## CERTIFICATE FOR ORDER OR RESOLUTION

THE STATE OF TEXAS §
COUNTIES OF HAYS AND CALDWELL §

The undersigned officers of the Board of Directors of Maxwell Special Utility District of Caldwell and Hays Counties, Texas (the "**District**") hereby certify as follows:

The Board of Directors of Maxwell Special Utility District convened in a **regular** meeting on the 28th day of May 2020, via teleconference and videoconference in compliance with an advisory issued by the Office of the Governor, and the roll was called of the duly constituted officers and members of the Board, to wit:

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| Robert Karasch | President |
| Doris Steubing | Vice-President |
| Nadine Hodges | Treasurer |
| Mabel Vaughn | Secretary |
| Liralen Canion | Asst. Secretary/Asst. Treasurer |
| Brian Freeman | Director |
| Doug Spillman | Director |
| VACANT | Director |
| Valentin Yanez, Jr. | Director |

and all of said persons were present, except for the following absentees: None, thus constituting a quorum. Whereupon, among other business, the following was transacted at the meeting:

**AN ORDER OF MAXWELL SPECIAL UTILITY DISTRICT: PROVIDING A CONSOLIDATED RATE ORDER; RULES AND REGULATIONS; PROVIDING FINDINGS OF FACT; ADOPTING DROUGHT CONTINGENCY PLAN; PROVIDING PENALTIES UP TO $10,000.00 PER VIOLATION; PROVIDING REPEALER; PROVIDING SEVERABILITY; PROVIDING FOR OPEN MEETING.**

was introduced for the consideration of the Board. It was then duly moved and seconded that the Order or Resolution be adopted, and, after due discussion, the motion, carrying with it the adoption of the Order or Resolution prevailed and carried by the following vote:

AYES: Directors Karasch, Hodges, Vaughn, Freeman, Spillman, and Yanez

NOES:

ABSTENTIONS: Directors Steubing and Canion

That a true, full and correct copy of the aforesaid Order or Resolution adopted at the meeting described in the above and foregoing paragraph is attached to and follows this certificate;

and that said Order or Resolution has been duly recorded in said Board's minutes of said meeting; that the persons named in the above and foregoing paragraph were duly chosen, qualified and acting officers and members of the Board as indicated therein, that each of the officers and members of said Board was duly and sufficiently notified officially and personally, in advance, to the holding of said meeting for such purpose; that said meeting was held in compliance with the advisory issued by the Office of the Governor; that said meeting was open to the public as required by law; that public notice of the time, place and subject of said meeting was given as required by the Texas Government Code, §551.043, as amended, and §49.063 of the Texas Water Code, as amended, and that the undersigned are the duly chosen, qualified and acting officers of the current Board of Directors.

SIGNED AND SEALED this 28th day of May 2020.

Secretary, Board of Directors
Maxwell Special Utility District

President, Board of Directors
Maxwell Special Utility District

[SEAL]

**AN ORDER OF MAXWELL SPECIAL UTILITY DISTRICT: PROVIDING A CONSOLIDATED RATE ORDER; RULES AND REGULATIONS; PROVIDING FINDINGS OF FACT; ADOPTING DROUGHT CONTINGENCY PLAN; PROVIDING PENALTIES UP TO $10,000.00 PER VIOLATION; PROVIDING REPEALER; PROVIDING SEVERABILITY; PROVIDING FOR OPEN MEETING.**

**WHEREAS**, the Texas Legislature adopted and passed into law S.B. 1422, Acts 2019, 86th Leg., R.S., Ch. 559, eff. June 10, 2019, providing for Maxwell Water Supply Corporation to convert to Maxwell Special Utility District ("District") upon a successful conversion election held within the District's boundaries; and

**WHEREAS**, the District's qualified voters affirmed the creation of the District and conversion from Maxwell Water Supply Corporation to Maxwell Special Utility District in an election held on January 23, 2020; and

**WHEREAS**, the Board of Directors ("Board") of the District now finds it necessary to adopt an order containing and rules and regulations establishing the rates and conditions under which water service will be provided (collectively the "Rate Order"); and

**WHEREAS**, the District holds Certificate of Convenience and Necessity No. 10293, to provide water utility service within its designated service area.

**NOW, THEREFORE**, BE IT ORDERED BY THE BOARD OF DIRECTORS OF MAXWELL SPECIAL UTILITY DISTRICT THAT:

## ARTICLE I.
## DEFINITIONS

For the purpose of this Rate Order, the following terms shall have the meaning set out hereafter:

(1) "Board of Directors" means the Maxwell Special Utility District Board of Directors.

(2) "Commercial" means any structure designed for business purposes including office buildings, hotels, retail stores, warehouses, service stations, churches, schools, recreational centers and all other establishments not generally considered as residential structures or defined herein as a residential structure.

(3) "Customer" means any person, partnership, corporation, non-profit corporation, trust or other legal entity served by the District's System with water services to a residence or business establishment owned or occupied by such person, partnership, corporation, non-profit corporation, trust or legal entity.

(4) "District" means Maxwell Special Utility District, its agents, or representatives.

(5) "Front End Capital Contribution Fee" or "FECC" means the charged assessed to new applicants for water service to acquire capital to defray costs of expanding the System in order to meet the customer growth needs.

(6) "General Manager" means the District's General Manager or his or her designee.

(7) "Health Hazard" means a cross-connection, potential contamination hazard, or other situation involving any substance that can cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the potable drinking water supply.

(8) "Living Unit Equivalent" or "LUE" shall mean the typical amount of water flow that would be produced by a single-family residence located in a typical subdivision.

(9) "Maxwell" means Maxwell Special Utility District.

(10) "Multi-Family Residential Connection" shall mean all multiplex residential connections which are served by a master meter.

(11) "Multi-Family Units" means the individual dwelling units served through the Multi-Family Residential Connection's master meter and shall include condominiums and all individual dwelling units served by a master meter.

(12) "Non-taxable" means any entity not subject to property taxation pursuant to the provisions of the Texas Tax Code.

(13) "Rules and Regulations" means the Rules and Regulations Governing Water Facilities, Service Lines, and Connections attached to this Rate Order as Appendix "A" and incorporated herein for all purposes.

(14) "Separate Connection" means each residential unit designed for occupancy by a separate family, including each separate unit located within a single multi-unit building, and each commercial unit designed for use by a separate business, including separate establishments within a single building.

(15) "Single-family Residential" means any single- family structure within the District designed for occupation as a residence whether by the owner or by a renter or lessee, including any single-family residence, townhouse, multiplex, apartment building, or other structure generally considered to be and used solely for residential purposes and which is separately metered.

(16) "System" means the water facilities of the District and all extensions and additions thereto, whether now in place or hereafter constructed.

(17) "TCEQ" means the Texas Commission on Environmental Quality.

## ARTICLE II.
## CONNECTION POLICY

Section 2.01. Initiation of Water Connections. Each person desiring a water service connection to the District's System shall be required to pay such fees as set forth in this Rate Order. No service shall be established or re-established until such fees are paid. All service connections are subject to the provisions of the District's Rules and Regulations and all other rules, regulations, and policies of the District.

Section 2.02. Policies Governing Initial Connections.

(a) Certification of System. Connections shall not be made to the District's System or portions of the System until the District's engineer has certified that the System or applicable portion thereof is operable.

(b) Availability of Access/Obstructions. By application for connection to the District's System, the Customer shall be deemed to be granting to the District and its representatives a right of ingress and egress to and from the meter or point of service for such installation, maintenance and repair as the District, in its judgment, may deem reasonably necessary. The Customer shall also be deemed to be granting to the District and its representatives a right of ingress and egress to the Customer's property, including the interior and exterior of the Customer's premises, for the purpose of performing the inspections and completing the Customer Service Inspection Certifications required by the District's Rules and Regulations. Taps and connections will not be made when, in the opinion of the District, the work area is obstructed by building materials or other debris or the work area is not completed or finished to grade. When sidewalks, driveways or other improvements have been constructed prior to application for service, such application shall be construed and accepted as the Customer's waiver of a claim for any damages to such improvements resulting from the reasonable actions of the District in installation of the connection.

Section 2.03. Connections by District. All connections to the District's water system shall be made in accordance with the District's Rules and Regulations. No person except the District's authorized agents may tap or make any connection to the mains or distribution piping of the District's water system, except for emergency fire-fighting purposes, or make any repairs or additions to or alterations in any meter, box, tap, pipe, cock or other fixture connected with the water service unless otherwise specified by the Board of Directors.

Section 2.04. Inspections and Fees.

(a) Pre-Facility Inspection. A builder must contact the District, prior to starting any work on a lot, to do an inspection to verify District facilities. If any District facility is either damaged or cannot be located, the District will make necessary repairs or locate and make visible the equipment at the expense of the District. A copy of the inspection will be given to the builder's representative. After the inspection and any necessary work is completed, the builder will then be responsible for paying the costs of all damages, adjustments, relocations, and repairs

found during the Final Site Survey. The cost for the inspection is $25.00 payable with the tap fee.

(b) Residential Customer Service Inspections and Fees. The District shall perform the inspection and complete the Customer Service Inspection Certification for residential connections as required by Article III of the Rules and Regulations. The District shall conduct the Residential Customer Service Inspection during the period of construction in three stages as follows:

(1) Slab line inspection.
(2) Wall line inspection.
(3) Fixture inspection.

The District shall charge the Customer a fee of $25.00 for the slab line inspection, $25.00 for the wall line inspection and $50.00 for the fixture inspection.

(c) Commercial Customer Service Inspection and Fees. The District shall perform the inspection and complete the Customer Service Inspection Certification for commercial connections as required by Article III of the Rules and Regulations. The District shall conduct the Commercial Customer Service Inspection during the period of construction in four stages as follows:

(1) Slab line inspection.
(2) Wall line inspection.
(3) Fixture inspection.
(4) Backflow Prevention Test.

The District shall charge the commercial Customer a fee of $75.00 to conduct the backflow prevention test. All other inspections fees shall be determined by the District at the time at the time the commercial customer applies for a tap from the District.

(d) Final Builder Inspection and Fees. Upon receipt of instruction from a builder to transfer an account to an initial Customer, the District shall make a final inspection of the property and make note of the condition of all District facilities. The District will repair any damaged District facilities, and the builder will be held responsible for all costs incurred. A fee of $50.00 shall be charged by the District to cover the cost of such inspection and will be collected at the time the tap fee is paid.

A Customer may request the District to reinspect the facilities for a fee of $25.00 when service is transferred to a subsequent Customer.

If any re-inspections of the facilities are required to ensure that the District's facilities are repaired, relocated, or adjusted, a fee of $25.00 shall be charged for each reinspection before service can be transferred to a subsequent Customer. Payment of any backcharges due, or any inspection or reinspection fees, shall be made on or before the 30th day after the date of the invoice for said charges. The District may withhold the provision of service to the property or

to other property owned by any Customer, property owner, builder, or contractor who has failed to make timely payment of backcharges or any inspection or reinspection fees, including specifically the provision of additional taps; provided, however, the District shall follow the notification procedures set forth in Section 4.02 prior to withholding the provision of services.

(e) Swimming Pool Inspections and Fees. Every Customer who plans to construct or install a swimming pool within the District shall notify the District in writing prior to commencing construction of the pool. Upon notification by the Customer of the intention to construct or install a swimming pool, the Customer shall pay an inspection fee of $50.00. After the notification is received, the District shall ensure that all drains from the swimming pool are connected to the District's storm drainage system. After the drains have been installed, the Customer shall notify the District, who shall make an inspection of all swimming pool drains to verify that the proper connection is made, before service is authorized for said swimming pool.

(f) Annual Testing of Backflow Prevention Devices and Assemblies and Fees. Backflow prevention assemblies shall be installed on any connection which poses a Health Hazard and any other connection which the District or the District reasonably believes poses a threat to the District's Water Supply System. Water service provided for lawn sprinklers, swimming pool supply, reflection pool supply or other such applications must incorporate a back flow prevention assembly in accordance with a State Approved Plumbing Code for the particular designated use. No permanent water service will be provided or continued to any new connection in the District which requires a backflow prevention assembly, unless the Customer provides the District with a Backflow Prevention Assembly Test and Maintenance Report (the "Test Report"), as described in Exhibit "3" to the Rules and Regulations. At the request of the customer, the District may, on behalf of the District, complete the Test Report at cost of $75.00.

Backflow prevention assemblies which are installed to provide protection against Health Hazards, shall be tested and certified to be operating within specifications annually by the District. The District shall charge the Customer a fee of $75.00 to conduct the annual inspection. Connections considered Health Hazards include, but are not limited to, sprinkler systems for homeowners and property owners' associations, chemical supply establishments, manufacturing establishments, pet stores, film developing shops and strip shopping centers.

Section 2.05. Builder's Deposit. Each builder of a residence, commercial building or other structure shall, at the time a request for a water tap is made, pay a deposit of $500.00 for the first lot for which a water tap has been requested and $100.00 for each additional lot thereafter. The deposit shall be refunded within ninety (90) days after the builder certifies the sale of its last residence, commercial building or other structure within the District, less any amounts forfeited as provided herein. The District shall deduct from the deposit the cost to repair any damage caused to the District's property by the builder or the builder's employees, contractors, subcontractors or agents and shall deduct any delinquent water service bills of the builder. In the event any amounts are so deducted from the builder's deposit, it will be incumbent on the builder to reinstate the original amount of the deposit, and failure to do so will result in the suspension of any additional water taps for the builder.

Section 2.06. Temporary Water Service.

In the event a request is made for intermittent fire hydrant/flush valve meter, the applicant shall complete and sign the District's Temporary Construction Meter Application form thereby agreeing to the terms and conditions contained in the agreement, which includes an acknowledgement that the applicant will comply with the District's cross-connection control rules. To obtain Temporary Construction Meter service, the following fees and charges must be paid by the applicant:

(1) Deposit of $2,500 which shall be returned to the applicant upon the payment of all monthly and usage fees due to the District and the return of the meter in good working condition.
(2) Monthly Minimum Charge and a Usage Charge, as defined by the size of the meter and equivalent to the charges outlined under Section 3.01(b), below.

Section 2.07. Service to Out-of-District Customers. All requests for water service from parties located outside the boundaries of the District shall be considered on a case-by-case basis and governed by separate agreement.

Section 2.08. Title to Facilities. Title to all water meters, water taps, and all other appurtenances, including meter boxes, shall lie in the District.

## ARTICLE III.
## SERVICE RATES

Section 3.01. Water Service Rates. The District levies a monthly charge for water service to each Customer. Those who are connected to the District's water distribution system and who have an installed meter pay a charge that is the total of three components: (a) a monthly minimum charge; (b) a charge for water consumed, billed on the basis of thousand gallon increments; and (c) the TCEQ regulatory assessment provided under 30 Texas Administrative Code, Section 291.76, as amended. The District shall pay the regulatory assessment to the TCEQ by January 30th of each year, in the amount required by law on the total charges for retail water service collected from its customers in the prior twelve months. At the end of each calendar year, the District shall prepare a written statement indicating (i) the total charges collected for retail water service for the year and (ii) the regulatory assessment due and payable to the TCEQ. The District must list the TCEQ regulatory assessment on Customers' bill as a separate line item and shall collect the assessment in addition to other charges. Failure by a Customer to pay the TCEQ regulatory assessment shall result in the termination of water service in accordance with the provisions of this Rate Order.

(a) Monthly Minimum Charge

(1) For Standard Service

- Each customer pays the standard water usage fee as determined by meter readings regardless of meter size and number of LUEs

- Standard service is either a 5/8 X ¾ meter with one LUE or a 1" meter with one LUE.

- The monthly minimum for Standard Service is $30.00.

(2) For Non Standard Service

- Each customer pays a monthly fixed charge based on meter size and, in some instances, on meter size and the number of LUEs, as follows.

  - For "non-standard" service for everything other than a RV park or motel that serves transient customers:

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    |---|---|
    | 1" or smaller with 2 LUEs: | $60.00 |
    | 1" or smaller with 3 LUEs: | $90.00 |
    | 1" or smaller with 4 LUEs: | $120.00 |
    | 1-1/2" Compound | $150.00 |
    | 2" Compound | $240.00 |
    | 2" Turbine | $300.00 |
    | 3" Compound | $540.00 |
    | 3" Turbine | $720.00 |
    | 4" Compound | $750.00 |
    | 4" Turbine | $1,260.00 |
    | 6" Compound | $1,500.00 |
    | 6" Turbine | $2,760.00 |
    | 8" Compound | $2,400.00 |
    | 8" Turbine | $4,800.00 |

  - For an RV Park or for a motel that serves transient customers there is no charge made for LUEs regardless of the number of LUEs served. (This situation would only apply for an RV Park or a motel that serves transient customers that is providing service through a 1" or smaller meter.)

  - **Early Billing Fee.** Any customer requesting early billing in order to collect from tenants in advance of regular billing

will be required to pay a monthly fee of $5.00 per meter for that service.

(b) Charge for Water Consumed

Regardless of meter size, the charge for water measured through a meter in any month is as follows per one thousand gallons:

(1) up to 5,000 gallons: $7.25 per thousand gallons;

(2) for amounts of 5,001 gallons through 10,000 gallons: $66.25 + $7.50 per thousand gallons for the excess amounts from 5,001 gallons through 10,000 gallons;

(3) for amounts of 10,001gallons through 15,000 gallons: $103.75 + $7.75 per thousand gallons for the excess amount over 10,000 gallons; and

(4) for amounts of 15,001 gallons or greater: $142.50 + $8.00 per thousand gallons in excess of amounts over 15,000 gallons.

(c) Edwards Aquifer Authority Fee

(1) Pass-through to offset fees charged to District by the Edwards Aquifer Authority

(2) Subject to change as the fees charged by the Edwards Aquifer Authority increase

(d) TCEQ Assessment –

Each customer pays the amount of a TCEQ Assessment levied at the rate being charged by TCEQ for the period covered by the bill.

Section 3.02. Connection Fees.*

(a) Single Dwelling or Single Non-residential Business Connection Meter installation – Straight Set (no line extension, no road crossing)

| Meter Size | Line Size | Installation Fee | Engineering Admin. Fee | Front End Capital Contrib. | Single Meter | Customer Deposit | Total |
|---|---|---|---|---|---|---|---|
| 5/8"x 3/4" | 1.25"-6" | $1,100.00 | $200.00 | $3,500.00 | $50.00 | $100.00 | $4,950.00 |
| 5/8"x3/4" | 8" | $1,100.00 | $200.00 | $3,500.00 | $50.00 | $100.00 | $4,950.00 |
| 5/8"x3/4" | 12" | $1,500.00 | $200.00 | $3,500.00 | $50.00 | $100.00 | $5,350.00 |
| 1" | 2"-6" | $1,450.00 | $200.00 | $8,750.00 | $50.00 | $100.00 | $10,550.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1" | 8" | $1,450.00 | $200.00 | $8,750.00 | $50.00 | $100.00 | $10,550.00 |
| 1" | 12" | $1,850.00 | $200.00 | $8,750.00 | $50.00 | $100.00 | $10,950.00 |

*All charges are based on routine installs. If the District determines or finds the install to be exceptional in any way (needing any work or equipment not normally done or used for meter installations) the fee will be adjusted to cover any unusual expenses.

(b) Multiple Connection Service – 1" or smaller Meter – Straight Set

(No line extension, no road crossing.)

Multiple Connection Service is available for apartments, manufactured housing parks, and multi-unit residential structures such as duplexes, etc. All other residential service must comply with the one dwelling per meter policy stated in Section F.07 of this Rate Order .

The tap fee for a multiple dwelling connection shall include the installation fee for the meter size specified by the District plus a FECC equal to the FECC for a 5/8" X ¾" meter times the number of dwelling units or manufactured home pad sites to be connected.

Whenever an increase is proposed in the number of dwelling units from the number in the initial construction or installation, or in the case of a manufactured housing park, an increase in the number of pad sites from the initial number, the customer shall pay to the District the appropriate FECC in effect at the time the application for the increase is made before making such expansion. If the District determines that the number of dwelling units or pad sites connected to a master meter was exceeded, the number of units that have been paid for by the customer, the customer shall pay a FECC equal to the FECC for a 5/8"X ¾" meter in effect when the discrepancy is noted times the number of additional dwelling units or pad sites over the initial number that are connected to the meter. The FECC for the additional dwelling units or pad sites shall be paid within thirty (30) days of the date that the District provides notice to the customer.

(c) Additional Connection Charges

(1) Charge for Line Extensions and Road Crossings. The cost to construct line extensions and road crossings will be determined on a case-by-case basis based on the cost of labor and materials at the time of construction.

(2) Non-standard Service. Requests for service or supplemental service other than those set out in this Rate Order shall be considered Additional Charges and shall be determined on a case-by-case basis.

(3) Easements. When the District determines that private right-of-way easements are necessary to provide service to an applicant, the applicant shall be required to pay all costs incurred by the District in obtaining such easements.

(4) Backflow Prevention Device. At any residence or establishment where an actual or potential contamination hazard exists additional protection shall be required in the form of an

air gap or backflow prevention device. The District's backflow prevention program identifies potential sources of contamination on a customer's property to the District'sl's system.

(5) Meter Location. When possible, meters should not be placed in locations where they may be subjected to vehicular traffic, such as under a driveway providing access to a dwelling. If an applicant desires that one or more meters be placed in a location where, in the opinion of the District, the meter(s) may reasonably be subjected to vehicular traffic of any sort, then at the sole expense of applicant: (1) the meter box(as) installed shall be designed and constructed to minimize the likelihood of damage to the meter(s) resulting from said vehicular traffic; and (2) prior to installation of the meter(s), the location of the meter box(s) proposed for use shall first be submitted to the District for approval.

(d) Fees Related Property Subdivision or Conveyance.

(1) All services outside the normal scope of utility operations that the District may be compelled to provide at the request of a customer shall be charged to the recipient based on the cost of providing such service.

(2 ) If an existing customer subdivides his/her property or otherwise transfers a portion of the customer's property to another, whether according to an approved plat or otherwise, the customer must notify the District. If the transferee of such property seeks service, the transferor customer shall pay all actual costs for the District to install a minimum 6" distribution line and road bore from the District's supply main if requested by the District. Customers failing to comply with this provision shall be subject to Disconnection with Notice.

(c ) If the District determines that an applicant's property is subdivided or otherwise transferred to the applicant from a single property tract within five years prior to making a standard service connection request, whether according to an approved plat or otherwise, the applicant must pay all actual costs for the District to install a minimum 6" distribution line and road bore from the District's supply main if requested by the District as a condition for standard service.

Section 3.03. Miscellaneous.

(a) Customer Deposit $ 100.00

The Deposits are refundable and apply to each service connection to the District's system.

(b) Customer Service Inspection $ 75.00

The State of Texas mandates that any requests for new service from a public water supply include a Customer Service Inspection conducted by a licensed inspector.

(c) Fees

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|---|---|
| Reconnect Fees | $150.00 |
| Lock-out Fee | $100.00 |
| Return Check Fee | $ 35.00 |

| | |
|---|---|
| Meter Reading Fee | $ 50.00 |
| Late Payment Fee | $ 20.00 |
| Service Call | $ 30.00 |
| After Hour Service Call | $ 50.00 |
| Transfer Fee | $ 25.00 |
| Easement Recording Fee | pass-through for county recording fees |

Failure to furnish a reading actually obtained from the meter by the 15th of the month will necessitate the District having to read the meter at the customer's expense and include the meter reading fee on the next bill. At the discretion of the General Manager, this fee may be waived upon demonstration of a physical need for this service to be provided by the District.

(d) Change in Use of Property Requiring Increase in Meter Size

In cases where the customer has a District meter and wishes to increase the size of the meter, the customer shall pay to the District the difference between the current amount of the FECC on the existing meter and the current amount of the FECC on the proposed meter. In addition, the customer shall pay the cost of a new meter installation fee being charged at the time of the request.

(e) Temporary Construction Meter

In the event a request is made to the District for intermittent fire hydrant/flush valve meter, the applicant shall complete and sign the District Temporary Construction Meter Application form thereby agreeing to the terms and conditions contained in the agreement, which includes an acknowledgement that the applicant will comply with the District's cross-connection control rules. To obtain Temporary Construction Meter service, the following fees and charges must be paid by the applicant:

(3) Deposit of $2,500 which shall be returned to the applicant upon the payment of all monthly and usage fees due to the District and the return of the meter in good working condition

(4) Monthly Minimum Charge and a Usage Charge which shall be defined by the size of the meter and be equivalent to the charges outlined under Section E.01( b.) Large Volume Service in this Tariff

(f) Water Service Equipment Damage Fees and Water Theft

Water theft will be reported to the law enforcement entities with jurisdiction and charges filed.

