

Bid Proposal, Plans & Technical Specifications
for the:

El Cenizo Control Valve Improvements

WEBB COUNTY, TEXAS



Webb County Judge
Honorable, Tano E. Tijerina

Commissioner, Pct 1
Jesse Gonzales

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Rosaura "Wawi" Tijerina

Commissioner, Pct 3
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Prepared by:



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WEBB COUNTY - EL CENIZO CONTROL VALVE IMPROVEMENTS - BID SCHEDULE

ITEM NO.	ITEM DESCRIPTION (1)	UNIT	EST. QTY.	UNIT PRICE	TOTAL AMOUNT BID
Schedule of Unit Price Work - BASE BID					
1	Furnish and Install a "Motor Operated Valve Assembly" Complete with all Valves, Actuator, Meter, Piping, Fittings, Accessories and all Incidentals, Complete in Place at _____ Dollars and _____ Cents Per Lump Sum	L.S.	1	\$	\$
2	Furnish and Install a "Pressure Reducing Valve" Complete with all Valves, Vaults, Piping, Fittings, Accessories and all Incidentals, Complete in Place at _____ Dollars and _____ Cents Per Lump Sum	L.S.	1	\$	\$
3	Furnish and Install a "Plant Piping and Valves" Complete with all Excavation, Piping, Valves, Fittings, Interconnections and Incidentals, Complete in Place at _____ Dollars and _____ Cents Per Lump Sum	L.S.	1	\$	\$
4	Furnish and Install Chain Link Fence & Gates with Barb Wire and Privacy Slats at _____ Dollars and _____ Cents Per Linear Foot	LF	72	\$	\$
5	Furnish, Install & Maintain Barricades and Traffic Control at _____ Dollars and _____ Cents Per Lump Sum	LS	1	\$	\$
TOTAL BASE BID ITEMS				\$	

TOTAL BASE BID - PRICE IN WORDS: \$

Notes:

- 1. In the event of a discrepancy, this amount shall govern.**
- 2. The Owner has the right to reject any or all bids, or otherwise award in its best interest.**

PROJECT: El Cenizo Control Valve Improvements

Contractor: _____

Bidder's Signature: _____

Address: _____

Name: _____

Title: _____

City

State

Zip Code

Telephone Number: _____

Date: _____

Fax Number: _____

INFORMATION FROM BIDDERS
MUST BE FULLY COMPLETED AND SUBMITTED WITH BID PROPOSAL

This form shall become part of the Bid and Contract. Any post-bid revisions to the listed information will be subject to approval or denial by the Owner & Engineer.

Statement of Qualifications: (Similar **WATER MAIN & CONTROL VALVE** Projects Completed by Bidder)

- 1. Name of Project: _____ Date Completed: _____
 Location: _____ Owner Name & Phone: _____
 Value of Contract: _____ Engineer Name & Phone: _____
- 2. Name of Project: _____ Date Completed: _____
 Location: _____ Owner Name & Phone: _____
 Value of Contract: _____ Engineer Name & Phone: _____
- 3. Name of Project: _____ Date Completed: _____
 Location: _____ Owner Name & Phone: _____
 Value of Contract: _____ Engineer Name & Phone: _____

Bidders shall verify all References listed above are current Names and direct Phone No.

INFORMATION FROM BIDDERS

Suppliers & Subcontractors: (Submit a list of **ALL** proposed Subcontractors.
(List sources, types and manufacturers of **ALL** proposed construction materials).

Pipe, Valves & Fittings : _____ Firm Written Offer? ___ Yes, ___ No

Control Valves & Meters: _____ Firm Written Offer? ___ Yes, ___ No

Concrete & Aggregate: _____ Firm Written Offer? ___ Yes, ___ No

List **ALL** Other Subcontractors to be used:

*NOTE: Failure to provide the requested information shall be cause for bid rejection.
"TO BE SUBMITTED UPON REQUEST", etc. is **NOT** an acceptable answer.*

INFORMATION FROM BIDDERS

Have firm offers from suppliers and/or manufacturers been used to determine the unit bid prices for all major items of work listed in your signed Bid Proposal? Yes, No

Experience Data: (Include name and experience record of the Superintendent)

List of projects that your business currently has under contract:

<u>Contract Amount</u>	<u>Type of Work</u>	<u>% Complete</u>	<u>Owner Name & Number.</u>

(Attach additional projects on separate sheets)

Data on Equipment to be used on the Work: (Include the number of machines, the type, capacity, age and conditions, location, equipment owner’s name) (Attach separately as required; include subcontractor’s equipment list, if subcontracting major work items)

<u>Type</u>	<u>Model</u>	<u>Age</u>	<u>Condition</u>	<u>Location</u>	<u>Company/Owner Name</u>

NOTE: Failure to provide the requested information shall be cause for bid rejection. “TO BE SUBMITTED UPON REQUEST”, etc. is NOT an acceptable answer.

TECHNICAL SPECIFICATIONS

Contractor shall adhere to all technical specifications as therein called for by The City of Laredo Specification Manual (2013 Edition) for the City of Laredo according to Ordinances # 2004-0-018, dated 2/2/04, adopted by The City of Laredo City Council and all other specifications as hereto added or forming part of this project.

A copy of the document can be viewed at the City's website at:

<http://www.ci.laredo.tx.us/>

Then, click on "City Departments",
Then, on "Planning and Zoning",
Then, on "Books and Manuals", then on
"Standard Technical Specifications Manual"

Or, click directly on the following link:

http://www.cityoflaredo.com/city-planning/Books_and_Manuals/Standard_Technical_Specifications_Manual.pdf

All subsequent special technical specification references to the "City" or "City Specification" are intended to identify the City of Laredo Specification Manual listed above.

SPECIAL TECHNICAL SPECIFICATION MOTOR OPERATED VALVE ASSEMBLY

DESCRIPTION

This item consists of furnishing and installing above grade motor operated butterfly valve, electromagnetic flow meter, piping and appurtenances, as shown on the plans and specified herein.

MATERIALS

Ductile Iron Water Mains shall comply with the requirements of the plans and the City's "Ductile Iron Pipe" specification.

Gate valves and valve box shall conform to the provisions of the City specification entitled "Gate Valves".

Fittings shall conform to the provisions of the specification entitled "Ductile Iron Fittings".

Pipe and fitting restraints shall conform to the provisions of the City specification entitled "Pipe Joint Restraint Systems".

Motor Operated Valve:

The motor operated valve shall be an 8" butterfly valve with an integrated actuator capable of rotating, throttling and closing the valve through an electrical and instrumentation interface with telemetry.

- A. Butterfly Valve shall be 8" AWWA C504 valve meeting the requirements of the City's "Butterfly Valve" specification with ten position locking levers, as manufactured by DeZurik, or approved equivalent.
- B. Actuator shall be a Rotork Model Number will be IQTM250 FA10 (IP68) 3 Phase, 240 Volt, 60 Htz, or approved equivalent with the following equipment:
 1. Enclosure: Actuator terminal compartment is sealed internally and externally 'Double-Sealed' watertight IEC/BS EN 60529, IP66/IP68 - 20 meters/10 days
 2. Service Duty Rating: Class B (Inching), Modulating Option – Actuator to have solid state starter with an F rated insulated motor capable of doing 1200 starts per duty cycle. The motor shall be capable of opening and closing between preset valve limits and/or throttling to a preset flow (900 gpm) from SCADA signal from flow meter.
 3. Motor Switching and Speed Control: Solid state motor switching incorporating 25% to 100% motor speed control. Motor speed shall be set to its minimum to maximize opening and closing time (full open/close 30 to 60 seconds).
 4. Auto Phase rotation correction and lost phase protection on 3 phase supplies.
 5. Integral illuminated, digital valve position indicator showing 0.1% increments in valve position with closed and open valve limit symbols, torque or other status data.
 6. Three LED's for local indication; red-open, yellow-intermediate, green-closed (can be reversed), blinker configurable.

SPECIAL TECHNICAL SPECIFICATION MOTOR OPERATED VALVE ASSEMBLY

7. Red, padlockable Local Control/Stop/Remote Control selector, Black, Open/Close selector.
8. Pad lockable manual override clutch lever, clockwise to close handwheel, non-rotating during electric operation
9. Battery Support for Power Off Conditions: The battery is not required for position sensing it does however support the LCD display, operation of indication relays, commissioning and data logging functions in the absence of mains power. During power off condition the valve shall maintain its current position.
10. Position Sensor: Absolute encoder provides continuous high resolution position measurement which is fully maintained during manual operation and without a power supply or battery support.
11. Externally and internally sealed terminal enclosure with two threaded cable entries.
12. Non-intrusive limit setting, commissioning and control configuration using the supplied Infra-red/Bluetooth Setting Tool.
13. Paint Finish: Polyester powder coating applied by electrostatic means to 100 micron nominal thickness. Top coat colour OO-A-05 (silver grey).
14. Sun-Flap shall be installed over the screen.

The integrated motor operated valve unit shall be ready for direct connection to power supply and instrumentation (separately installed by the Owner's telemetry consultant). The Contractor shall be present at a mutually agreed date to perform product testing within three (3) months of project completion at no additional cost to the Owner.

Additional Equipment:

Electromagnetic flow meter shall be 8" diameter, 240 Volt, 60 Htz, accurate to within 0.5% of actual test flows at a velocity range of 0.2 to 32.0 ft/sec. Liner shall be NSF approved, fusion bonded epoxy. The unit shall include 4-20mA output cables for telemetry interfacing (connection by others) and a converter sun shield. The meter shall be McCrometer Ultra Mag, Model UM06/UM08, or approved equivalent. The Contractor shall be present at a mutually agreed date to perform product testing within three (3) months of project completion at no additional cost to the Owner.

Air release valve shall be of the single housing style that combines the operating features of both an Air/Vacuum and Air Release Valve model no. D-060, as manufactured by A.R.I. Flow Control Accessories, or approved equivalent. Piping shall be brass or stainless steel, threaded to match air valve and service saddle or pipe tap. Shut off valve shall be stainless steel ball valve with hand lever. Install a standard hose bibb as part of ARV riser pipe, above the shut-off valve, as shown on the plans.

Couplings shall be Ebaa MegaFlange, Dresser, Smith-Blair Couplings or equivalent.

Pipe Supports: All above ground piping shall be provided with reinforced concrete supports (CL A, 3,000 psi), as shown in the plans.

SPECIAL TECHNICAL SPECIFICATION MOTOR OPERATED VALVE ASSEMBLY

Paint: All above ground piping, fittings and valves shall be furnished with a shop prime and painted with a blue epoxy or enamel paint, 3 to 6 mils, minimum thickness.

SUBMITALS

Prior to ordering, the Contractor will be required to provide detailed shop drawing submittals on all materials including dimensions piping layouts for Engineer's approval.

OPERATION MANUAL

Prior to final payment, the contractor will furnish the Owner with two (2) sets of Operation and Maintenance manuals for the motor operated valve and flow meter with associated parts list.

CONSTRUCTION METHODS

Pipe, Valve & Meter Placement: Piping, motor operated valve and magnetic flow meter will be placed according to the manufacturer's recommendations with good workmanship, all plumb and level in horizontal or vertical position according the plans. Tie rods shall be used across all dresser couplings. Provide steel adjustable braces as required.

Valve & Meter Testing: The contractor and/or equipment manufacturer shall provide a qualified service representative properly trained in the inspection and operation of motor operated valve and electromagnetic flow meters to approve the installation, test the equipment, and instruct the Owner's personnel on the maintenance and operation of each unit after power and instrumentation have been supplied to the site by the Owner, but no later than three (3) months after project completion and Owner acceptance. The inspection and testing date shall be coordinated through the Owner but shall not exceed a single day.

MEASUREMENT

Motor Operated Valve Assembly will be measured per each lump sum unit, complete to furnish and install all items of construction shown in the plans and specified herein.

PAYMENT

Payment for each "Motor Operated Valve Assembly" will be made at the lump sum unit bid price, which price shall be full compensation for all materials, equipment, labor, excavation, couplings, valves, actuators, flow meters, concrete, piping, fittings, joint restraints, threaded pipe taps, painting, testing, disinfection, inspection, and other incidentals shown in plans and necessary to complete the installation and make the unit fully functional as intended.

