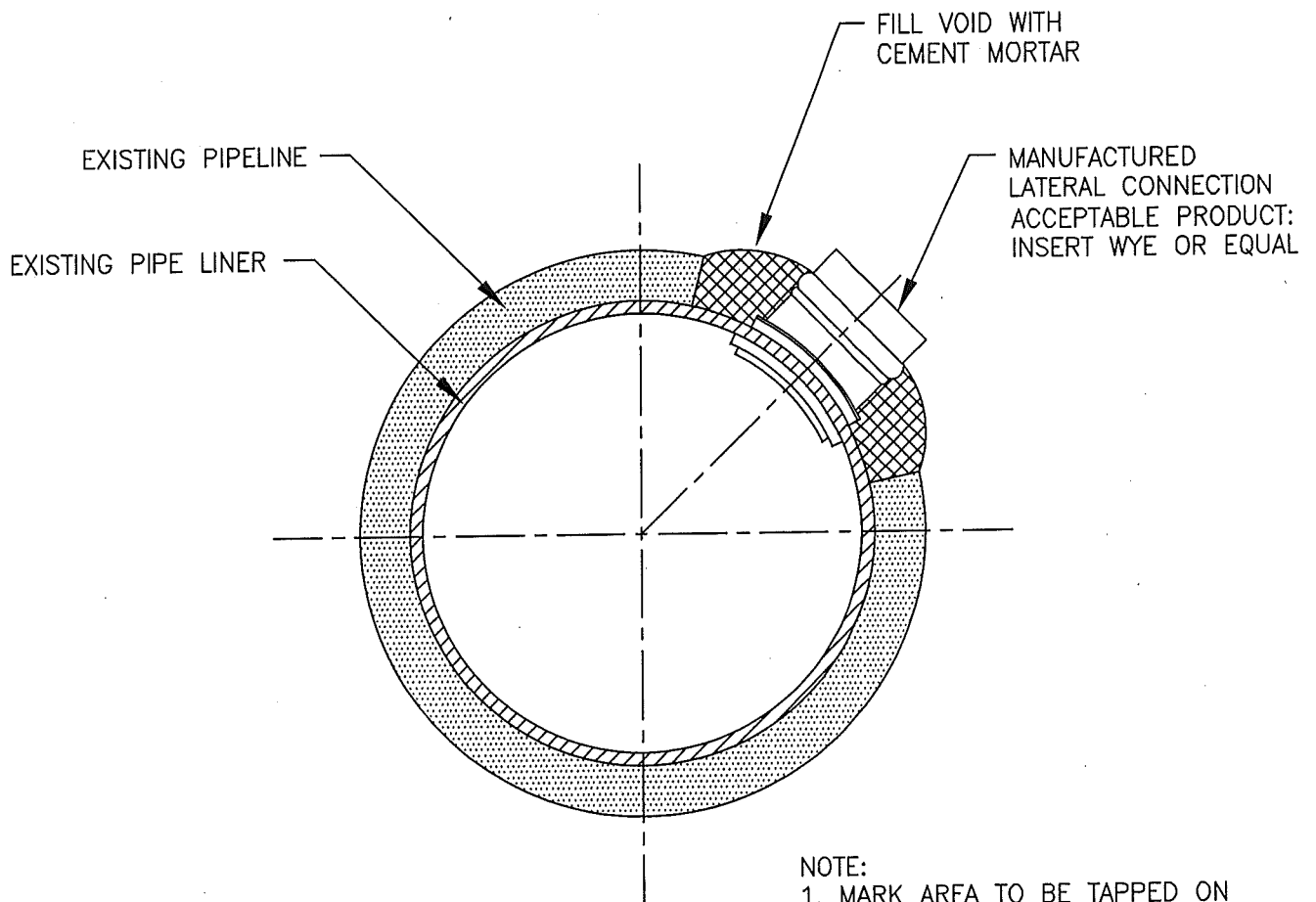
BUILDING SERVICE DETAIL

FOR SEWER INVERT DEPTHS TO 12 FEET



BUILDING SERVICE RISER DETAIL

FOR SEWER INVERT DEPTHS OVER 12 FEET

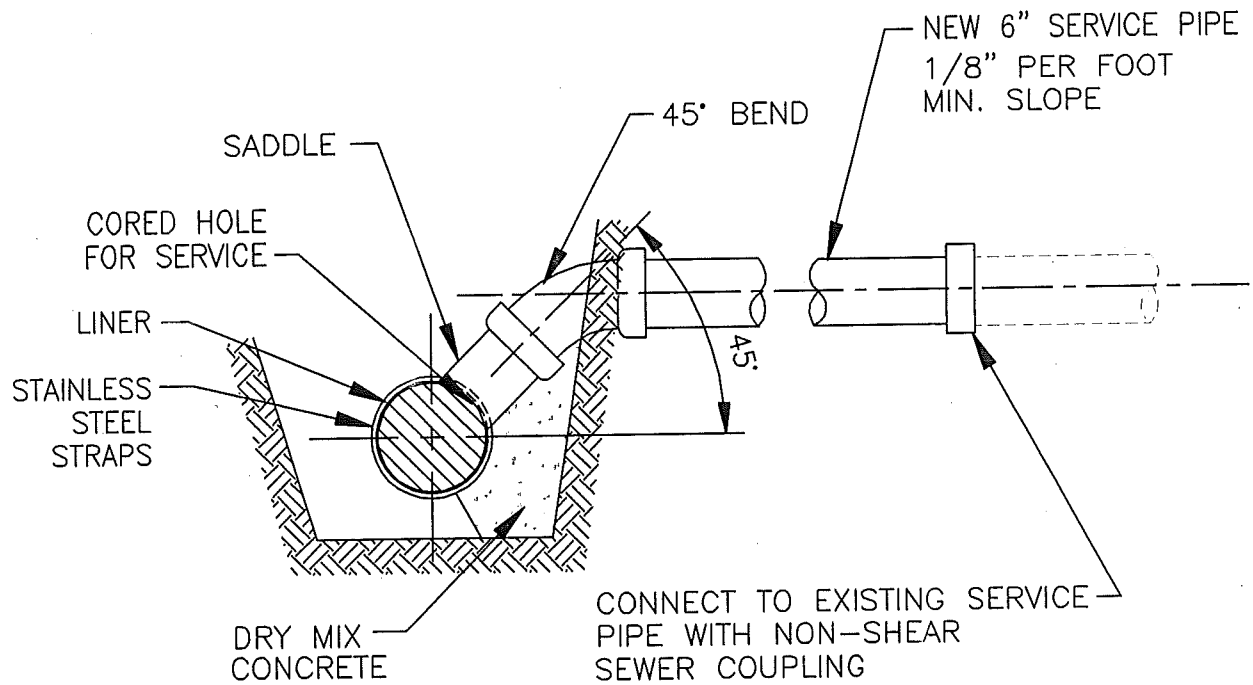


NOTE:

1. MARK AREA TO BE TAPPED ON SURFACE OF PIPE.
2. BREAK CONCRETE OR CLAY TO AN AREA 2-INCHES WIDER THAN THE LATERAL MANUFACTURED CONNECTION.
3. CORE HOLE THROUGH LINER AND INSTALL LATERAL INTO LINER.