The following fees will be charged to compensate the District for repairs due to damage to the District's water distribution system caused by unauthorized actions:

1. Replace damaged or destroyed locks $100.00

2. Replace damaged or destroyed water meter 5/8" x 3/4" $350.00

3. Replace damaged or destroyed water meter 1" $400.00

4. Replace damaged or destroyed angle stops $500.00

In addition to the fees listed above, charges to be paid by the customer will be determined on a case-by-case basis according to the actual cost incurred by the District for repairs when those costs exceed the fees listed above.

Section 3.04. No Reduced Rates or Free Service. All Customers receiving water service from the District shall be subject to the provisions of this Rate Order and shall be charged the rates established in this Order, and no reduced rate or free service shall be furnished to any Customer; provided, however, this provision shall not prohibit the District from establishing reasonable classifications of customers for which rates differing from the rates stated herein may be adopted.

Section 3.05. One meter per dwelling. It is the District's policy to require one paid meter and tap for each residence and dwelling for human habitation. Upon detection of possible multiple dwellings on one meter, the General Manager will communicate verbally and in writing with the suspected violating party and or parties violating this policy and require pre-payment for the setting of additional water meters for the dwellings requiring same. Non-compliance shall constitute basis for disconnection without further notice. All reconnection fees will be borne by the customer.

## ARTICLE IV.
## SERVICE & BILLING POLICY

Section 4.01. Security Deposits. Security deposits shall be required as follows:

(a) Full Payment Required. Service shall be established upon payment of the security deposit and all other fees and charges.

(b) Refund of Deposit. Following payment of the final bill and payment of all fees and charges, the balance of the security deposit, if any, shall be refunded by check mailed to the Customer. No interest shall be payable to the Customer on any security deposit.

Section 4.02. Billing Procedures. All accounts shall be billed in accordance with the following procedures:

(a) Water bills shall be rendered monthly unless service is terminated before the end of a billing cycle. Service initiated less than one week before the next billing cycle may be billed with the following month's bill.

(b) Payment is due upon customer's receipt of the bill and considered late if not received at the District's office or postal address by the 15th of the month. A $20.00 penalty will be added for payment received after the 15th day of the month. Service to customers with balances not paid by the 25th will be subject to disconnection.

(c) The customer residing at the service address will be responsible for payment of the bill. The District will not engage in conflicts between landlords and tenants.

Section. 4.03. Disconnection.

(a) A Customer's utility service shall be disconnected if a delinquent bill has not been paid and if proper notice has been given. Proper notice shall consist of a separate mailing or hand delivery at least ten (10) days prior to a stated date of disconnection, with the words "Termination notice" or similar language prominently displayed on the notice. If applicable, the notice must also list the past due balance.

(b) Service may be disconnected after proper notice for any of the following reasons:

(1) Failure to pay a delinquent account or to comply with a deferred payment agreement;

(2) Willful violation of a usage rule when that violation interferes with another Customer's service;

(3) Failure to comply with valid deposit or guarantee arrangements;

(4) Upon discovery by the District that the property has been subdivided in violation of applicable county subdivision ordinances;

(5) Upon discovery by Maxwell the District that more than one dwelling is connected to a single meter on the property, unless the present customers pay each month and the District has accepted the appropriate multiple of the Monthly Customer Charge;

(6) Upon discovery by the District that more than one dwelling is connected to a single meter, the dwellings are located on separate parcels of land, and there is no non-standard service agreement covering the service to multiple dwellings;

(7) A Customer has failed to have a customer service inspection performed or has failed to provide access to the service location for the purpose of performing a customer service inspection, or has failed to remedy failures discovered as a result of customer service inspection; or

(8) Non-payment of charges for sewer service that are collected by the District under an agreement between the District and the provider of the sewer service.

(c) A residential Customer may request a delay of disconnection of service upon establishing that disconnection of service will result in some person residing at the residence becoming seriously ill or more seriously ill if service is disconnected. Each time a Customer seeks to avoid termination of service under this provision, the Customer must have the attending medical doctor call or contact the District within fifteen (15) days of the issuance of the bill. A written statement must be received by the District from the attending medical doctor within twenty (20) days of the issuance of the bill. Upon receipt of the doctor's written statement, the District may, at the discretion of the General Manager, delay disconnection of service for a period not exceeding

forty-five (45) days from the issuance of the bill. After receipt of such a written statement the General Manager may also allow the Customer to enter into a deferred payment plan of any unpaid billed amounts subject to disconnection if the terms of the payment plan are not kept.

(d) Service may only be disconnected without notice:

(1) When a known dangerous condition exists, for as long as the condition exists;

(2) When service is established through meter bypassing, an unauthorized connection or unauthorized reconnection; or;

(3) in instances of tampering with the District's meter or equipment.

(e) Disconnection at the Request of the User.

Whenever a user of the District's services temporarily or permanently abandons the structure or building receiving service and no longer wishes to be served by the District, the Customer shall notify the District at least two (2) days prior to the time the Customer desires service to be discontinued. The District shall charge such Customer $25.00 for discontinuing and $25.00 for restoring service if such service is discontinued and restored at the request of the Customer and the Customer is not delinquent in the payment of any bill from the District at the time of the request.

Section 4.05. Surcharge for Service.

In fairness to all owners of land within the District, and to honor its contractual obligations and commitments, the District has the right to monitor the use of water to determine if users are exceeding the amount of capacity committed to serve their land or buildings. As one method of enforcement, the District has determined to reserve the right to impose a surcharge on any user who uses water in excess of the amount reserved to such user or tract. Accordingly, in addition to the other charges specified herein, the District has the right to impose an additional charge of $0.05 per gallon of water used in excess of one hundred ten percent (110%) of the amount of capacity reserved to the tract by any utility commitment letter.

Section 4.06. Returned Checks. A $35.00 charge will be charged to the Customer's account for any check returned by the bank. Any amounts due on an account which have been paid with a check that has been returned by the bank must be paid in full by cash, cashier's check or money order, including all late charges and returned check charges, within five (5) days from the day the District hangs a notice on the Customer's door or otherwise notifies the Customer that the check has been returned by the bank.

Section 4.07. Entitlement. Customers are not guaranteed a specific quantity or pressure of water for any purpose whatsoever; furthermore, in no instance shall the District be liable for failure or refusal to furnish water or any particular amount or pressure of water.

Section 4.08. Damage to District Facilities.

(a) Damage to Meter and Appurtenances. No person other than a duly authorized agent of the District shall open a meter box, tamper with or in any way interfere with a meter, meter box, service line or other water system appurtenance. The District reserves the right, immediately and without notice, to remove the meter or disconnect water service to any Customer whose meter has been tampered with and to assess repair charges to the Customer, plus a damage fee of $50.00.

(b) Right to Repair. The District reserves the right to repair any damage to the District's System and appurtenances without prior notice and to assess against any Customer such penalties as are provided by law and such penalties provided for in this Rate Order in addition to those charges necessary to repair the portion of the System so damaged.

Section 4.09. Water Pressure. The District agrees to use all reasonable efforts to supply adequate water to all Customers. However, the District does not and will not guarantee to any Customer a specific quantity or pressure of water for any purpose whatsoever. The District is required only to furnish a connection to its System and in no case shall the District be liable for the failure or refusal to furnish water or any particular amount or pressure of water.

## ARTICLE V.
## STORMWATER RUNOFF

Section 5.01. Prevention of Sediment and Debris Runoff. The District recognizes state and federal policies pertaining to the protection, preservation, and restoration of the purity and sanitary condition of water within the State, and the District has adopted the following policies requiring builders and developers of land within the District to comply with applicable laws, rules, and regulations applicable to water quality and stormwater runoff from construction sites, including compliance with the Environmental Protection Agency's ("EPA") General Permit for stormwater discharge from construction sites.

Section 5.02. EPA Guidelines. All builders and developers are to comply with the conditions and requirements of the EPA's guidelines set forth in the EPA's General Permit for Stormwater Discharges from construction sites. It is the responsibility of each builder and developer to be aware of and comply fully with all the environmental regulations, including preparation of a Pollution Prevention Plan and submittal of a Notice of Intent to the EPA, if required by law.

Section 5.03. Sediment Control. The District will require vegetation or other sediment control on all lots under construction in the District.

Section 5.04. Inlet Protection. Inlet protection will be required on all inlets and outfall pipes in areas in which there are lots or home under construction or where inlets are receiving runoff from lots under construction. Inlet protection can be either sandbags or bales of hay. The builder and developer will be responsible for maintaining the inlet protection.

Section 5.05. Street Cleaning. The builder and developer will be responsible for ensuring

that the street in front of their lots stays free from the accumulation of trash, sediment, dirt, and all other debris. Street cleaning will be done by street scraping or by using a vacuum sweeper. Washing sediments into the sewer inlets is prohibited by law.

Section 5.06. Handling of Industrial Wastes and Chemicals. Each builder shall insure that vendors or subcontractors properly dispose of any chemicals, used motor oils, or any other wastes. Chemicals such as paint, thinners, solvents, glues, waterproofing compounds, and other substances, including concrete and construction rubble, will be disposed of offsite in an acceptable and legal manner.

Section 5.07. Concrete Wash-Out Site. Each builder will provide a single, dedicated concrete wash-out site on one of the builder's reserved lots, for use during construction. The site selected will be reviewed with the District and developer, and an identification sign must be erected on the site by the builder prior to use.

The builder will clean and maintain the site as necessary and is responsible for the proper and legal disposal of concrete. Silt fencing must be installed along the curb in front of the wash-out site as well as an access pad.

The builder will inform its subcontractors of the location and purpose of the concrete wash-out site.

Section 5.08. Other Builder Responsibilities. The builder is responsible for observing all signs and for enforcing this policy with all employees, suppliers, and subcontractors. Builders are responsible for conducting regular inspections of their erosion control measures to insure they are functioning properly.

Section 5.09. Inspection and Compliance.

(a) The District shall conduct periodic inspections within the District to ensure that builders and developers are in compliance with this policy. In the event a problem is identified by the District, the District shall notify the builder and developer of the specific nature and location of conditions not in compliance with this policy, and the builder and/or developer shall take necessary action to eliminate any non-compliant conditions within 48 hours of receipt of such notice. There will be a charge of $25.00 to the builder for each notice issued.

(b) In the event of an emergency or in the event of continued non-compliance with this policy and the District's notice of non-compliance, the District may take action as necessary to eliminate such non-compliance, and the costs of such actions shall be charged to the builder or developer who is responsible for such conditions at the District's actual costs plus 20%.

(c) Amounts charged to the builders under Section 5.10 A or B must be paid within thirty (30) days of receipt of the invoice. If the charges are not timely paid, the District may deduct the charges from the deposit established in Section 2.05 of this Rate Order, with the requirement that the builder reinstate the original amount of the deposit or the District will cease making additional taps for the builder as set forth in Section 2.05.

## ARTICLE VI.
## ADOPTION OF RULES AND REGULATIONS CONCERNING WATERWORKS SYSTEM

To preserve the sanitary condition of all water controlled by the District, to prevent waste or the unauthorized use of water controlled by the District, and to secure and maintain safe, sanitary and adequate plumbing installation, connections and appurtenances, the Board of the District hereby adopts the Rules and Regulations Governing Water Facilities, Service Lines, and Connections attached hereto as Appendix "A" and incorporated herein for all purposes.

## ARTICLE VII.
## DROUGHT CONTINGENCY PLAN

The District hereby adopts the Drought Contingency Plan attached hereto as Appendix "B" and incorporated herein for all purposes.

## ARTICLE VIII.
## ENFORCEMENT/CIVIL PENALTIES

Section 8.01. Enforcement.

(a) Civil Penalties. Any person found to have violated any provision of this Rate Order may be assessed a civil penalty up to $10,000.00, per violation, pursuant to Section 49.004, Texas Water Code, as amended. A penalty under this Section is in addition to any other penalty provided by the laws of this State and may be enforced by complaints filed in the appropriate court of jurisdiction in the county in which the District's principal office or meeting place is located. If the District prevails in any suit to enforce its rules, it may, in the same action, recover any reasonable fees for attorneys, expert witnesses, and other costs incurred by the District before the court.

(b) Liability for Costs. Any person violating any of the provisions of this Rate Order and/or the Rules and Regulations Governing Water Facilities, Service Lines, and Connections shall become liable to the District for any expense, loss or damage occasioned by the District by reason of such violation, and enforcement thereof shall be in accordance with Section 8.01(A) of this Rate Order and Article X of the Rules and Regulations.

Section 8.02. Non-waiver. The failure on the part of the District to enforce any section, clause, sentence, or provision of this Rate Order shall not constitute a waiver of the right of the District later to enforce any section, clause, sentence, or provision of this Rate Order.

Section 8.03. Appeal. Any determination by the District or the District's engineer or any authorized agent of the District of any dispute regarding the terms and provisions of this Rate Order may be appealed to the Board of the District, which shall conduct a hearing on the matter.

The District and/or attorney shall provide the Customer with information regarding appeals and hearing procedures upon the Customer's request.

## ARTICLE IX.
## MISCELLANEOUS

Section 9.01. Amendments. The Board of the District has and specifically reserves the right to change, alter or amend any rate or provision of this Rate Order at any time, subject to the applicable open government provisions of Chapter 551, Texas Government Code, and Section 49.063, Texas Water Code.

Section 9.02. Severability. The provisions of this Rate Order are severable, and if any provision or part of this Rate Order 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 Rate Order and application of such provision or part of this Rate Order shall not be affected thereby.

Section 9.03. Headings. The section and paragraph headings used herein are for reference only and are not to be construed as part of the text of the section or paragraph.

## ARTICLE X.
## REPEAL OF PREVIOUS ORDERS

All previous orders adopted by the Board of Directors pertaining to the subject matter hereof are each hereby repealed in their entirety as of the effective date hereof.

## ARTICLE XI.
## EFFECTIVE DATE

This Rate Order shall be effective immediately.

The President or Vice President is authorized to execute and the Secretary or any Assistant Secretary is authorized to attest this Rate Order on behalf of the Board and to do all things necessary and proper to carry out the purpose and intent hereof.

PASSED and APPROVED as of the ____ day of _____, 2020.

/s/ Robert Karasch
President, Board of Directors

ATTEST:

/s/ Mabel Vaughn

Secretary, Board of Directors

(DISTRICT SEAL)

## LIST OF APPENDICES AND EXHIBITS

| | | |
|---|---|---|
| APPENDIX "A" | - | Rules and Regulations Governing Water Facilities, Service Lines, and Connections |
| Exhibit "1" | - | Plumber's Certificate |
| Exhibit "2" | - | Service Inspection Certification |
| Exhibit "3" | - | Backflow Prevention Assembly Test and Maintenance Report |
| Exhibit "4" | - | Customer Service Agreement |
| Exhibit "5" | - | Application for Service |
| Exhibit "6" | - | Maxwell Special Utility District Standard Specifications |
| APPENDIX "B" | - | Drought Contingency Plan |

APPENDIX A

MAXWELL SPECIAL UTILITY DISTRICT RULES AND
REGULATIONS GOVERNING WATER FACILITIES,
SERVICE LINES, AND CONNECTIONS

STATE OF TEXAS §
COUNTIES OF CALDWELL AND HAYS §

ARTICLE I.
PURPOSE

The following Rules and Regulations Governing Water Facilities, Service Lines, and Connections (the "Rules and Regulations") shall govern the design, installation and inspection of all connections and taps made to the District's water distribution system, protection of all facilities which are part of the District's waterworks system, and the enforcement of these Rules and Regulations.

ARTICLE II.
GENERAL

Section 2.01. Definitions.

(1) Customer is any person, partnership, corporation, non-profit corporation, trust or other legal entity served by the District with water services to a residence or business establishment.

(2) District is MAXWELL Special Utility District of Caldwell and Hays Counties, Texas, a political subdivision of the State of Texas.

(3) Engineer is the person, company or corporation which is under contract with the District to design the District's Water Supply System and performs any additional services as set forth in the contract with the District.

(4) Health Hazard means a cross-connection, potential contamination hazard, or other situation involving any substance that can cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the potable drinking water supply.

(5) Rate Order means the District's Order Adopting Consolidated Rate Order and Rules and Regulations; Adopting Drought Contingency Plan; Establishing Certain Other Policies; and Providing Penalties for Violation Thereof, which may be amended from time to time.

(6) State Approved Plumbing Code is a set of rules governing plumbing practices which are at least as stringent and comprehensive as one of the following nationally recognized

codes:

(A) Southern Standard Plumbing Code
(B) Uniform Plumbing Code
(C) National Standard Plumbing Code

(7) Tap Fee is the fee paid to the District to obtain a water meter inspection for any dwelling. The amount of the Tap Fee shall be established in the District's Rate Order and may be modified or changed at any time.

(8) Utility Easement is an interest in land, granted by dedication, to public utility entities, including the District, to install and maintain utilities across, over, or under private land together with the right to enter thereon with machinery, other vehicles and personnel necessary for the maintenance, repair or construction of said utilities.

(9) Water Supply System is composed of all water lines, valves, valve boxes, flushing valves, blow-off valves, water meters, water meter service lines, and meter boxes located within public rights-of-way or easements owned or leased and operated by the District. This system is maintained by the District.

(10) Water Meter is the recording device that registers the amounts of water consumed by each Customer of the District. The District owns and maintains the Water Meter.

(11) Water Service Line is any line from a residential dwelling or commercial building, which connects to the District's Water Supply System. This service line is owned and maintained by the property owner of the residential dwelling or commercial structure.

(12) Water Tap is the physical connection of any Water Service Line to the District's Water Supply System. Such connection will be made only by the District.

Section 2.02. Platting Requirement.

No connection may be made to the District's Water Supply System unless the tract, parcel, or lot of land to be served by such connection:

(1) is part of an area covered by a development plat duly approved and recorded pursuant to Sections 212.0115, 212.012, or 232.001, Texas Local Government Code, as amended; or

(2) is not required to be platted and written certification to that effect, in accordance with Section 212.0115(e) or 232.0015, Texas Local Government Code, as amended, has been presented to the District.

Section 2.03. Approval of Plans and Specifications.

Prior to any non-residential connection to the District's Water Supply System the plans and specifications for the Water Service Line must be submitted the District's Engineer for

review and approval. Upon the Engineer's review and approval, the plans and specifications shall then be submitted to the District for review and approval. The cost of the review and approval of the plans and specification by the District's Engineer and District shall be paid by the Customer.

## ARTICLE III.
## WATER CONNECTIONS AND CONSTRUCTION STANDARDS

Section 3.01. Water Tap Materials, Connections, and Standards

All water tap, line, and connection materials, as well as all related construction, must comply with the Maxwell Special Utility District Standard Specifications, attached hereto as Exhibit "6" and fully incorporated herein for all purposes.

Section 3.02. Plumbing Material Prohibitions.

(a) Prohibited Materials.

The use of the following materials is prohibited for the installation and repair of the District's Water Supply System and for the installation and repair of any private plumbing facilities:

(a) any pipe or pipe fitting which contains more than 8.0% lead; and

(b) any solder or flux which contains more than 0.2% lead.

This prohibition may be waived for lead joints that are necessary for repairs to cast iron pipe.

(b) Certificate of Compliance.

No new connections to the District's Water Supply System shall be made unless a state licensed plumber first submits in writing to the District a Certificate of Compliance, as set forth in Exhibit "2" attached hereto, specifying that the new connection complies with the plumbing material prohibition contained in Section 3.02 above. The Certificate of Compliance shall be signed by the licensed plumber and must be submitted to the District prior to continuous service being supplied. The District shall not accept any Tap Fee that is not accompanied by a Certificate of Compliance.

Section 3.03. Installation.

(a) An Application for Service, a copy of which is attached hereto as Exhibit "5," must be filed with the District. The Customer must pay to the District all Tap Fees, inspection fees and deposits, as described in the District's Rate Order.

(b) All Water Taps to the District's Water Supply System shall be installed only by the District.

(c) The District shall install Water Taps and set meters at a location on adjoining property lines, whenever possible, with the meter box being located in the easement adjacent to the property line and with two (2) meters per box, where appropriate.

(d) The District shall be responsible for all repairs to the Water Taps.

(e) After installation of the Water Tap, connection of the Water Service Line shall be made at the expense of the Customer. (Note: This line shall be tested for leaks since all water recorded through the meter will be charged to the Customer).

(f) After connection to the District's Water Supply System, the Water Service Line should be thoroughly flushed as to prevent foreign matter from entering the household system.

Section 3.04. Customer Service Inspection Certifications.

(a) A Customer Service Inspection Certification, as described in Exhibit "2" attached hereto, shall be completed prior to providing continuous water service to any new construction, on any existing service where the District has reason to believe that cross-connections or other unacceptable plumbing practices exist, and after any material improvement, correction, or addition to private plumbing facilities. Prior to the District initiating continuous service, a Customer shall provide a Customer Service Inspection Certification to the District. The Customer Service Inspection Certification may only be performed by the District and the Customer must pay the District the Customer Service Inspection Fee prior to the District performing the inspection and certification. Copies of properly completed Customer Service Inspection Certifications shall be kept on file by the District and made available, upon request, for Commission review. Inspection certifications shall be retained for a minimum of ten (10) years. Failure to provide a Customer Service Inspection Certification in accordance with this Section 3.04 shall constitute a violation of these Rules and Regulations and such violation shall be subject to the enforcement provisions set forth in Article X hereof.

(b) Private plumbing facilities in violation of Article III hereof shall constitute an unacceptable plumbing practice and violation of these Rules and Regulations. If an unacceptable plumbing practice is discovered, the Customer shall eliminate the unacceptable plumbing practice within thirty (30) days from the date of discovery to prevent possible contamination of the District's Water Supply System. The existence of a serious threat to the integrity of the District's Water Supply System shall be considered sufficient grounds for immediate termination of water service. Service can be restored only when the source of potential contamination no longer exists, or when sufficient additional safeguards have been taken, and a Customer Service Inspection Certification confirming correction of unacceptable plumbing practices has been submitted to the District.

(c) The Customer Service Inspection Certification shall certify that:

(1) No direct connection between the District's Water Supply System and a potential source of contamination exists. Potential sources of contamination are isolated from the District's Water Supply System by an air gap or an appropriate backflow prevention assembly in accordance with state plumbing regulations. Additionally, all pressure relief valves and thermal expansion devices are in compliance with state plumbing regulations.

(2) No cross-connection between the District's Water Supply System and a private water source exists. Where an actual air gap is not maintained between the District's Water Supply System and a private water supply, an approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a recognized backflow prevention assembly tester.

(3) No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the District's Water Supply System.

(4) No pipe or pipe fitting which contains more than 8.0% lead exists in private plumbing facilities installed on or after 1 July 1988.

(5) No solder or flux which contains more than 0.2% lead exists in private plumbing facilities installed on or after 1 July 1988.

(6) No new or replacement plumbing fixture is installed which is not in compliance with a State Approved Plumbing Code.

Section 3.05. Prohibited Connections.

(a) No water connection from the District's Water Supply System shall be made to any establishment where an actual or potential contamination or system hazard exists without an air gap separation between the drinking water supply and the source of potential contamination. Where a containment air gap is impractical, individual "internal" air gaps or mechanical backflow prevention devices shall be required at the meter in the form of a backflow prevention device (in accordance with AWWA Standards C510 and C511 and AWWA Manual M14) on those establishments handling substances deleterious or hazardous to the public health.

(b) No water connection from the District's Water Supply System shall be made to any condensing, cooling, or industrial process or any other system of nonpotable usage over which the District does not have sanitary control, unless the said connection is made in accordance with the requirements of paragraph (A) of this section. Water from such systems cannot be returned to the District's Water Supply System.

(c) Overhead bulk water dispensing stations must be provided with an air gap between the filling outlet hose and the receiving tank to protect against back siphonage and cross-contamination.

Section 3.06. Backflow Prevention Assemblies.