SPECIAL TECHNICAL SPECIFICATION PRESSURE REDUCING VALVE

DESCRIPTION

This item consists of furnishing and installing pressure reducing valves, related piping, reinforced precast concrete vault and appurtenances, as shown on the plans and specified herein.

MATERIALS

Ductile Iron Water Mains shall comply with the requirements of the plans and the City's "Ductile Iron Pipe" specification.

Gate valves and valve box shall conform to the provisions of the City specification entitled "Gate Valves".

Fittings shall conform to the provisions of the specification entitled "Ductile Iron Fittings".

Coupling shall be Ebaa MegaFlange, Dresser, Smith-Blair Couplings or equivalent.

Vault: Shall be 6'-0"L X 4'-0"W X 5'-6"H (interior – refer to plans) reinforced precast concrete vault as manufactured by Capital Precast, Hanson Aggregates, or approved equivalent, with traffic strength galvanized cover, two (2) knockouts, with one (1) four inch drain hub and 2'x2' gravel fill drain sump. The 60" x 42" (5'x3.5') hatch cover shall have two (2) spring assisted, lockable doors with handles and bolt down mechanisms.

Pressure Gauges: Ashcroft, or equivalent 4 inch diameter, oil filled pressure gauges with shut-off cocks which register 0-100 psi will be set each side of the reducing valve and shall face up for reading from the surface. Brass piping shall be used for this purpose.

Pipe Supports: Anvil International, or equivalent adjustable, galvanized iron with 4 to 6 inch cradle and yoke sized to match pipe diameter and weight.

Stainless Steel Fasteners: All nuts, bolts, restraining rods, etc. used to fasten the entire valve and pipe assembly shall be fabricated from Type 316 stainless steel.

Paint: All piping and valves installed within vaults shall be furnished with a shop prime and painted with epoxy or enamel paint, 3 to 6 mils, minimum thickness.

Pressure Reducing Valve: Shall be an 8" pressure reducing, pilot operated regulator valve Model 90-01 as manufactured by CLA_VAL Co. or approved equivalent. The trim shall be stainless steel.

SUBMITALS

Prior to ordering, the Contractor will be required to provide detailed shop drawing submittals on all materials and piping layouts to the Owner for approval. The vault and

SPECIAL TECHNICAL SPECIFICATION PRESSURE REDUCING VALVE

hatch cover submittal shall be dimensioned, show the position of the required knock outs, and identify traffic bearing capacity (HS-20). Overall unit weight shall be listed for installation equipment rating purposes.

OPERATION MANUAL

Prior to final payment, the contractor will furnish the Owner with two (2) sets of Operation and Maintenance manuals for the valve, including therein, a parts list.

CONSTRUCTION METHODS

Pipe and Valve Placement: Piping and valves will be placed according to the manufacturer's recommendations and with good workmanship. Valves are to be placed vertically. Horizontal piping will be level. Tie rods shall be used across all dresser couplings. Provide steel adjustable braces as required.

Rock Excavation: All excavation work will be unclassified, no separate payment will be made for rock excavation or initial backfill.

Pressure Valve Setting and Testing: The contractor and/or equipment manufacturer shall provide a qualified service representative properly trained in the inspection and operation of pressure reducing valves to approve the installation, test the equipment, and instruct the Owner's personnel on the maintenance and operation of each unit. The inspection and testing date shall be coordinated through the Owner but shall not exceed a single day.

MEASUREMENT

Pressure Sustaining Valves will be measured per each lump sum unit, complete to furnish and install all items of construction shown in the plans and specified herein.

PAYMENT

Payment for each "Pressure Reducing Valve" will be made at the lump sum unit bid price, which price shall be full compensation for all materials, equipment, labor, excavation, couplings, valves, concrete vault, piping, fittings, joint restraints, painting, testing, disinfection, inspection, and other incidentals shown in plans and necessary to complete the installation and make the unit fully functional as intended.

SPECIAL TECHNICAL SPECIFICATION PLANT PIPING AND VALVES

DESCRIPTION

This item covers the furnishing and installation of all underground and exposed piping, fittings, couplings, and valves that are used in this project that is not specified as a component for equipment.

MATERIALS

PVC Water Mains shall be PVC C-900, DR-18 and comply with the requirements of the plans and the City's "PVC Water Pipe" specification.

Gate valves and valve box shall conform to the provisions of the City specification entitled "Gate Valves".

Fittings shall conform to the provisions of the specification entitled "Ductile Iron Fittings".

Pipe and fitting restraints shall be provided at all fittings, valves, and along pipe length identified in the plans and details and shall conform to the provisions of the City specification entitled "Pipe Joint Restraint Systems".

GALVANIZED PIPE: Shall meet current AWWA Standard Specification 7A.3 (1) and 7A.4 (2) Schedule 40 (ASA B-36-10) steel pipe and shall be heavily zinc coated by the Hot-Dip process in accordance with the latest ASTM Specifications.

COPPER PIPE: Shall conform to the requirements of Federal Specification WW-T-799, Type "K"

CONCRETE THRUST BLOCKING: Concrete Thrust Blocking with plastic polyethylene wrap shall be provided in addition to fitting restraints at interconnection points, as shown in the plans. Concrete for thrust blocks shall be proportioned to develop a compressive strength of 2500 pounds per square inch in twenty-eight (28) days.

JOINTS: All exposed pipe shall have flanged joints. All underground pipe shall have slip joint fittings.

CONSTRUCTION METHODS

PIPE CUTTING AND JOINTING: The cutting of all pipe shall be done with standard wheel pipe cutters. Pipe may be cut in the field and field machined for coupling purposes. Standard adapters and pre-machined sections may be used where required.

Jointing Pipe: (1) Cleaning Before Jointing: The machined ends of pipe to be jointed, the coupling grooves and rubber rings shall be cleaned immediately before assembling. (2) Assembly of the Coupling: The assembly shall be made as recommended by the manufacturer. (3) Checking Rubber Ring Locations: The location of field assembled rings shall be checked with a suitable gauge to verify that rubber rings are in the

SPECIAL TECHNICAL SPECIFICATION PLANT PIPING AND VALVES

required position. (4) Deflection of Pipe at Joints: Pipe shall not be deflected either vertically or horizontally in excess of that recommended by the manufacturer.

EXCAVATION: Excavation shall comply with the requirements of the plans and the City's "Excavation and Backfill for Utilities" specification.

During excavation, material suitable for backfilling shall be stockpiled in orderly and manner a sufficient distance from banks of the trench to avoid overloading and to prevent slides or cave ins. All excavated materials not required or suitable for backfill shall be removed and properly disposed of by the Contractor or as directed by the Engineer. Grading shall be done as may be necessary to prevent surface water from flowing into trenches or other excavations, and any water accumulating therein shall be removed by pumping or by other approved methods.

Excavation stockpiles shall not block driveways or hinder access and must be removed and disposed as to not exceed one City block in length (~300 feet) in residential areas. Streets shall be cleaned with approved equipment immediately after stockpile removal.

Sheeting and shoring shall be installed in accordance with OSHA safety requirements for the protection of the work, adjoining property, and for the safety of the personnel. Unless otherwise indicated, excavation shall be by open cut, whether by hand, backhoe, ram-hoe, rock saw, or other method as necessary. Short sections of a trench may be tunneled, if in the opinion of the Engineer representing the Owner, the pipe or structure can be safely and properly installed or constructed and backfill can be properly compacted in such tunnel sections.

ROCK EXCAVATION: All excavation work will be unclassified, no separate payment will be made for rock excavation, sand backfill, or trench dewatering, if encountered. Blasting of rock is prohibited.

TIE INTO EXISTING MAINS: The Contractor shall make all ties to existing mains required by the plans as soon as pipe laying reaches the designated location, after the new main has been accepted for service by the Owner. Ties to existing mains shall consist of wet and dry connections. "Wet connection" is a connection to a water main under pressure and is made by a pipe tapping machine without interrupting service to customers. A "dry connection" is a connection to a water main, while the main is empty.

The cost to furnish and install all materials used in making tie-ins, such as extra pipe, thrust restraint systems, sleeves, couplings, caps, plugs, etc., will not be paid for separately, but will be considered fully subsidiary to "Interconnections", when such an item is provided in the bid schedule, as described below. For all other interconnections, all related costs shall be included in the unit bid price of various pipe bid items. Relaying of existing lines to achieve grade or alignment will not be paid for separately. Abandoned mains shall be concrete capped.

SPECIAL TECHNICAL SPECIFICATION PLANT PIPING AND VALVES

The Contractor will confer with the Owner as to the time for making interconnections or wet connections, and the Owner's representative shall be present when any interconnections are made. There is no additional payment for night or weekend work if required by the City for interconnections. The Contractor will not operate existing valves except as authorized by the Owner.

In general, interconnections will not be paid for separately with new lines that are being constructed in accordance with the plans. Where necessary, the Contractor shall furnish, install, and remove any necessary "jumpers", taps and temporary blow-offs needed to test and flush new mains prior to connection to existing lines.

TESTING AND DISINFECTION: All pipe will be tested at 150 psi for 4 hours with no leakage. Contractor to furnish all materials and labor to test, disinfect and flush, including temporary flush valves. There will be no separate pay item for testing and disinfection.

FLUSHING AND DISINFECTION: After pipe and fittings have been laid, and prior to testing, chlorine (either liquid, gaseous or powdered) shall be applied inside the line and the line filled with water in accordance with the State (TCEQ) Specifications.

CLEANING AND RESTORATION OF THE SITE: 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/her own expense. Excavated rock shall be disposed of by the Contractor off-site.

The Contractor shall restore all disturbed areas to their original condition, except that, with approval by the Project Inspector and the land Owner, he may leave a sufficient windrow of dirt over uncompacted backfill to care for future settlement. 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. Any driveways or shape contours along the route of the work shall be restored to prevent erosion or ponding.

MEASUREMENT AND PAYMENT

All piping, fittings and valves will be measured and paid for at the lump sum unit price bid for "Plant Piping and Valves". Separate payment will be made for piping, fittings and valves only where specifically provided in the bid proposal. Piping and valves related to separately listed bid items shall be included with those unit bid prices. All other work will be considered subsidiary to the "Plant Piping and Valves" bid item. Payment shall be considered full compensation for furnishing and installing all pipe, valves, fittings, concrete thrusts bracing, restraints, etc., including excavation, bedding, sheeting, bracing, shoring, backfill, compaction, rock removal, disinfecting and pressure testing all mains, connection to existing mains and other items shown in the plans and specified herein as required to complete the work as intended.

SPECIAL TECHNICAL SPECIFICATION
CHAIN LINK FENCE

DESCRIPTION: Work includes: providing chain link fence system with barb wire and gates where shown on the drawings, as specified herein, and as needed for a complete and proper installation.

PRODUCT:

Dimensional Data:

General: Pipe size indicated are commercial pipe sizes. Fences shall be six (6) feet high overall, when erected, excluding barbed and razor wire, as shown in the plans and specified herein.

Galvanizing: On steel framework and appurtenances, provide galvanized finish with not less than the following weight of zinc per square foot.

1. Pipe: 1.8 oz., complying with ASTM A120.
2. Hardware and Accessories: Comply with Table 1 of ASTM A153.
3. Fabric: 1.2 oz, complying with Class I of ASTM A392.

Fabric:

- A. Provide number 9 gauge or 0.148" wires in two (2) mesh with top and bottom knuckled finish. Furnish and install blue privacy slats across all mesh at fence completion.
- B. Place fabric in one piece width.

Posts, Rails, and Associated Items:

- A. End, corner, slope, and pull posts: provide at least the following minimum sizes and weights:

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 2.875" outside dimension	5.79

- B. Line posts: provide minimum sizes and weights.