LATERAL CONNECTION TO CIPP LINED SEWER

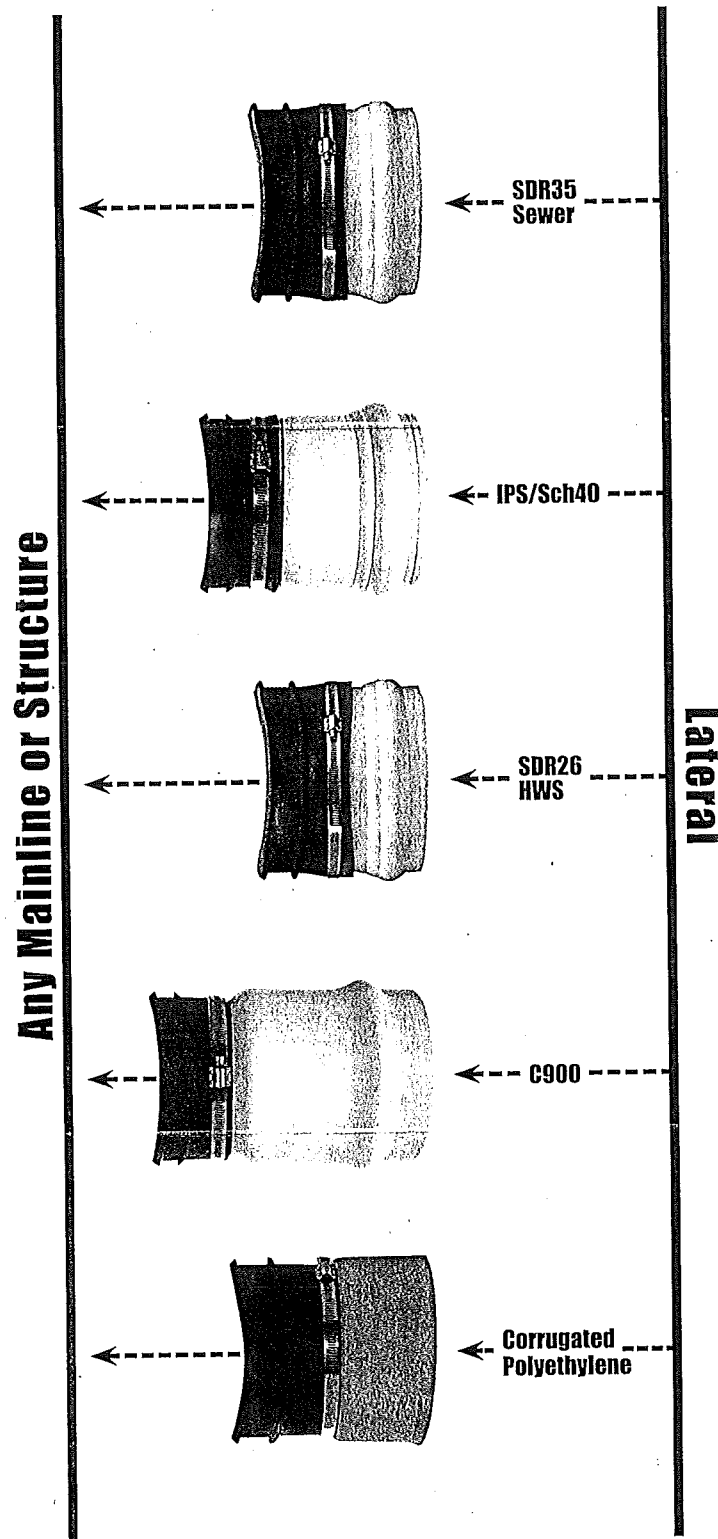
NO SCALE



LINED SEWER - SANITARY SERVICE

NO SCALE

Lateral Connection Solutions For Any Mainline



Easy, Fast & Watertight



INSERTA TEE® MANIFOLD ADAPTORS FOR SLIPLINING AND PIPE BURSTING

INSERTA TEE is a three piece service connection consisting of a PVC Hub, Rubber Sleeve and Stainless Steel Band. INSERTA TEE is compression fit into the cored wall of a mainline and requires no special tooling. INSERTA TEEs are designed to connect 4" (100 mm) through 30" (750 mm) services to all known solidwall, profile, closed profile and corrugated pipe manufactured today.

When Sliplining, Pipe Bursting and Relining, INSERTA TEE allows the following:

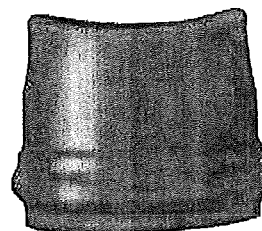
- Compression fitting directly into both mainline and new liner or just into new liner
- Simple installation with no special equipment required
- For Pipe Bursting the connection is made directly into solid wall PE and PVC pipe



