



## SUMMARY OF SUBDIVISION APPROVAL FOR WATER SERVICE PROCESS

1. COMPLETE SERVICE APPLICATION FOR DEVELOPMENT
2. PAY NON-STANDARD SERVICE INVESTIGATION FEE
3. FURNISH BOLIVAR WATER SUPPLY CORPORATION WITH 2 COPIES OF SUBDIVISION PLAT AS NOTED ON APPLICATION
4. BOLIVAR W.S.C. WILL FORWARD PLAT & FACILITY PLAN TO BOLIVAR'S ENGINEER.
5. SUBDIVISION WILL BE PLACED ON THE NEXT REGULAR SCHEDULED BOARD OF DIRECTORS MEETING AGENDA FOR DISCUSSION AND ACTION.
6. IF SUBDIVISION IS APPROVED, THE DEVELOPER MUST POST THE A.T.C. & MEMBERSHIP COST IN THE TARIFF WITHIN 60 DAYS.

REFER TO SECTION 'C' OF THIS TARIFF FOR DETAILS

7. DEVELOPER WILL ENTER INTO A NON-STANDARD WATER UTILITY SERVICE AGREEMENT WITH BOLIVAR W.S.C. AND PAY ALL COST ASSOCIATED WITH THE PROJECT ACCORDING TO BOLIVAR W.S.C. TARIFF SECTION 'C':

NOTE: NO WATER SERVICE WILL BE PROVIDED TO LOTS IN THE RESIDENTIAL SUBDIVISION PRIOR TO OR DURING THIS PROJECT

## **NON-STANDARD WATER UTILITY SERVICE AGREEMENT**

This Non-standard Water Utility Service Agreement (the "Agreement") is entered into by and between BOLIVAR Water Supply Corporation (the "Corporation"), a non-profit water supply corporation operating pursuant to Article 1434a, Texas Revised Civil Statutes (West 1980, Vernon Supp. 1996) and its Certificate of Convenience and Necessity No. 12257 issued by the Texas Natural Resource Conservation Commission, and ("Developer"), in consideration of the mutual promises set forth herein and other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged by both parties.

### **RECITALS**

The Corporation is the operator of a water supply system, which currently provides retail water utility service to customer locations within its CCN No. 11257, including as depicted on Attachment "A" (incorporated herein by reference for all purposes the "Subdivision").

Developer desires to obtain retail water utility service for the Subdivision.

Developer has received and reviewed Section C of the Corporation's Tariff, and Developer understands and acknowledges that Developer must pay Corporation all cost reasonable and necessary for Corporation to provide retail water utility service to the Subdivision. Developer understands and acknowledges that such cost as are reasonable and necessary for retail water utility service are Developer's cost and must be prepaid to Corporation.

Developer understands and acknowledges that failure to pay the cost specified in this Agreement allows Corporation to refuse retail water utility service to the Subdivision or any part of the Subdivision.

## BOLIVAR WATER SUPPLY CORPORATION NON-STANDARD SERVICE AGREEMENT

THIS AGREEMENT is made and entered into by and between \_\_\_\_\_, hereinafter referred to as "Developer", and Bolivar Water Supply Corporation, hereinafter referred to as "WSC".

WHEREAS, Developer is engaged in developing that certain \_\_\_\_\_ acres of land in \_\_\_\_\_, County, Texas, more particularly known as the \_\_\_\_\_ subdivision, according to the plat thereof recorded at Vol. \_\_\_\_\_, Page \_\_\_\_\_ of the Plat Records of \_\_\_\_\_ County, Texas, said land being hereinafter referred to as "the Property"; and,

WHEREAS, WSC owns and operates a water system which supplies potable water for human consumption and other domestic uses to customers within its service area; and,

WHEREAS, Developer has requested WSC to provide such water service to the Property through an extension of WSC's water system, such extension being hereinafter referred to as "the Water System Extension";

NOW THEREFORE: KNOW ALL MEN BY THESE PRESENTS: THAT for and in consideration for the mutual promises hereinafter expressed, and other good and valuable consideration, the sufficiency of which is hereby acknowledged by the parties, Developer and WSC agree as follows:

### **I. Engineering and Design of the Water System Extension.**

- (a) The Water System Extension shall be engineered and in accordance with the applicable specifications of the WSC and all governmental agencies having jurisdiction by WSC's consulting engineer prior to the issuance of any request for bids for the construction of the Water System Extension and the commencement of any utility system construction on the property. After completion of the plans and specifications by the WSC's consulting engineer, the plans and specifications shall become part of this Agreement by reference and shall more particularly define "the Water System Extension".
- (b) The Water System Extension must be sized to provide continuous and adequate water service to the property based on plans for the development of the Property provided to WSC by the Developer. If the property is to be developed in phases and the Developer desires the water system to be constructed in corresponding phases and such phased construction is deemed desirable and acceptable to WSC at its sole discretion, Developer shall be required to execute a separate Non-Standard Service Agreement for each development and construction phase. The execution of one or more separate Non-Standard Service Agreement(s) will not provide to or vest in the Developer any capacity reservations or service rights for any property not expressly covered by the executed agreement(s). The property to be covered and served under each agreement shall be clearly designated in a plat reviewed and approved by WSC's consulting engineer and Board of Directors to be appended to the agreement and incorporated therein for all purposes.
- (c) WSC may require the Water System Extension to be oversized in anticipation of the needs of other customers of the WSC, subject to the obligation to reimburse the Developer for any such over-sizing as provided below.
- (d) Due to the variable market for needed materials and supplies, quotations for the cost of construction of utility plant and/or upgrades that will be necessary to meet the service demands of the service application shall be good only for the date of

presentation by the Corporation's engineer and/or contractor. Following the date of presentation, materials and supplies for construction may include an adjustment to reflect current market prices