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 1.900" outside dimension	2.75

- C. Gate posts: provide gate posts for supporting single gate leaf, or one leaf of a double gate installation, for nominal gate widths as follows:

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 2.875" outside dimension	5.79

SPECIAL TECHNICAL SPECIFICATION
CHAIN LINK FENCE

D. Top rails:

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 1.660" outside dimension	1.80

1. Provide in manufacturer's longest lengths, with expansion type couplings approximately 6" long for each joint.
2. Provide means for attaching top rail securely to each gate, corner, pull, slope, and end posts.

E. Post brace assemblies: Provide at end and gate posts, at both sides of corner, slope and pull posts, with the horizontal brace located at mid-height of the fabric.

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 1.660" outside dimension	1.80

Use 3/8" diameter rod with turnbuckle for diagonal truss.

F. Tension wire: Provide number 9 gauge galvanized coiled spring wire at bottom of fabric.

G. Post tops:

1. Provide steel, wrought iron or malleable iron, designed as weathertight closure cap.
2. Provide one cap for each post.
3. Provide caps with openings to permit through passage of top rail.

H. Stretcher Bars:

1. Provide one-piece lengths equal to full height of fabric with a minimum cross section of 3/19" x 3/4".
2. Provide one stretcher bar for each gate and end post, and tow of each corner, slope and pull post, except where fabric is woven integrally into the post.

I. Stretcher Bar Bands:

1. Provide steel, wrought iron or malleable iron, spaced not over 15" on centers, to secure stretcher bars to end, corner, pull, slope, and gate posts.
2. Bands may be used also with special fittings for securing rails to end, corner, pull, slope, and gate posts.

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CHAIN LINK FENCE

- J. Barb Arm: Barb arm shall hold three (3) continuous barbed stay wires.
- K. Barb wire: Strands of double strand (12) ½ gauge aluminum coated wire with four (4) point barbs of #14 gauge spaced on 5" centers.
- L. Razor Wire: A continuous strand of double strand 24" diameter single coil "Concertina Razor Wire" with 5" spacing between coils shall loop around continuous barbed stay wires. Barb points, gauges and barb spacing shall be the same as "barb wire".

GATES:

A. General:

- 1. Provide additional horizontal and vertical member to assure proper operation of the gate, and for attachment of fabric hardware and accessories.
- 2. Space frame members not more than 8 feet apart.

<u>Material and dimensions:</u>	<u>lbs./ft.</u>
Pipe: 1.660" outside dimension	2.27

B. Gate Hardware: Provide the following for each gate:

1. Hinges:

- a. Pressed or forged steel or malleable iron, to suit the gate size; non-lift-off type, offset to permit 180E opening.
- b. Provide 1-11/2 pr. of hinges for each leaf over 6 feet in nominal height.

2. Latches:

- a. Provide forked type or plunger-bar type to permit operation from either side of the gate.
- b. Provide padlock eye as integral part of latch.
- c. Furnish the Owner a padlock with two keys for each gate latch.

3. Keeper: Provide keeper for vehicle gates, which automatically engages the gate leaf and holds it in the open position until manually released.

4. Double gates:

- a. Provide gate stops for double gates consisting of mushroom or flush plate with anchors.
- b. Set in concrete to engage the center drop rod or plunger bar.
- c. Provide locking device and padlock eyes as an integral part of the latch, requiring both gate leaves.

MISCELLANEOUS MATERIALS AND ACCESSORIES:

SPECIAL TECHNICAL SPECIFICATION
CHAIN LINK FENCE

A. Wire ties:

1. For tying fabric topline posts, use number 9 gauge wire ties spaced 12" on centers.
2. For tying fabric to rails and braces, use number 9 gauge wire ties spaced 24" on centers.
3. For tying fabric to tension wire, use number 11 gauge hog rings spaced 24" on centers. 4. Manufacturer's standard wire ties will be acceptable if of equal strength and durability.

- C. Concrete: Comply with provisions for 2500 psi concrete.

EXECUTION:

Surface Conditions: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

Installation:

A. General:

1. Install posts at a maximum spacing of 10 feet on centers.
2. Install corner or slope posts where changes in line or grade exceed a 30° deflection.

B. Excavating:

1. Drill holes for post footings in firm, undisturbed or compacted soil, strictly adhering to the dimensions and spacing shown.
2. Post hole dimensions.
 - a. Provide 30" deep by 8" diameter foundations for line post for 5 foot fabric height and less.
 - b. Provide 36" deep by 8" diameter foundations for line posts for fabric heights exceeding 5 feet.
 - c. Provide 35" deep by 12" diameter foundations for all other posts.
3. Spread soil from excavations uniformly adjacent to the fence line, or on adjacent areas of the site if so directed.

D. Setting Posts:

1. Remove loose and foreign materials from sides and bottoms of holes, and moisten soil prior to placing concrete.

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CHAIN LINK FENCE

2. Center and align post in holes.
3. Place concrete around posts in a continuous pour, and vibrate and tamp for consolidation.
4. Check each post for vertical and top alignment and hold in position during placement and finishing operations.
5. Trowel tops of footings, and slope or dome to direct water away from posts.
6. Extend footing for gate posts to the underside of bottom hinge.
7. Set keeps, stops, sleeves, and other accessories into concrete as required.
8. Keep exposed concrete surfaces cured with membrane curing material.

E. Concrete Strength:

1. Allow concrete to attain at least 75% of its minimum 28-day strength before rails, tension wires, and/or fabric is installed.

F. Rails and Bracing:

1. Install fence with top rail and bottom tension wire.
2. Install tip rails continuously through post caps or extension arms bending to radius for curved runs.
3. Provide expansion couplings as recommended by the fencing manufacturer.
4. Provide bracing to the midpoint of the nearest line post or posts at all end corners, slope, pull, and gate posts.
5. Install tension wires parallel to the line of fabric by weaving through the fabric and tying to each post with not less than number 6 gauge galvanized wire, or by securing the wire to the fabric.

G. Installing Fabric:

1. Leave approximately 2" between finish grade and bottom salvage.
2. Excavate high points in the ground to clear the bottom of the fence.
3. Place and compact fill to within 1" of the bottom of the fabric in depressions.
4. Pull fabric taut and tie to post, rails, and tension wires.
5. Install fabric on outward side fencing side of fence and anchor to framework so that the fabric remains in tension after pulling force is removed.
6. Install stretcher bars by threading through or clamping to fabric on 4" centers and secure to posts with metal bands spaced 15" on centers.
7. Install blue privacy slats through all fence and gate fabric.

H. Installing Gates:

1. Install gates plumb, level, and secure for full opening without interference.
2. Install ground-set items in concrete for anchorage in accordance with the fence manufacturer's recommendations.

SPECIAL TECHNICAL SPECIFICATION
CHAIN LINK FENCE

3. Lubricate and adjust the hardware for smooth operation.

I. Miscellaneous:

1. Use U-shaped tie wires, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns.
2. Bend ends of wire to minimize hazards to persons and clothing.
3. Fasteners.
 - a. Install nuts for tension bank and hardware bolts on side of fence opposite fabric side.
 - b. Peen the ends of bolts to prevent the removal of nuts.
4. Repair coatings damaged in the shop or field erection, using a hot-applied repair compound applied in accordance with its manufacturer's recommendations.

MEASUREMENT & PAYMENT

Chain link fence will be measured and paid by the unit bid price per linear foot measured including gates, which price shall be full compensation for providing all materials, labor, tools, and equipment necessary to complete the work as shown in the plans and specified herein.

SPECIAL TECHNICAL SPECIFICATION TRAFFIC CONTROL & REGULATION

DESCRIPTION

Section includes requirements for signs, signals, control devices, flares, lights, and traffic signals, as well as construction parking control, designated haul routes and bridging of trenches and excavation. Temporary Traffic Control plans shall be in strict accordance with the latest revision of TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

INSPECTIONS

a) Yard Inspection: Before the Traffic Control Plan (TCP) is implemented and devices or hardware are installed in the field the devices must be inspected to insure that they are accepted devices in acceptable condition. There must also be sufficient devices to meet the needs of the approved traffic control plan.

b) Drive-Through Inspection: To decrease hazards to motorists and workers, traffic control shall be inspected and evaluated immediately after the traffic control plan is implemented. This kind of inspection shall be done in all lanes, in both directions or crossroads, during the day and the night, and from all entry or exist points within the zone. Any other routes such as detours that have work zone traffic on them shall be inspected also. Unacceptable devices or situations that are found on the jobsite shall be replaced or the situation corrected. Imminent danger situation require immediate correction.

MATERIALS: All materials shall comply with the latest version of the Texas State Manual on Uniform Traffic Control Devices

PUBLIC ROADS

(a) Abide by laws and regulations of governing authorities when using public roads. If the Contractor's work requires that public roads be temporarily impeded or closed, approvals shall be obtained from governing authorities and permits paid for before starting any work.

(b) Contractor shall maintain at all times a 10-foot-wide all-weather lane adjacent to work areas which shall be kept free of construction equipment and debris and shall be for the use of emergency vehicles, or as otherwise provided in traffic control plan.

(c) Contractor shall not obstruct the normal flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials or as directed by the County Engineer.

(d) Contractor shall maintain local driveway access to residential and commercial properties adjacent to work areas at all times.

SPECIAL TECHNICAL SPECIFICATION TRAFFIC CONTROL & REGULATION

(e) Surrounding streets used for entering or leaving the job area must be keep free of excavated material, debris, and any foreign material resulting from construction operations.

CONSTRUCTION PARKING CONTROL

(a) Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles and County's Operations.

(b) Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

(c) Prevent parking on or adjacent to access roads or in non-designated areas.

FLARES AND LIGHTS: Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

HAUL ROUTES:

(a) Utilize haul routes designed by authorities or shown on the drawings for construction traffic.

(b) Confine construction traffic to designated haul routes.

(c) Provide traffic control at critical areas of haul routes to regulate traffic minimize interference with public traffic.

TRAFFIC SIGNS AND SIGNALS

(a) Install traffic control devices at approaches to the site and on site, at cross roads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.

(b) Install and operate traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control and areas affected by Contractor's operations. Relocate traffic signs and signals as work progresses to maintain effective traffic control.

BRIDGING TRENCHES AND EXCAVATIONS

(a) Whenever necessary, bridge trenches and excavation to permit an unobstructed flow of traffic.

(b) Secure bridging against displacement by using adjustable cleats, angles, bolts or other devices whenever bridge is installed:

SPECIAL TECHNICAL SPECIFICATION TRAFFIC CONTROL & REGULATION

1. On existing bus routes;
2. When more than five percent of daily traffic is comprised of commercial or truck traffic;
3. When more than two separate plates are used for the bridge; or
4. When bridge is to be used for more than five consecutive days.

(c) Install bridging to operate with minimum noise.

(d) Adequately shore the trench or excavation to support bridge and traffic.

(e) Extend steel plates used for bridging a minimum one foot beyond edges of trench or excavation. Use temporary paving materials (premix) to feather edges of plates to minimize wheel impact on secured bridging.

(f) Use steel plates (refer to CITY SPECIFICATION SECTION 808) of sufficient thickness to support H-20 loading, truck or lane that produces maximum stress.

REMOVAL

(a) Remove equipment and devices when no longer required.

