

WATER USE ORDINANCE

FOR THE

TOWN OF NORTH HERO, VERMONT

As Adopted by the North Hero Selectboard on November 3, 1997

**WATER USE ORDINANCE
FOR THE
TOWN OF NORTH HERO, VERMONT**

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ARTICLE I

GENERAL; RESPONSIBILITIES OF TOWN & WATER OFFICIALS

Section 1: General

The Town of North Hero, Vermont under the authority of the Selectboard and with approval of a majority of the registered voters has constructed and operates a public community water system, which serves the residents and businesses of the Town. The Selectboard, as the elected officials of the municipality shall have final authority over all aspects of the system except as delegated below and amended from time to time.

The Selectboard shall appoint a five-member Board of Water Commissioners. The Commissioners shall serve three-year terms with the term's set to expire so as to maintain a reasonable continuity of experience. The Commissioners shall in turn appoint/hire necessary water system staff including but not limited to a treatment plant operator and a clerk.

Section 2: Water Treatment Plant Operator

The responsibilities of the Water Treatment Plant Operator shall include:

- A. Those tasks, as outlined in the Employment Contract, necessary for the safe and efficient operation of the plant.
- B. Preparation of the documentation and testing as mandated by the State of Vermont for the operation of the plant.
- C. Assist the Commissioners with the preparation of an Annual Report to be completed by January 15th of each year, compiling relevant information of the plant performance. Included shall be a summary of expenditures and a recommendation of the following year's budget for the consideration by the Selectboard.

Section 3: Water Systems Clerk:

The responsibilities of the Water Systems Clerk shall include:

- A. Those tasks, as outlined in and delegated by the Employment Contract for the efficient management of the water system.
- B. The billing for and collection of water service connection and annual fees.

Section 4: Board of Water Commissioners

- A. Contract for the positions of Water Treatment Plant Operator and System Clerk.
- B. With the assistance of the plant operator prepare an Annual Report to be completed by January 15th of each year, compiling relevant information of the plant performance. Included shall be a summary of expenditures and a recommendation of the following year's budget for the consideration by the Selectboard.
- X C. Make recommendations to the Selectboard with regard to the setting of fees.
- D. Make recommendations to the Selectboard as to the management of the water system reserve account.
- E. Make recommendations to the Selectboard for amendments to this ordinance as necessary from time to time.
- ? X F. Rule on water use policies such as fees, rebates, etc.
- G. Collect or contract for collection of past due receipts.
- H. Act as necessary to further the interest of the water system.

Section 5: Selectboard

The responsibilities of the Selectboard shall include:

- A. Review, amend and approve the water system budget for inclusion in the Town's annual budget.
- X B. Review recommendations by the Water Commissioners and act upon proposed amendments to the system's rates and the Water System Ordinance.
- C. Appoint the Board of Water Commissioners.

REGULATIONS OF WATER USE

AN ORDINANCE REGULATING THE INSTALLATION AND USE OF PUBLIC AND PRIVATE WATERLINES, SERVICE CONNECTIONS, HYDRANTS, VALVES AND OTHER EXISTING OR PROPOSED COMPONENTS OF THE PUBLIC WATER SYSTEM AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF: IN THE TOWN OF NORTH HERO, COUNTY OF GRAND ISLE, STATE OF VERMONT.

The Selectmen of the Town of North Hero hereby ordain:

ARTICLE II

DEFINITIONS

Unless the context specifically indicates otherwise, the meaning of terms used in this ordinance shall be as follows:

Section 1 Corporation Stop - A valve for joining a service pipe to a street water main. It is usually owned and operated by the water department. It cannot be operated from the surface.

Section 2 Peak Demand - The maximum momentary load placed on a water system.

Section 3 Permit - A written document issued by the Town of North Hero pursuant to this ordinance giving a designated person permission to operate and/or construct, alter, renovate or connect to or draw water from the Town public water system.

Section 4 Person - An individual, partnership, association, syndicate, company, firm, trust, corporation, government corporation, municipal corporation, institution, department, division, bureau, agency or any entity recognized by law.

Section 5 Service Connection - Each single water pipeline which provides water to an individual residential living unit, a commercial unit or an industrial unit from the public water system is a service connection. The service connection shall start at the corporation stop at the main water line and extend to the building. The service connection on new construction shall be constructed by the applicant to the Town standards. Once installed, the responsibility for maintenance and repairs on the service connection is split at the curb stop between the owner/applicant and the Town. The Town has responsibility for maintenance from the main line to and including the curb stop. The owner/applicant has responsibility for maintenance and repairs from beyond the curb stop to and inside the building.

Section 6 Valve Boxes - A metal or concrete box or vault set over a valve stem and rising to the ground surface, to allow access to the stem in opening and closing the valve. A cover is usually provided at the surface to keep out dirt and debris.

Section 7 Wet Tap - A connection made to a main that is full or under pressure.

Section 8 Equivalent Residential Unit (ERU) - That amount of water theoretically used by an average single family home as set forth in the Vermont Water Supply Rule and incorporated into this ordinance. All other types of uses are considered as a percentage of and ERU.

ARTICLE III

WATER SERVICE CONNECTIONS

Section 1

No unauthorized person shall uncover, make any connections with, or opening into, use, alter or disturb any public water line or appurtenance thereof without first obtaining a written permit from the Town.

Section 2

The owner or agent shall make application for initiation of water service on a form supplied by the Town. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgment of the Town. A water service connection fee, as set forth in Article ____ shall be paid to the Town at the time the application is filed. No physical construction between the water service connection piping and the main waterline shall be made until the application is approved by the Town and the water mains are fully tested and found to be acceptable by the Town.

Section 3

All costs and expense incidental to the installation and connection of the building water service connection shall be borne by the owner. The property owner/agent is responsible and must provide all necessary excavation from the main to the building or structure. The owner shall indemnify the Town from any loss or damage that may directly or indirectly be occasioned by the installation of the water service connection.

Section 4

A separate and independent corporation stop and curb stop with valve box shall be provided for every building, fronting on a water main. Where one building stands at the rear of another or on an interior lot and no water system is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, the Town may allow additional services from a single corporation stop, providing each building has a separate curb stop and valve box.

Section 5

The size, depth, alignment, materials of construction of the building water service connection and the methods to be used in excavating, placing the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the building and plumbing code, Public Works Specifications or other applicable rules and regulations of the Town. In the absence of code provisions or in amplification thereof the materials and procedures set forth in appropriate specifications of the National Plumbing Code, Ten States Standards for Water Main and AWWA Standards, all latest edition, shall apply. Furthermore, the following additional standards shall apply:

- a. New service connections for residential or commercial use shall be Type K Copper or PVC, schedule SDR21 rated at 200 psi or compression connectors SDR 9 CTS P.E. rated at 200 psi.
- b. Service connection taps to the main water line and all associated work to curb stop shall only be performed by firms qualified to perform the service connection tap. The qualification of a firm to perform this tap shall be determined by the Town.

The Appendix to this ordinance contains additional guidelines for the installation of building water service connections.

Section 6

Prior to any service connection being made to the main water line the Water Department shall be given at least two working day's notice in order that the work can be scheduled for inspection. All service connections will be made during normal workday hours and no connection shall be allowed on Saturday, Sunday or legal Town holidays. If the Water Department has not been properly notified and the work has proceeded, the Water System Operator or Water Commissioners may require the completed work to be uncovered for examination, at the owners' expense. The property owner/agent shall agree, as a condition of receiving approval for connection to the Town water system, to restore the street, sidewalk, curbs, electrical lines, grassed or open areas or other features to their original conditions after the installation of the said water line.

Section 7

All excavations for building water service connections shall be adequately guarded with barricades and lights so as to protect the public from hazard. A permit shall be obtained from the Town for all construction within the highway right-of-way, which permit shall specify the times and dates of construction, the type and manner of construction, any guarantee thereof and any special safety requirements. Construction within State Highway right-of-way shall require that a permit be obtained from the Agency of Transportation.

Section 8

The owner or their agent shall not block any driveway, street, or road at any time without permission of the Town and other controlling agencies. Every effort shall be made to permit the movement of vehicular traffic at all times. Whenever it becomes necessary to cross or interfere with roads, walks, or drives, whether public or private, the owner or their agent shall maintain, at their own expense, and subject to the approval of the Town, safe bridges or other means of egress.

ARTICLE IV

USE OF THE PUBLIC WATER SUPPLY SYSTEM

Section 1

The primary uses of the public water supply system shall be for the supply of potable water to all connected users for domestic consumption for structures within the area served by the public water supply system.

Section 2

Auxiliary use of the public water system, such as using hydrants to fill swimming pools, flooding ice skating rinks, agricultural uses and the like shall only be permitted when such uses are approved by the Town and not in conflict with the primary uses under Section 1.

Section 3

Hydrant Use:

Except for hydrant use by the Water Department for flushing water mains for the Fire Department for filling tankers, use of hydrants in the Town of North Hero shall require prior approval and issuance of a hydrant use permit.

The Water Department shall be responsible for hooking up and disconnecting hoses.

The Town will provide 300 feet of fire hose; any facility, which cannot be served by this length of hose, will need additional hose provided by the owner. The fee schedule is as set forth in Article _____ Rates. The permit application form is provided in the Appendix.

Section 4

In consideration of water service supplied by the Town of North Hero, all applicants agree to be responsible for payment of all bills rendered and for all water used by the applicant, their tenants, successors in tenancy or in ownership and all other persons at the specified locations, unless and until proper notice is given to the Town Water Department of termination of service on a specific date. The applicant shall agree to abide by all rules and regulations established by the Town of North Hero Water Department consistent with enforcement of the provisions of this ordinance. A Change of Service form is provided in the Appendix.

Section 5

All water mains shall be constructed, tested and disinfected in accordance with AWWA standards C-600, C-601, C-900 and The Vermont Water Supply Rule. The test pressure for all mains shall be a minimum of 200 psi; or 150% of working pressure, whichever is greater.

Section 6

Private water supply main connections to the Public Water Supply System.

- a. The Town's responsibility for private water supply main connection to the Public Water System terminates at the shutoff valve(s) to the private system water mains. The Town assumes no responsibility for hydrant or line maintenance, operational checks, line breaks or other similar items of work in connection with these systems.
- b. The Town of North Hero may assume the responsibility for operation and maintenance of the private water supply main lines, services, excluded, at such time as the following conditions for acceptance are met by the owners of the private system:
 - 1) Accurate surveyed as-builts shall be provided to the Town, indicating line sizes and locations, hydrants, valves, curb stops, service connections and all other pertinent features of the system.
 - 2) Deeds, easements or other similar legal documents shall be prepared by the owner and found to be acceptable by the Town transferring the owner's legal interest in the main lines and pertinent features.
 - 3) The Water Department of the Town shall conduct an inspection of the system and provide the owner, with a list of improvements, which must be made to bring the water system up to municipal public work standards prior to acceptance by the Town. The private water system owner shall make the necessary improvements prior to acceptance of the system by the Town.
- c. The Town will require the installation of a meter and meter pit meeting the Town's specifications at the point of connection to the municipal water system. Cost to the water customers for usage shall be based upon the same cost to other system users plus a metered use charge prorated to all connected users for water consumption over and above the nominal allowance per ERU (set at 300 gpd), by measuring the total quantity of water passing through the meter. This Policy is intended to protect the town from the expense of water lost through leakage in the private systems not meeting Town construction standards.

ARTICLE V

PROTECTION FROM DAMAGE

Section 1

No person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance, or equipment which is part of the Public Water System. Any person violating this provision shall be subject to immediate arrest under the charge of unlawful mischief as set forth in Title 13, Section 3701 of the Vermont Statutes Annotated. Any person violating this article on conviction thereof shall be fined an amount not less than \$100.00 for each violation.

ARTICLE VI

POWERS AND AUTHORITY OF INSPECTORS

Section 1

The Selectboard and other duly authorized employees of the Town bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling, and testing and maintenance in accordance with the provisions of this ordinance.

Section 2

While performing the necessary work on private properties referred to in Article VI, Section 1 above, the Selectboard or duly authorized employees of the Town shall observe all safety rules applicable to the premises established by the owner or tenant, and the owner or tenant shall be held harmless for injury or death to the Town employees. The Town employees and the Town shall indemnify the owner or tenant against liability claims and demands for injury of property damage except as may be caused by negligence or failure of the owner or tenant to maintain safe premises or conditions, including conduct of agents or employees of the owner or agent, as applicable.

Section 3

The Selectboard and other duly authorized employees of the Town bearing proper credentials and identification shall be permitted to enter all private properties through which the Town holds an easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair and maintenance of any portion of the water works lying within said easement. All entry and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the easement pertaining to the private property involved.

ARTICLE VII

PENALTIES

Section 1

Any person found to be violating any provision of this ORDINANCE except Article ____, shall be served by the Town with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violation.

Section 2

Any person who shall continue any violation beyond the time limit provided for in Article ____, Section 1, shall be guilty of a misdemeanor, and on conviction thereof shall be fined the maximum amount allowable under state statute. Each day in which any such violation shall continue shall be deemed a separate offense.

Section 3

In addition to any fine imposed under Section 2 hereof, any person violating any of the provisions of this ordinance shall become liable to the Town for any expense, loss, or damage occasioned the Town by reason of such offense.

Section 4

Notwithstanding any of the foregoing provisions, the Town may institute any appropriate action including injunction or other proceeding to prevent, restrain or abate violations of any provisions of this ordinance.

ARTICLE VIII

RATES

Section 1

The Board of Selectmen shall have the authority to establish rates, including service connection fees, hydrant fees, user fees, turn-on/shutoff fees, and other similar fees to defray the costs of construction, operations and maintenance of the system.

Section 2

A service connection fee shall be paid by all new water users at time of submittal of the application for water service. The service connection fee is established to help defray the Town's past, current and future costs, both direct and indirect, of providing potable water and water for fire protection to the property boundary. The water service connection fee is based upon the number of Equivalent Residential users (ERU's) which is the theoretical volume of water used by an average single family home. Fees for non-single family water customers are calculated based upon Vermont Water Supply Rule "Unitized Average Day Flows", based upon the type of use. The calculated UADF is then divided by 300 gpd, which is the average usage of one ERU to get the total number of ERU's. Seasonal uses are given a 1/3 discount in the number of ERU's from the year-around rate. The connection fee rate shall be set by the Selectboard.

Section 3

If the payment of the service connection creates a financial hardship, an applicant may request a payment schedule for the connection fee over a period not to exceed five years at an interest rate of 6% with a 10% down payment. Payments will be scheduled with the quarterly water use payments until amortized.

Section 4

A hydrant use fee shall be paid by all users, (not including Town Departments for use of Town hydrants) at the time of submittal of the application for hydrant use. The hydrant fee schedule is \$25 for use of the Town hydrants.

Section 5

The total annual user fee shall be paid by all users of the Town Water System based upon the total number of ERU's multiplied by the rate of \$600, or as amended by the Selectboard as required to operate, maintain, and pay debt service on the system.

Section 6

There shall be shutoff and turn-on fees of \$20.00 during normal working hours (7:00 a.m. to 3:30 p.m.) and \$30.00 during overtime hours for turning on and shutting off water at the

curbstop. These fees shall be charged in all cases except when it is determined that there is a problem with the service connection between the curb stop and the main line. The owner of the property is responsible for all problems between the curb stop (not including the curb stop) and the building.

Section 7

Excess revenues may be placed into a reserve fund, accessible for use on water system related construction or expenses.

Section 8

Water charges will be invoiced quarterly. Water charges shall be payable on or before the 30th day following the date of the invoice or a later date as shown on the invoice.

New water connections made during a three-month billing period shall be billed on a prorated basis according to the number of days of service provided.

Section 9

All water charges will be billed to the owner of record of the facility(s) served, unless waived by the legislative body.

Section 10

The fee structure shall be reviewed by the legislative body on an annual basis.

Section 11

The Town will contribute the sum of \$1,500 per equivalent residential unit from the water system connection fee toward the extension of water mains to those properties not directly abutting the proposed water system as approved by the voters of the Town of North Hero on January 18, 1994. All other costs associated with the installation of such water mains shall be borne by the parties served, including engineering, construction and the legal establishment of the necessary right-of-way. All lines shall comply with Town construction standards in effect at the time of application.

The Town/Water Board is not responsible for installing curb stops for multiple users accepting the rebate.

Section 12

Properties outside the service area of the water system, namely those with frontage along West Shore Road, Block House Point Road, North End Road, and Pelots Point, shall be able to connect to the Town Water System, at such time as a Water Main is extended to those respective areas, for a connection fee of \$2,000, unless otherwise amended by the North Hero Selectboard.

Section 13

No user is allowed to sell, furnish or provide any water from this system to any person, building or use, unless the Water Committee, after written application by the user, approves and makes special provision for charging the user for this extra consumption.

Section 14

Delinquency - Disconnection of Service:

1. The Water Committee may order any water service to be disconnected when any payment is delinquent as defined in the Uniform Water and Sewer Disconnect Act, Title 24, Chapter 129, Section 5141 et seq (herein after "Act"), and Notice of Disconnection has been provided to the customer pursuant to the provision of the "Act".
2. The Water Commission may charge fees for collection of overdue accounts and reconnection of service disconnected because of nonpayments. Such fees shall be as set forth on the following schedule, or the maximum fees allowed under the provisions of the "Act", whichever are greater:

Collection Trips - \$25.00 maximum, regardless of number

Reconnection: Normal Hours - \$25.00 Overtime - \$37.50

3. The District may collect interest on overdue delinquent accounts at the rate of one percent (1%) per month or fraction thereof for the first three months after the account becomes delinquent (as defined in the "Act") and thereafter at the rate of one and one-half percent (1 ½%) per month or fraction thereof.
4. The Water Committee shall further exercise all rights to warrants and liens that are allowed by law for enforcing or securing the collection of outstanding taxes, assessments, charges and accounts.

Section 15

Unauthorized Connection: The officers and agents of the Water Department may at all reasonable times enter any premises supplied with water to examine the pipes and fixtures and to prevent unnecessary waste. If any person, without the prior written consent of the Water Department, shall use any connection to the water system or shall use same in violation of the provisions of these Bylaws and/or the "Water Users Agreement, an action under Title 24, Chapter 129, Section 5150 may be maintained against such person by the Fire District for the recovery of its damages including reasonable attorney's fees incurred by it in connection with the prosecution of said action.

Section 16

Seasonal use connections shall be turned on during the period of April 15 to April 30 and turned off during the period of October 30 to November 15. Property owners requesting connection/disconnection at other times shall be assessed a fee of \$25.00 or as amended from time to time by the Water Commissioners. It is unlawful for anyone other than an authorized representative of the Water Department to connect/disconnect water services.

ARTICLE IX
ORDINANCE IN FORCE

Section 1

This ordinance shall be in full force and effect from its passage, approval, recording and publication as provided by law.

Section 2

Passed and adopted by the Board of Selectmen of the Town of North Hero, State of Vermont on the _____ day of _____, 1996.

Approved this _____ day of _____, 1996.

BOARD OF SELECTMEN

Attest _____
Clerk

**TOWN OF NORTH HERO WATER DEPARTMENT
CHANGE OF OWNERSHIP**

The undersigned, being the owner/owner's agent of the property located at _____
_____, does hereby notify the Town of
North Hero Water Department of a change in ownership.

OLD OWNER:

Name _____

Current Address _____

New Address _____

NEW OWNER:

Name _____

Current Address _____

Account Number _____

Administrative Fee: \$25.00 service fee paid _____

TOWN OF NORTH HERO WATER DEPARTMENT

Cost Share Policy

The Town will contribute up to the sum of \$1,500 per equivalent residential unit from the water system connection fee toward the extension of multiple user water mains **to those properties not directly abutting the proposed water system** as approved by the voters of the Town of North Hero on January 18, 1994. All other costs associated with the installation of such water mains shall be borne by the parties served, including engineering, construction, and the legal establishment of the necessary rights-of-way. All lines shall comply with the Town construction standards in effect at the time of application.

Calculation of the total contribution shall be based upon the following units pricing or as updated at the discretion of the Town:

1" service line	\$10.00 per linear foot
1 ½ " service line	\$16.00 per linear foot
2" or larger service line	\$20.00 per linear foot
Trench ledge removal	\$20.00 per linear foot

Dated: _____

Town of North Hero Selectboard

VERMONT WATER SUPPLY RULE - CHAPTER 21

TABLE 5 - UNITIZED AVERAGE DAY FLOWS

Engineering Design Criteria
Unitized Average Day Flow Quantities

Establishment	Gallons/Person/Day (Unless otherwise noted)
Assembly Areas, Conference Rooms.....	5
Airports.....	5
Bathhouses.....	5
Bowling Alley (no food service) per lane.....	75
Camps:	
Campground with central comfort stations (4 people/site).....	100/site
With flush toilets, no showers (4 people/site).....	75/site
Construction camps (semi-permanent).....	50
Day camps (no meals served).....	15
Day Care Centers (per child or employee, per shift).....	15
Resort camps (night & day) with limited plumbing.....	50
Cafeterias.....	50/seat
Churches:	
Sanctuary seating x 25%.....	5
Church suppers.....	8
Cottages.....	50
Country Clubs (per resident member).....	100
Country Clubs (per non-resident member present).....	25
Dairy Farms (per tie-up).....	20/tie-up
Dentists:	
Staff member.....	35
Per chair.....	200/chair
Doctor's Office:	
Staff member.....	35
Patient.....	10
Dwellings:	
Apartments (minimum 2 people/bedroom).....	75
Boarding houses.....	50
Addition for non-resident boarders.....	10
Multiple dwelling (condominiums, town houses, clustered housing) (minimum 2 people/bedroom).....	75
Den w/couch.....	55
Rooming houses (per occupant bed space).....	40
Single family dwellings (per bedroom).....	150
Factories (gallons per person, per shift, exclusive of industrial wastes).....	15
Gyms:	
Participant.....	10
Spectator.....	3
Hairdressers:	
Operator.....	10
Per chair.....	150/chair
Hotels** with private baths (per person sleeping space).....	50
Hospitals.....	250
Institutions other than hospitals (per bed).....	125
Laundries, self-service (gallons per machine).....	500
Mobile Home Parks:	
Systems serving 4 or fewer trailers (per space).....	450
Systems serving 5 or more trailers (per space).....	250
Motels** with bath, toilet (per persons sleeping space).....	50
Nursing Homes.....	125
Picnic Parks (toilet wastes only/picnicker).....	5
Restaurants (toilet and kitchen wastes/seat, including restaurant and bar seats).....	30
Additional per seat for restaurant serving 3 meals per day.....	15

VERMONT WATER SUPPLY RULE - CHAPTER 21

Restaurants (fast food - see cafeteria)	
Schools:	
Boarding.....	100
Day, without gyms, cafeterias & showers.....	15
Day, with gyms, cafeterias & showers.....	25
Day, with cafeteria, but without gyms and showers.....	20
Service stations (first set of gas pumps).....	500
Each set thereafter.....	300
Shopping Centers/Stores**:	
Large dry goods.....	5 gpd/100 SF
Large supermarkets with meat department without garbage grinder.....	7.5 gpd/100 SF
Large supermarkets with meat department with garbage grinder.....	11 gpd/100 SF
Small dry goods (in shopping centers).....	100 gpd/store
Subdivision per lot (or 150 per bedroom whichever is greater).....	450
Theaters:	
Movie (per auditorium seat).....	5
Drive-in (per car space).....	5
Travel trailer parks without individual water & sewer hookups:	
Comfort Station (per trailer space).....	90
Dumping Station (per trailer space).....	35
Travel trailer parks with individual water & sewer hookups (per trailer space).....	125
Veterinary clinic (3 or fewer doctors):	
without animal boarding.....	750/clinic
with animal boarding.....	1500/clinic
Workers:	
Construction (at semi-permanent camp).....	50
Day at schools and offices (per shift).....	15

*Elderly housing may be calculated at 1.5 people per bedroom.
 **Does not include laundry or restaurant demand.

TOWN OF NORTH HERO

P.O. Box 12
North Hero, Vermont 05474

Shire Town of
Grand Isle County

WATER DEPARTMENT
APPLICATION FOR WATER SERVICE

The undersigned, being the owner/owner's agent of the property located at

_____ does hereby

_____ (#) (Street Name) (Lot #) (Development)

request a permit to initiate water service as noted below to serve _____ Equivalent Residential Units (ERU's).
(# of units)

Property Owner

Name: _____
Daytime Telephone: _____

Address: _____

Installer

Name: _____
Address: _____
Daytime Telephone: _____

Insurance Carrier: _____
Address: _____
Phone: _____
Policy #: _____

Firm Performing Tap to the Main Line

Name: _____
Address: _____
Daytime Telephone: _____

Insurance Carrier: _____
Address: _____
Phone: _____
Policy #: _____

SERVICE REQUESTED

Water Service Initiation Fee: _____

See attached "Connection/Annual Fee Calculation" sheet.

- (a) Prior to the approval of the hook-on, the Town may, in its sole discretion, obtain an engineering opinion as to whether the Town has sufficient capacity to serve the customer.
- (b) The customer is to pay a per ERU hook-on fee according to the schedule set forth by the Water Commissioners. The customer must also pay for and arrange the installation of the saddle, corporation, curb stop, and intermediate piping using a Commission-approved contractor and Commission-approved hardware. The current approved contractors are Island Excavating Corporation, Grand Isle; Beaver Creek Construction, North Hero; Scandore Construction, North Hero. These contractors are selected based on their familiarity with municipal water system construction practices, familiarity with the Town of North Hero Water System, demonstrated quality of work, and ability to immediately remedy problems encountered during installations. If the customer gets another contractor, he or she must come before the Commission with said contractor for explanation of installation and provide suitable references. In addition, the customer is obligated to pay the system operator \$25 per hour to supervise the installation and the contractor must provide proof of sufficient liability insurance.
- (c) The customer, at his or her expense, shall arrange for the installation and connection of all lateral piping beyond the curb stop. Before service laterals are backfilled and connected to the Town system, inspection and approval shall be required from an official representative appointed by the Water Commissioners of the Town. The type and quality of pipe, connections, and workmanship shall conform to the requirements of the Town.
- (d) All repair, replacement, and maintenance of such laterals shall be at the customer's own expense and subject to prior approval of the Town as outlined above.
- (e) In consideration of the water service supplied by the Town of North Hero Water Department, I agree to be responsible for payment of all bills rendered and for all water used by me, my tenants, successors in tenancy or ownership, and all other persons at the above location, unless and until proper notice is given to the Town Water Department of termination of service on a specific date. I also agree to abide by all rules and regulations established by the North Hero Water Department.

IN WITNESS WHEREOF, the CUSTOMER has executed this Agreement this _____ day of _____, 19 _____.

IN THE PRESENCE OF:

_____ CUSTOMER

_____ CUSTOMER

Note: If property is occupied by husband and wife, both must sign. If property is owned by more than one person, all owners must sign. If tenant signs, landlord must also sign.

NORTH HERO WATER DEPARTMENT
Connection/Annual Fee Calculation Sheet

Date: _____

Property Owner: _____

Mailing Address: _____

Property Location: _____

Tax Map # _____ Parcel # _____

Use Description: _____

Unitized Average Daily Flow Quantity _____ gpd per _____
(Per Table 5, Vermont Water Supply Rule - Chapter 21, Appendix A)

NOTE: One Equivalent Residential Unit is defined as any single family residence with usage of 300 gpd.

Calculation:

1. Number of Units (_____) Type _____
2. Unitized Average Daily Flow Quantity _____ gpd
3. Property Average Daily Demand Line 1 x Line 2 = _____
4. Equivalent Residential Unit (ERU) Line 3 + ~~300~~ gpd = _____
5. Connection Fee Line 4 x \$2,000 = _____
6. Annual Fee Line 4 x \$600 = _____
7. Summer Use Discount
 - a. Discount Factor _____
 - b. Connection Fee Line 5 x Line 7a = _____
 - c. Annual Fee Line 6 x Line 7a = _____

TOWN OF NORTH HERO

P.O. Box 38
North Hero, Vermont 05474

Shire Town of
Grand Isle County

**NOTICE TO PROPERTY OWNERS
AND
CONTRACTORS**

This Notice is to inform all property owners connecting to the municipal water system currently under construction, and all Contractors performing such work, of the following policies:

1. Subject to final completion and acceptance of the water mains being installed by the Town's Contractors, the Contractors maintain ownership of the work. Property owners and their contractors are responsible to the Town's Contractors for any damage resulting from the connection to these mains or service lines.
2. Contractors performing work within the Town's right-of-way or water line easements shall have and provide proof of general liability insurance as will protect the Town from all claims for bodily injury, death, or property damage, arising from the contractor's work.
3. Activation of service lines or final connection to interior plumbing is not allowed until such time as the Town gives notice of the system's readiness to supply potable water to its customers.
4. Property owners shall completely disconnect to the satisfaction of the Town's inspector existing water sources prior to activation of service lines and final connection to the municipal water system.

CERTIFICATION OF RECEIPT

Property Owner: _____

Date: _____

Contractor: _____

Date: _____

Witness: _____

Date: _____

ADDITIONAL COSTS FOR NEW ERU's ON PRIVATE EXTENSIONS DEEDED OVER TO THE TOWN

This will apply to all private extensions meeting Town requirements over 750 feet in length from main line curb stop to new curb stop. Private projects with town assistance are not entitled to a refund.

1. Two members of Water Commission to approve work completed and give authorization for checks to be disbursed.
2. Refund of project costs to be prorated to private members as additional ERU's connect.
3. Water Department/Town collects money as standard hook-on fee for new ERU's and refunds appropriate members.
4. Procedure for refunds to be as follows:

Total cost of project from main line curb stop to new curb stop. (Excludes cost of ERU from curb stop)
- Subtract Town rebate of \$1500 per ERU
 Balance = Total Private Cost

Divide total private cost by total number (existing and potential) of ERU's = Additional cost to new ERU. This amount is divided equally among existing ERU's.

Example:

Total Project Cost	\$20,000
Town rebate (1500 x 5 ERU's)	<u>7,500</u>
Private Cost	\$12,500

New ERU extension cost: \$12,500 divided by 6 ERU's = \$2,083.33

Refund of \$2,383.33 divided by 5 existing ERU's = \$416.66 per ERU

5. Additional Fees:
 - a. \$50.00 processing charge per ERU - This is in addition to extension charge
6. Initial numbers are verified by Water Commissioners at time of waterline transfer.
7. Process ends for individual ERU's when:
 - a. 15 years after initial transfer of extension to town
 - b. Property sold - Portion of ERU extension charge goes back to new ERU.
 - c. Additional extension per new ERU equals \$500 or less
8. Additional problems or concerns to be ruled on by the Water Committee

WATER TEST

HYDROSTATIC TEST

Project _____ Date _____

Contractor _____

Type of Pipe _____ Type of Joint _____

Section Tested _____

BEGIN TEST	TIME	GAUGE PRESSURE	REMARKS
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
_____ minutes	_____	_____	_____
END TEST	_____	_____	_____

WATER LOSS: _____

TEST RESULTS: _____

TESTED BY: _____

TOWN OF NORTH HERO

P.O. Box 38
North Hero, Vermont 05474

Shire Town of
Grand Isle County

WATER LINE EXTENSION REBATE

SECTION 1

Contractor: _____

Location of Project _____

Approximate Footage/Cost _____

Type of Use _____

Number of ERUs _____
(Equivalent residential Units)

List of ERUs _____

SECTION 2

This project meets or exceeds all standards required by the Town of North Hero.

Engineer's signature

SECTION 3

The undersigned agree to the contents of this agreement and the Town of North Hero Water Service Agreement. Please disburse my water line rebate as directed below:

PROJECT CUSTOMERS

REBATE TO

Name _____ Signature _____
Name _____ Signature _____

Name _____ Address _____
Name _____ Address _____
Name _____ Address _____
Name _____ Address _____
Name _____ Address _____
Name _____ Address _____

SECTION 4
CONTRACTOR'S LIENS

The undersigned swears that there are no liens currently attached on the above project and forfeits future rights to do so.

contractor's signature

date

SECTION 5

The above conditions have been met per Town requirements. The above money shall be rebated as directed above in Section 3.

APPROVED:

reviewers signature

date

DISAPPROVED: (State the reason for disapproval) _____

reviewers signature

date

DRAFT -- November 1, 1996

North Hero Water Department Grievance Procedure:

The North Hero Water Department will hear formal written grievances regarding decisions, rules and charges at the regular monthly water meeting in April of each year.

Decisions on grievances will be rendered immediately following that meeting.

Appeals to the Water Department decisions will be referred to the Board of Civil Authority in the same manner as property tax appeals.

Appeals of the Board of Civil Authority decisions would require a filing with Vermont Superior Court.

**Town of North Hero Water Department
P.O. Box 38
North Hero, Vermont 05474
(802) 372-6926**

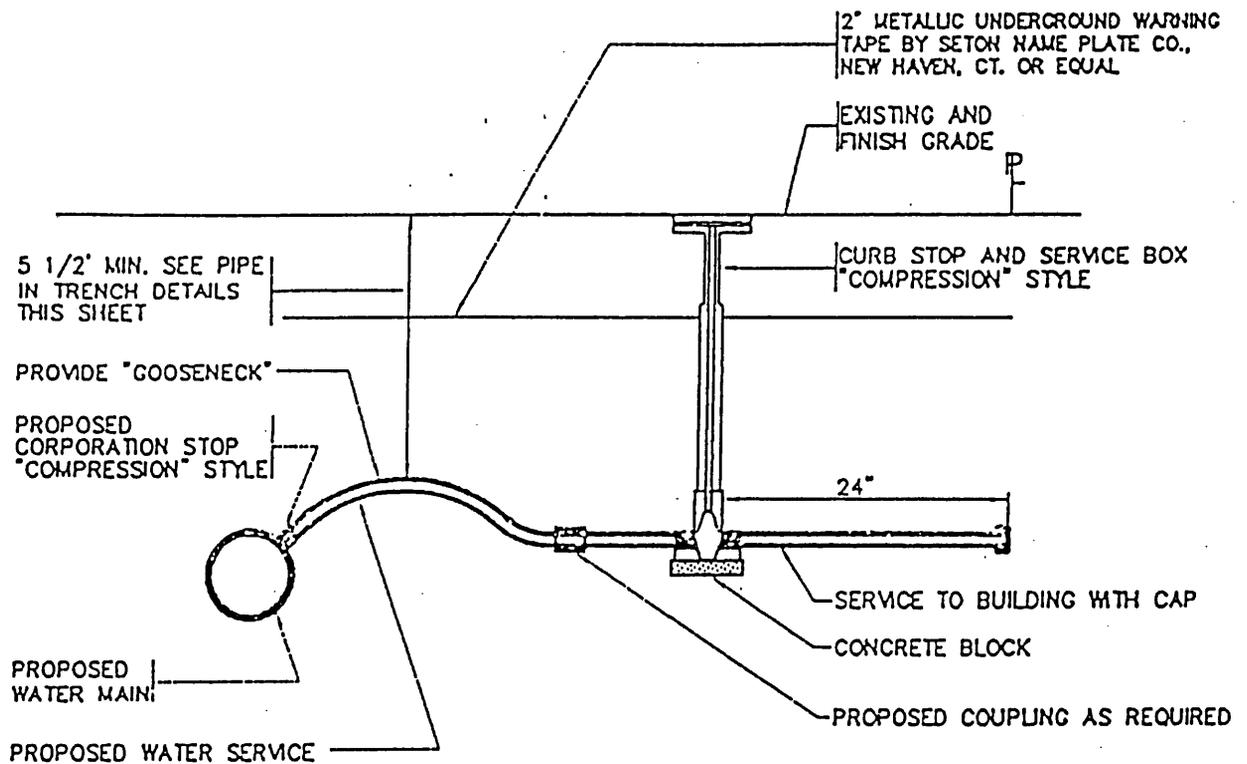
WATER HOOK-ON FEE PAYMENT AGREEMENT

I, _____ do agree to render payment in quarterly installments for a water hook-on in the amount of \$_____. Interest will accrue at a rate of 6% per month, compounded monthly.

The terms of this agreement require a down payment of 10% of the total hook-on fee at the time of hook-on. I agree to pay \$_____ each year for a period of ____ years. A payment of \$_____ will be due and payable at the same time of each quarterly payment. It is my understanding this payment is in addition to the annual water user fee.

My signature below constitutes acceptance of the above.

Witness:	Homeowner	Date
	Water Commissioner	Date

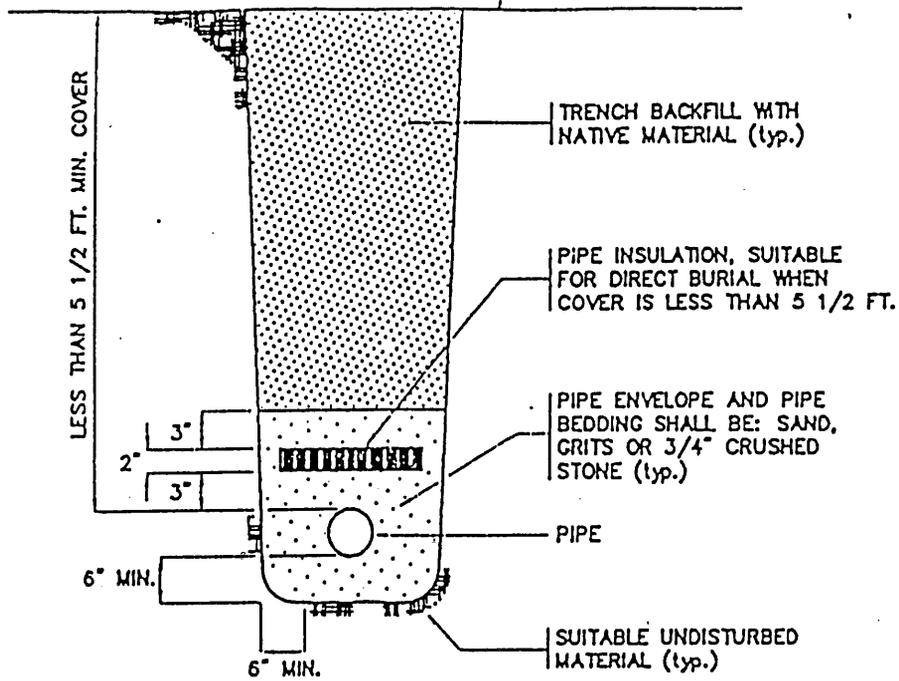


WATER SERVICE CONNECTION DETAIL

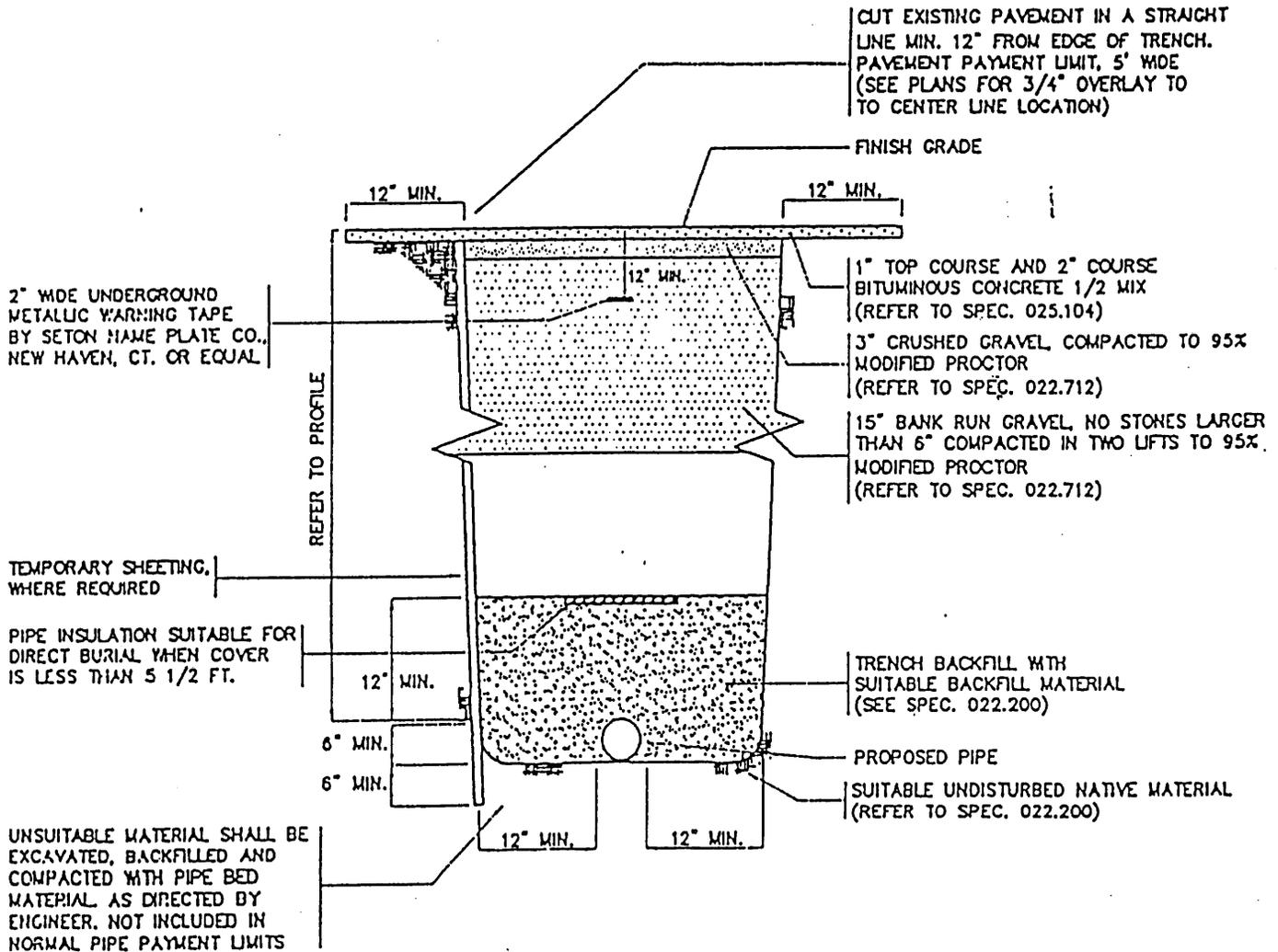
NOT TO SCALE

WATER SERVICE CONNECTION NOTES:

1. AS SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER SERVICE CONNECTIONS SHALL BE LAID TO THE EDGE OF THE RIGHT OF WAY AND CURB STOP MARKED WITH 2"X4" PRESSURE TREATED POST, 4' IN THE GROUND AND 4' OUT.
2. SERVICE PIPE SHALL BE COPPER TUBING SIZE POLYETHYLENE 200 PSI AWWA C-901, ASTM D-1298 AND ASTM D-2737 WITH COMPRESS FITTINGS AND STAINLESS STEEL INSERT STIFFENERS OR TYPE "K" COPPER TUBING ASTM B 75, B88 AND B68, UNLESS OTHERWISE SPECIFIED OR DIRECTED. ALL PIPE SHALL BE BEDDED IN SAND OR GRITS A MINIMUM OF 8" ALL AROUND.
3. CORPORATION STOPS SHALL BE McDONALD, MUELLER OR EQUAL PLUG TYPE. INSTALL STOP AT APPROXIMATELY "2:00 OR 10:00 O'CLOCK" POSITION ON THE WATER MAIN WITH CC AWWA TAPER THREAD.
4. SADDLES WITH STRAPS SHALL BE USED ON ALL PLASTIC WATER MAINS, AND ON CAST OR DUCTILE IRON WATER MAINS WHERE SERVICE CONNECTION IS LARGER THAN 1 INCH.
5. WHERE REQUIRED PROPOSED CURB STOPS SHALL BE SOLID BRASS AND SHALL BE McDONALD, MULLER BALL VALVE TYPE OR EQUAL. CURB STOP BOX AND COVER SHALL BE INSTALLED FLUSH WITH THE GROUND SURFACE. CURB STOP SHALL BE INSTALLED WITH SUFFICIENT BLOCKING AND TAMPED GRANULAR MATERIAL SO THAT TURNING OF THE STOP WILL NOT TRANSMIT STRAIN TO THE SERVICE PIPE. CURB STOPS SHALL NOT HAVE WASTE DRAIN.
6. CURB STOP AND BOX TO BE BACKFILLED WITH SAND TO GROUND SURFACE; MINIMUM 12 INCHES ALL AROUND BOX.
7. SERVICE CONNECTION SHALL BE DISINFECTED AND PRESSURE TESTED IN ACCORD WITH THE SPECIFICATIONS FOR THE WATER MAIN.
8. ALL SEWER CROSSINGS ARE TO BE IN CONFORMANCE WITH THE WATER/SEWER CROSSING NOTES THIS SHEET.
9. IF THE SERVICE IS WITHIN 5 FT. OF A STORM SEWER PLACE 2" THICK RIGID INSULATION BETWEEN THE STORM SEWER AND THE WATER SERVICE AS DIRECTED BY THE ENGINEER. REFER TO PROFILES.



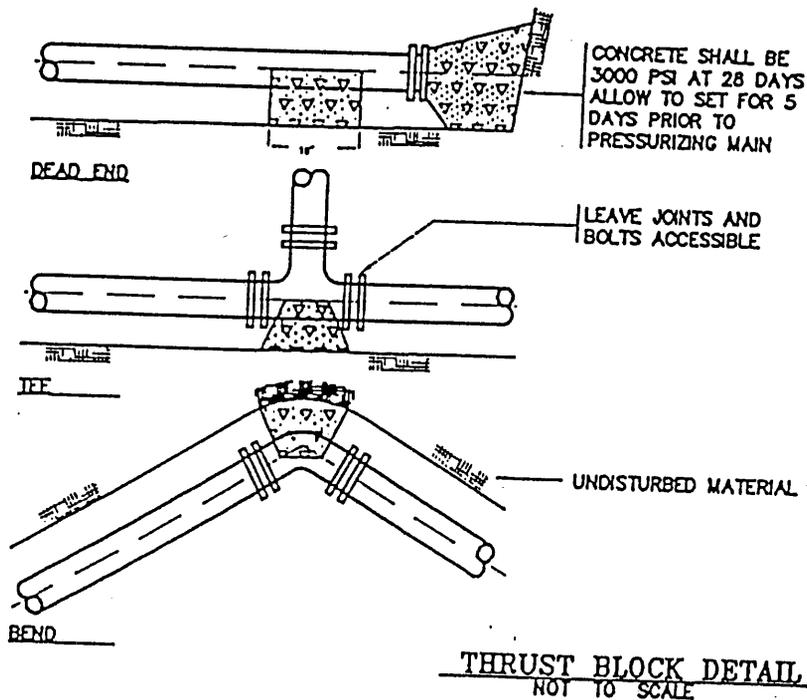
PIPE IN TRENCH DETAIL
NOT TO SCALE



AREA OF BEARING FACE OF CONCRETE THRUST BLOCKS IN SQUARE FEET

PIPE SIZE (INCHES)	SOFT WET CLAY SAND OR SILT (1,000 PSF)	DRY SAND (3,000 PSF)	COMPACT SAND COARSE GRAVEL OR HARDPAN (5,000 PSF)
DEAD END OR TEE			
8 OR LESS	20	7	4
10	29	10	6
12	41	14	8
1/4 BEND (90°)			
8 OR LESS	27	9	6
10	41	14	8
12	58	19	12
1/8 BEND (45°)			
8 OR LESS	15	5	3
10	22	7	5
12	31	11	6
1/8 BEND (22 1/2°) OR LESS			
8 OR LESS	8	3	2
10	11	4	2
12	16	5	3

NOTE: BEARING SURFACE AREAS CALCULATED ASSUMING
A MAXIMUM WORKING PRESSURE OF 150 PSI AND A
2:1 SAFETY FACTOR FOR SURGE.



5 1/2' MIN. COVER FOR

5 1/2' MIN. COVER FOR
WATER MAIN

6'

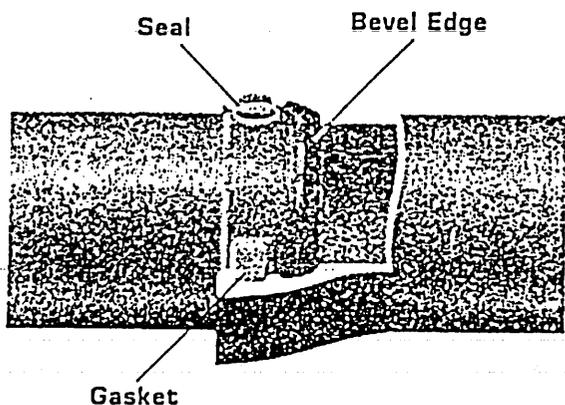
12'

F

Pipe A-1

Ductile Iron Pipe

Super Bell-Tite® (SBT)



The Super Bell-Tite® Joint is simplicity itself. A single rubber sealing type joint that employs a circular rubber gasket assuring a tight, permanent seal. This "push-on" type joint is simple to assemble and fast to install. Eliminates pouring and caulking or need for bolts, nuts and glands. The rubber gasket fits the inside contour of the bell which seats the gasket. The plain end of pipe is slightly beveled to further ease assembly.

Super Bell-Tite® pipe is highly recommended wherever there is need for an easily assembled tight joint for ductile iron pressure pipe. It is particularly well suited for water or other liquid service, providing an almost bottle tight environment. The Super Bell-Tite joint is Underwriters' Laboratories, Inc. approved.

SHORT SPEC:

Ductile Iron pipe shall be Super Bell-Tite® joint, pressure class 350 (or special thickness class as requested), double cement lined (1.5"), bituminous coated, 18-20 ft. lengths. Pipe shall be manufactured in full conformance with AWWA/ANSI C151/A21.51; AWWA/ANSI C111/A21.11 (for push-on joints) and AWWA/ANSI C104/A21.4 (for cement mortar lining and seal coating).

FOR YOUR CONVENIENCE:

We offer delivery, unloading, stringing and stockpiling of ductile iron pipe with our men and equipment at a small additional cost. Prices vary by order size. Please call your local EJP sales office for specific information.

Thickness Class Pipe

NOMINAL SIZE	THICKNESS CLASS	STANDARD LENGTHS	
3"	52	18'-0"	:
4"	52	18'-0"	:
6"	50	20'-0"	:
6"	52	20'-0"	:
8"	50	20'-0"	20330 SBT
8"	52	20'-0"	20350 SBT
10"	50	20'-0"	20430 SBT
10"	52	20'-0"	20450 SBT
12"	50	20'-0"	20540 SBT
12"	52	20'-0"	20560 SBT
14"	50	20'-0"	20620 SBT
14"	52	20'-0"	20640 SBT
16"	50	20'-0"	20700 SBT
16"	52	20'-0"	20720 SBT

Pressure Class Pipe

NOM. SIZE	PRODUCT NUMBER			
	PRESSURE CLASS			
	200	250	300	350
3"	—	—	—	20134 SBT
4"	—	—	—	20186 SBT
6"	—	—	—	20264 SBT
8"	—	—	—	20355 SBT
10"	—	—	—	20514 SBT
12"	—	—	—	20567 SBT
14"	—	20683 SBT	20684 SBT	20685 SBT
16"	—	20724 SBT	20725 SBT	20726 SBT
18"	—	20804 SBT	20805 SBT	20806 SBT
20"	—	20887 SBT	20888 SBT	20889 SBT
24"	20962 SBT	20963 SBT	20964 SBT	20965 SBT

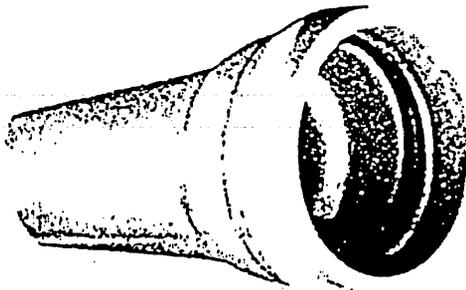
NOTES:

- See Section S, page S-6 for a comparison of wall thicknesses of Pressure Class vs Thickness Class Ductile Iron Pipe.
- See Section B for restraint devices and ductile iron mechanical joint fittings suitable for use with ductile iron pipe.
- Other sizes and classes of Super Bell-Tite® pipe are available upon request. Call your local EJP sales office for price and availability.
- Lubricant and gasket are furnished with pipe. Two bronze wedges are supplied per joint, if requested.

Pipe A-9

PVC Pressure Pipe

**Steel O.D. Size PVC Pipe
Class 200 (SDR 21) 160 (SDR
26) and Class 125 (SDR 32.5)
(ASTM D2241)**



PVC Class 200, 160 and 125 pressure pipe are used in rural water systems, agricultural and turf irrigation and as sewer force mains. Class 200, 160 and 125 pipe conform to steel pipe O.D.'s. The pressure rating of the pipe—200 psi, 160 psi or 125 psi—indicates the maximum allowable sustained pressure per ASTM D2241. PVC pressure pipe is lightweight and has a rubber gasketed joint for a flexible, watertight seal. Transition gaskets are available in sizes 3" thru 12" for adapting PVC pressure pipe to Mechanical Joint fittings and valves.

NOTES:

- See Section B for Class 200 PVC pressure fittings, MJ fittings, retaining devices and transition gaskets.
- See Section J, pages 15 and 16, for saddles to be used with PVC Pipe.

Designed for Installed-Cost Savings

Save in handling costs. Most sizes can be handled manually, so there is no need for costly installation equipment. Use the backhoe for excavating and backfilling only. Dig more trench, lay pipe faster, save more in cost per foot installed.

PIPE SIZE	O.D.	PRODUCT NUMBER	
		SDR 26	SDR21
1½"	1.90	22005	22007
2"	2.375	22010	22020
3"	3.50	22030	22040
4"	4.50	22050	22060
6"	6.625	22090	22100
8"	8.625	22130	22140
10"	10.75	22175	22176
12"	12.75	22195	22196

NOTES:

- SDR 32.5 is not a stock item.
- 20' standard laying lengths.
- Sizes through 24" available.
- Installation guides are available at your local EJP sales office.
- There is no AWWA Standards for SDR 21, 26 and 32.5 PVC pipe.

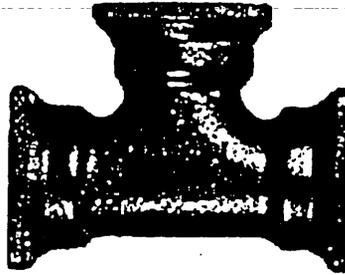
SHORT SPEC:

Pipe shall conform to ASTM D2241 for SDR 21, SDR 26 and SDR 32.5. PVC resin compound shall conform to ASTM D1784 and rubber gaskets shall conform to ASTM D1869 and F477. Pipe shall be 20' nominal lengths.

Pipe Fittings B-3

Ductile Iron Mechanical Joint Fittings

Class 350 DI Tees



SIZE	WEIGHT	PRODUCT NUMBER	SIZE	WEIGHT	PRODUCT NUMBER
3" x 3"	24	33094	16" x 6"	229	34690 1
4" x 4"	35	33165	16" x 4"	N/A	NS 08
4" x 3"	32	33164	18" x 18"	490	34781
6" x 6"	60	33360	18" x 16"	445	34786
6" x 4"	51	33385	18" x 14"	415	NS 08
8" x 8"	90	33615	18" x 12"	370	34791
8" x 6"	80	33625	18" x 10"	350	34796
8" x 4"	71	33645	18" x 8"	310	34801
10" x 10"	120	33900	18" x 6"	275	34806
10" x 8"	111	33910	20" x 20"	605	34881
10" x 6"	93	33920	20" x 18"	560	34882
10" x 4"	83	33936	20" x 16"	530	34886
12" x 12"	178	34190	20" x 14"	475	34887
12" x 10"	153	34200	20" x 12"	432	34891
12" x 8"	123	34210	20" x 10"	410	34896
12" x 6"	115	34220	20" x 8"	383	34901
12" x 4"	104	34234	20" x 6"	335	34906
14" x 14"	281	34556	24" x 24"	830	34981
14" x 12"	235	34558	24" x 20"	740	34985 1
14" x 10"	229	NS 08	24" x 18"	675	34987
14" x 8"	206	NS 08	24" x 16"	625	34991
14" x 6"	183	34574	24" x 14"	585	34993
16" x 16"	323	34665 1	24" x 12"	545	34996
16" x 14"	317	NS 08	24" x 10"	505	35001
16" x 12"	281	34670 1	24" x 8"	475	35006
16" x 10"	265	34680 1	24" x 6"	454	35011
16" x 8"	248	34685 1			

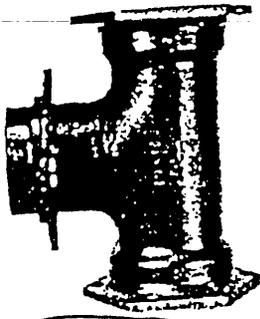
NOTES:

- Mechanical joint tees are available as reducing run tees. Call your local EJP sales office for prices and availability.
- Fitting weights listed do not include mechanical joint accessories.

Pipe Fittings B-4

Ductile Iron Mechanical Joint Fittings

Class 350 DI Hydrant Tees and Solid Sleeves



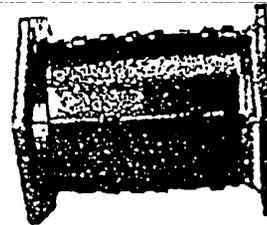
MJ Hydrant Tees

Our ductile iron Hydrant Tee provides positive restraint to mechanical joint valves or fittings attached to the branch. Tie rodding is eliminated. The rotating split anchor gland allows connection at any grade or bolt hole alignment.

SIZE	WEIGHT	PRODUCT NUMBER
6"x 6"	77	33375
8"x 6"	89	33635
10"x 6"	113	33930
12"x 6"	128	34230
14"x 6"	211	34576
16"x 6"	248	34693 1
18"x 6"	266	34807
20"x 6"	346	34907
24"x 6"	445	35012

SHORT SPEC:

Mechanical joint compact fittings shall be ductile iron class 350 and shall be produced in strict accordance with ANSI/AWWA C-153/A-21.53 and ANSI/AWWA C-111/A21.11 for joints and ANSI/AWWA C-104/A21.4 for cement lining in sizes 3" through 12", 14" thru 24" shall be manufacturer's standard and produced to the intent of ANSI/AWWA C-153/A21.53. Mechanical joint nuts and bolts shall be Corten, high strength, low alloy steel per ANSI A21.11.



MJ Solid Sleeve

SIZE	WEIGHT	LENGTH	PRODUCT NUMBER
3"	21	12	33126
4"	17	7.5	33285
4"	25	12	33275
6"	28	7.5	33545
6"	39	12	33535
8"	38	7.5	33820
8"	53	12	33810
10"	49	7.5	34105
10"	64	12	34095
12"	56	7.5	34450
12"	82	12	34440
14"	141	15	34621
16"	137	12	34772
16"	172	15	34774 1
18"	235	15	34877
20"	270	15	34977
24"	370	15	35087

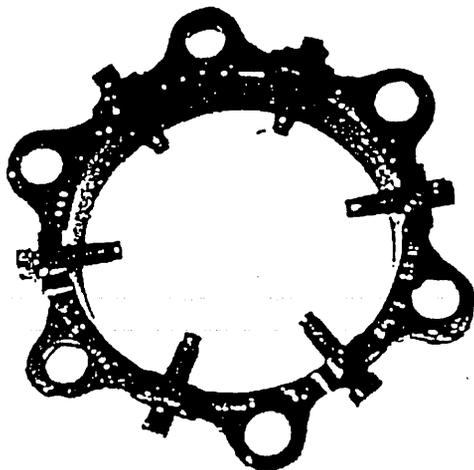
NOTES:

- Transition gaskets can be used with Solid Sleeves for connecting ductile iron to steel or steel O.D. PVC in sizes 3" thru 12" and for connecting SDR 35 sewer pipe in sizes 4" thru 12".
- Fitting weights listed do not include mechanical joint accessories.

Pipe Fittings B-11

Mechanical Joint Retainer Accessories

Retainer Glands



Retainer Glands are used when positive restraint is required on ductile iron and cast iron pipe, fittings, valves and hydrants. They are used in place of concrete thrust blocks or threaded tie rods. The recommended set screw torque is 75 foot pounds.