**2. Required Easements or Rights-of-Way.**

- (a) Developer shall be responsible for dedicating or acquiring any easements across privately owned land which are necessary for the construction of the Water System Extension and for obtaining any Governmental approvals necessary to construct the Water System Extension in public right-of-way.
- (b) The easement hereby granted shall be (exclusive and not less than) 15' in width, and Grantee is hereby authorized to designate the course of the easement herein conveyed except that when the pipeline(s) or plant is installed, the easement herein granted shall be limited to a strip of land 15' in width the centerline or center-point thereof.
- (c) There shall be a construction easement of equal width parallel and adjacent with said easement for the period necessary to construct and test public utility pipelines and such other utility plant with the easement. After the newly constructed pipeline, utility plant or other facilities have been constructed and placed into commercial operation, this construction easement shall terminate. Thereafter the easement shall be only 15' in width.
- (d) Any easements acquired by the Developer shall be assigned to WSC upon proper completion of the construction of the Water System Extension. The validity of the legal instruments by which the Developer acquires any such easements and by which Developer assigns such easements to WSC, must be approved by WSC's attorney.

**3. Construction of the Water System Extension.**

- (a) WSC's consulting engineer, at Developer's expense, shall advertise for bids for the construction of the Water System Extension in accordance with generally accepted bidding practices and shall award the contract for the construction of the Water System Extension subject to the approval of the WSC's Board of Directors. WSC may reject any bid, contractor or subcontractor. No construction will commence until plans and specifications for the Water System Extension have been submitted to and approved by the Texas Commission on Environmental Quality and any other required regulatory agency, as may be required by law. WSC shall have no liability of any kind to Developer occasioned by delays or difficulties in obtaining any required governmental approvals, permits, licenses or certificates.
- (b) The Water System Extension shall be constructed in accordance with the approved plans and specifications. WSC shall have the right to inspect all phases of the construction of the Water System Extension. Developer must give written notice to WSC of the date on which construction is scheduled to begin so that WSC may assign an inspector. WSC may charge reasonable inspection fees based on the actual costs of labor, travel and incidental expenses of the inspectors, plus 10% overhead.

**4. Dedication of Water System Extension to WSC.**

Upon proper completion of construction of the Water System Extension and final inspection thereof by WSC, the Water System Extension shall be dedicated to the WSC by an appropriate legal instrument approved by WSC's Attorney. Any costs of remediation or

rehabilitation necessary to bring the Water System Extension into compliance with all state, federal, and WSC standards prior to acceptance by WSC shall be borne by Developer. WSC shall have to the sole decision of when the Water System Extension is acceptable. The Water System Extension shall thereafter be owned and maintained by WSC; however, Developer shall warrant the construction and suitability of the same for a period of one (1) calendar year and shall bear all costs of repairs and improvements during this warranty period.

**5. Subdivision Restrictions.**

Developer shall create and enforce permanent and irrevocable subdivisions deed, plat or other restrictions and/or covenants running with the land that shall prohibit the construction of private potable water systems or water wells within the subdivision. These prohibitions need not apply to non-potable water sources used for irrigation

purposes only if they do not encroach on or in any way hazard the WSC's source of water. No interconnection between a private water supply and the WSC's water supply may be constructed or maintained except in strict conformance with applicable state or federal health, safety, environmental or utility regulations.

**6. Cost of the Water System Extension.**

(a) Developer shall pay all costs associated with the Water System Extension as a contribution in aid of construction, including without limitation to the cost of the following:

- (1) engineering and design;
- (2) easement or right-of-way acquisition;
- (3) construction;
- (4) inspection;
- (5) attorneys' fees;
- (6) governmental or regulatory approvals required to lawfully provide service, including all costs of amending WSC's certificate of convenience and necessity;
- (7) WSC's prescribed capital recovery (impact) fee (by anticipated meter size) and/or capacity reservation charge for each lot and/or service connection for which the Water System Extension is designed to serve less credit for any production, treatment, storage, pressure and transmission facilities added to WSC's utility system at Developer's expense to serve the property in question; however, no credit shall be provided for distribution lines, valves, taps, services, flush valves and appurtenances thereto (together the "distribution system infrastructure") constructed at Developer's expense and the total offset credit received shall never exceed the total amount of WSC's prescribed impact or capital recovery fee (by anticipated meter size) and/or capacity reservation charge which would otherwise be collected.
- (8) WSC's prescribed right-of-way acquisition fee (by anticipated meter size) and/or capacity reservation charge for each lot and/or service connection for which the Water System Extension is designed to serve.

(b) Developer shall indemnify WSC and hold WSC harmless from all of the foregoing costs.

(c) Payment of Contribution in Aid of Construction:

- (1) A Non-Standard Service Investigation Fee in an amount set by the WSC's General Manager, in consultation with the WSC's consulting engineer and counsel, shall be paid by cashier's check payable to the WSC at the time of initial application for service.
  - (2) The WSC's Capital Recovery Fee, Right-of-Way Acquisition Fee and Membership Fee, as defined by the WSC's tariff, shall be paid by cashier's check payable to the WSC within ten (10) business days of the latter of approval of the consulting engineer's plans for the Service Extension by the WSC or the Texas Commission on Environmental Quality. Failure to deliver the funds to the WSC's business offices within the 10 business day period shall void the application for non-standard service and the Developer shall have to reapply and repay all applicable Non-Standard Service Investigation Fees. Upon timely payment of the Capital Recovery Fee, WSC's consulting engineer shall proceed with issuing proposals for bids for construction.
  - (3) All funds required for the Water System Extension construction shall be escrowed in an interest bearing, federally insured, account in a state chartered bank located in Denton County, Texas within sixty (60) days of the acceptance of construction bid(s) by WSC. The account shall be in the name of and under the sole control of the WSC. Interest accrued thereon shall be retained in the account for the benefit of the Developer. All escrow and other charges associated with the creation and maintenance of this account shall be borne by Developer. If the amount of the funds to be escrowed exceed \$100,000, the bank shall provide suitable collateral in the form of United States or State of Texas treasury bonds, bills or certificates of obligation suitable as collateral under the Texas Public Funds Investment Act said collateral to be held by an agent acceptable to WSC. Developer shall be required to maintain the level of funds in said escrow account at no less than ten percent (10%) of the total estimated cost of the Water System Extension. If phased development and construction under multiple Non-Standard Service Agreements will be followed, the parties may establish and utilize a single escrow account. All funds remaining in the escrow account at the expiration of the Developer's one-year warranty of the Water System Extension (or the final warranty year if phased development and construction is followed) shall be refunded to Developer. Developer-paid impact or capital recovery fees or capacity reservation charges shall be paid directly to WSC at execution of this Agreement and shall not be subject to escrow but shall be the unrestricted funds of WSC. Failure to deliver the funds to the WSC's business offices within the 60-day period shall void the application for non-standard service and the Developer shall have to reapply and repay all applicable Non-Standard Service Investigation Fees. Upon timely delivery of these funds to the selected bank, WSC shall authorize construction to commence
- (d) Provided, however, except for the one-year warranty provide in the Agreement, nothing herein shall be construed as obligating the Developer to maintain the

Water System Extension subsequent to its dedication and acceptance for maintenance by WSC and the expiration of the warranty period.

- (e) If WSC has required the Water System Extension to be oversized in anticipation of the needs of the other customers of WSC, WSC shall reimburse Developer for the additional costs of construction attributable to the over-sizing, as determined by the WSC's consulting engineer, in three equal annual installments without interest beginning one year after dedication of the Water System Extension to WSC.
- (g) If the Developer requests WSC to install meters at service locations during the construction of the distribution system infrastructure, Developer shall pay the normal monthly service rates for each meter beginning with the date of installation. Unless the service meter is for the Developer's own permanent use and not for property to be resold to the public in the ordinary course of business, Developer shall pay a customer service deposit of \$100.00 per 5/8 inch meter. The deposit shall be increased by the meter equivalency factors in WSC's approved tariff for larger meters. These customer service deposits shall be payable in lieu of the WSC's customary membership fee and shall be managed and refundable in the same fashion as a membership fees under WSC's by-laws and tariff. Failure to timely pay the service charges and/or deposits for any individual meter shall be grounds for discontinuance and/or refusal of service for all other meters held by Developer.

**7. Service From the Water System Extension.**

- (a) After proper completion and dedication of the Water System Extension to WSC, WSC shall provide continuous and adequate water service to the Property under the requirements of WSC's state-issued certificate of convenience and necessity, the regulations of the Texas Commission on Environmental Quality and all duly adopted rules and regulations of WSC and payment of the following:
  - (1) All standard rates, fees and charges as reflected in WSC's approved tariff;
  - (2) Any applicable impact or capital recovery fee adopted by WSC;
  - (3) Any applicable reserved service charge adopted by WSC.
- (b) It is understood and agreed that the obligation of WSC to provide water service in the manner contemplated by this Agreement is subject to the issuance by the Texas Commission on Environmental Quality and all other governmental agencies having jurisdiction of all permits, certificates or approvals required to lawfully provide such service.
- (c) Unless the prior approval of WSC is obtained, the Developer shall not:
  - (1) construct or install additional water lines or facilities to service areas outside the proper;
  - (2) add any additional lands to the Property for which water service is to be provided pursuant to this agreement; or
  - (3) connect or serve any person or entity who, in turn, sells water service directly or indirectly to another person or entity.

**8. Effect of Force Majeure.**



In the event either party is rendered unable by force Majeure to carry out any of its obligations under this Agreement, in whole or in part, then the obligations of that party, to the extent affected by the force Majeure shall be suspended during the continuance of the inability, provided however, that due diligence is exercised to resume performance at the earliest practical time. As soon as reasonably possible after the occurrence of the force Majeure relied upon to suspend performance, the party whose contractual obligations are affected thereby shall give notice and full particulars of the force Majeure to the other party.

The cause, as far as possible, shall be remedied with all reasonable diligence. The term "force Majeure" includes acts of God, strikes, lockouts or other industrial disturbances, acts of the public enemy, orders of the government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraints of government and civil disturbances, explosions, breakage, or accidents to equipment, pipelines, or canals, partial or complete failure of water supply, and any other inability's of either party, whether similar to those enumerated or otherwise, that are not within the control of the party claiming the inability and that could not have been avoided by the exercise of due diligence and care. It is understood and agreed that the settlement or strikes and lockouts shall be entirely within the discretion of the party having the difficulty and that the requirement that any force Majeure be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party if the settlement is unfavorable to it in the judgment of the party having the difficulty.

9. **Notices.**

Any notice to be given hereunder by either party to the other party shall be in writing and may be effected by personal delivery or by sending said notices by registered or certified mail, return receipt requested, to the address set forth below. Notice shall be deemed given when deposited with the United States Postal Service with sufficient postage affixed. Any notice mailed to the WSC shall be addressed:

Bolivar Water Supply Corporation  
Attn: General Manager  
310 N 3<sup>rd</sup> Street  
PO Box 1789  
Sanger, TX 76266

with copy to:

Mark H. Zeppa, Esq.  
Law Offices of Mark H. Zeppa, P. C.  
4833 Spicewood Springs Road, Suite 202  
Austin, Texas 78759-8436

Any notice mailed to Developer shall be addressed:

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Either party may change the address for notice to it by giving notice of such change in accordance with the provisions of this paragraph.