(a) Backflow prevention assemblies shall be installed on any connection which poses a Health Hazard and any other connection which the District or the District reasonably believes poses a threat to the District's Water Supply System. Water service provided for lawn sprinklers, swimming pool supply, reflection pool supply or other such applications must incorporate a back flow prevention assembly in accordance with a State Approved Plumbing Code for the particular designated use. No permanent water service will be provided or continued to any new connection in the District which requires a backflow prevention assembly, unless the Customer provides the District with a Backflow Prevention Assembly Test and Maintenance Report (the "Test Report"), as described in Exhibit "3" attached hereto. At the request of the customer, the District may, on behalf of the District, install the backflow prevention assembly and complete the Test Report at the Customer's cost.

(b) All backflow prevention assemblies shall be tested upon installation by a Recognized Backflow Prevention Assembly Tester and certified to be operating within specifications. The Test Report, as described in Exhibit "3" attached hereto, shall be retained for a minimum of three (3) years. The District shall provide these records to the Commission for inspection upon request. Backflow prevention assemblies which are installed to provide protection against Health Hazards must also be tested and certified to be operating within specifications at least annually by a Recognized Backflow Prevention Device Tester.

(c) Recognized Backflow Prevention Device Testers shall have completed a Commission approved course on cross-connection control and backflow prevention and passed an examination administered by the Commission or its designated agent. The accredited tester classification shall be broken down into two categories:

(1) The "General Tester" is qualified to test and repair backflow prevention assemblies on any domestic, commercial, industrial or irrigation service.

(2) The "Fireline Tester" is qualified to test and repair backflow prevention assemblies on firelines only. The State Fire Marshall's office requires that a person performing maintenance on firelines must be employed by an Approved Fireline Contractor.

(d) Individuals who can show proof of completion of a course and passage of an exam based on the ABPA or ASSE National Exam, prior to the effective date of these regulations, may be recognized as accredited for the term of their current certification (not to exceed three (3) years).

(e) Gauges used in the testing of backflow prevention assemblies shall be tested for accuracy annually in accordance with the University of Southern California's Foundation of

Cross-Connection Control and Hydraulic Research and/or the American Water Works Association Manual of Cross Connection Control (Manual M-14). Test gauge serial numbers must be included on the Test Report and Recognized Backflow Prevention Device Testers shall have gauges tested for accuracy.

(f) A Test Report must be completed by the Recognized Backflow Prevention Assembly Tester for each assembly tested. The signed and dated original must be submitted to the District for record keeping purposes.

(g) Repairs to backflow prevention assemblies shall be performed by authorized individuals as recognized by the Texas State Board of Plumbing Examiners, the Commission, Texas Irrigators Advisory Council, or the Texas Commission on Fire Protection-State Fire Marshall's Office, depending upon application and use.

(h) The use of a backflow prevention device at the service connection shall be considered as additional backflow protection and shall not negate the use of backflow protection on internal hazards as outlined and enforced by a State Approved Plumbing Code.

Section 3.07. Customer Service Agreements.

(a) The District is responsible for protecting its Water Supply System from contamination or pollution which can result from unacceptable plumbing practices. To this end, the District has adopted plumbing restrictions to provide protection to the District's Water Supply System. To notify Customers of the plumbing restrictions which are in place, each Customer shall be required to sign a Customer Service Agreement, as described in Exhibit "4" attached hereto, before the District will begin service. In addition, when service to an existing connection has been suspended or terminated, the District will not re-establish service unless it has a signed copy of a Customer Service Agreement.

The District will maintain a copy of the Customer Service Agreement as long as the Customer and/or the premises is connected to the District.

(b) The Customer shall allow his/her property to be inspected for possible cross-connections and other unacceptable plumbing practices. These inspections shall be conducted by the District or its designated agent prior to initiating new water service; when there is reason to believe that cross-connections or other unacceptable plumbing practices exist; or after any major changes to the private plumbing facilities. Inspections shall be conducted during the District's normal business hours.

(c) The District shall notify the Customer in writing of any cross-connection or other unacceptable plumbing practices which have been identified during the initial inspection or the periodic re-inspection.

(d) The Customer shall immediately correct any undesirable plumbing practice on his/her premises.

(e) The Customer shall, at his expense, properly install, test, and maintain any backflow prevention device required by the District. Copies of all testing and maintenance records shall be provided to the District.

(f) If a Customer fails to comply with the terms of the Customer Service Agreement, the District shall, at its option, either terminate service or properly install, test, and maintain an appropriate backflow prevention assembly at the service connection. Any expenses associated with the enforcement of the Customer Service Agreement shall be billed to the Customer.

## ARTICLE IV.
## FEES AND CHARGES

The District's fees and charges shall be as established by its Rate Order.

## ARTICLE V.
## PRIVATE WELLS, TANKS, SPETIC

The construction of water wells and/or the installation of septic tanks is prohibited without prior written approval by the Board of Directors. Said approval, if granted, will state the purpose for the construction of a water well and the intended use of the water. If the District at any point begins providing wastewater services to Customers within the District, the District may require that such Customers utilize the District's wastewater services as a condition of the Customer receiving water services from the District.

## ARTICLE VI.
## AVAILABILITY OF ACCESS/OBSTRUCTIONS

By application for connection to the District's Water Supply System, the Customer shall be deemed to be granting to the District and its representatives a right of ingress and egress to and from the meter or point of service for such installation, maintenance and repair as the District, in its judgment, may deem reasonably necessary. The Customer shall also be deemed to be granting to the District and its representatives a right of ingress and egress to the Customer's property, including the interior and exterior of the Customer's premises, for the purpose of performing the inspections and completing the Customer Service Inspection Certifications required by these Rules and Regulations. Taps and connections will not be made when, in the opinion of the District's Engineer or District, the work area is obstructed by building materials or other debris or the work area is not completed or finished to grade. When sidewalks, driveways or other improvements have been constructed prior to application for service, such application shall be construed and accepted as the Customer's waiver of a claim for any damages to such improvements resulting from the reasonable actions of the District in installation of the connection.

## ARTICLE VII.
## PROTECTION OF DISTRICT'S WATER SUPPLY SYSTEM

(a) Damage to the District's Water Supply System by the District's Customers, including developers and builders' plumbers, will be repaired by the District at the Customer's expense.

(b) After a water meter has been set or a fire hydrant installed, the Customer shall at all times keep the area in, around and upon such facilities and District easements and property under Customer's control free from rubbish or obstructions of any kind, including shrubbery. Failure to keep such facilities and District easements and property under Customer's control free from rubbish or obstructions of other kind, including shrubbery, shall result in disconnection of water service and/or the assessment of charges necessary to remove said obstructions.

(c) It shall be unlawful for any person, unless authorized in writing by the District, to tamper or interfere with, obstruct access to, or as a result of willful action injure, deface, or destroy any facilities that are a part of the District's Water Supply System, including, with respect to the waterworks system, water plants, flushing valves, valve boxes, and water lines up to the meter box and including meters; provided, however, that duly authorized members of the local fire department shall have the right to use such flushing valves for fire protection purposes.

(d) It shall be unlawful for any person to connect any building to the District's Water Supply System without a meter or to have a straight line connection to a building without being metered. It shall also be unlawful for any person, other than the District or Engineer, to draw water from the District's Water Supply System (except for the use of water for firefighting purposes) without being metered, including the unauthorized use of a flushing valve or unmetered water taps.

(e) It shall be unlawful for any person to deposit, throw, drain, discharge, or otherwise cause to be injected into any manhole, catch basin, flush tank, or other facility that is a part of the District's Water Supply System any debris or foreign substance that would interfere with the proper and routine functioning thereof.

## ARTICLE VIII.
## ENFORCEMENT OF RULES AND REGULATIONS

Any and all of the following remedies may be employed by the District to abate and prevent any violation of the provisions of these Rules and Regulations:

(1) Discontinuance of water service.

(2) The Board hereby imposes the following civil penalties for breach of any rule or regulation of the District: The violator shall pay the District twice the costs the District has sustained due to the violation up to $5,000. A penalty under this Section is in addition to any other penalty provided by the laws of this State and may be enforced by complaints filed in the appropriate court of jurisdiction in the county in which the District's principal office or meeting place is located. If the District prevails in any suit to enforce its rules, it may, in the same action, recover any reasonable fees for attorneys, expert witnesses, and other costs incurred by the

District before the court. The amount of the attorneys' fees shall be fixed by the court.

(3) A Customer found in violation of these Rules and Regulations shall be liable to the District for all expenses borne by the District including laboratory fees, legal fees, engineering fees and other costs incurred by the District in establishing the violation and resolving the cause of the violation.

## ARTICLE IX.
## EFFECTIVE DATE

These Rules and Regulations are effective immediately.

EXHIBIT "1" TO
APPENDIX "A"

CERTIFICATE OF COMPLIANCE
WITH PROHIBITION ON USE OF SPECIFIED MATERIALS IN CONNECTIONS TO
SPECIAL UTILITY DISTRICT WATER SYSTEM

I, _____ a duly licensed plumber in the State of Texas, hereby certify that the connection at _____ (the "Connection") complies in full with the "Prohibition of Use of Specified Materials" provision contained in the Rules and Regulations for _____. I further certify that:

1. No direct connection between the District's Water Supply System and a potential source of contamination exists. Potential sources of contamination are isolated from the District Water Supply System by an air gap or an appropriate backflow prevention assembly in accordance with state plumbing regulations. Additionally, all pressure relief valves and thermal expansion devices are in compliance with state plumbing codes.

2. No cross connection between the District's Water Supply System and a private water system exists. Where an actual air gap is not maintained between the District's Water Supply System and a private water supply system, an approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a certified backflow prevention device tester.

3. No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the District's Water Supply System.

4. No pipe or pipe fitting which contains more than 8.0% lead exists in private plumbing facilities installed on or after July 1, 1988.

5. No solder or flux which contains more than 0.2% lead exists in private plumbing facilities installed on or after July 1, 1988.

6. No plumbing fixture is installed which is not in compliance with a State Approved Plumbing Code.

These determinations have been made under my direction and supervision. I am aware that there are significant penalties for false certification, including the possibility of fine.

_____
Signature

Printed Name

Company Name

Texas License No.: _

Date: _

EXHIBIT "2"
TO APPENDIX "A"

Service Inspection Certification

Name of District: MAXWELL Special Utility District
District I.D. No.:_____
Location of Service: _____

I,_____(*name of Inspector*), upon inspection of the private plumbing facilities connected to the Water Supply System of MAXWELL Special Utility District , do hereby certify that, to the best of my knowledge:

| | | FOR DISTRICT USE ONLY | | |
|---|---|---|---|---|
| | | Pass | Fail | N/A |
| (1) | No direct connection between the District's Water Supply System and a potential source of contamination exists. Potential sources of contamination are isolated from the District Water Supply System by an air gap or an appropriate backflow prevention assembly in accordance with state plumbing regulations. Additionally, all pressure relief valves and thermal expansion devices are in compliance with state plumbing codes. | ☐ | ☐ | ☐ |
| (2) | No cross connection between the District's Water Supply System and a private water system exists. Where an actual air gap is not maintained between the District's Water Supply System and a private water supply system, an approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a certified backflow prevention device tester. | ☐ | ☐ | ☐ |
| (3) | No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the District's Water Supply | ☐ | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| (4) | No pipe or pipe fitting which contains more than 8.0% lead exists in private plumbing facilities installed on or after July 1, 1988. | ☐ | ☐ | ☐ |
| (5) | No solder or flux which contains more than 0.2% lead exists in private plumbing facilities installed on or after July 1, 1988. | ☐ | ☐ | ☐ |
| (6) | No plumbing fixture is installed which is not in compliance with a State Approved Plumbing Code. | ☐ | ☐ | ☐ |

Water service shall not be provided or restored to the private plumbing facilities until the above conditions are determined to be in compliance.

I further certify that the following materials were used in the installation of the plumbing facilities:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Service Lines | Lead | ☐ | Copper | ☐ | PVC | ☐ | Other ☐ |
| Solder | Lead | ☐ | Lead Free | ☐ | Solvent Weld | ☐ | Other ☐ |

I recognize that this document shall become a permanent record of the Water Supply System of MAXWELL Special Utility District and that I am legally responsible for the validity of the information I have provided.

NOTE: THIS SERVICE INSPECTION CERTIFICATION IS FURNISHED FOR THE SOLE PURPOSE OF INSPECTING THE PLUMBING FACILITIES AT THE AFORESAID LOCATION OF SERVICE FOR UNACCEPTABLE PLUMBING PRACTICES IN ACCORDANCE WITH SAID DISTRICT'S RULES AND REGULATIONS GOVERNING WATER FACILITIES, SERVICE LINES, AND CONNECTIONS. NO REPRESENTATION OR WARRANTY IS INTENDED OR MADE AS TO THE ADEQUACY, QUALITY OR FITNESS OF THE PRIVATE PLUMBING FACILITIES.

Signature of Inspector: _____

Registration Number: _____

Title: _____

Type of Registration: _____

Date: _____

EXHIBIT "3"
TO APPENDIX "A"

Backflow Prevention Assembly Test and Maintenance Report

The following form must be completed for each assembly tested. A signed and dated original must be submitted to the District for record keeping purposes:

BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT

Name of District: MAXWELL Special Utility District
PWS I.D. No.:

Location of Service:

The backflow prevention assembly detailed below has been tested and maintained as required by Commission regulations and is certified to be operating within acceptable parameters.

TYPE OF ASSEMBLY

□ Reduced Pressure Principle
□ Double Check Valve
□ Not Needed at this Address
□ Pressure Vacuum Breaker
□ Atmosphere Vacuum Breaker

| | Reduced Pressure Principle Assembly | | | Pressure Vacuum Breaker | |
|---|---|---|---|---|---|
| | Double Check Valve Assembly | | Relief Valve | Air Inlet | Check Valve |
| | 1st Check | 2nd Check | | Opened at ____psid ____psid | |
| Initial Test | DC- Closed Tight | Closed Tight □ Leaked □ | Opened at ___ psid | Did not Open □ | Leaked □ |
| Repairs and Materials | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Test After Repair | DC-Closed Tight □ RP____psid | Closed Tight □ | Opened at _____psid | Opened at _____psid | |

Manufacturer_____
Size _____
Model Number_____
Located at _____
Serial Number _____

The above is certified to be true.

Firm Name:_____
Certified Tester: _____
Firm Address:_____
Cert. Tester No.: _____

EXHIBIT "4" TO
APPENDIX "A"

CUSTOMER SERVICE AGREEMENT

SECTION I. PURPOSE. MAXWELL Special Utility District (the "District") is responsible for protecting its Water Supply System from contamination or pollution which could result from unacceptable plumbing practices. The purpose of this Service Agreement is to notify each customer of the plumbing restrictions which are in place to provide this protection. The District enforces these restrictions to ensure the public health and welfare. Each customer must sign this Customer Service Agreement before the District will begin service. In addition, when service to an existing connection has been suspended or terminated, the District will not reestablish service unless it has a signed copy of this Customer Service Agreement.

SECTION II. PLUMBING RESTRICTIONS. The following unacceptable plumbing practices are prohibited by State regulations:

(1) No direct connection between the District's Water Supply System and a potential source of contamination is permitted. Potential sources of contamination shall be isolated from the public water system by an air gap or an appropriate backflow prevention device.

(2) No cross-connection between the District's Water Supply System and a private water system is permitted. These potential threats to the District's Water Supply System shall be eliminated at the service connection by the installation of an air gap or a reduced pressure-zone backflow prevention device.

(3) No connection that allows water to be returned to the District's Water Supply System is permitted.

(4) No pipe or pipe fitting which contains more than 8.0% lead may be used for the installation or repair of plumbing at any connection that provides water for human use.

(5) No solder or flux that contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

SECTION III. SERVICE AGREEMENT. The following are the terms of this Customer Service Agreement between MAXWELL Special Utility District (the "District") and _____ (the "Customer"):

(1) The District will maintain a copy of this Customer Service Agreement as long as the Customer and/or the premises is connected to the District.

(2) The Customer shall allow his/her property to be inspected for possible cross-connections and other unacceptable plumbing practices. These inspections shall be conducted by the District or its designated agent prior to initiating new water service; when there is reason to believe that cross- connections or other unacceptable plumbing practices exist; or after any major changes to the private plumbing facilities. Inspections shall be conducted during the District's normal business hours.

(3) The District shall notify the Customer in writing of any cross-connection or other unacceptable plumbing practices which have been identified during the initial inspection or the periodic re-inspection.

(4) The Customer shall immediately correct any unacceptable plumbing practice on his/her premises.

(5) The Customer shall, at Customer's, properly install, test, and maintain any backflow prevention device required by the District. Copies of all testing and maintenance records shall be provided to the District.

(6) The Customer shall pay to the District all required fees to be paid to the Corporation, as applicable and as provided by the District's Rate Order:

| | For < 8" PVC | 12" PVC |
|---|---|---|
| Customer Deposit: | $100.00 | $100.00 |
| Labor & Materials: | $1,100.00 | $1,500.00 |
| Engineering/Admin Fees: | $200.00 | $200.00 |
| Front End Capital Contribution: | $3,500.00 | $3,500.00 |
| Water Acquisition Fee: | $1,750.00 | $1,750.00 |
| Single Meter Application: | $50.00 | $50.00 |
| Easement Fee: | $26.00 | $26.00 |
| Customer Service Inspection: | $75.00 | $75.00 |
| | $6,901.00 | $7,301.00 |

Monthly minimum charges of: $30.00 (0 gallons)

Tiered Rate: $7.25 per 1,000 gallons (0 gallons to 5,000 gallons)
$7.50 per 1,000 gallons (5,001 gallons to 10,000 gallons)
$7.75 per 1,000 gallons (10,001 gallons to 15,000 gallons)
$8.00 per 1,000 gallons (over 15,001 gallons).

(7) Payment must be received on or before the close of business the 15th day of each month.

(8) A late charge of $20.00 will be assessed after the 15th of each month

SECTION IV.ENFORCEMENT. If the Customer fails to comply with the terms of this Service Agreement, the District shall, at its option, either terminate service or properly install, test, and maintain an appropriate backflow prevention device at the service connection. Any

expenses associated with the enforcement of this Service Agreement shall be billed to the Customer.

NOTE: THE PURPOSE OF THE CUSTOMER SERVICE AGREEMENT IS TO NOTIFY CUSTOMERS OF THE PLUMBING RESTRICTIONS OF THE DISTRICT ADOPTED TO PROTECT THE DISTRICT'S WATER SUPPLY SYSTEM. INSPECTIONS CONDUCTED BY THE DISTRICT IN ACCORDANCE WITH THIS SERVICE AGREEMENT ARE FOR THE SOLE PURPOSE OF DISCOVERING AND ELIMINATING UNACCEPTABLE PLUMBING PRACTICES. THE DISTRICT OR THE DISTRICT MAKES NO REPRESENTATION AS TO THE ADEQUACY, QUALITY, OR FITNESS OF THE CUSTOMER'S PRIVATE PLUMBING FACILITIES.

Customer's Signature:

_____

Date:

_____

Address:

_____

EXHIBIT "5" TO
APPENDIX "A"

MAXWELL SPECIAL UTILITY DISTRICT SERVICE APPLICATION

Acct # _____
Meter # _____

Date: _____ Applicant's Name: _____

Current Address: _____

Driver's License #: _____ Social Security #: _____

Home Phone: _____ Cell: _____ Work: _____

Email: _____

Address of Property to be Served: _____

Billing Address: _____

EXHIBIT "6" to
APPENDIX "A"

# MAXWELL SPECIAL UTILITY DISTRICT

# STANDARD SPECIFICATIONS

TABLE OF CONTENTS

MAXWELL SPECIAL UTILITY DISTRICT

STANDARD TECHNICAL SPECIFICATIONS

## ITEM NO. 02232

## REMOVING AND RELOCATING MAIL BOXES

### 1.0 DESCRIPTION

This item shall consist of removing, temporarily relocating and replacing mail boxes as shown on the plans or as directed by the Owner's Representative.

### 2.0 MATERIALS

None required

### 3.0 CONSTRUCTION METHODS

The mail boxes and any supporting posts shall be removed from their present location, installed in a temporary, serviceable location or locations during construction and replacement in a permanent location as shown on the plans. Any supporting posts found to be set in concrete at the time of their removal shall be reset in the permanent location in concrete. As a minimum, each individual mail box shall be set on a 4" x 4" wood post, equal or better than the original, at the location and to the height shown on the plans. Mail boxes found to be set on ornamental iron, masonry or other special posts shall be relocated on such posts undamaged by the Contractor. Ornamental mailboxes (i.e., brick, stone, etc.) shall be replaced to original condition or better using the same or like materials.

Any damage to the mail boxes, posts, supporting members, braces, etc., caused by negligence of the Contractor shall be remedied by the Contractor at his expense. All such repairs shall be made in such a manner so as to insure the unit to be in a good as or better condition as it was originally. Any such repairs shall be subject to approval by the Owner's Representative.

### 4.0 MEASUREMENT

"Removing and Relocating Mail Boxes" will be measured by the number of mail boxes so removed and relocated. Multiple mail boxes mounted between 2 posts shall be considered as 2 mail boxes regardless of the actual number of physical boxes.

### 5.0 PAYMENT

The work performed as prescribed by this item, will be paid for at the contract unit price bid per mail box, for "Removing and Relocating Mail Boxes", which price shall be full compensation for removing mail boxes from their present position, temporary relocation in a serviceable position, and relocation to a permanent designated location, for resetting in

concrete if required, for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 02232: Removing and Relocating Mail Boxes - per each

# ITEM NO. 02250

# TRENCHING, BACKFILLING, EMBEDMENT AND ENCASEMENT

## 1.1 DESCRIPTION

A. Scope of Work

1. The work under this item and Item 02260 - Trench Excavation Safety Protection of the Specifications consists of furnishing all labor, equipment and materials, and performing all operations in connection with the excavation, trenching, backfill, embedment and concrete encasement required to install the pipeline shown on the Drawings, and as specified.

2. Excavation shall include the removal of any trees, stumps, brush, debris, or other obstacles that may obstruct the line of work, and the excavation, installation of trench safety systems as required and removal of all earth, rock or other materials to the extent necessary to install the pipe and appurtenances in conformance with the lines and grades shown on the Drawings, or as specified.

3. Backfill shall include the refilling and consolidation of the fill in the trenches and excavations up to the surrounding ground surface or road grade at crossing.

4. Where construction enters the limits of City, State or County right-of-way, the requirements of these agencies shall be met.

B. Quality Assurance

1. Density. All references to "Maximum dry density" shall mean the maximum dry density defined by the "Maximum Density-Optimum Moisture Test," ASTM D698, unless otherwise specified. Determination of the density of backfill in-place shall be in accordance with the requirements of ASTM D2922, "Density of Soil and Soil-Aggregate in Place by Nuclear Methods Shallow Depth)." The Owner will provide for initial density testing of in-place backfill; however, the Contractor shall pay for all additional density testing of backfills found not to be within the minimum requirements of the Specifications.

2. Sources and Evaluation Testing. Materials to be used for embedment and granular material to be used for select backfill shall be obtained in accordance with a sampling plan and ASTM D75, Sampling Aggregates. Testing of materials to certify conformance with the specification of requirements shall be performed by an independent testing laboratory paid for by the Contractor. Contractor's testing agency shall perform tests upon change of source and at sufficient intervals to certify conformance of all select material furnished for use of this project.

3. Trench Width Dimension. The sides of all trenches shall be cut as nearly vertical as possible. The minimum and maximum widths of trenches, measured at an elevation 12 inches above the top of the pipe, shall be as specified. If the maximum width is exceeded at any point, the Contractor shall use the next higher class (load factor) of embedment or encasement of the trench width as actually cut, at no additional cost to the Owner.

