Fort Bend County BID 18-096 Construction of Water Supply Well at Harlem Park Sports Facilities for Fort Bend County

Q&A #1

Questions 1: Does the Material Safety Data Sheet (MSDS) need to be sent along with the bid? Or are these files updated via email with the Purchasing department?

Answer: The MSDS will be requested from the awarded vendor.

Question 2: The drawings are not legible. Would you please provide a pdf of the drawings?

Answer: See attached drawings. There are no revisions.

CONSTRUCTION DESIGN

PUBLIC WATER SYSTEM NO. UNASSIGNED

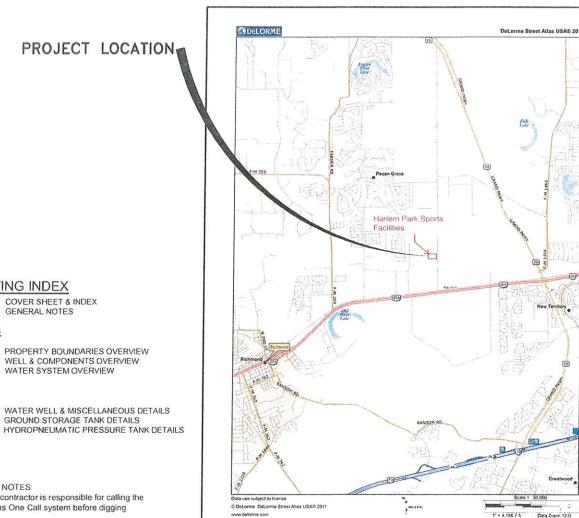
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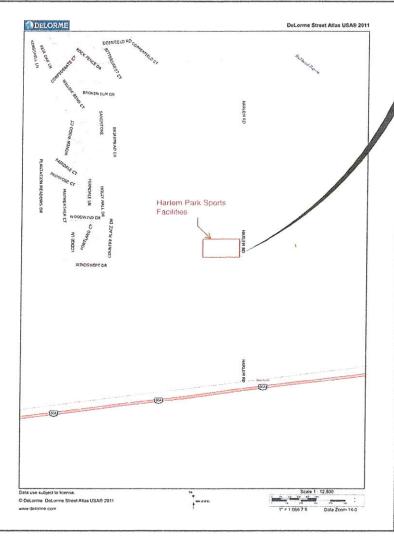
HARLEM PARK SPORTS FACILITIES

ON BEHALF OF

FORT BEND COUNTY PARKS

FORT BEND COUNTY, TEXAS





PROJECT LOCATION

WARD, GETZ & ASSOCIATES, LLP CONSULTING ENGINEERS

TEXAS FIRM REGISTRATION No.9756

2500 Tanglewilde, Suite 301 Houston, Texas 77063 713.789.1900



GENERAL NOTES:

DRAWING INDEX

LAYOUTS

W-C1.2 **DETAILS**

W-C2 1

W-C2.2

COVER SHEET & INDEX

WATER SYSTEM OVERVIEW

The contractor is responsible for calling the Texas One Call system before digging

The contractor shall verify pipe materials at tie-ins and use appropriate materials to ensure no service disconnect.

Ince Engineering does not design electrical systems or foundations.

VICINITY MAP **MARCH 2018**

WATER WELLS

- These water well facilities must be constructed 7. 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. The premises, materials, tools, and drilling equipment shall be maintained so as to nimize contamination of the groundwater during drilling operation.
- 3. 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
- 4. The slush pit shall be constructed and maintained so as to minimize contamination of the drilling mud.
- 5. No temporary toilet facilities shall be maintained within 150 feet of the well being constructed unless they are of a sealed, leakproof type.
- 6. The construction, disinfection, protection, and testing of a well to be used as a public water supply source must meet the following
- 6.1. 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 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 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 12. construction materials containing more than 0.25% 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 (A100-06). 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).
- 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 current AWWA standards for well disinfection except that the disinfectant shall remain in the well for at least six

- 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 treatmen
- 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 wellhouses shall be locked during periods of darkness and when the plant is unattended.
- Appendix C: Section C.2 (Positive 14. An all weather access shall be provided to
 - 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.

HYDROPNEUMATIC PRESSURE TANKS

- These water well 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.
- All hydro-pneumatic tanks must be located wholly above grade and must be of steel construction with welded seams except as providing in note No. 10 of these construction
- 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. 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 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 Sates environmental Protection Agency (EPA), National Sanitation Foundation (NSF), 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.
- 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.
- 8. 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.
- 9. Associated appurtenances including valves pipes and fittings connected to pressure tanks shall be thoroughly tight against leakage.
- 10. Where seamless fiberolass tanks are utilized they shall not exceed 300 gallons in capacity.
- 11. No more than three pressure tanks shall be installed at any one site without the prior approval of the executive director.
- 12. All potable water storage tanks and pressure maintenance facilities must be enclosed by an ntruder resistant fence with lock-able gates. Pedestal type elevated storage tanks with lock-able doors and without external ladders are exempt from this requirement. The gates and odors must be kept locked whenever the facility is unattended

CHEMICAL STORAGE

- Hypochlorination solution containers and pumps must be housed in a secure enclosure to protect them from adverse weather conditions and vandalism. The solution container top must be completely covered to prevent the entrance of dust, insects, and other contaminants. 30 TAC §290.42(e)(5)
- Disinfection equipment shall be selected and installed so that continuous and effective disinfection can be secured under all conditions. 30 TAC §290.42(e)(3)
- Disinfection equipment shall have a capacity at least 50% greater than the highest expected dosage to be applied at any time. It shall be capable of satisfactory operation under every prevailing hydraulic condition. 30 TAC §290.42(e)(3)(A)
- Automatic proportioning of the disinfectant dosage to the flow rate of the water being treated shall be provided at plants where the treatment rate varies automatically and at all plants where the treatment rate varies more than 50% above or below the average flow Manual control shall be permissible at surface water treatment plants or plants treating groundwater under the direct influence of surface water only if an operator is always on hand to make adjustment promptly. 30 TAC §290.42(e)(3)(B)
- Facilities shall be provided for determining the amount of disinfectant used daily as well as the amount of disinfectant remaining for use, 30 TAC §290,42(e)(3)(D)
- When used, solutions of calcium hypochlorite shall be prepared in a separate mixing tank and allowed to settle so that only a clear supernatant liquid is transferred to the hypochlorinator container. 30 TAC §290.42(e)(3)(E)
- Provisions shall be made for both pretreatment disinfection and post-disinfection in all surface water treatment plants. Additional application points shall be installed if they are required to adequately control the quality of the treated water, 30 TAC \$290,42(e)(3)(F)

	PROPOSED WATER LINE				PROPOSED SANITARY SEWER			
	OVER		UNDER		OVER		UNDER	
	EXISTING SS	PROP SS	EXISTING SS	PROP SS	EXISTING WL	PROP WL	EXISTING W.	PROP WL
MINIMUM 2 FEET VERTICAL CLEARANCE	×	X 1	х	х		х	X 1	X 1
PLACE 1 FULL SECTION (MIN 18 FT) OF WL CENTERED AT SS CROSSING PROVIDE RESTRAINED JOINTS ON WL. SPACED AT LEAST 9 FT HORIZONTALLY FROM CENTERLINE OF SS	х	х	х	х		х		x
PLACE 1 FULL SECTION (MIN 18 FT) OF SS CENTERED AT WIL CROSSIN PROVIDE RESTRAINED JOINTS ON SS, SPACED AT LEAST 9 FT HORIZONTALLY FROM CENTER LINE OF WIL		х				***************************************	×	х
REPLACE 1 FULL SECTION OF EXISTING SS WITH PRESSURE-RATED DIP OR PRESSURE RATED PVC PIPE WITH ADAPTERS AND RESTRAINED JOINTS CENTERED AT WL. CROSSING	X 2.3		X 3		ALLOWED			
PROVIDE DIP FOR SMALL DIAMETER W. (LESS THAN 24 INCHES), PVC PIPE IS ONLY ALLOWED IF ENCASED PER TAC § 290.44, AND USE RESTRAINED JOINTS FOR BOTH DIP AND PVC PIPE			х	х	NOT AL	х		
EMBED SS WITH CSS FOR HE TOTAL LENGTH OF I PIPE SEGMENT PLUS 1 FOOT BEYOND THE JOINTS ON EACH END.	X 2. 3	X 4	X 3	X 4		X 4	X 4	X 4
PLACE TFULL SECTION (MIN 18 FT) CF MIN 150 PSI SS CENTERED AT W.L CROSSING PROVIDE RESTRAINED JOINTS ON SS. SPACED A LEAST 9 FT HORIZONTALLY FROM CENTERLINE OF W.L OR RONCASE IN A JOINT OF 150 PSI PRESSURE PIPE MIN 18 FT) TWO NOMINAL SIZES LARGER WITH SPACERS AT ST INTERVAL				х		x		

MINIMUM CLEARANCE IS 2 FEET FOR NON-PRESSURE RATED SS AND 1 FOOT FOR PRESSURE RATED SS AND 1 FOOT FOR PRESSURE RATED SS REQUIRED IF EXISTING SS IS DISTURBED AND OR THERE IS EVIDENCE OF LEAKAGE.

NOT REQUIRED FOR AUGERED VIL UNLESS THERE IS EVIDENCE OF LEAKAGE. COMPLETELY FILL AUGERED HOLE WITH BENTONITE / CLAY MIXTURE.

NOT REQUIRED FOR AUGERED SS; COMPLETELY FILL AUGERED HOLE WITH BENTONITE / CLAY MIXTURE.

BOTH WATER LINES AND WASTEWATER MAIN OR LATERAL MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWAY CROSSTANDARDS

B SANITARY SEWERS (SS) IS APPLICABLE TO BOTH GRAVITY SANITARY SEWERS AND FORCE MAINS

- 1. MAINTAIN 12-INCH (12") MINIMUM CLEARANCE BETWEEN ALL SANITARY SEWERS, STORM SEWERS AND CULVERTS UNLESS OTHERWISE NOTED
- WATERLINE / SANITARY MANHOLE AND SANITARY SEWER SEPARATION ALL SANITARY SEWER FACILITIES AND POTABLE WATERLINES MUST BE INSTALLED SO AS TO PROVIDE A MINIMUM OF NINE FEET OF HORIZONTAL CLEARANCE BETWEEN THEM. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED. FOLLOW THESE SPECIAL PROCEDURES:
- 4 CROSSINGS UNDER ROADWAY TO EXTEND 5 FEET BEYOND EDGE OF PAVEMENT AND TO BE CONSTRUCTED USING RESTRAINED JOINT PIPE IN STEEL CASINGS

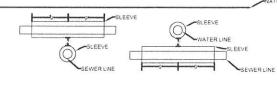
PRIMARY CONDITION						PROPOSED WATER - PROPOSED FORCE MAIN OR EXISTING WATER - PROPOSED FORCE MAIN				
SECONDARY CONDITIONS	WATER OVER FORCE MAIN			UNDER E MAIN	WATER OVER FORCE MAIN		WATER UNDER FORCE MAIN			
IF THE CLEARANCE IS		GREATER THAN 2 FT, BUT LESS THAN 9 FT	LESS THAN 2 FT	GREATER THAN 2 FT, BUT LESS THAN 9 FT	LESS THAN 2 FT	GREATER THAN 2 FT BUT LESS THAN 9 FT	LESS THAN 2 FT	GREATER THAN 2 FT, BUT LESS THAN 9 FT		
* PROTECTION REQUIREMENT	1	2	3	4	1, 5	6	3	3		

OUTSIDE WALL TO OUTSIDE WALL)

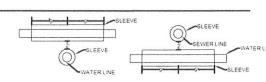
- CONSTRUCT WATER LINE WITH ONE FULL SECTION CENTERED ABOVE THE FORCE MAIN CROSSING 6-INCH MINIMUM CLEARANCE
- 2. CONSTRUCT WATER LINE WITH ONE FULL SECTION CENTERED ABOVE THE FORCE MAIN.

PROTECTION REQUIREMENTS AT WATER LINE - FORCE MAIN CROSS

- 4 AUGER 9-FEET MINIMUM EACH SIDE OF FORCE MAIN PLACE ON FULL SECTION OF WATER LINE CENTERED UNDER FORCE MAIN FILL BORED HOLE WITH BENTONITE! CLAY MIXTURE: 2 FOOT MINIMUM CLEARANCE IF THE EXISTING FORCE MAIN IS LEAKING REPLACE THE FORCE MAIN WITH 150 PSI LINED DUCTILE IRON OR PVC PIPE WITH APPROPRIATE ADAPTERS ON ALL PORTIONS OF THE FORCE MAIN WITHIN 9 FEET OF THE WATER LINE
- CENTER ONE FULL SECTION OF FORCE MAIN. 150 PSI LINED DUCTILE IRON OR PVC PIPE AT WATER LINE. AND USE CEMENT-STABILIZED SAND BACKFILL FOR ALL PORTIONS OF THE SEWER WITHIN 9 FEET OF THE WATER LINE AS MEASURED PERPENDICUL ARLY FROM ANY POINT ON THE WATER LINE TO THE FORCE MAIN (MINIMUM 2.5 SACKS CEMENT PER CUBIC YARD OF SAND.) THE CHENT-STABILIZED SAND BEDDING SHALL START AT A POINT 6 INCHES BELOW THE BOTTOM O THE FORCE MAIN TO 6 INCHES ABOVE THE TOP OF THE FORCE MAIN AND ONE QUARTER OF THE PIPE DIMMETER ON THE SIDE OF THE FORCE MAIN
- 6 ONE FULL SECTION OF FORCE MAIN, CENTERED AT THE WATER LINE.



WATERLINE CROSSING GRAVITY FLOW SEWERLINE



WATERLINE CROSSING PRESSURE SEWER LINE

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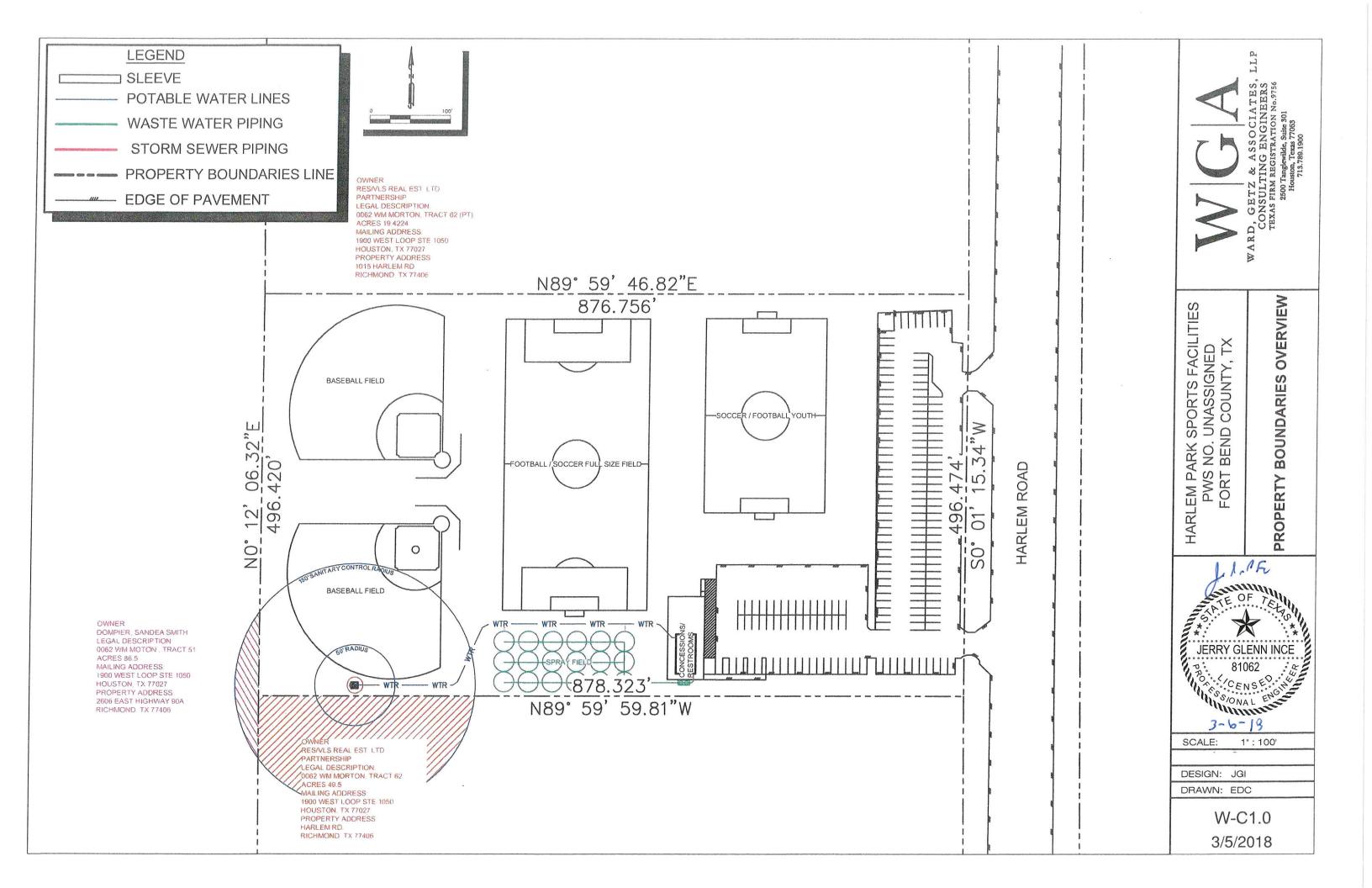
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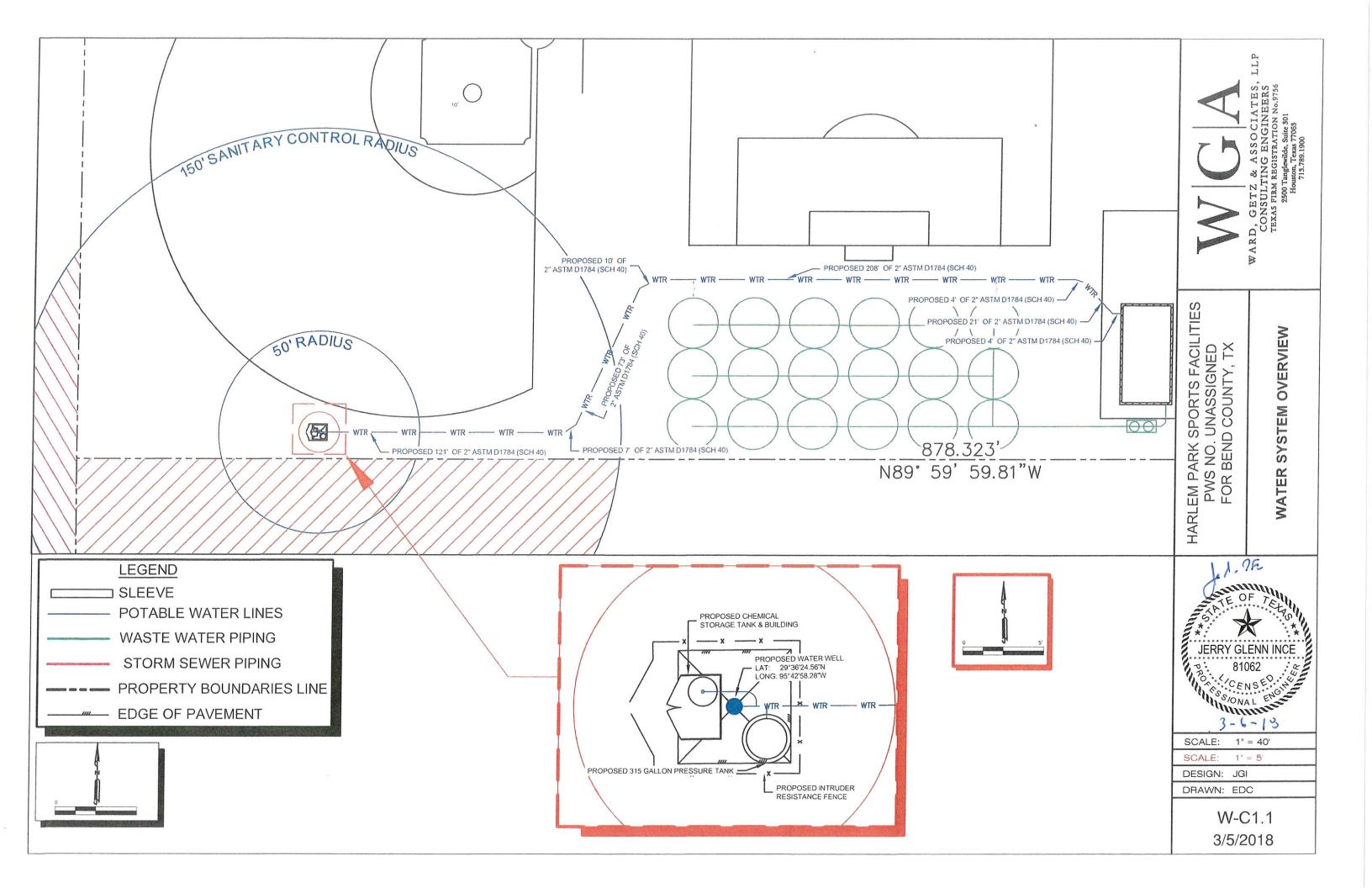
ENERAL

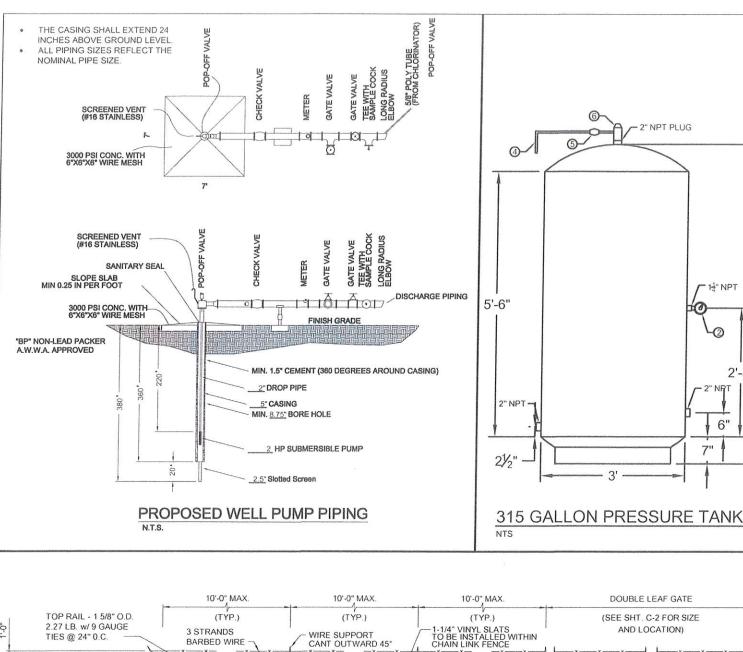
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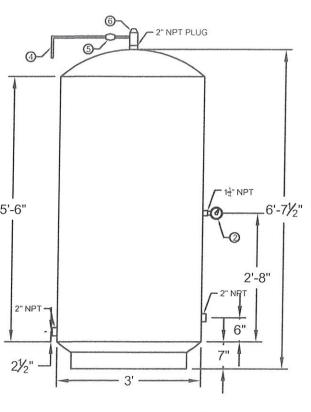
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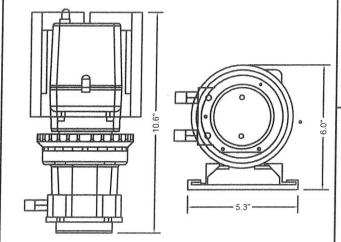


- PRESSURE TANK NOTES

 1. CONTRACTOR TO INSTALL NEW 315 GAL GALVANIZED HYDROPNEUMATIC PRESSURE TANK. (MODEL NO. PZ-315 AS MANUFACTURED BY PERMA TANK OR EQUAL).
- TANK SHALL BE EQUIPPED WITH AN EASILY READABLE PRESSURE GAUGE
- NO SIGHT GLASS OR LIQUID LEVEL INDICATOR IS REQUIRED FOR TANKS UNDER 1,000 GALLONS.
- A CONNECTION WITH A SUITABLE AIR COMPRESSOR 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 LUBRICANTS AND OTHER CONTAMINANTS FROM ENTERING THE TANK.
- TANK SHALL BE EQUIPPED WITH A PRESSURE RELEASE DEVICE

- PERISTALTIC PULSE PUMP NOTES

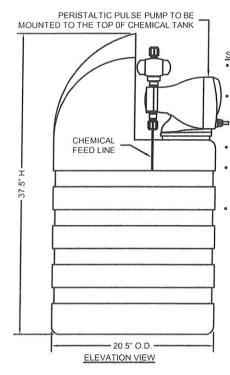
 METERING PUMP SHALL HAVE A CAPACITY AT LEAST 50% GREATER THAN THE HIGHEST EXPECTED DOSAGE TO BE APPLIED AT ANY TIME.
- SPECIFIED METERING PUMP IS A STENNER MODEL 45MHP2 CAPABLE OF DELIVERING UP TO 0.13 GALLONS OF DISINFECTANT PER HOUR.



PROPOSED PERISTALTIC PULSE PUMP

DOUBLE LEAF GATE (SEE SHT. C-2 FOR SIZE 1-1/4" VINYL SLATS TO BE INSTALLED WITHIN CHAIN LINK FENCE AND LOCATION) 1 5/8" O.D. BRACE PULL AS REQ'D. 1" 6 GAUGE GALV. CLIP @ 14" O.C. (TYP.) 3/8" TRUSS ROD w/ ADJ. TAKE-UP LINE & PULL CORNER POST POSTS 3" O.D GATE POST 3" O.D. 5.79 LB. 5.79 LB. 4" 0.D. 9.11 LB. 1'-0" MIN 1'-0" EXISTING ASPHALT OR (TYP.) NATURAL GROUND **CORNER POST** LINE POST **PULL POST GATE POST** FENCE SHALL BE EQUAL TO U.S. STEEL CYCLONE SAFEGUARD **PROPOSED**

CHAIN LINK FENCE DETAIL - 7' HEIGHT



SPILL CONTAINMENT IS NOT REQUIRED FOR

- HYPOCHLORITE SOLUTION CONTAINERS THAT HAVE A CAPACITY OF 35 GALLONS OR LESS. LIQUID CHEMICAL DISINFECTANT FOR THIS SYSTEM SHALL BE STORED IN A 30 GALLON TAPERED CYLINDRICAL CHEMICAL STORAGE TANK. (MODEL NO. STS30GC AS MANUFACTURED BY STENNER PUMP COMPANY).
- CHEMICAL STORAGE TANK SHALL BE INSTALLED IN A SECURE, WEATHER RESISTANT ENCLOSURE. TANK MATERIAL TO BE NSF/ANSI 61 APPROVED POLYETHYLENE AND SHALL BE TRANSLUCENT SO AS TO ALLOW FOR VISUAL INSPECTION OF THE LIQUID LEVEL
- TANK SHALL BE FURNISHED WITH GRADUATED MARKINGS INDICATING THE VOLUME INSIDE THE PRIMARY AND SECONDARY TANK.

SPORTS FACILIANT UNASSINGED NO. UP BEND HARLEM PARK PWS I

WATER WELL & MISCELLANIES DETAIL

FACILITIES

OF TEN E OF TE JERRY GLENN INCE 81062 CENSEO MALENGES 81062 At 3-6-13 DESIGN: JGI DRAWN: EDC

W-C2.0 3/5/2018

PROPOSED 30 GALLON CHEMICAL STORAGE TANK