Rubber Sleeve

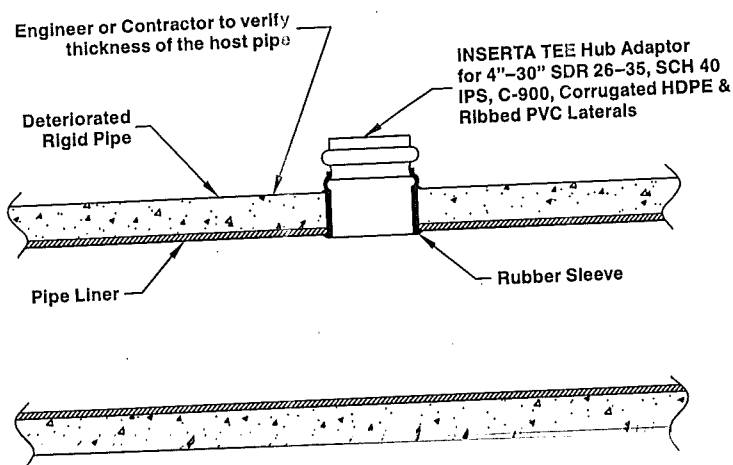


Stainless Steel Band

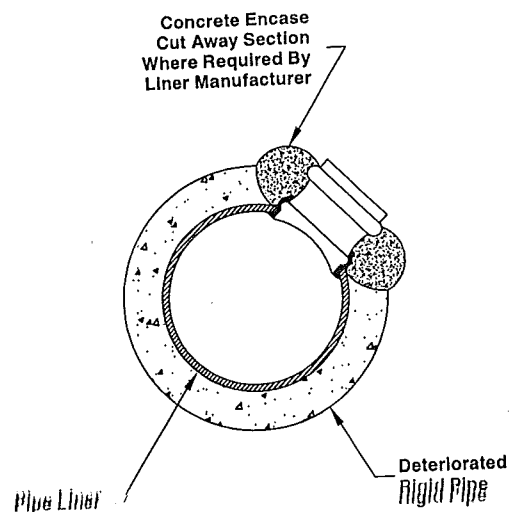


Gasketed
PVC Hub

Detail for coring—both the host pipe and the liner



Detail for coring—directly into the liner



Inserta Fittings Co. p 503.357.2110 | f 503.359.5417 | sales@insertatee.com | insertatee.com

Inserta Fittings Terms and Condition of Sale are available on the website, www.insertatee.com. INSERTA TEE® is a registered trademark Inserta Fittings Co.
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INSERTA TEE