**10. Severability.**

The provisions of this Agreement are severable, and if any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement or the application thereof to any person or circumstance shall ever be held by any court of competent jurisdiction to be invalid or unconstitutional for any reason, the remainder of this Agreement and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this Agreement to other persons or circumstances shall not be affected thereby and this Agreement shall be construed as if such invalid or unconstitutional portion had never been contained therein.

**11. Entire Agreement.**

This Agreement, including any exhibits attached hereto and made a part hereof, constitutes the entire agreement between the parties relative to the subject matter of this Agreement. All prior agreements, covenants, representations, or warranties, whether oral or in writing, between the parties are merged herein.

**12. Amendment.**

No amendment of this Agreement shall be effective unless and until it is duly approved by each party and reduced to a writing signed by the authorized representatives of the WSC and the Developer, respectively, which amendment shall incorporate this Agreement in every particular not otherwise changed by the amendment.

**13. Governing Law.**

This Agreement shall be construed under and in accordance with the laws of the State of Texas and all obligations of the parties are expressly deemed performable within the state-certificated service area of WSC.

**14. Venue.**

Venue for any suit arising hereunder shall be in Denton County, Texas.

**15. Successors and Assigns.**

This Agreement shall be binding on and shall inure to the benefit of the heirs, successors and assigns of the parties.

**16. Assignability.**

The rights and obligations of the Developer hereunder may not be assigned without the prior written consent of the WSC.

**17. Effective Date.**

This Agreement shall be effective from and after the date of due execution by all parties.

**18. Conflict.**

In the event there is determined to be a conflict between the terms of this Agreement and the provisions in the WSC's tariff governing the same matter, the tariff shall prevail.

IN WITNESS WHEREOF each of the parties has caused this Agreement to be executed by its duly authorized representative in multiple copies, each of equal dignity, on the date or dates indicated below.

"WSC"

DEVELOPER

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

# **Bolivar Water Supply Corporation**



**DESIGN STANDARD AND  
SPECIFICATIONS MANUAL**

# **WATER SYSTEM SPECIFICATIONS**

## **1.1 General:**

The design and construction of the water distribution system to serve the development shall be in accordance with good engineering principles, with these Standards of Design, the Standard Specifications for Construction and the Standard Details and with the requirements of the Texas Commission on Environmental Quality (TCEQ). All off-site water mains shall be sized and located to conform to projected demands in accordance with the latest Water Master Plan and the computer model with regard to the impact of each development on the existing and proposed water distribution system. No construction shall commence prior to the approval of the complete construction plans and specifications by Bolivar WSC.

All facilities shall be of sufficient size to provide adequate capacity for ultimate development. The pipelines shall be sized to meet the maximum instant domestic requirements. The design criteria for water demand shall be submitted to Bolivar WSC with the plans and specifications. Bolivar WSC reserves the right to require larger pipelines than required for the proposed development in order to provide capacities for areas outside the development. The developer will be responsible to construct water lines adjacent to their property in accordance with the latest Water Master Plan, across the frontage of the tract, or as required by Bolivar WSC. All facilities that are to be public shall be constructed with domestically manufactured materials.

The minimum pipeline size to serve residential areas shall be six (6) inches in diameter, and the minimum pipeline size serving commercial, business, industrial, etc. shall be six inches (6"). In general, all lines shall be looped with no dead-ends. Dead-end lines will be considered on a case by case basis and shall be furnished with an approved flush valve arrangement.

## **1.2 Connections to Existing Distribution System:**

Preliminary discussions concerning take-off points in the distribution system should be conducted with Bolivar Water Supply Corporation prior to finalizing the preliminary designs of the distribution system, which will serve the development. Connections to BWSC's existing system will be allowed only at locations where Bolivar WSC has determined that sufficient quantity and pressures are available to meet the projected requirements of the development. In general, the connections to the existing distribution system shall be made in such a manner to keep "shut-downs" to a minimum. Preference will be given to a tapping sleeve and valve connections.

In a proposed development where BWSC water is not adjacent to the property but is accessible, the developer shall provide, at his expense, an off-site water main of

sufficient size to serve his development or as shown on BWSC's Water Master Plan, which ever is larger. The proposed development will normally require a loop into the existing water distribution system in order to provide adequate water pressure. The loop will be at the developer's expense. In general, BWSC will not approve a development, which cannot be served by extensions to Bolivar WSC distribution system.

### **1.3 Location of Facilities:**

A. Pipelines: Water pipelines shall be located in the parkways between the back of the curb and the street right-of-way. The location shall be two feet (2') from the back of curb on the north side of east-west streets and on the west side of north-south streets. The location of all water mains and valves are to be shown on the subdivision plans subject to the approval of Bolivar WSC.

B. Gate Valves: Gate valves shall be located outside the paved streets and shall be two feet (2') from back of curb of the intersecting street. In general, gate valves shall be located at street intersections. Unless otherwise approved by BWSC, valves shall be located in the northwest quadrant of the street intersection. All valve boxes shall be encased in a concrete pad that shall be twelve inches by twelve inches by six inches (12" x 12" x 6") and reinforced with No. 3 steel bars.

### **1.4 Water Service Connections:**

A water service pipeline shall be laid to each lot with fittings and a meter box in accordance with the Standard Specifications for Construction and the Standard Details. All service pipelines, which supply water to each single-family lot, shall be constructed of SDR-9 (Polytube) having a minimum size of Three-fourths inch (3/4").

All water services under pavement shall be encased in a minimum 2" diameter steel encasement pipe or approved equivalent, with no coupling being installed under the roadway. The ends of the encasement pipe shall be sealed with silicone

All residential services shall be tapped to the PVC water main using double strap brass saddle. Tapping tees are required for all services larger than 4-inch.

Meter box tops shall be set one-half inch to one and one-half inch (1/2" to 1 1/2") above the curb, and an angle meter stop shall be set six inches (6") below the meter box top. Meter boxes shall have a one-inch (1") wide slot from five inches (5") below the top of the box to the bottom of the box on the side facing the lot for service connection. All meter boxes shall be set at least two feet (2') behind the curb, with a "W" etched into the curb adjacent to the meter box.

A. Installation of Meter Boxes: Installation of model FYM241-233-T-G-NL Ford Meter Box Company, Inc., meter boxes for single family, multi-family, condominium and townhouse developments may be installed only at approved locations. Each single family residence shall have individual meter taps and boxes. Condominiums, townhouses, or multi-family developments may use alternate installations, approved on case-by-case basis. Service pipeline size for commercial and industrial developments shall be designed by the developer in accordance with the BWSC's adopted Uniform Plumbing Code.

## 1.5 Materials and Installation:

A. Pipe: Water pipelines shall be PVC pipe conforming to the Standard Specifications for Construction. In general, the water pipelines shall be AWWA Standard C-900 with cast-iron outside dimensions, and installed with a minimum of four feet (4') of cover from proposed final grade, unless otherwise approved by Bolivar WSC.

B. All water mains under pavement shall be encased as follows:

- a. 8-inch through 10-inch - encase in steel or approved equal.
- b. 12-inch and larger - encase in steel pipe, size and thickness ( 1/4" min.) to be approved by Bolivar's Engineer.

C. All pipes not under pavement shall be installed in embedment material as shown on the Standard Details.

D. Gate Valves: All gate valves shall conform to AWWA C-509 standards manufactured by Mueller, Clow, or an approved manufacturer with resilient seat only and shall conform to and shall be installed according to the Design Standard.

G. Water Service Connections: Service pipeline shall be in accordance with the designs shown on the Standard Drawings. The materials shall be Mueller, Ford, or approved equal and shall be installed in accordance with the Standard Specifications for Construction. All connections shall be compression type or approved equal.

H. Bends: Mega-lugs or approved equal shall be installed at a horizontal change in the directions of 45° or greater and at all vertical change in direction that require a bend. The restraints shall be placed at the bend and at the next pipe joint in the direction from the bend.

I. All irrigation meters shall have a testable double check backflow preventer

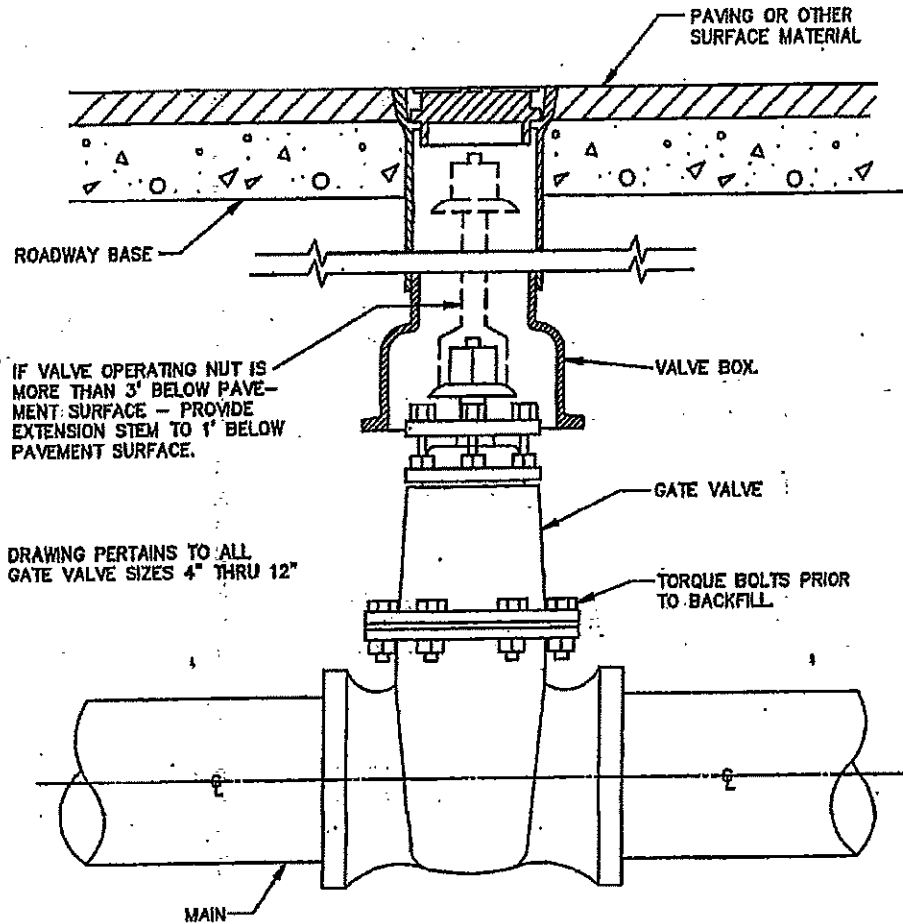
J. All iron fittings shall be covered and secured with plastic wrap prior to backfill being placed.

K. No imported materials.

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**NOTE:**

IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.



**GATE VALVE BOX AND  
EXTENSION STEM**

N.T.S.

Gate Valve 4" To 12"	 <b>Bolivar Water Supply</b>	Revision Date	Scale None
Box & Extension Stem		Date Dec, 2012	Sheet No. WAT-01

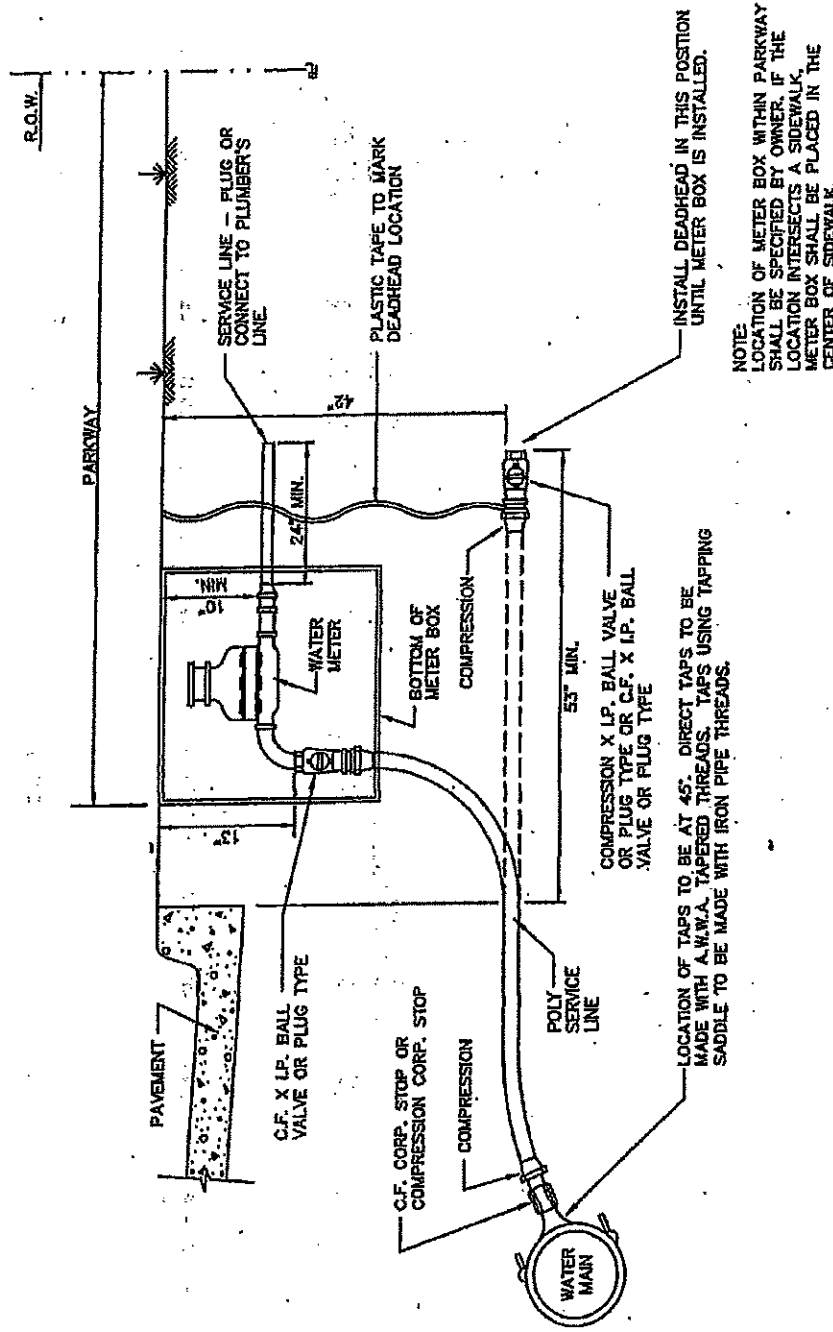
PLOT SCALE: 1:1

PLOT STYLE: 11x17.ctb



Date: 12/12/12 - DSMITH

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NOTE:  
 LOCATION OF METER BOX WITHIN PARKWAY SHALL BE SPECIFIED BY OWNER. IF THE LOCATION INTERSECTS A SIDEWALK, METER BOX SHALL BE PLACED IN THE CENTER OF SIDEWALK.

LOCATION OF TAPS TO BE AT 45° DIRECT TAPS TO BE MADE WITH A.W.W.A. TAPERED THREADS. TAPS USING TAPPING SADDLE TO BE MADE WITH IRON PIPE THREADS.

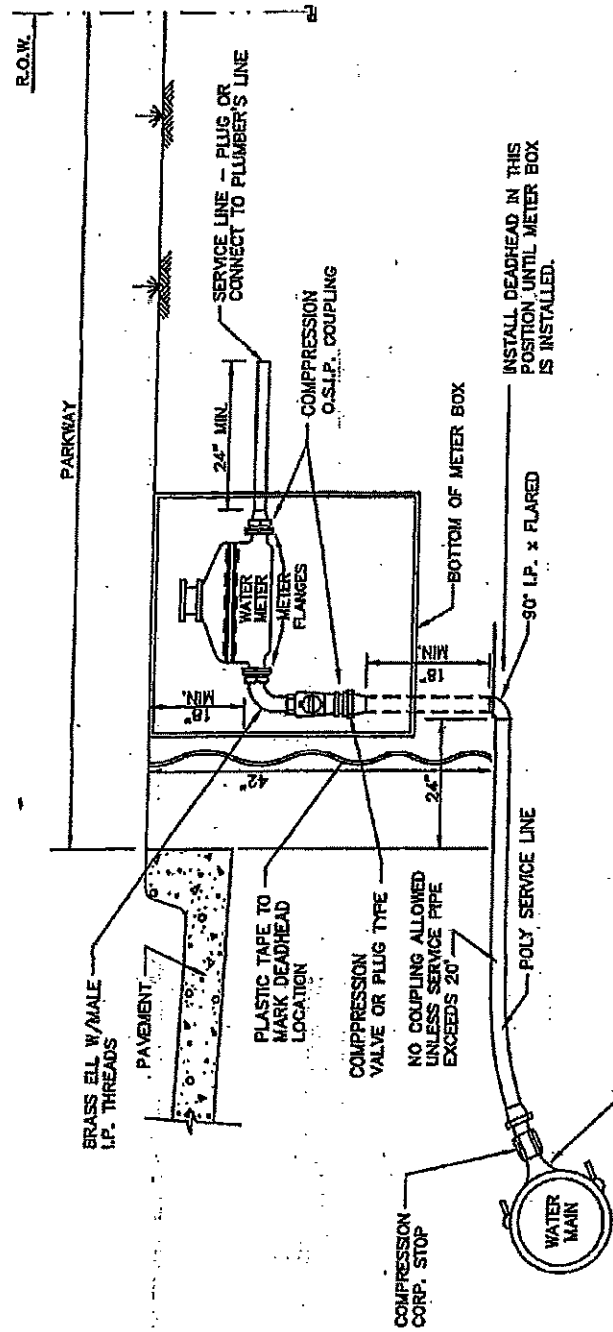
COMPRESSION X I.P. BALL VALVE OR PLUG TYPE OR C.F. X I.P. BALL VALVE OR PLUG TYPE

