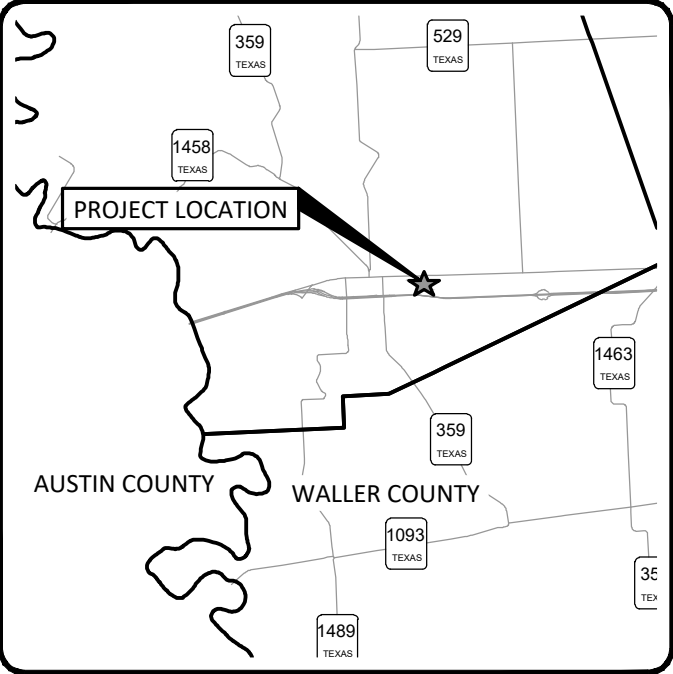
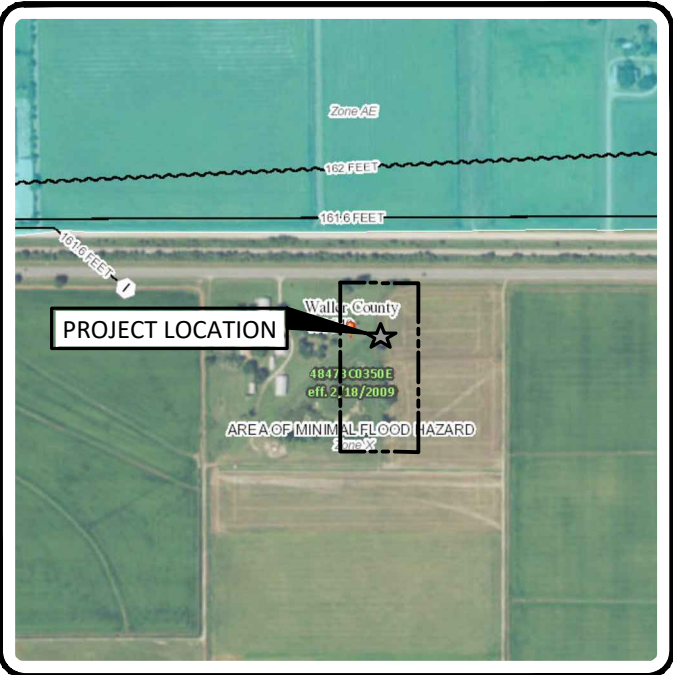


# WALLER COUNTY PRECINCT 4 ANNEX BUILDING WATER SYSTEM



LOCATION MAP  
NTS

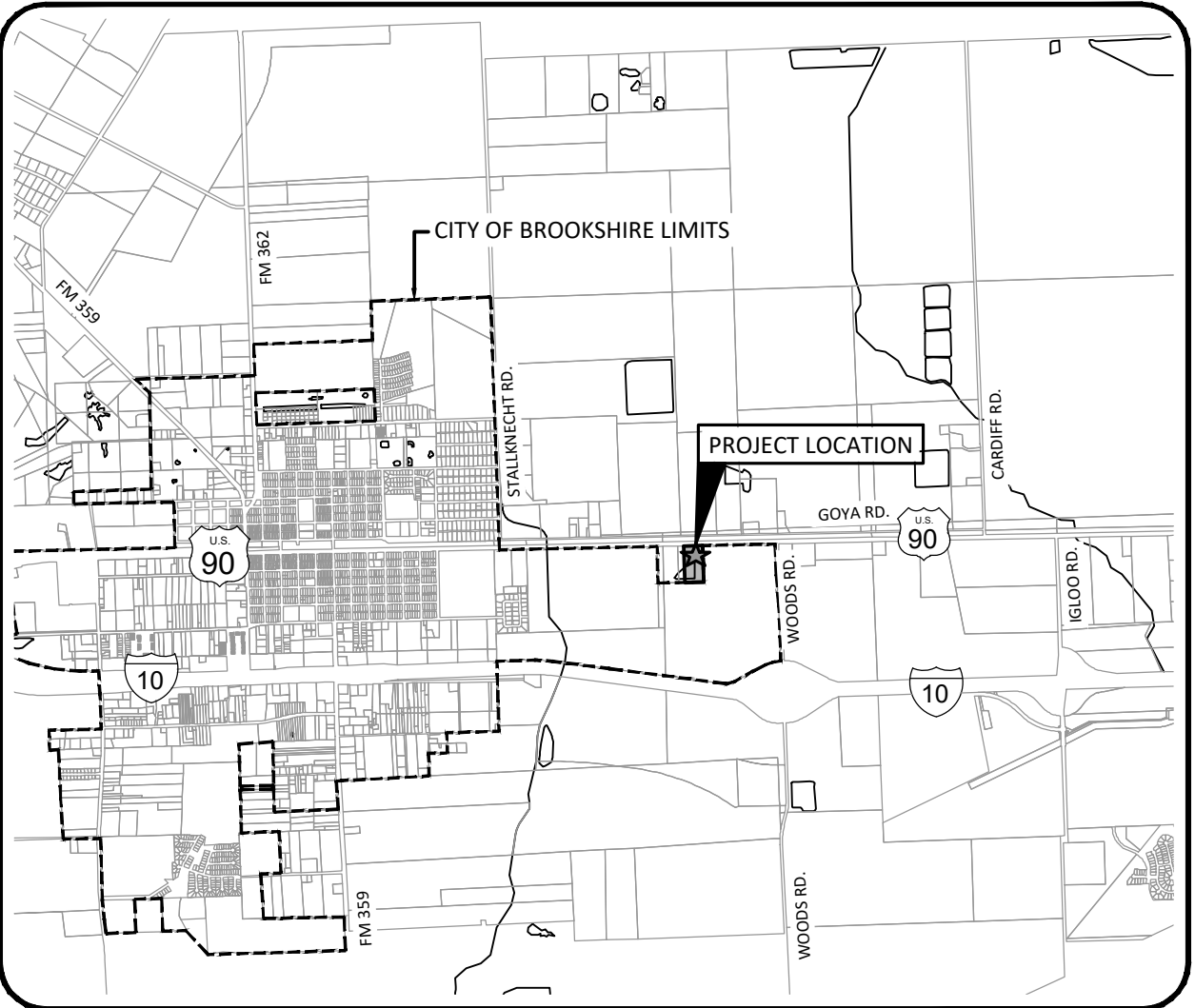


FLOOD PLAIN INFORMATION

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY  
FLOOD INSURANCE RATE MAP COMMUNITY  
PANEL No. 48473C0350E DATED: 2/18/2009  
THIS TRACT LIES WITHIN ZONE X, AREAS OUTSIDE OF THE 500 YEAR FLOOD PLAIN

**OWNER INFORMATION:**  
WALLER COUNTY  
775 BUSINESS 290 EAST  
HEMPSTEAD, TEXAS 77445-7445

**PROJECT LOCATION:**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423



VICINITY MAP

WALLER COUNTY, TEXAS  
KEY MAP PAGE No. 4058 S  
SCALE: 1" = 1000'-0" (24"x36")  
1" = 2000'-0" (11"x17" 8.5"x11")

## SHEET INDEX

SHEET No.	SHEET NAME
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02	SITE PLAN
03	WATER PLANT PLAN
04	WATER WELL PLAN & DETAILS
05	GROUND STORAGE TANK PLAN & DETAILS
06	BOOSTER PUMP FACILITY PLAN & DETAILS
07	BOOSTER PUMP FACILITY DETAILS
08	HYDROPNEUMATIC TANK PLAN & DETAILS
09	WATER PLANT DETAILS
10	CONTROL SCHEMATIC
11	ELECTRICAL ONE LINE
12	GENERAL NOTES



REVISION	DATE
DESCRIPTION	M/D/YY

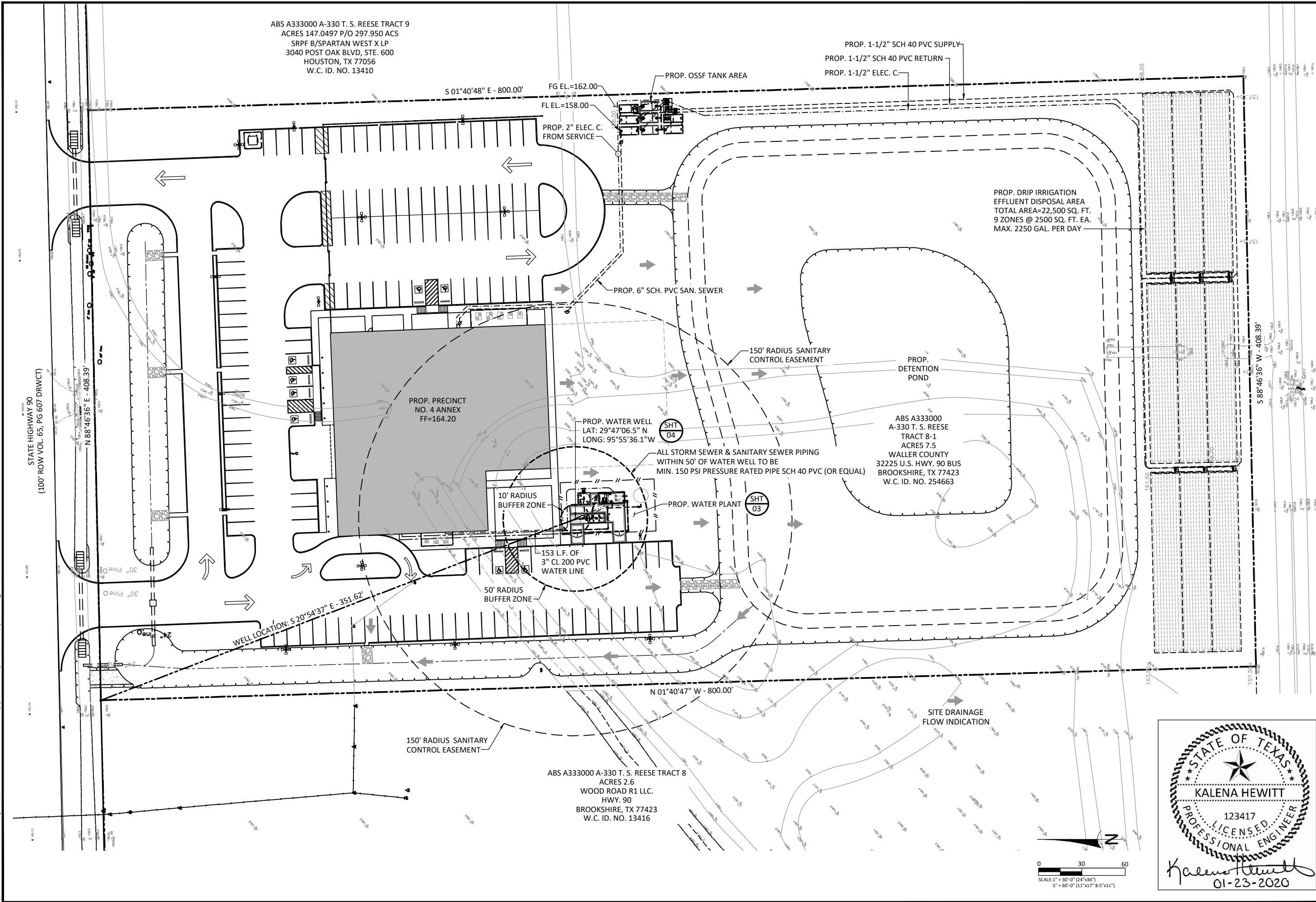
**WATERENGINEERS, INC.**  
Water & Wastewater Treatment Consultants  
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066  
17230 HUFFMEISTER ROAD  
CYPRESS, TEXAS 77429  
TEL: 281-373-0500  
FAX: 281-373-1113  
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**WALLER COUNTY PRECINCT 4 ANNEX BUILDING  
WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423


SHEET NAME:  
**COVERSHEET**

DRAWN BY: JLW  
CHECKED BY: DRY  
PJT No.: 5996-19234  
DATE: 1/23/2020  
SHEET No.:

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REVISION	DATE
DESCRIPTION	M/D/YY

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*Water & Wastewater Treatment Consultants*  
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17230 HUFFMEISTER ROAD  
CYPRESS, TEXAS 77429  
TEL: 281-373-0500  
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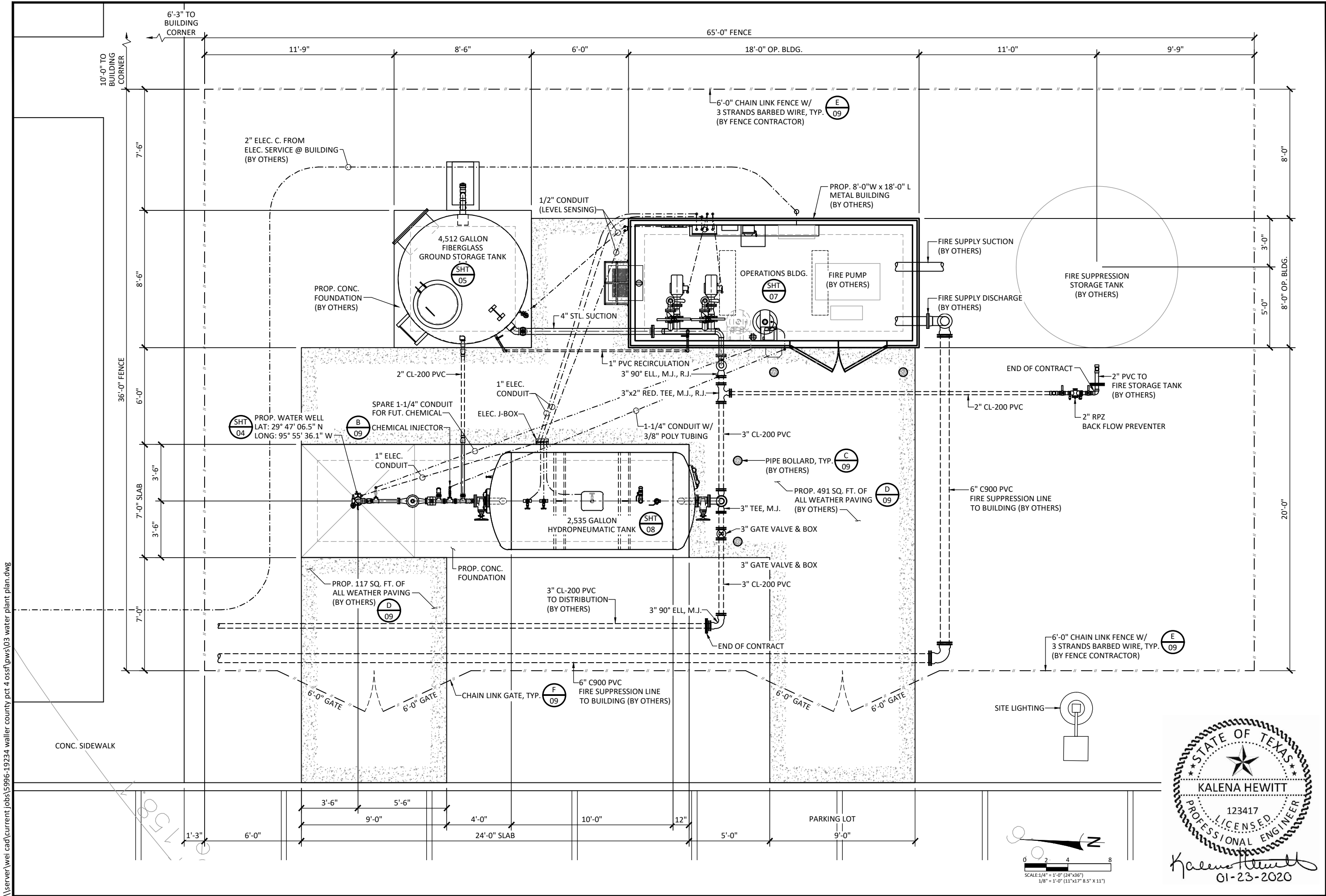
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**WALLER COUNTY PRECINCT 4 ANNEX BUILDING**  
**WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

SHEET NAME:  
**SITE PLAN**

DRAWN BY:	JLW
CHECKED BY:	DRY
PJT No.:	5996-19234
DATE:	1/21/2020
SHEET No.:	<b>02 OF 12</b>

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REVISION	DATE
DESCRIPTION	M/D/YY

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**WALLER COUNTY PRECINCT 4 ANNEX BUILDING**  
**WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

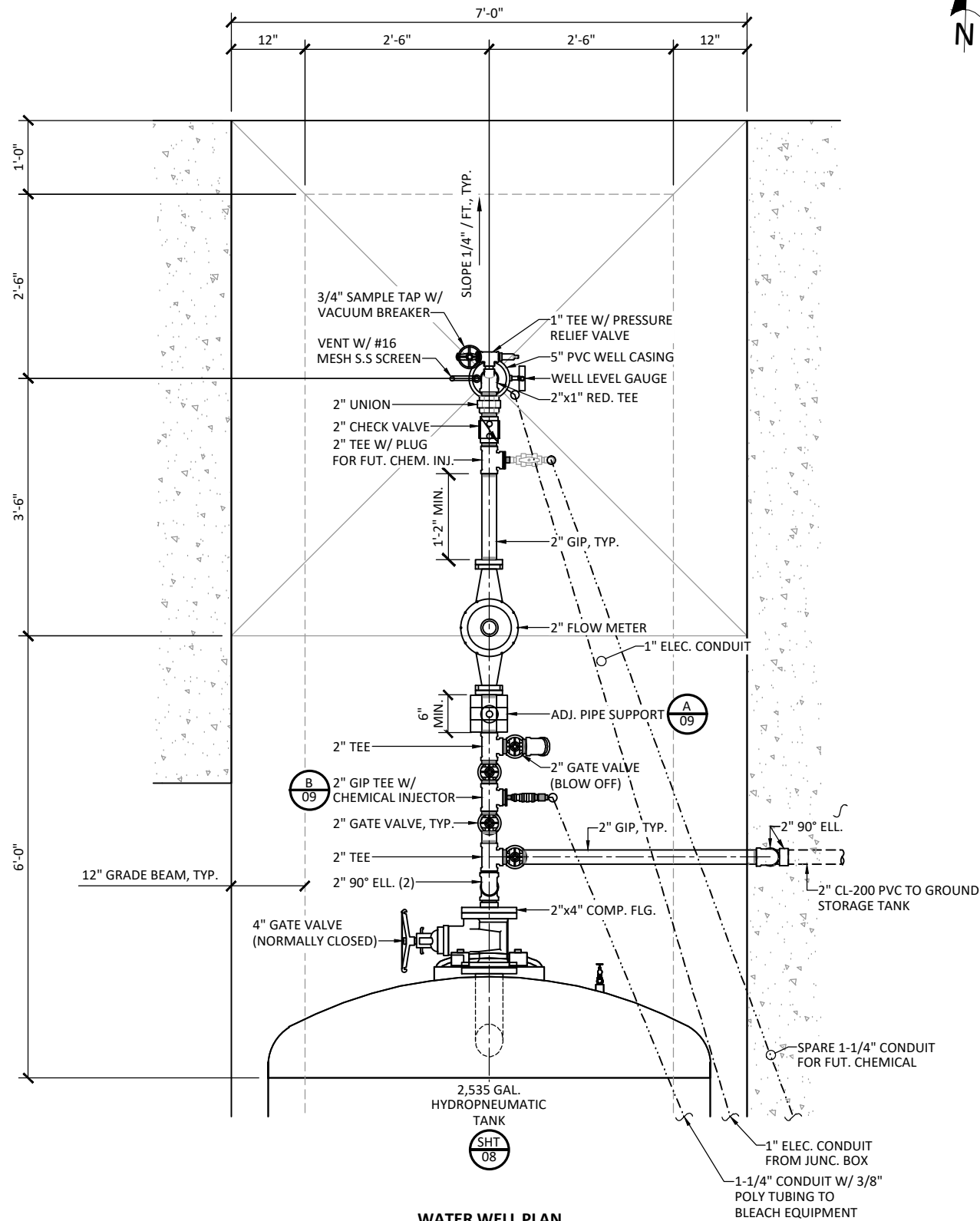
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**WATER PLANT PLAN**

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PJT No.:	5996-19234
DATE:	1/22/2020
SHEET No.:	<b>03</b> OF <b>12</b>



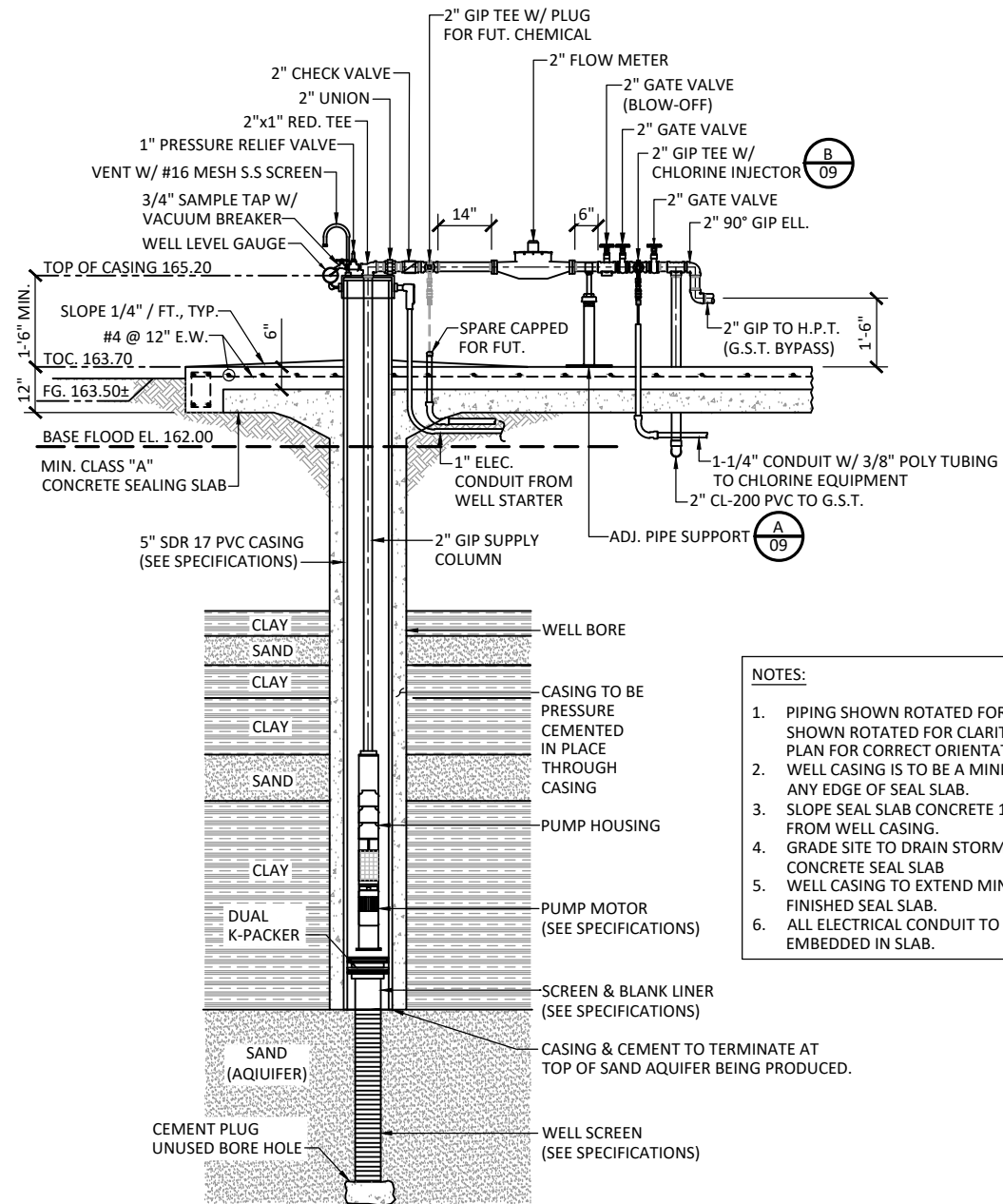
**KALENA HEWITT**  
123417  
PROFESSIONAL ENGINEER  
01-23-2020

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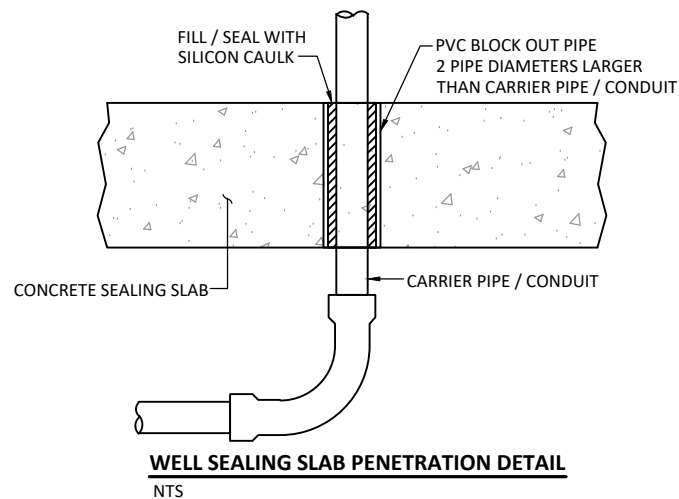


WATER WELL PLAN

0 1 2  
SCALE: 1" = 1'-0" (24" x 36")  
2" = 1'-0" (11" x 17" 8.5" x 11")



WATER WELL PROFILE  
NTS



WELL SEALING SLAB PENETRATION DETAIL  
NTS

NOTES:

1. PIPING SHOWN ROTATED FOR CLARITY, PIPING SHOWN ROTATED FOR CLARITY, SEE WATER WELL PLAN FOR CORRECT ORIENTATION.
2. WELL CASING IS TO BE A MINIMUM OF 3'-0" FROM ANY EDGE OF SEAL SLAB.
3. SLOPE SEAL SLAB CONCRETE 1/4" PER FOOT AWAY FROM WELL CASING.
4. GRADE SITE TO DRAIN STORM WATER AWAY FROM CONCRETE SEAL SLAB
5. WELL CASING TO EXTEND MIN. OF 18" ABOVE FINISHED SEAL SLAB.
6. ALL ELECTRICAL CONDUIT TO BE IN SCH 80 PVC EMBEDDED IN SLAB.



REVISION	DATE
DESCRIPTION	M/D/YY

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**WALLER COUNTY PRECINCT 4 ANNEX BUILDING  
WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

SHEET NAME:

**WATER WELL PLAN  
& DETAILS**

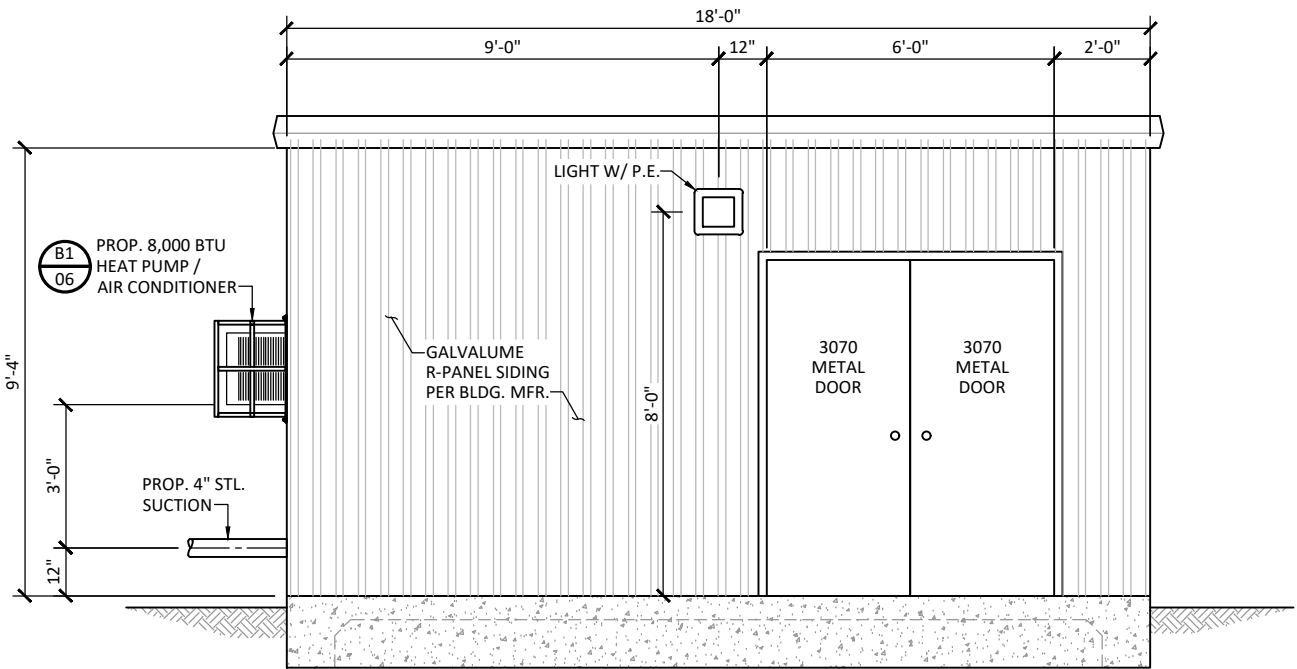
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CHECKED BY: DRY  
PJT No.: 5996-19234  
DATE: 1/22/2020  
SHEET No.:



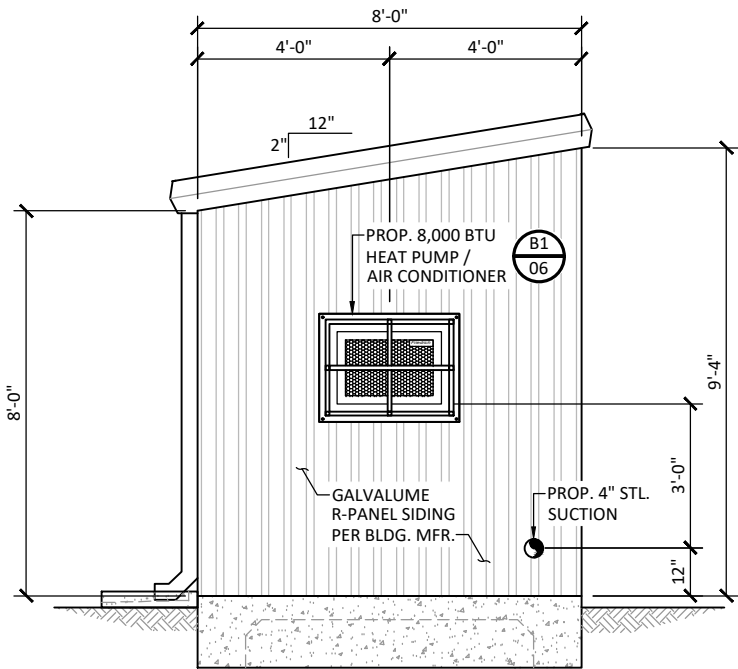
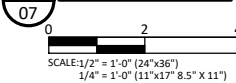




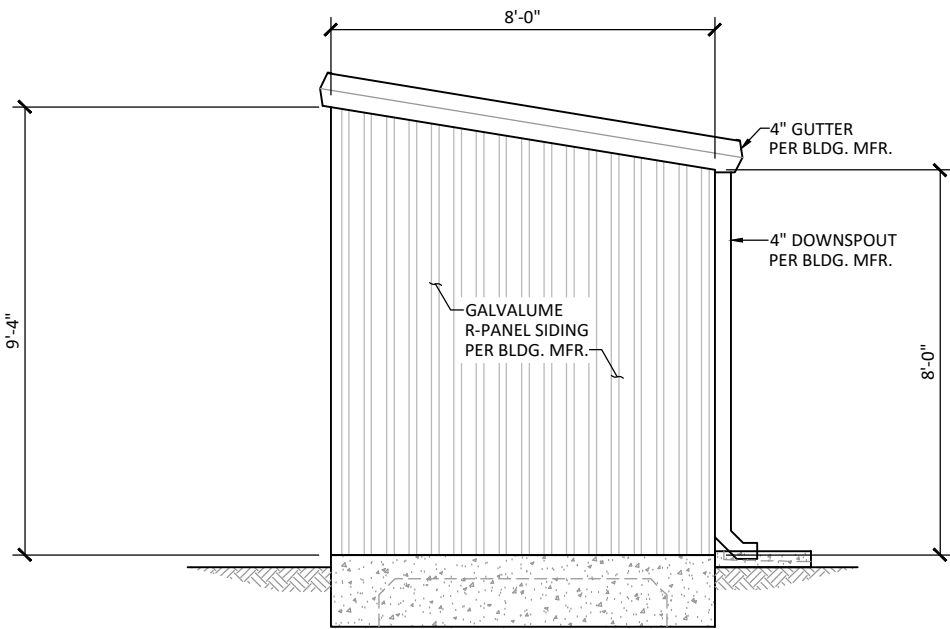
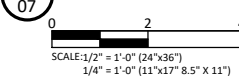
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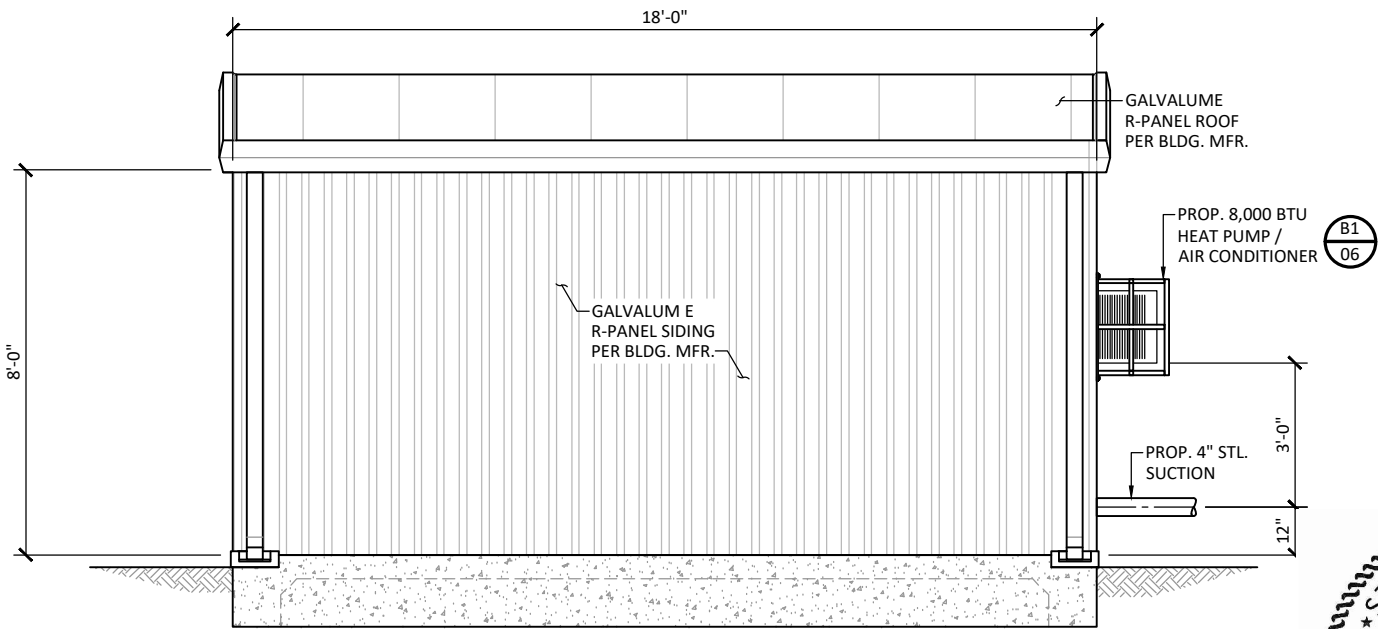
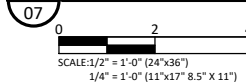
A WEST ELEVATION



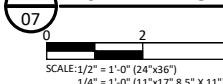
B NORTH ELEVATION



C SOUTH ELEVATION



D EAST ELEVATION



REVISION	DATE
DESCRIPTION	M/D/YY

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**WALLER COUNTY PRECINCT 4 ANNEX BUILDING**  
**WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

SHEET NAME:  
**BOOSTER PUMP FACILITY DETAILS**

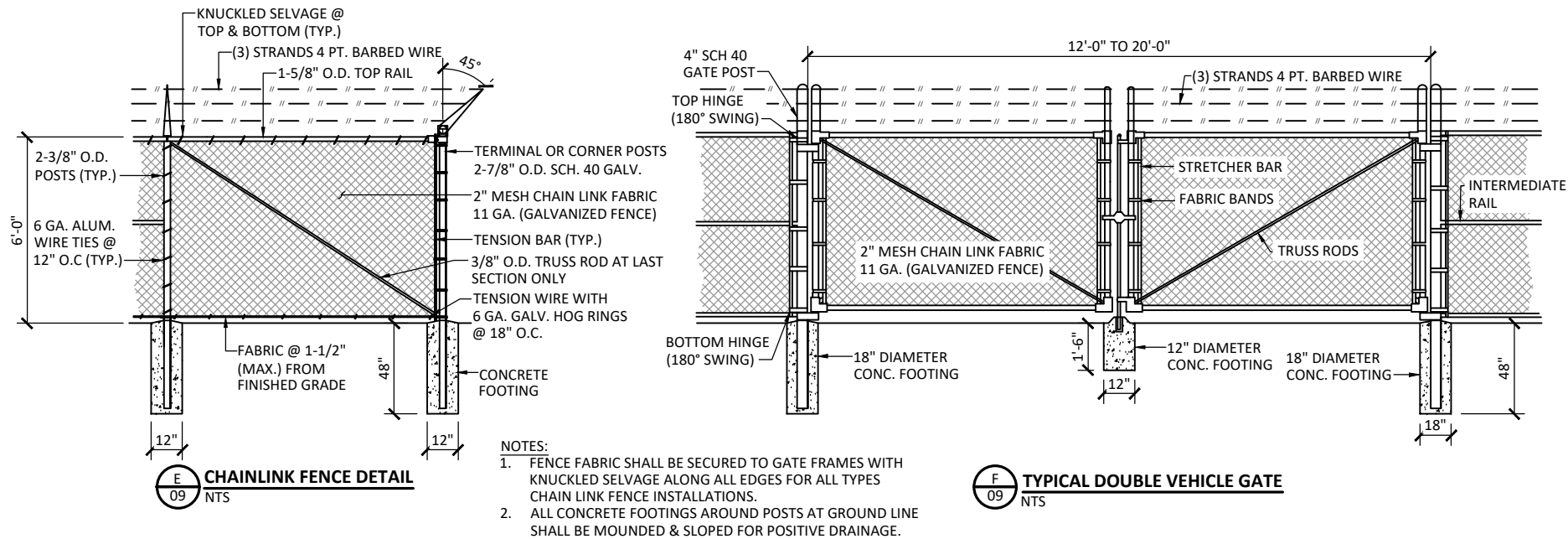
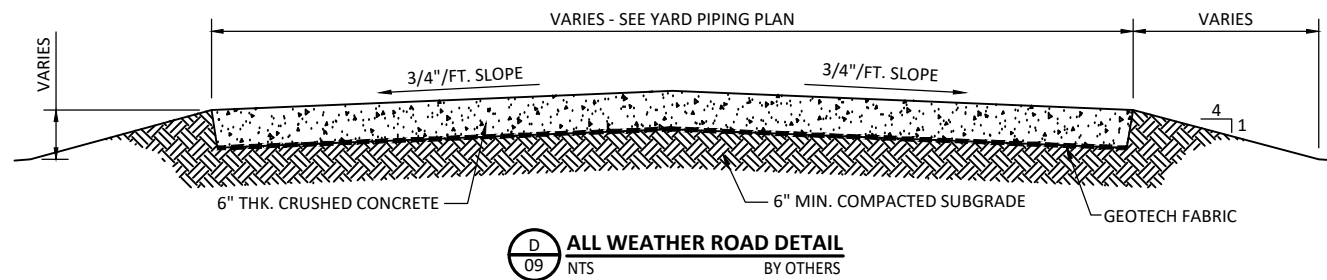
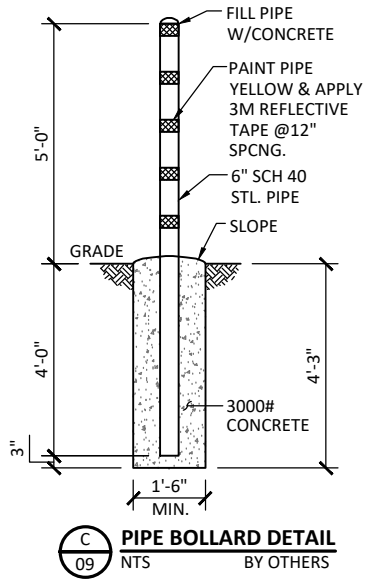
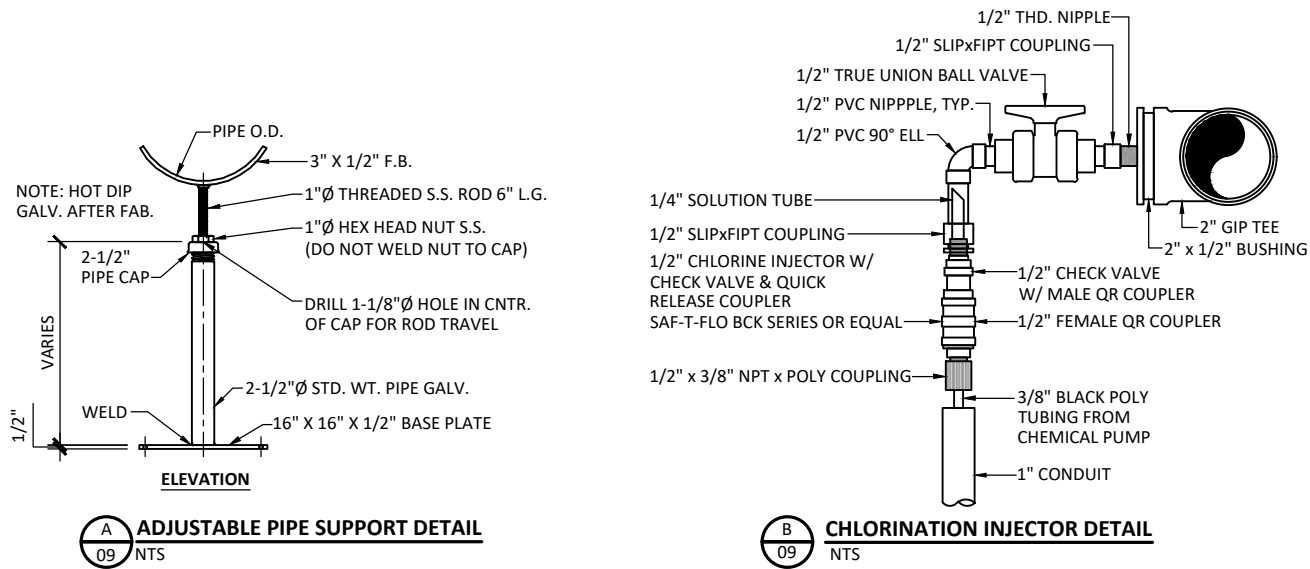
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CHECKED BY: DRY  
PJT No.: 5996-19234  
DATE: 1/30/2020  
SHEET No.:

**07 OF 12**





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REVISION	DATE
DESCRIPTION	M/D/YY

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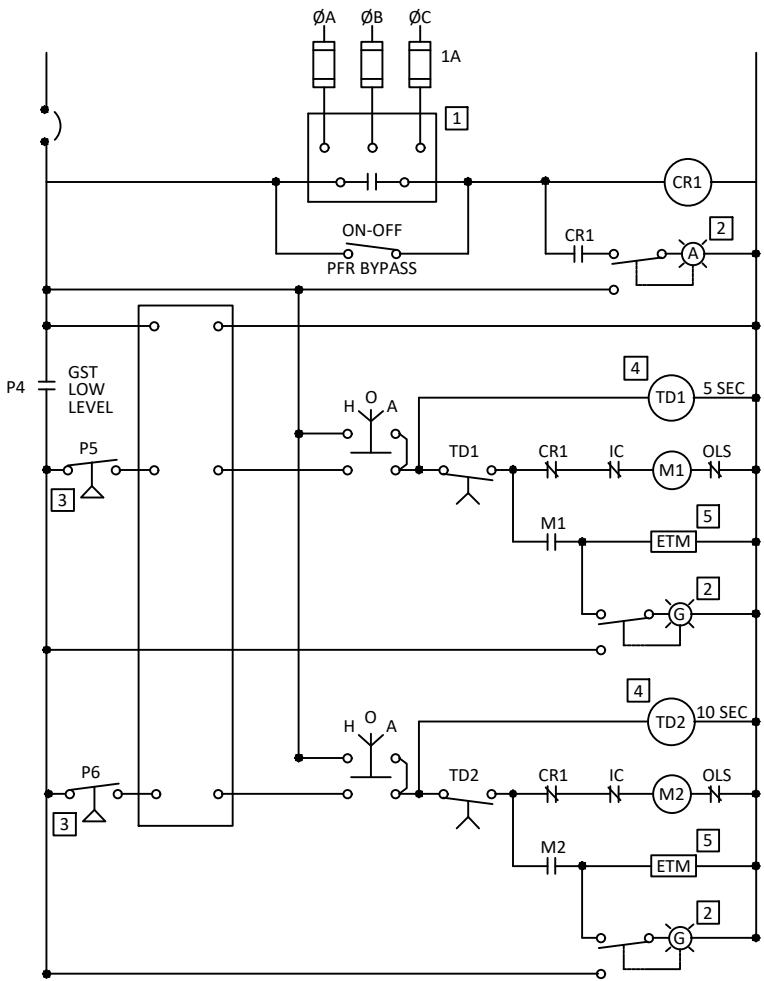
**WALLER COUNTY PRECINCT 4 ANNEX BUILDING**  
**WATER SYSTEM**  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

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**WATER PLANT DETAILS**

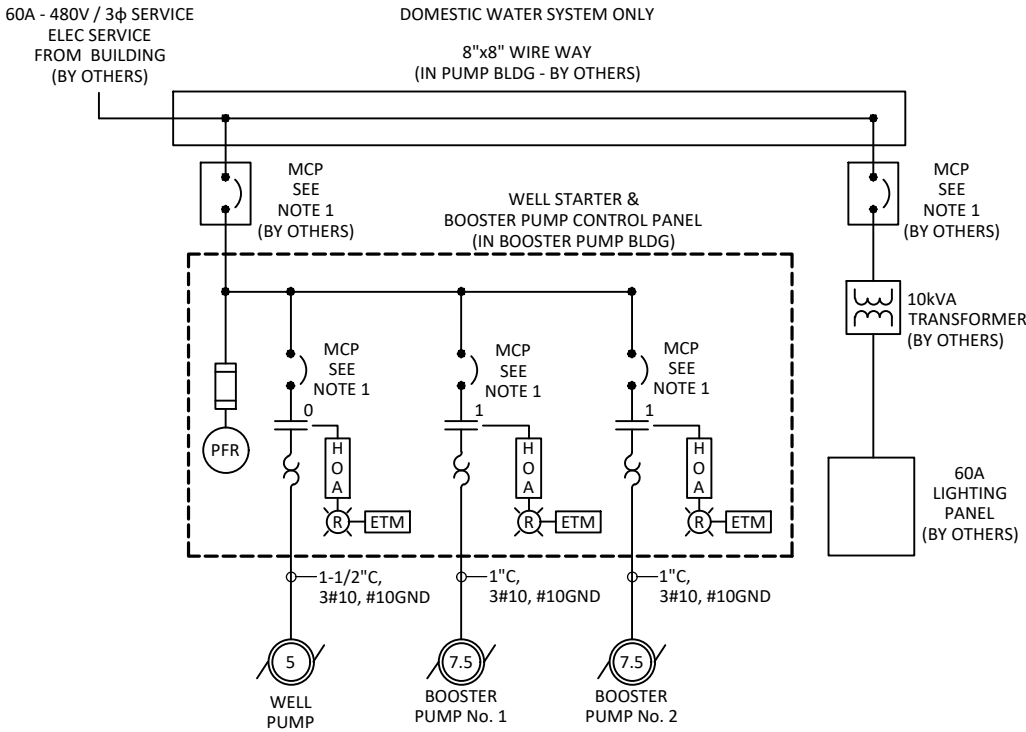
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PJT No.: 5996-19234  
DATE: 1/22/2020  
SHEET No.:



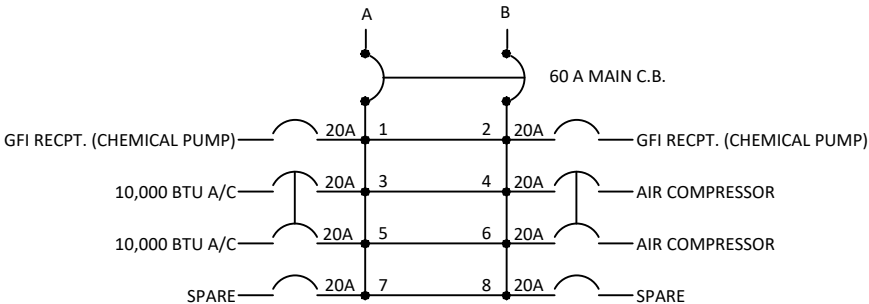
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BOOSTER PUMP CONTROL PANEL SCHEMATIC



ELECTRICAL ONE-LINE DIAGRAM



LOAD CENTER SCHEMATIC  
8 SPACE CAPACITY

NOTES:

1. ADJUST MCP FOR MOTOR LOAD, SETTING MUST COMPLY W/ NEC. COORDINATE MOTOR MCP SIZE W/ MOTOR SUPPLIED FOR THIS PROJECT ADJUST SIZES ACCORDINGLY, ESPECIALLY FOR HIGH EFFICIENCY MOTORS.
2. ALL HOA'S, ETM'S AND RUN LIGHTS TO BE ON PANEL DOOR
3. ALL CONDUITS, CONDUCTORS AND DEVICES MAY NOT BE SHOWN ON THIS SHEET
4. ALL OUTDOOR ENCLOSURES TO BE NEMA 4X FIBERGLASS W/ LOCKABLE OUTER DOOR, U.N.O. ALL INDOOR SWITCHES & ENCLOSURES TO BE NEMA 12, U.N.O.
5. ALL MOTORS ARE TO BE EQUIPPED WITH POWER FAILURE RELAYS (ON DELAY). THESE TIMERS WILL BE USED TO SEQUENTIALLY START THE EQUIPMENT FOLLOWING A POWER FAILURE.
6. ALL WIRING TO BE THWN/THHN COPPER UNLESS OTHERWISE NOTED.
7. ALL CONDUIT ABOVE GRADE TO BE ALUMINUM, SCH 80 PVC IN CORROSIVE ENVIRONMENTS.
8. ALL CONDUIT BELOW GRADE TO BE SCH 40 PVC ENCASED IN CONCRETE
9. ALL MOTOR STARTERS FOR 25 HP AND GREATER SHALL BE ELECTRONIC SOFT START.

ELECTRICAL LOAD ANALYSIS				
	MOTOR HP	LINE "A" AMPS *	LINE "B" AMPS*	LINE "C" AMPS*
WATER WELL	5	7.6	7.6	7.6
BOOSTER PUMP NO. 1	7.5	11	11	11
BOOSTER PUMP NO. 2	7.5	11	11	11
10 KVA TRANSFORMER		21		21
25 % OF LARGEST MOTOR	2	3	3	3
TOTALS	22	53	32	53

\* BASED ON 480/277 VOLT, 4 WIRE SERVICE



REVISION	DATE
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WALLER COUNTY PRECINCT 4 ANNEX BUILDING  
WATER SYSTEM  
32225 U.S. HWY 90 BUS  
BROOKSHIRE, TEXAS 77423

SHEET NAME:

ELECTRICAL  
ONE LINE

DRAWN BY: JLW

CHECKED BY: DRY

PJT No.: 5996-19234

DATE: 1/22/2020

SHEET No.:

\\server\wei cad\current jobs\5996-19234 waller county pct 4 oss\pws\12 general notes.dwg

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
PROPOSED WATER WELL GENERAL CONSTRUCTION NOTES

- These water well facilities must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
- The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the groundwater during drilling operation.
- Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids or mud shall contain a chlorine residual of at least 0.5 milligrams per liter (mg/l).
- The slush pit shall be constructed and maintained so as to minimize contamination of the drilling mud.
- No temporary toilet facilities shall be maintained within 150 feet of the well being constructed unless they are of a sealed, leakproof type.
- The construction, disinfection, protection, and testing of a well to be used as a public water supply source must meet the following conditions.
  - The casing material used in the construction of wells for public use shall be new carbon steel, high strength low alloy steel, stainless steel or plastic. The material shall conform to the most recent American Water Works Association (AWWA) standards. The casing shall extend a minimum of 18 inches above the elevation of the finished floor of the pump room or natural ground surface and a minimum of one inch above the sealing block or pump motor foundation block when provided. The casing shall extend at least to the depth of the shallowest water formation to be developed and deeper, if necessary, in order to eliminate all undesirable water bearing strata. Well construction materials containing more than 0.25 percent lead are prohibited.
  - The space between the casing and drill hole shall be sealed by using enough cement under pressure to completely fill and seal the annular space between the casing and the drill hole. The well casing shall be cemented in this manner from the top of the shallowest formation to be developed to the earth's surface. The driller shall utilize a pressure cementation method in accordance with the AWWA standard for water wells (A100-15) or most recent, Appendix C: Section C.2 (Positive Displacement Exterior Method); Section C.3 (Interior Method Without Plug); Section C.4 (Positive Placement, Interior Method, Drillable Plug); and Section C.5 (Placement Through Float Shoe Attached To Bottom Of Casing).
  - The grouting mixture used to pressure cement the annular space shall be neat cement as specified in the most recent AWWA Standard for Water Wells and to which a maximum of 6%, by dry weight, bentonite and 2%, by dry weight, calcium chloride may be added. The minimum annular space between the outside diameter of the casing pipe and the borehole shall be no less than 1 1/2 inches in radial thickness or three inches in net diametrical difference and the pressure grouting shall be from the bottom upward utilizing one of the methods listed in this subparagraph for all public water system groundwater well construction.
  - All gravel shall be of selected and graded quality and shall be thoroughly disinfected with a 50 mg/l chlorine solution as it is added to the well cavity.
  - Safeguards shall be taken to prevent possible contamination of the water or damage by trespassers following the completion of the well and prior to installation of permanent pumping equipment.
  - Upon well completion, or after an existing well has been reworked, the well shall be disinfected in accordance with recentAWWA Standard C654-13 or most recent for well disinfection except that the disinfectant shall remain in the well for at least 12-hours.
- Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
- The well site shall be fine graded so that the site is free from depressions, reverse grades, or areas too rough for proper ground maintenance so as to ensure that surface water will drain away from the well. In all cases, arrangements shall be made to convey well pump drainage, packing gland leakage, and floor drainage away from the wellhead. Suitable drain pipes located at the outer edge of the concrete floor shall be provided to collect this water and prevent its ponding or collecting around the wellhead. This wastewater shall be disposed of in a manner that will not cause any nuisance from mosquito breeding or stagnation. Drains shall not be directly connected to storm or sanitary sewers.
- A concrete sealing block extending at least three feet from the well casing in all directions, with a minimum thickness of six inches and sloped to drain away at not less than 0.25 inches per foot shall be provided around the wellhead.
- Wellheads and pump bases shall be sealed by a gasket or sealing compound and properly vented to prevent the possibility of contaminating the well water. A well casing vent shall be provided with an opening that is covered with 16-mesh or finer corrosion resistant screen, facing downward, elevated and located so as to minimize the drawing of contaminants into the well. Wellheads and well vents shall be at least two feet above the highest known watermark or 100 year flood elevation, if available or adequately protected from possible flood damage by levees.
- If a well blow off line is provided, its discharge shall terminate in a downward direction and at a point which will not be submerged by flood waters.
- A suitable sampling cock shall be provided on the discharge pipe of each well pump prior to any treatment.
- Flow measuring devices shall be provided for each well to measure production yields and provide for the accumulation of water production data. These devices shall be located to facilitate daily reading.
- All completed well units shall be protected by intruder resistant fences, the gates of which are provided with locks or shall be enclosed in locked, ventilated well houses to exclude possible contamination or damage to the facilities by trespassers. The gates or well houses shall be locked during periods of darkness and when the plant is unattended.
- An all-weather access shall be provided to each well site.
- An air release device shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
GROUND STORAGE TANK GENERAL CONSTRUCTION NOTES

- The water storage tank must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
- 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 on-site, and other appurtenances as specified in these rules.
- Disinfection of water storage facilities shall be in strict accordance with current AWWA Standard C652-11 or most recent.
- Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
- 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 D100. The roof of all metal 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. Concrete tank roofs shall be constructed in strict compliance with their respective AWWA Standard.
- 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).
- 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.
- Overflows shall be designed in strict accordance with current AWWA standards and shall terminate with a gravity-hinged and weighted cover, an elastomeric duckbill valve, or other approved device to prevent the entrance of insects and other nuisances. 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.
- 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.
- 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.
- 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.
- 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.
- 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), NSF International, or the United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF International Standard 61 and must be certified by an organization accredited by ANSI.
- 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.
- 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.
- 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.
- Pursuant to 30 TAC §290.44(b)(1), the maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

- This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
- All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI [§290.44(a)(1)].
- Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF-pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less [§290.44(a)(2)].
- No pipe which has been used for any purpose other than the conveyance of drinking water shall be accepted or relocated for use in any public drinking water supply [§290.44(a)(3)].
- All water line crossings of wastewater mains shall be perpendicular [§290.44(e)(4)(B)].
- Water transmission and distribution lines shall be installed in accordance with the manufacturer's instructions. However, the top of the water line must be located below the frost line and in no case shall the top of the water line be less than 24 inches below ground surface [§290.44(a)(4)].
- The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent [§290.44(b)].
- The contractor shall install appropriate air release devices with vent openings to the atmosphere covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent [§290.44(d)(1)].
- The contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation [§290.44(f)(1)].
- When waterlines are laid under any flowing or intermittent stream or semi-permanent body of water the waterline shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested [§290.44(f)(2)].
- Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.

The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;  
$$Q=(LD \sqrt{P})/148,000$$
Where:  
$$Q = \text{the quantity of makeup water in gallons per hour,}$$
$$L = \text{the length of the pipe section being tested, in feet,}$$
$$D = \text{the nominal diameter of the pipe in inches, and}$$
$$P = \text{the average test pressure during the hydrostatic test in pounds per square inch}$$
- The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;  
$$L=(SD \sqrt{P})/148,000$$
Where:  
$$L = \text{the quantity of makeup water in gallons per hour,}$$
$$S = \text{the length of the pipe section being tested, in feet,}$$
$$D = \text{the nominal diameter of the pipe in inches, and}$$
$$P = \text{the average test pressure during the hydrostatic test in pounds per square inch}$$
- The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)-(4).
- The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five-foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].
- Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].
- Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].
- Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].
- The contractor shall disinfect the new waterlines in accordance with AWWA Standard C-651-14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].
- Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent. lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
HYDROPNEUMATIC PRESSURE TANK GENERAL CONSTRUCTION NOTES

- These hydropneumatic pressure 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. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
- All hydropneumatic tanks must be located wholly above grade and must be of steel construction with welded seams except as providing in note № 12 of these construction notes.
- Metal thickness for pressure tanks shall be sufficient to withstand the highest expected working pressures with a four to one factor of safety. Tanks for 1000 gallon capacity or larger must meet the standards of the American Society of Mechanical Engineers (ASME) Section VIII, Division 1 Codes and Construction Regulations and must have an access port of periodic inspections. An ASME name plate must be permanently attached to those tanks. Tanks installed before July 1, 1988, are exempt from the ASME coding requirement, but all new installations must meet this regulation. Exempt tanks can be relocated within a system, but cannot be relocated to another system.
- All pressure tanks shall be provided with a pressure release device and an easily readable pressure gauge.
- Facilities shall be provided for maintaining the air-water-volume at the design water level and working pressure. Air injection lines must be equipped with filters or other devices to prevent compressor lubricant and other contaminants from entering the pressure tank. A device to readily determine air-water-volume must be provided for all tanks greater than 1000 gallon capacity. Galvanized tanks which are not provided with the necessary fittings and were installed before July 1, 1988, shall be exempt from this requirement.
- Hydropneumatic pressure tanks shall be painted, disinfected and maintained in strict accordance with current American Water Works Association (AWWA) standards. Protective paint or coating shall be applied to the inside portion of any pressure tank. However, no temporary coating, wax, grease coating or coating materials containing lead will be allowed. No other coating will be allowed which are not approved for use (as a contact surface with potable water by the United States Environmental Protection Agency (EPA), NSF International, The United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF International Standard 61 and must be certified by an organization accredited by ANSI.
- No pressure tank that has been used to store any material other than potable water may be used in a public water system. A letter from the previous owner or owners must be provided.
- Pressure tank installations should be equipped with slow closing valves and time delay pump controls to eliminate water hammer to reduce the chance of tank failure.
- Associated appurtenances including valves pipes and fittings connected to pressure tanks must conform to ANSI/NSF International Standard 61 and shall be thoroughly tight against leakage. Pursuant to 30 TAC §290.44(b)(1), the maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent.
- Disinfection of water storage facilities shall be in strict accordance with current AWWA Standard C652-11 or most recent.
- Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
- Where seamless fiberglass tanks are utilized, they shall not exceed 300 gallons in capacity.
- No more than three pressure tanks shall be installed at any one site without the prior approval of the executive director.
- All potable water storage tanks and pressure maintenance facilities must be enclosed by an intruder resistant fence with lockable gates. Pedestal type elevated storage tanks with lockable doors and without external ladders are exempt from this requirement. The gates and doors must be kept locked whenever the facility is unattended.



REVISION	DATE
DESCRIPTION	M/D/YY
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SHEET NAME:	
GENERAL NOTES	
DRAWN BY: JLW	
CHECKED BY: DRY	
PJT No.: 5996-19234	
DATE: 1/17/2020	
SHEET No.: 12 OF 12	