TRENCHLESS PIPELINE REHABILITATION

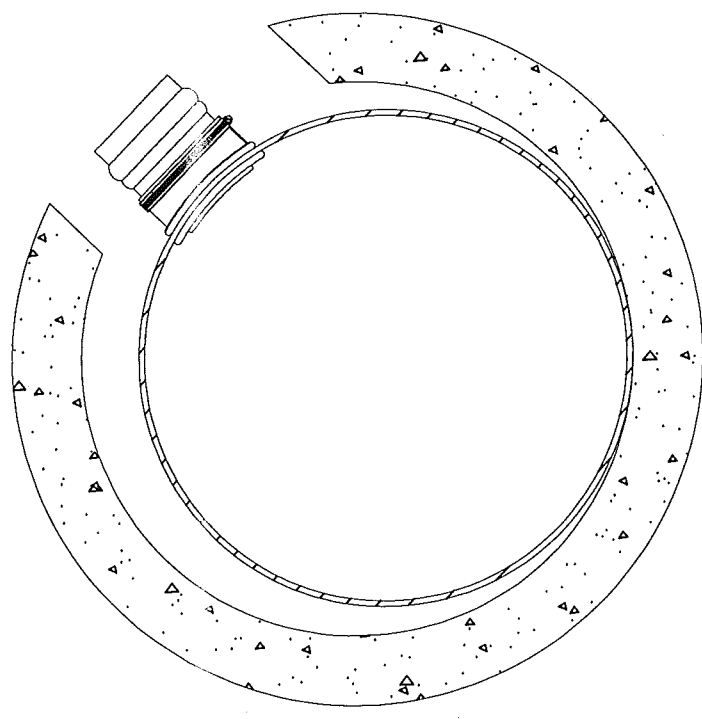


THE LATERAL CONNECTION SOLUTION®

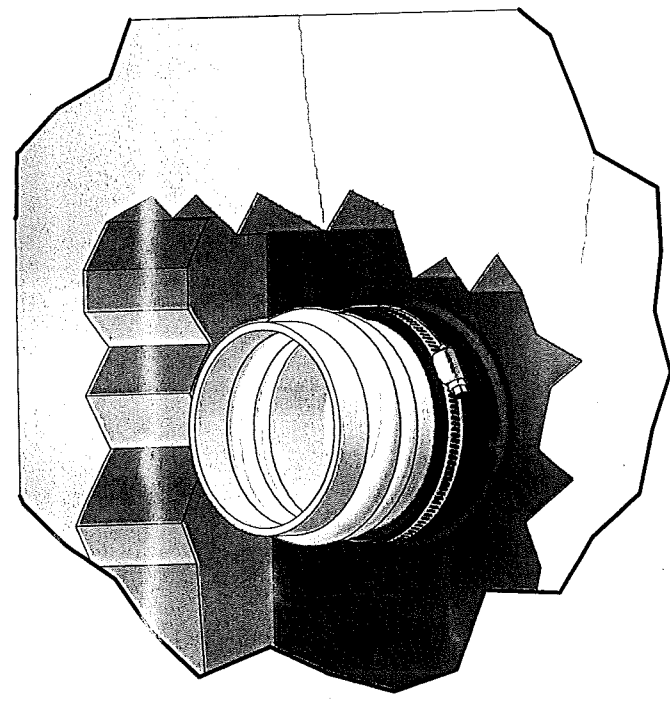
Inserta Fittings Co.
PO Box 714
Cornelius, OR 97113

2 1

TAPPING LINED CONCRETE OR CLAY PIPE RECOMMENDED METHOD



SECTION A-A
SCALE 1 / 8



DETAIL B
SCALE 1/4

RECOMMENDED INSTALLATION INSTRUCTIONS:

- MARK AREA TO BE TAPPED ON SURFACE OF PIPE
- WORKING AREA SHOULD BE 2" WIDER THAN DIAMETER OF INSERTA TEE
- BREAK CONCRETE OR CLAY USING CHISEL
- CORE HOLE THROUGH LINER AND INSTALL INSERTA TEE INTO LINER

DRAWN	Daniel Fink	TITLE	INSERTA TEE		
CHECKED	Emery Roberts	SIZE	DWG NO	REV	
AIR TESTABLE	Yes	SCALE	7/22/2008	SHEET 1	OF 1



INSERTA TEE® DESCRIPTION

INSERTA TEE is a three piece service connection consisting of a PVC Hub, Rubber Sleeve and Stainless Steel Band. INSERTA TEE is compression fit into the cored wall of a mainline and requires no special tooling. INSERTA TEEs are designed to connect 2" (51 mm) through 30" (750 mm) laterals to all known solidwall, profile, closed profile, corrugated pipe and manhole structures manufactured today.

INSERTA TEE for NEW & REHAB installations allows:

- Reduction in labor hours and pipe materials
- Services to be connected where needed
- Easier grading of mainline
- Matching of the internal radius of your pipe or structure for minimal penetration

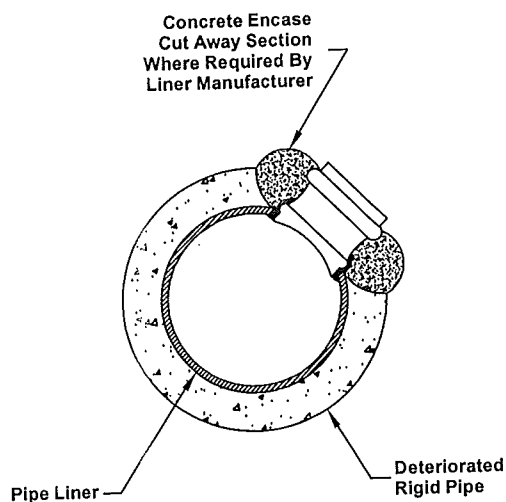
INSERTA TEE for TAPPING EXISTING LINES without disturbing the bedding while eliminating:

- Glues, epoxies and grout
- Tightening and retightening of bands around mainline
- Awkward gaskets

When Sliplining, Pipe Bursting and Relining, INSERTA TEE allows the following:

- Simple installation with no special equipment required
- For Pipe Bursting the connection is made directly into solid wall PE and PVC pipe

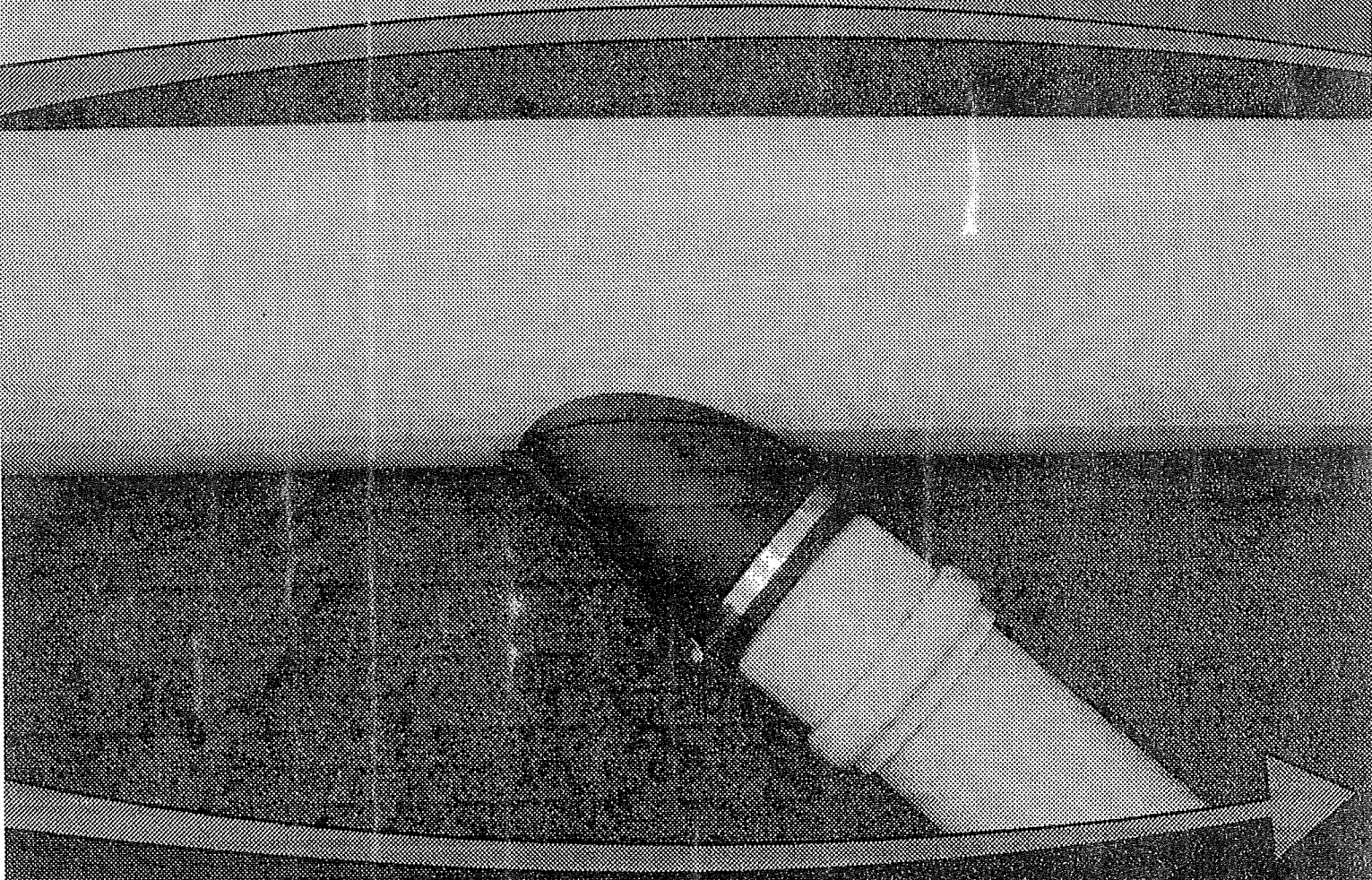
Detail for coring—directly into the liner



Applications:

- Sanitary Sewers
- Pipe Bursting (HDPE/PVC)
- Fold-and-Formed Products
- Manholes
- Drainage
- Catch Basins
- Storm Sewers
- Sliplining
- Cured-In-Place Products
- Wet Wells
- Irrigation
- Electrical Vaults

INSERTA WYE

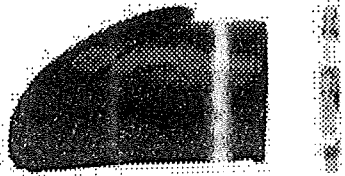


THE LATERAL CONNECTION SOLUTION®

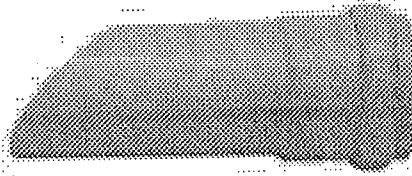
INSERTA WYE™

INSERTA WYE is a patent-pending three piece service connection consisting of a PVC Hub, Rubber Sleeve and Stainless Steel Band. INSERTA WYE is compression fit into the cored wall of a mainline and requires no expensive tooling. INSERTA WYEs are designed to connect 4" (100 mm) and 6" (150 mm) laterals to solidwall pipe, profile, closed profile, corrugated pipe and manhole structures manufactured today.

Rubber Sleeve



Gasketed PVC Hub



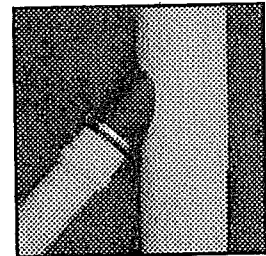
Stainless Steel Band

SPECIFICATIONS

Rubber SleeveASTM F477
Band301 SS
Screw305 SS
Housing301 SS
GasketASTM F477

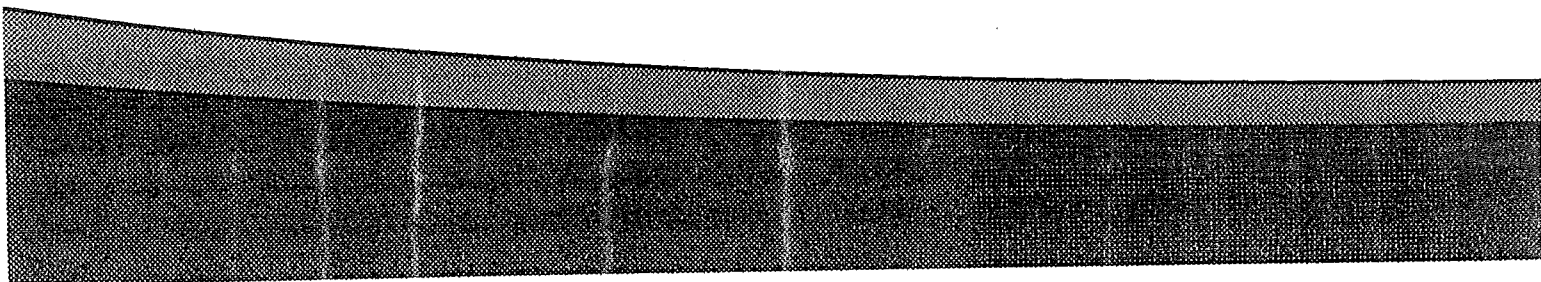
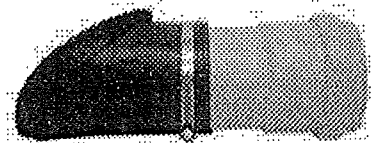
Features

- ❖ No straps or clamps that require digging under the mainline pipe
- ❖ No reinforcing bars and secondary clamps required
- ❖ Gasketed PVC Hub cut to match the interior radius of the mainline
- ❖ Economical cutting tools to ensure the proper wye hole is cut
- ❖ Lateral connections for SDR 35, SDR26, Corrugated Polyethylene, Corrugated Polypropylene, C-900/Ductile Iron, IPS/SCH 40 Polyethylene DR17



Benefits

- ❖ Can be installed on most pipe types
- ❖ Provides a true hydraulic wye connection
- ❖ Can be installed without affecting the backfill
- ❖ Meets the testing requirements of ASTM D3212
- ❖ Quick and easy installation



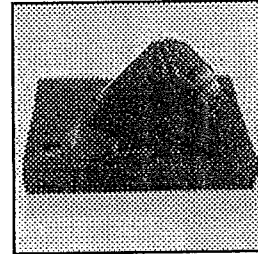
Cutting the Proper Hole

The Inserta Drill Guide is the way to always ensure you drill the perfect hole. Most PVC and Rubber boot style saddle wyes are cut with the incorrect hole. The new patented wye cutting jig from Inserta will allow the contractor to drill the proper 45 degree hole.

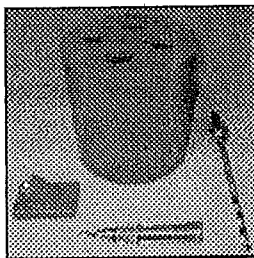
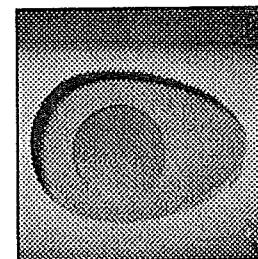
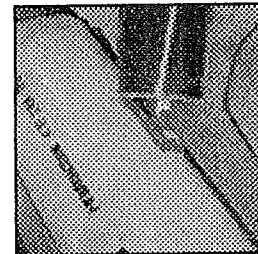
The proper wye hole is teardrop shaped not round like a tee would use. The hole needs to be this shape to make sure there is minimal flow loss and no benching area that can trap solids between the mainline pipe and the lateral.

Most manufacturers of these products don't ever address cutting the proper hole in their installation instructions, cutting a round hole makes a wye a problem rather than an asset that the system was designed to be.

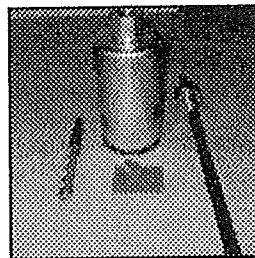
Hole saw kits are available for plastic pipe or concrete and clay pipe. The plastic pipe hole saw kit includes a hole saw, pilot bit, wye drill guide and deburring tool. The concrete and clay pipe hole saw kit includes a hole saw, pilot bit, arbor and wye drill guide.



#IDY12 (12 mm)
#IDY75 (¾")



Plastic Pipe Kit



Concrete, Clay Pipe Kit

Hole Size for INSERTA WYE	Hole Saw Kit for Plastic Pipe	Hole Saw Kit for Concrete, Clay Pipe
4" (100 mm) = 4 ½" (114 mm) Hole	BL412KIT	GA412KIT
6" (150 mm) = 6 ½" (165 mm) Hole	BL612KIT	GA612KIT



INSERTA WYE™ PRODUCT SPECIFICATION

Scope

This specification describes 4 and 6 inch INSERTA WYE service connections for use in gravity-flow sewer and storm drainage applications.

Product Requirements

INSERTA WYE service connections, as manufactured by Inserta Fittings, shall consist of a PVC hub, rubber sleeve, and stainless steel band. Connection shall be a compression fit into the cored wall of a mainline pipe. Hub shall be made from heavy-duty PVC material. Stainless steel band and housing shall be made of SS#301 and screws shall be made of SS#305 to meet the requirements of ASTM A666. Rubber sleeve and gasket, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the manufacturer. A water-based solution provided by the manufacturer shall be used during assembly.

The INSERTA WYE can be installed into most mainline pipe types. Connection hubs are available to connect to corrugated polyethylene, corrugated polypropylene, PVC C900/ Ductile Iron, SDR 26 HWS, SDR 35, IPS/Sch 40/DR17 (gasketed bell & solvent weld bell). Availability of connection diameters is based on the service pipe material.

Joint Performance

INSERTA WYE product shall provide a watertight connection according to the requirements of ASTM D3212 in most pipe types.

Field Pipe and Joint Performance

To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F2487, ASTM C969, or ASTM F1417. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Installation

Installation shall be accordance with the manufacturer's recommended installation guidelines. The use of installation methods or hole saws not purchased from Inserta Fittings will void the performance warranty of the product. Backfill around the INSERTA WYE service connection shall be of the same material type and compaction level as specified for the mainline pipe installation. Contact Inserta Fittings or visit the website at www.insertatee.com for a copy of the latest installation guidelines.

Inserta Fittings Co. p 503.357.2110 f 503.359.5417 sales@insertatee.com insertatee.com

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