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Water Service Installation	 Bolivar Water Supply	Revision Date	Scale None
3/4" Or 1" Line		Date Dec, 2012	Sheet No. WAT-13

PLOT SCALE: 1:1

PLOT STYLE: 11x17.ctb



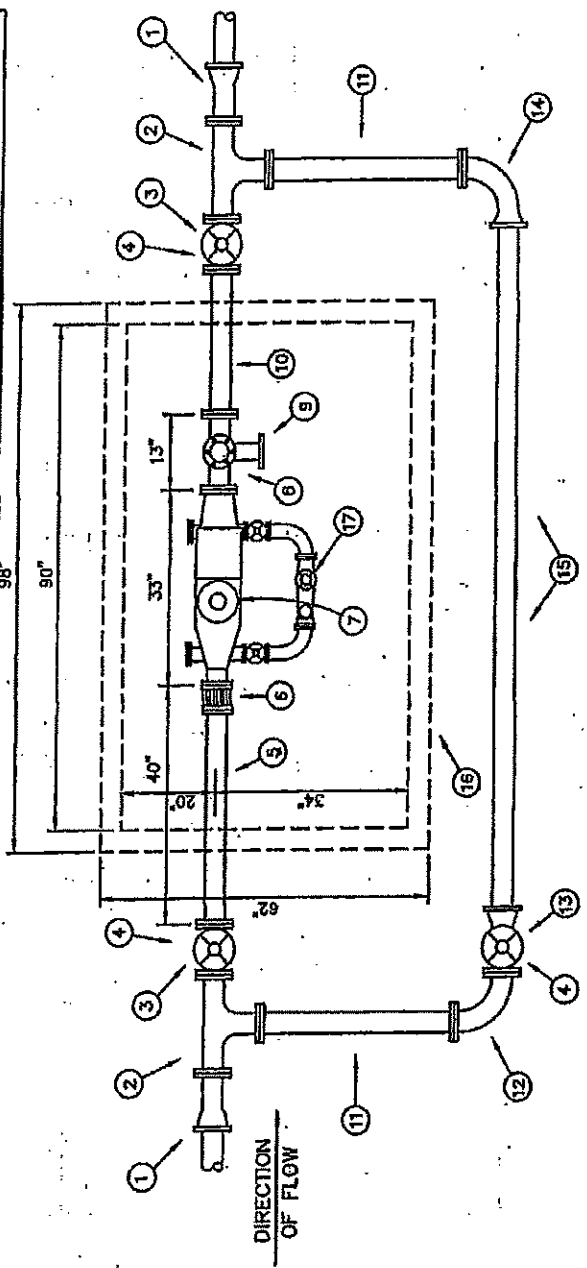
**NOTE:**  
 LOCATION OF METER BOX WITHIN THE AVAILABLE PARKWAY SHALL BE SPECIFIED BY OWNER. IF THE LOCATION INTERSECTS A SIDEWALK, METER BOX SHALL BE PLACED IN CENTER OF SIDEWALK.

LOCATION OF TAPS TO BE AT 45°. DIRECT TAPS TO BE MADE WITH A.W.W.A. TAPERED THREADS. TAPS USING TAPPING SADDLE TO BE MADE WITH IRON PIPE THREADS.

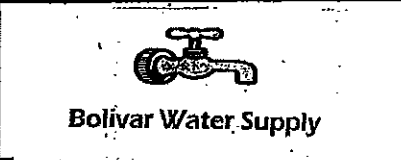
Water Service Installation	 Bolivar Water Supply	Revision Date	Scale None
1-1/2" Or 2" Line		Date Dec, 2012	Sheet No. WAT-14

MATERIALS LIST	
PART NO.	DESCRIPTION
10	1 EA. 4" X 24" D.I. NIPPLE F. X F.
11	2 EA. 4" X 36" D.I. NIPPLE F. X F.
12	1 EA. 4" D.I. 90° BEND. F. X F.
13	1 EA. 4" GATE VALVE F. X M.J.
14	1 EA. 4" D.I. 90° BEND. M.I. X F.
15	1 EA. 4" D.I. PIPE, CLASS 52, APPROX. 10'
16	1 EA. PRECAST METER VAULT
17	1 EA. VAULT FLOOR (NOT SHOWN)
18	1 EA. ACCESS HATCH (NOT SHOWN)
19	1 EA. BY-PASS METER

MATERIALS LIST	
PART NO.	DESCRIPTION
1	2 EA. 4" X 12" D.I. NIPPLE M.I. X F.
2	2 EA. 4" X 4" D.I. TEE F. X F.
3	3 EA. 4" GATE VALVE F. X F.
4	VALVE STACK RISER COVER & LID
5	4" X 40" D.I. NIPPLE F. X SLEEVE
6	4" FLANGED COUPLING ADAPTER
7	4" METER AS SPECIFIED (TYPE F.M. SHOWN)
8	1 EA. 4" X 4" D.I. TEE F. X F. (TEST POINT)
9	4" BLIND FLG.



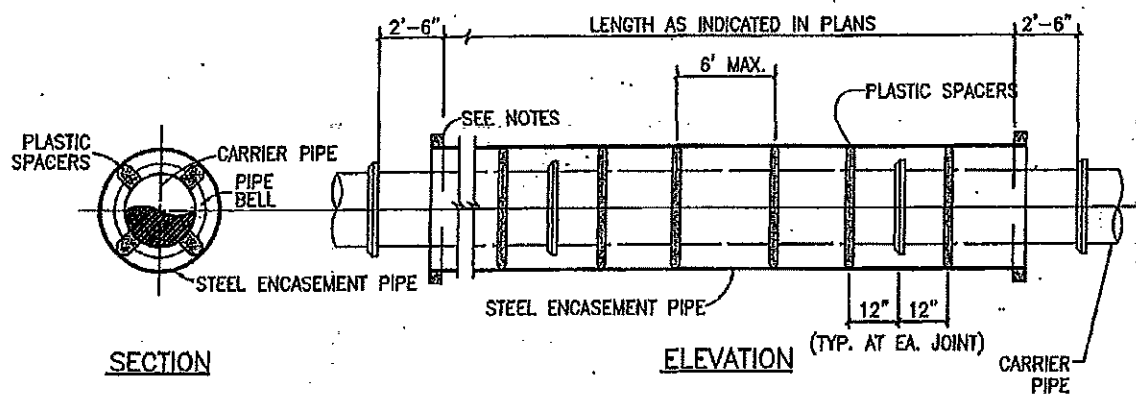
4" Combination Water Service  
With 4" Meter



Revision Date  
Date  
Dec, 2012

Scale  
None  
Sheet No.  
WAT-15

Date: 12/12/12 - DSMITH  
 H:\Projects\Anna\4007 General Services\120 - Design Manual\Water Details\Water Details.dwg

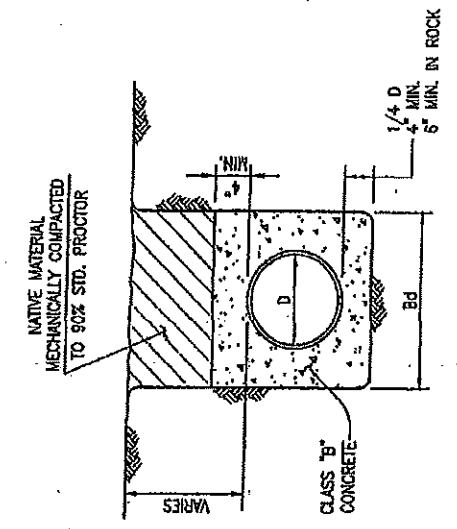


- NOTES:**
- 1) PREFABRICATED PLASTIC SPACERS MUST BE APPROVED BY THE OWNER.
  - 2) CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
  - 3) ENDS OF ENCASEMENT PIPE SHALL BE PLUGGED WITH BRICK AND MORTAR FOR ROADWAY AND RAILROAD CROSSINGS. PLUGS SHALL BE CONSTRUCTED WITH A WEEP HOLE.
  - 4) STEEL ENCASEMENT PIPES SHALL BE WELDED.
  - 5) EXTERIOR OF ENCASEMENT PIPE SHALL BE COATED WITH AN ASPHALT VARNISH.
  - 6) MINIMUM YIELD STRENGTH OF THE ENCASEMENT PIPE SHALL BE 35,000 P.S.I.
  - 7) CARRIER PIPE JOINTS SHALL BE RESTRAINED.

**ENCASED BORE RAILROAD OR ROADWAY**

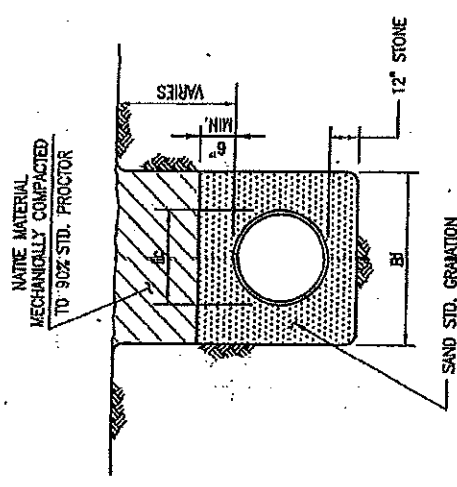
NO SCALE

Encasement Pipe	 <b>Bolivar Water Supply</b>	Revision Date	Scale
Water Line By Bore		Date	Sheet No.
		Dec, 2012	WAT-17



**CLASS "B"**

- N.T.S.
1. Bc = OUTSIDE DIAMETER OF PIPE
  2. Bd = TRENCH WIDTH
  3. D = INSIDE DIAMETER OF PIPE



**WATER LINE EMBEDMENT**

- N.T.S.
1. Bc = OUTSIDE DIAMETER OF PIPE
  2. Bd = TRENCH WIDTH
  3. D = INSIDE DIAMETER OF PIPE

Embedment	 <b>Bolivar Water Supply</b>	Revision Date	Scale
Water Line Embed. & Class "G"		Date	Sheet No.
		Dec, 2012	EMB -01