

P. S. C. Ky. No. 2

Cancels P. S. C. Ky. No. 1

*Now Warren Co. Water District*

NORTHSIDE WATER DISTRICT

*Cancelled*

OF

Bowling Green, Warren County, Kentucky

**Rates, Rules and Regulations for Furnishing**

WATER SERVICE

AT

North Warren County

**Filed with PUBLIC SERVICE COMMISSION OF  
KENTUCKY**

ISSUED November 1, 1973

EFFECTIVE November 1, 1973

**CHECKED**  
PUBLIC SERVICE COMMISSION  
DEC 6 1973  
by *[Signature]*  
ENGINEERING DIVISION

ISSUED BY NORTHSIDE WATER DISTRICT  
(Name of Utility)

BY *[Signature]*  
Marion Jenkins, Chairman  
Board of Commissioners

FOR Entire Area Served

P.S.C. Ky. No. 2

ORIGINAL Sheet No. 1

Cancelling P.S.C. Ky. No. 1

Sheet No. 1

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

1. Additional Rules and Regulations. These Rules and Regulations are in addition to the rules of the Kentucky Public Service Commission.
2. Application for Service. Each prospective customer desiring water service may be required to sign the District's standard Application for Water Service before service is supplied by the District. No service will be installed unless there is a main distribution line existing along the road from which service is requested. If service is desired on the same side of the road as the water main, the meter shall be installed within 5 feet of the water main. If service is desired on the opposite side of the road from the water main, the service line will be run under the road and the meter installed on private property adjacent to the highway right of way, provided the distance from the main line to the meter point is not more than 60 feet. If the distance is greater than 60 feet, the customer will be required to pay the cost of installing the pipe for the additional footage.

A. Residential

A contribution in aid of construction as provided in the Schedule of Rates and Charges must be paid on all new connections to the existing water line.

B. Commercial

Rules and regulations for commercial service, except as noted below, are the same as for residential service.

A commercial customer, or large-quantity user, will be required to pay a contribution in aid of construction determined by the size of metering equipment as provided in the Schedule of Rates and Charges. In addition to the connection fee, the customer shall pay the cost of installing all service line bores or open cuts which extend beyond 5 feet of the water main.

3. Discontinuance of Service by District. District may refuse to connect or may discontinue service for the violation of any of its Rules and Regulations, or for violation of any of the provisions of the Schedule of Rates and Charges, or of the application of customer or contract with customer. District may discontinue service to customer for the theft of water or the appearance of water theft devices on premises of customer. The Discontinuance of service by District for any causes as stated in this rule does not release customer from his obligation to District for the payment of minimum bills as specified in application of customer or contract with customer.

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DATE OF ISSUE November 1, 1973  
Month Day Year

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Month Day Year

ISSUED BY Marion Jenkins Chairman, Board of Commissioners Route 1, Bowling Green, KY  
Name of Officer Title Address

FOR Entire Area Served

P.S.C. Ky. No. 2

ORIGINAL Sheet No. 1-A

Cancelling P.S.C. Ky. No. \_\_\_\_\_

Sheet No. \_\_\_\_\_

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

All water line extensions will be in compliance with PSC W-1 Rule XII 2 "B".

In summary each customer who hooks on along the line extended will pay our standard tap fee (residential -- \$250.) The developer will receive \$125 rebate for each connection along the extension.

If the developer desires service along the line extended, he too will pay the standard tap fee just as any other customer. The water district will return to him 50 percent of the fee. On a residential tap fee this would amount to \$125, which would be more than the cost for extending the average distribution line for 50 feet.

Should service be desired on the opposite side of the road from the water main, the District will cross the road with the residential service line at no additional cost.

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FOR Entire Area Served

P.S.C. Ky. No. 2

ORIGINAL Sheet No. 2

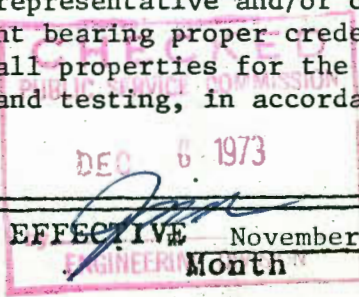
Cancelling P.S.C. Ky. No. 1

Sheet No. 2

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

4. Billing. Bills will be rendered monthly and shall be paid within ten days from date of bill at the office of District. Failure to receive bill will not release customer from payment obligations. Should bills not be paid as above, District may at any time thereafter, upon five days' written notice to customer, discontinue service. Bills paid on or before the final date of payment shall be payable at the net rates, but thereafter the gross rates shall apply as provided in the Schedule of Rates and Charges. Should the final date for payment of the bill at the net rates fall on a Sunday or holiday, the business day next following the final date will be held as a day of grace for delivery of payment.
5. Deposit. A deposit or suitable guarantee equal to approximately twice the average monthly water bill may be required of any customer before water service is supplied. The District may at its option return the deposit to the customer after one year. Upon termination of service, deposit may be applied by the District against any unpaid bills of the customer, and if any balance remains after such application is made, said balance shall be refunded to customer.
6. Point of Delivery. The point of delivery is the point where the meter is located on the customer's premises. All water lines, plumbing, and equipment beyond the meter shall be installed and maintained by the customer.
7. Termination of Contract by Customer. Customers who have fulfilled their contract terms and wish to discontinue service must give at least three (3) days' written notice to that effect, unless contract specified otherwise. Notice to discontinue service prior to expiration of contract term will not relieve customer from any minimum or guaranteed payment under any contract or rate.
8. Customer's Service Line. All service lines beyond the metering point should be installed of material consisting of copper, galvanized, or PVC pipe with rating of not less than 160 psi. The size of service line beyond the point of delivery should not be less than 3/4"; however, a larger size may be needed to provide adequate service. If the customer's point of use is at a higher elevation than the point of delivery, the customer should consult with a reputable engineering firm to size the service line from the point of delivery.
9. Right of Access. The customer must agree to permit the District to lay, maintain, repair, or remove such water lines which is the property of the District located on the customer's property with the right of ingress and egress over customer's property. The District's duly authorized representative and/or other duly authorized employee of the State Health Department bearing proper credentials and identification shall be permitted to enter upon all properties for the purpose of inspection, observation, measurement, sampling, and testing, in accordance with the provisions of these Rules and Regulations.



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P.S.C. Ky. No. 2

Sheet No. 3

Cancelling P.S.C. Ky. No. 1

Sheet No. 2A

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

10. Interruption of Service. The District will use reasonable diligence in supplying water service, but shall not be liable for breach of contract in the event of, or for loss, injury, or damage to persons or property resulting from interruptions in service, excessive or inadequate water pressure, or otherwise unsatisfactory service, whether or not caused by negligence.
11. Additional Load. The service connection supplied by the District for each customer has a definite capacity, and no addition to the equipment or load connected thereto will be allowed except by consent of the District. Failure to give notice of additions or changes in load, and to obtain the District's consent for same, shall render the customer liable for any damage to any of the District's lines or equipment caused by the additional or changed installation.
12. Notice of Trouble. Customer shall notify the District immediately should the service be unsatisfactory for any reason, or should there be any defects, trouble, or accidents affecting the supply of water. Such notices, if verbal, should be confirmed in writing.
13. Nonstandard Service. Customer shall pay the cost of any special installation necessary to meet his peculiar requirements for service other than standard water tap.
14. Scope. This Schedule of Rules and Regulations is a part of all contracts for receiving water service from the District, and applies to all service received from the District whether the service is based upon contract, agreement, signed application, or otherwise. A copy of this schedule, together with a copy of the District's Schedule of Rates and Charges, shall be kept open to inspection at the office of the District.
15. Damage to District's Water System. No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the District's water works. Any person violating this provision shall be subject to immediate arrest and discontinuation of water service and shall pay the cost of repairing or replacing the pipe or appurtenance.
16. Water Line Extension. An applicant desiring an extension to a proposed real estate subdivision will be required to pay the entire cost of the extension. An agreement must be executed by the developer, a copy of which is attached. Individual service applications will be in accordance with Rule No. 2.

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 Month      Day      Year                                      Month      Day      Year

ISSUED BY Marion Jenkins      Chairman of Board of Commissioners      Route 1, Bowling Green,  
 Name of Officer                                      Title                                      Address

FOR Entire Area Served

P.S.C. Ky. No. 2

ORIGINAL Sheet No. 4

Cancelling P.S.C. Ky. No. \_\_\_\_\_

Sheet No. \_\_\_\_\_

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

The customer shall pay all construction cost and design engineering in addition to reimbursing the District for inspection cost.

- 17. Relocation of Water Facilities. District may, at the request of customer, relocate or change existing District-owned equipment. Customer shall reimburse District for such changes at actual cost including appropriate overhead.
- 18. Revisions. These Rules and Regulations may be revised, amended, supplemented, or otherwise changed from time to time without notice. Such changes, when effective, shall have the same force as the present Rules and Regulations.
- 19. Conflict. In case of conflict between and provisions of any rate schedule and the schedule of Rules and Regulations, the rate schedule shall apply.



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Name of Officer Title Address

FOR Entire Area Served

P.S.C. Ky. No. 2

ORIGINAL Sheet No. 5

Cancelling P.S.C. Ky. No. \_\_\_\_\_

Sheet No. \_\_\_\_\_

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

SUBJECT: Charges for Special Services

The following charges for special services shall be made:

1. Service Connection Charge. A charge of \$5 shall be made for all service reconnections made during regular working hours, except that there shall be no connection charge made for service on the original installation of facilities. If service is reconnected other than during regular working hours, the charge shall be \$15.
2. Delinquent Service Charge. A charge of \$5 shall be made for a trip to disconnect a delinquent account. A reconnection charge of \$5 shall be made if reconnected during regular working hours. If reconnected after regular working hours, the charge shall be \$15. (See PSC: Gen-1, Rule XII.)
3. Meter Reading Recheck Charge. A charge of \$5 shall be made for a trip to recheck a meter reading when the customer requests the meter to be rechecked for a correct reading and the meter was not misread.
4. Meter Test Request. Upon request and payment of \$7.50, a customer may have his meter tested provided request by the customer is not more frequent than once each twelve months. If such test shows the meter to be more than two percent fast, a refund of the \$7.50 charge shall be made and the bill adjusted accordingly.
5. PSC Meter Test Complaint. Any customer of the District may request a meter test by written application to the Commission.
6. Service Investigation Charge. A charge of \$3.50 per trip shall be made for service investigation during regular working hours if interruption of service is not caused by failure of District's facilities. The charge for investigation after working hours will be \$7.50 per trip. Any maintenance and repair of facilities beyond District's delivery point is the responsibility of the customer.

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P.S.C. Ky. No. 2

ORIGINAL Sheet No. 6

Cancelling P.S.C. Ky. No. \_\_\_\_\_

Sheet No. \_\_\_\_\_

NORTHSIDE WATER DISTRICT

**RULES AND REGULATIONS**

7. Contribution in Aid of Construction. The established contribution fee is based on the size of metering equipment required as noted below:

5/8-inch meter . . . . .	\$ 250
3/4-inch meter . . . . .	300
1 -inch meter . . . . .	350
1½ -inch meter . . . . .	500
2 -inch meter . . . . .	675
3 -inch meter . . . . .	950
4 -inch meter . . . . .	1,350
6 -inch, or larger, meter .	Actual Cost

In addition to the above connection fees for the various size meters, the customer shall pay the cost of installing all service line bores or open cuts which extend beyond 5 feet of the water main.



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ISSUED BY Marion Jenkins Chairman, Board of Commissioners Route 1, Bowling Green, KY  
Address, KY



Form for filing Rate Schedules

For Entire Area Served  
Community, Town or City

P.S.C. NO. 2

ORIGINAL SHEET NO. 7

CANCELLING P.S.C. NO. 1

SHEET NO. 1

NORTHSIDE WATER DISTRICT  
 Name of Issuing Corporation

CLASSIFICATION OF SERVICE

RATE  
 PER UNIT

APPLICABLE: Within the service area of Nothside Water District.

AVAILABILITY OF SERVICE: Industrial, domestic, farm and commercial.

RATES: The water rate shall be as follows, or such other rate as the District shall file with and be approved by the Kentucky Public Service Commission. The monthly rates shall be based on water consumption and billed under the following schedule:

DOMESTIC, INDUSTRIAL, FARM, AND COMMERCIAL

First 2,000 gallons  
 Next 3,000 gallons  
 Next 3,000 gallons  
 Next 4,000 gallons  
 Next 20,000 gallons  
 Next 50,000 gallons  
 Next 60,000 gallons  
 Next 3,000,000 gallons  
 All Over 3,142,000

(I)  
 \$5.00 Minimum bill  
 1.50 per 1,000 gal  
 1.00 per 1,000 gal  
 .85 per 1,000 gal  
 .75 per 1,000 gal  
 .60 per 1,000 gal  
 .50 per 1,000 gal  
 .38 per 1,000 gal  
 .28 per 1,000 gal

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 DEC 6 1973  
 by [Signature]  
 ENGINEERING DIVISION

DATE OF ISSUE November 1, 1973

DATE EFFECTIVE December 1, 1973 12-15-71

ISSUED BY Marion Jenkins  
 Name of Officer

TITLE Chairman, Board of Commissioners

Issued by authority of an Order of the Public Service Commission of Ky. in Case No. 5563 dated 9-10-71

WATER LINE EXTENSION  
AGREEMENT

THIS AGREEMENT made and entered \_\_\_\_\_, by and between \_\_\_\_\_  
WATER DISTRICT, Bowling Green, Kentucky, party of the first part, and \_\_\_\_\_  
party of the second part, whose address is \_\_\_\_\_.

WITNESSETH: That, whereas, the party of the second part is the owner and developer of a certain area of land located in Warren County, Kentucky, and which property is identified and diagrammed upon the plans attached hereto and made a part of this Agreement, and

WHEREAS the party of the second part is desirous of extending and constructing water lines and/or mains in order to provide water service to that certain area of land herein described and which is to be immediately made available as construction sites for residential and/or other structure, and

WHEREAS the party of the first part is desirous of providing the water service herein described:

NOW, THEREFORE, for and in consideration of the mutual benefits to be derived by the parties hereto, the parties covenant and agree as follows:

1. The party of the second part is to pay the party of the first part for preparing detailed construction plans and specifications. The construction plans must be on sepia paper, 12" x 18" and include complete hydraulic calculations. Construction inspection will be performed by the party of the first part and shall be paid by the party of the second part. All construction must comply with the District's general water line specifications, a copy of which is attached hereto and made a part hereof as if copied in full herein.
2. All new road construction shall be complete before the water main is installed.
3. The party of the second part shall construct all water lines pursuant to plans and specifications approved in writing by the party of the first part.
4. The party of the second part shall make a contribution of \$250 in aid of construction for each domestic service connection, without exception.
5. Upon completion of construction and acceptance by the party of the first part, the party of the second part shall relinquish any and all control over the water lines covered by this Agreement and the party of the first part shall thereafter be responsible for maintenance of the extended system and said water system shall immediately become an asset of the party of the first part.
6. The party of the second part, in the event he has made any contribution in aid of the construction of the water lines which are the subject of this Agreement, will be partially, reimbursed by the party of the first part under the following terms and conditions:
  - A. The party of the second part must qualify for reimbursement within a term of ten (10) years from the date of this Agreement.
  - B. Upon the party of the second part's compliance with the terms and conditions of this Agreement, each water connection added by the party of the second part at the agreed contribution of \$250.00 per connection, the party of the second part shall be reimbursed in a sum equal to fifty percent (50%) of the contribution within six (6) months by the party of the first part, but in no event shall reimbursement be paid for connections after the end of the ten (10) years above mentioned, or until the original cost of line has been recovered by the party of the second part.
7. The party of the first part is specifically granted the right to extend any water lines which are the subject of this Agreement, at no expense to the party of the second part, and without any reimbursement to the party of the second part for any connections made on said extensions constructed by the party of the first part.
8. Final authority relative to additions, extensions, taps, and/or uses of the water lines hereinbefore described shall rest within the sound discretion and policy of the party of the first part.
9. The party of the second part shall obtain approval from the Health Department and all other regulatory agencies before any work is performed on extending any water mains. The plans approved must be the same as the plans approved by the District.

10. The District shall perform daily construction inspection and the party of the second part shall reimburse the District for all cost involved with the inspection. The party of the second part shall contract with a contractor who shall perform all work in continuous orderly manner. If the contractor does not perform the work in continuous orderly manner the party of the second part shall notify his contractor to discontinue work until such time as the work can be completed in an orderly manner.

11. All construction contractors shall be approved in writing by the District before the developer enters into any construction agreements.

12. The developer will execute and have recorded in the County Court Clerk's office the District's standard easement for access to the proposed water lines. The original easement is to be returned to the District's office after it is recorded.

IN WITNESS WHEREOF, witness the hands of the parties hereto on this day and date first above written.

PARTY OF THE FIRST PART

PARTY OF THE SECOND PART

\_\_\_\_\_ WATER DISTRICT

BY \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Specifications to be used in conjunction with executed water line extension agreement between \_\_\_\_\_ and \_\_\_\_\_  
Water District.

#### DEFINITIONS

The word, "Developer", means the person, association, corporation or group for whom the water line extension work is to be performed. In this instance the word "Developer" will mean \_\_\_\_\_. The Developer will be responsible for payment of all material, labor, supplies, machinery and tools used in construction of the project.

The word, "Water District", means the \_\_\_\_\_ Water District.

The word, "Project" means the plan and design as set forth to construct an extension to the \_\_\_\_\_ Water District's water distribution system.

#### RIGHTS OF WAY

All easements necessary for carrying out the project must be furnished to the Water District before work may begin. The standard easement form used by the Water District will be furnished to the Developer to be executed and returned to the Water District.

#### TIE INTO EXISTING WATER MAIN

The tie between existing water main and the project will be made by the Water District with the expense being paid by the Developer.

#### INSPECTION

The authorized representative of the Water District shall inspect all work, materials, records, and other relevant data. No pipe shall be backfilled until inspected by the District inspector. All pipe backfill which is not inspected shall be dug up and re-layed at the contractor's expense.

#### WARRANTY

All work from the tie-in to the existing water main to the end of the water project line addition will have a warranty of one year from date accepted by the Water District. The Water District will give the Developer of the project a letter accepting the project when it is completed and the warranty will begin on that date. All water leaks, defective material, cave-ins over the water line, and any other damage caused by the project shall be repaired by the Water District and the expense shall be paid by the Developer during the warranty period.

#### ROAD CROSSING (FEDERAL, STATE, COUNTY)

The Developer shall obtain a permit necessary for crossing under Federal, State, and county roads. A permit in writing shall be presented to the Water District before work on the project begins. All line crossing under a road two-inches or less in size shall be copper, PVC-encased, or CIP pipe. If the line is larger than two-inches in size, it shall be incased in a jacket.

PLAT WATER LINE EXTENSION

One reproducible (sepia) plan sheet indicating the location of the water line project shall be furnished to the Water District for approval before work begins. The plat shall show location, roads, water line size, existing water lines, north-south directions, subdivision lot numbers, existing houses and any other relevant information.

INTERPRETATION

The Water District has the right and shall interpret the specifications. Should any questions arise, the Water District shall make final interpretation of the specifications.

COST OF WORK

The Developer shall furnish to the Water District a copy of invoices showing the price of all materials, labor and other cost incurred by the water line project.

ALIGNMENT AND GRADE

1. Contractor shall locate utilities as necessary at his expense.
2. Depth of pipe shall be 30" minimum cover.

EXCAVATION AND PREPARATION OF GRADE

1. Not more than 200 linear feet of trench shall be dug in advance of the completed pipe laying operation.
2. The width of trench shall be the bell diameter plus fifteen inches (15") for the various pipe diameters used.

LAYING PIPE

1. Inspection before laying shall be by careful visual examination.
2. Deflection at joints shall not exceed that recommended by the manufacturer.

BACKFILLING

Crushed limestone bedding and backfill shall be used as directed.

1. Backfill material from the centerline of the pipe to one foot above the pipe shall consist of approved excavated material placed in 6" layers and compacted by tamping.
2. Backfill material from 1.0 foot above the pipe to finished subgrade shall consist of approved excavated material placed in 6" layers and compacted by tamping where water lines cross streets, aprons, driveways, etc. Backfill for trenches at locations other than the above shall be loosely filled and mounded up over trench.

CAST IRON PIPE, FITTINGS, VALVES

- A. Cast iron pipe shall be heat treated and centrifugally cast in metal molds with bell-and-spigot joints, mechanical joints, push-on joints, or flanged joints as indicated on the plans. Pipe shall meet the following specifications: ASA A21.1; ASA A21.12; ASA A21.6; AWWA H-1; AWWA C106; AWWA C112; and Federal Specification WW-P-421C with 21/45 Physicals. Pipe shall have a working pressure of 150 psi with 'B' laying conditions and 2-1/2 feet of cover. Sizes and location of valves, fittings, and other appurtenances are to be as shown on the drawings, or as required to conform to the

alignment and grade as shown. Minimum pipe wall thickness and classes shall be as follows:

<u>Size</u>	<u>Class</u>	<u>Thickness</u>
10	20	.38"
8	20	.35"
6	21	.35"
4	22	.35"
3	22	.32"
2		.25"

- B. All pipe and fittings shall be lined with Enameline or thin cement mortar lining furnished by the manufacturer of the pipe and fittings, and shall meet ASA A21.4 and AWWA C104 Specifications. In addition, a bituminous seal coat or asphalt emulsion spray coating shall be applied to the cement lining and to the exterior surfaces of the pipe and fittings in accordance with the manufacturer's standard practice. Spigot and flange sections of pipe and fittings shall have the flange end faced and drilled standard for attachment to adjacent valves, fittings, equipment, etc., as necessary.
- C. Cast iron fittings shall correspond to the type and class of pipe to which they are attached, and shall have a pressure rating of 160 psi, meeting ASA A21-10 and AWWA C110 Specifications.
- D. Gate valves shall be of sizes shown on the drawings, heavy pattern iron body with bronze mountings, double disk, parallel seat, hub end or mechanical joint end as required, good for 150 pounds per square inch working pressure with non-rising stems and 2-inch square operating nuts. Valves shall be AWWA C500 List 14 Federal Specifications WW-V-58 Type II, Class 'A'. Cast iron adjustable valve boxes and covers of sizes to accommodate the valves, shall be provided, set, and adjusted to suit the finished grade conditions at the valve, properly supported. Boxes shall include base, center section, top section and cover.
- E. Rubber gasket shall conform to ASA A21.11 and AWWA C111 Specifications.
- F. Mechanical joint pipe shall be installed to true alignment with spigots carefully centered in bells, as follows:
  - (1) Joints shall be carefully brushed with a wire brush just prior to assembly to remove loose rust and scale and provide clean surfaces which should be brushed with soapy water just prior to slipping rubber gasket over spigot end and into the bell. Soapy water brushed over the gasket prior to installation also removes loose dirt and lubricates the gasket as it is forced into its retaining space.
  - (2) For water service the normal range of bolt torques to be applied to standard cast iron bolts in a mechanical joint are:

<u>Size Inches</u>	<u>Length of Wrench Inches</u>
5/8"	8"
3/4"	10"
1"	12"
1-1/4"	14"

- (3) When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly, maintaining the approximate same distance between the gland and the face of the flange at all points around the socket. This may be done by partially tightening the bottom bolt first, then the top bolt, next the bolts at either side and last, the remaining bolts. Repeat this cycle until all bolts are within the maximum torque indicated above, the joint should be disassembled

and reassembled after thorough cleaning. Overstressing of bolts to compensate for poor installation practice shall always be avoided.

- G. Slip type single gasket or push-on type joint cast iron pipe may be used for underground mains in lieu of bell and spigot or mechanical joint pipe at the District's option.
- (1) Under this option, cast iron pipe shall be centrifugally cast, slip type, single gasket joint, similar or equal to Bell-Tite by James B. Clow and Sons, Fastite by American Cast Iron Pipe Co. or Tyton by U. S. Pipe co., of same class as specified for other cast iron pipe. Fittings and valves shall be same as specified above under either bell and spigot joints, mechanical joints, or slip-on joints.
  - (2) Joints shall be of the double sealing type, of long-life, high strength, high quality vulcanized self-centering, permanent, tight, trouble-free, rubber gasket, moulded, of two hardnesses, shaped to fit the configuration of the gasket socket. Gasket shall be tapered to allow the pipe to center properly.
  - (3) The pipe bell shall have a cast or machined gasket socket recess, a tapered annular opening and flared socket. Plain spigot ends shall be suitably beveled to permit easy entry into bell, centering in gasket and compression of gasket.
  - (4) In the installation of the pipe, lubricant of the type recommended by the manufacturer shall be used on each spigot end. Same to be non-toxic, impart no taste or odor and have no deleterious effect on the rubber gasket, of such consistency that it can be applied to pipe in hot or cold weather and adhere to either wet or dry pipe.
- H. Bottoms of all trenches for water lines shall be reasonably dry and firm before pipe is laid, bell holes cut and proper locations and joints in pipe and fittings kept clean until the joint material has been put in place. Protect joints after laying pipe. Align pipe in trench, bed to required grade and shove spigot ends firmly into bells. No pipe or fittings shall be backfilled until the work has been inspected and approved by the District. Keep dirt, gravel, and stone out of pipe by providing a stopper in ends of pipe at all times. Fire hydrants which show evidence of gravel or stone under seats shall be taken and cleaned and reinstalled.
- I. Flanged sections of pipe and fittings shall be connected into adjacent fittings or equipment and bolted up tight in required position before the joints at spigot ends of the sections or fittings are made up. Block or clamp fittings at changes in direction to prevent blowing out of the joints.
- J. The entire length or section of water mains, fittings and valves constructed under this contract shall be subjected to and satisfactorily withstand a hydrostatic pressure of 150 pounds per square inch with the pressure to remain on the line for a period of not less than two hours, and made in the presence of the representative of the District. The line shall remain filled for at least 24 hours to insure complete sterilization thereof. Drain the lines and refill with water by backflusing same after inspections and tests are complete.
- K. During the test period in which the line is under pressure, joints in the line shall be carefully examined for leaks, and pipe, fittings, and valves examined for defective castings or weakness. Any parts of the work failing to meet the test requirements shall be removed and replaced to the satisfaction of the District.

POLYVINYL CHLORIDE PIPE  
TWIN GASKETED COUPLING

The PVC pipe shall be manufactured of Type I, Grade I, 2000 PSI design stress compound designated as PVC 1120 and will conform to ASTM 1-1784 compound specifications. PVC pipe having a maximum hydrostatic working pressure of 200 PSI (SDR 21) shall be used as shown on proposal form. It shall bear the National Sanitation Foundation (NSF) seal of approval and shall conform with the requirements of Public Standard PS-2270 and ASTM D-2241. Pipe and Fittings shall be manufactured by Certain-Teed Products Corporation or equal. District's approval must be obtained (7) working days prior to bidding. The Pipe shall have both ends tapered for use with a twin gasketed coupling and shall be in 20 foot or 40 foot lengths.

The twin gasketed coupling shall have a positive pipe stop within the couplings that will eliminate repositioning of the pipe after assembly and will allow for automatic thermal expansion or contraction.

Pipe shall be white in color permitting uncovered outside storage.

The PVC fittings shall have a minimum rating of 200 PSI for continuous operation at 73.4 degree F. Couplings shall be delivered separate from the pipe and packaged to prevent shipping damage.

Couplings shall be extruded and manufactured by the manufacturer of the pipe and shall be approved by the District at least (5) working days prior to bid letting.

Pipe shall be certainteed or approved equal as under terms called for above.

PHYSICAL AND CHEMICAL REQUIREMENTS

Materials - Pipe and fittings shall be made from clean, virgin, NSF approved Type I, Grade 1, Polyvinylchloride, (PVC 1120) conforming to ASTM resin specifications D1784. Clean reworked material generated from the manufacturer's own pipe production may be used.

All physical and chemical tests should be conducted at 73.4°F.

Quick Burst Test - The pipe shall be designed to withstand without failure a pressure of 640 psi in 60-90 seconds on Class 200 when tested in accordance with ASTM 1599-62T.

Sustained Pressure Test - The pipe shall be desinged to withstand without failure for 1,000 hours a pressure of 400 pse on Class 200 when tested in accordance with CB256-63 as referenced to ASTM 1598-67.

Acetone Immersion Test - After two hours immersion in a sealed container of anhydrous (99.5%) pure acetone a 1" long sample ring shall show no visible spalling cracking (swelling or softening is not a failure) in accordance with ASTM 2152-67.

Vice Test - Place between two flat parallel plates a 2" long ring and compress in less than one minute to 100% flattening. There shall be no evidence of splitting or shattering.



Drop Impact Test - A single impact load from a freely falling missile having a 1/2" diameter rounded 1" long nose shall be imparted on a 6" long horizontally placed specimen sample. No shattering or splitting (denting is not a failure) shall be evident when the following energy is imposed.

<u>Nominal Size</u>		2"	3"	4"	6"
<u>Ft. - Lbs.</u>	Class 200	34	57	86	100

- B. All joints shall be sealed with rubber rings provided by the manufacturer. All pipe joints shall provide for expansion and contraction. Rubber rings shall be equal and conform to the specifications for joints on asbestos cement pipe.
- C. The pipe shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other defects. The pipe shall withstand a working pressure test of 200 psi hydrostatic pressure specified above for other pipe.
- D. All pipe shall meet the standards as specified for National Sanitation Foundation approved pipe and be so marked.
- E. Pipe shall be marked at intervals of not greater than five feet with the following information:
  - (1) The nominal pipe size.
  - (2) The type of plastic pipe material.
  - (3) The pressure rating in psi.
  - (4) The manufacturer's name and code.
- F. Manufacturer's test certificates for plastic pipe shall accompany each shipment stating specifications for the tests and results obtained.

PIPE BACKFILL

- A. Where rock is encountered in excavating trench, it is to be removed to a level of approximately six inches (6") below the bottom of the pipe. Before the pipe is laid in a rock trench, all irregularities in the bottom of the trench are to be filled with earth or three-quarter inch crushed stone to a depth of approximately six inches (6").
- B. In backfilling a trench in rock, the Developer shall procure earth or three-quarter inch crushed stone and the trench must be filled in 6" layers with this material, well tamped to approximately 12 inches above the top of pipe. The remainder of the trench may be filled with material as excavated, except 3" diameter and larger stone will not be permitted in any backfill.
- C. After trench is backfilled and thoroughly tamped, the Developer must remove all surplus material at once, and a section of main will not be considered finished until such materials are removed. The streets where pipe is laid, as well as the adjoining sidewalks must be left in as good condition as they were before the excavation was made.
- D. The Developer must "redlight" and guard all open trenches of obstructions placed

on the streets or sidewalks. This shall include all pipe, fittings, valves, and all special casings distributed along the proposed route of the water lines. The lights must be kept burning from sunset to sunrise in order to effectively warn and safeguard the public against accident and the Developer will be held responsible for any damages that may occur to persons or property by reason of the failure of the Developer to properly "redlight" and guard all open trenches or obstructions along the route of said pipe line.

- E. When blasting, or when using explosives, the greatest care must be exercised so as not to endanger life and property, nor injure any existing water pipes, gas pipes, sewers, drains, conduits, or other structures in the street or on the adjacent premises, and the Developer shall be held responsible for any and all damages, of every nature and character to person, or to personal or real property, that may be caused by, or in connection with any excavation, blasting or the use of any explosives.
- F. The Developer shall be responsible for all injury to water pipes, gas pipes, electric wires, conduits, drains, sewers and other structures, owned either by municipalities or by other corporations or individuals, that may be encountered in the prosecution of the work, and the Developer shall be liable for damages to public or private property resulting therefrom.
- G. The Developer shall provide for ingress to and egress from all streets, roads, and alleys at all times during the work, and to abutting property, along the route of the work, when the same is essential. The Developer, when necessary, shall also remove culverts in drainage ditches under driveways when necessary to clear proposed water mains which may be installed in drainage ditches along certain portions of the project. The culverts and driveways shall be replaced and resurfaced by the Developer, after the main has been installed, in the same condition as existed previous to installation of water mains.
- H. In backfilling trenches, mechanical tamping shall be used throughout in roads and streets and care shall be taken to thoroughly compact the fill under, around and over the pipe to the top of the trench in order to properly protect the pipe and minimize the settlement of trench fill. Mechanical clay tampers will be permitted where backfill is clay or dirt. Paving breaker and tamping pad shall be used where backfill is chert, gravel or broken stone or concrete.

#### HEALTH DEPARTMENT APPROVAL

The District shall collect a sample from the line or sections of the line under test and send them to the State Health Department to determine the bacteriological condition of same and to determine the chlorine residual remaining in the section under test after the 24 hour period. The District may hold the line out of service and require the Developer to continue sterilization of same until assured the line or section of line is entirely free from contamination and safe in every way for service.

#### CERTIFICATES OF TEST

The Developer shall furnish, in duplicate, notarized certificates of test from the factory inspector, covering cast iron pipe, and/or PVC pipe, fittings, valves, fire hydrants, etc., certifying that the materials were made and tested in full compliance with the specifications and itemizing the test pressures to which the items of materials were subjected and withstood. Test certificates shall be filed with the District.

FIRE HYDRANTS

A. Materials and Design

- (1) Fire hydrants shall be provided with two 2-1/2 inch hose nozzles, and one 4" pumper nozzle, with nozzle threads for hose connections, and shall be of a make approved by the District and Developer and the State Inspection Bureau. Fire hydrants shall be as manufactured by Iowa, M & H or Mueller or equal as approved by the District.
- (2) The valve and valve seat design shall be such that valve seats and valve stem shall all be replaceable without digging up the fire hydrant.
- (3) The size of hydrants shall be designated by gross valve opening of hydrants and shall be not less than 5 1/4".
- (4) Inlet pipe to hydrant shall be 6 inch size and hydrant shall be furnished with hub end for receiving 6 inch inlet pipe.
- (5) Hydrants must be so designed, particularly, as regards the pitch of the thread of the operating stem, that, when properly operated, a water hammer will not be caused which will give an increased pressure to exceed the working pressure, when such pressure is over 60 pounds per square inch, nor increase the pressure over 60 pounds per square inch when operated under less working pressure than 60 pounds per square inch.
- (6) Hydrant barrel is to be made in two sections with revolving upper section to provide for adjusting position of hydrant outlets. The upper flange connection must be at such a distance above ground line so as to easily remove bolts and revolve head part of hydrant. The head and hydrant design shall be such that a minimum wrench swing clearance of 18" shall be provided between the ground line and any operating nut.
- (7) The hydrant body is to be made of cast iron.
- (8) All castings shall be made from a superior quality of iron, free from blow or sand holes or defects of any kind. The iron is to be of a tough even grain and shall possess a tensile strength of not less than 22,000 pounds per square inch.
- (9) All wrought iron shall be of the best quality of refined iron of a tensile strength not less than 45,000 pounds per square inch.
- (10) The valve stem shall be of genuine wrought iron, or stainless steel.
- (12) Hydrant outlets shall consist of two 2-1/2 inch and one 4" outlet with nozzles and caps of National Fire Protection Association hose coupling design. The Developer shall check with officials and be sure he furnishes the design directed by the District.
- (13) Nozzle caps shall have operating nuts of type selected, and shall be chained to barrel of hydrant with a chain constructed of material not less than 1/8 inch in diameter.
- (14) Hose nipples must be of bronze or suitable non-corrodible metal, securely fastened in place.

- (15) The hydrant valve must be faced with "oak sole" leather or hard rubber, must be designed so that it can be easily removed for repairs without digging up hydrant.
- (16) Hydrant operating nut on top of stem shall be octagonal, 1-1/8" across the shoulder. Developer to verify from District before ordering hydrant, that this type and size is satisfactory.
- (17) All hydrants shall be provided with positively operating non-corrodible drip or frost valves arranged so as to properly drain the hydrant when the main valve is closed. The drip valve seat must be securely fastened in the hydrant and must be of non-corrodible material. All other parts of the drip valve mechanism must be designed so as to be easily removed without digging up the hydrant.
- (18) The operating threads of the hydrant must be so arranged as to do away with the working of any iron or steel parts against iron or steel. Either the operating screw or the operation nut must be made of non-corrodible metal, and sufficiently strong to perform the work for which intended.
- (19) The stuffing box and gland must be of bronze or suitable non-corrodible metal, when an iron operating stem nut passes through the stuffing box. When packing nut is used it must be made of bronze or suitable non-corrodible metal. The bottom of the box and end of the gland or packing nut must be slightly beveled.
- (20) Gland bolts or studs must be at least 1/2 inch diameter. Bolts or studs may be either of bronze or suitable non-corrodible metal, iron or steel. The nuts shall be of bronze or suitable non-corrodible metal.
- (21) The hydrant top must be designed so as to make the hydrant as weatherproof as possible, and thus overcome the danger from water getting in and freezing around the stem. Provisions must be made for oiling, both for lubricating and to prevent corrosion. A reasonable tight fit should be made around the stem.
- (22) There must be cast on top of the hydrant in characters raised 1/8 inch, an arrow at least 1-1/2 inches long, and the word "open" in letters 1/2 inch high and 1/8 inch in relief, indicating direction to turn to open the hydrants. Hydrants must open to the left (counter-clockwise).
- (23) The hydrant must be marked with the name or particular mark of the manufacturer. All letters or figures must be cast on the hydrant above the ground line.
- (24) Hydrants, after being assembled, shall be tested by hydraulic pressure to 300 pounds per square inch, before leaving the factory. The test must be made with the valve open in order to test the whole barrel for porosity and strength of hydrant body. A second test must be made with valve shut in order to test the strength and tightness of the valve.
- (25) Hydrant barrel shall be so designed that distance from ground line to bottom of shoe shall be 3-1/2 feet.
- (26) Hydrants must be suitable and guaranteed to safely stand a working water pressure of 150 pounds per square inch.
- (27) The Developer shall furnish the District certificates of inspection sworn to by the factory inspector, in the presence of a Notary Public, stating that

hydrants were made and satisfactorily tested in full compliance with the specifications.

- (28) The Developer shall furnish shop drawings of fire hydrant he proposes to use, for review, modification or approval by the District prior to ordering same.

B. Installation of Fire Hydrants:

- (1) Fire hydrants must be set on smooth flat stones, or on a concrete pad 6 inches thick, with at least two cubic feet of broken stone placed about the waste opening to permit proper drainage.
- (2) Care must be used to set fire hydrants plumb and true.
- (3) The fire hydrant shoe on the opposite side to the hydrant inlet pipe shall be carefully blocked against undisturbed earth with a carefully formed and poured concrete kicker of size shown on detail to prevent the hydrant from being forced out of position by the water pressure.
- (4) Hydrant locations as shown on plans are schematic only, the Developer to provide details to larger scale of fittings, valves, etc., on hydrant inlet line.
- (5) Actual fire hydrant location relative to property lines, edge of paving, drive-ways, parking areas, etc., is to be determined in the field and careful consideration shall be given to each hydrant location to minimize as much as possible likely damage to the hydrant by cars and trucks, and to inconvenience adjacent property owners as little as possible, and to provide the best location of the hydrant to facilitate ready operation by the fire department.
- (6) No fire hydrant shall be finally located without first obtaining the approval of the District in each and every instance.
- (7) One gate valve will be installed between the hydrant and the water main.

AIR RELEASE VALVE

Air release valves shall be placed where shown on the drawings and/or as directed by the District. The air release valve shall be designed for a working pressure of one hundred and fifty (150) pounds and shall be similar to Clow No. 65, Mueller, or Eddy, three quarter (3/4") inch size, or equal. The air valve shall be provided with a copper float of the hollow ball type, and shall be so constructed as to permit any air which accumulates in the lines to escape, but shall be watertight. The valve shall be connected to the line as shown on the plans and shall be installed in a standard 3/4" water meter box, complete with top cover plate and a 3/4" corporation stop all as shown or as specified herein.

TESTING

The Water District may perform the pressure test or may require the Developer to perform the test in the presence of the District's representative. All pipe shall be subject to a pressure test. Pressure shall be applied equal to 50 percent above the rated operating pressure of the pipe at the lowest point in that section of pipe being tested.

Maximum leakage allowed shall be as set forth in AWWA 0600-64, Section 13.7-Leakage Test-Page 25 and as outlined in Table 3, Page 24.

The Developer shall ascertain to his own satisfaction that the system is ready for pressure

and leakage tests prior to performance of such tests. The system shall then be tested as specified. Before the extension will be accepted by the Water District, a test will be made under the supervision of a Water District representative.

DISINFECTION

Upon completion of the water mains or sections of the mains the Developer shall disinfect such mains in accordance with the procedure prescribed by the American Water Works Association Specification C601-53-T using either liquid chlorine or calcium hypochloride such as "HTH", "Perchlorine", or "Pittchlor", or equal, except that the chlorine residual shall not be less than 25 ppm at the end of 24 hours and as approved by the Water District. The Developer shall be responsible for payment to the Water District required for flushing and testing the water mains.

CUTTING AND REPLACING FENCES, LAWN, SOD AND SHRUBBERY

Whereever it becomes necessary in excavating to cut fences or disturb lawns, the fences and lawns shall be restored after completion of the backfill to the original condition.

- (a) Fences. Fences shall be restored to their original condition using the same type of materials that were used in the original construction.
- (b) Lawn Sod. Where lawn sod has been disturbed by trenching same shall be backfilled in accordance with the applicable provisions as set forth in the specifications for Pipe Backfill, and compacted by hand, if necessary. After replacing the sod, it shall be covered loosely with earth, tamped lightly to protect the roots, and sprinkled with water. See Plans for locations.
- (c) Shrubbery. Shrubbery shall be taken up ahead of construction, stored and reset in such a manner as to not damage. If replacement is required the Developer is responsible.

STEEL JACKET PIPE: (BLACK STEEL)

Steel Jacket Pipe under this specification shall be 0.25" wall, non-pressure pipe, Sch. 40, A steel jacket must be used to incase all water lines larger than two inch under federal, state and county roads.

VALVE BOXES

Valve Box shall be Goddard No. 1-RT Gate Valve Box or equal as approved by the Water District. Gate Valve Box to be installed with necessary telescoping sleeve. Sleeve to be non-metallic pipe, to fit down on bonnet of gate valve or equal as approved by the Water District.

Gate Valve Boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover flush with the surface of the finished grade or at such other levels as may be directed. One 4 X 4 X 4 yellow concrete post 36" long shall be placed in the ground 18" deep beside each gate valve box.

BLOW-OFF VALVES

A blow-off valve shall be installed at the end of each water line. The blow-off shall be installed at right angles to the main, not on the end.

Installations at the end of line shall not be permitted. Anchorage shall be required at the end of all lines.

3" blow-off shall consist of a tee in the main with flanged end to accommodate a companion flange, 3" galv. pipe 3 feet long lead threaded 3" G.V.W/Box screwed ends 90 degree ell galv., nipple 8" long threaded ends and cap.

A 4" or larger blow-off shall include the same fittings and pipe.

Blow-off box and cover shall be Goddard or equal as approved by the Water District.

Blow-off box shall be No. 36 Series, HLD, self-closing, self-locking. Blow-off box setting shall be a minimum of twenty-four (24) inches and may be in one or two sections and shall have prefabricated holes in unit for inlet.

Blow-off box cover (lid) shall be cast iron and shall be furnished with the word, "Water" in recessed letters cast in the Cover, or equal and as approved by the Water District. Each cover shall be painted yellow.

PROGRESS SCHEDULE

No order of construction is set out herein since it will be the Contractor's responsibility to plan his work in such a manner as to best accomplish the desired results, however no shipping about will be permitted. The Contractor will be required to submit a progress schedule to the District for consideration and approval which schedule shall be adhered to throughout the construction unless approved changes therein are made. Complete work, including clean-up, shall be accomplished in an orderly manner. Rocks shall be picked up and trees disposed of as pipe laying is progressing.

EXISTING UTILITIES

Particular attention is directed to the existing utilities systems which services shall be uninterrupted and any work involving conflict with these systems shall be worked out to the satisfaction of the District at the Contractor's expense.

QUALIFICATIONS OF BIDDER

The Contract will be awarded only to responsible contractors qualified by experience to do the work specified herein. The Bidder shall submit, prior to the award of contract, satisfactory evidence of his experience in like work and that he is fully prepared with the necessary organization, capital, equipment and machinery to complete the work to the satisfaction of the District within the time limit stated in the proposal.

ORDELY WORKING MANNER

The Water District will be advised in writing three days in advance as to the day any on site construction work is to begin. If work is not continuous, the contractor shall be liable to the Developer for the cost of inspection on an 8 hour day bases; 5 days per week until all work is completed.

WITNESS: \_\_\_\_\_

\_\_\_\_\_  
DEVELOPER

BY: \_\_\_\_\_

\_\_\_\_\_

CONTRACTOR'S AGREEMENT

\_\_\_\_\_, as contractor, shall perform the construction work under a separate contract for the Developer. All obligations of the Developer and Contractor which is relative to the construction work is understood and assumed. If questions arise concerning the interpretation of the specifications, the Water District's representative's interpretation will be final.

WITNESS: \_\_\_\_\_

\_\_\_\_\_

CONTRACTOR

BY: \_\_\_\_\_

DATE: \_\_\_\_\_