## 2.1 MATERIALS

A. Materials for Embedment

1. Crushed Stone. Crushed stone embedment shall consist of crushed stone or gravel with the following grading requirements, and shall be in compliance with ASTM C-33 for Course Concrete Aggregate.

| Sieve Size Sq. Openings | Amount Passing Percent by Weight |
|---|---|
| 1" | 95-100 |
| 3/4" | 55-85 |
| 1/2" | 25-50 |
| No. 4 | 0-5 |

2. Granular Material.

a. Granular material for embedment and backfill shall be defined as free flowing river run, sandy gravel or blended sand and crushed rock, free from large stones, clay, and organic material. The embedment material shall be such that when wet, the fine material will not form mud or muck. The embedment material shall be composed of tough durable particles, reasonably free from thin, flat and elongated pieces and of suitable quality to insure permanence in the trench. The P.I. of the fines shall not exceed 3. Light weight aggregate is not acceptable for granular embedment.

b. Granular embedment for rigid pipe shall be cohesionless material meeting the following gradation requirements:

| Sieve Size Sq. Openings | Amount Passing Percent by Weight |
|---|---|
| 1/2" | 100 |
| 3/8" | 85-100 |
| No. 4 | 10-30 |
| No. 8 | 0-10 |
| No. 16 | 0-5 |

c. Granular embedment for semi-rigid pipe shall be cohesionless material meeting the following gradation requirements:

| Sieve Size Sq. Openings | Amount Passing Percent by Weight |
|---|---|
| 1/2" | 100 |
| No. 4 | 25-50 |
| No. 50 | 0-20 |
| No. 200 | 0-5 |

3. Select Material. Select material shall consist of gravel, fine rock cuttings, sand, sandy loam or loam free from excessive clay. Rock cuttings shall have no dimension greater than two inches. Trench cuttings may be utilized as select material provided the conditions of this paragraph are met.

4. Concrete for Embedment and Encasement. Concrete embedment and encasement shall be Class "B" concrete with a minimum compressive strength of 2,000 pounds per square inch at 28 days. Dry mix will not be permitted. The concrete cushion portion of the embedment or encasement shall be mixed moist of damp to give a slump of not more than one inch. Concrete for the sides and top, if specified, shall be mixed to obtain a slump of not less than one inch nor more than three inches, and shall be placed after the concrete used for cushion portion of the embedment or encasement sets up.

B. Materials for Secondary Backfill

1. Backfill material to a depth of 12-inches above the top of the pipeline shall be embedment or encasement materials as shown on the Drawings and as specified in Paragraph A above.

2. Unless otherwise specified or required elsewhere, the remaining backfill shall be material from the trench excavation, except the top 6-inches shall be the topsoil, to be placed separately, or pavement repair.

3. No material of a perishable, spongy or otherwise unsuitable nature, or rock in excess of 6-inches measured at its largest dimension, shall be used in backfilling. "Nesting" of rocks shall not be permitted.

## 3.1 CONSTRUCTION METHODS

A. Topsoil

1. Topsoil shall be stripped a minimum of 6-inches over the trench excavation site and stockpiled separately for replacement over the finished grading areas.

B. Excavation

1. Trenches shall be excavated to the lines and grades shown on the Drawings with the centerlines of the trenches on the centerlines of the pipe.

2. The sides of all trenches shall be vertical to a point one foot above the top of the pipe. Unless otherwise indicated on the Drawings, the trench width shall be equal to the sum of the outside diameter of the pipe plus 2 feet, within a tolerance of +3 inches. Trench width will be measured at an elevation in the trench which is 12-inches above the top of the pipe when laid to grade.

3. Wherever the prescribed maximum trench width is exceeded, the Contractor shall use the next higher class (load factor) of embedment or encasement for the trench width as actually cut, at no additional cost to the Owner.

4. The trenches shall be excavated to the required depth allowing for the placement of pipe bedding to the thickness shown on the Drawings.

5. Should the bottom of the trench become an unstable foundation for the pipe through the failure of the Contractor to adequately perform, the Contractor shall remove the unstable material and fill the trench to the proper subgrade with crushed rock. No extra compensation will be allowed for this material or work. Should the trench be inadvertently excavated to a greater depth than necessary, crushed rock fill to the proper subgrade shall be provided at no additional cost to the Owner.

6. Should the undisturbed material encountered at the grade depth constitute, in the opinion of the Engineer, an unstable foundation for the pipe, the Contractor shall be required to remove such unstable material and fill the trench to the proper subgrade with crushed rock.

7. All excavation shall be unclassified, regardless of material encountered.

C. Sheeting and Shoring

1. In all trenches exceeding 5 feet in depth and trenches less than 5 feet in depth in otherwise unstable materials, the sides of all trenches and excavations shall be adequately sheeted and braced, to maintain the excavation from slides or cave-ins and to provide safety for workmen. The minimum trenching and bracing requirements shall be in accordance with the Contractor's Trench Safety System. Refer to Item 02260 - Trench Excavation Safety Protection for requirements.

2. In all cases, excavation shall conform to the requirements of the Occupational Safety and Health Act of 1970, and all subsequent amendments as well as Texas Legislature H.B. Nos. 662, 665, and 1569.

D. Dewatering Excavations

1. There shall be sufficient pumping equipment, in good working order, available at all times to remove any water that accumulates in excavations. Where the pipe line crosses natural drainage channels, the Work shall be conducted in such a manner that unnecessary damage or delays in the execution of the Work will be prevented. Provisions shall be made for the satisfactory disposal of surface water pumped to prevent damage to public or private property.

2. In all cases, accumulated water in the trench shall be removed before laying pipe, placing concrete or backfilling.

E. Excavated Materials

1. Excavated material shall be placed adjacent to the work area and used for backfilling as required.

2. Top soil shall be placed separately in a careful manner and replaced in its original position.

F. Embedment

1. All pipe shall be installed with the embedment materials indicated on the Drawings and specified herein.

2. Surplus material shall be disposed of in accordance with the appropriate water main specified.

3. Final backfilling shall be as specified in Paragraph H below.

G. Concrete Embedment and Encasement

1. After pipe joints are completed, the voids at the joints in the embedments shall be brought to proper grade. Where concrete is placed over or along the pipe, it shall be placed in such manner as not to injure the joints or displace the pipe.

2. While placing concrete embedment and until the concrete sets up, each pipe shall be properly braced and held to grade so as to prevent any possible shifting or floating of the pipe.

3. No cleavage line between the base concrete and the side or top concrete will be allowed. Backfilling shall be done in a careful manner and at such time after concrete embedment or encasement has been placed so as not to damage the concrete in any way.

4. Backfill placed over concrete embedment, encasement, cradle, or block shall not be placed until the concrete has set up to such an extent that backfill operations will not damage the concrete.

H. Placement of Secondary Backfill

1. From 12-inches above the top of the pipe, or as shown on the Drawings, the trench or excavation shall be backfilled with select material from the excavation placed in a manner approved by the Owner. No rock greater than 6-inches measured at its largest dimension or debris of any sort are to be put into the backfill, and appreciable weight of any sort, other than backfill, shall not be allowed on the pipe until it has been covered to such a depth that damage to the pipe or joints will not occur. The top 6 inches shall be free from rock.

2. Excavated material which is unsuitable for backfilling and excess material shall be disposed of off-site by the Contractor at no additional cost to the Owner.

3. Method of Consolidation

   a. Secondary Backfill Under Roadways, Driveways, Concrete Slabs and Related Items. The secondary backfill for trenches under roadways, driveways, concrete slabs and relate items shall extend from above the pipe embedment to the pavement repair section. Secondary backfill shall be mechanically compacted in lifts not to exceed 8 inches to 95% Standard Proctor Density unless otherwise indicated on the Drawings.

   b. Secondary Backfill Outside Roadways, Driveways, Concrete Slabs and Related Items. The secondary backfill for trenches outside roadways, driveways, concrete slabs and related items shall extend from above the pipe embedment to the topsoil section. Secondary backfill shall be mechanically compacted in lifts not to exceed 8 inches to 90% Standard Proctor Density unless otherwise indicated on the Drawings.

   c. Water jetting and flooding as a means of consolidating the trench backfill will not be allowed.

   d. The Contractor may provide an alternate method of consolidation of material above the embedment. This material may be placed mechanically or by other means to provide the compaction required and indicated on the Drawings. Such material shall be tested and approved by the Owner's Representative before continuing. The initial test section shall be a minimum of 100 linear feet. Material not meeting required specification shall be removed and replaced at no additional cost to the Owner.

## 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

## ITEM NO. 02255

## FLOWABLE BACKFILL

### 1.0 DESCRIPTION

This item shall govern for the backfilling of structures and pipe on this project. It may be used as backfill in blockouts between pipe inserts and existing concrete walls, as backfill of new culverts in lieu of soil backfill, as fill in abandoned structures, and other uses as approved by the Owner's Representative. The flowable backfill shall be composed of portland cement, fly ash (optional), fine aggregate, water, and a shrinkage compensator, proportioned as hereinafter provided or an acceptable mix as approved by the Engineer.

### 2.0 MATERIALS

Flowable backfill materials shall conform to the requirements of Item 4088, "Flowable Backfill", of the Texas Department of Transportation's *Standard Specifications for Construction of Highways, Streets and Bridges,* latest revision.

### 3.1 CONSTRUCTION METHODS

A. The general procedure will be to plug open ends as shown on plan details. The Contractor shall submit a plan for approval of the Engineer.

B. The Contractor must provide a means of filling the entire void area and be able to demonstrate that this has been accomplished. This must be done without the use of a vibrator. Any inspection holes will be patched after completion and treated accordingly. Care shall be taken to prevent the movement of the insert structure from its designed locations.

C. If voids are found in the fill or if any of the requirements are not met as shown on the plans, it will be the Contractor's responsibility to remove and replace or correct the problem without additional cost to the Owner.

### 4.0 MEASUREMENT

This item will be measured by the cubic yard of material in place. Cubic yards will be computed on the basis of the measured area to the lines and grades shown on the plans or as directed by the Owner's Representative. Measurement will not include additional volume caused by slips, slides or cave-ins resulting from the action of the elements or the Contractor's operations.

### 5.0 PAYMENT

This item will be paid for at the contract unit price bid for "Flowable Backfill". This price shall be full compensation for all the work herein specified, including furnishing, hauling, and placing all materials and for all tools, labor, equipment, and incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 02255: Flowable Backfill - per cubic yard

## ITEM NO. 02260

## TRENCH EXCAVATION SAFETY PROTECTION

### 1.0 DESCRIPTION

This item shall govern for the trench excavation safety protection required for the construction of all trench excavation protection systems to be utilized in the project and including all additional excavation and backfill necessitated by the protection system.

### 2.0 MATERIALS

None required.

### 3.0 CONSTRUCTION METHODS

Trench excavation safety protection shall be accomplished as required by the most recent provisions of Part 1926, Subpart P - Excavations, Trenching, and Shoring of the Occupational Safety and Health Administration Standards and Interpretations.

### 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

## ITEM NO. 02270

## TEMPORARY SEDIMENT CONTROL FENCE

### 1.0 DESCRIPTION

This item shall consist of furnishing all materials and completion of all the work required for the control of erosion and sedimentation. This includes the installation, maintenance and removal of temporary sediment control fence (Silt Fence) as shown in the plans.

### 2.1 MATERIALS

A. Fence

The fence shall be a net-reinforced fence, using woven geotextile fabric.

B. Fabric

Fabric may be manufactured from polyester, polypropylene or polyamide and shall be resistant to ultraviolet degradation, mildew and rot and shall be suitable for use in a wet soil and stagnant water environment. The edge of woven fabric shall be sealed or selveged to prevent raveling. Fabric shall be at least 36" wide with 6-8" of the width buried in a trench to prevent undercutting, unless specified otherwise on the plans. The fabric shall exhibit the following physical properties when sampled and tested using the specified methods:

| Physical Property | Test Method | Min. Req. |
|---|---|---|
| Tensile Strength, lb | ASTM D4632 | 90 Min. |
| Elongation @ Yield, % | ASTM D4632 | 100 Min. |
| Trapezoidal Tear, lb | ASTM D4533 | 35 Min. |
| Apparent Opening Size | ASTM D4751 | 50-80 Min. |
| Permittivity, 1/sec | ASTM D4491 | 1.0 Min. |
| Ultraviolet Stability original tensile strength retained after 500 hrs. exposure, % | ASTM D4355 | 80 Min. |

C Posts

Posts shall be a minimum of 48" long, essentially straight, and shall be wood or steel, unless otherwise shown on the plans. Soft wood posts shall be at least 3" in diameter or nominal 2 x 4". Hardwood posts shall have a minimum cross section of 1.5 x 1.5". Steel posts shall be "T" or "L" shaped with a minimum weight of 1.3 pounds per linear foot.

D. Net Reinforcement

Net reinforcement shall be galvanized welded wire mesh of a minimum 12.5 gauge wire or equal as approved by the Engineer with a maximum opening size of 2" x 4" and shall be at least 24" wide unless otherwise shown on the plans.

E. Staples

Staples used to secure reinforcement and fabric to wood posts shall have a crown at least 3/4" wide and legs 1/2" long.

F. Used Materials

Previously used materials, meeting the above requirements and when approved by the Engineer, may be used.

## 3.1 CONSTRUCTION METHODS

The temporary sediment control fence shall be used during construction near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. The fence may be incorporated into the erosion control measures used to control sediment in areas of higher flow. The fence installation methods shall be as specified below, unless otherwise shown on the plans. The physical alignment and location of the fence shall be as shown on the plans or as directed by the Engineer.

A. Installation of Post

Posts shall be embedded 18" deep, or adequately anchored if in rock, with a maximum spacing of 6 feet, and installed on a slight angle toward the anticipated runoff source.

B. Fabric Anchoring

Trenches shall be dug along the uphill side of the fence to anchor 6-8" of fabric. The trench shall have a minimum cross section of 6 x 6". The fabric shall be installed in the trench such that 4-6" of fabric is against the side of the trench and approximately 2" of fabric is across the bottom in the upstream direction. The trench shall then be backfilled and hand tamped as approved by the Engineer.

C. Fabric Attachment

The reinforcement shall be attached to the end posts, if wood, by staples, or if steel, by T-clips or sewn vertical pickets at a minimum of four locations. The reinforcement shall be attached to each succeeding post as approved by the Engineer. The ends of successive reinforcement sheets or rolls shall be connected at a fence post at least 6 times with hog rings. The fabric shall be fastened to the top strand of reinforcement by hog rings or cord at a maximum spacing of 15".

D. Fabric Splices

Splices shall occur at a fence post and shall have a minimum lap of 6" attached in at least six places. Splices in concentrated flow areas will not be permitted.

E. Maintenance

The temporary sediment control fence shall be maintained in good condition (including staking, anchoring, tension adjustments, etc.) by the Contractor. All necessary work and materials to maintain the integrity of the fence, including keeping fabric free of accumulated silt, debris, etc., shall be provided until earthwork construction and permanent erosion control features are in place and/or the disturbed area has been adequately stabilized. The areas damaged by the removal process shall be stabilized by the Contractor using appropriate methods as approved by the Engineer.

Torn or punctured fabric shall be repaired by the placement of a patch consisting of an additional layer of fabric over the damaged area. The patch shall have a minimum overlap of 18" in all directions and be securely attached to the repaired fabric.

When the accumulated sediment deposit reaches a depth of approximately 6", it shall be removed and disposed of at approved sites in a manner that will not contribute to additional siltation. If the structure ceases to function as intended, the engineer may direct that the fence or portions thereof be replaced. Such replacement will not be measured for payment.

## 5.0 MEASUREMENT

Measurement for "Temporary Sediment Control Fence" shall be made by the linear foot, as measured on the centerline of the fence installed, complete in place, and ready for use including all components necessary for a completed and working installation.

## 6.0 PAYMENT

The work performed and materials furnished as prescribed by this item will be paid for at the unit price bid per linear foot for "Temporary Sediment Control Fence", which price shall be full compensation for furnishing, placing, removing and maintenance of the fence; for all required trenching, fence posts, fabric, backfill and removal of accumulated sediment deposits, as described under "Maintenance" and for all labor, tools, equipment and incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 02270: Temporary Sediment Control Fence (Silt Fence) - per linear foot

## ITEM NO. 02335

## SUBGRADE FILLER

### 1.0 DESCRIPTION

This item shall consist of furnishing and placing materials for purposes of stabilizing subgrades in trenches or channels or under conduits or poured-in-place box culverts, as instructed by the Engineer, where quicksand, muck or other unstable materials are encountered and the Engineer deems the measures provided herein warranted.

### 2.1 MATERIALS

The subgrade fillers shall be of two classes known as Concrete Subgrade Filler and Clean Gravel Subgrade Filler.

A. Concrete Subgrade Filler

Concrete subgrade filler shall be composed of concrete conforming to the provisions of the specification entitled "Concrete (Natural Aggregate)" 2,000 psi.

B. Clean Gravel Subgrade Filler

Clean gravel subgrade filler shall be composed of well graded, clean, washed gravel, 100% passing a 1-1/2" screen and 100% retained on a 1/4" screen.

### 3.1 CONTRUCTION METHODS

Where the soil encountered in the subgrade for a channel bottom, a box culvert, box conduit, storm sewer, sanitary sewer, water main, force main, or other structure at established footing grade is a quicksand, muck or other unstable material, the Owner's Representative may order its removal to any depth deemed necessary and replacement with one of the fillers specified above. Where so ordered by the Owner's Representative, the following procedures shall govern:

A. The concrete subgrade filler will be used to established a thin working surface on subgrades which are saturated but are regarded as stable, and where otherwise the construction operations would disturb the subgrade surface. In such a case a layer of material to a depth below the established footing elevation, as directed, shall be removed and replaced with the concrete filler material, the material shall be lightly consolidated by tamping and the surface shall be screened or struck off and allowed to set to form a subgrade surface of accuracy equivalent to that obtained for normal fine grading or subgrade.

B. Clean gravel subgrade filler will be used to replace wet subgrade materials regarded as unsatisfactory for support of the poured-in-place structure involved. In such cases, subgrade material shall be removed to such depth below the established footing elevation as may be ordered. The soil removed shall be replaced with clean gravel as subgrade filler, placed in uniform layers of suitable depth, as directed by the Owner's Representative.

## 4. MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

## ITEM NO. 02445

## BORING AND CASING PIPE UNDER HIGHWAYS, RAILROADS, OR OTHER AREAS

### 1.0 DESCRIPTION

This item shall consist of furnishing all materials and completion of all construction required to bore and case water pipelines under highways, railroads, or other areas.

### 2.1 MATERIALS

A. Carrier Pipe

Carrier pipe material shall be ductile iron pipe conforming to American Water Works Association (AWWA) Standard C150/A21.50-96, Pressure Class 350 for sizes through 12 inches in diameter, and Pressure Class 250 for larger sizes. All pipe to be installed in casing pipe shall be mechanical joint.

B. Casing Pipe

Casing pipe shall be new concrete pipe or smooth steel casing pipe. All casing pipe shall be subject to approval by the Engineer. Casing pipe diameter shall be of sufficient size for installation of the water pipe in accordance with details shown on the Drawings.

### 3.1 CONSTRUCTION METHODS

A. The Contractor shall provide suitable mechanical equipment in the judgment of the Engineer to bore under highways, railroads, or other areas to the line and grade shown on the plans or as directed by the Engineer without disturbing the surface or interrupting traffic.

B. After the casing pipe has been installed, the contractor shall fill the space between the outside of the casing pipe and the excavation with a Portland Cement grout, consisting of 1 part Portland Cement and 3 parts sand, applied under pressure until the void is filled. Backfill of the working pits shall be consistent with that of the pipeline. The water main shall be supported the full length of the pipe between bells on timbers banded to the pipe. The pipe shall then be placed inside the casing pipe. The timbers shall be sufficient to prevent the pipe from deflecting more than 2" inside the casing in any direction.

C. The designation "Installation By Other Than Open Cut" indicates, where shown on the plans, that the pipeline shall be installed by a method other than the open cut method. The Contractor may select a method by which this installation can be

accomplished including boring, jacking or tunneling. Horizontal offset is not permitted.

## 4.0 MEASUREMENT

Water pipe and casing pipe placed under highways, railroads, or other areas by boring shall be measured as the number of linear feet installed in place and accepted. One linear foot of each water pipe and casing pipe shall be considered as a linear foot of "Boring and Casing".

"Installation By Other Than Open Cut" will be measured by the linear foot of the size as indicated on the plans.

## 5.0 PAYMENT

The number of linear feet of water pipe and casing pipe measured as provided above shall be paid for at the unit price bid per linear foot for "Boring and Casing" and for "Installation By Other Than Open Cut" for the various sizes of water pipeline, which payment shall be considered full compensation for all labor, tools, materials, equipment, and all incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 02445.1: Boring and Casing - per LF (size as per bid proposal)
Item No. 02445.2: Installation By Other Than Open Cut - per LF (size as per bid proposal)

## ITEM NO. 02505

## TESTING OF PRESSURE PIPELINES

### 1.0 DESCRIPTION

This item shall govern the furnishing of all labor, materials, tools, equipment and related items required to perform hydrostatic testing of Ductile Iron and Polyvinyl Chloride (PVC) pressure pipelines for integrity and leakage.

### 2.0 MATERIALS

Not applicable.

### 3.1 CONSTRUCTION METHODS

A. For Ductile Iron Pipe, make hydrostatic pressure and leakage tests on entire pipeline in accordance with AWWA Standard C600-99, Section 5.2.

B. For PVC Pipe, make hydrostatic pressure and leakage tests on entire pipeline in accordance with AWWA Standard C605-94, Section 7.3.

C. Furnish all labor equipment, including test pump with regulated by-pass meters and gauges required for conducting pipeline tests. Furnish equipment and necessary piping as required to transport water used in testing from source to test location.

D. Schedule time and sequence of testing, subject to observation and approval by the Owner or Owner's Representative. Provide adequate labor, tools and equipment to operate valves and to locate and repair leaks discovered during the initial filling of the pipeline prior to actual testing or during the course of the tests.

E. After the pipe has been laid and backfilled and the backfill has been jetted or otherwise consolidated, subject all newly laid pipe or valved section thereof to the hydrostatic pressure specified below for the particular type of pipe. The duration of each pressure test shall be at least four hours, unless otherwise specified or noted on the plans. Disconnect all meters, fixtures, devices or appliances which are connected to the pipeline system and which might be damaged if subjected to the specified test pressure. Cap or plug the ends of the branch lines during the testing procedures.

F. Fill each valved (capped or plugged) section of pipe slowly with water and expel all air. If permanent air vents are not located at all high points, install corporation or blow-of cocks at such points so that the air can be expelled as filling takes place. After verification that all air has been expelled, close the cocks and keep the pipe filled until tested. Examine unexposed pipe, fittings, valves, hydrants and joints while

under test pressure. Visible leaks shall be stopped. Remove and replace cracked or defective pipe, fittings, valves or hydrants discovered during testing. Replacement shall be with sound material. Repeat the test until specified requirements are achieved.

G. Where any section of a pipeline is proved with concrete thrust blocking, do not make hydrostatic pressure test until at least five days have elapsed after installation of the blocking.

H. Pressure/Leakage Tests

1. The duration of the hydrostatic test shall be a minimum of four (4) hours.

2. The pipeline shall be tested so that the pressure at the highest point in the test section is not less than 125% of the working pressure of the pipe.

3. The maximum allowable leakage is the number of gallons per hour as determined by the following formulas.

a. For Ductile Iron Pipe:

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

Where:

L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in psig

b. For PVC Pipe:

$$L = \frac{ND\sqrt{P}}{7{,}400}$$

Where:

L = allowable leakage, in gallons per hour
N = number of joints in the length of pipeline tested
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in psig

H. Final Acceptance

1. No pipe installation will be accepted until known leaks have been repaired, whether or not leakage is within allowable limits. Locate and repair leaks at no additional cost to the Owner.

2. The Contractor will certify that all required pressure and leakage tests have been successfully completed before the pipeline is accepted.

I. Special Project Requirements

Water Source. Obtaining water for testing purposes shall be the responsibility of the Contractor. The Contractor shall provide all equipment and labor required to transport water from the source to the test point.

## 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

**ITEM NO. 02510**

**WATER MAINS**
**POLYVINYL CHLORIDE AND DUCTILE IRON PRESSURE PIPE**

## 1.0 DESCRIPTION

This item shall govern the furnishing of all materials and completion of all construction required to install water mains of various sizes as shown on the plans, or as directed by the Engineer.

## 2.0 MATERIALS

A. Polyvinyl Chloride (PVC) Pressure Pipe

PVC pressure pipe for water mains 1" through 12" in diameter shall conform to ASTM D2241. PVC pressure pipe for water mains 1" through 8" in diameter shall be pressure class 160 (SDR 26) unless otherwise noted on the plans. PVC pressure pipe for water mains 10" through 12" in diameter shall be pressure class 200 (SDR 21) unless otherwise noted on the plans. Pressure pipe 14" in diameter and larger, shall conform to AWWA C905-latest version, pressure class 165 psi (DR25). All PVC pressure pipe shall have integral bell gasketed joints and shall have the same outside diameter as ductile iron pipe.