(b) Repair damage caused by installation

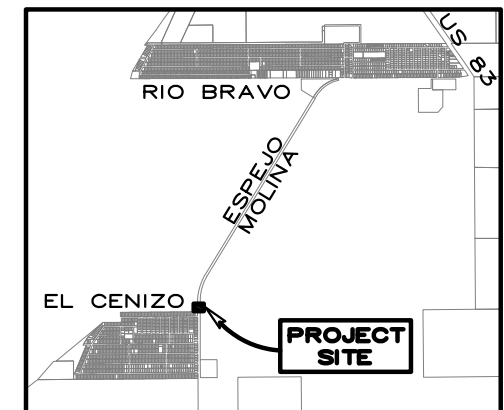
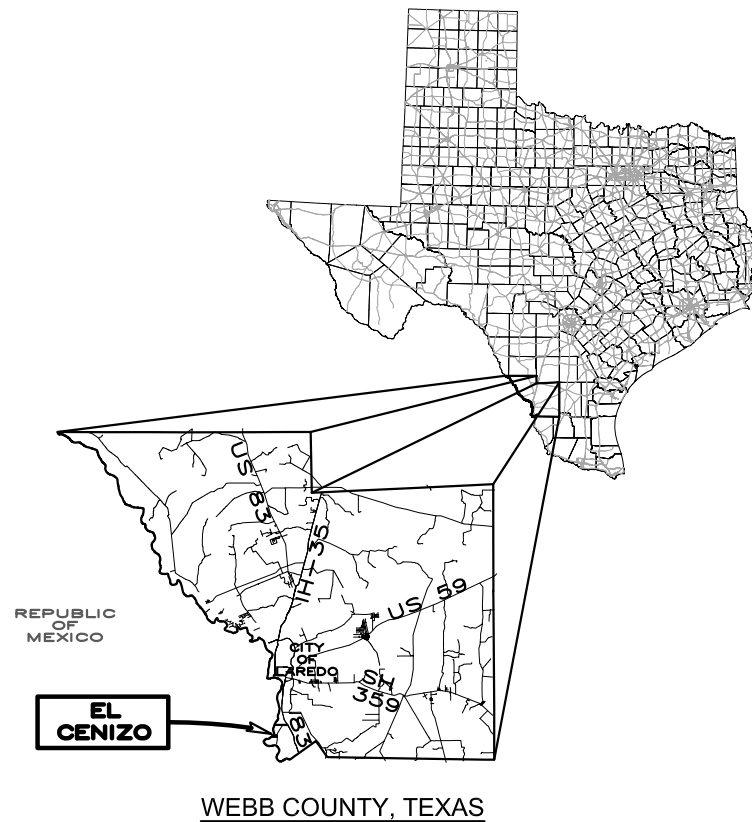
(c) Remove post settings to a depth of 2 feet.

MEASUREMENT: Measurement is a lump sum basis to furnish, install and remove all traffic control and regulation, including submittal of a traffic control plan if different from the plans, including all traffic control devices, barricades, equipment and personnel as necessary to protect the work and the public.

PAYMENT: The amount invoiced shall be paid by percent completed or as approved by the Engineer based on the schedule of values submitted for traffic control and regulation.

CONSTRUCTION PLANS FOR **EL CENIZO** **CONTROL VALVE UPGRADES**

WATER SYSTEM IMPROVEMENTS



EL CENIZO, TEXAS

WEBB COUNTY, TEXAS

HONORABLE TANO E. TIJERINA, COUNTY JUDGE

WEBB COUNTY COMMISSIONERS

JESSE GONZALES.....PRECINCT 1
 ROSAURA "WAWI" TIJERINA.....PRECINCT 2
 JOHN GALOPRECINCT 3
 JAIME CANALES PRECINCT 4

INDEX OF SHEETS

SHEET	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	MOV & PRV DETAILS
4	MISCELLANEOUS DETAILS
5	CONSTRUCTION SEQUENCE & TRAFFIC CONTROL PLAN
6	TCP 2-1 STANDARD



BASIS OF ESTIMATE

ITEM	DESCRIPTION	QUANTITY	UNIT
1	Motor Operated Valve Assembly	1	LS
2	Pressure Reducing Valve with Vault	1	LS
3	Plant Piping & Valves	1	LS
4	Chain Link Fence & Gates	72	LF
5	Barricades & Traffic Control	1	LS

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT THE NOTICE OF INTENT (NOI) HAS BEEN FILED AND POSTED ONSITE.
- CONTRACTOR SHALL INSTALL STORM WATER POLLUTION PREVENTION CONTROLS PRIOR TO ANY SITE PREPARATION WORK (DEMOLITION, EXCAVATION, GRUBBING, ETC.)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND THE PROPER REMOVAL/DISPOSAL OF SURPLUS EXCAVATED AND/OR DEMOLISHED MATERIAL AND ALL ABOVE GROUND ITEMS INCLUDING BUT NOT LIMITED TO FENCES, IRRIGATION HARDWARE, TREES, TRASH AND MISCELLANEOUS DEBRIS.
- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE THE EXISTING FACILITIES. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL UTILITY COMPANIES REGARDING REMOVAL OF EXISTING SERVICE, VERIFYING UTILITIES ARE SHUT OFF OR DISCONNECTED, AND ALL POSSIBLE SAFETY PRECAUTIONS HAVE BEEN ENACTED TO ENSURE THE SAFEST ENVIRONMENT FOR ALL PERSONNEL. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED.
- NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL THE PERMITTING AUTHORITIES.
- NECESSARY BARRICADES, SUFFICIENT LINES, SIGNS, AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC, SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUAL ON UNIFORM CONTROL DEVICES AND MAINTAINED AT ALL TIMES (24 HOURS PER DAY) DURING THE CONSTRUCTION PROCESS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING FACILITIES FROM DAMAGE AND COST TO REPAIR EXISTING FACILITIES AND IMPROVEMENTS AS A RESULT OF THE CONTRACTOR'S WORK. ANY EXISTING PAVEMENT, CURBS, BUILDING, SIGNS, SIDEWALKS, WALLS, FENCES, UTILITY INFRASTRUCTURE, TREES, ETC. DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS SOLE EXPENSE.
- CONTRACTOR SHALL INCLUDE IN HIS BID THE REQUIRED ADJUSTMENT OF ALL VALVES, VALVE COVERS, MANHOLE LIDS, FIRE HYDRANTS, CLEANOUTS, AND ANY OTHER MISC. UTILITY ITEM WHETHER SHOWN ON THESE PLANS OR NOT.
- THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS IS APPROXIMATE AND HAS BEEN BASED UPON AVAILABLE RECORD INFORMATION AND MAY NOT MATCH LOCATIONS AND/OR DEPTHS ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL CONTACT EACH INDIVIDUAL UTILITY FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS AND DEPTHS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND DEPTHS OF ALL UTILITY CROSSINGS (BOTH VERTICALLY AND HORIZONTALLY) PRIOR TO BEGINNING ANY CONSTRUCTION. AN INCOMPLETE CONTACT LIST FOR SOME OF THE UTILITIES THAT MAY BE ENCOUNTERED ON THE PROJECT ARE LISTED BELOW:

 TEXAS ONE CALL SYSTEM 1-800-245-4545 OR CALL 811
 SOUTHWESTERN BELL LOCATION GROUP AT 1-800-828-5127
 LONESTAR NOTIFICATION COMPANY AT 1-800-669-8344
 TEXAS EXCAVATION SAFETY SYSTEM GROUP (DIGTESS) AT 1-800-344-8377
 LAREDO WATER UTILITIES DEPARTMENT, HUMBERTO SERRADELL (956) 721-2000
 AMERICAN ELECTRIC POWER, MARK OCHOA (956) 721-3169, MARTIN VALDEZ (956) 721-3125
 AT&T, JENNIFER SEGURA (956) 727-6749; 1-800-545-6005 (LOCATES)
 TIME WARNER CABLE, JOSE VALENZUELA (956) 721-0600 or JAVIER ESQUIVEL (956) 235-6318
 CENTERPOINT ENERGY, ROEL PEÑA (956) 723-6584
 DCP MIDSTREAM, HECTOR SAENZ (956) 724-7191, (956) 285-2741

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT BOTH OVERHEAD AND UNDERGROUND UTILITIES EXIST IN THE VICINITY OF THE CONSTRUCTION AREA. THE EXACT LOCATION OF UNDERGROUND UTILITIES IS NOT CERTAIN. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE AREA UTILITY COMPANIES FOR EXACT LOCATIONS AT LEAST 48 HOURS PRIOR TO CONSTRUCTION OR COMMENCING ANY WORK SO AS TO PREVENT ANY DAMAGE OR INTERFERENCE WITH PRESENT UTILITIES.

10. DURING THE EXECUTION OF THE WORK, UTMOST CARE SHALL BE EXERCISED TO PREVENT DAMAGE TO ANY UTILITIES, STRUCTURES OR RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES OR STRUCTURES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL BE REPAIRED PROMPTLY. IF IN THE COURSE OF THE WORK, UNDERGROUND UTILITIES OR STRUCTURES ARE ENCOUNTERED AND ARE IN CONFLICT WITH THE WORK, THE CONTRACTOR SHALL CONTACT THE ENGINEER WHO WILL DIRECT THE NECESSARY ADJUSTMENTS.

11. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

12. SOIL BORES HAVE NOT BEEN DRILLED FOR THIS PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RESEARCH AND VERIFY PRIOR TO BIDDING THE NEED FOR ADDITIONAL GEOPHYSICAL INFORMATION. NO DIRECT PAYMENT SHALL BE MADE FOR COSTS ASSOCIATED WITH OBTAINING SUCH INFORMATION. THERE WILL BE NO ADDITIONAL PAYMENT FOR ROCK EXCAVATION OR TRENCH DEWATERING, IF ENCOUNTERED.

13. CONTRACTOR SHALL COORDINATE PROJECT CONSTRUCTION TESTING WITH THE COUNTY INSPECTOR. ALL FAILED TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

14. CONTRACTOR SHALL ADJUST AND/OR SAW-CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH AND CONTINUOUS TRANSITION GRADE.

15. THE CONTRACTOR SHALL PROTECT ALL AREAS OF THE RIGHT-OF-WAY WHICH ARE NOT INCLUDED IN THE ACTUAL LIMITS OF THE PROPOSED CONSTRUCTION AREAS FROM DAMAGE. CARE SHALL BE EXERCISED TO PREVENT DAMAGE TO TREES, VEGETATION AND OTHER NATURAL SURROUNDINGS. THE CONTRACTOR, AT HIS EXPENSE, SHALL RESTORE TO ANY AREAS DISTURBED AS A RESULT OF HIS OPERATIONS TO A CONDITION AS GOOD AS, OR BETTER THAN, THAT PRESENT PRIOR TO HIS CONTRACT. EXISTING STREET SIGNS SHALL RESET AS REQUIRED - NO SEP. PAY.

16. RIGHT-OF-WAY LINES SHOWN ARE SOLELY FOR REPRESENTATION; THESE PLANS DO NOT ATTEMPT TO REESTABLISH OR CONFIRM ANY PROPERTY OR EASEMENT LINES.

17. GPS COORDINATES (NAD 83, TEXAS STATE PLANE 4205, SOUTH ZONE) FOR FITTINGS, VALVES, ETC. LISTED IN THE PLANS ARE PROVIDED FOR GENERAL LOCATIVE PURPOSES ONLY. THE FINAL POSITION MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER AND/OR COUNTY INSPECTOR TO ACCOMMODATE SPECIFIC FIELD CONDITIONS.

18. IF ANY OVERHEAD OR UNDERGROUND ELECTRICAL LINES NEED TO BE DE-ENERGIZED, THE CONTRACTOR SHALL CALL THE POWER COMPANY TO DO THIS WORK. ANY COST ASSOCIATED WITH DE-ENERGIZING THE ELECTRICAL LINES AND/OR ANY OTHER PROTECTIVE MEASURES REQUIRED SHALL BE AT THE CONTRACTOR'S EXPENSE.

19. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT WHERE NOT SPECIFICALLY COVERED ON THESE PLANS OR IN THE SPECIAL TECHNICAL SPECIFICATIONS SHALL CONFORM TO ALL APPLICABLE CITY OF LAREDO STANDARD TECHNICAL SPECIFICATION MANUAL, DIVISION "D": (http://www.cityoflaredo.com/city-planning/Books_and_Manuals/Standard_Technical_Specifications_Manual.pdf)

20. THE CONTRACTOR MUST OBTAIN ALL NECESSARY PERMITS PRIOR TO WORKING WITHIN COUNTY RIGHT-OF-WAY. THERE IS NO SEPARATE PAYMENT FOR REGISTRATION AND PERMIT FEES, WHICH MUST BE INCLUDED WITH AND CONSIDERED FULLY SUBSIDIARY TO THE VARIOUS BID ITEMS.

GENERAL NOTES

WATER MAIN NOTES

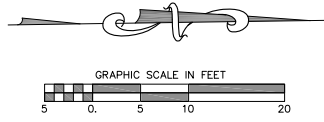
- WATER MAINS (4"-12" DIAMETER) SHALL BE AWWA, PVC, C-900, DR-18, PRESSURE CLASS 235 PIPE UNLESS OTHERWISE SHOWN IN THE PLANS.
- MAXIMUM PIPE DEFLECTION SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION.
- ALL WATER MAIN FITTINGS TO BE DUCTILE IRON, COMPACT MECHANICAL JOINT THAT CONFORM TO AWWA SPECIFICATIONS C110/C153, CLASS 50/350 AND SHALL BE WRAPPED IN POLYETHYLENE.
- ALL FITTINGS AND VALVES SHALL BE RESTRAINED TO THE MAIN WITH MEGALUG JOINT RESTRAINTS (EBAA IRON) OR APPROVED EQUIVALENT. PIPE SECTIONS LESS THAN 10 FEET IN LENGTH WILL NOT BE PERMITTED ADJACENT TO FITTINGS OR VALVES, UNLESS ACCEPTABLE BELL RESTRAINTS ARE PROVIDED AT NO COST TO THE OWNER. WHERE CALLED FOR IN THE PLANS OR REQUIRED AS STATED ABOVE, THE WATER MAIN JOINTS (BELLS) SHALL BE RESTRAINED WITH EBAA IRON, MEGALUG BELL RESTRAINTS, OR APPROVED EQUIVALENT PVC PIPE SYSTEM. THERE IS NO SEPARATE MEASUREMENT OR PAY ITEM FOR JOINT AND/OR BELL RESTRAINT COSTS, WHICH ARE CONSIDERED FULLY SUBSIDIARY TO THE VARIOUS BID ITEMS INVOLVED (FITTINGS, VALVE, PIPE, ETC.) ALL FITTINGS SHALL BE MANUFACTURED IN THE U.S.A.
- ALL VALVES MUST OPEN TO THE LEFT.
- CONTRACTOR SHALL NOT CLOSE OR OPEN ANY GATE VALVES WITHOUT THE APPROVAL OF THE COUNTY'S WATER UTILITIES DEPT.
- THE CONTRACTOR MAY BE REQUIRED TO INSTALL AN APPROVED SERVICE SADDLE, TAP, BALL VALVE, AND PIPE RISER, OR ALTERNATE TEMPORARY BLOW-OFF ASSEMBLY ON THE PROPOSED WATER MAIN(S) FOR TEMPORARY AIR RELEASE AND SAMPLING DURING PRESSURE TESTING AND BACTERIOLOGICAL TESTS. THERE WILL BE NO ADDITIONAL PAY FOR THESE ITEMS, WHICH WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS. TEMPORARY SERVICE TAPS MUST BE REMOVED AND/OR PLUGGED WATERTIGHT PER UTILITIES REQUIREMENTS WHEN TESTING COMPLETE.
- PIPE SERVICE TIES FOR PVC PIPE SHALL BE ENTIRELY OF BRASS MATERIAL AND OF THE DOUBLE STRAP DESIGN (SIMILAR TO MUELLER BR2B SERIES). ALL SERVICE TIES SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C-800, LATEST EDITION, AND SHALL BE CERTIFIED BY THE MANUFACTURER. ALL SADDLES SHALL BE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES AND ANY PIPE DAMAGED BY OVERTORQUING WILL BE REPLACED BY THE CONTRACTOR AT NO CHARGE TO THE OWNER.
- ALL COPPER PIPE SERVICES FROM THE MAIN TO PROPERTY LINE MUST MATCH EXISTING SERVICE LINE SIZES, BUT MUST BE AT LEAST 3/4" SERVICES ON INDIVIDUAL SERVICES DIRECTLY FROM THE MAIN.
- SINGLE AND DOUBLE SERVICE CLAMPS WITH ITS SADDLE, STRAP, NUTS AND BOLTS SHALL BE OF BRONZE OR STAINLESS STEEL METAL.
- MAINS SHALL BE LOADED AND TESTED TO COINCIDE WITH HYDRANTS AND VALVES LOCATIONS. THERE WILL BE NO SEPARATE MEASUREMENT OR PAYMENT FOR WATER FLUSHING OR TESTING PER CONTRACT SPECIFICATIONS. THESE COSTS SHALL BE INCLUDED WITH THE ASSOCIATED WATER MAIN UNIT BID PRICES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND THE PROPER REMOVAL/DISPOSAL OF SURPLUS EXCAVATED AND/OR DEMOLISHED MATERIAL AND ALL ABOVE GROUND ITEMS INCLUDING BUT NOT LIMITED TO FIRE HYDRANTS, METERS, BOXES, VALVES & COVERS AND MISCELLANEOUS DEBRIS. ALL ABANDONED WATER MAINS SHALL BE CONCRETE CAPPED. NO SEPARATE PAY ITEM FOR THIS WORK - IT SHALL BE INCLUDED IN THE VARIOUS BID ITEMS INVOLVED.

PLAN SYMBOL LEGEND	
15SSL	EXIST 15" SAN. SEWER MAIN
16WL	EXIST 16" WATER MAIN
UGE	EXIST BURIED ELECTRIC
GAS	EXIST BURIED GAS LINE
ATT	EXIST BURIED CABLE
OHE	EXIST OVER HEAD LINE
⊗	EXIST FIRE HYDRANT
⊙	EXIST STREET LIGHT
⊗	EXIST GATE VALVE
⊗	EXIST STORM DRAIN MH.
⊗	EXIST POWER POLE
⊗	EXIST. GAS METER
⊗	PROP. WATER MAIN
⊗	PROP. HYDRANT
⊗	PROP. VALVE
⊗	PROP. AIR RELEASE VALVE
⊗	PROP. REDUCER
⊗	PROP. TEE
⊗	PROP. CAP, PLUG

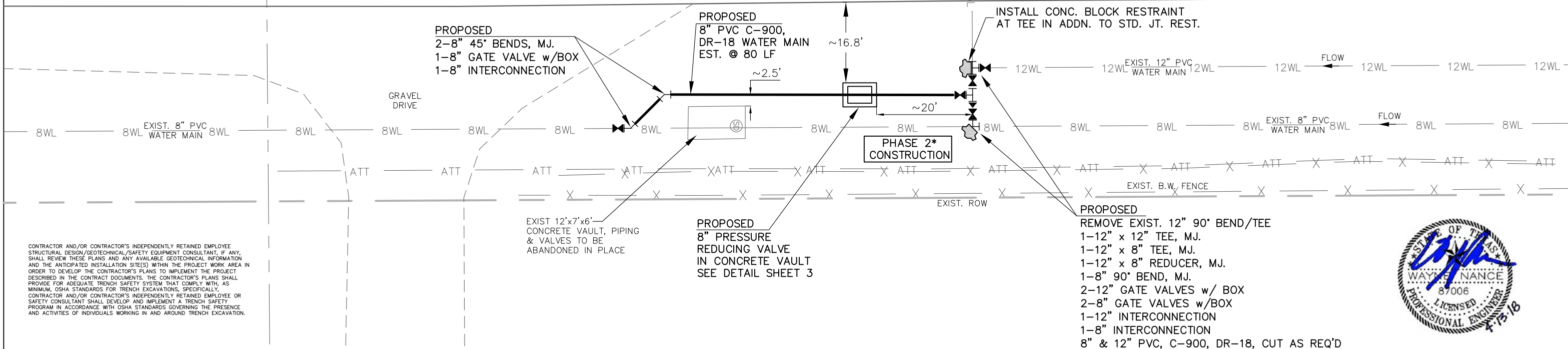
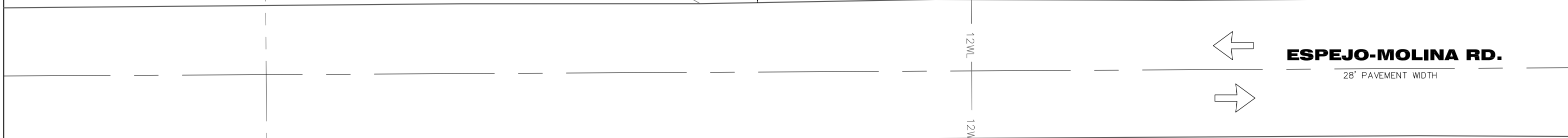
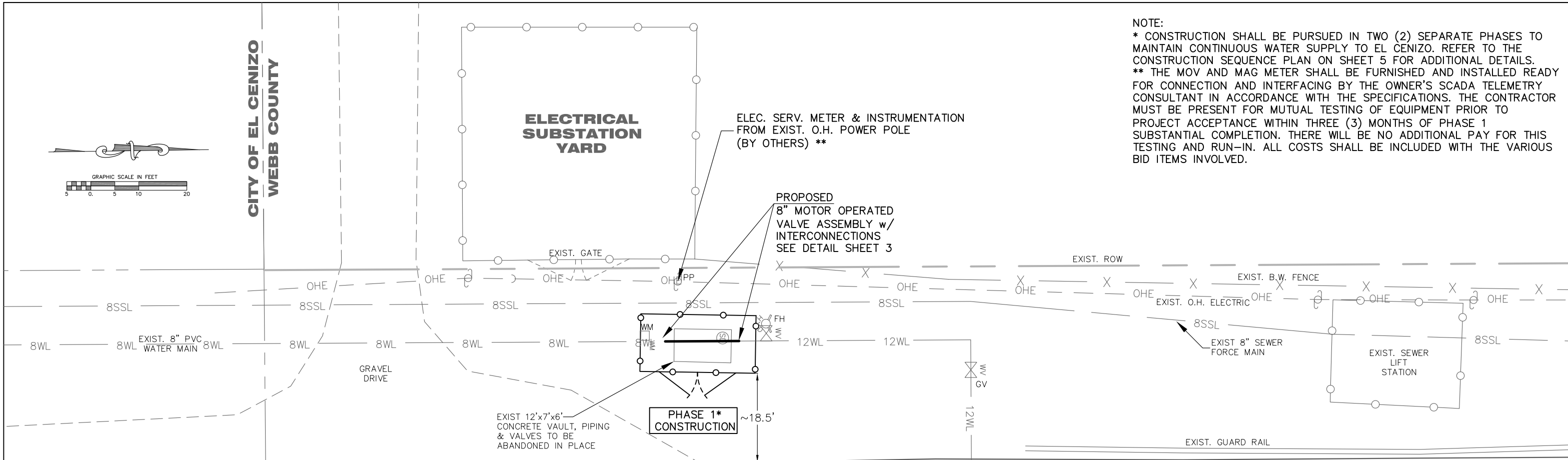


DATE :	VERTICAL SCALE : 1"=		304 E. CALTON LAREDO, TEXAS 78041 TBPE F-6205 TBPLUS F-101888 OFFICE (956) 724-3097 www.porrasnance.com	WEBB COUNTY, TEXAS EL CENIZO CONTROL VALVE UPGRADES	THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY WAYNE NANCE, P.E. #87006 ON 04/13/18. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS A VIOLATION UNDER THE TEXAS ENGINEERING PRACTICES ACT.	PLAN OF:	BASIS OF ESTIMATE, GENERAL NOTES & PLAN SYMBOL LEGEND	SHEET
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CITY OF EL CENIZO
WEBB COUNTY



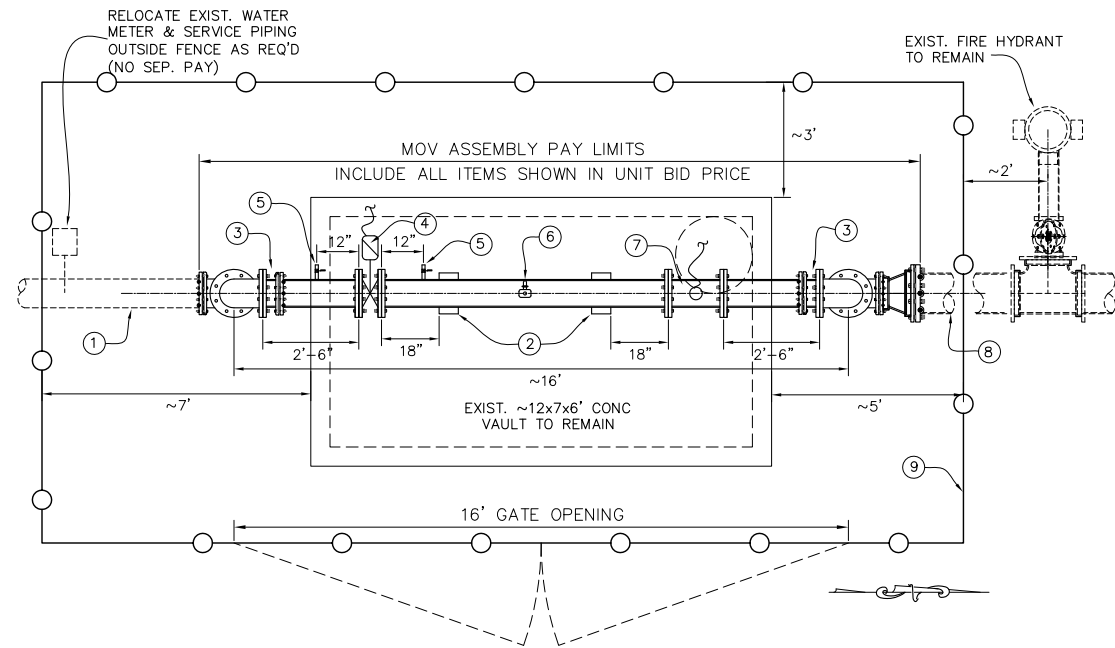
NOTE:
 * CONSTRUCTION SHALL BE PURSUED IN TWO (2) SEPARATE PHASES TO MAINTAIN CONTINUOUS WATER SUPPLY TO EL CENIZO. REFER TO THE CONSTRUCTION SEQUENCE PLAN ON SHEET 5 FOR ADDITIONAL DETAILS.
 ** THE MOV AND MAG METER SHALL BE FURNISHED AND INSTALLED READY FOR CONNECTION AND INTERFACING BY THE OWNER'S SCADA TELEMETRY CONSULTANT IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR MUST BE PRESENT FOR MUTUAL TESTING OF EQUIPMENT PRIOR TO PROJECT ACCEPTANCE WITHIN THREE (3) MONTHS OF PHASE 1 SUBSTANTIAL COMPLETION. THERE WILL BE NO ADDITIONAL PAY FOR THIS TESTING AND RUN-IN. ALL COSTS SHALL BE INCLUDED WITH THE VARIOUS BID ITEMS INVOLVED.



CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEM THAT COMPLY WITH, AS MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

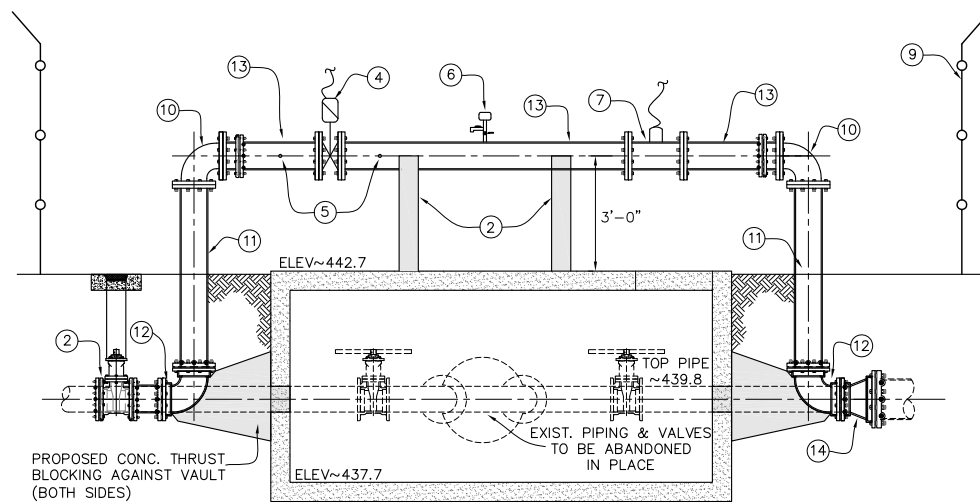


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REVISIONS :	HORIZONTAL SCALE: 1"=		This document is the property of PORRAS NANCE ENGINEERING and may not be reproduced, modified, or used in any way without the written permission of PORRAS NANCE ENGINEERING.			SITE PLAN	



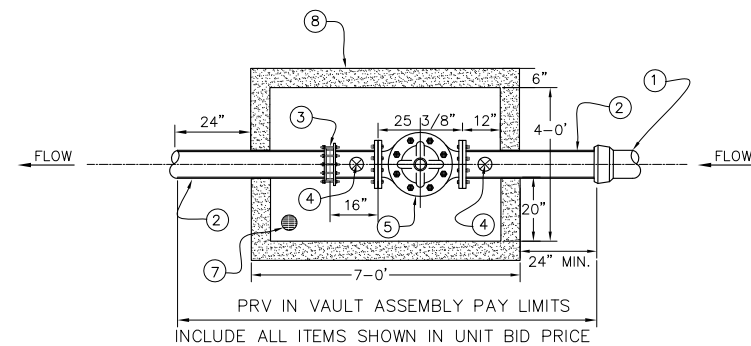
PLAN VIEW

- ① EXIST. 8" PVC WATER MAIN
 - ② 6"x12" REINF. CONC. PIPE SUPPORT (#4 @ 6" OCBW)
 - ③ 8" RESTRAINED FLANGE ADAPTER/COUPLING
 - ④ 8" MOTOR OPERATED BUTTERFLY VALVE*
 - ⑤ 1" TAP w/BALL VALVE, SIDE MOUNTED (FUT.TRANDSCR BY OTHERS)
 - ⑥ 1" TAP w/BALL VALVE, AIR RELEASE VALVE & HOSE BIBB
 - ⑦ 8" ELECTROMAGNETIC FLOW METER
 - ⑧ EXIST. 12" PVC WATER MAIN
 - ⑨ 6" CHAIN LINK FENCE w/BARB WIRE & PRIVACY SLATS
 - ⑩ 8" 90° BEND, FL.
 - ⑪ 8" DUCTILE IRON PIPE, FL.xP.E. w/2-STAIN. STL. ALL THREAD TIES (NOT SHOWN)
 - ⑫ 8" 90° BEND, M.J.
 - ⑬ 8" DUCTILE IRON SPOOL, FL.xFL. & FL.xP.E.
 - ⑭ 12"x8" REDUCER, M.J. (IF REQ'D)
- * 8" MOV SHALL BE AN INTEGRATED BUTTERFLY VALVE WITH ACTUATOR PER SPECIFICATION. TEST WITH OWNER'S REPRESENTATIVE PRESENT AFTER POWER AND INSTRUMENTATION INSTALLED AT SITE BY OTHERS.



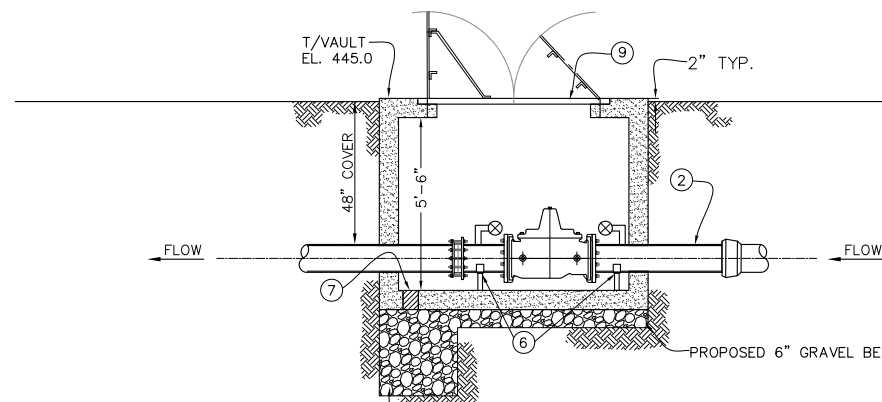
ELEVATION VIEW

MOTOR OPERATED VALVE ASSEMBLY DETAIL
NO SCALE



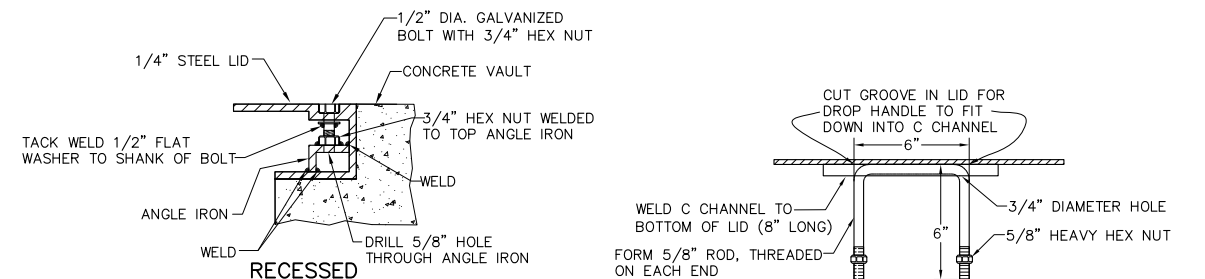
PLAN VIEW

- ① 8" PVC, DR-14 WATER MAIN
 - ② 8" DUCTILE IRON PIPE
 - ③ 8" DRESSER COUPLING
 - ④ 0-100 P.S.I. PRESSURE GAUGE*
 - ⑤ 8" PRESSURE REDUCING VALVE **
 - ⑥ 2" ADJUSTABLE PIPE SUPPORT w/4" CRADLE & YOKE
 - ⑦ 4" DRAIN HUB
 - ⑧ 7'x 5' REINFORCED CONCRETE VAULT (PRECAST HS-20: CAPITAL PRECAST, HANSON AGGR., OR APPROVED EQUAL).
 - ⑨ 5'x 3.5' HS-20 TRAFFIC RATED GALVANIZED FRAME & COVER w/PULL HANDLES (INSTALL FLUSH WITH TOP OF BOX)
- * PRESSURE GAUGES SHALL BE 4" DIA. GLYCERIN-FILLED GAUGE WITH BRASS, LEVERED SHUT-OFF COCKS AND PIPELINE TAPS. GAUGES SHALL BE FACE-UP AS SHOWN.
- ** 8" PRESSURE REDUCING VALVE SHALL BE CLA-VAL MODEL, 90-01, OR APPROVED EQUAL. SET DOWNSTREAM TO 40 PSI AND TEST WITH OWNER'S REPRESENTATIVE PRESENT.



ELEVATION VIEW

PRESSURE REDUCING VALVE DETAIL
NO SCALE



BOLT DOWN MECHANISM DETAIL

DROP HANDLE DETAIL

TWO (2) PER LID



DATE :	VERTICAL SCALE : 1"=
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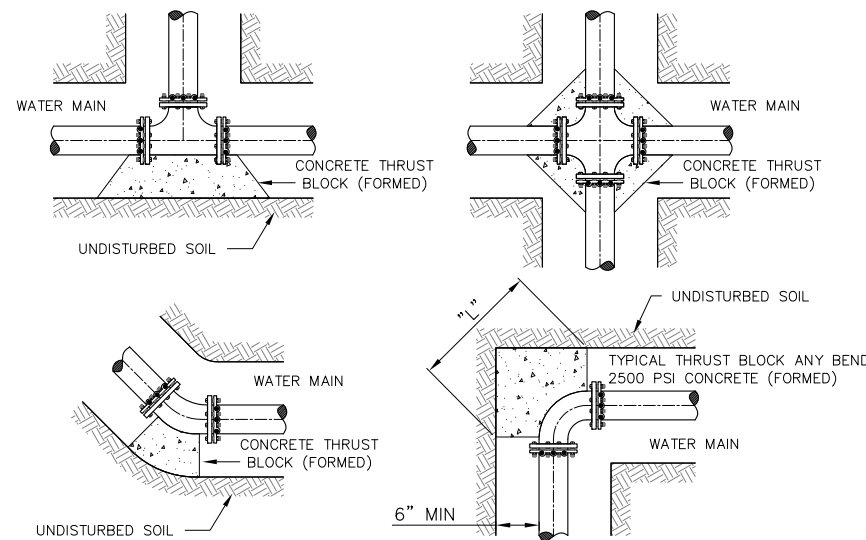
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**WEBB COUNTY, TEXAS
EL CENIZO
CONTROL VALVE UPGRADES**

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PLAN OF:

**MOV & PRV
DETAILS**

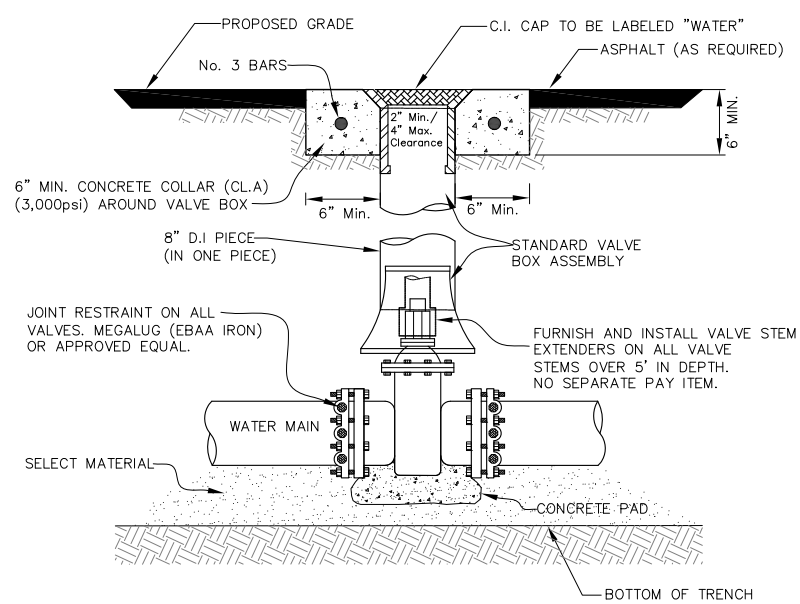


BASED ON 2000 LBS/SQFT. MIN. SOIL BEARING CAPACITY

PIPE SIZE	THRUST BLOCK DIMENSIONS 150 PSI TEST PRESSURE					
	"TEE"	CAP	BEND			
			90°	45°	22 1/2°	11 1/4°
6"	25/12	25/12	36/12	19/12	10/12	5/12
8"	45/12	45/12	64/12	35/12	18/12	9/12
12"	51/24	51/24	72/24	52/18	40/12	20/12

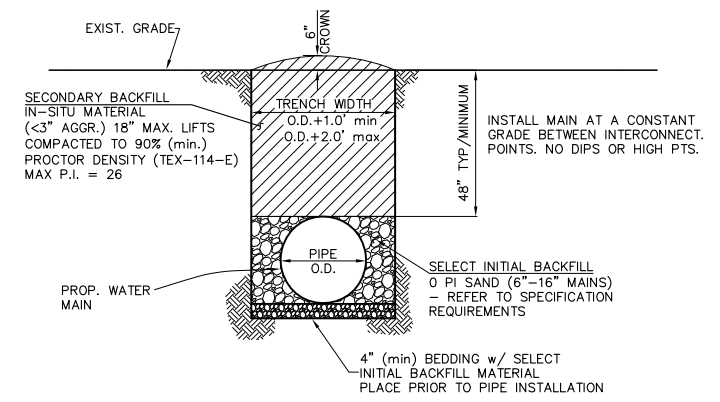
CONCRETE HORIZONTAL THRUST BLOCK DETAILS

NO SEPARATE PAY ITEM—ALL COSTS ARE FULLY SUBSIDIARY TO PLANT PIPING & VALVES UNIT BID PRICE. N.T.S.



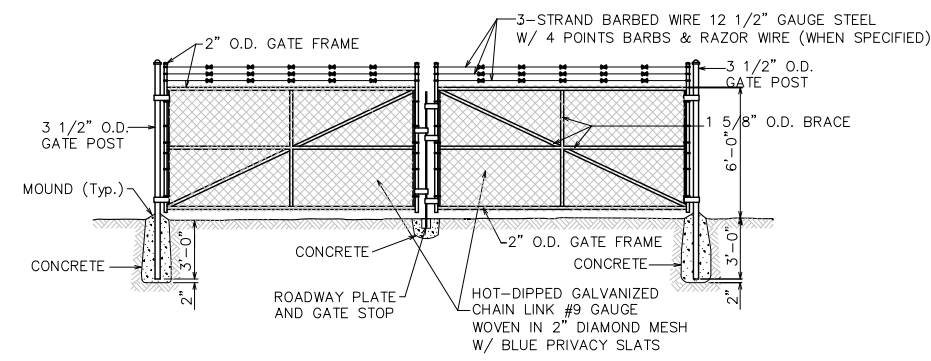
TYPICAL GATE VALVE & VALVE BOX INSTALLATION

N.T.S.



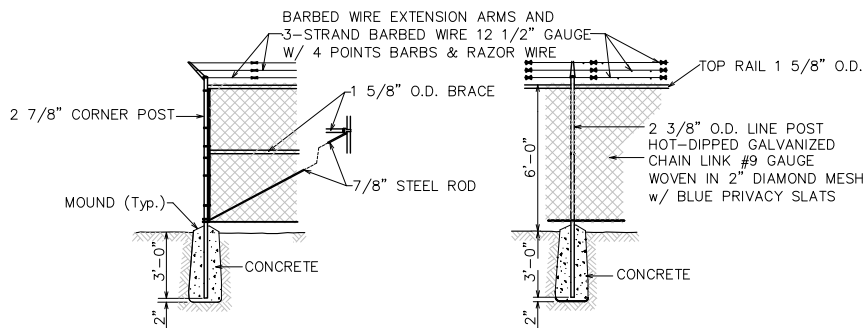
TYPICAL PIPE TRENCH

NO SCALE



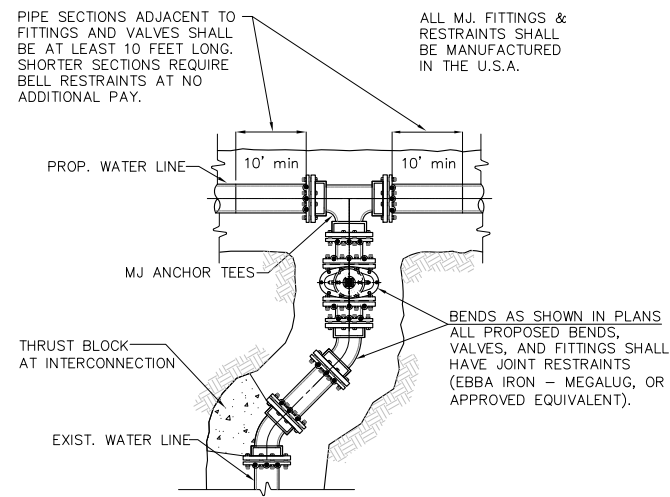
STANDARD CHAIN LINK GATE

N.T.S.



STANDARD CHAIN LINK FENCE

N.T.S.



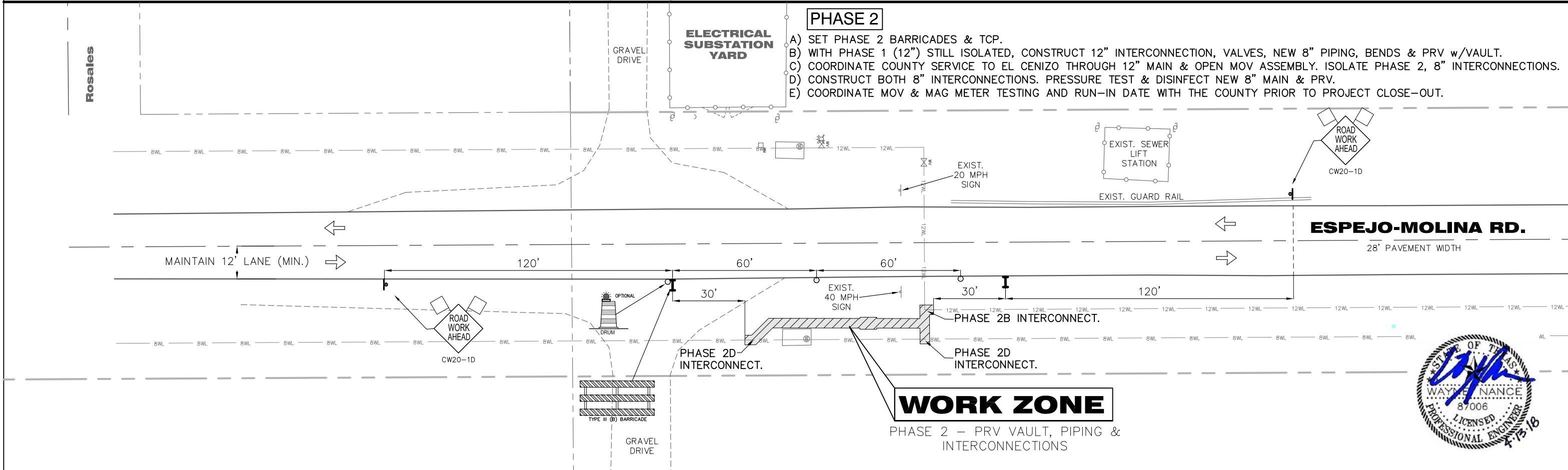
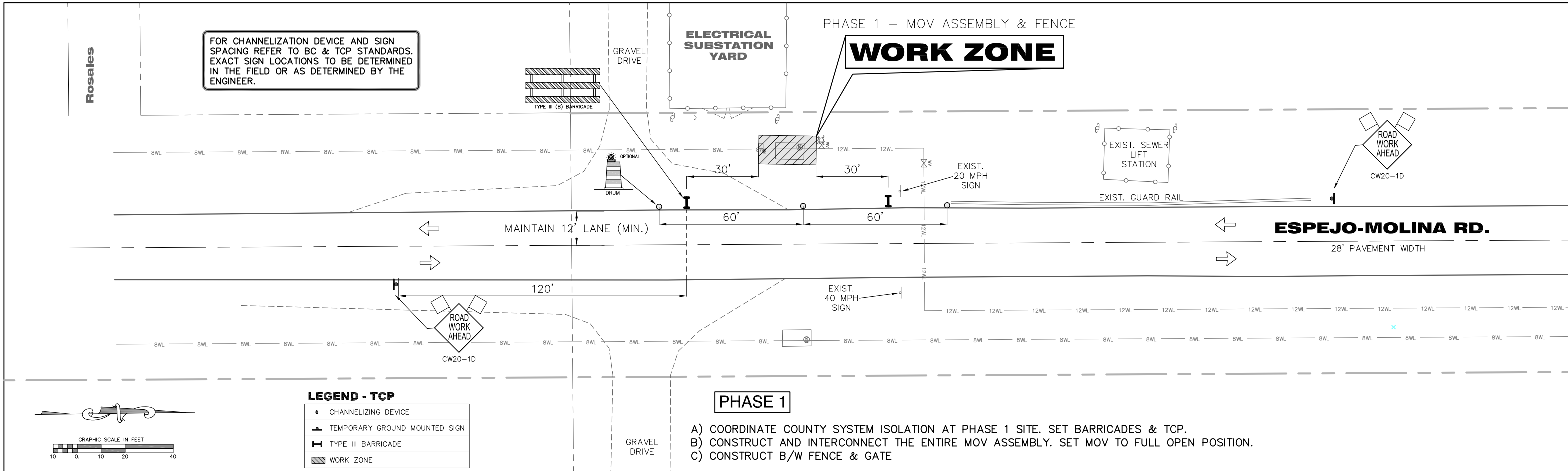
JOINT RESTRAINT DETAIL

N.T.S.

