

CA - Old Bridge

Old Bridge Township Sewerage Authority
Rules + Regulations
+ appendix list + attachments

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A P P E N D I X

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OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY

MIDDLESEX COUNTY, NEW JERSEY

RULES AND REGULATIONS

**GOVERNING APPLICATIONS FOR
AND CONSTRUCTION OF
SEWERAGE FACILITIES IN THE
TOWNSHIP OF OLD BRIDGE**

MEMBERS OF THE AUTHORITY:

**ARNOLD E. LAUER, SR. - CHAIRMAN
WILLIAM HOGARTY - VICE CHAIRMAN
DONALD EDEL - SECRETARY
MARTIN CONNORS - TREASURER
ROBERT KNIGHT - MEMBER**

**JOHN A. PHILLIPS - EXECUTIVE DIRECTOR
THOMAS WILSON - PROJECT COORDINATOR
ELEANOR BUSHMAN - OFFICE MANAGER
CASIMIR ZIZIK - SUPERINTENDENT
LOUIS E. GRANATA, ESQ. - ATTORNEY
EISNER AND TENENBAUM - AUDITORS**

**CHARLES J. KUPPER, INC.
CONSULTING ENGINEERS**

MARCH 1979

\$10.00

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RULES AND REGULATIONS

GOVERNING APPLICATIONS TO OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY FOR CONSTRUCTION OF COMPREHENSIVE SEWERAGE SYSTEMS, IN THE TOWNSHIP OF OLD BRIDGE

WHEREAS, there are in and about the Township of Old Bridge waters which may be polluted and subject to pollution from causes arising within the Township, and

WHEREAS, the governing body of the Township of Old Bridge has heretofore determined that because of the imperative need for relief of said waters from pollution, there should be created in the Township the Old Bridge Township Sewerage Authority, pursuant to the Sewerage Authorities Law (P.L. 1946 C. 138, as amended) of the State of New Jersey, and

WHEREAS, pursuant to said determination there has been duly established in the Township said Old Bridge Township Sewerage Authority, and

WHEREAS, the Authority hereby requires that certain property owners, subdividers, and developers construct sanitary sewer systems and/or treatment plants in areas of the Township where the Authority has not yet made its facilities available, or in areas where the Authority does not intent to install sanitary sewers, and

WHEREAS, the Authority requires the necessity of promulgating rules and regulations to be pursued in considering applications to be received from said property owners, subdividers and developers for the installation of sanitary sewer systems and treatment plants, or the waiver thereof, and whereas the Authority is cognizant that seldom do two cases involve identical circumstances and that each application will be judged on its own facts;

THEREFORE, be it resolved by the Old Bridge Township Sewerage Authority that the following Rules and Regulations dated March, 1979 be and are hereby adopted:


Any previous rules, regulations and resolutions heretofore adopted by the Authority which are inconsistent with this Resolution are hereby rescinded.

The resolution shall take effect immediately and a copy at all times be kept on file at the principal office of the Authority and shall at all resonable times be open to public inspection.

The administration of the Rules and Regulations by the Sewerage Authority shall be considered the minimum requirements for the protection of the public health, safety, and welfare of the citizens of Old Bridge. However, if an applicant can clearly demonstrate that, because of peculiar conditions pertaining to his application, the literal enforcement of one or more of these Rules and Regulations is impractical or will exact undue hardship, the Sewerage Authority may grant such exception or exceptions as may be reasonable and within the general purposes and intent of these Rules and Regulations. (Emphasis Added.)

If any section, subsection, paragraph, clause, phrase or provision of these Rules and Regulations shall be adjudged invalid or held unconstitutional, such determination shall not affect the validity of the remaining portions of these Rules and Regulations.

I certify the foregoing to be a true and correct copy of a resolution regularly passed at a meeting of the Old Bridge Township Sewerage Authority held on March 7, 1979 and in that respect is a true and correct copy of its minutes.



Donald Edel - Secretary

RULES AND REGULATIONS

Conditions Requiring the Installation of Sewerage

Unless resolved otherwise by the Authority, residential subdivisions containing more than three lots of any residential structure to be used by four or more families, regardless of volume of flow, and all non-residential developments, such as schools, commercial buildings, industrial buildings and all other structures, where the Authority estimates a daily discharge of 400 gallons or more of sewage or waste, will be required to install a sanitary sewer system to be connected with the nearest existing sanitary sewer of adequate capacity, and in all respects the subdivision installation shall comply with all Old Bridge Township ordinances and resolutions. In the event that the applicant's lands are deemed by the Authority to be too remote from an existing sanitary sewer, an approved method of sewage disposal will be required.

Payment of Annual Sewer Use Charges

Payment of annual sewer use charges shall be the responsibility of the owner of the property to which service is provided. Accounts maintained in the name of tenants will not be permitted.

Definitions

As used in these Rules and Regulations, unless a different meaning clearly appears from the context, the following words shall have the following meanings:

a) "Authority" means Old Bridge Township Sewerage Authority;

b) "Township" means the Township of Old Bridge, in the County of Middlesex, New Jersey;

c) "Applicant" means property owner; or property owners; or, if owned by a company, a proper official of said company; or an authorized agent of the Owner, certified to the Authority as such; making application to the Authority for review and approval of plans for sewerage and/or for connection to the Authority's sewerage system.

d) A "Unit" shall be defined as a dwelling or a portion of a structure normally occupied by a single family, a professional office or a store. One commercial rented room without kitchen or efficiency kitchen in hotels, motels, rooming houses, etc., shall be billed as one-half unit. A unit in a school shall be defined as each classroom in the structure.

For other users, including industries, laundries, restaurants, car washes, hospitals, nursing homes, swimming pools or institutions which are billed on the commercial rate, and exceed an estimated flow of 400 gallons per day, a unit shall be based on each estimated 400 gallons or portion thereof per day. The Authority reserves the right to impose special conditions on all establishments where sewage flows are expected to exceed 400 gallons per day.

General

An applicant will not be given consideration by the Authority before filing an application, together with the required fees, and supporting data, with the Executive Director at least 14 days prior to the Agenda Meeting at which consideration is requested.

Approved applications will be null and void after the period indicated below from the date of approval, if no subsequent application is submitted.

1. Preliminary approval - 90 days.
2. Tentative approval - 180 days.

Approved final applications will be null and void after a one year period from the date of approval if no construction takes place during said one year period. Approved final applications will be null and void after a two year period from the date of approval if all construction has not been completed during said two year period.

All fees paid on approved applications that become null and void are non-refundable.

Applications not prosecuted by the Applicant for more than 90 days from submission shall become null and void, and all fees paid shall be non-refundable. No application will be considered for approval of parts or sections of a subdivision in which the proposed construction provides the facilities necessary to serve portions or the remainder of the tract not included in the application.

Preliminary Application

A preliminary application for review of the proposed sewerage system for the proposed subdivision or other development, shall be submitted to the Authority for a ruling on whether an individual or comprehensive sewerage system is required. If the applicant's proposal is for an individual sewerage system, certification from the Board of Health that each of the proposed lots appears capable of properly sustaining sewerage disposal must be submitted. Such certification shall be obtained under such procedure as the Board of Health may establish.

This application shall be filed, in duplicate, on a form which may be obtained from the Secretary of the Authority, a copy of which is included herewith as Exhibit "A".

In addition to the form of application, the applicant shall furnish six copies of a key map showing the location of the project within the Township and a Sketch plan showing streets and lots, tax lot number and block, location of nearest Authority facilities and a description of proposed method of connection. A filing fee as set forth in the prevailing rate schedule shall accompany the application.

Upon the filing of an application, the Engineer of the Authority shall issue an application number. Once an application has been assigned a number, such number shall appear on all subsequent papers, maps, plats, or other documents, submitted for processing in conjunction with the application, including preliminary, tentative and final submissions.

All material must be submitted to the Authority at least two weeks prior to the agenda meeting at which discussion is desired. In addition, the applicant or his authorized agent must appear before the Authority at that meeting to informally discuss the proposed development with the Authority. The purpose of the informal discussion shall be to establish the general guide lines to be followed by the applicant in developing the sewerage plan for the proposed development.

Application for Tentative Approval

If sewers are required, the applicant must submit an application, in duplicate, for tentative approval on a form (Exhibit "B") furnished by the Secretary of the Authority, together with the supporting data described below.

If the size of any sewer main, as shown by the applicant's Engineer, is inadequate for the future requirements of the tributary area, as determined by the Authority, then the applicant shall install a larger size pipe, if required to do so by the Authority. The Authority agrees to pay the applicant the difference in the material cost of the pipe plus the cost of the additional excavation. Payment by the Authority shall be in the form of a credit to the applicant against the required connection fee.

The Authority will not charge the applicant the increased cost of the Authority's Engineer's review and inspection when the increased cost of construction results from an order by the Authority.

In the event, the applicant is permitted to tie into an existing sewer of adequate capacity, he shall pay the connection fee per unit as established by the Authority in its current rate schedule.

All sewers must be designed on a separate system plan, in which all water from roofs, cellars, streets and any other areas must be excluded. No by-passes which allow raw sewage to be discharged from sewers or which permit storm water to enter the sewers shall be installed.

To receive consideration, the application must be accompanied by the proper fee, in the form of a certified check, for review of the application. This fee shall be based on a charge of 1% of the applicant's Engineer's estimated construction cost as approved by the Authority. Construction cost shall include, as a minimum, the following items: pipe, manholes, house connections and cleanouts, pumping stations, force mains, treatment plants, appurtenances, and as-built drawings. Construction cost estimates shall reflect costs for the Authority's installation of the facilities.

The application shall be accompanied by six (6) copies of each of the following:

1. Engineer's Report.
2. General Map of the entire project.
3. Plans and profiles of all proposed sewers and pipelines.
4. Plans and specifications for sewage pumping stations and treatment plants.
5. Engineer's estimated cost of construction.

Applications for tentative approval must be submitted at least 2 weeks before a regularly scheduled agenda meeting of the Authority. Applications are to be signed by the Owner, or Owners, or by a proper official of the company, or, if signed by an authorized agent, shall be accompanied by a certified copy of the authorization.

After approval, one complete set of plans will be so stamped and returned to the applicant.

Instructions for Submitting Applications for Tentative Approval

Where Sewers are Required

1. Engineer's Report

A complete engineer's report, setting forth the basis of design, shall be submitted to the Authority for each project.

All sanitary sewers shall be designed to carry four times the average flow, based upon full development of the tributary area. Average flow shall be assumed to be 400 gallons per unit, per day.

Sewers and force mains shall be designed to flow with a minimum velocity of not less than two feet per second at full flow. Minimum size of force main shall be 6" diameter ductile iron pipe.

Unless otherwise required by the Authority, materials used in the construction of sewers, force mains, and outfalls shall be as follows: gravity sewers shall be constructed of reinforced concrete, vitrified clay or asbestos cement sewer pipe. Inverted siphons, force mains and outfalls shall be constructed of ductile iron pipe, unless otherwise permitted by the Authority. House connections shall be constructed of 4 inch extra heavy weight cast iron soil pipe. Each house connection shall include a complete 4 inch diameter cast iron clean out assembly.

Material specifications and construction details are specified under "Detailed Information on Sewers" below.

2. General Map of the Entire Project

A general map of the entire project shall be furnished, showing sewers, pumping stations and easements for the entire development.

3. Plans of All Proposed Sewers

Plans shall be of uniform size, 24" x 36", with a 1/2" border on top, bottom and right side, and a 2" border on the left side, the last one for binding. Six sets of plans shall be submitted. The plans shall show the following:

(a) Details

The plans shall show contours, all existing and proposed streets, and surface elevations at all breaks in grade and street intersections, tributary areas with population per acre, the true or magnetic meridian, boundary line, title, date and scale. Any area from which sewage is to be pumped shall be indicated clearly. All sheets shall be numbered. The contour interval shall not exceed 2 feet.

(b) Symbols

Sewers to be built now and those to be constructed later shall be shown by solid and dashed lines respectively. Existing sanitary sewers shall be shown by special designation. All topographical symbols and conventions shall be the same as the ones of the United States Geological Survey.

(c) Elevations

All permanent bench marks of U.S.G.S. and N.J.C.G.S. shall be shown. Elevations of street surfaces shall be placed outside the street lines. The elevations of sewer inverts, shown at each manhole location, shall be written parallel with the sewer lines and between the street lines. The elevations of street surfaces shall be shown to the nearest 0.1 foot, the sewer inverts to the nearest 0.01 foot (based on U.S.G.S. datum). Sufficient benchmarks shall be permanently established for the area.

(d) Distances, Grades and Sizes

The distances and stationing between manholes, slopes, and sewer sizes, material, and strength classifications shall be shown on the plans. Arrows shall show the direction of the flow. Maximum allowable manhole spacing shall be 300 feet.

4. Profiles

Profiles shall show all manholes, siphons, force mains, pumping stations, and elevations of stream crossings. Gradients and sizes of sewers, spacing, stationing, surface elevations and sewer inverts shall be shown at each manhole. They shall be drawn to standard scales (1 inch = 50' horizontal and 1 inch = 5' vertical), and the scales shall be shown on each sheet. An index of the streets shall also be shown on each sheet.

Profile sheets should be numbered consecutively. Drawings shall conform to the size specified under "3. Plans of All Proposed Sewers", above.

5. Plans and Specifications for Sewage Pumping Stations and Treatment Plants

The plans for the pumping stations and treatment plants shall include a general site plan showing boundaries and contours, proposed mechanical and piping plans for pumping stations or treatment plants, with capacities, electrical plans, underground piping, underground or overhead wires, water supply and other details necessary for review of the proposal. A flow diagram shall be included for treatment plants.

6. Easements

All easements to be deeded to the Authority shall be clearly indicated on the drawings. Easements shall be unrestricted and shall be a minimum of 20 feet wide. In unpaved or undeveloped areas, the applicant shall provide a suitable 12 foot wide all weather service road within the easement to permit adequate maintenance of the sewer.

Application for Final Approval of Plans and Specifications

Upon notification by the Authority that tentative approval has been given to the proposed sewerage system with its appurtenances, the applicant may file an application for final approval of plans and specifications.

This application will be prepared, in duplicate, on a form (Exhibit "C") furnished by the Secretary of the Authority. The application must be submitted at least 2 weeks before a regularly scheduled agenda meeting of the Authority. It must be signed by the Owner, or Owners, or by a proper official of the company, or, if signed by an authorized agent, shall be accompanied by a certified copy of the authorization.

The application shall be accompanied by the following:

1. Fees for review and inspection.
2. Plans and Profiles of all proposed sewers and pipelines. (6 copies)
3. Details of construction of manholes, siphons, connections and other sewer appurtenances. (6 copies)
4. Detailed plans for sewage pumping stations and treatment plants. (6 copies)
5. Engineer's Report. (6 copies)
6. Specifications for the construction of the proposed sewerage system and appurtenances including sewage pumping stations and treatment plants. (6 copies)
7. Detailed Engineer's estimate of entire construction cost. (6 copies)

8. Performance Bond (amount and detail will be established during final review by the Authority).
9. All connection fees, as set forth in the Authority's current rate schedule.
10. Maps and descriptions of all lands and easements to be conveyed to Authority.
11. Completed copies of N.J.D.E.P. forms CP-1 and PWF-2.
12. Additional copies of any data furnished with the application for tentative approval, as requested by the Authority.

All drawings, design reports and specifications submitted by the applicant must bear the signature and raised seal of the applicant's engineer. Upon Authority approval or completion of all conditions of a conditional final approval, one complete set of plans and specifications will be so stamped and returned to the applicant and processing for M.C.S.A. and N.J.D.E.P. approval will begin.

Instruction for Submitting Applications for Final Approval

1. Fee for Review and Inspection

A certified check or cashier's check in the amount of 1-1/2% for review and 6.5% of the cost of construction for inspection.

2. Plans and Profiles of all Proposed Sewers and Pipelines

Plans and profiles shall be as specified in paragraphs 3 and 4 under Instructions for Submitting Applications for Tentative Approval.

3. Details

Details of manholes, siphons, etc. shall accompany the plans. Details shall be drawn to standard scales to show clearly the nature of design.

4. Detailed Plans for Sewage Pumping Stations and Treatment Plants

The plans for the pumping stations and treatment plants shall include a general site plan showing boundaries, contours, proposed pumping stations, underground piping, underground or overhead wires.

The plans shall show the general arrangement of mechanical and electrical equipment, piping, valves, fittings, etc. within the various structures. A flow diagram shall be included for treatment plants.

The plans shall conform to the size specified under "3. Plans of All Proposed Sewers" above.

5. Engineer's Report

A complete Engineer's report setting forth the basis of design shall accompany the plans. Information required shall be as specified in paragraph 1 under "Instructions for Submitting Applications for Tentative Approval."

6. Specifications

Complete specifications for the construction of the proposed sewerage system and appurtenances, including sewage pumping stations and treatment plants, shall accompany the plans. They may be omitted for sewer extensions, provided specifications for the sewer system are already filed and reference is made to them in the application.

7. Engineer's Estimate of Costs

A detailed Engineer's estimate of the entire cost of construction based upon costs that would be incurred by the Authority for performance of the work shall be furnished. Construction cost shall include, as a minimum, the following items: pipe, manholes, house connections, and cleanouts, pumping stations, force mains, treatment plants and appurtenances and as-built drawings.

8. Performance Bond

A Performance Bond (accompanied by a certified or cashier's check in the amount of \$50.00 to cover the cost of legal review) which shall be approved by the Authority's Attorney as to form and issued by a company authorized to do business in the State of New Jersey and approved by the Authority, in the amount of 100% of the total construction cost as defined in paragraph 7, immediately above, shall be furnished, guaranteeing complete construction within the time period specified by the Authority, and further guaranteeing that said construction will be in accordance with the Rules and Regulations of the Authority and the plans and specifications, Engineer's Report and cost estimates as approved by the Authority. Provision for a one year maintenance bond upon completion and acceptance of the work shall be included.

9. Connection Fees

The Authority will not take formal action on a final application unless it is accompanied by payment for all connection fees as set forth in the Authority's current rate schedule. Said payment must be in the form of a certified check or cash.

10. Maps and Description of all Easements

Unrestricted easements to the Authority shall be a minimum of 20 feet wide.

Application for Sewer Connection

Owners of property desirous of making connection to existing sewers, shall file an application for sewer connection with the Secretary of the Authority on a form furnished by the said Secretary (Exhibit D). This application shall be accompanied by the appropriate connection fee as set forth on the form of application.

Sewer connection shall be made to a street main only by a licensed plumber or bona-fide sewer construction contractor under the supervision and inspection of the Authority. Connection to the sewer shall be made through an approved tee or wye with saddle or manhole. Connections shall be made in accordance with Authority standards.

All connections must have a cast iron cleanout assembly placed 2 feet from the curb in the sidewalk area. If curbs are not in existence, a tee shall be installed 2 feet beyond the edge of pavement.

Connections beyond the cleanout are under the jurisdiction of the Board of Health through its plumbing inspector and his approval will be required before the Authority will accept discharge of sewage into its mains.

The above shall also apply where a land owner is required by the Board of Health to connect to a sewer.

Detailed Information on Sewers

All references to standard specifications A.S.T.M., A.S.A. and the like, shall be to the latest revision thereof.

1. Reinforced Concrete Pipe

Concrete pipe shall meet all the requirements of A.S.T.M. Specification C76, Wall B.

Reinforced concrete pipe joints shall be the steel and rubber gasketed joint as described in Interpace Pipe Company specification SP-32, and as manufactured by Interpace Pipe Company, Price Brothers Company or equal.

Rubber and steel joints shall be externally mortared after jointing.

Strength classifications shall be as set forth below:

- (a) The following installation depths are maximum for the pipe classes noted and trench widths specified, installed with Ordinary Bedding as defined in paragraph (6), Cushions. In no case shall pipe with a strength classification of less than Class IV be permitted.
- (b) For depths less than three feet, measured from the top of the pipe, installed under traffic areas, Class V pipe shall be required.

<u>Pipe Dia. (in.)</u>	<u>Maximum Width of Trench at Top of Pipe</u>	<u>Maximum Depth of Fill Above Pipe for Various Strength Classifications</u>	
		<u>IV</u>	<u>V</u>
12"	3' - 0"	6.5	18.0
15"	3' - 8"	6.0	14.0
18"	4' - 0"	7.0	16.0
21"	4' - 3"	8.5	17.5
24"	4' - 6"	9.0	20.0
30"	5' - 0"	10.5	22.5
36"	5' - 8"	11.0	22.0

(c) Unusual conditions not covered by paragraph (a) or (b) above shall be given special consideration and appropriate standards will be established by the Authority.

2. Asbestos Cement Pipe

Asbestos cement pipe shall be manufactured in accordance with A.S.T.M. specifications, C428. Joints shall be "O"-Ring, Johns-Manville "Ring-Tite", Certain-teed "K & M", or equal. Rubber-ring gaskets shall be made of a vulcanized rubber compound, suitable for use with sewage.

Asbestos cement pipe shall be tested in accordance with A.S.T.M. C500-77, "Testing Asbestos Cement Pipe".

Asbestos cement pipe shall be as manufactured by Johns-Manville, Certain-teed, "K & M", or equal.

Asbestos cement sewer pipe shall have a minimum crushing strength of 3300 pounds per lineal foot as tested in accordance with the A.S.T.M. 3-edge bearing method for every installation except where stronger pipe is required.

- (a) For depths less than three feet, measured from the top of the pipe, installed under traffic areas, pipe with a minimum 3-edge bearing "strength" of 5000 lbs. shall be required.
- (b) The following installation dimensions are maximum for each of the pipe strengths indicated, when installed with Ordinary Beddings as defined in paragraph (6),
Cushions.

Size	Maximum Width of Trench at Top of Pipe	Maximum Depth of Fill Above Pipe for Various Strength Classifications		
		3300	4000	5000
8"	3'	12'	-	-
10"	3'	12'	18'	30'
12"	3'	12'	18'	30'
14"	3' - 8"	8.5'	11.5'	16'
16"	3' - 8"	8.5'	11.5'	16'
18"	4' - 0"	7.5'	10'	14'
20"	4' - 3"	6.5'	9'	12'
24"	4' - 6"	4.5'	8'	10.5'
27"	4' - 10"	-	5.5'	9'
30"	5' - 0"	-	5'	9'
33"	5' - 6"	-	-	7'
36"	5' - 8"	-	-	6.5'

(c) Unusual conditions not covered by paragraph (a) or (b) above shall be given special consideration. Lesser pipe strengths may be considered than those specified in paragraph (b), above, where concrete cradle or concrete encasement bedding is specified for a proposed sewer.

3. Vitrified Clay Pipe

Clay pipe shall be extra strength vitrified clay pipe meeting criteria set forth in A.S.T.M. Specification C700.

Resinous plastic joints shall conform to A.S.T.M. C425 Type III with resinous plastic castings factory applied. The Type III joint should be similar to the Wedglock Type "O" joint, A.M.V.I.T. Type III, or approved equal, with a groove on the spigot end to form a tight and flexible compression coupling when assembled. The pipe shall be tested in accordance with A.S.T.M. C301 and installed according to A.S.T.M. C12.

The following installation depths are maximum permissible.

<u>Size</u>	<u>Maximum Width of Trench at Top of Pipe</u>	<u>Maximum Depth of Fill Above Pipe</u>
		<u>3300</u>
8"	3'	12'
10"	3'	12'
12"	3'	12'
14"	3' - 8"	8.5'
16"	3' - 8"	8.5'
18"	4' - 0"	7.5'
20"	4' - 3"	6.5'
24"	4' - 6"	4.5'

Bedding for clay pipe with less than eight feet (8') of cover shall be Class C Ordinary Bedding with Proper backfill. Bedding and backfill for clay pipe with more than eight feet (8') cover shall be Class B Bedding in paragraph (6) Cushions.

4. Ductile Iron Pipe

Ductile iron pipe shall be centrifugally cast in metal or sand molds in accordance with A.S.A. specification A21.51, minimum thickness Class 52, unless otherwise required. The joint shall conform with the requirements of A.S.A. A.21.11 and shall be of a type that employs a single elongated grooved gasket to effect a joint seal such as United States Cast Iron Pipe Company's "Tyton" joint, James B. Clow and Sons Inc. "Bell-tite", or equal. Gaskets shall be of a composition suitable for exposure to sewage.

The outside of the pipe shall be coated with a uniform thickness of a hot applied coal tar and the inside of the pipe shall be lined with cement and bituminous seal in accordance with the American Standard Specifications for cement mortar lining for cast iron pipe and fittings, A.S.A., A21.4.

Specials shall be manufactured of the same materials as the pipe and shall conform to the specifications for the pipe insofar as they are applicable. Joints for ductile iron fittings shall be mechanical joint conforming to the A.S.A. Specification A21.11 and the fittings shall comply with the requirements of A.S.A. A21.10.

5. Cast Iron (Pit Cast) House Connection Pipe

Cast iron (pit cast) house connection pipe and fittings shall be extra heavy thickness conforming with the requirements of A.S.A. Specification A74.

Neoprene gasket joints shall conform to A.S.T.M. C-564. Lead and oakum joints shall be made in accordance with A.W.W.A. Standard C-600.

6. Cushions

- (a) Class "C", Ordinary Bedding shall be defined as that method of bedding sewers in which the sewer is bedded in crushed stone or rounded gravel bedding material placed on the trench bottom. The bedding material shall have 95 percent passing a 3/4 inch (19.0 mm) sieve and 95 percent retained on a No. 4 (4.75 mm) sieve. The bedding shall have a minimum thickness beneath the pipe of 6 inches (150 mm) or one eighth of the outside diameter of the pipe, whichever is greater, shall extend up the sides of the pipe one sixth of the outside diameter of the pipe and shall be properly compacted. Backfill between the bedding

and a plane 12 inches (300 mm) over the top of the pipe, shall be hand placed and compacted finely divided earth free from clay, silt, organics, debris and stones.

(b) Class "B", First Class Bedding shall be defined as that method of bedding sewers in which the sewer is bedded in crushed stone or rounded gravel bedding material placed on the trench bottom. The bedding material shall have 95 percent passing a 3/4 inch (19.0 mm) sieve and 95 percent retained on a No. 4 (4.75 mm) sieve. The bedding shall have a minimum thickness beneath the pipe of 6 inches (150 mm) or one eighth of the outside diameter of the pipe, whichever is greater, shall extend up the sides of the pipe to the horizontal centerline and shall be properly compacted. Backfill between the bedding and a plane 12 inches (300 mm) above the top of the pipe shall be of the bedding material or hand placed select backfill. Hand placed select backfill shall be compacted finely divided material free from clay, silt, debris, organic material, and stones.

(c) Concrete Cradle Bedding is that method of bedding sewers in which the lower part of the sewer exterior is bedded in 2000 lb. concrete, with or without reinforcement, as required, having a minimum thickness under

the pipe of 4 inches or one-fourth its nominal internal diameter, whichever is greater, and extending upward to a height equal to one-half times the nominal inside diameter.

- (d) Concrete Encased Pipe Bedding is that method of bedding sewers in which the entire sewer exterior is encased in 3000 lb. reinforced concrete, with a minimum thickness of 6 inches of concrete all around the pipe bell.

7. Manholes

Manholes shall be provided at ends of sewer lines, at intersections and at changes of grade or alignment. Distances shall not exceed 300 feet for sewers 24 inches or less in diameter or 400 feet for sewers greater than 24 inches in diameter. Where lateral sewers enter manholes at elevations two feet or more above the invert, drop manholes shall be provided and drop pipes shall be built. Manholes shall be of precast concrete, or concrete block construction. Use of concrete block manholes will only be approved for special construction conditions which prevent use of precast manholes.

If precast manhole bases, barrels and cones are used, they shall be equal to reinforced concrete pipe and fittings conforming to A.S.T.M. Specification C-478, with round rubber gasketed joints, conforming to A.S.T.M. Specification C-361. Maximim absorption shall be 8% in accordance

with A.S.T.M. Specification C-76.

Manhole frames and covers shall be of cast iron conforming to Specification A.S.T.M. A-48. The letters OBTSAs shall be cast integrally in the cover.

All manhole covers in easements or in remote areas shall be provided with locking devices, unless otherwise required by the Authority. Manhole covers in low lying or flood prone areas shall be water tight and locking.

Manhole details, manhole frames and covers are shown on the construction details drawing attached.

8. Inverted Siphons

Inverted siphons, if permitted, shall not have less than two barrels. Provision shall be made for rodding and for flushing. Velocity shall not be less than 3 feet per second and flow control gates in chambers shall be provided. These are special conditions and further standards will be provided by the Authority.

9. Pumping Stations

Raw sewage shall be screened or comminuted before pumping. At least two pumps (or ejectors, if permitted) shall be provided, each capable of handling the total ultimate peak flow. If more than two pumps are used, their capacities shall be such that upon failure of the largest pump, remaining units will handle the peak flow.

Force mains shall be ductile iron pipe, as specified herein and of such size that the velocity shall be not less than two feet per second at normal pumping rates, with a minimum diameter of 6 inches.

Pumps shall be installed in concrete dry well chambers. Wet and dry wells shall be provided with adequate entrances, ventilation and drainage. Minimum dry well diameter shall be eight feet. All entrance tubes shall be equipped with elevators.

All facilities shall be designed for ease of maintenance.

Concrete wet wells shall have a minimum diameter of six feet and shall slope toward the pump suction. Pump suction shall terminate with 90° flared elbows. Normally, the capacity of the wet well shall not exceed ten minutes flow at the average dry weather rate.

An auxiliary generator (diesel) shall be provided for electrically driven pumps.

A solid wall shall be constructed between the wet and dry wells to the superstructure.

Minimum pipe size in pump stations shall be 6 inch diameter.

Automatic sound alarms shall be installed independently of station power and shall give warning of high and low water and power failure both locally and remotely by telemetering the alarm to the Authority offices and to the Police Station.

Adequate light, ventilation, heat and fresh water supply shall be provided.

Complete sets of replacement parts, instructions, repair tools and accessories shall be provided with the pumps.

Pumping station plans and specifications must include provisions for crushed stone ground cover, shrubbery, paved roads, and the entire facility must be surrounded by a six foot chain link fence with three strands of barbed wire above the fence. A truck gate must be provided.

Requirements for ejector stations if permitted will be established by the Authority.

10. Treatment Plants

No general rules can be formulated for the design of treatment plants and each case shall be considered individually, based upon the discharge of effluent. The type and method of treatment must be acceptable to the New Jersey Department of Environmental Protection.

Treatment Plant plans and specifications must include provision of crushed stone ground cover, shrubbery, paved roads, and sidewalks, and the entire facility must be surrounded by a six foot chain link fence with three strands of barbed wire above the fence.

Separate gates must be provided for pedestrian and truck use.

Detailed estimates of operating and maintenance costs of the proposed treatment plant must be submitted.

Approval of Plans by County Agencies, State Agencies and Others

Approval of plans by the State of New Jersey Department of Environmental Protection, M.C.S.A. or other agencies will be

required by the Authority as a condition of the Authority's final approval. Applicant must furnish to the Authority all fees, and documents required for the Authority's application on his behalf for approval by Department of Environmental Protection. The applicant shall obtain permits for all stream crossings or encroachments from the New Jersey State Division of Water Resources. Permits to construct sewers and/or other structures within the right-of-way limits of State, County, and Municipal Roads and all Railroads must be secured and paid for by the applicant.

The applicant must also secure any necessary permits or clearances from any public agencies or utilities involved which have jurisdiction.

Inspection of Sewerage System During Course of Construction

All construction of sewerage systems shall be under the jurisdiction of the Authority's Engineer, either directly or through inspectors under his supervision. He shall enforce compliance with the approved plans and specifications. He shall have the authority to have the work discontinued in the event of non-compliance. Upon satisfactory completion of construction and testing, the Authority's Engineer will certify to the NJDEP that the project has been inspected and tested under his supervision. NJDEP requires that such certification be given prior to its issuance of a permit to operate new sewerage facilities.

No such certifications shall be provided for sections or portions of the overall construction when the entire work is included under a single NJDEP permit to construct sewerage facilities.

The applicant shall give 48 hours notice to the Authority prior to any construction or resumption of any construction of sewerage facilities throughout the construction period for the project. Should any construction be backfilled prior to inspection, the aforesaid Engineer's certification will be withheld. Uninspected construction will only be approved upon subsequent re-excavation to permit proper inspection.

The applicant shall submit a progress report at the end of each month, to Authority's Engineer together with a certified cost of construction completed to the end of the month.

The applicant shall also furnish the name of the occupant, the street address and lot and block number of every connection made to an approved section of sewer during the month.

No sewer connections shall be made to a street main, whether approved or not, unless under the inspection of the Authority's Engineer.

No connection to any existing Authority facilities may be made by other than a licensed plumber or a qualified sewer line contractor acceptable to the Authority.

When a section of sewer has been pressure tested, then all individual or house connections must be pressure tested under a ten foot head of water and found tight.

A temporary, leak-proof, bulkhead type plug shall be installed in the downstream side of the manhole furthest downstream in any sewer main or branch under construction and shall remain intact until written permission is received from the Authority Engineer to remove same.

This permission will not be granted until each section of the sewer has been cleaned and flushed in a manner acceptable to Authority's Engineer.

Testing of Completed Sewerage

All facilities shall be subjected to either an air test or a water infiltration or exfiltration test. The tests shall be performed between two manholes or as otherwise directed by the Authority's Engineer and shall include all related sewerage including the house connections.

The Contractor shall furnish all labor, material and equipment necessary for the testing.

Exfiltration tests shall be conducted in lieu of infiltration tests when the pipe has been laid above the ground water level.

Exfiltration tests shall be under at least a four foot head or a pressure corresponding to a head equal to the depth of the lower manhole of the section under test.

Allowable infiltration or exfiltration shall not exceed a rate of 100 gallons per mile, per inch of diameter of sewer per 24 hours.

Low pressure air testing of pipes as indicated below may be used in lieu of water exfiltration test in dry areas. The

use of gel or any other sealer is strictly prohibited.

Prior to air testing, that section of pipe to be tested shall be flushed and cleaned of sand and other foreign matter. The test shall be made on the section of pipe from manhole to manhole.

Isolate the section of pipe to be tested and install a plug at each end of pipe at the manholes. Plug ends of all branches, laterals and wyes. Brace all plugs securely. The plugs at each end of the pipe at the manholes must have provision for connecting an air hose. Connect one end of air hose to the plug and the other to a portable air compressor with pressure regulators and gauges. The pressure regulators are used to control the rate at which air flows to the test section, and to monitor air pressure in the pipe. Supply air to the pipe section, monitoring it so that the pressure inside the pipe does not exceed 5.0 PSIG.

When pressure reaches 4.0 PSIG throttle the air supply so that internal pressure is maintained between 4.0 and 3.5 PSIG for at least two minutes. This allows time for the temperature of the air to come to equilibrium with pipe walls.

After the temperature has been allowed to stabilize for two minutes, disconnect the air supply and allow pressure to decrease to 3.5 PSIG. At 3.5 PSIG start a stop watch to determine the time required for pressure to drop to 2.5 PSIG. The time required for a loss of 1.0 PSIG at an average pressure of 3.0 PSIG can be used to compute the rate of air loss.

The table below may be used to determine the allowable time for pressure to drop 1.0 PSIG for various size pipe.

ALLOWABLE TIME TABLE

<u>PIPE SIZE</u>	<u>MINUTES</u>	<u>TIME*</u>	<u>SECONDS</u>
6"	2		15
8"	3		57
10"	4		43
12"	5		40
15"	7		5
18"	8		30

* Maximum time allowed for pressure to drop from 3.5 PSIG to 2.5 PSIG.

Any pipe, joint or other part of the sewer construction found to show unacceptable air loss or infiltration or ex-filtration in excess of the permissible limit shall be repaired, or removed and replaced.

Use of System

(a) Use of Sewer by Authority

During construction and before final acceptance, the Authority shall have the right to use any portion completed without waiving their right to order correction of any defects.

(b) Illegal Use of System

Use of the system for the discharge of trench excavation, sump pumps, or drainage from cellar drains

leaders, downspouts, drainage tile, developers cellar pits or pumping out septic tanks is strictly prohibited.

As-built Plans

After construction and before final acceptance by the Authority, the applicant shall furnish the Authority one (1) mylar reproducible tracing, in ink, approved by the Authority's Engineer, and two (2) sets of prints (black on white) of each drawing showing the sewers, connections, etc. as constructed.

Acceptance of New Sewers by the Authority

After satisfactory completion of all facilities proposed, and upon certification of the Engineer for the applicant and the engineer for the Authority,

1. The applicant must:

- (a) Obtain NJDEP permission to operate the facilities.
- (b) Give title to the Authority for all land, easements, sewer structures and appurtenances by deed or appropriate dedication.
- (c) Post a maintenance bond equal to 10% of the Performance Bond guaranteeing the satisfactory performance of the system for a period of one year.

2. The Authority on a finding of satisfactory compliance with 1 (a) and 1 (b) will by resolution:

- (a) Release the applicant from the Performance Bond.
- (b) Accept the title to all lands, easements, sewer

structures and appurtenances unless otherwise indicated as a condition of final approval by the Authority.

- (c) Operate and maintain the system thereafter unless otherwise indicated as a condition of final approval by the Authority.

Requirements as to Waste Discharged into Sewers

A. Industrial or Other Wastes

1. Prior written approval shall be obtained from the Authority in order to discharge into the sewerage system, wastes containing any of the following:
 - a. A five (5) day B.O.D. greater than two hundred and fifty (250) mg/l; or
 - b. A suspended solids content greater than two hundred and fifty (250) mg/l; or
 - c. A chlorine demand greater than five (5) mg/l; or
 - d. An average daily flow greater than 400 gallons/day; or
 - e. Any quantity of substances as described in Section C "Prohibited Wastes".
2. Industrial users may, at the option of the Authority, be required to execute an individual contract with the Authority for sewerage service. Said contract may contain special conditions relating to pretreatment, metering, sampling or additional requirements as the Authority deems necessary and appropriate for the protection and proper operation of its sewerage system.

B. Pretreatment, Metering and Sampling of Industrial or Other Wastes

1. Whenever necessary, in the opinion of the Authority's Engineer, the applicant shall provide at his own expense such facilities for pretreatment of industrial or other wastes as may be necessary to:
 - a. Reduce five (5) day B.O.D. to two hundred and fifty (250) mg/l and suspended solids to two hundred and fifty (250) mg/l; or
 - b. Reduce objectionable characteristics or constituents to conform to the maximum limits permitted in these Rules and Regulations; or
 - c. Insure equalization of discharge over a 24 hour period to prevent temporary overloading of the Authority's treatment or conveyance facilities.
2. Whenever necessary, in the opinion of the Authority's Engineer, the applicant shall provide at his own expense a suitable chamber, meter and appurtenances for the observation, metering and sampling of waste material.
3. Plans, specifications, and all other pertinent information relating to proposed facilities for pretreatment, metering or sampling of industrial wastes shall be submitted to the Authority for approval. No construction shall be permitted until written approval has

been granted by the Authority and all governmental regulatory bodies having jurisdiction.

4. Pretreatment, metering and sampling facilities shall be accessible to the Authority's authorized agent at all times. The applicant may, at the option of the Authority, be required to grant title to said facilities to the Authority in order to insure the proper operations or maintenance thereof.

C. Prohibited Wastes

No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, excavation drainage or discharge from a sump pump into any sewer. Except as otherwise provided in this ordinance, no person shall discharge or cause to be discharged any of the following described wastes or waters into the Sewer System:

1. Any liquid or vapor having a temperature higher than one hundred and four (104) degrees Fahrenheit.
2. Any water or waste containing more than one hundred (100) ppm by weight or fats, oils or greases.
3. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas which, by reason of its nature or quality, may cause fire or explosion of which, in any other way, may be injurious to persons or the Sewerage Facilities.

4. Any noxious or malodorous gas or substance which, either singly or by interaction with other wastes, shall be capable of creating a public nuisance or hazard to life or of preventing entry into any sewerage facility for maintenance and repair.
5. Any garbage, except properly shredded or ground garbage.
6. Any solid or viscous substance which shall be capable of causing obstruction to the flow in any sewer or other interference with the proper operation of the Sewerage Facilities.
7. Any water or waste having a pH lower than 5.5 or higher than 9.0 or having any corrosive property capable of causing damage or hazard to structures or equipment of the Sewerage Facilities or to personnel engaged in operation and maintenance thereof.
8. Any water or waste containing any toxic substance in quantity sufficient to constitute a hazard to humans or animals or to interfere with the biochemical processes of the Sewerage Facilities or that will pass through the Sewerage Facilities in such condition so that it will exceed State, Federal or other validly existing requirements for the receiving waters.
9. Discharges containing B.O.D. or S.S. in excess of 250 mg/l.

10. Any toxic radioactive isotopes, except by special permission by the Authority.
11. Cesspool or septic tank contents.
12. Any waters or wastes containing concentrations of materials in excess of the following limits:

<u>Material</u>	<u>Maximum Concentration (mg/l)</u>
Cyanide	0.2
Hexavalent Chromium	1.0
Copper, Nickel, Cadmium, Zinc	1.0
Iron	5.0
Arsenic	0.1
Lead	0.3
Tin	1.0
Flourides	5.0
Phenol	10.0

Compliance with Rules and Regulations

The applicant shall comply with all of the Rules and Regulations as set forth herein. Failure to do so will result in a work-stoppage directive by the Authority.

Applicant shall exercise all construction constraints required to conform to New Jersey Department of Environmental Protection regulations.

Noncompliance

1. The Authority reserves the right to refuse to any applicant the privilege of connecting to the Authority's system, or to compel discontinuance of use of a sewer, or to compel the pretreatment of industrial or other wastes in order to prevent discharge into the sewerage system of wastes deemed to be harmful to the sewerage system or treatment process.
2. If any user shall fail or refuse, upon receipt of written notice from the Authority to remedy any unsatisfactory condition relating to sewage discharge within a period of 30 days of receipt of said notice, the Authority shall have the right to disconnect the service lateral of said user until such time as all violations have been corrected to the satisfaction of the Authority.

OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY

APPLICATION FOR REVIEW OF PRELIMINARY PLANS FOR SEWERAGE SYSTEM CONSTRUCTION IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application must be filed in duplicate, accompanied by filing fee of ten dollars (\$10.00) per unit with the Executive Director of the Authority, 14 days in advance of the agenda meeting of the Authority.)

Application is hereby made for preliminary review of sewerage plans for the proposed subdivision for a ruling on whether individual or comprehensive sewerage system is required.

1. Applicant's Name: _____
Address: _____ Phone: _____
2. Name and address of present owner (If other than No. 1 above):
Name: _____
Address: _____ Phone: _____
3. Interest of applicant if other than owner: _____

4. Date Classified as major subdivision by the Planning Board: _____

5. Location of subdivision: _____
(neighborhood or section name)
_____, _____, _____
(street) (tax map block) (lot nos.)
6. Number of proposed lots to be sewerred: _____
7. Area of entire tract: _____ and portion being sewerred: _____
8. Development plans:
a. Sell lots only? (Yes or No) _____
b. Construction of houses for sale? (Yes or No) _____
c. Other: _____
9. Name and profession of person designing sewerage system:
Name: _____
Profession _____
Address: _____
Phone _____
10. Does applicant or owner agree to convey by deed to the Authority easements to all areas on preliminary plan showing sanitary sewer and all rights to sewer system?

11. Describe your proposal for sewage disposal:

- 1. _____
- 2. _____
- 3. _____

12. If sewers are required, will applicant post Performance and Maintenance Bonds? _____
(Yes or No)

13. List plans and other material accompanying application and number of each.

Item	Number
a.	_____
b.	_____
c.	_____
d.	_____
e.	_____
f.	_____

14. Attach 6 black on white prints of your plans. .

Signature of Applicant: _____

Make all checks payable to the Old Bridge Township Sewerage Authority

(Do not write below this line)

Date received and fee collected by Executive Director:

_____	_____
Date	Fee Paid

Action of the Old Bridge Township Sewerage Authority:

Date: _____ Approved: _____ Approved as Noted: _____

Disapproved: _____

Remarks: _____

Date: _____

Executive Director

OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY

APPLICATION FOR TENTATIVE APPROVAL OF SANITARY SEWERS AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application must be filed in duplicate, accompanied by a filing fee of one percent (1%) of the estimated construction cost, with the Executive Director of the Authority, 14 days in advance of the agenda meeting of the Authority.)

Application is hereby made for Tentative approval of the Tentative Plan of sanitary sewers and appurtenances.

1. Applicant's Name: _____
Address: _____ Phone: _____
2. Name and address of present owner (If other than No. 1 above):
Name: _____
Address: _____
3. Preliminary Application No. _____ Approved (Date): _____
4. Does the Tentative Plan follow the Preliminary Plan in regard to Lot Layout and Area covered? _____ If not, indicate changes:

5. Date of filing for preliminary approval with the Old Bridge Township Planning Board. _____
6. Number of lots proposed for Tentative Approval: _____
7. Name and profession of person designing tentative plan.
Name: _____ Profession _____
Address: _____ Phone _____
8. Describe your proposal for sewage disposal
1. _____
2. _____
3. _____
9. Engineer's estimate of cost of construction: _____
10. List plans and other material accompanying application and number of each.

	Item	Number
a.	_____	_____
b.	_____	_____
c.	_____	_____

d. _____
e. _____
f. _____

14. Attach 6 black and white prints of your tentative plan and a detailed cost estimate.

Signature of Applicant: _____

Make all checks payable to the "Old Bridge Township Sewerage Authority".

(Do not write below this line)

Date received and fee collected by Executive Director:

_____ Date _____ Fee Paid _____

Action of the Old Bridge Township Sewerage Authority

Date: _____ Approved: _____ Approved as Noted: _____

Disapproved: _____

Remarks: _____

Date: _____

Executive Director

FINAL APPLICATION NO. _____

Filed _____

OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY

APPLICATION FOR FINAL APPROVAL OF SANITARY SEWERS AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY This application must be filed in duplicate, accompanied by the following fees; with the Executive Director of the Authority, 14 days in advance of the agenda meeting of the Authority.

- Review fee - 1-1/2% of Estimated Construction Cost
- Inspection fee - 6-1/2% of Estimated Construction Cost
- Connection fee - As per current rate schedule

Application is hereby made for final approval of plan of sanitary sewers and appurtenances.

1. Applicant's Name: _____ Address: _____ Phone: _____

2. Name and address of present owner (If other than No. 1 above): Name: _____ Address: _____ Phone: _____

3. Preliminary application No. _____ Approved (Date) _____

4. Tentative application No. _____ Approved (Date) _____

5. Does the Final Plan follow exactly the Tentative Plan in regard to details and area covered? _____ if not, indicate planned changes: _____

6. Date of filing Final Plan with the Old Bridge Township Planning Board _____

7. Number of lots proposed for Final Approval: _____

8. List of plans and other material accompanying application and number of each.

	Item	Number
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

9. Applicant's engineer's estimate of entire cost of construction, including as-built plans \$ _____

Signature of Applicant: _____

Make all checks payable to the Old Bridge Township Sewerage Authority

(Do not write below this line.)

Date received and fee collection by Executive Director

_____ Date _____

_____ Fee Paid _____

Action of the Old Bridge Township Sewerage Authority

Date _____ Approved _____ Approved as Noted _____

Disapproved _____

Remarks: _____

Date: _____

_____ Executive Director

SEWER CONNECTION
Application No. _____

OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY
Post Office Box 72
Laurence Harbor, New Jersey

Premises to be connected: _____

Name of Owner: _____

Address of Owner: _____

State what premises are used for: _____

Application Fee: \$10.00 per unit Inspection Fee: \$20.00 per unit

Initial Service Fee: As per current rate schedule

(If fee paid upon Application for Final
Approval, check here _____)

Dated: _____

Signature of Applicant

Application shall be accompanied by two checks made payable to the OLD BRIDGE TOWNSHIP SEWERAGE AUTHORITY to cover application and inspection fees and initial service fee.

Action of the Authority:

Date Application Received _____

Amount of Fees Received _____

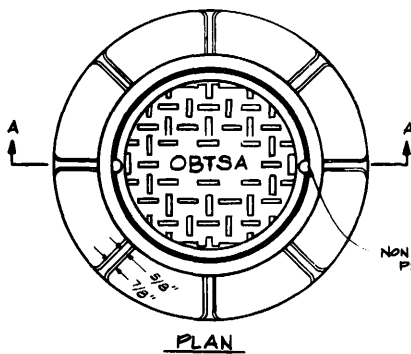
Date Approved _____

Tie-in Inspected by _____ Date: _____

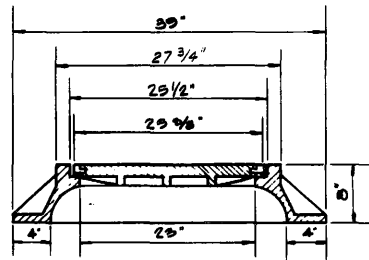
OLD BRIDGE TOWNSHIP SEWERAGE
AUTHORITY

TO BE FILED IN DUPLICATE

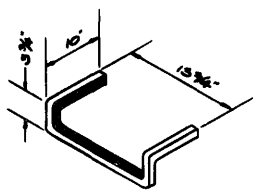
WEIGHT OF COVER 186 LBS.
WEIGHT OF FRAME 312 LBS.



PLAN



SECTION A-A
STANDARD MANHOLE
FRAME AND COVER
NO SCALE



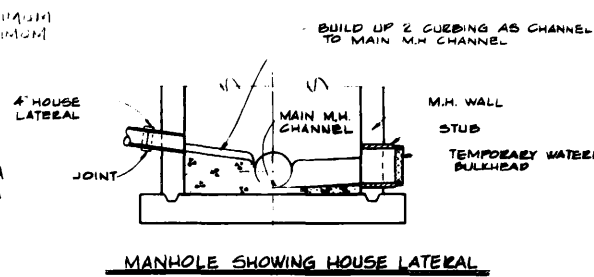
STEP FOR
PRECAST CONCRETE MANHOLES
NO SCALE

MANHOLE NOTES

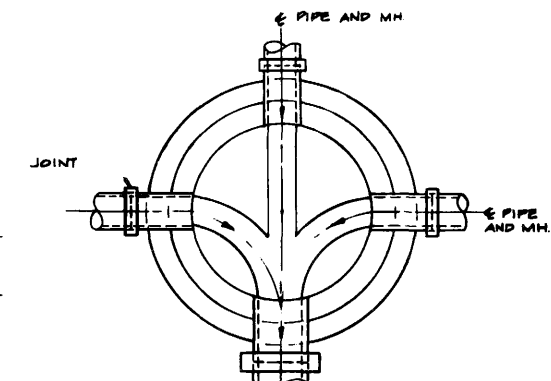
- GENERAL**
- SEWER PIPE AT MANHOLES SHALL BE BEDDED IN CLASS 'B' CONCRETE UP TO THE FIRST JOINT OR TO FIRM BEDDING.
 - SHOOTS SHALL BE USED AT MANHOLES.
 - EXTERIOR SURFACES SHALL BE PAINTED WITH TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.

PRECAST CONCRETE MANHOLES

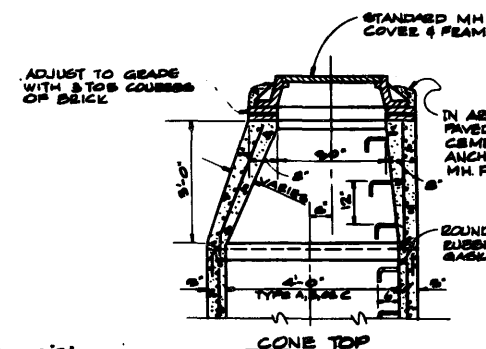
- WHERE TYPE 'B' AND 'C' BASES ARE USED A TAPER SECTION CONNECTING BASE SECTION AND RISER SHALL BE REQ'D AND SHALL HAVE A THICKNESS AS SHOWN. THE BASE SECTION AND RISER ALLOW FOR AT LEAST 6 FOOT MIN. VERTICAL CLEARANCE WHERE POSSIBLE.
 - BASES TO BE TYPE 'A' FOR SEWERS UNDER 24", TYPE 'B' FOR SEWERS 24" TO 36", AND TYPE 'C' FOR SEWERS 42" AND OVER.
 - ALUMINUM MANHOLE STEPS SHALL BE EXTRUDED ALUM. 6061-T6 ALLOY.
 - THE PORTION TO BE IMBEDDED IN THE MANHOLE SHALL BE COATED WITH COAL TAR PITCH OR OTHER APPROVED MATERIAL.
 - CONCRETE BLOCK MANHOLES (NOT SHOWN)
 - CONCRETE BLOCK MANHOLES MUST BE APPROVED BY THE AUTHORITY.
 - SHOP DRAWINGS MUST BE SUBMITTED FOR ALL DETAILS.
- WORK AT EXISTING MANHOLES**
- AT THE DIRECTION OF THE ENGINEER THE CONTRACTOR SHALL CUT INTO THE MANHOLE AND COMPLETE A CONNECTION USING A SUITABLE ADAPTOR AS REQ'D.
 - THE CONTRACTOR SHALL NOT INTERFERE WITH EXISTING SEWERAGE SERVICE DURING THE PERIOD OF CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO KEEP DEBRIS OUT OF MANHOLE.



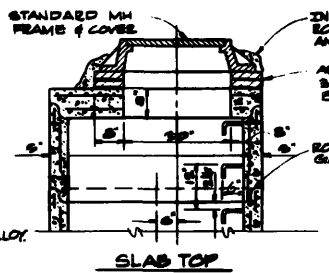
MANHOLE SHOWING HOUSE LATERAL AND STUB
SCALE 1/2" = 1'-0"



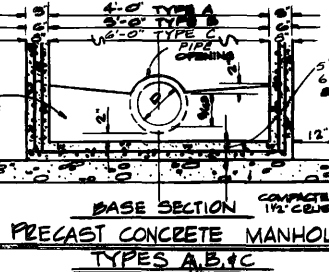
TYPICAL CHANNELING OF MANHOLE BOTTOM
SCALE 1/2" = 1'-0"



CONE TOP
NO SCALE

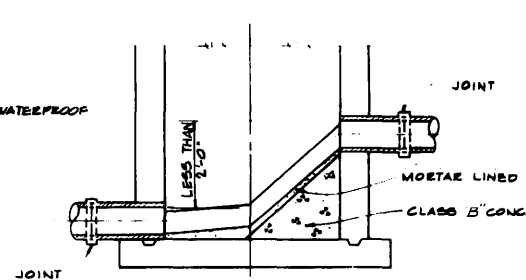


SLAB TOP
NO SCALE



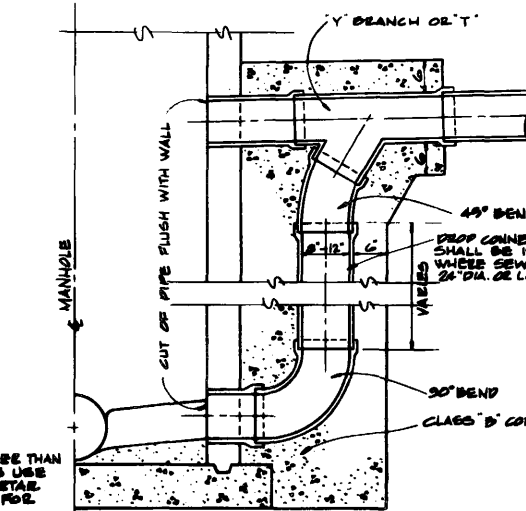
BASE SECTION
PRECAST CONCRETE MANHOLE
TYPES A,B,C
NO SCALE

BUILD UP 2 CURBING AS CHANNEL TO MAIN M.H. CHANNEL

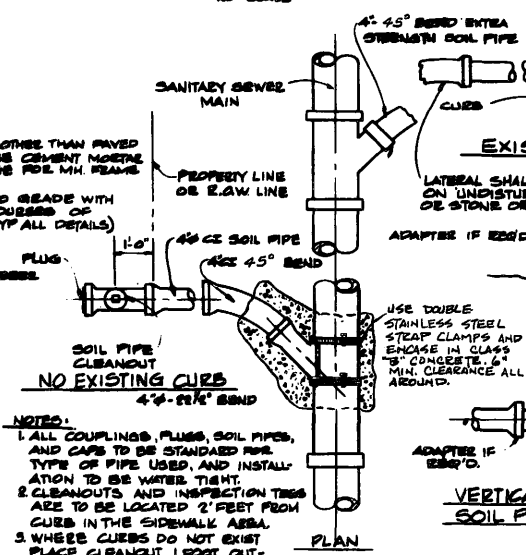


MANHOLE CHUTE
SCALE 1/2" = 1'-0"

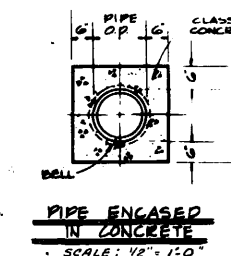
NOTE: MANHOLE CHUTE IS TO BE USED WHERE DIFFERENCE IN CELOW ELEVATIONS BETWEEN INCOMING PIPE AND OUTGOING PIPE IS LESS THAN 2'-0". IF THE DIFFERENCE IS 2'-0" OR GREATER, THEN DROP CONNECTION SHALL BE MADE AS SHOWN IN DETAIL BELOW. CHANNELING SHALL BE DONE AS SHOWN IN DETAILS ON THIS SHEET.



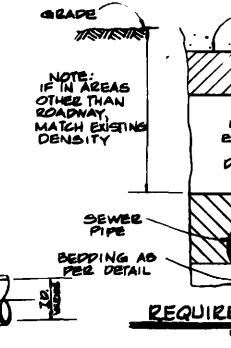
SECTION
TYPICAL DROP MANHOLE
NO SCALE



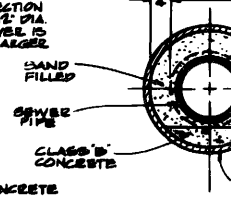
TYPICAL 4 INCH HOUSE CONNECTION INSTALLATION
NO SCALE



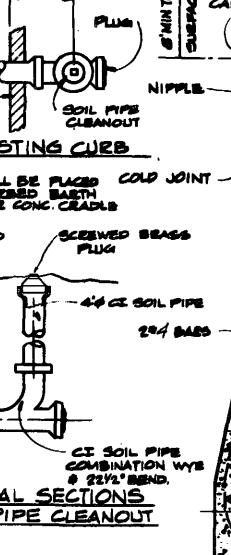
PIPE ENCASED IN CONCRETE
SCALE: 1/2" = 1'-0"



REQUIRED BACKFILL
NO SCALE



PIPE IN DRIVEN STEEL CASING
NO SCALE

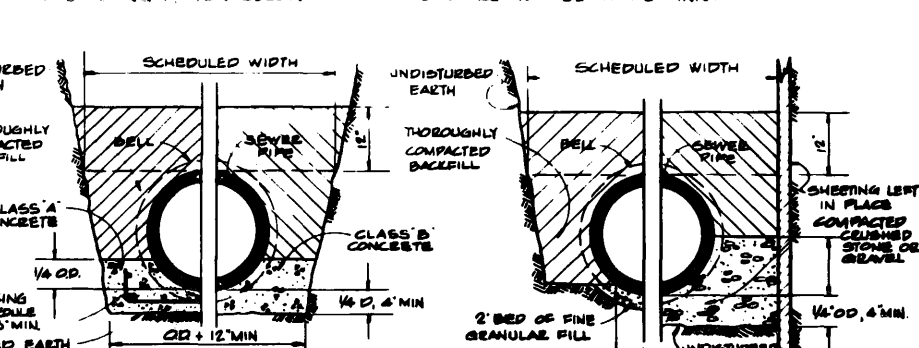


VERTICAL SECTIONS
SOIL PIPE CLEANOUT
NO SCALE

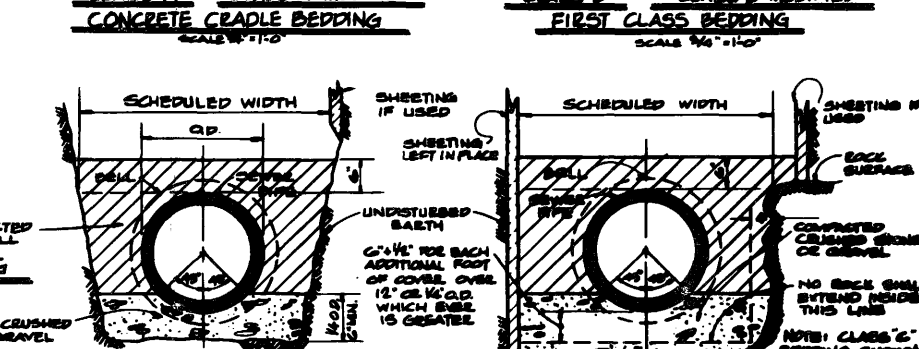
TRENCH WIDTH SCHEDULE										
DIA OF PIPE	8", 10", 12"	14", 16", 18"	20", 22", 24"	27"	30"	33"	36"	42"	48"	54"
TRENCH WIDTH	3'-0"	3'-8"	4'-0"	4'-3"	4'-6"	4'-10"	5'-0"	5'-6"	5'-8"	6'-3"

BAR SCHEDULE - REINFORCED CONCRETE CRADLE										
LONGITUDINAL BARS	3#4	3#4	3#4	3#4	3#4	3#4	3#4	3#4	3#4	3#4
TRANSVERSE BARS	#4@12"	#4@12"	#4@11"	#4@9 1/2"	#4@8"	#4@8 1/2"	#4@10"	#4@9"	#4@8 1/2"	#4@8 1/2"

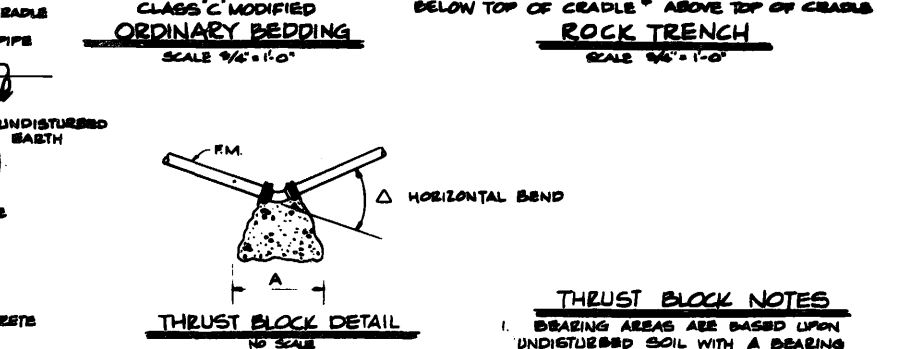
- TRENCH NOTES:**
- IF THE ABOVE SCHEDULED TRENCH WIDTHS ARE EXCEEDED THE CONTRACTOR SHALL USE GREATER STRENGTH PIPE OR INSTALL PIPE IN HIGHER CLASS BEDDING, OR BOTH, AS DIRECTED.
 - TRENCH WIDTHS SHALL BE MEASURED AT TOP OF PIPE.
 - ALL TRENCHES AND EXCAVATIONS TO BE GIVEN THE STEEPEST SIDE SLOPE PRACTICABLE.
 - SHIELDING GIVEN BELOW TOP OF PIPE SHALL NOT BE WITHDRAWN.



HALF SECTION REINFORCED CONCRETE CLASS 'A' CONCRETE CRADLE BEDDING
SCALE 1/2" = 1'-0"



HALF SECTION ROCK ABOVE TOP OF CRADLE
SCALE 1/2" = 1'-0"

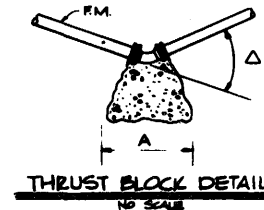


HALF SECTION ROCK BELOW TOP OF CRADLE
SCALE 1/2" = 1'-0"

THRUST BLOCK TABLE

PIPE DIA. INCHES	UP TO 24" A 50 FT.	UP TO 48" A 50 FT.	UP TO 80" A 50 FT.
4-6	0.8	0.9	1.0
8	0.8	1.0	2.0
10	1.0	2.0	4.4
12	1.8	3.0	6.0
16	3.2	6.0	0.0

- THRUST BLOCK NOTES**
- BEARING AREAS ARE BASED UPON UNDISTURBED SOIL WITH A BEARING CAPACITY OF 2 TONS PER SQUARE FOOT. FOR A LESSER SOIL BEARING CAPACITY THESE AREAS SHALL BE INCREASED ACCORDINGLY.
 - APPROVED MECHANICAL JOINT RESTRAINTS ARE REQUIRED AT ALL VERTICAL BENDS AND MAY BE USED IN LIEU OF THRUST BLOCKS AT HORIZONTAL BENDS.
 - THRUST BLOCKS ARE TO BE CLASS 'B' CONCRETE.



THRUST BLOCK DETAIL
NO SCALE

NO.	DATE	DESCRIPTION	CHK'D.	APPR'D.

DESIGNED OFFICE - CJK CHECKED GTS
DRAWN GEW G.E. APPROVED C.A.B.

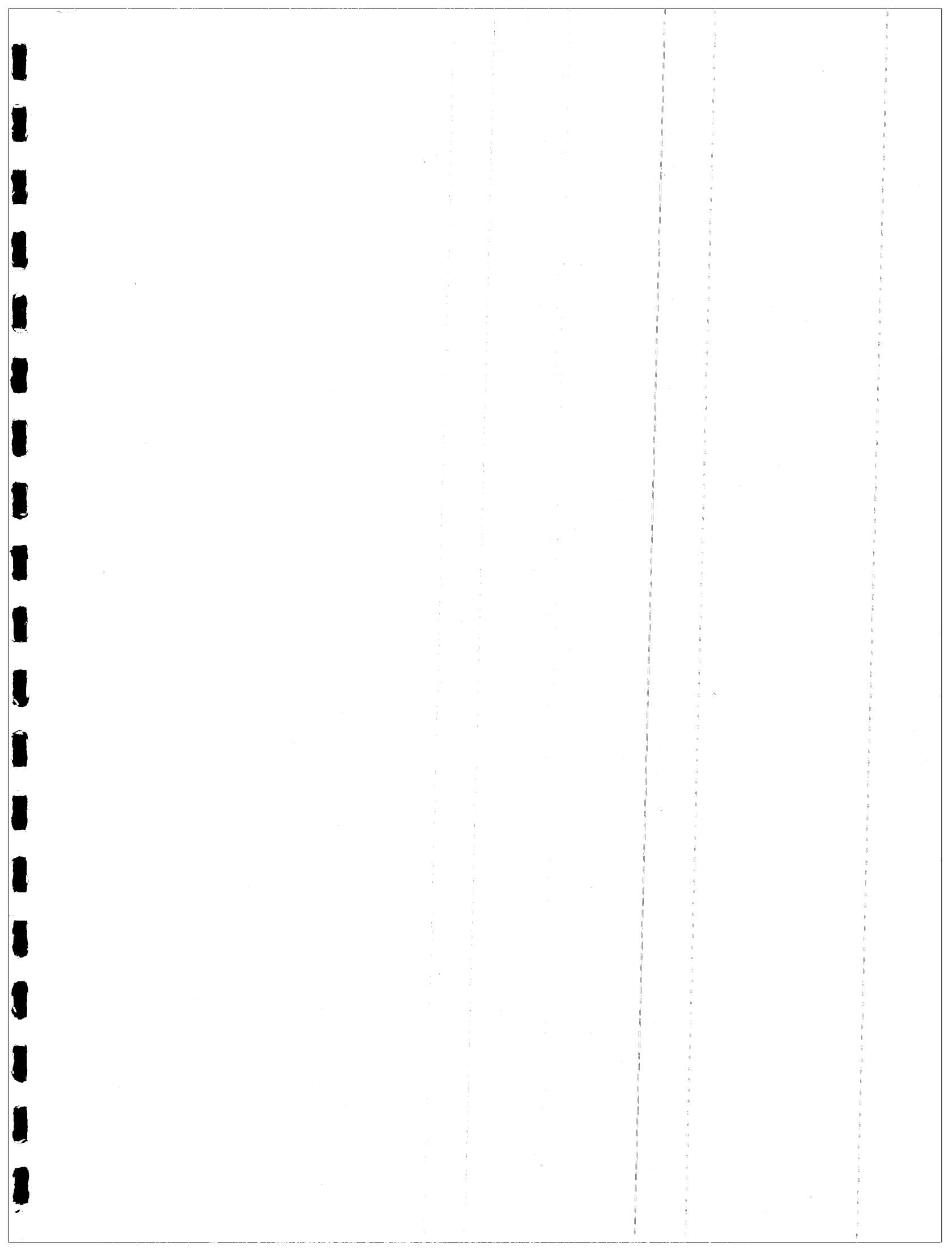
OLD BRIDGE TOWNSHIP
SEWERAGE AUTHORITY
MIDDLESEX COUNTY NEW JERSEY

RULES & REGULATIONS
CONSTRUCTION DETAILS

CHARLES J. KUPPER, INC.
CONSULTING ENGINEERS
HARRY S. ALLEN N.J.P.E. 13623 DATE

SCALE: AS SHOWN DATE: FEBRUARY, 1979 CONTRACT NO. SHEET NO. 1 OF 1

FILE NO. 223



STATE OF NEW JERSEY:

ss.

AFFIDAVIT

COUNTY OF MIDDLESEX:

I, JOHN A. PHILLIPS, of full age, being duly sworn according to law upon his oath, deposes and says:

1. I am the Executive Director of the Old Bridge Township Sewerage Authority and have been for more than ten years and as such am familiar with all the statements made herein.

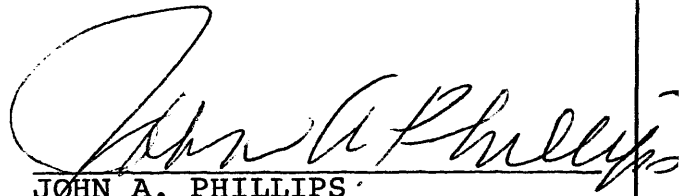
2. I am the person to whom all applications, correspondence and payments are made.

3. I have made a thorough review of all the applications and payments to the Old Bridge Township Sewerage Authority for the last three years and do not find any applications, correspondence, or payments to this authority by any company or corporation known as O & Y Old Bridge Development Corp.

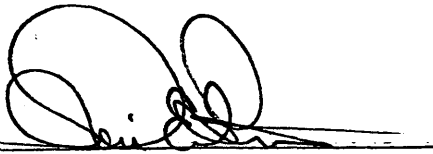
4. The attached Appendix I is a true copy of the Old Bridge Township Sewerage Authority Rules and Regulations.

5. The Authority acts at its regular meetings and, I as Executive Director, have been authorized from time to time to negotiate and contract on its behalf. At no time has the Authority, formally, informally, or otherwise entered into any contracts with other municipal agencies or bodies to deprive anyone from developing any property within its district nor to violate any mandates of any Court.

6. The Authority stands ready, willing, and able to process any application submitted to it for its services, subject to the limitations imposed by law.


JOHN A. PHILLIPS

Sworn and Subscribed to
before me this 1st day
of April, 1981.



LOUIS E. GRANATA
AN ATTORNEY AT LAW
OF NEW JERSEY

40:14A-2. Declaration of policy; purpose

It is hereby declared to be in the public interest and to be the policy of the State to foster and promote by all reasonable means the relief of waters in or bordering the State from pollution and thus to reduce and ultimately abate the menace to the public health resulting from such pollution. It is the purpose and object of this act to further and implement such policy by

(1) Authorizing counties, or municipalities, either separately or in combination with other municipalities, by means and through the agency of a sewerage authority, to acquire, construct, maintain, operate or improve works for the collection, treatment, purification or disposal of sewage or other wastes, and, if necessary, works for the impounding, transportation and release of water for the replenishment in periods of drought or at other necessary times of all or a part of waters in or bordering the State diverted into a sewer, sewage treatment or sewage disposal system operated by the sewerage authority;

(2) Authorizing service charges to occupants or owners of property for direct or indirect connection with and the use or services of such works, and providing for the establishment, collection and enforcement of such charges;

(3) Creating as a body corporate and politic sewerage authorities to have full responsibility and powers with respect to such works and the establishment, collection, enforcement, use and disposition of all such service charges;

(4) Providing for the financing of such works, for the issuance of bonds therefor, and for the payment and security of such bonds; and

(5) In general, granting to counties and municipalities and to such sewerage authorities discretionary powers to provide for sewerage services designed to relieve pollution of such waters at the expense of the users of such services or of counties or municipalities or other persons contracting for or with respect to the same. L.1946, c. 138, p. 639, § 2, as amended L.1951, c. 127, p. 543, § 1; L.1953, c. 177, p. 1456, § 2, eff. May 29, 1953.

Sections 40:14A-1 to 40:14A-37.

40:14A-6. Sewers; acquisition; operation

(a) The purposes of every sewerage authority shall be the relief of waters in or bordering the State from pollution arising from causes within the district and the relief of waters in, bordering or entering the district from pollution or threatened pollution, and the consequent improvement of conditions affecting the public health.

(b) Every sewerage authority is hereby authorized and directed, subject to the limitations of this act,¹ to acquire, in its own name but for the local unit or units, by purchase, gift, condemnation or otherwise, and, notwithstanding the provisions of any charter, ordinance or resolution of any county or municipality to the contrary, to construct, maintain, operate and use such trunk, intercepting and outlet sewers, conduits, pipelines, pumping and ventilating stations, treatment plants or works at such places within or without the district, such compensating reservoirs within the county in which the district lies, and such other plants, structures, boats and conveyances, as in the judgment of the sewerage authority will provide an effective and satisfactory method for promoting the purposes of the sewerage authority.

(c) Every sewerage authority is hereby authorized and directed, when in its judgment its sewerage system or any part thereof will permit, to collect from any and all public systems within the district all sewage and treat and dispose of the same in such manner as to promote the purposes of the sewerage authority. L.1946, c. 138, p. 648, § 6, as amended L.1951, c. 127, p. 555, § 5; L.1953, c. 177, p. 1460, § 4, eff. May 29, 1953.

¹ Sections 40:14A-1 to 40:14A-37.

40:14A-7. Sewerage authority a public body corporate; powers.

Every sewerage authority shall be a public body politic and corporate constituting a political subdivision of the State established as an instrumentality exercising public and essential governmental functions to provide for the public health and welfare and shall have perpetual succession and have the following powers:

(1) To adopt and have a common seal and to alter the same at pleasure.

(2) To sue and to be sued.

(3) In the name of the sewerage authority and on its behalf, to acquire, hold, use and dispose of its service charges and other revenues and other moneys.

(4) In the name of the sewerage authority but for the local unit or units, to acquire, hold, use and dispose of other personal property for the purposes of the sewerage authority.

(5) In the name of the sewerage authority but for the local unit or units, to acquire by purchase, gift, condemnation or otherwise, real property and easements therein, necessary or useful and convenient for the purposes of the sewerage authority, and subject to mortgages, deeds of trust or other liens, or otherwise, and to hold and to use the same, and to dispose of property so acquired no longer necessary for the purposes of the sewerage authority.

(6) To provide for and secure the payment of any bonds and the rights of the holders thereof, and to purchase, hold and dispose of any bonds.

(7) To accept gifts or grants of real or personal property, money, material, labor or supplies for the purposes of the sewerage authority, and to make and perform such agreements and contracts as may be necessary or convenient in connection with the procuring, acceptance or disposition of such gifts or grants.

(8) To enter on any lands, waters or premises for the purpose of making surveys, borings, soundings and examinations for the purposes of the sewerage authority.

(9) To make and enforce bylaws or rules and regulations for the management and regulation of its business and affairs and for the use, maintenance and operation of the sewerage system and any other of its properties, and to amend the same.

(10) To do and perform any acts and things authorized by this act under, through or by means of its own officers, agents and employees, or by contracts with any persons.

(11) To enter into any and all contracts, execute any and all instruments, and do and perform any and all acts or things necessary, convenient or desirable for the purposes of the sewerage authority or to carry out any power expressly given in this act subject to P.L.1971, c. 198 "Local Public Contracts Law" (C. 40A:11-1 et seq.); and

(12) To enter into any and all lease agreements with sewerage authorities, and municipalities, and counties operating sewerage systems, for the rental of equipment owned by authority and municipality and/or county, together with the personnel to operate said equipment.

Amended by L.1968, c. 317, § 1, eff. Oct. 7, 1968; L.1975, c. 96, § 3, eff. May 16, 1975.

40:14A-35. Liberal construction; independent authority

This act¹ shall be construed liberally to effectuate the legislative intent and as complete and independent authority for the performance of each and every act and thing herein authorized, and a sewerage authority shall not be subject to regulation as to its service charges or as to any other matter whatsoever by any officer, board, agency, commission or other office of the State. L.1946, c. 138, p. 674, § 35, eff. April 23, 1946.

¹ Sections 40:14A-1 to 40:14A-37.