B. Ductile Iron Pressure Pipe

Ductile iron pressure pipe for water mains shall conform to AWWA C150/A21.50-96, pressure class 350 for sizes through 12" in diameter and pressure class 250 for pipe diameter larger than 12". Pipe ends shall be mechanical joint for below ground installation and flanged for above ground installation unless otherwise shown on the plans.

C. Embedment

1. Crushed Stone Embedment

a. Description. The aggregates shall consist of durable particles of crushed stone; free from frozen material or injurious amounts of salt, alkali, vegetable matter or other material either free or as adherent coating; and its quality shall be reasonably uniform throughout. It shall have a wear of not more than 40 percent when tested in accordance with TxDOT Test Method Tex-410-A.

b. Test. When tested by standard laboratory methods, crushed rock embedment for each gradation shall meet the following requirements for

percentage by weight as stated in the TxDOT Standard Specifications for Construction of Highways, Streets and Bridges:

| Standard Crushed Rock - Aggregate Grade 4 | |
|---|---|
| Retained on 1-1/2 inch sieve | 0% |
| Retained on 1 inch sieve | 0-5% |
| Retained on 1/2 inch sieve | 40-75% |
| Retained on No. 4 sieve | 90-100% |
| Retained on No. 8 sieve | 95-100% |

| Fine Crushed Rock - Aggregate Grade 8 | |
|---|---|
| Retained on 1/2 inch sieve | 0% |
| Retained on 3/8 inch sieve | 0-5% |
| Retained on No. 4 sieve | 35-80% |
| Retained on No. 8 sieve | 90-100% |

| Course Crushed Rock | |
|---|---|
| Passing 1-1/2 inch sieve | 100% |
| Retained on 3/4 inch sieve | 100% |

2. Granular Material. Granular material shall be free flowing, such as sand or hydraulically graded crushed stone fines, or mixed sand and gravel, or sandy loam. The material shall be free from lumps, stones over 2" in diameter, clay and organic matter.

3. Select Material. Select material shall be gravel, fine rock cuttings, sand, sandy loam or loam free from excessive clay. Rock cuttings shall have no dimension greater than 2".

4. Sand. Sand shall consist of clean, hard, durable, uncoated grains, free from lumps and organic material. All particles must pass a No. 8 sieve.

D. Backfill Material

1. Backfill material to a depth of 12" above the top of the pipeline shall be embedment or encasement materials as shown on the plans and as specified herein.

2. Unless otherwise specified or required elsewhere, the remaining backfill shall be material from the trench excavation, except the top 6" shall be the topsoil which has been placed separately.

3. No material of a perishable, spongy or otherwise unsuitable nature, or rock in excess of 6" measured at its largest dimension, shall be used in backfilling.

## 3.1 CONSTRUCTION METHODS

A. Topsoil

Topsoil shall be stripped a minimum of 6" over the trench excavation site and stockpiled separately for replacement over the finished grading areas.

B. Excavation

1. Trenches shall be excavated to the lines and grades shown on the plans with the centerline of the trenches on the centerlines of the pipe.

2. The sides of all trenches shall be vertical to a point 1 foot above the top of the pipe. Unless otherwise indicated on the plans, the trench width shall be equal to the sum of the outside diameter of the pipe plus 2 feet, within a tolerance of ±3". Trench width will be measured at an elevation in the trench which is 12" above the top of the pipe when laid to grade.

3. Wherever the prescribed maximum trench width is exceeded, the Contractor shall use the next higher class (load factor) of embedment or encasement for the trench width as actually cut, at no additional cost to the Owner.

4. The trenches shall be excavated to the required depth allowing for the placement of pipe bedding to the thickness shown on the plans.

5. Should the bottom of the trench become an unstable foundation for the pipe through the failure of the Contractor to adequately perform, the Contractor shall remove the unstable material and fill the trench to proper subgrade with clean gravel subgrade filler. No extra compensation will be allowed for this material or work. Should the trench be inadvertently excavated to a greater depth than necessary, clean gravel subgrade filler to the proper subgrade shall be provided at no additional cost to the Owner.

6. Should the undisturbed material encountered at the grade depth constitute, in the opinion of the Owner's Representative, an unstable foundation for the pipe, the Contractor shall be required to remove such unstable material and fill the trench to the proper subgrade with clean gravel subgrade filler. Payment for this work shall be in accordance with Item No. 02335, Subgrade Filler.

7. All excavation shall be unclassified, regardless of material encountered.

C. Trench Excavation Safety Protection

1. In all trenches exceeding 5 feet in depth and trenches less than 5 feet in depth in otherwise unstable materials, the sides of all trenches and excavations shall be adequately sheeted and braced, to maintain the excavation from slides or cave-

ins and to provide safety for workmen. The minimum trenching and bracing requirements shall be in accordance with the Contractor's Trench Safety System. Refer to Item No. 02260 - Trench Excavation Safety Protection for requirements.

2. In all cases, excavation shall conform to the requirements of the Occupational Safety and Health Act of 1970, and all subsequent amendments.

D. Dewatering Excavation

1. There shall be sufficient pumping equipment, in good working order, available at all times to remove any water that accumulates in excavations. Where the pipe line crosses natural drainage channels, the work shall be conducted in such a manner that unnecessary damage or delays in the execution of the work will be prevented. Provisions shall be made for the satisfactory disposal of surface water pumped to prevent damage to public or private property.

2. In all cases, accumulated water in the trench shall be removed before laying pipe, placing concrete or backfilling.

E. Excavated Materials

Excavated material shall be placed adjacent to the work area and used for backfilling as required. Top soil shall be placed separately in a careful manner and replaced in its original position.

F. Embedment

1. All pipe shall be installed with the embedment materials indicated on the plans and specified herein. No exceptions.

2. Surplus material shall be disposed of in accordance with applicable sections of this specification.

3. Final backfilling shall be as specified in Section 3.0.H, Final Backfill Placement, of this specification.

G. Concrete Embedment and Encasement

1. After pipe joints are completed, the voids at the joints in the embedments shall be brought to proper grade. Where concrete is placed over or along the pipe, it shall be placed in such manner so as not to injure the joints or displace the pipe.

2. While placing concrete embedment and until the concrete sets up, each pipe shall be properly braced and held to grade so as to prevent any possible shifting or floating of the pipe.

3. No cleavage line between the base concrete and the side or top concrete will be allowed. Backfilling shall be done in a careful manner and at such time after concrete embedment or encasement has been placed so as not to damage the concrete in any way.

4. Backfill placed over concrete embedment, encasement, cradle, or block shall not be placed until the concrete has set up to such an extent that backfill operations will not damage the concrete.

H. Final Backfill Placement

1. From 12" above the top of the pipe, or as shown on the plans, the trench or excavation shall be backfilled with select material from the excavation placed in a manner approved by the Owner's Representative. No rocks greater than 6" measured at its largest dimension or debris of any sort are to be put into the backfill, and appreciable weight of any sort, other than backfill, shall not be allowed on the pipe until it has been covered to such a depth that damage to the pipe or joints will not occur. The top 6" shall be free from rock.

2. Excavated material which is unsuitable for backfilling and excess material shall be disposed of in accordance with applicable sections of this specification.

3. Method of Consolidation

   a. Non-Consolidated Backfill. The backfill within easements acquired by the Owner and not within public rights-of-way may be placed in the trench without consolidation by water jetting or mechanical means. The backfill shall be placed to the top of the trench and additional material placed in a mounded fashion at least 1 foot above finished grade to allow for settling. The Contractor must restore the site to its original condition per Paragraph M of this Section no later than 6 months from final acceptance of the Project by the Owner. This method of backfill is not permissible within public rights-of-way.

   b. Jetting and Flooding. Within public rights-of-way but not under roadways, concrete slabs, driveways and related items, the backfill shall be consolidated by jetting and flooding. After the trench has been backfilled, the earth shall be consolidated by jetting and flooding by pumping water through a pipe that is slowly inserted vertically into the trench backfill. The end of the pipe shall be lowered to a point near the top of the installed pipe. The trench shall then be flooded in puddles until no more appreciable absorption of water into the backfill occurs. Non-consolidated backfill as described in Paragraph H.3.a. above, is not permissible within public rights-of-way.

The Contractor may provide an alternate method of consolidation of material 12" or more above the pipe. This material may be placed mechanically or by other means to provide the compaction required and indicated on the plans. Such material shall be tested and approved by the Owner's Representative before continuing. The initial test section shall be a minimum of 100 lineal feet. Material not meeting required specification shall be removed and replaced at no additional cost to the Owner.

c. Backfill Under Roadways, Concrete Slabs, Driveways and Related Items. The backfill for trenches under roads, concrete slabs, and related items shall be well graded and free from binders, rocks, lumps, organic or clay material, except where concrete backfill is shown on the plans. The backfill shall be mechanically consolidated to provide a density of compaction of at least 95 percent of the maximum dry density. Non-consolidated backfill as described in Paragraph H.3.a. above, is not permissible within public rights-of-way.

I. Tie-In to Existing Mains

The Contractor shall make ties to existing mains as specified on the plans, or as may be directed by the Owner's Representative. A tie-in is defined as the connection between the new main and the existing main. In that context, additional requirements for which the Contractor shall be responsible shall include shut-down and isolation of the existing main to which the new main is to be connected, cutting pipe for the connection, de-watering the excavation, customer notification of service interruption where required, and other requirements as may be directed by the Owner's Representative. Payment to the Contractor for the work defined herein will be made on the basis of the unit price bid for each tie-in of the various types and sizes completed and will be in addition to the unit price bid for each lineal foot of pipe of the various types and sizes installed, which includes the excavation, backfilling the excavation trench with approved selected material, and installation of polyethylene wrapping material where required.

J. Sodding

Where sodding is disturbed by excavation or backfill operations, such areas shall be replaced by hydromulch on all slopes of 2% or less. All slopes over 2% shall be replaced by block sodding. All sodding shall be as specified by the Texas Department of Transportation. No separate payment will be made for any sodding but it will be considered subsidiary to this bid item.

K. Hydrostatic Testing

All water mains shall be tested in accordance with Item No. 02505, Testing of Pressure Pipelines, for integrity and leakage.

L. Disinfecting

The Contractor shall flush and disinfect all water mains and appurtenances in accordance with the latest edition of AWWA C651-92. After disinfection, the water mains shall be flushed until normal free chlorine residual remains. Disinfection of mains utilizing dry calcium hypochlorite (HTH) will be considered subsidiary to the various items of work required under this contract and no direct payment will be made. A minimum of one sample for each 1,000 feet of completed main will be required. The Contractor shall take the water samples and submit them to TNRCC for bacteriological examination. Results of the laboratory analysis shall be furnished to the Owner and Engineer in writing. All disinfection and sampling shall be accomplished in the presence of the Owner.

M. Cleaning and Restoration of the Site

1. After the backfilling is completed, all excavated material not required or acceptable for backfill and all rubbish shall be disposed of by the Contractor at his own expense, as directed by the Owner's Representative.

2. The Contractor shall restore all disturbed areas to their original condition. After the work is completed, the Contractor shall remove all tools and equipment used by him, leaving the entire site free, clean and in as good a condition as existed prior to the start of the work.

3. The Contractor will be required to remove and replace existing private fences, as he proceeds with the project, in accordance with Item No. 02820. The Contractor will be responsible for any damage caused by fences being down during construction.

4. Performance of the work described in this section is not payable directly, but shall be considered as a subsidiary obligation of the Contractor, covered under the unit price bid for pipe in place.

## 4.0 MEASUREMENT

The footage of pipe to be paid for shall be the number of linear feet of pipe in place, completed and approved, measured along the centerline of the pipe. The several classes, types, and sizes shall be measured separately.

## 5.0 PAYMENT

The footage of pipe, measured as provided above, will be paid for at the unit prices bid for the various sizes of pipe, which payment shall constitute full compensation for all excavation, bedding, backfilling, compacting, and for furnishing all materials, testing, labor, tools, equipment and incidentals necessary to complete the work. The Contractor will

confer with the Owner as to the time for making inter-connections or wet connections, and the Owner's Representative shall be present when any inter-connections are made.

PAYMENT WILL BE MADE UNDER:

Item 02510.1: Polyvinyl Chloride(PVC)Pressure Pipe - per LF (size as per bid proposal)
Item 02510.2: Ductile Iron (DI) Pressure Pipe - per LF (size as per bid proposal)
Item 02510.3: Tie-In - per EA (size as per bid proposal)

## ITEM NO. 02519

## FIRE HYDRANT ASSEMBLY

### 1.0 DESCRIPTION

This item shall govern the furnishing of all materials and completion of all construction required to furnish and install fire hydrant assemblies as shown on the plans or as directed by the Engineer.

### 2.1 MATERIALS

A. Fire Hydrants

1. Except as otherwise modified or supplemented herein AWWA Standard C502, "AWWA Standard for Fire Hydrants for Ordinary Water Works Service", or the latest revision thereof, shall govern the design, component materials, construction, manufacture, and testing of all fire hydrants furnished under this specification. Fire hydrants shall be Mueller Centurion. The bronze used for valve seats, drain outlet, stems, and all other hydrant components shall not contain more than 15% zinc or more than 2% aluminum.

2. The Owner reserves the right to limit purchases of fire hydrants to the traffic models equipped with a safety flange on the hydrant barrel and stem, manufactured by the Mueller Company (Centurion), providing such products conform to the following provisions.

   a. Shut-off valves shall be of the compression type.

   b. Main valve shall be circular with a minimum opening of 5" in diameter.

   c. Inlet connection shall be an elbow with AWWA Standard bell designed for 6" mechanical joint, hub end, or "Ring-Tite" assembly as specified.

   d. Bury length shall be as specified below.

   e. Hydrants shall be 2 hose nozzles and one pumper nozzle.

   f. Nominal inside diameter shall be 2-1/2" for the hose nozzles and 4" for the pumper nozzle.

   g. Hose nozzle and pumper nozzle threads shall be in conformity with ASA Specification B-26 for "National (American) Standard Fire Hose Coupling Screw Thread."

h. Nozzle cap gaskets are required and shall be of rubber composition.

i. Hydrants shall open left counter clockwise.

j. Stuffing Box shall be O-ring seal type, bronze, and of a design approved by the purchaser.

k. Gate Valves shall be Kennedy, resilient seat with valve boxes.

l. Hydrants shall be painted with a suitable primer and finished with red paint from the top of the hydrant to a point 24" below the center line of the pumper nozzle.

m. Hydrants shall have at least one untapped drain opening. When the main valve is in a fully opened position leakage through the drain opening shall be cause for rejection.

n. All gaskets shall be of rubber composition, copper asbestos, lead or impregnated fibre composition.

o. All fire hydrants having mechanical joint inlets shall be supplied with glands, bolts, and gaskets. Bolts shall be high strength low alloy steel meeting requirement of AWWA Specifications C111.

p. Hydrant shall have non-rising stems.

q. Barrel shall have an inside diameter of not less than 7". The wall thickness shall be in accordance with AWWA Standard C502.

r. Hydrants shall be equipped with a breakable coupling on the barrel section and the stem. These couplings shall be at least two inches above the finished grade line. The breakable coupling shall be so designed that in case of traffic collision, the barrel safety flange and steam safety collar will break before any other part of the hydrant. The coupling shall be designed to afford the hydrant to rotate 360 degrees.

s. Valve stems shall have a diameter of 1-1/4" for hydrants up to and including a 5'-0" bury. Hydrants with a bury of greater than 5'-0" shall have a stem diameter of not less than 1-3/8".

t. The design length between the centerline of pumper nozzle and elevation of bury at ground line shall not be less than 18".

B. Accessories

Accessories to be furnished with the fire hydrants shall consist of two (2) operating wrenches, one (1) seat wrench and two (2) safety flange repair kits.

B. Concrete

Concrete for thrust blocks shall be proportioned to develop a compressive strength of 2,500 pound per square inch in 28 days.

## 3.1 CONSTRUCTION METHODS

A. Location of hydrants will be as shown on the plans or as directed by the Engineer. Hydrants shall be installed plumb and with a minimum of 2" between the safety flange and finished grade.

B. After joints are completed, a concrete thrust block shall be installed as shown on the plans. Thrust block shall be concrete poured in place. The concrete shall fill the entire bottom of the excavation around the hydrant and shall extend under the hydrant shoe in such a way that the shoe is embedded in concrete up to the drain holes. The concrete shall be at least 4" in depth under the lowest part of the shoe. The hydrant shall be supported on bricks or precast concrete blocks during construction of the thrust block. Concrete shall terminate even with the joint, leaving the joint free and accessible for repair. Hydrant drain holes shall be plugged with wood plugs during construction of thrust block. After the concrete has taken its initial set, plugs shall be removed.

C. After concrete has set, clean washed gravel, 3/8" maximum size, shall be placed around hydrant. Gravel shall fill the excavation above the concrete to a depth of 10". A layer of 20 pound roofing felt shall be placed over the gravel and the backfill placed thereon.

## 4.0 MEASUREMENT

Fire Hydrant assemblies shall be measured as the number of units each, in place, complete with thrust blocks and accepted.

## 5.0 PAYMENT

The number of fire hydrant assemblies measured as provided above will be paid for at the contract unit price per each unit.

PAYMENT WILL BE MADE UNDER:

Item 02519: Fire Hydrant Assembly - per each

# ITEM NO. 02520

# VALVES AND APPURTENANCES

## 1.1 DESCRIPTION

A. Scope of Work

This item shall govern the furnishing of all materials, equipment, incidentals and completion of all construction required to install complete and ready for operation valves and appurtenances as shown in the Drawings and specified herein or as directed by the Engineer. Valves governed by this specification include the following:

1. Ball Valves
2. Altitude Valves

B. Description of System

All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of wastewater.

C. Qualifications

All of the types of valves and appurtenances shall be products of well established firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.

D. Submittals

Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for approval.

E. Operating Instructions

Manufacturer's operating and maintenance instructions in four (4) sets shall be furnished to the Engineer for equipment furnished under this item.

F. Warranty

The manufacturer shall furnish to the Owner a Certificate of Conformance to these specifications and a statement of warranty. The warranty shall cover all defective parts, material and workmanship for a period of 12 months after acceptance or 18

months after shipment, whichever occurs first. The manufacturer shall replace all items deemed by the Engineer, in writing, to be defective, without cost to the Owner.

## 2.1 MATERIALS

All valves and appurtenances shall be of the size shown on the Drawings and as far as possible all equipment of the same type shall be from one manufacturer. All valves and appurtenances shall have the name of the manufacturer, flow directional arrows, and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body. Except as otherwise shown in the Drawings or specified herein, all valves with operators located 6 feet or more above the operating floor shall be provided with chain wheel operators complete with chain guides and galvanized steel chain, when applicable. All buried valves shall open left (counter clockwise). Insofar as possible, all valves shall open counter clockwise.

A. Ball Valves

1. Ball valves shall be of stainless steel with union, socket, threaded or flanged ends, as required.

2. Stainless steel ball valves shall be as manufactured by Celanese Piping System, Inc., Wallace and Tiernan, Inc., or Engineer approved equal.

3. Shop prime shall be compatible with coating specificed in Item No. 09905, Cleaning and Painting Exposed Piping, Valves and Related items.

B. Altitude Valves

1. The altitude valve shall be for two-way flow and shall function to control the high water level in the elevated tank by remaining fully open until the shut off point is reached. The valve shall be hydraulically operated and pilot controlled. The reservoir pressure sensing line shall be 1 inch diameter installed with a 2 degree slope from valve to reservoir to avoid air pockets. Contractor shall properly insulate all piping to protect from freezing weather.

2. The valve body shall be globe style and made of ductile iron, ASTM A-536 and operate at a 250 psi pressure class. The valve interior shall be of bronze B-62. Flanges shall conform to ANSI B16.42 Standards.

3. The altitude valve shall be as manufactured by the Watts ACV Model 6127-2, or approved equal.

4. Shop prime shall be compatible with coating specificed in Item No. 09905, Cleaning and Painting Exposed Piping, Valves and Related items.

C. Valve Boxes and Vaults

1. Valve boxes shall be three piece, cast iron, screw type, Mueller No. H10357, with oval base, or Engineer approved equal. The drop cover shall be lettered "WATER".

2. Vaults shall be as shown on plans, or as directed by the Engineer.

3. Valve boxes shall be provided for each buried valve. They shall be cast iron cover. The upper section of each box shall have a bottom flange of sufficient bearing area to prevent settling. The bottom of the lower section shall enclose the stuffing box and operating nut of the valve. Boxes shall have barrels of not less than 5-inches in diameter and be of length adapted to pipe cover. Boxes shall be adjustable, with a lap of at least 6-inches when in the most extended position. Covers shall have the word "OPEN" and an arrow indicating the direction of opening cast into covers in raised letters. Provide valve stem extensions for all buried valves.

4. One tee-handled valve wrench of suitable length shall be furnished to operate all valves with valve boxes.

## 3.1 CONSTRUCTION METHODS

A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.

B. After installation, all valves and appurtenances shall be tested at least 1 hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the Engineer.

C. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of valve openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the Owner.

D. Buried flanged or mechanical joints shall be made with cadmium plated bolts. All exposed bolts and nuts shall be cadmium plated.

E. Buried valves and valve boxes shall be set with the stem vertically aligned in the center of the gate box. Valves shall be set on a firm foundation and supported by tamping selected excavated material under the sides of the valve. The valve box shall be supported as shown in the Drawings, true to alignment and rigidly supported. Any

damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.

F. The Contractor shall install the valves with proper support. The valves shall not carry the weight of adjacent piping.

## 4.0 MEASUREMENT

Ball Valves and Altitude Valves and necessary appurtenances, such as boxes and vaults, as shown on plans, shall be measured by the unit of each, such assembly installed in place and accepted.

## 5.0 PAYMENT

Payment for Valves and Appurtenances, as described herein, will be made at the unit price bid for such assembly installed in place and accepted. Such payment shall include excavation, selected embedment material, fittings, pipe, concrete, cast iron valve box or concrete vault as shown on plans, valves, backfill and other incidentals necessary to complete the work.

The altitude valve assembly shall include the installed valve plus the altitude valve, all associated materials, equipment, tools, labor and incidentals to provide valve bypass piping, and all fittings, valves, pipe, pipe supports, pipe painting to complete the assembly. Also included is the slab in the tower pedestal to support the valve assembly.

PAYMENT WILL BE MADE UNDER:

Item No. 02520.1: Ball Valve - per EA (size as per proposal)
Item No. 02520.2: Altitude Valve - per EA (size as per proposal)

## ITEM NO. 02521

## FLUSHING VALVE

### 1.0 DESCRIPTION

This item shall consist of furnishing all materials and completion of all construction required to install flushing valves in the location(s) shown on the plans and described herein.

### 2.0 MATERIALS

The flushing valve assembly shall consist of a main line tapped tee with 2" tap, 2" PVC adapter, 2" AWWA gate valve, 2" galvanized 90° bend, 2" galvanized steel pipe (length as required), 2" galvanized 90° bend, and 2" threaded cap with 1¼" nut welded to the cap.

### 3.0 CONSTRUCTION METHODS

All flushing valves shall be located as shown on the plans. Each flushing valve shall be located near right-of-way fence, corner, or other physical protection. Flushing valves shall be placed so as to be protected from vehicular traffic. Provide valve marker per Standard Detail Sheet.

### 4.0 MEASUREMENT

Flushing valves shall be measured by the unit of each such assembly installed in place and accepted.

### 5.0 PAYMENT

Payment for flushing valves shall be made at the unit price bid for each such assembly installed in place and accepted. Such payment shall include excavation, selected embedment material, fittings, pipe, concrete, valves, valve marker, backfill, and other incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item 02521: Flushing Valve - per EA (sizes as per bid proposal)

## ITEM NO. 02522

## TAPPING SLEEVE AND VALVE

### 1.0 DESCRIPTION

This item shall consist of furnishing all materials and completion of all construction required to install tapping sleeves and valves of the various size(s) in the location(s) shown on the plans and described herein.

### 2.0 MATERIALS

Tapping sleeves and valves shall be mechanical joint. Tapping sleeves shall be ductile iron with Class 125 outlet flange, 200 psi working pressure, and shall be Mueller or approved equal.

Tapping valves shall have Class 125 inlet flange, 200 psi working pressure and shall be Mueller or approved equal.

Tapping saddles shall be bronze as manufactured by Mueller, Ford, or approved equal.

Curb cock shall be Mueller, Ford, or approved equal.

### 3.0 CONSTRUCTION METHODS

The Contractor shall insure that the tapping sleeves and valves are installed in accordance with the manufacturer's requirements. The existing main shall be tapped in such a way as to not damage the existing pipe.

### 4.0 MEASUREMENT

Tapping sleeves and valves and tapping saddles with curb cocks shall be measured as the number installed complete in place and accepted.

### 5.0 PAYMENT

The number of tapping sleeves and valves and tapping saddles with curb cocks measured as provided above shall be paid for at the unit price bid per each for "Tapping Sleeve and Valve" or "Tapping Saddle with Curb Cock" of the various sizes, which payment shall be considered full compensation for all labor, tools, materials, equipment, and all incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 02522.1: Tapping Sleeve and Valve - per EA (sizes as per bid proposal)

Item No. 02522.2: Tapping Saddle and Curb Cock - per EA (sizes as per bid proposal)

## ITEM NO. 02523

## GATE VALVES AND BOXES

### 1.0 DESCRIPTION

This item shall govern the furnishing of all materials and completion of all construction required to install gate valves and boxes of the size called for on the plans, or as directed by the Engineer.

### 2.1 MATERIALS

A. Gate Valves

Gate valves 3" through 20" shall conform to AWWA Standard C509, latest edition, and shall be cast iron body, bronze mounted, resilient seat, non-rising stem with mechanical joint ends. Gate valves 3" through 12" shall be designed for a minimum working water pressure of 200 psig.

2" gate valves shall conform to applicable AWWA Standards and shall be cast iron body, bronze mounted, non-rising stem with mechanical joint ends. 2" gate valves shall be designed for a minimum working water pressure of 200 psig.

Gate valves 2" through 20" shall be Mueller No. A 2370-20.

Gate valves smaller than 2" shall be bronze construction with solid wedge bronze disc and screw in bonnet for positive sealing, rising stem with threaded ends, and heavy duty hand wheel. Minimum design working water pressure shall be 200 psig.

B. Valve Boxes

Valve boxes shall consist of 6" PVC (SDR 26 or Schedule 40) riser pipe and lid. The PVC riser pipe shall sit just above valve bonnet and shall extend vertically to one (1) foot above finished grade. The lid shall be lettered "WATER" and shall fit snugly within the PVC riser pipe.

### 3.1 CONSTRUCTION METHODS

A. Setting Valves

Valves shall be located as shown on the plans or as directed by the Engineer. Valves shall be set with stems vertical. Valve boxes shall be placed and adjusted so that the lids are one (1) foot above finished grade.

B. Jointing Valve to Pipeline

Plain end of pipe, joint stuffing box, and gasket shall be thoroughly cleaned by brushing with a wire brush before joint is made up. Pipe and valve shall be laid up true to line and so that the plain end fully enters the stuffing box. Gasket shall be moved into the stuffing box and seated, by hand.

C. Backfilling

Backfill around valve and valve box shall be placed in loose layers of not exceeding four (4) inches in depth. Each layer shall be compacted with hand or pneumatic tampers to the density of the surrounding undisturbed earth as determined by procedures set out under ASTM D 698. This procedure shall be followed for the entire depth of the backfill.

D. Relocating Existing Valves and Boxes

Existing valves and boxes shall be defined as those valves and boxes located within the right-of-way (or as shown on plans) of the specified area of construction operations which are in conflict. Contractor shall carefully excavate and remove existing valve and box for installation in new location as shown on plans or as directed by the Engineer. Valve and box condition shall be verified by Owner prior to installation. Valve and box shall be set, joined to pipeline and backfilled in accordance with specification for new valve, as specified herein.

## 4.0 MEASUREMENT

New valves shall be measured as the number of units of each size with valve box, in place, completed and accepted.

Relocation of existing valves and boxes shall be measured as the number of units of each size with valve box, in place, completed and accepted.

## 5.0 PAYMENT

The number of valves, either new or relocated, measured as provided for above, will be paid for at the contract unit price bid per each unit of the several sizes. All material, labor and equipment utilized to make a complete installation shall be included in this unit price.

PAYMENT WILL BE MADE UNDER:

Item No. 02523.1: Gate Valve and Box - per EA (sizes as per bid proposal)
Item No. 02523.2: Relocate Gate Valve and Box - per EA (sizes as per bid proposal)

## ITEM NO. 02524

## COMBINATION AIR VALVE

### 1.0 DESCRIPTION

This item shall consist of furnishing all materials and completion of all the work required to install a Combination Air Valve of the size and in the location(s) shown on the plans or as directed by the Owner's Representative and described herein.

### 2.0 MATERIALS

The Combination Air Valve shall consist of a body, cover, baffle, float and seat. The baffle will be designed to protect the float from direct contact of the rushing air and water to prevent the float from closing prematurely in the valve. The seat shall be fastened into the valve cover, without distortion, and shall be easily removed, if necessary. The float shall be stainless steel designed to withstand a maximum of 1,000 psi. The float shall be center guided for positive shutoff into the seat.

All materials of construction shall be certified in writing to conform to ASTM specifications as follows:

| | | |
|---|---|---|
| Body, Cover & Baffle | Cast Iron | ASTM A48, Class 30 |
| Float | Stainless Steel | ASTM A240 |
| Seat | Buna-N | |
| Exterior paint | Phenolic Primer | FDA approved for |
| | Red Oxide | potable water contact |
| Protector Hood | Steel | |

Combination Air Valve shall be an APCO, Bulletin No. 623, Model 149C, Combination Air Valve, or Engineer approved equal.

### 3.0 CONSTRUCTION METHODS

All Combination Air Valve installations shall be installed in accordance with detail drawings and manufacturer's recommendations.

### 4.0 MEASUREMENT

Combination Air Valve shall be measured by the unit of each such assembly installed in place and accepted.

## 5.0 PAYMENT

Payment for Combination Air Valve will be made at the unit price bid for each such assembly installed in place and accepted. Such payment shall include excavation, selected embedment material, fittings, pipe, concrete, concrete vault, valves, backfill and other incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item 02524: Combination Air Valve - per EA (size as per proposal)

## ITEM NO. 02525

## DUCTILE IRON FITTINGS

### 1.0 DESCRIPTION

This item shall govern the furnishing of all materials and completion of all the work required to install ductile iron fittings of the types and sizes shown on the plans or as directed by the Owner's Representative.

### 2.1 MATERIALS

A. Ductile Iron Fittings

Mechanical joint fittings shall conform to the requirements of AWWA C111/A21. Flanged fittings shall conform to the requirements of AWWA C110/A21. Push-on joint fittings are not acceptable.

B. Concrete

Concrete for thrust blocks shall be proportioned to develop a compressive strength of 2,500 pounds per square inch in 28 days.

### 3.1 CONSTRUCTION METHODS

A. Pipe Jointing

All components of the fitting and pipe shall be thoroughly cleaned before making up a joint. The mechanical procedure used for making up the joint shall be in strict compliance with the manufacturer's recommendations and the applicable AWWA designation.

B. Thrust Blocks

Concrete thrust blocks shall be installed at all fittings. Thrust blocks shall be as shown on the plans and shall be concrete poured in place after all joints have been made. The block shall be of sufficient depth to brace the entire diameter of the fitting and of sufficient size to entirely fill the space between the fitting and the side of the trench. The block shall rest upon and against undisturbed earth only. Blocks shall be constructed in such a manner that it is possible to recaulk or repair any joint.

Thrust block concrete shall extend under the fitting in such a way that the fitting is entirely embedded in concrete. The concrete shall be at least 4" in depth under the lowest part of the fitting. Fittings shall be supported on large stones, bricks, or precast concrete blocks during construction of thrust blocks.

## 4.0 MEASUREMENT

Ductile Iron Fittings required for the water main, regardless of size, approved and accepted as prescribed by this specification, will be measured by the ton.

## 5.0 PAYMENT

The tonnage of fittings, as measured and approved in Measurement, shall be paid for at the unit price bid for Ductile Iron Fittings. There will be no separate payment for thrust blocks.

PAYMENT WILL BE MADE UNDER:

Item No. 02525: Ductile Iron Fittings - per ton

## ITEM NO. 02540

## WATER SERVICE INSTALLATION

### 1.0 DESCRIPTION

This item shall govern the furnishing of all labor, materials, tools, equipment and related items required to install service lines of the size called for on the plans or as directed by the Owner's Representative.

### 2.1 MATERIALS

A. Single 3/4" Service (long side)

1. 12" x 3/4" Bronze Saddle, Ford S70 or S90, single strap.
2. 3/4" Corporation Stop, Ford F600, taper thread.
3. 3/4" Polyethylene Tubing, SDR 7, Class 200.
4. 3" SDR 26 PVC Casing, length as required by pavement width.
5. 3/4" Angle Stop (lock-wing type), Ford KV43-332W.
6. Meter Box, plastic, DFW Model D-1500, w/plastic meter lid.
7. 3/4" Water Meter, Sensus Technologies, Model SR.
8. 3/4" Brass Dual Check Valve, Ford Model HH538-323.
9. 3/4" PVC Ball Valve, Spears Model 2621-007, or equivalent (homeowner's cutoff).

(Items 5, 7, 8 and 9 above shall be placed within the new meter box. See Detail on the plans.)

10. 3/4" x 6" Brass Nipple on down stream side of PVC Ball Valve, as needed.
11. Compression Adaptors as needed to connect to existing homeowner's service line.
12. The previous items shall be described as follows:

a. Service Line - All service lines from the water main corporation stop to the meter angle stop shall be polyethylene service tubing, SDR 7, Class 200, conforming with ASTM 2239.

b. Meter Valve (angle stop) - Meter valves shall be single swivel type with pack joint fitting on one end (single service) and meter coupling nut on other end to connect to meter, Ford KV 43-342W, or equivalent. Meter valves shall have wings for locking valve in closed position.

c. Meter Boxes - Boxes shall be plastic, DFW Model D1500, or equivalent.

d. 3" PVC Casing – 3" SDR 26 PVC rubber gasketed pipe shall be used under all streets for long side single service and at the discretion of the Owner. Pipe casing shall extend behind each pavement edge at least 6 feet. 1" or 1 1/2" copper service tubing shall be placed into casing. PVC casing shall be laid on a 6" bed of granular material and backfilled to 4" above casing with same.

e. Meter - Meters shall be Sensus Technologies SR. Meter shall provide flow measuring accuracy with 1.5 percent of rated capacity through meter.

B. Single 3/4" Service (short side)

All items shall be the same as for Paragraph A above except shorter length of polyethylene tubing and 3" casing is required.

C. Single 1" Service (long side and short side)

All items shall be the same as for Paragraphs A and B above except Contractor shall install 1" angle stop, Ford KV43-444W, or equivalent, 1" water meter, Sensus Technologies SR, or equivalent.

D. Individual Pressure Regulators

Individual pressure regulators shall be of bronze body construction, with stainless steel integral strainer, and shall have a corrosion resistant cage and adjusting screws for water works and pit installations. The pressure regulator shall be a WATTS Model N35BUZ3, or approved equal.

## 3.1 CONSTRUCTION METHODS

A. General

All trenches for service connections shall be excavated to a depth of 36" below existing street road ditch flowline. For each long side service, 4" of granular material

bedding shall be placed in the bottom of the trench with 3" PVC casing placed uniformly on bedding. Granular material bedding shall be placed to 12" above the pipe casing.

Where service tubing is laid directly in trench (short side service only), a minimum of 6" of granular material bedding shall be placed under the tubing and 12" of similar material placed over the tubing. Granular material is defined in Item No. 02510, Water Mains, of these specifications.

B. Meter Boxes

Meter boxes shall be set at 6" minimum granular material. A minimum 4" of granular material must be placed between the box and undisturbed soil.

The box shall be positioned so that the top is level and 6" minimum and 10" maximum above the ground elevation. The meter valve (angle stop) shall be set a minimum of 6" below the ground elevation. The angle stop fittings shall line up with the hole cut on the house side of the box. Granular material shall be placed within box up to 1" below top of meter to provide support and previous freezing. Meter box shall be plastic.

C. Service Connections

Water service connections shall be provided at the location shown on the plans or as directed by the Owner's Representative.

D. Individual Pressure Regulators

Where the plans show individual pressure regulators at a customer service connection, the Contractor shall install a 1" pressure regulator and a 1" x 4" brass nipple between the check valve and the Owner's cut-off (ball) valve.

The Contractor shall install the pressure regulator at the end of the check valve within the meter box. The 4" nipple and union shall be set downstream of the regulator. The ball valve shown in the typical meter installation detail shall then be placed downstream of the nipple followed by the 6" nipple and connection to existing piping.

E. Location of Meters

Unless directed otherwise by the Owner's Representative, the Contractor shall set new meter boxes over existing or proposed mains.

F. Relocate Existing Meters and Boxes

Existing meters and boxes shall be defined as those meters and boxes which are located within the right-of-way (or as shown on plans) of the specified area under

construction operations which are in conflict. Contractor shall carefully excavate and remove existing meter and box for installation in new location as shown on plans or directed by the Owner's Representative. Meter and box condition shall be verified by the Owner prior to installation. Meter and box shall be installed in accordance with specification for new meter as specified herein.

## 4.0 MEASUREMENT

New service installations or service relocations shall be measured by each individual connection actually installed or transferred to the new water main by the Contractor. The several sizes and types shall be measured separately.

Relocation of existing service shall be measured by each installation made.

Relocation of existing meter and meter box shall be measured by each installation made and includes all items listed in Section 2.0, utilizing the relocated meter and box in lieu of a new meter and box.

## 5.0 PAYMENT

Each new service installation or service relocation, individual pressure regulator, or relocated meter and meter box measured as provided above, will be paid for at the unit price bid per each for each of the various sizes specified. All material, labor and equipment utilized to make a complete installation shall be included in this unit price. Thus, all materials such as service saddle or main line tapped tee, corporation stop, angle stop, check valve, ball valve, nipple, necessary adaptors, and meter box, shall be incidental to this item.

PAYMENT WILL BE MADE UNDER:

Item 02540.1: Water Service Installation - per each (sizes as per bid proposal).
Item 02540.2: Relocate Existing Service - per each (sizes as per bid proposal).
Item 02540.3: Relocate Existing Meter and Meter Box - per each (sizes as per bid proposal)

## ITEM NO. 02820

## WIRE FENCE AND GATES

### 1.0 DESCRIPTION

This item shall govern the construction of wire fence and gates, supported on wood or steel posts, as shown on the plans and at locations determined in the field by the Owner's Representative.

### 2.1 MATERIALS

A. Treated Wood Posts and Braces

1. Treated wood posts and braces shall be pine or fir timber of the size and dimension shown on the plans, or equal to or better than posts being replaced. The timber shall be sound and free from all decay, shakes, splits or any other defect which would weaken the posts or braces or otherwise make them structurally unsuitable for the purposes intended.

2. The posts and braces shall be round, square or sawed rectangular shape. The slope of grain in sawed, square or rectangular posts for the full length shall not exceed one in ten, and knots shall be sound, tight, well spaced and shall not exceed one-third of the small diameter or least dimension of the post. A line drawn from the center of each end of the post shall not fall outside the center of the post at any point more than 2". All posts shall have a creosote oil or pentachlorophenol treatment in accordance with American Wood Preservers Association (AWPA) Standard Specifications. Posts shall be inspected at time of treatment. Round posts and brace shall be peeled to remove all outer bark and all inner cambium bark, except that occasional strips of bark may remain if not over 1/2" inch wide or over 3" long. All knots shall be trimmed flush with the sides, spurs and splinters removed and the ends cut square. The allowable taper from end to end of round posts and braces shall not exceed 1-1/2".

B. Metal Posts and Braces

1. Steel pipe used for posts and braces shall conform to the specifications of ASTM A120. Steel sections used for posts and braces shall be equal to or better than posts being replaced. Galvanized steel sections shall conform to ASTM A123. All steel posts or braces, except galvanized products, shall be painted with an Owner-approved anti-corrosive paint. All fittings required for posts and braces shall be pressed or rolled steel, forged steel, malleable or wrought iron of good commercial quality and shall conform to the details shown on the plans.

2. Metal line posts shall be "H" column, tubular or other approved shape that is properly adapted to provide means for attaching the fencing to the post in a manner that will not damage the post nor the fencing material. Line posts shall be provided with tapered anchor plates securely attached thereto.

C. Gates and Gate Posts

Gates and gateposts shall be of the materials and to the dimensions as determined in the field by the Owner's Representative.

D. Barbed Wire

Barbed wire shall conform to ASTM A121, Class 1. The barbed wire shall consist of five strands of 12-1/2 gauge wire, twisted with two-point 14 gauge barbs spaced not more than 5 inches apart.

E. Wire Mesh

Wire mesh fabric shall conform to ASTM A116, Class 1. The wire mesh shall be of the height shown on the plans, or equal to the mesh being replaced. The top and bottom wires shall be 10 gauge minimum and the intermediate wires and vertical straps shall be of 12-1/2 gauge, minimum.

F. Miscellaneous

1. Staples used to secure barbed wire to wood posts shall be not less than 1-1/2" long and the wire from which they are made shall be galvanized as specified in Materials, Paragraph D.

2. Galvanized bolts, nuts and washers for attaching braces and straps to metal posts and suitable galvanized devices for holding barbed wire and wire mesh firmly in position shall be of good commercial quality and design.

## 3.1 CONSTRUCTION METHODS

A. Space the posts at intervals of not more than 10 feet apart. Set to a depth of 3 feet. Set posts in a vertical position. Brace end and gate posts in one direction. Where alignment changes 30 degrees or more, install a corner post. At alignment angles varying from 15 to less than 30 degrees, brace angle post to adjacent line posts by diagonal tension wires. The spacing of pull post assemblies shall be approximately 1,000 feet, unless otherwise shown on the Drawings. Set posts plumb and firm. Tamp backfill thoroughly in 4" layers. Notch timber post braces.

B. Install corner, end and angle post assembly before stretching the wire between line posts. At all grade depressions where stresses tend to pull the posts out of the ground, the fencing shall be snubbed or guyed at the critical point by means of a double 9-1/2 gauge

galvanized wire connected to each horizontal line of barbed wire or to the top and bottom wire or wire mesh fabric and to a deadman, weighing not less than 100 pounds, buried in the ground 5 feet. Stretch fencing before being snubbed and guyed. Connect existing cross-fences to the new fences and place corner posts with braces at junctions with existing fences. Draw barbed wire and wire fabric taut and fasten to posts with galvanized ties or staples.

## 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

## ITEM NO. 02821

## CHAIN LINK FENCE AND GATES

### 1.0 DESCRIPTION

Fence overall height shall be as required to match conditions in the field or as specified by the Owner's Representative. The fabric shall be composed of individual wire pickets which are helically wound and interwoven in the form of a continuous chain link fabric having a 2" square mesh. The top edge of the fabric shall be twisted and barbed, the bottom barbs to clear existing and/or proposed finished grade 2" plus or minus 1".

### 2.1 MATERIALS

A. Wire Fabric

Fabric shall be woven of No. 9 gauge steel wire and shall be zinc coated by the hot-dipped (hot galvanizing) process after weaving. Minimum tensile strength of wire pickets shall be 80,000 psi based on the coated wire diameter. The zinc coating shall be smooth, of reasonably uniform thickness, free from dross, uncoated spots and adhering particles of foreign material. Fabric shall meet the requirements of ASTM A392. Aluminum coated fabric meeting ASTM A491 is acceptable.

The weight of the coating per square foot of uncoated wire surface shall be not less than 2.0 ounces as specified for Class II galvanizing and shall withstand an average minimum of twelve one minute dips by the Preece Test. ASTM A239 shall be considered standard for Preece Tests. Aluminum coating shall conform to Class II, ASTM A491.

B. Posts

All tubular members, posts, rails or braces shall be hot-dip galvanized welded or seamless steel pipe conforming to ASTM A120, Schedule 40, unless otherwise noted, but will be identified by outside diameter and weight per foot. H-columns, if used, shall be hot galvanized in accordance with ASTM A123. All posts and post settings shall conform to the following table:

| Type | O.D. (in) | WGT lbs/(ft) | Embedment in Concrete (ft) | Max. Spacing (ft) |
|---|---|---|---|---|
| Tubular Line Post | 2.375 | 3.65 | 3.0 | 10.0 |
| Line Post (H-Col) | 2x2.25 | 4.10 | 3.0 | 10.0 |
| Terminal Post (Corner, Angle, Pull or End Post) | 2.875 | 5.79 | 3.0 | 10.0 |
| Gate Posts | 4. | 9.11 | 3.5 | -- |
| Top Rail | 1.66 | 2.27 | -- | -- |
| Braces | 1.66 | 2.27 | -- | -- |

C. Tops

All posts not having extension arms shall be fitted with heavy hot-dipped galvanized cast iron tops. Base of tops shall carry a flange around outside of posts. Galvanized steel tops 14 gauge or thicker are also acceptable.

D. Extension Arms

All extension arms shall be of 14 gauge or thicker pressed steel, or of malleable iron, hot-dipped galvanized, and shall be made as a unit with the post fittings. All terminal posts shall be fitted with heavy malleable iron or welded steel arms. All posts shall carry three strands of barbed wire, of which the topmost strand shall be 12" above the fabric. The barbed wire shall be fastened in slots by using heavy galvanized wire pins. Pins shall be bent and crimped to prevent their being readily removable. Arms having projections to be bent down over barbed wire will not be accepted. Extension arms shall be of sufficient strength to support permanent deformation a weight of 350 lbs. suspended from the end of the arm.

E. Top Rail

The top rail shall pass through the base of the post top fittings to form a continuous brace from end to end of each stretch of fence. Outside sleeve type couplings, not less than 6" in length, 14 gauge or thicker, shall be used in the top rail. Suitable 12 gauge or thicker pressed steel, or malleable iron connections, shall be used to fasten rails securely to all terminal posts.

F. Concrete

All concrete used in chain link fence construction shall develop a 28-day minimum compressive strength of 2,000 psi. If a water-reducing admixture is used, the slump shall not be greater than 5". If no water-reducing admixture is used, the slump shall not be greater than 4". The concrete shall be of such consistency that it will slide, not flow, into place.

G. Braces

Each brace shall be diagonally trussed with a 3/8" round galvanized rod with adjustable 1" x 3/8" truss tightener. The braces shall be horizontal and shall be spaced midway between top rail and ground and shall extend to the first line post. Braces and truss rods shall be complete with all necessary heavy duty fittings. Corner, angle and/or pull posts shall be braced in each direction.

H. Barbed Wire

Three strands of four point steel barb wire shall be installed on each arm. Each strand shall be composed of two No. 12-1/2 gauge copper-steel wires with barbs not to

exceed 5" apart and shall be hot-dipped galvanized after weaving in conformity with ASTM A121. Wire having aluminized coating and barbs is acceptable.

I. Tension Wire

Not less than No. 7 gauge, steel galvanized wire shall be installed along the bottom of the fence and fastened with hot rings on 24" centers.

J. Fabric Bands

Fabric shall be fastened to the line posts with galvanized fabric bands spaced approximately 14" apart, and to top rail, braces, and tension wire at not more than 24" spacings. Fabric bands shall be not less than 11 gauge galvanized steel wire.

K. Stretcher Bars

Stretcher bars shall be of 3/4" x 1/4" flat hot-dipped galvanized steel.

L. Stretcher Bar Bands

Each stretch of fence shall be secured to terminal posts by means of 7/8" x 12 gauge stretcher bars using galvanized bolted stretcher bar bands spaced approximately 14" apart.

M. Fittings

All fittings including tops, extension arms, fabric bands and stretcher bars and bands shall be cast iron, malleable iron, wrought iron or pressed steel fittings approved by the Owner's Representative, and shall be hot-galvanized in conformity with ASTM A123 or A153, as applicable.

N. Gates

1. Gates shall be single or double swing and of the size shown on the plans. Gate frames shall be constructed entirely of 1.9" O.D. hot-dipped galvanized pipe weighing not less than 2.72 pounds per linear foot.

2. Gate end members shall extend above the gate frame to carry the barbed wire guard and have tops to match gate post tops. Barbed wire shall be secured to end members with tension bands. Fabric and barbed wire shall be the same as specified for the fence construction. Each gate frame shall have one center vertical brace and two 3/8" galvanized, adjustable truss rods providing double-diagonal trussing.

3. Gate frames constructed by welding shall be hot-dipped galvanized after fabrication. All welded joints shall be continuous, ground smooth, and cleaned of slag and spatter after fabrication, prior to galvanizing.

4. If gate frames are constructed using fittings, fittings shall be extra heavy malleable iron, hot-dipped galvanized.

5. Gates shall be complete with approved offset type or double action hinges allowing gates to swing back parallel with line of fence. Hinges shall be made of malleable iron and forgings.

6. Gates shall be equipped with plunger type drop rod assembly securely bolted to frame, built to engage a gate stop and catch for plunger. Stop and catch shall be well anchored in concrete base. Means for readily locking gate latch with padlock shall be provided.

7. Gate opening size as specified on the plans shall be the clear opening distance when the gate frames are in full open position and held by the keepers.

## 3.1 CONSTRUCTION METHODS

A. Post interval spacing shall conform to those dimensions shown in Materials, Paragraph B, or as field conditions require.

B. Before placing concrete, moisten surfaces of all post holes. Rod thoroughly or vibrate the fresh concrete after placing. Finish smoothly, crowning tops of post holes. Cure concrete by keeping the exposed surface wet for three days, or use a white pigmented curing compound conforming to ASTM C309.

C. All posts shall be set plumb and to line in the center of a 12" diameter post hole which extends 6 inches below the bottom of the post. Holes for line posts may be 10" in diameter. All pipe posts shall be filled solidly with concrete.

D. Pull posts shall be installed at changes of fence grade equal to 15% or more.

## 4.0 MEASUREMENT

Fencing shall be measured by the linear foot of chain link fence, measured at the bottom, along the centerline, from center to center of end posts, including gates, as shown on the plans, installed and in place and accepted.

## 5.0 PAYMENT

Payment for fence and gates, as described herein, will be made at the unit price bid for Chain Link Fence and Gates. Such price shall be full compensation for furnishing and installing all fencing materials, including gates, for all preparation, hauling and installing, for all labor, tools, equipment and incidentals necessary to complete the work, including removing any existing fence, excavation, backfilling and disposal of surplus materials.

PAYMENT WILL BE MADE UNDER:

Item 02821: Chain Link Fence and Gates - per linear foot

# ITEM NO. 02920

# HYDROMULCH SEEDING

## 1.0 DESCRIPTION

Includes all material, labor, equipment, tools, and superintendence necessary to furnish and install common Hydromulch seeding, complete in place.

## 2.0 MATERIALS

Seed and fertilizer shall conform to TxDOT Standard Specification Item 164.

## 3.1 CONSTRUCTION METHODS

A. Installation

Comply with TxDOT Standard Specification Item 164. Cover all disturbed areas outside sodded area excluding channel bottom. Seeding shall provide a continuous coverage.

B. Watering

Contractor shall furnish and apply water in such amounts, coverage, and frequency so as to insure sufficient growth to meet or exceed minimum standards.

C. Growth Standards

Sod shall provide a dense, virile growth of rye grass a minimum of 4" tall at the end of 60 days after planting. Dense growth shall be defined as 95% coverage of each square yard planted with those areas covered with growth providing 100% coverage. No bald spots larger than 6" square will be allowed.

D. Maintenance

Those areas planted shall be watered, maintained, except mowing, by the Contractor until areas planted are accepted. This shall include furnishing and installing replacement seeding. Contractor is advised that responsibility for maintenance will not be waived due to conflicts between growing seasons and construction schedules.

## 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

# ITEM NO. 02950

## CUTTING AND PATCHING ASPHALT PAVEMENT, ASPHALT DRIVES, CONCRETE DRIVES, OR GRAVEL ROADS AND DRIVES

## 1.0 DESCRIPTION

This item shall consist of cutting pavement, excavating, backfilling and patching pavement over pipelines laid under existing surfaces.

## 2.1 MATERIALS

A. Flexible Base Material

The flexible base material shall consist of argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate, gravel, sand, and other granular materials. The grading and quality of the materials when properly slaked and tested by standard laboratory methods shall be in accordance with the following limits for Type F, Grade 3, caliche as per TxDOT specifications:

| | |
|---|---|
| Retained on 1 3/4" screen | 0% |
| Retained on No. 4 screen | 45% to 75% |
| Retained on 40 mesh sieve | 50% to 85% |

The material passing the 40 mesh sieve shall be known as Soil Binder and shall meet the following requirements:

| | |
|---|---|
| The liquid limit shall not exceed | 40% |
| The plasticity index shall not exceed | 12 |

The material as obtained from the pit shall be of uniform character. Abrupt changes in grading Soil Binder characteristics or other properties shall be cause for rejection.

B. Asphalt Base Material

Asphalt base material shall be Type B Hot Mix Cold Laid Asphaltic Concrete Pavement and shall conform to Item 334 of the current Texas Department of Transportation Specifications.

C. Cement

Portland Cement shall meet the requirements of ASTM C150. All cement shall be delivered in bags plainly marked with the brand and name of the manufacturer.

D. Bituminous Material

Bituminous material for prime coat (MC1) and tack coat (RC2) shall conform to Item 300 of the current Texas Department of Transportation Specifications.

E. Asphalt Paving Material

Asphalt paving material shall be Type D Hot Mix Cold Laid Asphaltic Concrete Pavement and shall conform to Item 334 of the current Texas Department of Transportation Specifications.

F. Concrete Aggregate

Concrete aggregate shall conform to the requirements of ASTM Designation C33 and D448.

## 3.1 CONSTRUCTION METHODS

A. Cutting Pavement

Pavement shall be cut with an approved machine or by approved hand methods. The cut edges shall be straight and the width of the trench shall be uniform and no greater than necessary to permit work within the trench. All base and asphaltic material shall be disposed of and shall not be reused.

B. Backfilling

Backfill shall be placed and thoroughly compacted as provided in the appropriate items of these specifications. After backfill has been completed, it shall be graded flush with existing grade and subjected to traffic compaction for a period of time sufficient for the mass to become thoroughly compacted, of a uniform density, and with a moisture content equal to that of the surrounding undisturbed earth.

C. Replacing Base

The compacted backfill shall then be re-excavated to the depth of the existing base, wetted, if necessary, and the exposed subgrade compacted with hand or pneumatic tampers as directed by the Engineer. Base material shall be placed in lifts of not more than 4" compacted thickness. Each lift shall be wetted and thoroughly compacted with hand or pneumatic tampers.

D. Replacing Asphalt Surfacing

The surface of the base shall be primed with MC1, cut-back asphalt, applied at a rate of 0.25 gallons per square yard. After prime coat has cured, a tack coat of RC2, cut-back asphalt, shall be applied at a rate of 0.10 gallons per square yard.

The surfacing material shall be placed in one course and shall be spread into place and thoroughly compacted by well-oiled hand or pneumatic tampers. If the Contractor so elects, he may compact the material with a power driven roller acceptable to the Engineer. The surface of the pavement after compression shall not deviate by more than 1/8" from the line and grade of the original surface.

E. Replacing Concrete Surface

The surface of replaced concrete shall be identical with the adjacent undisturbed concrete surface in both form and finish and shall contain such expansion joints, dummy joints, reinforcing steel, and other materials as was contained in the removed section.

The thickness of the pavement shall be equal to or greater than the thickness of the removed concrete. The work of replacing concrete on State Highways shall be carried out in strict accordance with the requirements of the Texas Department of Transportation. Minimum compressive strength shall be 2,500 psi in 28 days.

F. Replacing Gravel Surface

The gravel surface shall be replaced the same as or better than the original condition of the gravel or dirt surface.

G. Replacing Texas State Roads and Highways

Backfilling of utility trench and restoration of pavement sections for Texas state roads and highways shall be in accordance with the details shown on the construction plans and as per Texas Department of Transportation regulations.

## 4.0 MEASUREMENT

The number of units to be paid for shall be measured as the number of square yards of asphalt pavement, asphalt drives, concrete drives, or gravel roads and drives cut and patched with the underlying base, complete in place, and open for traffic. Any pavement outside the outlines of the required trench which has been disturbed or removed by the Contractor shall not be included in the quantities measured but shall be replaced by the Contractor, at his own expense, in accordance with these specifications.

## 5.0 PAYMENT

The number of square yards of asphalt pavement, asphalt drives, concrete drives, or gravel roads and drives measured as above will be paid for at the contract unit price per square yard for cutting and patching asphalt pavement, asphalt drives, concrete drives, or gravel roads and drives.

PAYMENT WILL BE MADE UNDER:

Item No. 02950.1: Cutting and Patching Asphalt Pavement - per SY
Item No. 02950.2: Cutting and Patching Asphalt Drives - per square yard
Item No. 02950.3: Cutting and Patching Concrete Drives - per square yard
Item No. 02950.4: Cutting and Patching Gravel Roads and Drives - per square yard

## ITEM NO. 03300

## CONCRETE (NATURAL AGGREGATE)

### 1.0 DESCRIPTION

This item shall govern for the material used; for storing and handling of materials; and for the proportioning, mixing, and transportation of concrete construction. The concrete shall be composed of Portland Cement, mineral filler, if necessary, natural aggregates (fine and coarse), and water, proportioned and mixed as hereinafter provided in these specifications. This specification does not cover the placement, consolidation, curing, or protection of the concrete.

### 2.0 MATERIALS

Concrete shall meet all the requirements as set forth in ASTM C94.

### 3.0 CONSTRUCTION METHODS

Classifications and Proportions: The minimum cement content, maximum allowable water content, and maximum slump of the various classes of concrete shall conform to the following table:

| Class | Min.Comp.Strength 28 Day psi | Max.Water Cement Ratio | Slump Range (In) | Min.-Max.Sacks Cement Per CY |
|---|---|---|---|---|
| A | 3,000 | 7.0 | 2-5 | 5.0 |
| B | 2,500 | 8.0 | 2-5 | 4.5 |
| C | 2,000 | 9.0 | 1-4 | 4.0 |
| D | 1,500 | 11.0 | 1-4 | 3.0 |
| F | 5,000 | 5.75 | 2-3 | 5.5-7.0 |
| G | 6,000 | 5.75 | 2-3 | 6.0-7.0 |

### 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

## ITEM NO. 03371

## CONCRETE CRADLES, SADDLES, COLLARS AND ENCASEMENT

### 1.0 DESCRIPTION

This item shall govern the placement of concrete cradles, saddles, collars and encasement, as shown on the plans or as directed by the Owner's Representative.

### 2.0 MATERIALS

All concrete shall conform to the provisions of Item No. 03300, Concrete (Class B) or shall be of the class as noted on the plans.

### 3.1 CONSTRUCTION METHODS

A. Concrete Cradles

When concrete cradles are shown on the plans or when called for by the Engineer, the trench shall be prepared and the pipe supported in the same manner as described in concrete encasement of this specification and shall be constructed in accordance with details and sections shown on the plans.

B. Concrete Saddles

When shown on the plans or when directed by the Engineer, pipe to receive concrete saddles shall be backfilled in accordance with Item No. 02250, Trenching, Backfilling and Embedment, to the spring line and concrete placed for a depth and width conforming with details and section shown on the plans.

C. Concrete Collars

When shown on the plans or when directed by the Engineer, concrete collars shall be constructed in accordance with details and sections shown on the plans.

D. Concrete Encasement

When concrete encasement is shown on the plans or when directed by the Engineer, the trench shall be excavated and fine graded to a depth conforming with details and sections shown on the plans. The pipe shall be supported by precast concrete blocks of the same strength as the concrete for encasement and securely tied down to prevent floatation. Encasement shall then be placed to a depth and width conforming with details and sections shown on the plans.

## 4.0 MEASUREMENT

This item shall be measured by the cubic yard of material in place and accepted. Cubic yards will be computed on the basis of the measured area to the lines and grades shown on the plans or as directed by the Owner's Representative. Measurement will not include additional volume caused by slips, slides or cave-ins resulting from the action of the elements or the Contractor's operations, nor will it include reinforcement, if required as per plans.

## 5.0 PAYMENT

"Concrete Cradles, Saddles, Collars and Encasement" will be paid for at the unit price bid per cubic yard. This price shall be full compensation for all the work herein specified, including furnishing and placing all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work.

PAYMENT WILL BE MADE UNDER:

Item No. 03371.1: Concrete Cradles - per cubic yard
Item No. 03371.2: Concrete Saddles - per cubic yard
Item No. 03371.3: Concrete Collars - per cubic yard
Item No. 03371.4: Concrete Encasement - per cubic yard

**ITEM NO. 09905**

**CLEANING AND PAINTING**
**EXPOSED PIPING, VALVES AND RELATED ITEMS**

## 1.0 DESCRIPTION

The work to be performed under this section of the specifications shall comprise the furnishing of all labor, materials and equipment necessary to clean, paint and prepare for service the facilities as specified herein.

The term "paint", as used in this section, means the protective coatings specified. Other paints/coatings may be required in other sections of the specifications. All coatings which will be in contact with potable water or vapor areas shall comply with the American National Standards Institute, Inc./National Sanitation Foundation (ANSI/NSF), Standard 61 and shall be applied in conformance with the manufacturer's published specifications.

Work performed and materials used shall comply with the requirements of the Steel Structure Painting Council's Vol. No. 1, "Good Painting Practices", and Vol. 2, "Systems and Specifications", and these technical specifications. Where a conflict exists between these technical specifications and the Steel Structures Painting Council's Specifications, these technical specifications govern.

## 2.1 MATERIALS

A. Materials Specified

The materials specified herein under the sections titled "Coating Systems" and "Coating Schedule" are based on Tnemec paint systems acceptable to the Engineer/Owner. No substitutes will be allowed. Other manufacturers of coatings will not be considered.

B. Materials Used

Contractor shall submit the materials to be used with his bid.

Color for exterior finish coat will be determined by Owner. Upon selection of color using manufacturer's color chart, the Contractor will provide a painted steel panel (approximately 4" x 6") painted entirely with the first coat and painted about midway with the finish coat. This is to determine the hiding characteristics of the finish coat over the first coat and to determine the actual color of the finish coat.

C. Submittals of Alternate Materials

Contractor must provide data proving equality of products and performances at no expense to the Owner. Such data will include manufacturer's data sheets and any specific test results requested by the Engineer/Owner. Test results must be from an independent testing laboratory.

Contractor shall provide proof of acceptable performance for a minimum of 5 years in similar applications.

Contractor shall provide 5 names of cities or users with contacts, addresses and telephone numbers for references.

D. Manufacturer's Instructions

The manufacturer's published instructions for use in specifying and applying the manufacturer's proposed paint, if different from or not included on their product data sheet, shall be submitted to the Engineer. Paint shall not be delivered to the job site before review of the manufacturer's instructions by the Engineer. The manufacturer's published instructions must meet the following requirements:

1. The instructions must have been written and published by the manufacturer for the purpose and with the intent of giving complete instruction for the use and application of the proposed paint in the locality and for the conditions for which the paint is specified or shown to be applied under this contract.

2. All limitations, precautions and requirements that may adversely affect the paint; that may cause unsatisfactory results after the painting application; or that may cause the paint not to serve the purpose for which it was intended shall be clearly and completely stated in the instructions. These limitations and requirements shall include, but not be limited to, the following:

   Surface preparation.
   Methods of application.
   Thickness of each coat.
   Drying time of each coat, including primer.
   Drying time of final coat before placing in service. Time allowed between coats.
   Primer required to be used. Thinner and use of thinner.
   Weather limitations during and after application with emphasis on dry time which may effect appearance and uniformity of color (temperature and humidity).
   Physical properties of paint, including percent solids content by volume and weight per unit surface per dry mil thickness.

Equipment settings (air cap, fluid tip, equipment pressure settings, etc.)

E. Delivery

All paint shall be delivered to the job in original containers marked with the name of the manufacturer and the specification number or formula of the paint contained therein. The paint shall not show excessive settling in a freshly opened can, and shall be easily redispersed with a paddle to a smooth, homogenous state. The paint shall shown no curdling, livering, caking or color separation, and shall be free from lumps or skins. The paint shall dry to a smooth, uniform finish, free from roughness, grit, unevenness and other surface imperfections.

F. Storage

Store materials in an approved location. Keep the storage clean and repair any damage done. Remove oily rags, waste, or other fire hazards from buildings each night; take adequate precautions to avoid damage by fire. Place cloths and waste material which might constitute a fire hazard in metal containers or destroy at the end of each day. Maintain all coatings in compliance with local, state and federal regulations. Do not allow water based coatings to freeze. Maintain all other coatings within temperature ranges approved by manufacturer.

G. Maintenance Material

At the end of the project, the Contractor shall turn over to the Owner a gallon of each type and color of paint, primer, thinner, or other coatings used in the field painting. The material shall be delivered in unopened labeled cans, just as it comes from the factory. If the manufacturer does not package the material in gallon cans, and in the case of special colors, the materials shall be delivered in new gallon containers, properly closed with typed labels indicating brand, type, color, etc.

Where multiple component materials are used, the Contractor shall supply an unopened kit of the necessary materials in the manufacturer's smallest standard packaging size (i.e., a 2-component epoxy with a 1:1 mix ratio would require a 1- gallon can of resin and a 1-gallon can of curing agent). The manufacturer's literature describing the materials and giving directions for their use shall be furnished in 3 bound copies. A typewritten inventory shall be furnished at the time of delivery.

## 3.1 CONSTRUCTION METHODS

A. Surface Preparation

1. Steel Surfaces.

a. Touch-ups. Damaged areas on steel surfaces shall be repaired using the same materials used originally or a compatible equal approved by the Engineer.

b. Exterior. All such steel surfaces shall be prepared in accordance with the latest revision of Steel Structures Painting Council Surface Preparation Specifications.

c. Steel surfaces include carbon steel, cast iron and ductile iron.

2. Galvanized Surfaces. All galvanized surfaces which are to be painted shall be prepared in accordance with the latest revision of Steel Structures Painting Council definition SSPC-SP1-82, Solvent Cleaning, or as specified by the coatings manufacturer.

3. Masonry Surfaces. All masonry surfaces shall be free of all oil, dirt, form release agents, laitance, efflorescence or other deleterious matter. Cleaning may include acid etching and/or abrasive grit blasting.

4. Wood Surfaces. All wood surfaces shall be free of all dirt, oil, grease or other foreign matter. Surfaces shall be dry and free of gouges and sanded smooth. All knots shall be cleaned and sealed in accordance with the manufacturer's recommendations.

5. Dry Walls. All dry wall surfaces shall be dry and free of all dirt, oil and other contaminants. All nail heads must be counter sunk and sealed.

6. Aged Existing Coatings. Aged existing coatings which are to be topcoated after power washing, sweep blasting and/or spot blasting and priming shall be tested for adhesion prior to topcoating using a crosshatch test method according to ASTM D3359.

7. Plastic Surfaces. All plastic piping or reinforced fiber-glass plastic surfaces to be coated shall be lightly sanded and/or solvent cleaned prior to coating in accordance with manufacturer's recommendation.

8. Other Surfaces. Other surfaces may require surface preparation in accordance with the following Steel Structures Painting Council definitions:

SSPC-SP1 Solvent Cleaning
SSPC-SP2 Hand Tool
Cleaning SSPC-SP3 Power Tool
Cleaning
SSPC-SP5 White Metal Blast
Cleaning SSPC-SP6 Commercial Blast
Cleaning SSPC-SP7 Brush-Off Blast

Cleaning SSPC-SP8 Pickling
SSPC-SP10 Near White Blast Cleaning
SSPC-SP11 Power Tool Cleaning to Bare Metal

9. Abrasive Materials. All abrasive materials shall be graded and free of all contaminants. The grade shall be of such size to achieve an anchor pattern or surface profile required by the coatings manufacturer.

10. Equipment. All abrasive blast and other equipment shall be equipped with, but not limited to, the following:

    Hose coupling safety devices
    Electrical grounding devices
    Appropriate moisture traps and
    filters Fresh air hoods for all
    blasters
    "Dead Man" switches on all blast hoses

11. All Cleaned Surfaces. All cleaned surfaces which are subject to rusting or contamination shall be painted the same day they are cleaned. If for any reason the surfaces cannot be coated the same day, they must be re-cleaned by methods approved by the Engineer or his representative, inspected and brought up to standard prior to coating application.

12. Other Conditions.

    a. Grease and/or oil contamination cannot be removed by abrasive cleaning. All such contamination shall be removed in accordance with SSPC-SP-1, Solvent Cleaning, prior to manual, power tool or abrasive blast cleaning.

    b. Care must be taken not to allow detrimental solvent or detergent residues to remain on surfaces to be coated.

    c. Where abrasive blast cleaning will not remove or properly prepare metal surfaces, hand and/or power tool cleaning shall be used to handle such conditions.

    d. Shop Primed Surfaces. Where metalwork, equipment, valves and the like are shop primed, the primer used must be compatible with the coating system to be applied in the field. Full information shall be furnished regarding the shop prime coat and if not compatible with succeeding coats, in the opinion of the Owner's Representative, the shop prime coat shall be removed as directed by the coating's manufacturer or the Owner's Representative.

    e. Unknown or Noncompatible Materials. Items coated with an unknown paint system, or a primer or system which is not compatible with the specified system, shall be cleaned by an acceptable method and recoated with the specified coating system at the job site. When cleaning is not feasible, the Contractor shall

notify the Engineer and request permission to apply a barrier coat over the unknown or noncompatible material. The proposed barrier coat must be recommended in writing by the paint system manufacturer and is subject to review by the Engineer. Following application of the barrier coat, if permitted, the specified coating system shall be applied. Minimum dry film thickness shall be increased an amount equal to the barrier coat and unknown or noncompatible coats.

13. Surface Profile. The surface profile (anchor pattern) shall be as recommended by the coatings manufacturer and determined by visual comparators or profile tape.

B. Application

1. General.

a. All materials shall be applied in accordance with the coatings manufacturer's recommendations and shall be performed in a workmanlike manner by experienced workmen.

b. All surfaces shall be free of dust and other contaminants prior to coating.

c. All application equipment shall be electrically grounded as required and have clean operating gauges, moisture traps, etc.

d. Manufacturer's Representative. The coating manufacturer shall be responsible, through an authorized representative, to provide technical assistance to the paint contractor as needed.

2. Environmental Conditions. Coatings shall not be applied under the following conditions unless specifically authorized in writing by the coatings manufacturer and/or Engineer:

a. Surface temperature of the surface to be coated is at/or below 50°F or is expected to fall to or below 50°F within 4 hours of coating application.

b. Surface temperature of the surface to be coated is at 135°F or above.

c. The relative humidity is 85% or greater.

d. The temperature is within 5°F of the dew point or is expected to drop to that level within 8 hours of application.

e. Surfaces to be coated are wet or damp.

f. Misting rain, snow, fog or dust-laden air.

g. Excessive wind velocity (exterior).

3. System Compatibility. Unless specifically approved by the Engineer/Owner, coatings from different manufacturers may not be mixed within a coatings system.

4. Safety Precautions.

a. Contractor shall comply with applicable regulations set forth in the Code of Federal Regulations, OSHA Health and Safety Standards 29CFR- 1926/1910, latest edition.

b. Contractor shall comply with the applicable regulations set forth in the Texas Natural Resource Conservation Commission (TNRCC) Chapter 101, General Rules, Paragraph 101.4, concerning Nuisance Emissions and Chapter 111, Control of Air Pollution From Visible Emissions and Particulate Matter, Abrasive Blasting Of Water Storage Tanks Performed By Portable Operations, Paragraphs 111.131 through 111.139.

c. Surrounding equipment, fixtures, etc., shall be protected with drop cloths or other appropriate shielding from drops and overspray. Surfaces which are contaminated shall be cleaned and, if necessary, repainted.

d. The Contractor must provide adequate forced air ventilation while cleaning and painting. Ventilation shall be adequate to remove fumes, preventing injury to workmen or possible accumulation of volatile gases.

e. Proper and adequate illumination equipment shall be provided including explosion proof equipment where required by the Engineer/Owner.

f. Fresh air hoods shall be provided for painters and inspectors as necessary.

g. Warnings. Display caution signs in necessary areas advising of spray painting and warning against open flames.

5. Special Instructions.

a. In multi-coat systems, each coat shall be a different color to verify adequate coverage. However, the coat just prior to the finish coat, as necessary, may be tinted to approximately the same color as

the finish coat to ensure adequate hiding.

b. The use of spray-painting equipment which diffuses paint and compressed air or generates paint fog or permits paint spray to become air-borne will not be permitted. Paint shall not be applied when conditions are such that windblown driftage, insects or moisture can collect on the freshly applied paints.

c. The Contractor shall take all necessary precautions to prevent paint from being scattered or windblown during application and shall be responsible for any and all damages due to settlement of paint on dwellings, structures, vehicles, or property in the vicinity of the work.

d. All cloths and cotton waste which might constitute a fire hazard shall be placed in covered metal containers or destroyed at the end of each work day. Upon completion of the work, all scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Paint spots, oil or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

e. The sequence to be followed in painting shall be such that a minimum of damage to finished coatings will result.

6. Curing. Special consideration shall be given to drying and curing times of coatings as recommended by the coatings manufacturer.

C. Inspection/Quality Assurance

1. Materials, Equipment and Coating System. All materials and equipment used in the accomplishment of the job are subject to inspection at any time by the Engineer and/or Owner's Representative. All steps in the coating system shall be subject to inspection prior to progressing to succeeding steps. Phases of inspection shall include but not be limited to:

Pre-cleaning (surface preparation) survey of facilities to painted. During surface preparation and prior to coating inspection.
During and immediately after each coating application.

2. General Conditions for Inspection. Contractor shall not move or remove scaffolding, ladders or other fixtures necessary to provide proper inspection until such action has been approved by the Owner's Representative.

3. Surface Preparation.

a. Metal surfaces shall be inspected using the latest revision of the

Steel Structures Painting Council definitions and approved equipment and procedures. NACE (National Association of Corrosion Engineers)

definitions and standards and SSPC-Vis1-89 may also be used at the discretion of the Engineer.

b. Other surfaces shall be inspected in accordance with these specifications as previously defined.

4. Dry Film Thickness Measurements.

a. Ferrous metal surfaces will be checked using an acceptable magnetic pull- off (Type 1) or single fixed probe (Type II) gauge as described in SSPC- PA-2.

b. Non-magnetic surfaces will be checked with an approved wet film gauge.

c. Where non-magnetic surfaces are too irregular to be checked with a wet film gauge, estimated film thicknesses will be arrived at using coating manufacturer's published coverage rates and uneven color or shadowy appearance.

5. Methods and Procedures. Unless otherwise specified, inspection procedures shall be in accordance with the latest revision of AWWA D102, Section 8.

6. Finish. All finish coats shall be inspected visually and shall be free of all unsightly sags, runs, bubbles, drips, waves, laps, unnecessary brush marks, overspray, environmental contaminants or other physical defects and shall be uniform in color.

7. Inspection Tools. The inspection tools which may be used without precluding the use of others are shown below:

Wet Film Gauge.
Magnetic Pull-Off (Type I) or Single Probe (Type II) Gauge.
National Bureau of Standards Calibration Chips for Type I DFT
Gauge. Plastic Shims for calibrating Type II DFT Gauge.
Low voltage, wet sponge pinhole/holiday detector such as a Tinker & Rasor Model M-1.
SSPC or ISO Pictorial Standards.
Profile Comparators (Clemtex, K-Tator).
Replica Tape for measuring anchor pattern (surface
profile). Blast Hose Needle Gauge.
Blast Nozzle Aperture Gauge.
Sling Psychrometer with
Charts. Inspection Mirror.
Surface Temperature (thermometers).

D. Reporting/Records

1. Inspections. All inspections shall be recorded and shall include, but not be limited to, the following information:

Date
Time of Day
Job Identification
Engineer
Contractor and Sub-Contractor
Specified Coating System
Specified Surface Preparation
Coatings Manufacturer and Product Batch Numbers being used Weather Conditions - Temperature (Air and Surface)
- Humidity/Dew Point
- Wind
Velocity/Direction Remarks/Results of Inspection

2. Daily Work Reports. The Contractor will be required to furnish to the Engineer or Owner's Representative copies of daily work reports. These work reports shall include, but not be limited to, the following information:

Date - Start up and shut down time.
Names of personnel on job.
Tasks performed by individual personnel with time frame required to perform tasks.
Equipment being utilized.
Materials and quantities used.
Weather conditions and time taken (minimum twice daily) -
Temperature (air and surface)
Humidity/dew point
Wind velocity/direction
Work accomplished with remarks concerning equipment breakdown and/or any job irregularities.

E. Repairs of Defects

1. Exterior and Cosmetic Surfaces. Exterior and/or cosmetic surfaces will be repaired using the same material and matching color.

2. Low Film Thicknesses. Inspections discovering low film thicknesses at a significant number of inspection points may require additional coat(s) of material at the discretion of the Engineer/Owner or Construction Observer. These additional coats will be at the Contractor's expense.

F. Guarantee

The Contractor shall guarantee the job against defective materials and workmanship for a period of 1 year from the date of acceptance of the job by the Owner. On or about the 11th month of service, the facilities will be cleaned and inspected. At that time, all rust spots and other defects in the coating system shall be repaired as necessary at the Contractor's expense. Repairs will be made within 30 days after written notice by the Engineer/Owner.

G. Coatings Systems and Schedule

1. **Valves.** Shall include Check Valves, Gate Valves, Butterfly Valves, Surge Relief Valves and appurtenances to be located above ground or in a vault.

   Coatings System.
   Shop Coat: Tnemec Series 20-1211 Red Pota-Pox
   applied at 3.0-5.0 dry mils.
   Second Coat: Tnemec Series 140-1255 Beige Pota-Pox Plus
   applied at 6.0-8.0 dry mils.
   Third Coat: Tnemec Series 140-AA90 White Pota-Pox Plus
   applied at 6.0-8.0 dry mils.
   Total dry film thickness shall be 15.0 mils. minimum and 21.0 mils. maximum.

2. **Ductile Iron Pipes.** Shall include Ductile Iron Pipes, Ductile Iron Fittings, Dresser Couplings, Ductile Iron Spool Pieces and appurtenances to be located above ground or in a vault.

   Coatings System.
   Prime Coat: Tnemec Series 140 Pota-Pox Plus applied at 6.0-8.0 mils. Finish Coat: Tnemec Series 75 Endura-Shield applied at 3.0-5.0 mils. Total dry film thickness shall be 9.0 mils. minimum and 12.0 mils. maximum.

3. **Pumps.** Shall include "T" Head with Suction and Discharge Flanges, Sole Plates and appurtenances to be located above ground.

   Coatings System.
   Shop Coat: Tnemec Series 20-1211 Red Pota-Pox
   applied at 3.0-5.0 dry mils.
   Second Coat: Tnemec Series 140-1255 Beige Pota-Pox Plus
   applied at 6.0-8.0 dry mils.
   Third Coat: Tnemec Series 140-AA90 White Pota-Pox Plus
   applied at 6.0-8.0 dry mils.
   Total dry film thickness shall be 15.0 mils. minimum and 21.0 mils. maximum.

4. **Pump Cans.** Shall include steel pump can located above and below grade. Interior and exteriors surface shall be coated.

   Coatings System.
   Shop Coat: Tnemec Series 20-1211 Red Pota-Pox
   applied at 3.0-5.0 dry mils.
   Second Coat: Tnemec Series 140-1255 Beige Pota-Pox Plus
   applied at 6.0-8.0 dry mils.

Third Coat: Tnemec Series 140-AA90 White Pota-Pox Plus
applied at 6.0-8.0 dry mils.

Total dry film thickness shall be 15.0 mils. minimum and 21.0 mils. maximum.

5. **Pipe Supports.** Shall include all steel pipe supports and appurtenances to be located above ground or in a vault.

Coatings System.
Shop Coat: Tnemec Series 20-1211 Red Pota-Pox
applied at 3.0-5.0 dry mils.
Second Coat: Tnemec Series 140-1255 Beige Pota-Pox Plus
applied at 6.0-8.0 dry mils.
Third Coat: Tnemec Series 140-AA90 White Pota-Pox Plus
applied at 6.0-8.0 dry mils.
Total dry film thickness shall be 15.0 mils. minimum and 21.0 mils. maximum.

H. Total Dry Thickness

1. For all exterior surfaces: Total dry film thickness of the new coating system shall be as specified above per SSPC dry film thickness inspection standards.

2. Engineer shall verify and record the average dry film thickness of the existing coating system, if applicable, (per SSPC average dry film thickness standards) prior to application of the new coating system. The total dry film thickness of the existing system and newly applied system shall be the sum of the two.

## 4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work to be done or the equipment to be furnished under this item, but shall be considered subsidiary to the particular items of work for which unit prices are required in the proposal.

[*PLACE HOLDER FOR MAXWELL GENERAL DETAILS SCHEMATICS*]

APPENDIX "B"

**DROUGHT CONTINGENCY PLAN; PROVIDING FOR IMPLEMENTATION AND ENFORCEMENT THEREOF; PROVIDING PENALTIES FOR VIOLATIONS; AND CONTAINING OTHER PROVISIONS RELATED TO THE SUBJECT.**

## Section I: Introduction

1.01. Maxwell Special Utility District ("District") is a political subdivision of the State of Texas, created and operating under Chapters 49 and Chapter 65, Texas Water Code. The District converted from being a water supply corporation ("WSC") operating under Chapter 67, Texas Water Code, to a special utility district under authority granted by S.B. 1422, Acts 2019, 86th Leg., R.S., Ch. 559, eff. June 10, 2019. The District's qualified voters affirmed the creation of the District and conversion from a WSC to a special utility district in an election held on January 23, 2020. The District holds a Certificate of Convenience and Necessity, number 10293, to provide water utility service within its designated service area.

1.02. The District is a member of Canyon Regional Water Authority ("CRWA"), and as such the CRWA Water Conservation Plan and Drought Contingency Plan ("DCP") applies to the District. The District has adopted the use of the "Triggering Conditions" from CRWA, as detailed in Section IX.

## Section II: Declaration of Policy, Purpose, and Intent

2.01. In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the District hereby adopts the following regulations and restrictions on the delivery and consumption of water.

2.02. Water uses regulated or prohibited under this DCP are considered to be non essential and continuation of such uses during times of water shortage or other emergency water supply conditions are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section XII of this DCP.

## Section III: Public Involvement

Opportunity for the public to provide input into the preparation of the DCP is provided by the District by means of scheduling and providing public notice of a public meeting to accept input on the DCP.

## Section IV: Public Education

The District will periodically provide the public with information about the DCP, including information about the conditions under which each stage of the DCP is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of press releases, utility bill inserts and signs.

## Section V: Coordination with Regional Water Planning Groups

The District's service area is located within the South Central Texas Regional Water Planning Area Region "L". The District has provided a copy of this DCP to the South Central Texas Regional Water Planning Group.

## Section VI: Authorization

The General Manager of the District or designee is hereby authorized and directed to implement the applicable provisions of this DCP upon determination that such implementation is necessary to protect public health, safety, and welfare. The General Manager, or designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this DCP.

## Section VII: Application

The provisions of this DCP shall apply to all persons, customers, and property utilizing water provided by the District. The terms "person" and "customer" as used in the DCP include individuals, corporations, partnerships, associations, and all other legal entities.

## Section VIII: Definitions

For the purposes of this DCP, the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Commercial and institutional water use: water use which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

Conservation: those practices, techniques; and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

Customer: any person, company, or organization using water supplied by the District.

Domestic water use: water use for personal needs or for household or sanitary purposes such as

drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even number address: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

Industrial water use: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

Landscape irrigation use: the use of water for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Non-essential water use: water uses that are neither essential nor required for the protection of public, health, safety, and welfare, including:

(1) irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this DCP;
(2) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
(3) use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
(4) use of water to wash down buildings or structures for purposes other than immediate fire protection;
(5) flushing gutters or permitting water to run or accumulate in any gutter or street;
(6) use of water to fill, refill, or add to any indoor or outdoor swimming pools or hot tubs;
(7) use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
(8) failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
(9) use of water from hydrants for construction purposes or any other purposes other than fire fighting.

Odd numbered address: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

## Section IX: Triggering Criteria for Initiation and Termination of Drought Response Stages

9.01. The General Manager, or designee, shall monitor water supply and/or demand conditions on a weekly basis and shall determine when conditions warrant initiation or termination of each stage of the DCP. Public notification of the initiation or termination of drought response stages shall be by means of publication in a newspaper of general circulation, the District website, and signs posted in public places.

9.02. The District, as a member entity of Canyon Regional Water Authority, shall follow the trigger condition for the drought stages for areas served by the Edwards, related aquifers and Surface

Water Systems as identified on Page 5 of the August 2005 Canyon Regional Water Authority Drought Management Plan, as amended. Said trigger conditions and stages are described below.

9.03. Trigger Conditions and Water Conservation Measures for Areas Served by the Edwards and Related Aquifers

Stage 1 - Mild Water Shortage Conditions

(a) Trigger Conditions

Water level in Index Well AY-68-37-203 (j-17) in Bexar County declines to 650 feet,

(b) Requirements for Termination

Stage I of the DCP may be rescinded when the triggering condition cease to exist for a period of 5 consecutive days.

Stage 2 - Moderate Water Shortage Conditions

(a) Trigger Conditions

Water level in Index Well AY-68-3'7-203 (J-17) in Bexar County declines 640 feet.

(b) Requirements for Termination

Stage 2 of the DCP may be rescinded when the triggering condition cease to e><ist for a period of 5 consecutive days.

Stage 3 - Severe Water Shortage Conditions

(a) Trigger Conditions

Water level in Index Well AY-68-37-203 (J-17) in Bexar County declines to 630 feet.

(b) Requirements for Termination

Stage 3 of the DCP may be rescinded when the triggering condition cease to exist for a period of 5 consecutive days.

Stage 4 - Emergency Water Shortage Conditions

(a) Requirements for Initiation

Customers shall be required to comply with the requirements and restrictions for Stage 4 of this DCP when the General Manager or designee determines that a water supply emergency exists based on:

- Major water line breaks, or pump or system failures occur, loss of a storage tank, which cause unprecedented loss of capability to provide water service; or
- Natural or man-made contamination of the water supplies, including floods or other natural disasters.

(b) Requirements for Termination

Stage 4 of the DCP may be rescinded when all of the triggering conditions have ceased to exist for a period of 5 consecutive days.

9.04. Trigger Conditions and Drought Contingency Measures for Areas Served by Surface Water Systems

(a) Trigger Conditions

(1) Mild Water Shortage Conditions

Requirements for initiation - GBRA will recognize that a mild water shortage condition exists when:

Water in storage in Canyon Reservoir is equal to or less than elevation 895 feet mean sea level (msl) (274,800 acre-feet or approximately 72.5% full).

Requirements for termination - Stage I of the DCP may be rescinded when Canyon Reservoir returns to elevation 895 feet msl or greater for a period of 30 consecutive days. GBRA will notify its wholesale customers and the media of the termination of Stage I in the same manner as the notification of initiation of Stage 1 of the DCP.

(2) Moderate Water Shortage Conditions

Requirements for initiation - GBRA will recognize that a moderate water shortage condition exists when:

Water in storage in Canyon Reservoir is equal to or less than 890 feet mean sea level (msl) (242,872 acre-feet or approximately 64% full).

Requirements for termination - Stage 2 of the DCP may be rescinded when Canyon Reservoir returns to elevation 890 feet msl or greater for a period of 30 consecutive days. Upon termination of Stage 2, Stage I becomes operative.
GBRA will notify its wholesale customers and the media of the termination of Stage 2 in the same manner as the notification of initiation of Stage 2 of the DCP.

(3) Severe Water Shortage Conditions

Requirements for initiation - GBRA will recognize that a severe water shortage condition

exists when:

Water in storage in Canyon Reservoir is equal to or less than 885 feet mean sea level (msl) (213,386 acre-feet or approximately 56% full).

Requirements for termination - Stage 3 of the DCP may be rescinded when Canyon Reservoir returns to elevation 885 feet msl or greater for a period of 30 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. GBRA will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 3 of the DCP.

(4) Emergency Water Shortage Conditions

Requirements for initiation - GBRA will recognize that an emergency water shortage condition exists when:

- Mechanical or system failures occur, which cause unprecedented loss of capability to provide water service.
- Natural or man-made contamination of the water supply source(s).
- A drought of greater severity than the Drought of Record occurs,

Requirements for termination - Stage 4 of the DCP may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 30 consecutive days. GBRA will notify its wholesale customers and the media of the termination of Stage 4.

(b) Information and Education

Once trigger conditions and emergency measures have been approached, the public will be informed of the conditions, and measures to be taken. The process for notifying the public includes:

(1) Posting the Notice of Drought Conditions at City Halls, County Courthouses, Post Offices, Public Libraries, Senior Citizens Centers, and Major Supermarkets.

(2) General Circulation to newspapers.

(3) Notifying local radio and television stations.

(c) Termination Notification

Termination of the drought measures will take place when the trigger conditions which initiated the drought measures have subsided, and an emergency situation no longer exists. The public will be informed of the termination of the drought measures in the same manner that they were informed of the initiation of the drought measures through the officials in charge.

**Section X: Drought Stages Responses Measures**

The General Manager or designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in Section IX of the DCP, shall determine that a mild, moderate, severe or emergency condition exists and shall implement the following actions upon publication of notice in a newspaper of general circulation.

(a) Stage 1 - Mild Water Shortage Conditions

Goal: Achieve a voluntary 5 percent reduction in total water use.

Supply Management Measures: the District shall reduce or discontinue flushing of water mains as far as is practical and prudent.

Water Use Restrictions:

(1) Landscape watering with an irrigation system or sprinklers permitted only one day/week. Based on last digit of street address, the following schedule applies:

0,1 - Monday
2,3 - Tuesday
4,5 - Wednesday
6,7 - Thursday
8,9 – Friday

(2) Watering with a hand-held hose, soaker hose or drip irrigation is permitted.
(3) Charity car washes permitted at commercial car washes that use recycled water or are certified as a conservation car wash.
(4) Washing impervious cover such as parking lot, driveway, street or sidewalk prohibited.
(5) Restaurants may serve water only upon request.
(6) Pools must be covered at least 25% when not in use.
(7) Vehicle washing at home permitted only during designated days and times.
(8) Golf courses - 10% reduction in replacement of daily evapotranspiration (ET) rate or 1.8 times the base usage irrigation between hours of 8:00 p.m. and 10 a.m.
(9) Installation of new landscapes permitted only if more than 50% is drought tolerant turf and if proper horticultural practices are used. Variances may be granted.
(10) Athletic fields - watering permitted only between midnight and 9 a.m. for health and safety reasons, unless conservation plan approved by Maxwell.

(b) Stage 2 - Moderate Water Shortage Conditions

Goal: Achieve a 10 percent reduction in total water use.

Supply Management Measures: Continuing steps in Stages 1, the District will closely monitor the system for leaks and provide rapid repairs.

Water Use Restrictions:

(1) All restrictions from Stage 1are still in effect.
(2) Landscape watering with an irrigation system or sprinkler permitted on one day/week on same schedule as Stage I during the hours of 3 a.m. to 8 a.m. and 8 p.m. to 10 p.m.
(3) Watering with a hand-held hose, soaker hose or drip irrigation is permitted to maintain trees, shrubs and other ornamental plants on any day between 3 a.m. to 8 a.m. and 8 p.m. to 10 p.m.
(4) Filling all new and existing swimming pools is prohibited. Draining permitted onto pervious surface and only if necessary to repair leaks or remove excess water in order to have water level to maintenance level.
(5) Golf courses - 30% reduction in replacement of ET rate or 20% reduction if a participant in ISP or not more than 1.4 times base usage. 40% reduction of ET rate or not more than 1.4 times base usage if not participant irrigation between 8 p.m. and 10 a.m. only.
(6) Pools must be covered at least 50% when not in use.
(7) Installation of non-drought turf is prohibited.
(8) Public playing fields - watering permitted only between midnight and 9:00 a.m. to extent necessary to protect health and safety, unless conservation plan approved by the District.

(c) Stage 3 - Severe Water Shortage Conditions

Goal: Achieve a 15 percent reduction in daily water demand.

Supply Management Measures: Continuing steps in Stages 1, 2 & 3 the District will patrol the system for any waste of water and will issue citations as required. Reduce system pressures where feasible.

Water Use Restrictions:

(1) All restrictions from Stage 1& 2 are still in effect.
(2) Landscape watering with an irrigation system or sprinkler is prohibited.
(3) Watering with a hand-held hose, soaker hose or drip irrigation is permitted to maintain trees, shrubs and other ornamental plants only one day/week between 3 a.m. to 8 a.m. and 8 p.m. to 10 p.m. Based on last digit of street address, the following schedule applies:

0,1 - Monday
2,3 - Tuesday
4,5 - Wednesday
6,7 - Thursday
8,9 - Friday

(4) Filling all new and existing swimming pools is prohibited. Draining permitted onto

pervious surface and only if necessary to repair leaks or remove excess water in order to have water level to maintenance level.

(5) Golf courses - 40% reduction in replacement of ET rate or 30% reduction if a participant in ISP or not more than 1.2 times base usage. 40% reduction of ET rate or not more than 1.2 times base usage if not participant irrigation between 8 p.m. and 10 a.m. only.

(6) Pools must be covered at least 75% when not in use.

(7) Installation of non-drought turf is prohibited.

(8) Public playing fields - watering permitted only between midnight and 7:00 a.m. to extent necessary to protect health and safety, unless conservation plan approved by the District.

(d) Stage 4 - Emergency Water Shortage Conditions

Goal: Return System to Non-Emergency Conditions as soon as possible

Supply Management Measures: Continuing steps in Stages 1,2, & 3, the supplier will reduce the system operating pressure.

Water Use Restrictions:

All restrictions in Stage I, II, and Ill remain applicable and emergency conditions exits. The the District Board shall meet within 48 hours of the initiation of stage N to consider and adopt rules restricting non-discretionary and discretionary uses and to prevent danger to the public health, safety or welfare posed by said emergency conditions.

## Section XI: Water Rationing

11.01. In the event that water shortage conditions threaten public health, safety, and welfare, the General Manager is hereby authorized to ration water according to the following water allocation plan.

11.02. A customer's monthly allocation for water shall be based on a system-wide ratio multiplied times customer's winter average water use. The District's Board of Directors will set the system wide ratio by resolution as conditions warrant.

11.03. The District Board of Directors will also set a surcharge rate for excessive water use by resolution as conditions warrant.

11.04. The General Manager, or designee, shall provide notice by mail to each customer informing them of their water use allocations and shall notify the news media and the Executive Director of Texas Commission on Environmental Quality upon initiation of pro rata water allocation.

## Section XII: Enforcement and Penalties

Pursuant to 30 TAC 288.20(a)(1)(K), the following penalties and procedures apply to the enforcement of any mandatory water use restrictions.

First Violation: Written warning provided to the person or entity in violation of this DCP.

Second Violation: A fine will be assessed in the amount equal to the average monthly bill for the prior year of the person or entity charged with the violation.

Third Violation: A fine will be assessed in an amount equal to twice the average monthly bill for the prior year of the person or entity charged with the violation.

Fourth Violation: Service will be disconnected. Service will resume only after payment of all fees required to resume service after disconnection as defined in the District's Rate Order and all fines assessed pursuant to this DCP.

## Section XIII: Variances

13.01. The General Manager, or designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this DCP if it determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance and if one or more of the following conditions are met:

(a) Compliance with this DCP cannot be technically accomplished during the duration of the water supply shortage or other condition for which the DCP is in effect.
(b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

13.02. Persons requesting an exemption from the provisions of this DCP shall file a petition for variance with the District within 5 days after the DCP or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the General Manager, or designee, and shall include the following:

(a) Name and address of the petitioner(s).
(b) Purpose of water use.
(c) Specific provision(s) of the DCP from which the petitioner is requesting relief
(d) Detailed statement as to how the specific provision of the DCP adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this DCP.
(e) Description, of the relief requested.
(f) Period of time for which the variance is sought.
(g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this DCP and the compliance date.
(h) Other pertinent information.

13.03. Variances granted by the District shall subject to the following conditions, unless

waived or modified by the General Manager or designee.

(a) Variances granted shall include a timetable for compliance.
(b) Variances granted shall expire when the DCP is no longer in effect, unless the petitioner has failed to meet specified requirements.

13.04. No variance will be retroactive or otherwise justify any violation of this DCP occurring prior to the issuance of the variance.

## Section XIV: Severability

The sections, paragraphs, sentences, clauses, and phrases of this DCP are severable and, if any phrase, clause, sentence, paragraph, or section of this DCP is declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections.