Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \le S_{DS} < 0.33g$	B	B	C
$0.33g \le S_{DS} < 0.50g$	C	C	D
$0.50g \le S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.076 g, Seismic Design Category = A

TABLE 1613.3.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \le S_{D1} < 0.133g$	B	B	C
$0.133g \le S_{D1} < 0.20g$	C	C	D
$0.20g \le S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.060 g, Seismic Design Category = A

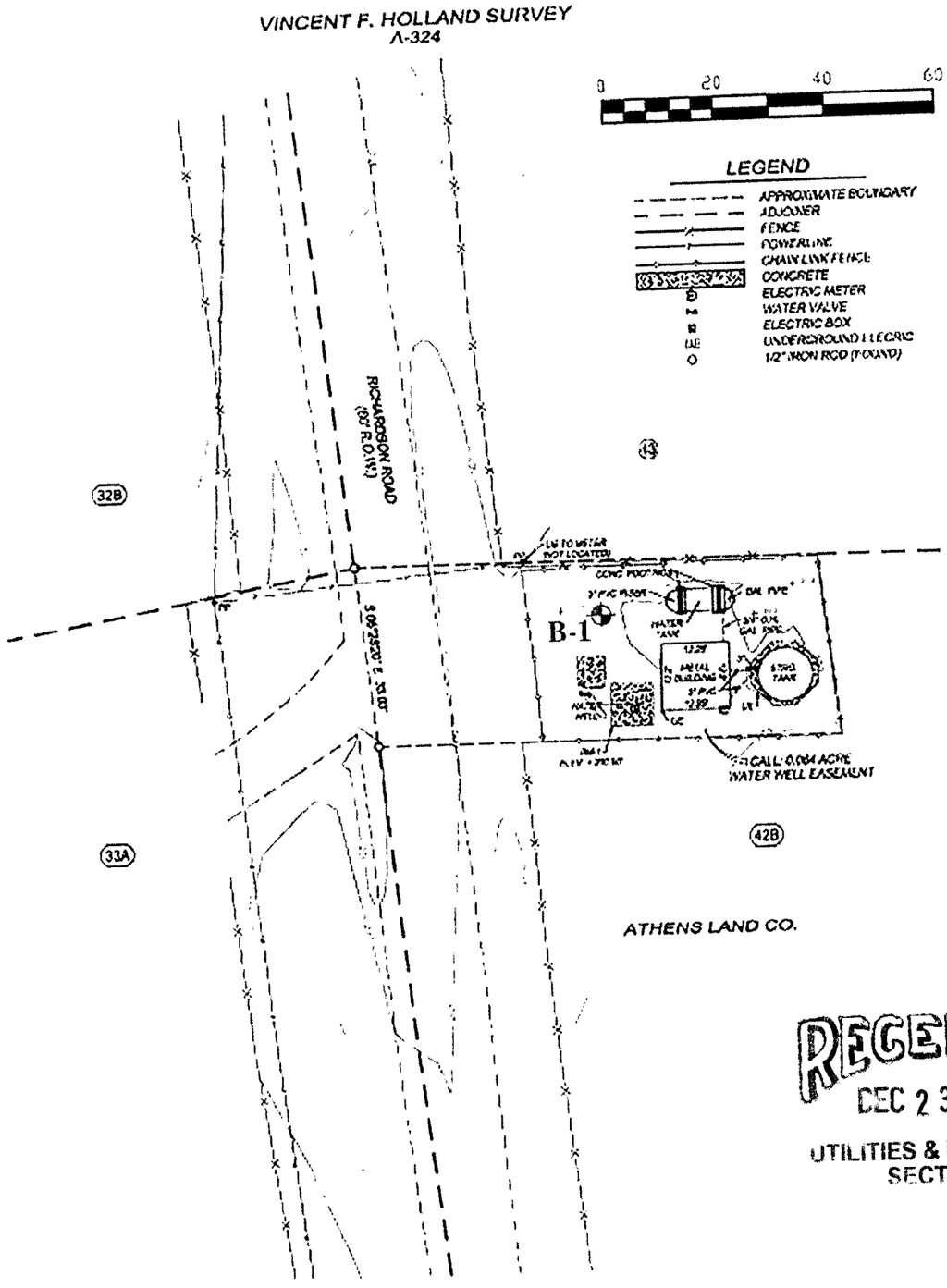
Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = A

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 1613.3.1(1)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
2. *Figure 1613.3.1(2)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf



ETTL ENGINEERS & CONSULTANTS	ATHENS WATER SUPPLY STANDPIPE ATHENS, TEXAS	PLATE 1 - PLAN OF BORINGS	APPROVED BY:
		JOB #: G3873-12	DRAWN BY: K.C.R.
		DATE: DEC. 2012 / SCALE: AS SHOWN	

UTILITIES & DISTRICTS
SECTION ETTL
ENGINEERS &
CONSULTANTS

MAIN OFFICE
1717 East Erwin
Tyler, Texas 75702
(903) 595-4421

LOG OF BORING B-1

PROJECT: Athens Water Supply Standpipe
Athens, Texas

DRILL RIG:

PROJECT NO.: G3873-12

BORING TYPE: Flight Auger

DATE 12/3/12

SURFACE ELEVATION

DEPTH (ft)	SAMPLES	USC	GEOLOGIC UNIT	WATER LEVEL	MATERIAL DESCRIPTION	FIELD STRENGTH DATA	DRY DENSITY (pcf)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	MOISTURE CONTENT (%)	ATTERBERG LIMITS(%) LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	MINUS #200 SIEVE (%)	OTHER TESTS PERFORMED (Page Ref #)
0		SM			SILTY SAND(SM) loose, tan	N=5										
		CH			FAT CLAY WITH SAND(CH) hard; tan and gray	P=4.5+					17	54	22	32	85	+40 Sieve=0% +4 Sieve=0%
5						P=4.5+	101	1.62	3.3	4	24					
		SM			SILTY SAND(SM) medium dense; light tan	N=24										
10						N=23					25	44	23	21	99	+40 Sieve=0% +4 Sieve=0%
		CL			LEAN CLAY(CL) very stiff; gray, laminated with silt											
15			Ewi			P=4.5+					22	59	20	39	97	+40 Sieve=0% +4 Sieve=0%
					–hard, brown											
20						P=4.5+										
25						P=4.5+										
30					Bottom of Boring @ 30'											

Natural Moisture Content and Atterberg Limits: Plastic Limit — Moisture Content — Liquid Limit (20 40 60 80)

Field strength data: BLOW COUNT (20 40 60 80); Qu (tsf) (1 2 3 4); PPR (tsf) (1.0 2.0 3.0 4.0); Torvane (tsf) (1.0 2.0 3.0 4.0)

Water Level — Est. ▽ Measured: ▼ Perched ▼

Water Observations: Dry and open upon completion.

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (tsf)
L - Lab Vane Shear (tsf)

Notes

GPS Coordinates: N32.272634°, W95.927345°

Driller: Johnathan Hart

Logger: Nathan Bueche

KEY TO SOIL CLASSIFICATIONS AND SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM [1]

Major Divisions		Letter	Symbol	Color	Name
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW		Red	Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP			Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM		Yellow	Silty gravels, gravel-sand-clay mixtures.
		GC			Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW		Red	Well-graded sands or gravelly sands, little or no fines
		SP			Poorly-graded sands or gravelly sands, little or no fines
		SM		Yellow	Silty sands, sand-silt mixtures
		SC			Clayey sands, sand-clay mixtures
FINED GRAINED SOILS	SILTS AND CLAYS LL < 50	ML		Green	Inorganic silts and very fine sands, rock flour, fine sandy silts, gravelly silts or silts with slight plasticity
		CL			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL			Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS LL > 50	MH		Blue	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH			Inorganic clays of high plasticity, fat clays
		OH			Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		Pt		Orange	Peat and other highly organic soils

TERMS CHARACTERIZING SOIL STRUCTURE

SLICKENSIDED-having inclined planes of weakness that are slick and glossy in appearance

FISSURED-containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical

LAMINATED (VARVED)-composed of thin layers of varying color and texture, usually grading from sand or silt at the bottom to clay at the top

CRUMBLY-cohesive soils which break into small blocks or crumbs on drying.

CALCAREOUS-containing appreciable quantities of calcium carbonate, generally nodular.

WELL GRADED-having wide range in grain sizes and substantial amounts of all intermediate particle sizes.

POORLY GRADED-predominantly of one grain size (uniformly graded) or having a range of sizes with some intermediate size missing (gap or skip graded).

SYMBOLS FOR TEST DATA

M/C = 15 - Natural moisture content in percent

δ = 95 - - Dry unit weight in lbs/cu ft.

Qu = 1.23 - Unconfined compression strength in tons/sq. ft.

Qc = 1.68 (21 psi) - Confined compression strength at indicated lateral pressure.

51-21-30 - Liquid limit, Plastic limit and Plasticity index.

30% FINER - Percent finer than No. 200 mesh sieve.

30 B/F - Blows per foot, standard penetration test.

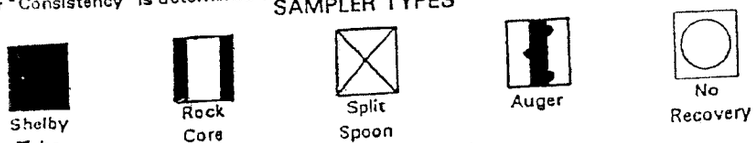
▼ - Ground water table.

TERMS DESCRIBING CONSISTENCY OF SOIL (2)

COARSE GRAINED SOILS		FINE GRAINED SOIL		
DESCRIPTIVE TERM	NO. BLOWS/FT. STANDARD PEN. TEST	DESCRIPTIVE TERMS	NO. BLOWS/FT. STANDARD PEN. TEST	UNCONFINED COMPRESSION TONS PER SQ.FT.
Very loose	0-4	Very Soft	< 2	< 0.25
Loose	4-10	Soft	2 - 4	0.25 - 0.50
Medium Dense	10-30	Medium Stiff	4 - 8	0.50 - 1.00
Dense	30-50	Stiff	8 - 15	1.00 - 2.00
Very Dense	over 50	Very Stiff	15 - 30	2.00 - 4.00
		Hard	over 30	over 4.00

Field classification for "Consistency" is determined with a 0.25" diam. penetrometer.

SAMPLER TYPES



1 - From Waterways Experiment Station Technical Memorandum No. 3-367
2 - From "Soil Mechanics in Engineering Practice" by Terzeghi and Peck

NEAL E. VELVIN, P.E.
WAYNE WEEKS, P.E
TYLER N HENDRICKSON, P.E.
CHRISTOPHER WEEKS, P.E.

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.

930 E. CORSICANA ST.
PO BOX 1007
ATHENS, TX 75751
PH 903 675.3903
FAX 903 675 8345
vwce@velvin-weeks.com

January 15, 2013

Mr. Tim Coffey – Chief Executive Officer
C & L Investment Company
P. O. Box 423
Centerville, TX 75833

RE: Athens Water Company Pump Station near Athens, TX

Dear Mr. Coffey:

Enclosed you will find an invoice from ETTL for geotechnical investigation work on your project. Please pay directly to ETTL.

Should you have any questions, please feel free to call.

Cordially Yours,

Velvin & Weeks Consulting Engineers, Inc.

Karen Bynum

Karen Bynum

Enclosures

ETTL Engineers & Consultants, Inc.

* Geotechnical * Materials * Environmental *
Offices Tyler, Tx * Longview, Tx * Texarkana, AR

SEND PAYMENT TO:
Post Office Box 2017
Tyler, TX 75710-2017

Phone: 903 595-4421

INVOICE

Order No	023127
Shipper ID	S024309
Order Type	Manual Order
Customer	ATHENSWSC
Dept Cntl Nbr	212-0212003
Department	02

SHIP TO:
ATHENS WATER SUPPLY CORPORATION
C/O VELVIN & WEEKS CONSULTING ENGRS
P O BOX 1007
ATHENS, TX 75751-1007

BILL TO:
ATHENS WATER SUPPLY CORPORATION
C/O VELVIN & WEEKS CONSULTING ENGRS
P O BOX 1007
ATHENS, TX 75751-1007

Notes GROUND STORAGE TANK FOUNDATION FOR IMPROVEMENTS AT THE PUMP STATION ON RICHARDSON ROAD / HENDERSON COUNTY, TEXAS

PURCHASE ORDER	JOB NUMBER	INVOICE NUMBER	INVOICE DATE
	G3873-12	I024354	1/7/2013

ITEM ID/DESCRIPTION	QUANTITY	UNITS	PRICE	AMOUNT
02 GEOTECHNICAL INVESTIGATION	1 000	EA		2,600 00

APPROVED FOR PAYMENT
VOUCE JOB No. 4210
15 JAN 13

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DEC 2 3 2013
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SECTION

Sales Total	2,600 00
Shipping & Handling	0 00
Misc Charges	0 00
Tax Total	0 00
TOTAL	2 600 00

Terms Due on Receipt Please Pay From This Invoice

NEAL E. VELVIN, P.E.
WAYNE WEEKS, P.E.
TYLER N. HENDRICKSON, P.E.
CHRISTOPHER WEEKS, P.E.

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.

930 E. CORSICANA ST.
PO BOX 1007
ATHENS, TX 75751
PH 903.675.3903
FAX 903 675.8345
vwce@velvin-weeks.com

February 19th, 2013

Mr. Tim Coffey – Chief Executive Officer
C&L Investment Company
P.O. Box 423
Centerville, TX 75833

RE: Report on Proposed Drinking Water System Upgrades at the Athens Water Company Pump Station near Athens, Texas

Dear Mr. Coffey:

This Preliminary Engineering Letter Report (PELR) has been prepared and sent to you for review and approval in compliance with the scope of work outlined within the Velvin & Weeks Consulting Engineers, Inc. (VWCE) Proposal for Professional Engineering Services letter approved by you on October 16th, 2012.

The Athens Water Company (AWC) plans to install a new ground storage tank at the pump station to operate in parallel with the existing ground storage tank, which has a gross fluid capacity of approximately 10,000 gallons. Once the new tank is installed and brought online, the existing ground storage tank will be taken offline and then processed for coating rehabilitation on both interior and exterior tank surfaces. When all coating rehabilitation work is completed, the old tank will be brought back online to serve again in parallel with the new ground storage tank.

Currently, the pump station provides potable drinking water to 31 domestic meter connections within the Richardson Road service area. Since State regulations require that a community-wide potable water production and distribution system serving fewer than 50 meter connections provide a total storage capacity of 200 gallons per meter connection, the new ground storage tank will be required to have a minimum fluid storage capacity of at least 6,200 gallons (Ref: 30 TAC 290.45. (b). (1). (B). (ii)).

Options for Location of the New Ground Storage Tank

The two existing open ground areas available for placement of the new tank and foundation are shown in plan view on Exhibit No. 1. Tank Location Option No. 1 involves possible construction of the foundation pad and installation of the tank in the open ground area located to the northwest corner of the pump building, near the front of the fenced pump station location. Alternatively,

Tank Location Option No. 2 involves possible construction of the foundation pad and installation of the tank in the open ground area to the northeast corner of the pump building, near the back of the fenced pump station location.

Since the owner of the tract surrounding the pump station location refuses to allow the Prospective Contractor temporary access to the fenced area from his property, Tank Location Option No. 1 has the distinct advantage of being close to the edge of Richardson Road, which runs in a north-south direction adjacent to the west end of the site. With access from the road, the Prospective Contractor would simply need to remove (temporarily) the front fence posts and fence fabric to construct the foundation and tank without ever having to encroach on the surrounding tract owner's property. However, Tank Location Option No. 1 has the disadvantage of being the furthest distance away from the tie-in point for tank fill and pump suction piping, which is located between the pump building and the existing ground storage tank. The longer distance will require the installation of more joints of pipe and ductile iron fittings to convey water to and from the tank for normal operation.

Tank Location Option No. 2 has the advantage of being somewhat closer to the piping tie-in point, so fewer joints of pipe and ductile iron fittings will be required for installation between the old and new tanks. However, a major disadvantage to locating the new tank there involves the severely restricted access for men and equipment between the front of the site near the road, and the east end of the existing hydropneumatic storage tank located to the north of the pump building. Required construction activities such as subgrade excavation and backfill, casting concrete for the foundation with a pumper truck, and erecting the tank structure with a crane would become extremely complicated due to the close proximity of vital tank and building components that could become damaged or inoperable if accidental contact between the equipment and those items were to occur during foundation and tank construction.

Based upon this comparison of advantages and disadvantages for tank location within the restricted site, it is my recommendation that Tank Location Option No. 1 be selected for construction of the foundation and tank as shown on Exhibit No. 2.

Options for Fluid Capacity of the New Ground Storage Tank

The new ground storage tank (GST) proposed for installation at the pump station site will be required to comply with all applicable regulations for its design and construction as promulgated by the Texas Commission on Environmental Quality (TCEQ). A copy of TCEQ's General Construction Notes which address and describe these requirements is provided for review within this Letter Report as Exhibit No. 3.

Essentially, there are at least three options to consider for selection of the approximate fluid capacity within the new GST. Each of the options is described diagrammatically within Exhibit Nos. 4, 5, and 6.

GST Option No. 1 involves the installation of a fiberglass-reinforced plastic (FRP) tank having a gross fluid capacity of 15,000 gallons. It would have a diameter measuring 12 linear feet, and a vertical height of 18 feet. The main advantage to installing a new GST of this size is that it could

operate over the full water depth range of dynamic storage capacity in parallel with the existing GST. This would enhance operational capacity of the booster pumps within the system, while maximizing available reserve storage capacity at approximately 25,000 gallons during periods of high demand from the distribution system, or during brief periods when the deep well water source might be out of commission for maintenance or repair activities. Of course, this option will likely be the most expensive one, since the tank is larger and will require more raw materials to fabricate and construct than what would be needed for a tank of a smaller size.

GST Option No. 2 involves the installation of an FRP tank having a gross fluid capacity of 10,000 gallons. It would have a diameter measuring 12 linear feet, and a vertical height of 12 feet. The main advantage to installing a new GST of this size is that it matches the fluid capacity of the existing GST so that no net loss of storage capacity occurs if the existing tank has to be taken offline for repairs or maintenance. However, if both tanks are operated in parallel, approximately 3,300 gallons of storage capacity in the existing GST is lost when the floating water level in both tanks is kept at or below the overflow weir elevation at the new GST. The combined storage capacity of both GSTs is approximately 16,700 gallons when the new GST is full, and the existing GST is partially filled as shown within Exhibit No. 5. It should be noted that implementation of this option will require a reset of all affected level sensor setpoints for electrical signal control of the booster pumps with existing sensors in the existing GST while both tanks are operating in parallel. It will also require the installation of new sensors, wires, selector switch, cabling, etc. for alternate control of the booster pumps when the existing GST is taken out of service for repairs or maintenance at some point in the future.

GST Option No. 3 involves the installation of an FRP tank having a gross fluid capacity of 7,500 gallons. It would have a diameter measuring 12 linear feet, and a vertical height of 9 feet. The main advantage to installing a new GST of this size is that it will provide the system's 31 service meter connections with at least 200 gallons of storage capacity per connection to comply with TCEQ storage capacity criteria when the existing GST has to be taken offline for repairs or maintenance. However, in a similar manner as described above for Option No. 2, if both tanks are operated in parallel, approximately 5,000 gallons of storage capacity in the existing GST is lost when the floating water level in both tanks is kept at or below the overflow weir elevation at the new GST. The combined storage capacity of both GSTs is approximately 12,500 gallons when the new GST is full, and the existing GST is partially filled as shown within Exhibit No. 6. It should be noted that implementation of this option will require a reset of all affected level sensor setpoints for electrical signal control of the booster pumps with existing sensors in the existing GST while both tanks are operating in parallel. It will also require the installation of new sensors, wires, selector switch, cabling, etc. for alternate control of the booster pumps when the existing GST is taken out of service for repairs or maintenance at some point in the future.

Fabrication specifications and tank sizing information from a typical vendor of the FRP tanks described above is provided for review as Exhibit No. 7 within this Letter Report.

I have no particular recommendation on the selection of a GST option from the ones described above, since any one of them will satisfy the State's criteria for minimum storage capacity within a service area of the size noted.

Mr. Tim Colley
2/19/13

Opinions of Probable Construction Costs

Based upon the results of recent inquiries for estimated pricing from local installation contractors and vendors with expertise in potable water pump station construction, it is my opinion that the probable costs to construct and install the foundation, tank, piping, valves, fittings, etc. will range somewhere between $24,320 and $30,220, depending upon which tank capacity option is selected for implementation. Additional fees ranging in summary values from $6,080 to $7,555 will be required to cover the costs of engineering design, testing, and inspection of the construction work. To account for any "unknown" issues that might arise during construction, I recommend allowing for an approximate 10% contingency amount to be included within the overall project budget. For more information in this matter, please see the enclosed tabular summaries of probable construction costs as they relate to the implementation of each option described above.

I trust that the information provided within this Letter Report will be of use to you when making a decision on how to proceed with this pump station improvements project. If you have any questions about, or comments related to, this report, please call me anytime at (903) 676-6546.

Cordially yours,

VELVIN & WEEKS CONSULTING ENGINEERS, INC.

Christopher Weeks, P.E.

STATE OF TEXAS
CHRISTOPHER D. WEEKS
81588
REGISTERED
PROFESSIONAL ENGINEER

Enclosures (10)

Cc: File

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-151

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

GROUND STORAGE TANK

GENERAL CONSTRUCTION NOTES

1. These water storage facilities must be constructed in accordance with the Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D.
2. All facilities for potable water storage shall be covered and designed, fabricated, erected, tested and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators and other appurtenances as specified in these rules.
3. Bolted tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D103. Welded tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D 100. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot.
4. Roof vents shall be installed in strict accordance with current AWWA standards and shall be equipped with approved screens to prevent entry of animals, birds, insects and heavy air contaminants. Screens shall be fabricated of corrosion resistant material and shall be 16 mesh or finer. Screens shall be securely clamped in place with stainless or galvanized bands or wires and shall be designed to withstand winds of not less than tank design criteria (unless specified otherwise by the engineer).
5. All roof openings shall be designed in accordance with current AWWA standards. If an alternate 30 inch diameter access opening is not provided in a storage tank, the primary roof access opening shall not be less than 30 inches in diameter. Other roof openings required only for ventilating purposes during cleaning, repairing or painting operations shall be not less than 24 inches in diameter or as specified by the licensed professional engineer. An existing tank without a 30-inch in diameter access opening must be modified to meet this requirement when major repair or maintenance is performed on the tank. Each access opening shall have a raised curbing at least four inches in height with a lockable cover that overlaps the curbing at least two inches in a downward direction. Where necessary, a gasket shall be used to make a positive seal when the hatch is closed. All hatches shall remain locked except during inspections and maintenance.
6. Overflows shall be designed in strict accordance with current AWWA standards and shall terminate with a gravity hinged and weighted cover. The cover shall fit tightly with no gap over 1/16 inches. If the overflow terminates at any point other than the ground level, it shall be located near enough and at a position accessible from a ladder or the balcony for inspection purposes. The overflow(s) shall be sized to handle the maximum possible fill rate without exceeding the capacity of the overflow(s). The discharge opening of the overflow(s) shall be above the surface of the ground and shall not be subject to submergence.

7. All clearwells and water storage tanks shall have a liquid level indicator located at the tank site. The indicator can be a float with a moving target, an ultrasonic level indicator, or a pressure gauge calibrated in feet of water. If an elevated tank or standpipe has a float with moving target indicator, it must also have a pressure indicator located at ground level. Pressure gauges must not be less than three inches in diameter and calibrated at not more than two-foot intervals. Remote reading gauges at the owner's treatment plant or pumping station will not eliminate the requirement for a gauge at the tank site unless the tank is located at the plant or station.
8. Inlet and outlet connections shall be located so as to prevent short circuiting or stagnation of water. Clearwells used for disinfectant contact time shall be appropriately baffled.
9. Clearwells and potable water storage tanks shall be thoroughly tight against leakage, shall be located above the ground water table and shall have no walls in common with any other plant units containing water in the process of treatment. All associated appurtenances including valves, pipes and fittings shall be tight against leakage.
10. Each clearwell or potable water storage tank shall be provided with a means of removing accumulated silt and deposits at all low points in the bottom of the tank. Drains shall not be connected to any waste or sewage disposal system and shall be constructed so that they are not a potential agent in the contamination of the stored water.
11. All clear wells, ground storage tanks, standpipes, and elevated tanks shall be painted, disinfected, and maintained in strict accordance with current AWWA standards. However, no temporary coatings, wax grease coatings, or coating materials containing lead will be allowed. No other coatings will be allowed which are not approved for use (as a contact surface with potable water) by the United States Environmental Protection Agency (EPA), National Sanitation Foundation (NSF), or the United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF Standard 61 and must be certified by an organization accredited by ANSI.
12. No tanks or containers shall be used to store potable water that has previously been used for any non potable purpose. Where a used tank is proposed for use, a letter from the previous owner or owners must be submitted to the Commission which states the use of the tank.
13. Access manways in the riser pipe, shell area, access tube, bowl area or any other location opening directly into the water compartment shall be located in strict accordance with current AWWA standards. These openings shall not be less than 24 inches in diameter. However, in the case of a riser pipe or access tube of 36 inches in diameter or smaller, the access manway may be 18 inches times 24 inches with the vertical dimension not less than 24 inches. The primary access manway in the lower ring or section of a ground storage tank shall be not less than 30 inches in diameter. Where necessary, for any access manway which allows direct access to the water compartment, a gasket shall be used to make a positive seal when the access manway is closed.
14. Service pump installation taking suction from storage tanks shall provide automatic low water level cutoff devices to prevent damage to the pumps. The service pump circuitry shall also resume pumping automatically once the minimum water level is reached in the tank.

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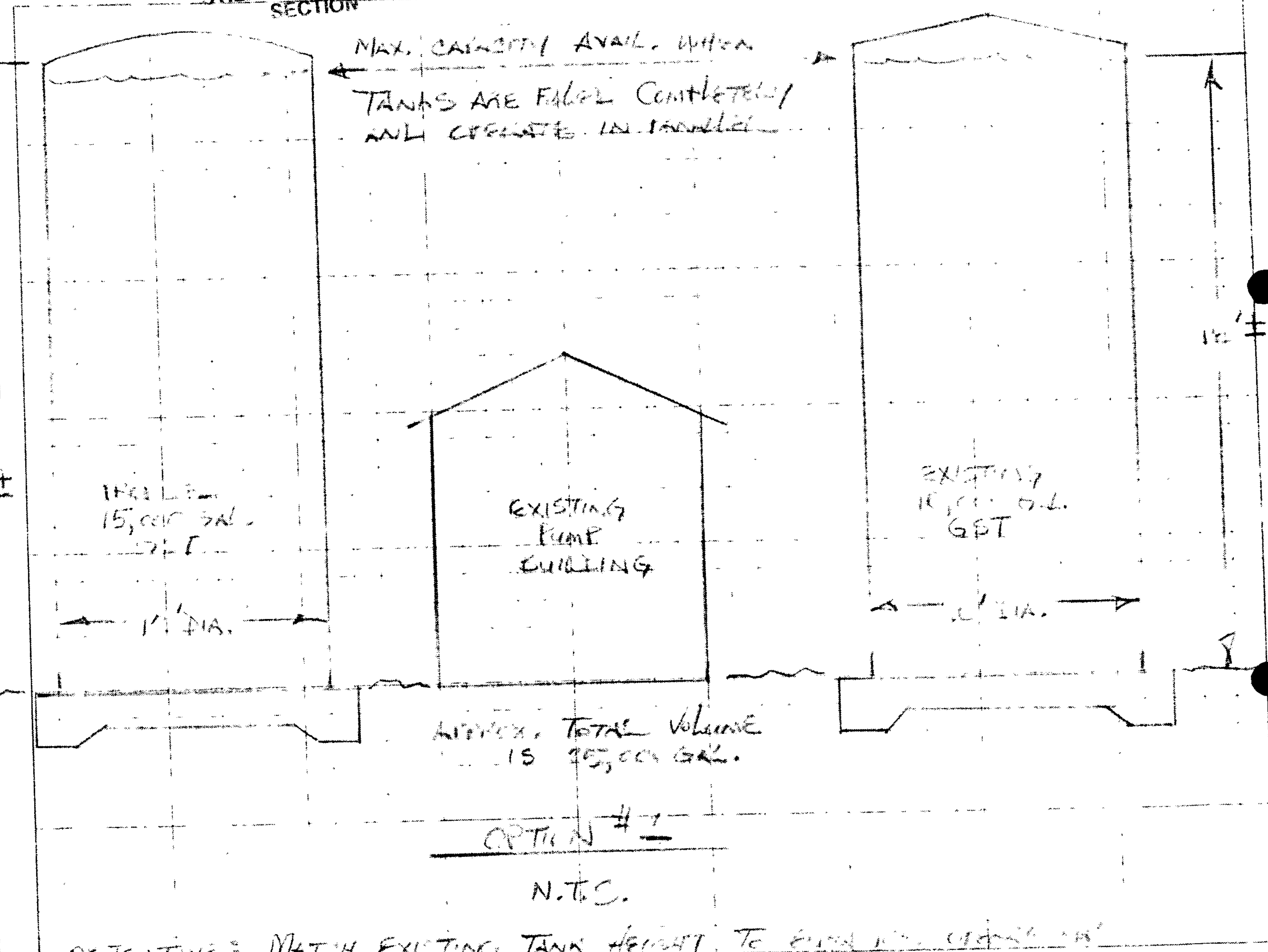
EXHIBIT NO. 4

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.
930 E Corsicana
Athens, Texas 75751
P.O. Box 1007
903-675-3903
903-675-8345 FAX

JOB ____
SHEET NO ____ OF ____
CALCULATED BY ____ DATE ____
CHECKED BY ____ DATE ____
SCALE ____



OBJECTIVE: MATCH EXISTING TANK HEIGHT
FLEXIBILITY WHEN BOTH TANKS ARE IN

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SECTION

EXHIBIT NO. 5

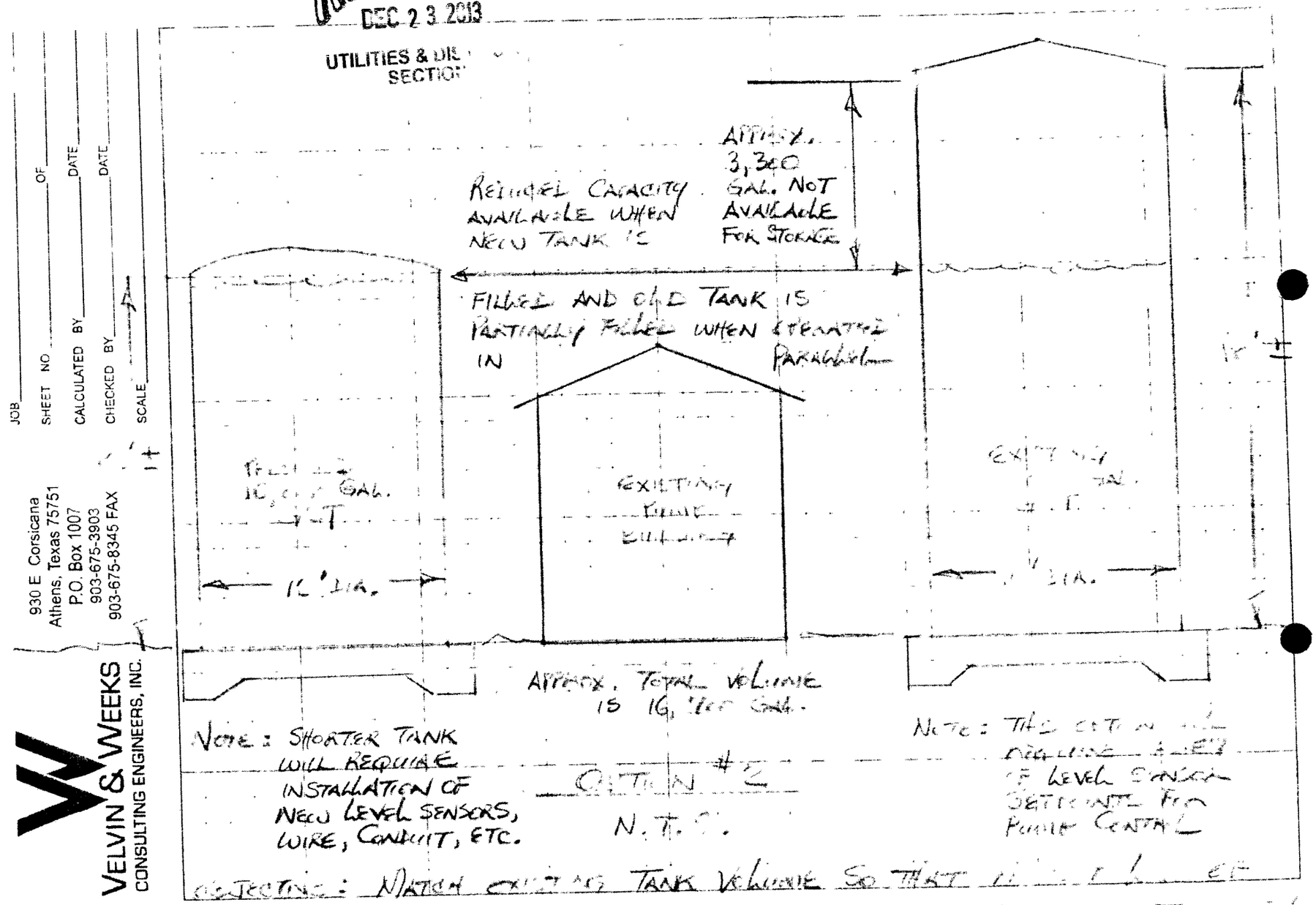
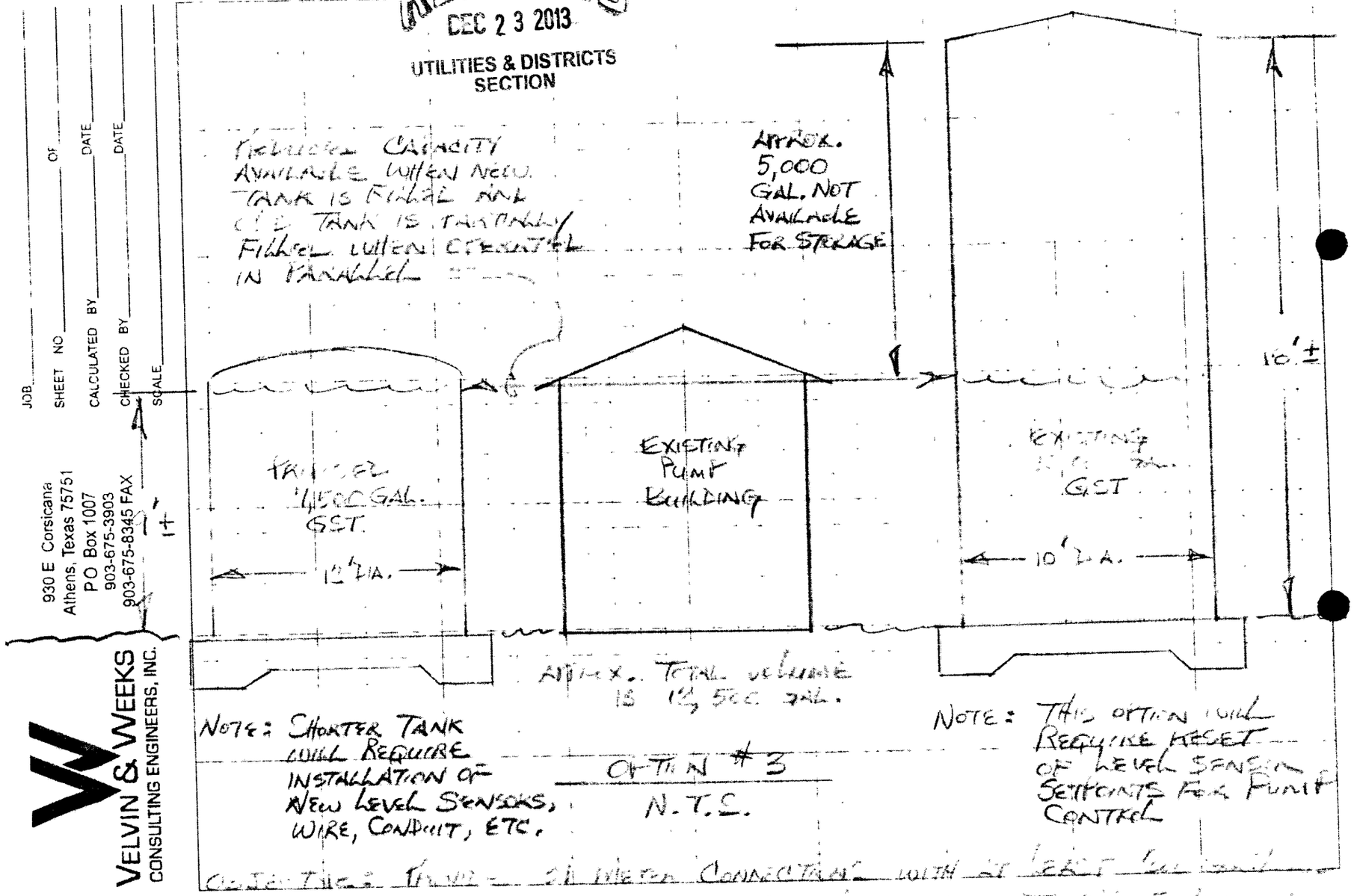


EXHIBIT NO. 6

RECEIVED
DEC 2 3 2013
UTILITIES & DISTRICTS SECTION

JOB _____
SHEET NO _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.
930 E Corsicana
Athens, Texas 75751
P O Box 1007
903-675-3903
903-675-8345 FAX



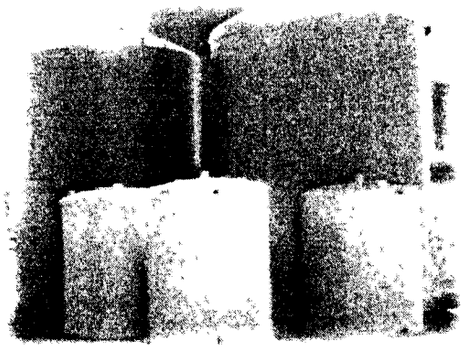
Option Three: Provide all interconnecting with at least [illegible] of storage capacity [illegible] to meet [illegible] when old tank [illegible] taken off line. For maintenance.

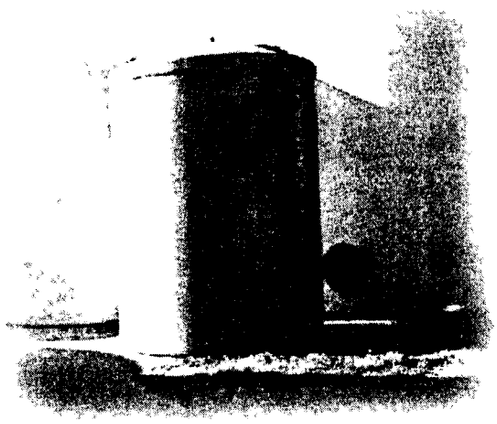
LF

Fiberglass Potable Water Tanks

Experience...

Let us put our experience to work for you. We have been manufacturing high quality fiberglass potable water tanks since 1974. Our tanks are built with quality in mind. We use only the highest quality resins and glass fiber to build our fiberglass tanks. We are committed to building the very best fiberglass tank money can buy LFM uses the latest manufacturing techniques, utilizing the most advanced chop and filament winding equipment available This insures the utmost quality in all of our fiberglass products. LFM's production facility covers over 83,000 square feet and is situated on 35 acres just east of Giddings, Texas Our workforce consists of over 100 full-time employees that are committed to building quality fiberglass products





Economical...

Our fiberglass potable water tanks are an excellent economic value when compared to steel tanks. A fiberglass tank from LFM weighs approximately 60% less than a steel tank; which makes installation easier and less time consuming, saving the customer money in the long run. Also. our fiberglass tanks save money because they are durable and have a longer service life than steel tanks

Clean Water Storage...

LFM knows the importance of keeping your water fresh and clean. Our fiberglass potable water tanks are corrosive resistant to the minerals and chemicals found in water Steel tanks may rust and corrode, which affects the quality of the water stored inside. Our fiberglass potable water tanks will continue to keep your water fresh and clean with no corrosion to the tank. LFM's fiberglass potable water tanks are FDA, USDA, and AWWA approved for storage of potable water.

Strong & Lasting Construction...

LFM builds its fiberglass potable water tanks to provide a long and trouble-free service life. Our fiberglass tanks are built to meet or exceed the strict requirements of ASTM D3299 and ANS/AWWA D120 specifications to assure our customers of the highest structural integrity, durability and corrosive resistance. We maintain individual inspection reports for each tank; recording such information as resin system used, actual material usage, fittings, accessories and destination. The inspection reports are filed for future reference and copies are available upon request Our excellent inspection program assures that each of our customers receive the highest quality fiberglass products available. At LFM we are committed to providing our customers with the best fiberglass products possible.

EXHIBIT NO. 7

Delivery...

At LFM, we maintain our own fleet of delivery trucks which are equipped for transporting fiberglass tanks. This helps to keep delivery costs to our customers low. We employ a professional delivery staff whose primary goal is to see to it that our fiberglass tanks are delivered on time and in a safe and professional manner. And as an added benefit, our fiberglass potable water tanks are light-weight, making them easier to handle during loading and unloading, further reducing delivery costs.

Available Sizes...

Our fiberglass potable water tanks are manufactured to meet our customers required dimensions Standard tanks are available in diameters from 2 feet through 15.5 feet. LFM can also custom design and manufacture fiberglass potable water tanks for almost any size, shape or service requested. Contact your LFM sales professional to find out which sizes best fit your specific needs

Options & Fittings...

LFM can build fiberglass tanks with many different options and fittings. Some of these include various FRP flanges, manways, sight glasses, ladder cages, insulation and many other specialty fixtures.

Corrosion-Free...

Our fiberglass potable water tanks eliminate the need for additional corrosion protection, such as exterior painting and cathodic protection systems for above ground and underground installations. Because of the anti-corrosive nature of our fiberglass tanks, the need for costly maintenance and repainting is eliminated, thus offering considerable savings when compared to steel tanks. And because our fiberglass potable water tanks are corrosion-free, the risk of leakage and content contamination is greatly reduced.

Quality Assurance...

We stand behind the products we build Our fiberglass potable water tanks carry a one year warranty For further information, see the warranty section of our brochure.

Required Ordering Information...

Certain information is required when ordering fiberglass reinforced plastic (FRP) tanks The following is a list of information that will help you to decide which particular tank design will best fit your specific needs

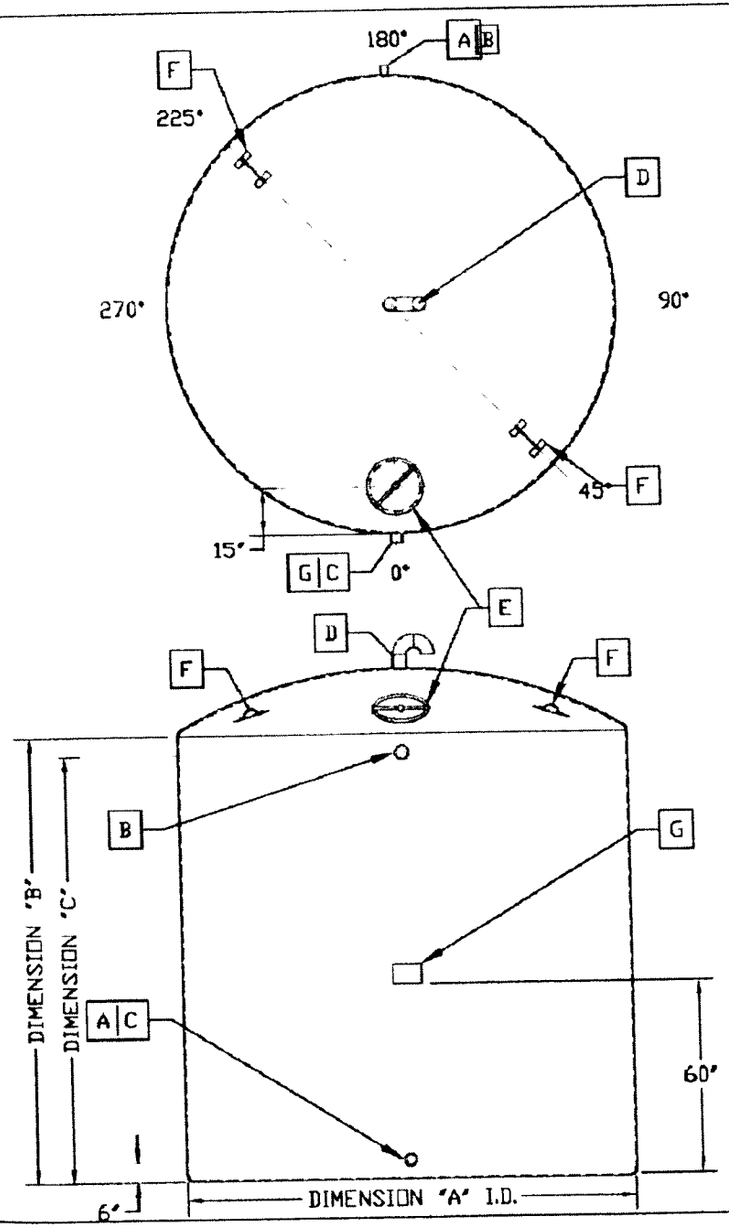
1. Service environment (contents)
2. Temperature
3. Volume
4. Wind load
5. Seismic load
6. Fittings (size & type)
7. Specific gravity
8. Desired dimensions
9. Above ground or underground installations

LF

5528 E. Highway 290
Giddings, Texas 78942
Phone 800 237 5791
Fax 979.542 0911

300 W. Riddleville Road
Karnes City, Texas 78118
Phone 800 237 5791
Fax 979.542 0911

2450 Industrial Boulevard
Waycross, Georgia 31503
Phone 912 285 7576
Fax 912 285 7553



NOTES:
1. TANK DESIGNED, FABRICATED, INSPECTED, TESTED AND MARKED IN ACCORDANCE WITH A.S.T.M. D-3299 SPECIFICATIONS.
2. SIGNED APPROVED DRAWING REQUIRED BEFORE START OF MANUFACTURING. DATE: _____

( ) APPROVED _____
( ) APPROVED AS NOTED _____
( ) REVISE & RESUBMIT _____

MODEL #	GAL	DIMENSION A	DIMENSION B	DIMENSION C
V168-15000	15000	14'-0"	13'-0"	12'-6"
V144-15000	10000	12'-0"	17'-9"	17'-3"
V168-10000	10000	14'-0"	9'-8"	8'-2"
V144-10000	10000	12'-0"	11'-10"	11'-4"
V168-8500	8500	14'-0"	7'-3"	6'-11"
V144-8500	8500	12'-0"	10'-1"	9'-7"
V168-7500	7500	14'-0"	6'-6"	72"
V144-7500	7500	12'-0"	8'-10"	8'-4"
V168-5000	5000	14'-0"	52"	3'-10"
V144-5000	5000	12'-0"	71"	65"
V120-5000	5000	10'-0"	8'-6"	8'-0"
V96-4000	4000	8'-0"	10'-8"	10'-2"
V96-3000	3000	8'-0"	8'-0"	7'-6"
V96-2500	2500	8'-0"	6'-8"	6'-2"
V72-2000	2000	72"	9'-5"	8'-11"
V72-1500	1500	72"	7'-1"	6'-7"
V48-1000	1000	48	10'-8"	10'-2"
V48-800	800	48"	8'-7"	8'-2"
V48-700	700	48"	7'-5"	6'-11"
V48-600	600	48	6'-5"	71"
V48-500	500	48"	64"	58"
V48-400	400	48"	51"	45"
V36-300	300	36"	68"	62"
V36-250	250	36"	57"	51"
V36-200	200	36"	46"	40"
V24-150	150	24"	6'-3"	66"
V24-125	125	24"	64"	58"
V24-100	100	24"	51"	45"
V24-50	50	24"	26"	20"

ITEM	QTY.	DESC.
G	1	NAME TAG
F	2	LIFTING LUG (PAINT.STL.MIN.)
E	1	18"DIA.POLYMANWAY(NON-VENTED)
D	1	3"DIA.PVC U-VENT W/S.S.SCREEN
C	1	3"DIA.FRP THRD HALF COUPLING
B	1	2"DIA.FRP THRD HALF COUPLING
A	1	2"DIA.FRP THRD HALF COUPLING

DESCRIPTION: RAINWATER COLLECTION

TOLERANCES: FRACTION = ±1/4; DECIMAL .X = ±.250, .XX = ±.062, .XXX = ±.010; UNLESS OTHERWISE SPECIFIED

LINER: NON FDA ISO

COLOR: GREY
RESIN: ORTHOPHTHALIC
DESIGN TEMP.: 150°F
OPERATING TEMP.: AMBIENT°F
DESIGN PRESS.: ATMOSPHERIC
OPER. PRESS.: ATMOSPHERIC
SERVICE: RAINWATER COLLECTION
DESIGN SP. GR.: 1.2
OPERATING SP. GR.: 1.0
DWN BY: MMM
SCALE: NONE
REV.: 05/09/05 TJJ REV. F
S.O. NO.: .
DATE: 07/11/96
CHK BY: TLW
APP BY: JDN
DWG NO.: A-MD0105RW
QUOTE NO.: .
SHT: 1 OF 1
SOLD BY:
CUSTOMER: .

LFM
FRP SPECIALISTS
L.F. MANUFACTURING, INC
(800) 237-5791
(979) 542-8027
FAX # (979) 542-0911

Exhibit No. 8

Athens Water Company

ENGINEER'S PRELIMINARY DESIGN COST ESTIMATE (2013 DOLLARS)

New Ground Storage Tank at Existing Pump Station Project - Option No. 1

Velyin & Weeks Consulting Engineers, Inc.

Item No.	Description	Quantity		Unit Cost		Amount
1	4-inch PVC Pressure Pipe (SDR-26) installed as Yard Piping between Existing and Proposed Ground Storage Tanks	70	LF	16 00	$	1,120
2	3-inch Gate Valve installed at Existing Tank Fill Line for isolation of Existing Ground Storage Tank	1	Ea	300 00	$	300
3	Modification of Existing Yard Piping to Tie-In Proposed Yard Piping	1	LS	1,000 00	$	1,000
4	Cast-in-Place Concrete Foundation for Proposed Ground Storage Tank (Includes Subgrade Preparation with Compacted Select Fill)	1	LS	7,500 00	$	7,500
5	15,000-Gallon Capacity Fiberglass Reinforced Plastic Ground Storage Tank (Includes Ladder, Vent, Hatches Isolation Valves Etc)	1	Ea	16,400 00	$	16,400
6	Sensor, Wire, Conduit, Switches, Etc for Modification of Existing Pump Control System to utilize water level input from Proposed GST	1	LS	1,500 00	$	1,500
7	Existing Chain-link Fence Repair at Conclusion of Construction Activities	1	LS	1,000 00	$	1,000
8	Trench Safety, Sheeting and Shoring	200	LF	2 00	$	400
9	Site Surveying and Construction Staking	1	LS	1,000 00	$	1,000

Construction Subtotal = $ 30,220

Basic Engineering Fee @ 15 0% of Construction Subtotal	$	4,533
Testing @ 2 0% of Construction Subtotal	$	604
Inspection @ 8 0% of Construction Subtotal	$	2,418

Grand Total = $ 37,775

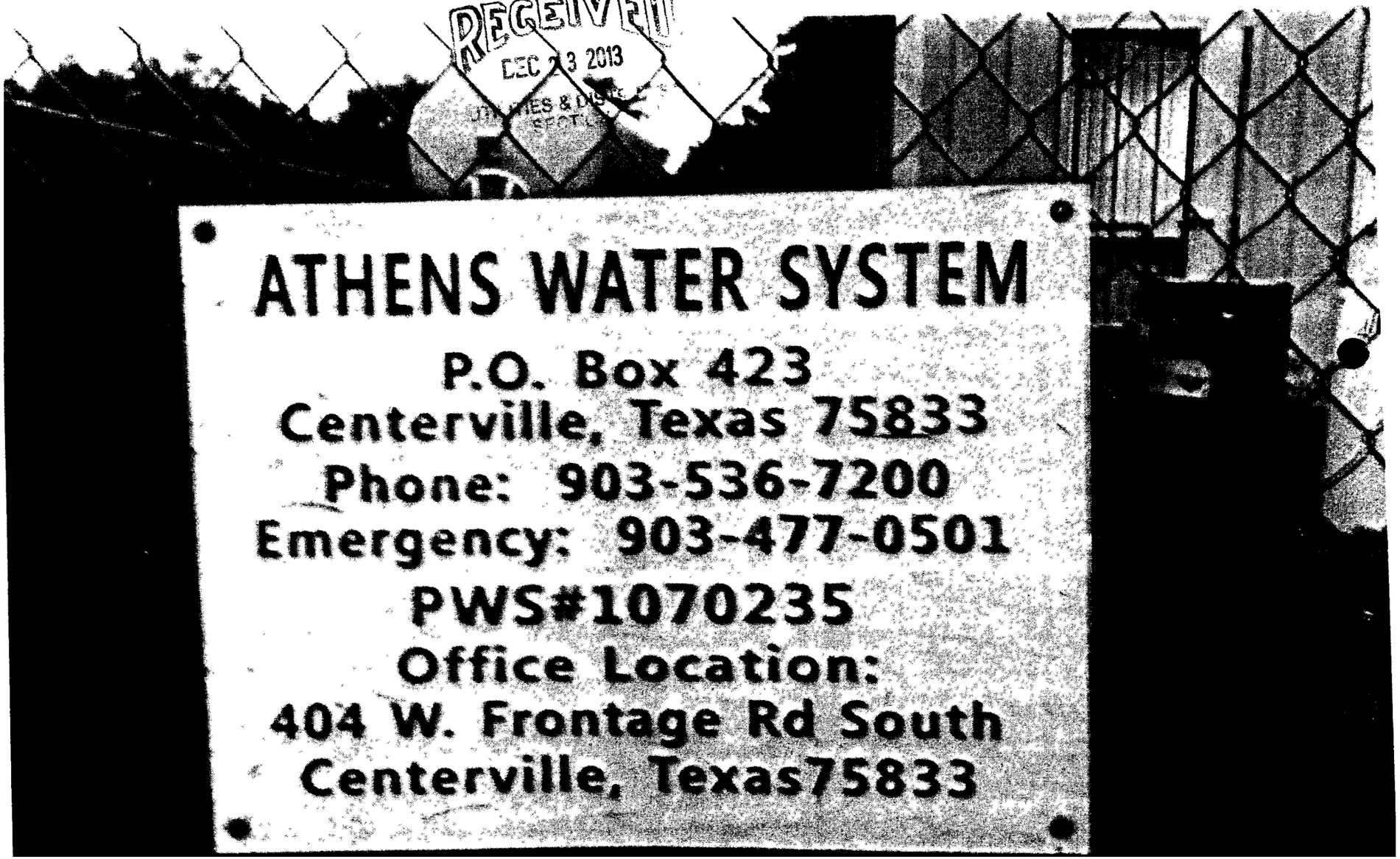

RECEIVED
DEC 13 2013
ATHENS WATER SYSTEM
P.O. Box 423
Centerville, Texas 75833
Phone: 903-536-7200
Emergency: 903-477-0501
PWS#1070235
Office Location:
404 W. Frontage Rd South
Centerville, Texas75833

Exhibit No. 9

Athens Water Company

ENGINEER'S PRELIMINARY DESIGN COST ESTIMATE (2013 DOLLARS)

New Ground Storage Tank at Existing Pump Station Project - Option No. 2

Velvin & Weeks Consulting Engineers, Inc.

Item No.	Description	Quantity		Unit Cost		Amount
1	4-inch PVC Pressure Pipe (SDR-26) installed as Yard Piping between Existing and Proposed Ground Storage Tanks	70	LF	16 00	$	1,120
2	3-inch Gate Valve installed at Existing Tank Fill Line for isolation of Existing Ground Storage Tank	1	Ea	300 00	$	300
3	Modification of Existing Yard Piping to Tie-In Proposed Yard Piping	1	LS	1,000 00	$	1,000
4	Cast-in-Place Concrete Foundation for Proposed Ground Storage Tank (Includes Subgrade Preparation with Compacted Select Fill)	1	LS	7,500 00	$	7,500
5	10 000-Gallon Capacity Fiberglass Reinforced Plastic Ground Storage Tank (Includes Ladder, Vent, Hatches, Isolation Valves, Etc)	1	Ea	13,000.00	$	13,000
6	Sensor, Wire, Conduit, Switches, Etc for Modification of Existing Pump Control System to utilize water level input from Proposed GST	1	LS	1,500 00	$	1,500
7	Existing Chain-link Fence Repair at Conclusion of Construction Activities	1	LS	1,000 00	$	1,000
8	Trench Safety, Sheeting and Shoring	200	LF	2 00	$	400
9	Site Surveying and Construction Staking	1	LS	1,000.00	$	1,000

Construction Subtotal = $ 26,820

Basic Engineering Fee @ 15 0% of Construction Subtotal	$	4 023
Testing @ 2 0% of Construction Subtotal	$	536
Inspection @ 8 0% of Construction Subtotal	$	2 146

Grand Total = $ 33,525

Exhibit No. 10

Athens Water Company

ENGINEER'S PRELIMINARY DESIGN COST ESTIMATE (2013 DOLLARS)

New Ground Storage Tank at Existing Pump Station Project - Option No. 3

Velvin & Weeks Consulting Engineers, Inc.

Item No.	Description	Quantity		Unit Cost		Amount
1	4-inch PVC Pressure Pipe (SDR-26) installed as Yard Piping between Existing and Proposed Ground Storage Tanks	70	LF	16 00	$	1,120
2	3-inch Gate Valve installed at Existing Tank Fill Line for isolation of Existing Ground Storage Tank	1	Ea	300 00	$	300
3	Modification of Existing Yard Piping to Tie-In Proposed Yard Piping	1	LS	1,000 00	$	1,000
4	Cast-in-Place Concrete Foundation for Proposed Ground Storage Tank (Includes Subgrade Preparation with Compacted Select Fill)	1	LS	7,500 00	$	7,500
5	7,500-Gallon Capacity Fiberglass Reinforced Plastic Ground Storage Tank (Includes Ladder, Vent, Hatches, Isolation Valves, Etc)	1	Ea	10,500 00	$	10 500
6	Sensor, Wire, Conduit, Switches, Etc for Modification of Existing Pump Control System to utilize water level input from Proposed GST	1	LS	1,500 00	$	1,500
7	Existing Chain-link Fence Repair at Conclusion of Construction Activities	1	LS	1,000 00	$	1,000
8	Trench Safety, Sheeting and Shoring	200	LF	2 00	$	400
9	Site Surveying and Construction Staking	1	LS	1 000.00	$	1,000

Construction Subtotal = $ 24,320

Basic Engineering Fee @ 15 0% of Construction Subtotal	$	3,648
Testing @ 2 0% of Construction Subtotal	$	486
Inspection @ 8 0% of Construction Subtotal	$	1,946

Grand Total = $ 30,400

Velvin & Weeks Consulting Engineers, Inc
930 East Corsicana St.
P. O. Box 1007
Athens, TX 75751
(903) 675-3903

INVOICE

Mr. Tim Coffey
C & L Investment Company
P. O. Box 423
Centerville, TX 75833

Dated: February 26, 2013
Invoice#: 5636
Job#: 4210.

Athens Water Company - Pump Station Upgrades - Athens, TX

Completion of PELR:	
(See Letter of 10/5/12 - Page 2)	$1,400.00
Subtotal:	$1,400.00
Credit for Payments Received:	$0.00
Amount Due:	**$1,400.00**

PLEASE INCLUDE OUR INVOICE# AND PROJECT# ON YOUR CHECK STUB

REPORT OF UNBILLED LABOR by Date Order

Printed 02/25/13 15:22:00 Labor 01/01/01 to 02/25/13

Job Number **4210.** Proposal Number:

Project: **Athens Water Company - Pump Station Upgrades - Athens, TX**

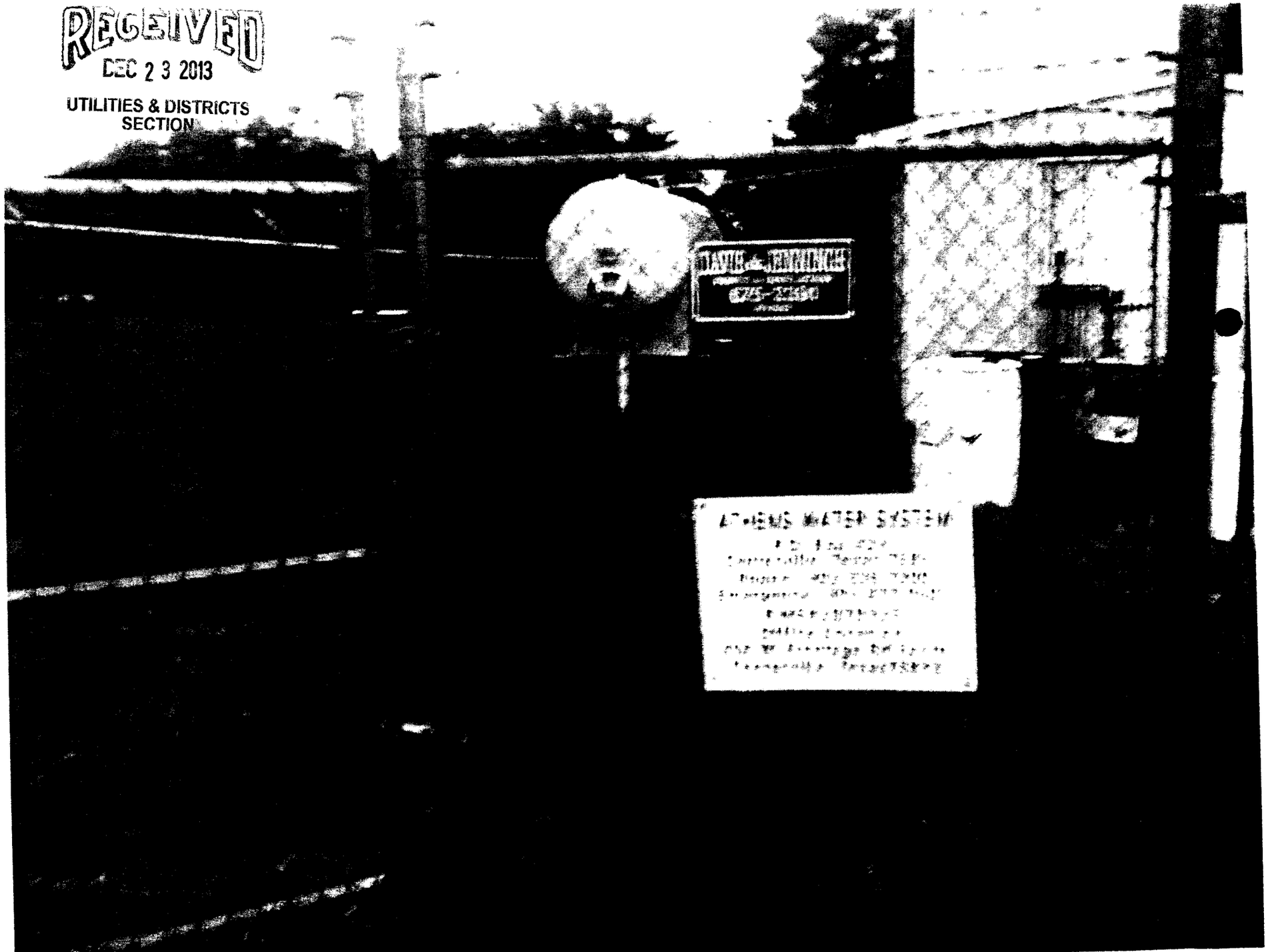
Address:

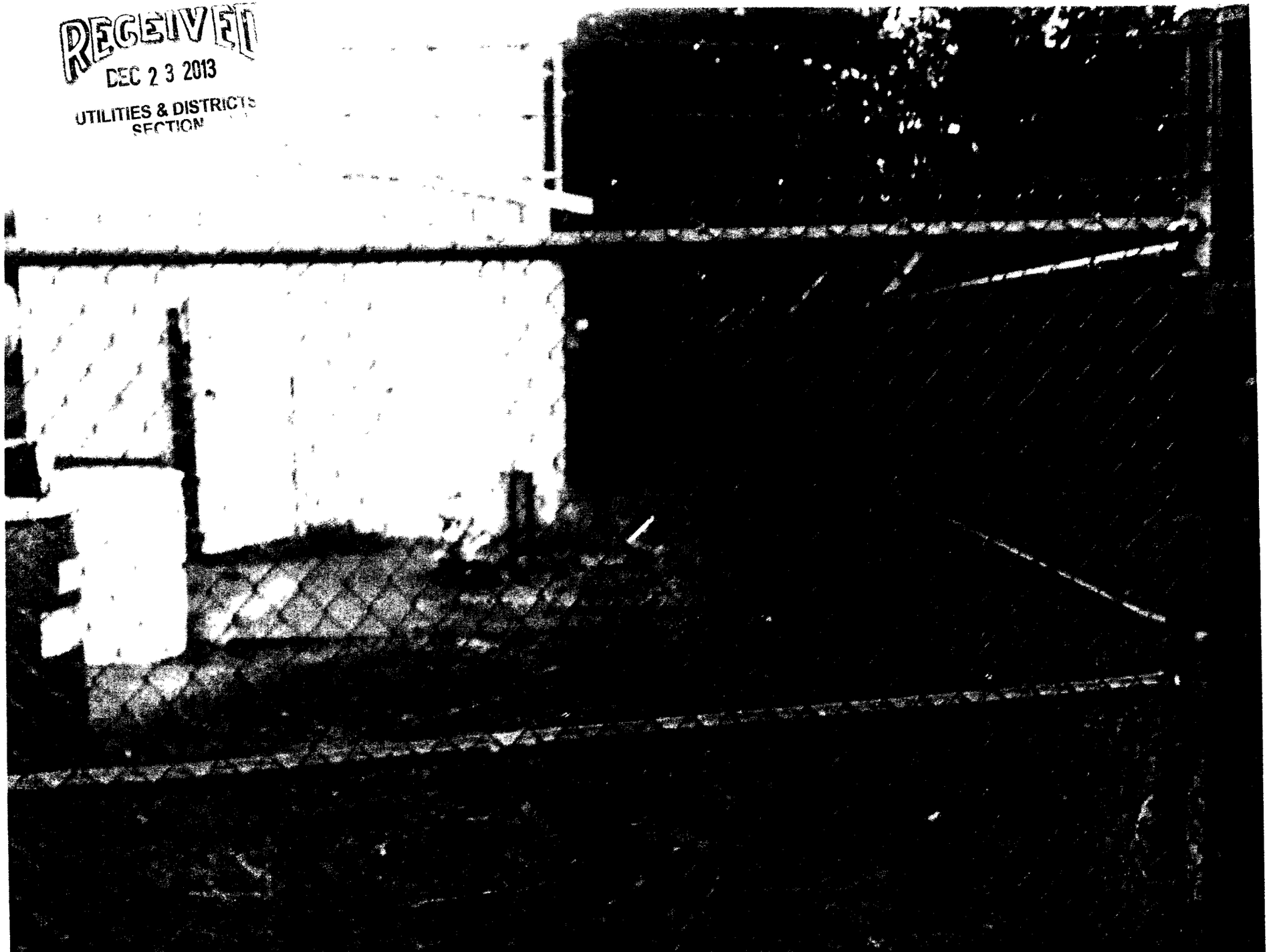
Client: Athens Water Company 528 Project Manager:

Date	Department	WC	Description of Labor	Employee	Hours	Rate	Amount	
10/30/12	Principal/Sr Engineer		Began research on FRP water storage tanks available for potable water service	Christopher Weeks	2.00	$130.00	$260.00	1
10/31/12	Principal/Sr Engineer		Called E Owen at HD Supply to get name of FRP tank vendor in Texas. Called ETTL to request proposal on geotech sampling and analysis at possible tank location sites	Christopher Weeks	1.00	$130.00	$130.00	1
11/01/12	Principal/Sr Engineer		Received and reviewed geotechnical proposal from E TTL, drafted transmittal memo and sent to Owner for approval.	Christopher Weeks	1.00	$130.00	$130.00	1
11/02/12	Principal/Sr Engineer		Continued to gather information on the fiberglass reinforced plastic ground storage tanks for use in design Began work on draft of PELR narrative text Called D. Belmont at L F Manufacturing Company to request specification and drawing data on FRP ground storage tanks	Christopher Weeks	6.00	$130.00	$780.00	1
11/20/12	Principal/Sr Engineer		Executed and distributed Agreement for Geotechnical Engineering Services to ETTL in Tyler	Christopher Weeks	0.50	$130.00	$65.00	1
01/10/13	Principal/Sr Engineer		Worked on cost estimate calculations for each of three options for tank configuration at pump station	Christopher Weeks	5.50	$130.00	$715.00	1
01/11/13	Principal/Sr Engineer		Continued work on cost estimate calculations and drawing exhibits for each of three options for tank configuration at pump station	Christopher Weeks	7.50	$130.00	$975.00	1
01/14/13	Principal/Sr Engineer		Continued work on cost estimate calculations and drawing exhibits for each of three options for tank configuration at pump station Began development of narrative text for PE L R	Christopher Weeks	7.50	$130.00	$975.00	1
02/11/13	Principal/Sr Engineer		Continued work on development of narrative text and exhibits for PELR	Christopher Weeks	3.00	$130.00	$390.00	
02/13/13	Principal/Sr Engineer		Continued work on development of narrative text and exhibits for PE L R	Christopher Weeks	3.50	$130.00	$455.00	
02/14/13	Principal/Sr Engineer		Continued work on development of narrative text and exhibits for PELR	Christopher Weeks	5.00	$130.00	$650.00	
02/19/13	Principal/Sr Engineer		Completed work on development of narrative text and exhibits for PE L R Scanned file for email transmittal to Client with hard copy delivered by USPS sent copy to file	Christopher Weeks	4.00	$130.00	$520.00	

Potential Billing:	46.50	$6,045.00
Labor Cost This Report:		$0.00
Total Labor Cost for Job:		$0.00
Average F/P:		
Estimated Price:		$0.00
Billed to Date:		
Used Retainers:		$0.00
Unused Retainers:		$0.00

Billed Extras:





POTABLE WATER STORAGE TANK
Inspection Form

Section 290.46(f)(3)(D)(ii) of the Texas Commission on Environmental Quality's *Rules and Regulations for Public Water Systems* requires documentation of annual ground, elevated, and pressure storage tank maintenance inspections. , See also 290.46(m)(1) and 290.46(m)(2)

	Location: Athens Water well
Description: 10,500 Gallon storage tank	
Date & Material of Exterior Coating System: N/A	
Date & Material of Interior Coating System: N/A	

Exterior of Tank

O.K.	Problem	N/A	Description
✓			Foundation: settling, cracks, deterioration
✓			Protective Coatings: rust, pitting, corrosion, leaks
			Water Level Indicator: operable, cable access opening protected
			Overflow Pipe: flap valve cover accessible, operable, sealed
			Access Ladder: loose bolts or rungs
			Roof: low spots for ponding water, holes along seams, rust
			Air Vents: proper flange, screened, sealed edges and seams
			Cathodic Protection Anode Plates: secured and sealed
			Roof Hatch: proper flange, locked, hinge bolts secured, gasket
			Pressure Tank Operational Items: pressure release device, pressure gauge, air-water volume device

Interior of Tank

O.K.	Problem	N/A	Description
			Water Quality: insects, floating debris, sediment on the bottom
			Protective Coatings: rust, corrosion, scaling
			Last Inspection of Pressure Tank Interior: 2011

Comments

RECEIVED
DEC 23 2013
UTILITIES & DISTRICTS SECTION

[illegible signature]

STM Checklist

Administrative Review #A - 003 - 14

Application Number (s) 37826-S, _____

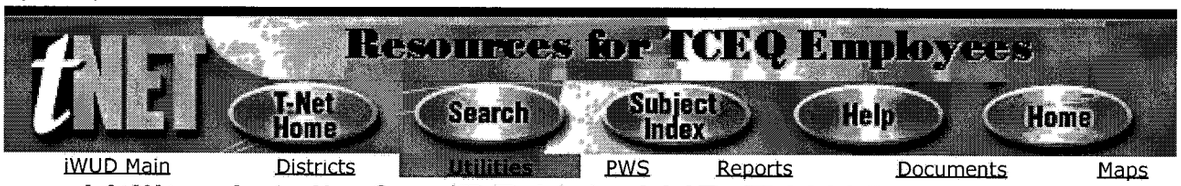
Date TCEQ Received Application 12/23/13

Date Assigned to program area 1/6/14

Name of **Seller** on Application Athens Water System (Athens Land Company)
CCN(s) # 12993
County(s) Henderson

Name of **Buyer** Land T WaterWorks, LLC
CCN(s) # A2017
County(s) Henderson

- ☑ Not on file in Central Registry. Needs Core Data Form
- ☑ **Attach a copy of CN and RN from WUD of both the seller and buyer involved**
- ☑ Account Fees due
- ☑ Regulatory Assessment Fees due
- ☑ Original and three copies of completed application and all required attachments, maps and exhibits. (Item 1 on page 1 of General Information and Instructions)
- ☑ Proposed action and CCN numbers involved. Buyer to take sellers CCN #



Utility details for (DBA) L AND T WATERWORKS LLC (A2017)

Affiliations Documents Site Visits Schedules

Responsible Party

Organization: **L AND T WATERWORKS LLC**
Address: **1560 AN COUNTY ROAD 485**
PALESTINE , TX 75803-3814
Individual: **CURTIS D LOGAN**

Official Address / Phone

Address: **1560 AN COUNTY ROAD 485**
PALESTINE , TEXAS 75803-3814
Telephone: **(903) 477-0501**

Properties

CR Regulated Entity Number:
CCEDS Status: **NO ACTIVE NOE EXISTS**
Utility Type: **WATER UTILITY**
Ownership Type: **INVESTOR**
Primary County: **ANDERSON**
County Code: **1**

Counties

Code	County Name	Primary
1	ANDERSON	Y

Activity

Activity Status: **ACTIVE**
Start Date: **04/30/2012**
End Date: **12/31/3000**

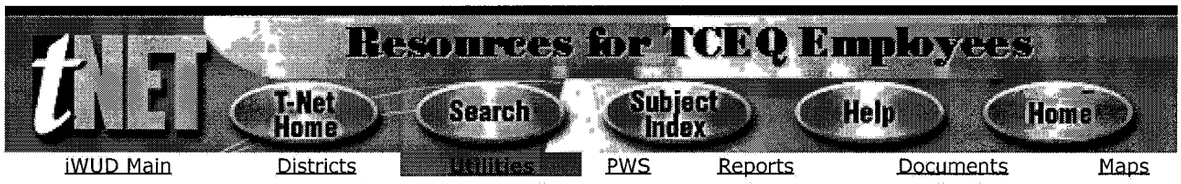
Activity Date: **04/30/2012**

Run Utility Cases Report
Run Utility Summary Report
Show Map

Utility successfully retrieved.

For questions or comments regarding information on this page, contact the TCEQ iWUD Web Manager

Version V2.7.0



Utility details for (DBA) ATHENS LAND COMPANY (12993)

Affiliations Documents Site Visits Schedules

Responsible Party

Address: **PO BOX 423**
CENTERVILLE , TX 75833-0423
Individual: **W R COFFEY**

Customers

Reference Number	Name	Role
CN600708051	COFFEY, W R	RESPONSIBLE PARTY

Official Address / Phone

Address: **PO BOX 423**
CENTERVILLE , TEXAS 75833-0423
Telephone: **(903) 536-7200**

Properties

CR Regulated Entity Number: **RN101243624**
CCEDS Status: **NO ACTIVE NOE EXISTS**
Utility Type: **WATER UTILITY**
Ownership Type: **INVESTOR**
Primary County: **HENDERSON**
County Code: **107**

Comments

Comment Date	Text	Staff Name
06/14/2001	TO OBTAIN A WATER CCN	

Occurrences retrieved.

PWS for this Utility

PWS Name	PWS ID	Status	District(Number)
ATHENS WATER SYSTEM COOP	1070235	A	

Water System occurrences retrieved.

Counties

Code	County Name	Primary
107	HENDERSON	Y

Activity

Activity Status: **ACTIVE**

Start Date: **03/05/1999**

End Date: **12/31/9999**

Activity Date: **04/05/2002**

Run Utility Cases Report
Run Utility Summary Report
Show Map

Utility successfully retrieved.

For questions or comments regarding information on this page, contact the TCEQ iWUD Web Manager

Version V2.7.0