SIZE	PRESSURE RATING	NUMBER OF SET SCREWS	PRODUCT NUMBER
3"	350	4	44035
4"	350	4	44080
6"	350	6	44150
8"	350	12	44220
10"	350	16	44295
12"	350	16	44360
14"	250	24	44420
16"	250	24	44450
18"	200	24	44470
20"	200	28	44490
24"	200	32	44510

SHORT SPEC:

Mechanical Joint Retainer Glands shall be made of ductile iron and shall conform to ASTM A-536. All sizes will be Underwriters' Laboratory Listed 877P. Sizes 3" thru 12" will also be Factory Mutual System approved.

"Coverall" Retainer for Ductile Iron Push-On Pipe Bells



SIZE	PRESSURE RATING	NUMBER OF SET SCREWS	PRODUCT NUMBER
3"			N/A
4"	350	4	44137
6"	350	6	44200
8"	350	9	44280
10"	350	12	44348
12"	250	16	44412
14"	250	20	NS 15
16"	250	24	44445
18"	200	24	NS 15
20"	200	28	NS 15
24"	125	26	NS 15

NOTES:

- Coveralls work much like Retainer Glands except they are used to restrain the bell and spigot of push-on pipe.
- Larger sizes of Retainer Glands and Coveralls are available upon request. Contact your local EJP sales office for price and availability.
- Pressure ratings shown allow for a 2 to 1 safety factor.
- Retainer Glands are not recommended for use on Ductile Iron Pipe with a wall thickness less than Class 52.

J 1/7/93

Pipe Fittings B-15B

Mechanical Joint Restraints

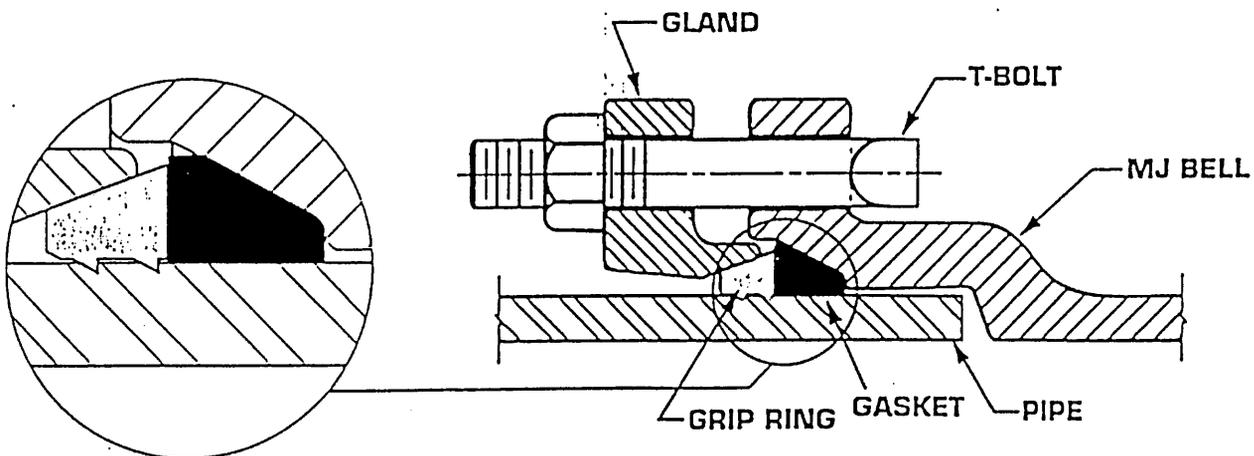
The GripRing's™ Articulating Wedge Action Provides the Restraint Required for Virtually Any Pressure.



GripRing™ set up for UNI-BELL Burst Pressure Test (UNI-B-13-87) on class 150 C-900 pipe.

Features:

- Reduce your inventory. – Dual purpose – one black GripRing™ fits both Ductile Iron and C-900.
- Rated to full working pressure of pipe. – GripRing™ pipe restrainers may be used at the full rated capacity of the pipe, including an allowance for pressure surges.
- Built in stop to prevent damage to pipe. – The "gap" in each GripRing™ is designed to completely close before a pipe can be excessively stressed.
- The GripRing™ provides the restraint required for virtually any pressure. – After the GripRing™ is engaged by tightening the T-bolts, the system responds dynamically to pressure changes in the pipe, providing the restraint required. Restraining systems using radial bolts or pads need to be pretightened enough to restrain the "worst case" pressure conditions.
- The Ring flexes to accommodate deflection allowed in a mechanical joint. – Restrains under the misalignment conditions often found in the field.
- The gland is painted yellow to avoid confusion. – Since the gland used with the GripRing™ restraint system is similar in looks to a standard MJ Gland, it is painted yellow. The inspector can easily see that a restrainer has, in fact, been used.



Valve and Service Boxes E-1

Erie Style Service Boxes

The EJP SERVICE BOX is the result of many years of development. It is made up of three basic components: the cover, the service box, and the rod.



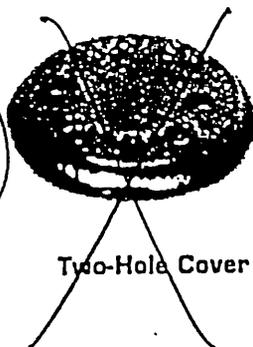
The EJP service box cover features two designs. The standard cover is the plug type which has a deep slot for the release of surface water and removal of debris. The brass pentagon plug features a coarse "rope" thread to enable quick and easy removal. The two hole cover is available in cast iron with non-seize Teflon lubricant, or a bronze thread inset.

The EJP service box is available in a number of heights to accommodate any bury depth from 4'0" to 8'0". Each box is adjustable 1'0" within its height range. The service box base is reinforced at the arch and pipe ring area and the arch will accommodate up to 1" curb stops.

The EJP service box rod is the key to a proper box. The rod is offset for centering in the pipe and has a heavy ductile iron yoke end, with a brass cotter pin. The rod's strength is derived from hot swedging it into the ductile iron yoke.



Plug Cover



Two-Hole Cover

EJP Service Box

DESCRIPTION	DEPTH OF BURY	PRODUCT NUMBER
4'-5' Service Box	4'-5'	45410
4½'-5½' Service Box	4½'-5½'	45415
5'-6' Service Box	5'-6'	45420
5½'-6½' Service Box	5½'-6½'	45425
6'-7' Service Box	6'-7'	45430
6½'-7½' Service Box	6½'-7½'	45435
7'-8' Service Box	7'-8'	45440

EJP Service Box Rod

DESCRIPTION	LENGTH	PRODUCT NUMBER
9/16" Service Box Rod	24	45475
	30	45485
	36	45490
	42	45500
	48	45505
5/8" Service Box Rod (Stock Size)	24	45515
	30	45520
	36	45525
	48	45535
1/2" SS Service Box Rod	24	45476
	36	45486

EJP Service Box Cover

DESCRIPTION	PRODUCT NUMBER
Service Box Plug Cover Rope	45370
Service Box 2-Hole Cover	45385
Service Box 2-Hole Cover BI	45390

BI = Bronze Insert

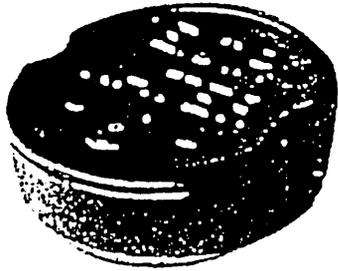
SS = Stainless Steel

NOTE: Covers with special markings are available upon request.

Valve and Service Boxes E-5

Slide Type Valve Boxes

2 Piece Valve Boxes

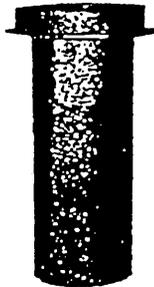


Valve Box Covers

Valve box cover is heavy 2" drop type, non-tilting and is recessed in the box top to prevent plow breakage. The cast iron construction drop-type cover has pick holes for easy removal.

DESCRIPTION	PRODUCT NUMBER
Valve Box Cover Water *	45005
Lok'n Rise Valve Box Cover **	45000

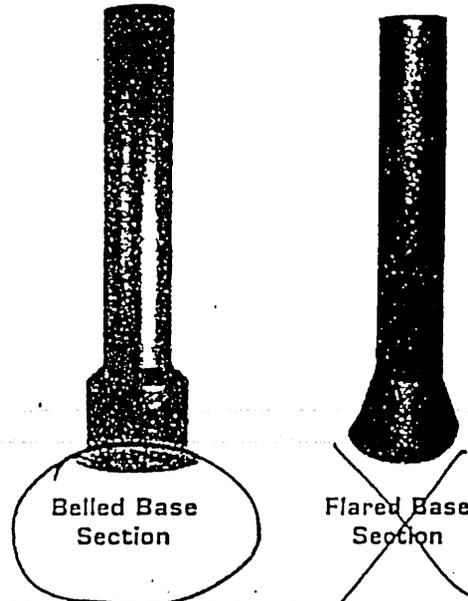
(Covers with special lettering available upon request.)



Top-Flange Valve Box Top

Valve box top has a smoothly cast seat to accept the valve box cover and insures a non-rocking installation. The top is available with a top flange (as shown) which helps eliminate settlement from traffic loads, and prevents frost from raising the box above the road surface. (See Top-Flange vs. Non-Flange Valve Box Top comparison on the back of the Table of Contents page)

DESCRIPTION	PRODUCT NUMBER
26" Valve Box Top TF *	45070
36" Valve Box Top TF	45080
54" Valve Box Top TF	45088



Valve box base is designed to center the operating nut and provide stability. It is manufactured to insure uniformity and strength.

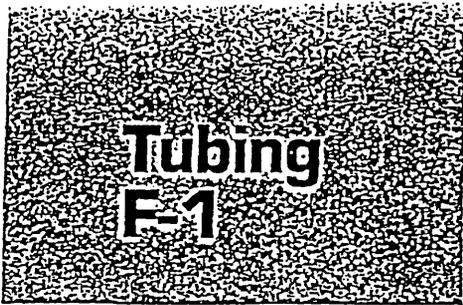
DESCRIPTION	PRODUCT NUMBER
36" Valve Box Base - Flare	45130
36" Valve Box Base - Belled *	45125
48" Valve Box Base - Flare	45135
48" Valve Box Base - Belled	45140
57" Valve Box Base - Flare	45145
57" Valve Box Base - Belled	45144

* Parts for standard 5'0" Valve Box Complete

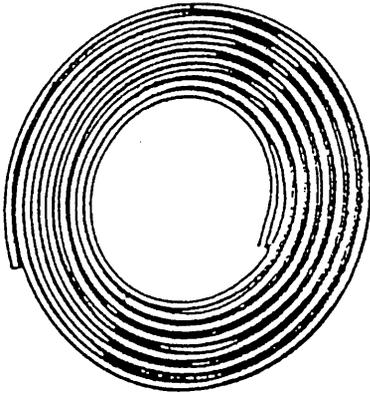
** See page E-6 for detail of Lok'n Rise Valve Box Cover

SHORT SPEC:

Valve boxes shall be cast iron, two piece, sliding type with a top flange and a minimum inside shaft diameter of 5/8". Boxes shall have the word "water" clearly cast into the cover.



Copper Type K Soft



Type K, soft copper tubing, remains free from rusting and is highly resistant to corrosion and scale formation. Type K has a heavy wall thickness for underground services from the water main to the house connection. It is conductive to enable thawing and its flexibility allows it to conform to underground trenching.

NOMINAL SIZE	O.D. INCHES	WALL THICKNESS	I.D. INCHES	WT. LBS./FT.
1/2"	0.625	0.049	0.527	0.344
3/4"	0.875	0.065	0.745	0.641
1"	1.125	0.065	0.995	0.839
1 1/4"	1.375	0.065	1.245	1.040
1 1/2"	1.625	0.072	1.481	1.360
2"	2.125	0.083	1.959	2.060

COPPER TUBING	SIZE	LENGTH OF COIL	PRODUCT NUMBER
	1/2"	250'	46010
	3/4"	250'	46020
	1"	100'	46030
	1 1/4"	250'	46040
	1 1/2"	100'	46050
	1 1/2"	250'	46080
	1 1/2"	250'	46070
	2"	20'	46110
	2"	40'	46080
2"	20'	46120	

*1 1/2" & 2" copper tubing in 20-foot lengths are straight lengths. All other above tubing comes in coils.

NOTE: See our Service Brass, Section G, for a complete line of fittings and valves for use with this tubing.

SHORT SPEC:

Copper tubing shall meet the requirements of Federal Specification WW-T 7996 and shall conform to ASTM specifications B-75, B-88 and B-68 as they apply to Type K Copper Tubing.

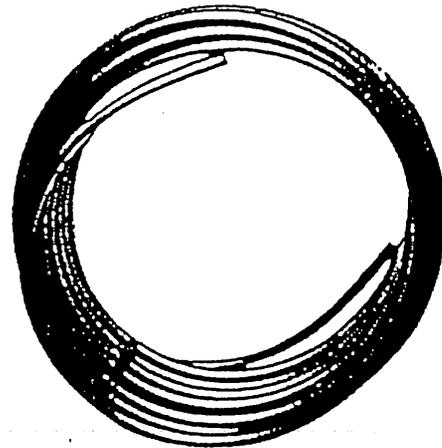
Tubing F-2

Polyethylene Tubing

Copper Tube Size Ultra-High Molecular Weight

CTS (Copper Tube Size) Polyethylene Tubing has many distinct advantages over other types of service pipe. It will not rust, rot or corrode. It has exceptional toughness, excellent resistance to abrasion and will flex repeatedly without damage. CTS Polyethylene Tubing is designed for 200 P.S.I. service and is tested at 330 P.S.I. for 1000 hours.

Its pressure rating remains unaffected by mild nicks and scratches that may occur during installation. The tubing will not crack or split at subzero temperatures, even if filled with ice. The insulating qualities of Polyethylene help to prevent water from freezing inside the pipe. Should freezing occur, thawing should be done with steam or hot air, not with direct flame.



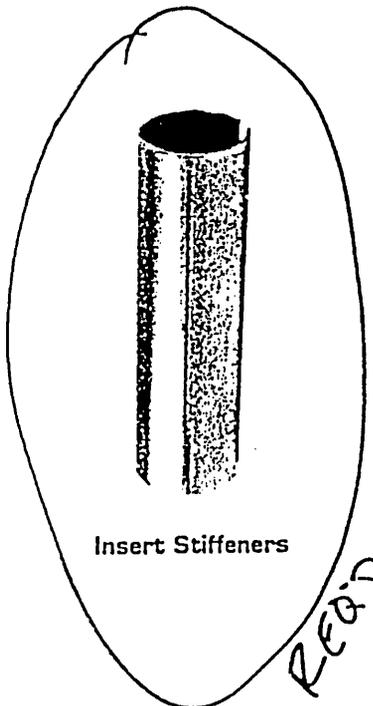
Short Spec:

Copper Tube Size Polyethylene shall have a working pressure of 200 P.S.I. and shall conform to AWWA C-901, ASTM-D-1248 and ASTM-D-2737.

SIZE	LENGTH OF COIL	PRODUCT NUMBER
3/4"	100 ft.	46130
3/4"	500 ft.	46140
1"	100 ft.	46150
1"	300 ft.	46160
1 1/4"	100 ft.	46164
1 1/4"	300 ft.	46165
1 1/2"	100 ft.	46170
1 1/2"	300 ft.	46180
2"	100 ft.	46190

CTS PLASTIC TUBING

NOTE: Our Polyethylene Tubing is copper tube size, therefore it can be used with compression fittings without special adapters. See our service brass section for a complete line of fittings and valves.



Insert Stiffeners

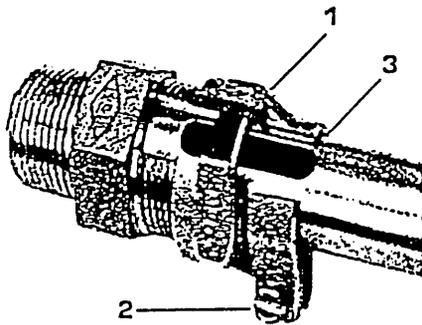
SIZE	PRODUCT NUMBER
3/4"	47730
1"	48330
1 1/4"	48525
1 1/2"	48910
2"	49310

INSERT STIFFENERS

NOTE: Insert stiffeners are required when compression connections are made to insure a leak-free installation.

Service Brass G-1

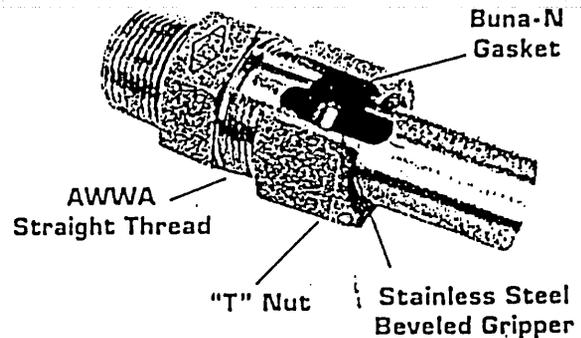
Pack Joint & T Compression Connections



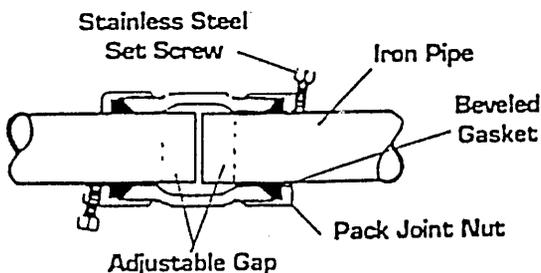
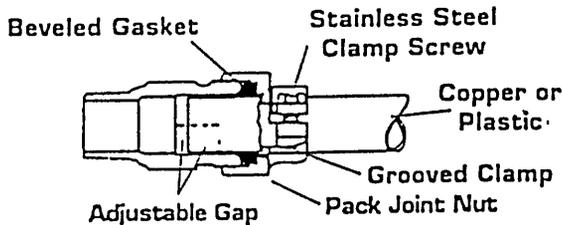
- 1 Tightening the large pack joint nut compresses the Buna-N beveled gasket, making it watertight around pipe or tubing.
- 2 For copper tubing (as well as lead or plastic pipe) there is a locking device—a split clamp which is drawn down securely on the tubing by tightening the stainless steel screw. For iron pipe a stainless steel set screw is provided on the pack joint to bite and lock on the pipe.
- 3 Grooves in the clamp provide additional gripping action.

The pack joint method has been employed for many years. It is a compression type joint which makes a simple, fast, watertight connection on copper or plastic tubing without flaring, soldering or threading. The pack joint outlet is simply slid over the plain end of the tubing and the pack joint nut is tightened with a wrench until it stops. As the pack joint nut is tightened, it compresses a Buna-N beveled rubber gasket, making a watertight connection. This method is similar to the mechanical joint method of installing pipe and iron fittings. The pack joint goes one step further by providing a split clamp locking device which is drawn together by tightening a stainless steel screw. This ensures continuity between the tubing and the fitting in the event electrical thawing is required. Without the locking device the rubber gasket could burn up when being electrically thawed due to the arc created by the non-metal contact of the fitting and the tubing. When using plastic tubing, a metal insert is recommended.

"T" Compression Style



For Copper or CTS (Copper Tubing Size) Plastic Tubing



- ### Installation Instructions
- No need to disassemble fitting, just insert tubing through the "T" Compression Nut and into the machined socket of the valve or fitting.*
 - Wrench tighten the "T" Compression Nut securely onto the valve or fitting. This will:
 1. Provide a watertight seal by compressing both edges of the Buna-N Gasket around the tubing .
 2. Compress the stainless steel beveled gripper, providing high pull-out resistance.

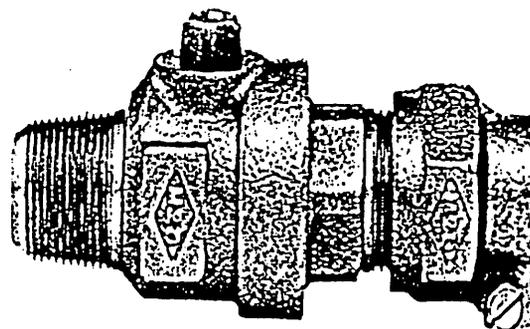
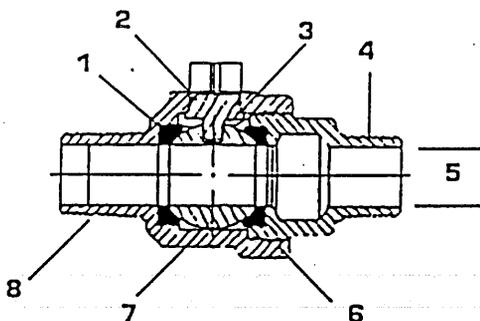
- NOTES:
- Upon request, "T" Compression style fittings are available in most sizes on all service brass.
 - If electrical continuity is required please specify when ordering.
 - * Insert stiffeners are recommended when using Pack Joint or "T" type connections on flexible plastic tubing.



Service Brass G-3

Ball Valve Type Corporations

Ball Valve Corporation Stop



Features:

- 1 Molded Nitrile (Buna-N) seals, 80 Durometer, sealed in place with adhesive.
- 2 Nitrile (Buna-N) O-ring, 70 Durometer
- 3 Flanged stem design prevents failure due to blowout.
- 4 Flared copper service fitting threads
- 5 Full bore
- 6 Threads sealed with epoxy.
- 7 Ball—TFE coated 85-5-5-5- Red Brass
- 8 AWWA or Iron Pipe inlet thread

NOTES:

- Materials meet or exceed AWWA Specification C-800.
- Each valve is pressure tested with air while underwater.
- 300 PSI working pressure
- Valves can be installed using standard tapping machine and insertion tools.
- Insert stiffeners are recommended for all flexible plastic connections.

EJP offers the Ball Valve Type Corporation in standard sizes 3/4" thru 2". Its unique design utilizes a TFE coated bronze ball that allows maximum flow and easier turning. The bubble-tight feature at 300 PSI makes this valve a better choice than a Plug Valve when test or operating pressures exceed 100 PSI.

CC X CPPJ	SIZE	PRODUCT NUMBER
	3/4"	47165
	1"	47785
	1 1/2"	48600
	2"	48990

This corporation has tapered AWWA threads (CC) on the inlet and a compression pack joint (CPPJ) for copper or CTS plastic on the outlet.

IP X CPPJ	SIZE	PRODUCT NUMBER
	3/4"	47188
	1"	47819
	1 1/2"	48620
	2"	49010

This corporation has iron pipe threads (IP) on the inlet and a compression pack joint (CPPJ) for copper or CTS plastic on the outlet.

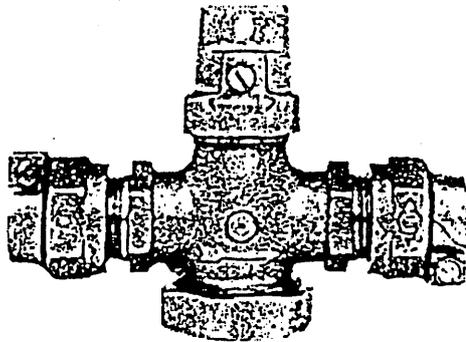
NOTES:

- Upon request, Ball Valve Corporations are available with other outlet connections.
- Ball Valve Corporations are available with "T" Compression Type connections.

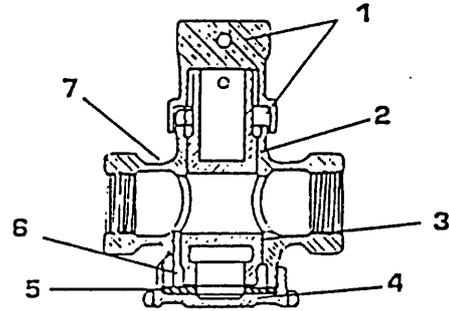
MAXIMUM DRILL SIZE USED WITH CORPORATIONS				
VALVE SIZE	3/4"	1"	1 1/2"	2"
DRILL SIZE	1/16"	3/16"	1/8"	1/4"

Service Brass G-6

Inverted Plug Curb Stops



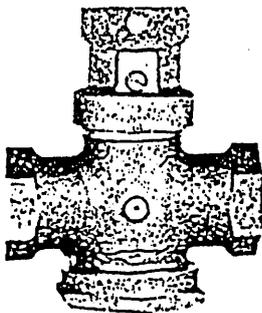
Inverted Plug Valve Features



- 1 Brass Cap with Integral Checks allow only a 90° rotation of Plug. Full 360° rotation available upon request.
- 2 Grease Seals between Plug and Body
- 3 Large diameter of Plug is at the bottom of Inverted Plug Valves.
- 4 Brass Bottom Cap holds Plug in position.
- 5 Treated Leather Gasket
- 6 Spline is cast into inlet side of body and allows pressurized water to flow under the plug, exerting upward pressure.
- 7 One piece Brass Body
- 8 Arrow cast into the body indicating direction of flow.

	CPPJ X CPPJ (with drain)*	SIZE	PRODUCT NUMBER
		¾"	47310
		1"	47960

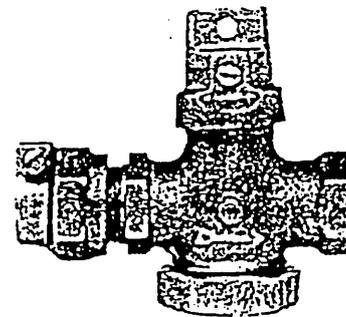
With compression pack joints (CPPJ) on both ends, this curb stop can be used on copper tubing and CTS (copper tubing size) plastic water service tubing.



	IP X IP (with drain)*	SIZE	PRODUCT NUMBER
		¾"	47370
		1"	48020

This valve has female iron pipe threads (IP) on both ends to accommodate male threaded pipe and fittings.

* Inverted curb stops are available without drains for areas where drains are prohibited. Please specify "less drain," if required.



	CPPJ X IP (with drain)*	SIZE	PRODUCT NUMBER
		¾"	47350
		1"	48000

With compression pack joints (CPPJ) on one end, and iron pipe thread on the other end (IP), the iron pipe end can accommodate threaded pipe and male iron pipe adaptors from the house service.

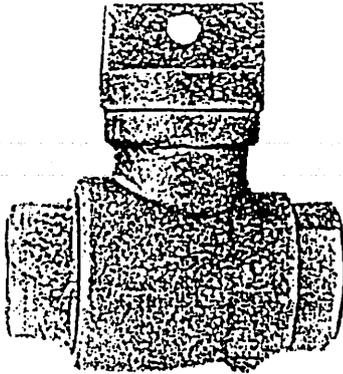
Service Brass G-10

Service Valves & Service Brass Accessories

Full Port Ball Service Valves

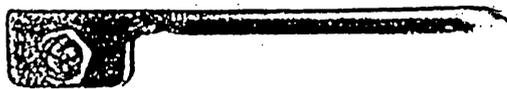
These Full Port Ball Valves provide a long-lasting, corrosion resistant inside shutoff valve and are also an excellent choice for above ground seasonal services.

Service valves are available in a wide variety of sizes and end configurations. Contact your local EJP sales office for more information.

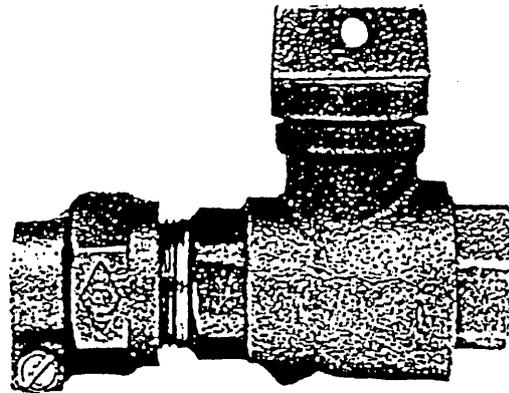


IP X IP	SIZE	PRODUCT NUMBER
	3/4"	47280
	1"	47930
	1 1/2"	48670
	2"	49050

This valve has female iron pipe (IP) threads on both ends to accommodate male threaded pipe and fittings.

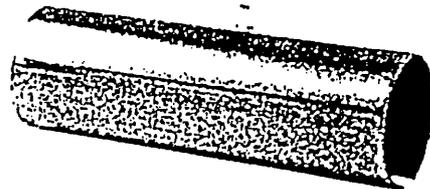


STRAIGHT VALVE HANDLES	SIZE	PRODUCT NUMBER
	3/4"	52960
	1"	52960
	1 1/2"	53400
	2"	53400



CPPJ X IP	SIZE	PRODUCT NUMBER
	3/4"	47250
	1"	47910
	1 1/2"	48660
	2"	49070

This valve has a compression pack joint (CPPJ) for copper or CTS (copper tubing size) plastic tubing on one end and female iron pipe thread (IP) on the other end.



INSERTS FOR CTS PLASTIC TUBING	SIZE	PRODUCT NUMBER
	3/4"	47730
	1"	48330
	1 1/2"	48525
	2"	48910

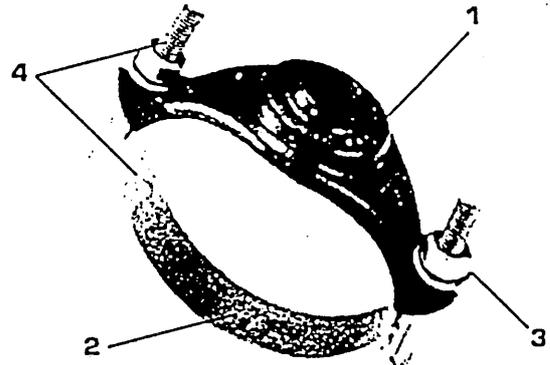
The stainless steel inserts are placed in the end of the plastic tubing to reinforce the tubing to accept compression pack joint couplings and valves. These inserts are for CTS (copper tubing size) plastic pipe only.

Clamps, Couplings and Saddles J-13

Single Strap Service Saddles

Styles 101S & 101N Single Strap Saddles

Single Strap Service Saddles with stainless steel straps are wide ranged and shape themselves during installation to various pipe diameters within a nominal pipe size and are suitable for all types of pipe. Saddles for C-900 or Steel Sized PVC Pipe should be preformed at the factory to exact size. Please note pipe O.D. when ordering for PVC pipe.



Style 101S (shop coat paint)

Specifications:

- 1** Finish: Shop coat paint.
- 2** SS Straps: 2" minimum width for "spreading out" clamp force on pipe.
- 3** Nuts and Washers: Heavy hex nuts and washers made from type 304 (18-8) Stainless Steel.
- 4** Stainless Steel Straps: Bolts, nuts, and washers: 1/4" N.C. roll thread Teflon coated. Straps: GMAW welds are passivated for resistance to corrosion. All are type 304 (18-8) stainless steel.



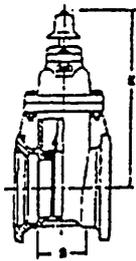
Style 101N (nylon coated)

These saddles are made to the same specifications as the shop coated saddles with the exception of the fusion bonded nylon coating which is made for high corrosive areas.

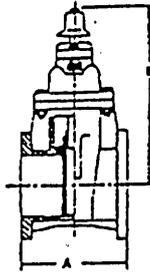
NOM. PIPE SIZE	O.D. RANGE	Style 101S Saddles (shop coat paint)				Style 101N Saddles (nylon coated)			
		PRODUCT NUMBERS				PRODUCT NUMBERS			
		1/2" CC	1/2" IP	1" CC	1" IP	1/2" CC	1/2" IP	1" CC	1" IP
2"	2.38-2.50	54360 RM	54370 RM	54390 RM	54400 RM	NS 21	NS 21	NS 21	NS 21
3"	3.45-4.05	54755 RM	54765 RM	54775 RM	54785 RM	NS 21	NS 21	NS 21	NS 21
4"	4.50-5.40	55257 RM	55259 RM	55316 RM	55344 RM	55255 RM	55287 RM	55315 RM	55345 RM
6"	6.63-7.50	56066 RM	56068 RM	56136 RM	56170 RM	56065 RM	56105 RM	56135 RM	56175 RM
8"	8.63-9.62	56833 RM	56867 RM	56921 RM	56953 RM	56825 RM	56885 RM	56925 RM	56955 RM
10"	11.10-12.12	57613 RM	57654 RM	57694 RM	57724 RM	57615 RM	57655 RM	57695 RM	57725 RM
12"	13.20-14.38	58374 RM	58401 RM	58434 RM	58464 RM	58375 RM	58405 RM	58435 RM	58465 RM

NOTE: Sizes marked NS 21 are non-stock but are available by special order. Other O.D. ranges are also available. Please contact your local EJP sales office.

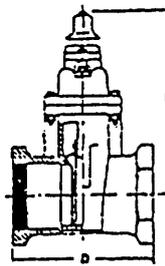
AVAILABLE END CONNECTIONS & DIMENSIONS FOR CLOW RESILIENT WEDGE VALVE



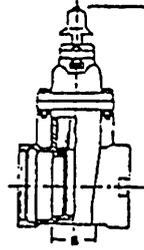
F-6100
MECHANICAL JOINT
2" - 12"



F-6102
FLANGED
2" - 12"



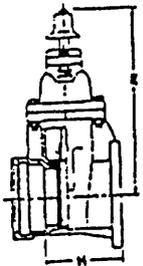
F-6103
THREADED ENDS
2" - 3"



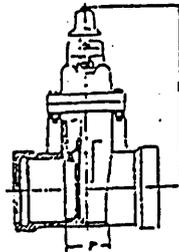
F-6104
RINGITE
4" - 12"



F-6106
RIGD. & MECH. JT.
3" - 12"



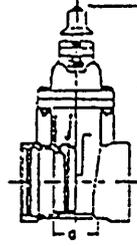
F-6108
FLANGED & RINGITE
4" - 12"



F-6110
PUSH-ON FOR PVC
2" - 8"



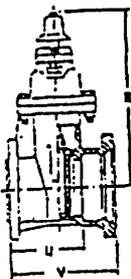
F-6111
MECHANICAL
CUTTING-IN JOINT
4" - 8"



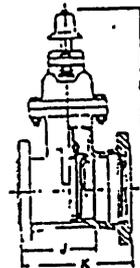
F-6112
PUSH-ON ENDS
FOR CAST IRON PIPE
4" - 12"



F-6113
FLANGED & PUSH-ON
4" - 12"



F-6114
MECH. JT. FOR TAPPING
4" - 12"



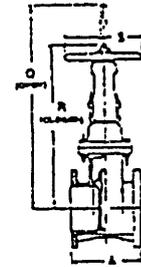
F-6115
PUSH-ON FOR TAPPING
4" - 8"



F-6116
RINGITE FOR TAPPING
4" - 8"



F-6120
MECHANICAL JOINT
INDICATOR POST VALVE
2" - 12"



F-6136
RIGD. OS & Y CONSTRUCTION
2-1/2" - 12"

	A	B	C	D	E	G	H	J	K	P	Q	R	S	U	V	W	Y	No. of Turns to Full Open
2"	7	3-1/4		5-1/4	10-7/8					3			7-1/4					4-3/4
2-1/2"	7-1/2			7	11-3/8					3-1/4	16-3/8	12-7/8	7-1/4					5-1/2
3"	8	3-1/2		7-1/8	12-3/8		5-3/4			3-1/2	18-7/8	15-5/8	10					10
4"	9	4-1/2	6-3/4		14-3/4	4-1/2	6-3/4	6-3/4	10-3/8	4-1/2	22-3/4	19-1/4	10	8-3/4	8-3/4	8-3/4	10-1/4	13-1/2
6"	10-1/2	5	7-7/8		19	5-1/4	7-3/4	8-1/4	12	5	30-1/8	23-3/4	12	7-3/4	11-1/4	7-3/4	11-1/4	19-1/2
8"	11-1/2	5-1/2	8-1/2		22-1/2	5-5/8	8-1/2	8-1/2	12-3/4	5-1/2	37-3/4	27-1/4	14	8-1/2	11-3/4	9-1/4	12-3/4	25-1/2
10"	13	7	10		26-1/2	7	10				45-3/4	35-3/8	18	10	13-1/2			31-1/2
12"	14	8	11-1/4		30	8-1/2	11				53-1/8	40-5/8	18	11	14-3/4			37-3/4

CLOW VALVE CO.
1375 Magnolia Avenue
Corona, California 91719
Phone 714-735-5555
FAX 714-735-0837

CLOW
VALVE COMPANY
A Division of McWane, Incorporated

CLOW VALVE CO.
902 South 2nd Street
Oskaloosa, Iowa 52577
Phone 515-673-8611
FAX 515-673-8269