ALL FITTINGS AND VALVES SHALL BE INSTALLED WITH JOINT RESTRAINTS AT ALL SIDES, BRANCHES AND/OR RUNS. WHERE SPECIFIED IN THE PLANS, OR AS REQUIRED ABOVE, PIPES MAY REQUIRE PIPE/BELL RESTRAINT SYSTEMS. ALL RESTRAINTS SHALL BE MEGALUG (EBAA IRON) OR APPROVED EQUIVALENT FOR PVC PIPES. THERE IS NO SEPARATE PAY ITEM FOR FURNISHING OR INSTALLING JOINT AND/OR BELL RESTRAINT SYSTEMS, WHICH ARE CONSIDERED FULLY SUBSIDIARY TO THE VARIOUS BID ITEMS INVOLVED: FITTINGS, VALVES, PIPE, ETC.

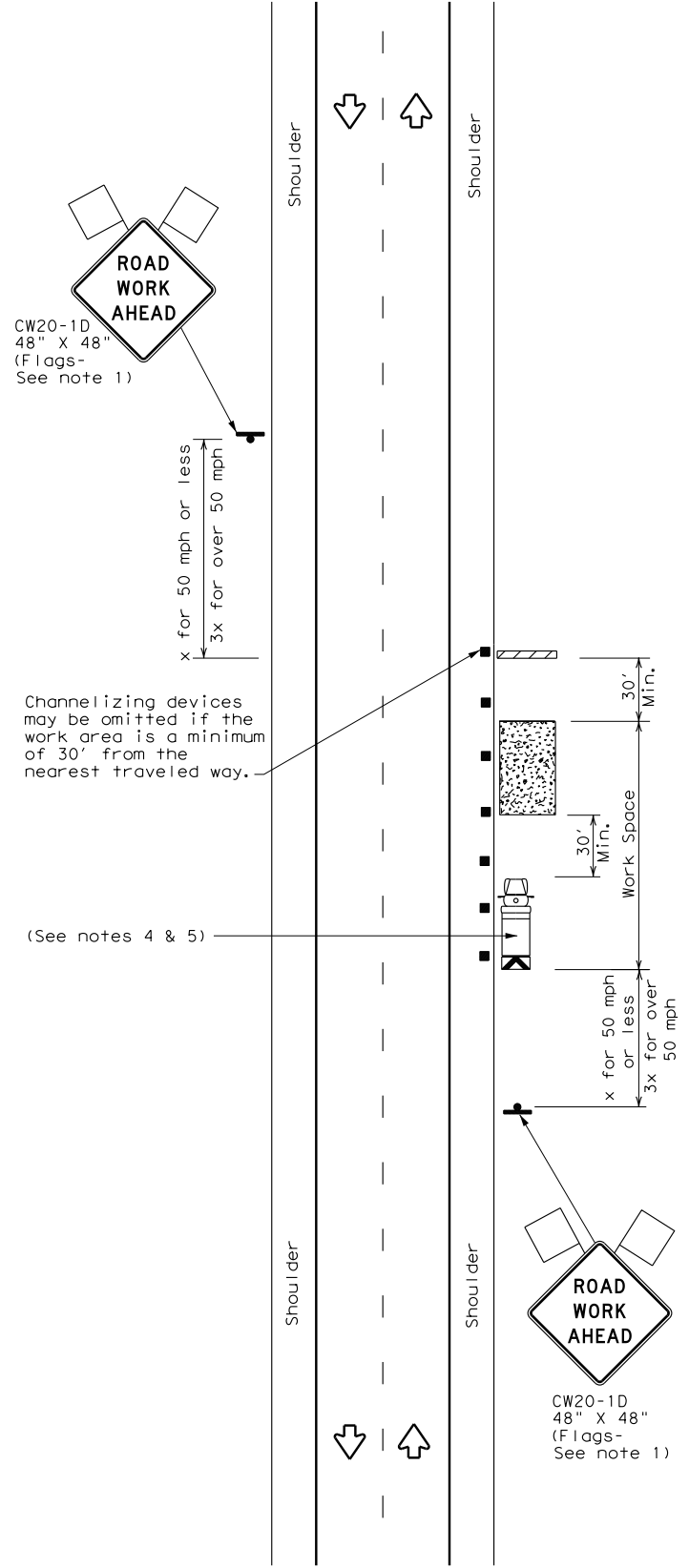
INSTALL CONCRETE THRUST BLOCK IN ADDITION TO RESTRAINTS ON LAST FITTING AT INTERCONNECTION POINTS WITH EXISTING MAINS OR WHERE SPECIFICALLY CALLED FOR IN THE PLANS. REFER TO STANDARD SPECIFICATION 104. NO SEPARATE PAY ITEM—INCLUDE IN FITTING UNIT BID PRICE.





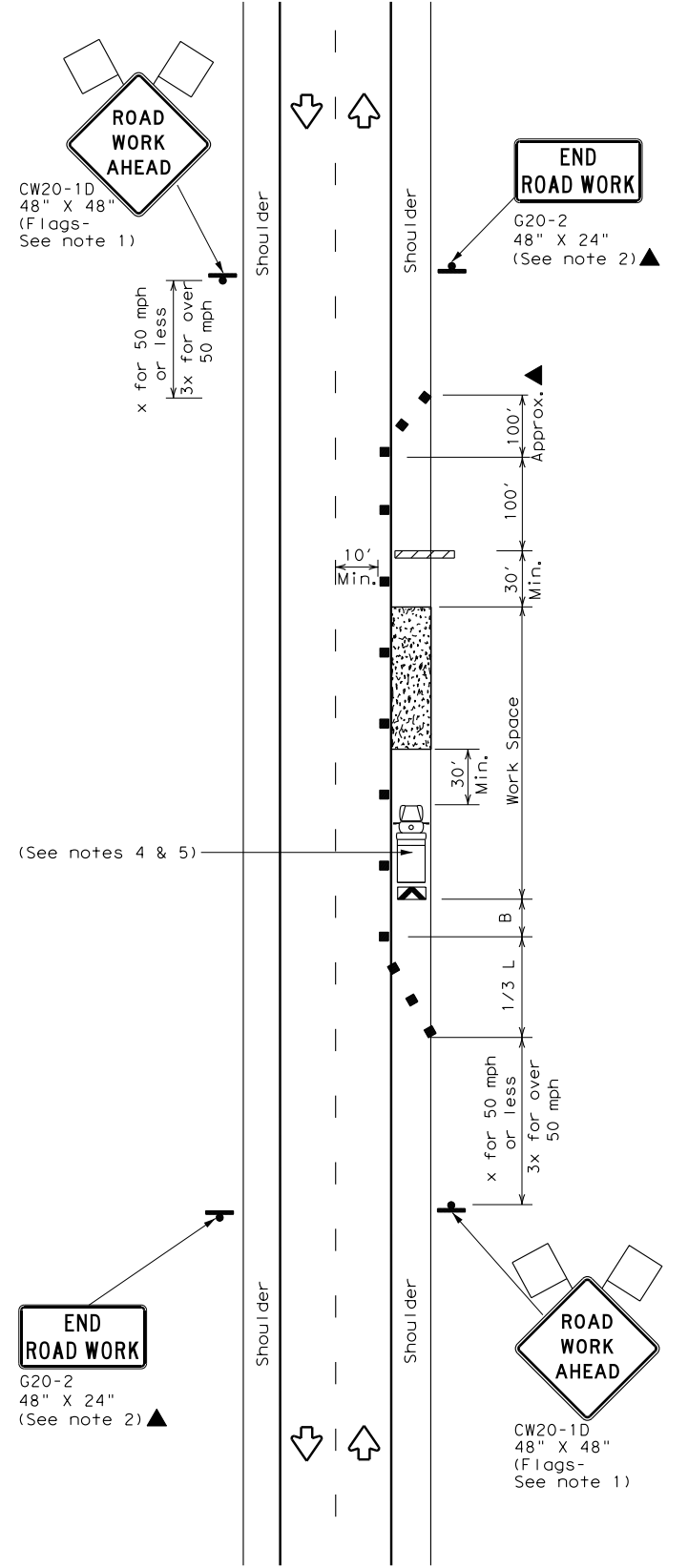
DATE :	VERTICAL SCALE : 1"=		304 E. CALTON LAREDO, TEXAS 78041	WEBB COUNTY, TEXAS EL CENIZO CONTROL VALVE UPGRADES	<small>THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY WAYNE NANCE, P.E. #87006 ON 04/13/18. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS A VIOLATION UNDER THE TEXAS ENGINEERING PRACTICES ACT.</small>	PLAN OF: CONSTRUCTION SEQUENCE & TRAFFIC CONTROL PLAN	SHEET 5
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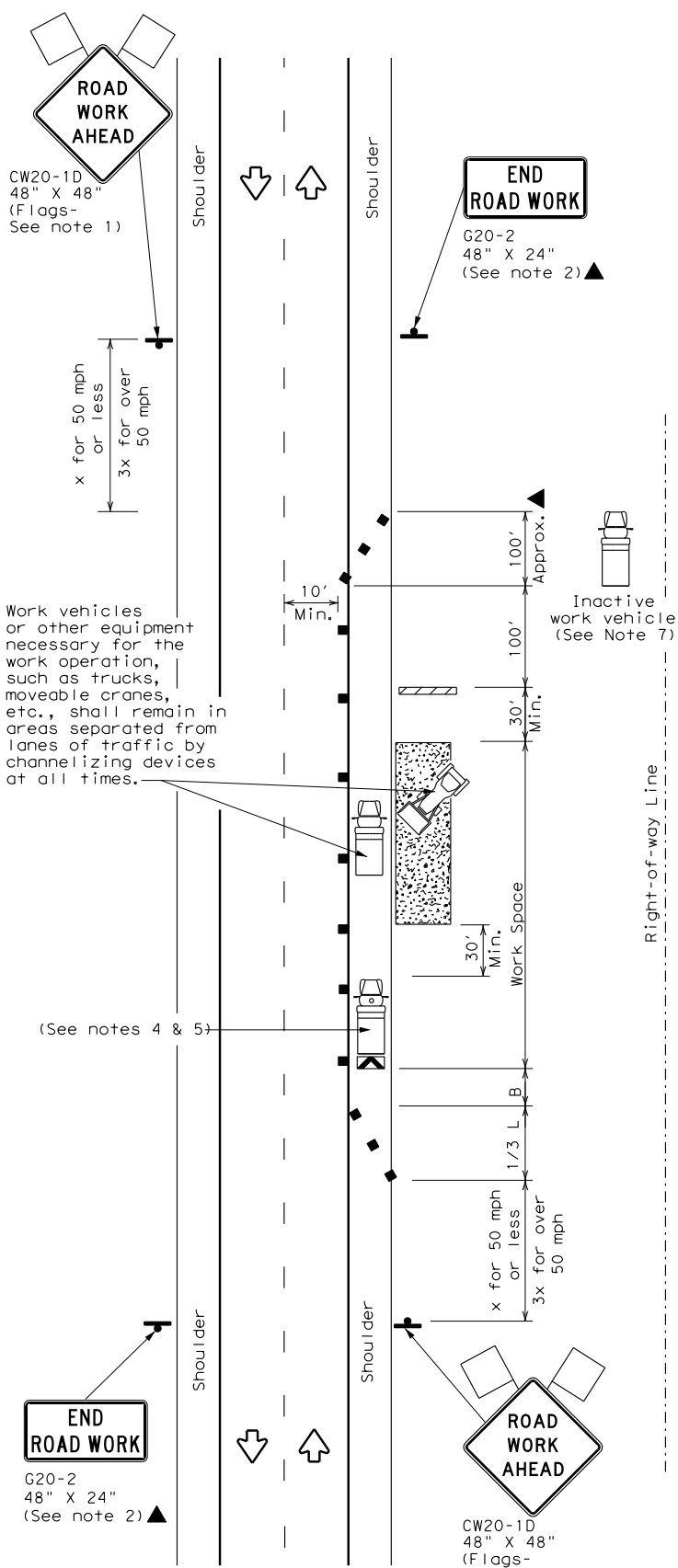
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

- Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
- Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
- Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (2-1) - 18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
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REVISIONS				
2-94 4-98	DIST		COUNTY	SHEET NO.
8-95 2-12				6
1-97 2-18				

DATE: FILE: