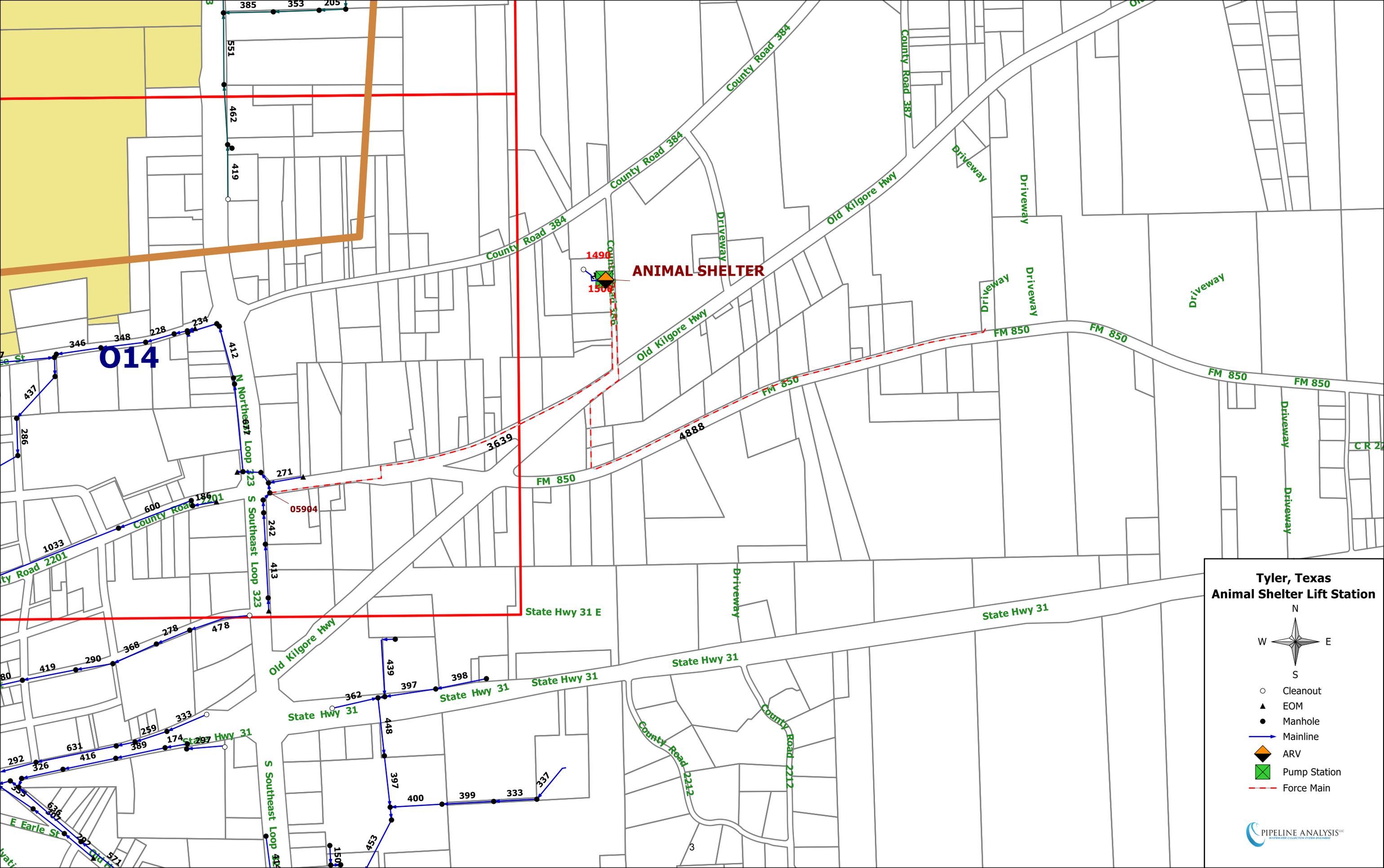


**APPENDIX A:
LIFT STATION DOCUMENTATION**

ANIMAL SHELTER LIFT STATION



ANIMAL SHELTER

014

**Tyler, Texas
Animal Shelter Lift Station**

N
W —+— E
S

- Cleanout
- ▲ EOM
- Manhole
- Mainline
- ◆ ARV
- ⊠ Pump Station
- - - Force Main

PIPELINE ANALYSISSM
AN INDEPENDENT GROUP OF PROFESSIONALS

Tyler Water Utilities - Lift Station Assessment Form

Lift Station Name ANIMAL SHELTER Type SUBMERSIBLE
 Location/Address 1847 County Road 386
 Lift Station Asset ID _____ Number of Pumps 2, (1 Disconnected)
 Firm Capacity in GPM (all pumps operating) _____
 Firm Capacity in GPM (largest pump out of service) _____
 Inspector Don White Date Dec 11, 2017
 City Works Work Order _____

Building and Grounds

Good Fair Poor Critical N/A

Building Structure		Type:	Good	Fair	Poor	Critical	N/A
		<u>NONE</u>					
	Building Roof/Ceiling		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Building Finishes		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Building Doors and Windows		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Building HVAC	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Fencing	<u>12.5' x 12.5'</u>	Type: <u>Chain Link</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gates	<u>4'</u>	Type: <u>11</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site/Grounds		Size: <u>12'-6" x 12'-6"</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Lighting	<u>DISCONNECTED NONE</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Pavement (Driving)	Type: <u>None</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Drainage	Type: <u>SURFACE</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor	Comment: <u>None</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Odor Control System	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Odor Control Mechanical		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Odor Control Media	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Noise		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Overall Site Appearance		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Surface drainage from 3 of 4 sides causing erosion; undermining metal wet well cover

Structural

		Good	Fair	Poor	Critical	N/A
Wet Well						
	Size: <u>4' φ</u>					
	Debris	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Fats, oils, and grease	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Ventilation	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Walls					
	Material: <u>Fiberglass</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Coatings					
	Type: _____	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Access Hatches					
	Number: <u>1 METAL 3' X 2'-6"</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Slab					
	<u>METAL 4'-6" φ</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry Well/Valve Vault						
	<u>None</u>					
	Walls					
	Material: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Coatings					
	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Grating/Hatching					
	Number: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Stairway/Ladder					
	Material: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Sump/Pump					
	Number: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Ventilation					
	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Comments Debris & Dirt on inside of Hatch and Frame

Mechanical

		Good	Fair	Poor	Critical	N/A
Bypass Connection	(Circle) YES <u>1</u> <u>NO</u>					
Piping and Valves						
	Suction Valve					
	Number: <u>—</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Check Valve					
	Number: <u>1</u>	<input type="radio"/>				
	Discharge Valve					
	Number: <u>2 PVC</u>	<input type="radio"/>				

Mechanical (continued)

		Good	Fair	Poor	Critical	N/A
	<u>3"</u> Riser Piping					
	Material: <u>PVC</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Discharge Piping	Material:	<u>PVC</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fittings	Material:	<u>PVC</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments No check valve observed, Old disconnected piping not in service still located at bottom of wetwell.

Pumps Not visible

Pump 1	Asset ID	Make	Model			
Capacity	GPM					
Impeller Dia./Code	Horsepower					
		Good	Fair	Poor	Critical	N/A
Pump		<input type="radio"/>				
Seals		<input type="radio"/>				
Motor		<input type="radio"/>				
Shaft		<input type="radio"/>				
Electrical Cable						
Noise		<input type="radio"/>				
Vibration/Heat		<input type="radio"/>				

Pump 1	The following components are to be inspected during pump disassembly
Oil	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Impeller	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Packing Rings	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Internal Seals	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

2 Pumps (1 DISCONNECTED)
Disconnected Pump: Discharge Valve Turned OFF, Breaker missing

Pump 2

Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Seals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shaft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electrical Cable					
Noise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vibration/Heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pump 2 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 3

Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 3

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 4

Asset ID _____

Make _____

Model _____

Capacity _____

GPM _____

Impeller Dia./Code _____

Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 4

The following components are to be inspected during pump disassembly

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 5

Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 5

The following components are to be inspected during pump disassembly

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 6

Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable	<input type="radio"/>				
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 6

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Electrical System

	Good	Fair	Poor	Critical	N/A
Electrical System Power	Volt/Phase:				
Panel/Enclosures	NEMA4X	<u>YES</u>	NO	<input checked="" type="radio"/>	<input type="radio"/>
Transformers (AEP)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disconnect	Type:	could not open door	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generator	KW	NONE	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Transfer Switch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Electrical System Control					
Breakers	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed control/VFD	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starters	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Control Relays	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Breaker MISSING FOR ONE PUMP

Instrumentation/SCADA

					Good	Fair	Poor	Critical	N/A
Panel	In control Panel	NEMA4X	YES	NO	<input type="radio"/>				

Instrumentation

Level	Type: Floats	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flow	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Instrumentation/SCADA (continued)

					Good	Fair	Poor	Critical	N/A
PLC	Type:	<input type="radio"/>							
SCADA					<input type="radio"/>				
RTU	Type: Dlink	<input type="radio"/>							
Radio/Antenna	Type: on uplink	<input type="radio"/>							

Comments Light Alarm, Sound Alarm

Building and Grounds



Lift Station Perimeter Facing East



Lift Station Perimeter Facing South



Erosion Around Wet Well Cover



Erosion Near Perimeter Fence

Building and Grounds



Erosion Near Perimeter Fence

Structural



Dirt on Inside of Wet Well Cover

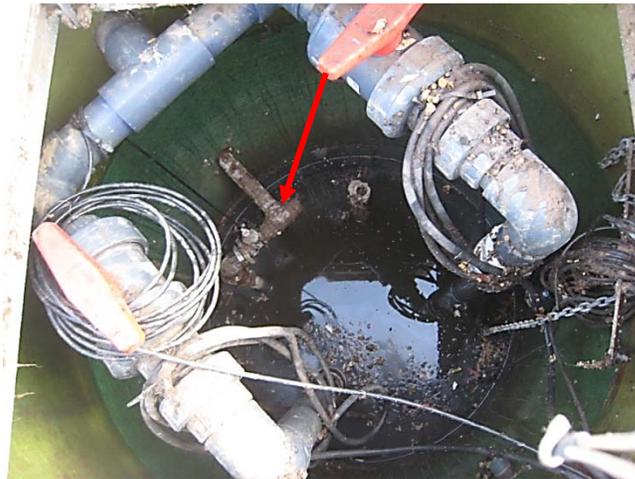


Debris and Dirt Inside Wet Well

Mechanical



Two (2) Discharge Valves in Wet Well. No Separate Valve Vault.
No Check Valve Observed.



Old Disconnected Piping Not in Service Still Located in Wet Well

Electrical



Front of Electrical Panel Facing East
Electric Panel Could Not be Opened



Rear of Electrical & Instrumentation Panel

Instrumentation/SCADA



Front of Instrumentation Panel Facing East



Inside of Instrumentation Panel (1)
Breaker Missing for Pump 2



Inside of Instrumentation Panel (2)



Inside of Instrumentation Panel Door

Instrumentation/SCADA



Uplink RTU Inside Instrumentation Panel

DATE	BY
02/04/00	SLH
02/16/00	SLH
03/19/01	EME
SUBMITTALS	
INITIAL SUBMITTALS	
SECOND SUBMITTALS	
AS-BUILT	

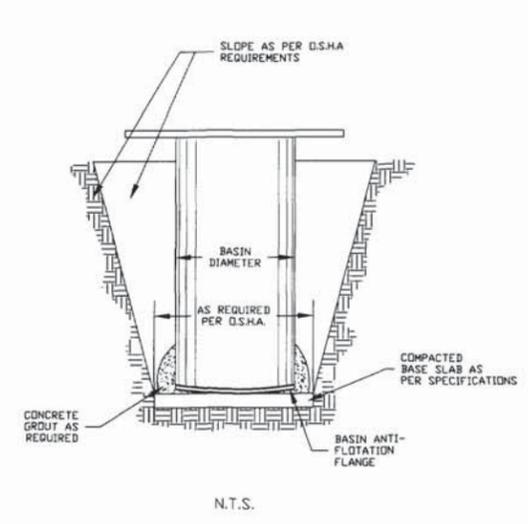
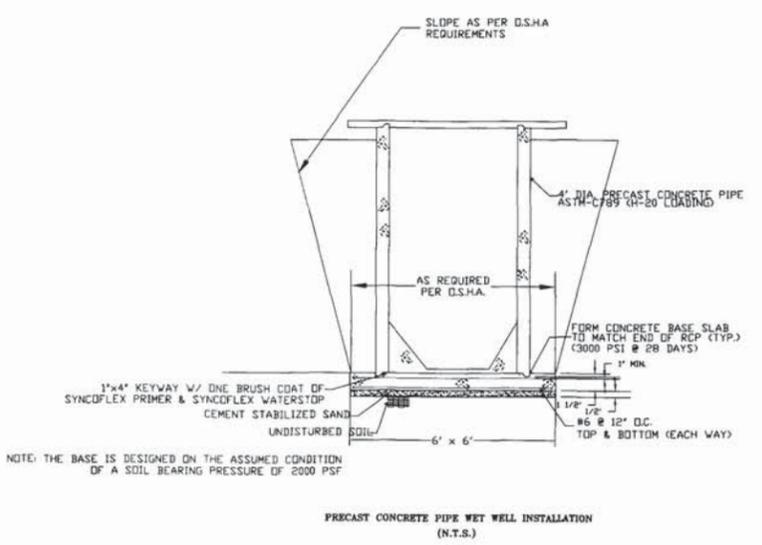
ADAMS CONSULTING ENGINEERS, INC.
CIVIL / ENVIRONMENTAL ENGINEERS - SURVEYORS
 6320 Copeland Road • Tyler, Texas 75703 • 903-324-8400

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CITY OF TYLER, TEXAS
TYLER, TEXAS
LIFT STATION & DETAILS



PROJECT MGR.	DCR
PROJECT TECH.	SLH
CHECKED BY	
JOB NO.	99-127
SHEET NO.	6

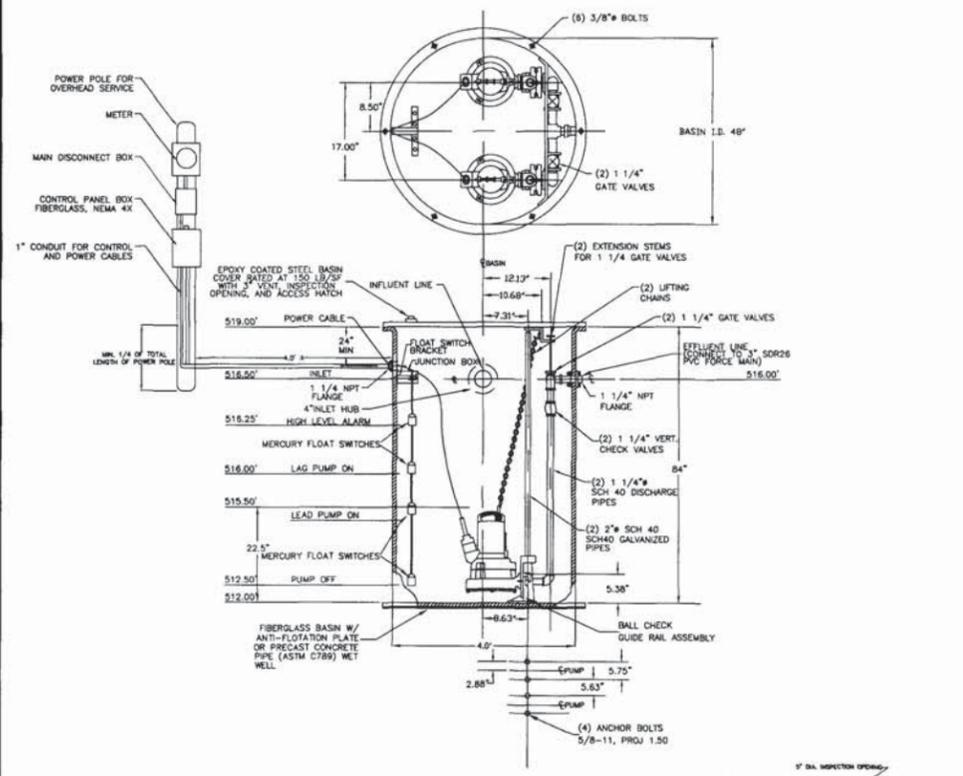


RECOMMENDED FIBERGLASS WET WELL INSTALL INSTRUCTIONS

- INSTALLATION INSTRUCTIONS:**
1. EXCAVATE HOLE TO THE REQUIRED SIZE
 2. INSTALL BASE, ENSURE THAT BASE IS LEVEL AND SMOOTH
 3. SET BASIN IN THE CENTER OF THE HOLE
 4. POUR CONCRETE GROUT AROUND ANTI-FLOTATION FLANGE AS REQUIRED
- BACK FILL REQUIREMENTS:**
1. BACK FILL IMMEDIATELY AFTER BASIN HAS BEEN SET IN PLACE
 2. PLACE BACK FILL MATERIAL IN 12" LIFTS AROUND THE BASIN & COMPACT TO 90% STANDARD PROCTOR DENSITY (ASTM D698).
- INLET AND OUTLET INSTALLATION:**
1. INSTALL INLETS AND OUTLETS AS REQUIRED WHEN BACK FILL IS WITHIN 2 FT. OF THAT ELEVATION
- THE INTENT OF THESE INSTALLATION INSTRUCTIONS IS TO INSURE THAT DAMAGE TO THE BASIN OR WETWELL WILL NOT OCCUR. THESE INSTALLATION INSTRUCTIONS ARE NOT INTENDED TO PRECLUDE NORMAL SAFETY PROCEDURES WHICH SHOULD BE FOLLOWED TO PREVENT INJURY TO PERSONNEL. SAFE INSTALLATION PROCEDURES SHALL BE ENTIRELY THE RESPONSIBILITY OF THE INSTALLER.

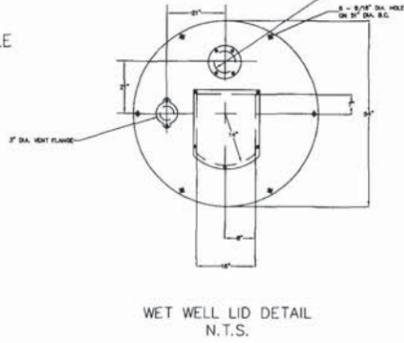
COMPACTED BASE SPECIFICATION

VERY SANDY CLAY TO CLAYEY SAND WITH A LIQUID LIMIT LESS THAN 35% AND A PLASTICITY INDEX LESS THAN 15; COMPACT TO A MINIMUM 95% STANDARD PROCTOR (ASTM D698)

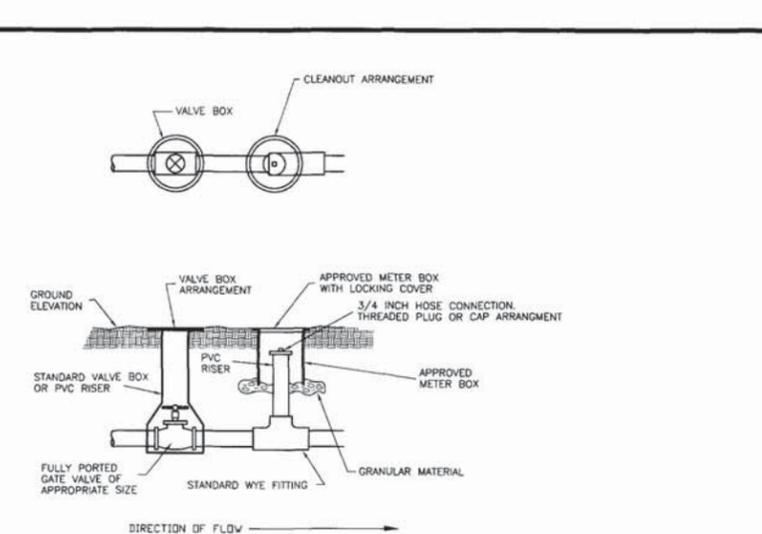


GRINDER PUMP DATA

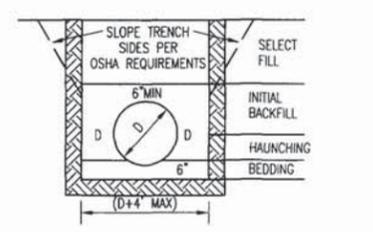
MANUFACTURER	ABS PUMPS, INC.
MODEL	M50/2W
IMPELLER	160 mm
HORSE POWER	6.2
RPM	3450
POWER REQUIREMENTS	230 V, 1 PHASE
DISCHARGE SIZE	1.25"
GALLONS PER MINUTE	73
TOTAL DESIGN HEAD	103



TYPE "A" VALVE AND CLEANOUT ASSEMBLY



TYPE "B" VALVE AND CLEANOUT ASSEMBLY

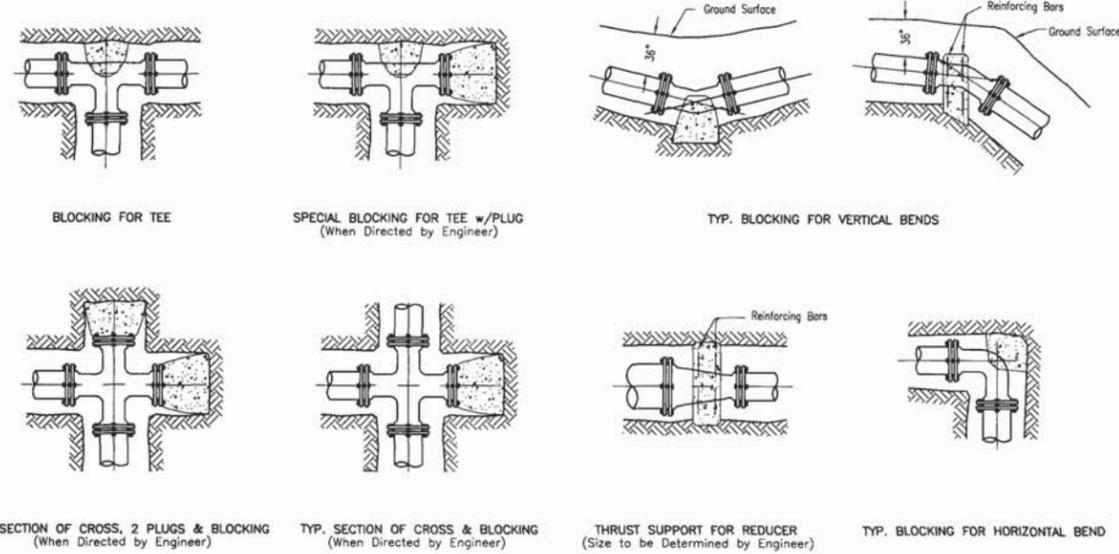


FLEXIBLE PIPE

INCLUDES CORRUGATED METAL PIPE, CORRUGATED POLYETHYLENE AND/OR POLYVINYL CHLORIDE PIPE.

1. BEDDING SHALL BE COMPACTED CRUSHED STONE AND SHALL BE SHAPED TO THE BOTTOM OF THE PIPE.
2. HAUNCHING AND INTIAL BACKFILL MATERIAL SHALL BE CLASS I OR II GRANULAR MATERIAL (ASTM D2321) AND SHALL BE COMPACTED TO 95% STANDARD PROCTOR.
3. SELECT FILL PLACEMENT AND COMPACTION SAME AS FOR RCP.

TRENCH AND BEDDING DETAILS

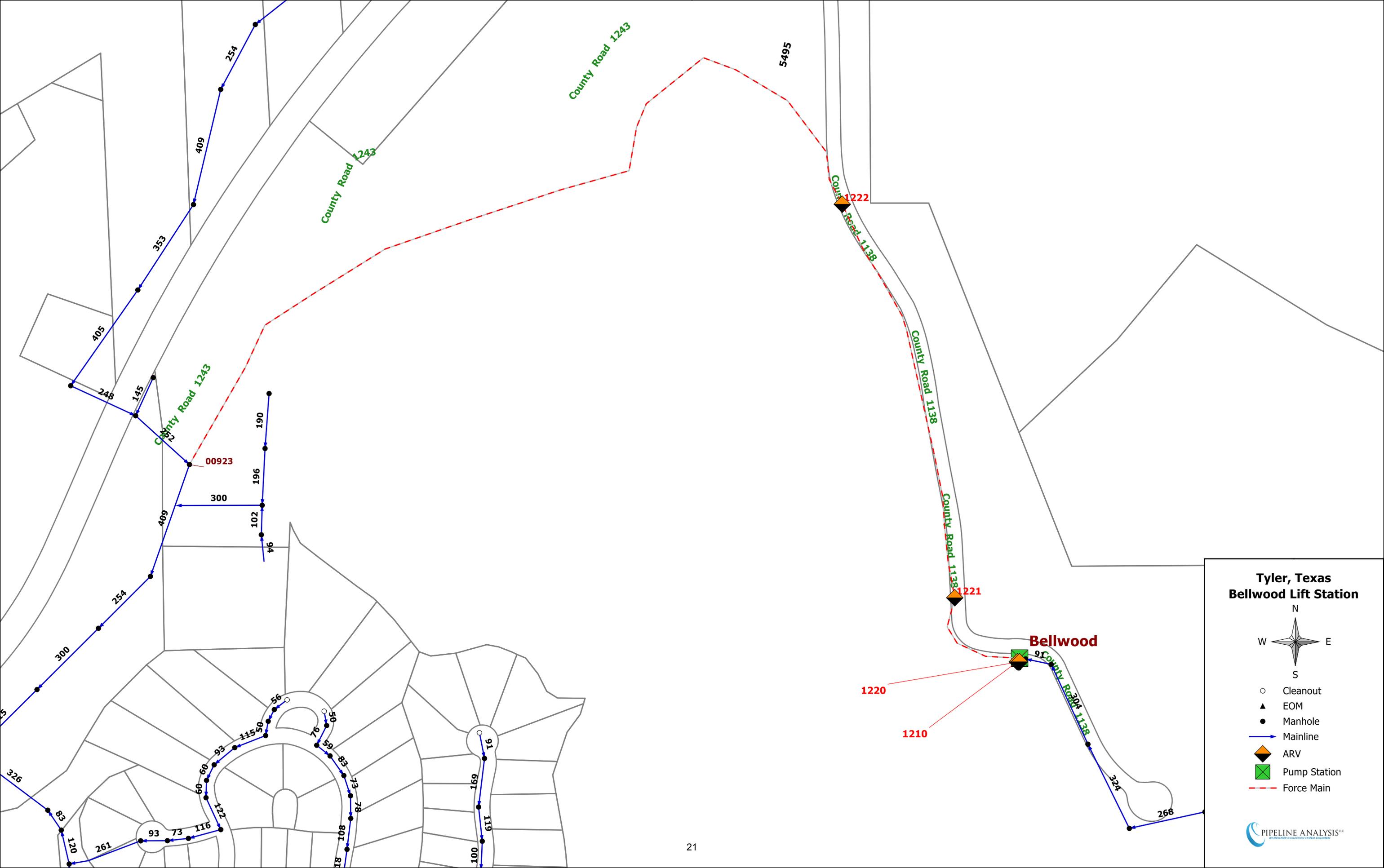


THRUST BLOCKING DETAILS

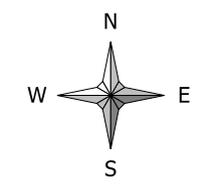
AS-BUILT PLANS DATE

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BELLWOOD LIFT STATION



**Tyler, Texas
Bellwood Lift Station**



- Cleanout
- ▲ EOM
- Manhole
- Mainline
- ◆ ARV
- ⊠ Pump Station
- - - Force Main

Tyler Water Utilities - Lift Station Assessment Form

Lift Station Name BELLWOOD Type Self Priming
 Location/Address 10362 County Road 1138
 Lift Station Asset ID _____ Number of Pumps 2
 Firm Capacity in GPM (all pumps operating) _____
 Firm Capacity in GPM (largest pump out of service) _____
 Inspector Don White Date Dec 18, 2017
 City Works Work Order _____

Building and Grounds

Good Fair Poor Critical N/A

Building and Grounds		Good	Fair	Poor	Critical	N/A
Building Structure	Type: <u>FIBERGLASS</u>					
Building Roof/Ceiling	<u>DOG HOUSE</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building Finishes		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building Doors and Windows		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building HVAC	Type: <u>WALL FAN, Grate</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fencing	Type: <u>Chain Link</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>VEHICULAR - DOUBLE 12' Gates</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>PED. 3'</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site/Grounds	Size: <u>50'W x 49'D</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pavement (Driving)	Type: <u>ASPHALT, CONCRETE, DIRT</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drainage	Type: <u>SURFACE</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor	Comment: <u>NONE-OUTSIDE</u> <u>MINOR INSIDE</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control System	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Mechanical		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Media	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noise		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall Site Appearance		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Latch on door broken, wall fan disconnected. Erosion silt in front of lift station almost to level of Dog House slab which will allow drainage into Dog House. Broken manhole lid on Gravity influent line allows drainage infiltration. One person could not slide open cover.

Structural

		Good	Fair	Poor	Critical	N/A
Wet Well	Size:					
	Debris	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Fats, oils, and grease	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Ventilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Walls	Material: <u>Concrete</u>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Coatings	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Access Hatches	Number: <u>2, Manhole lid</u>		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Slab	<u>13 X 27</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry Well/Valve Vault	<u>NONE</u>					
	Walls	Material:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Coatings	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Grating/Hatching	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Stairway/Ladder	Material:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Sump/Pump	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Ventilation	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments aggregate exposed on wet well walls

Mechanical

		Good	Fair	Poor	Critical	N/A
Bypass Connection	(Circle) <u>YES</u> / NO					
Piping and Valves						
	Suction Valve	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>1 w NEW</u>	Check Valve	Number: <u>2-6" DI</u>		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<u>1 w some CORROSION</u>	Discharge Valve	Number: <u>2-6" DI</u>		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Mechanical (continued)

		Good	Fair	Poor	Critical	N/A
	Riser Piping	Material: <u>6" DI</u>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Discharge Piping	Material: <u>6" DI; Reducer</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>8" DI OUT OF DOG HOUSE</u>					
Fittings	Material: <u>6, 8" DI</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Corrosion on flanges and bolts. Couplings at top of riser pipe - poor w/ corrosion
1" return line from each discharge pipe to wet well for aeration

Pumps

Pump 1	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	

Impeller Dia./Code _____	Horsepower _____
--------------------------	------------------

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 1 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 2 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 2 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 3 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 3

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 4

Asset ID _____

Make _____

Model _____

Capacity _____

GPM _____

Impeller Dia./Code _____

Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 4

The following components are to be inspected during pump disassembly

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 5	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Seals		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Motor		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Shaft		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Electrical Cable		
	Noise		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Vibration/Heat		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Pump 5 *The following components are to be inspected during pump disassembly*

	Oil	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Impeller	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Packing Rings	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Internal Seals	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Pump 6	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Seals		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Motor		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Shaft		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Electrical Cable		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Noise		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	Vibration/Heat		<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Pump 6

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Electrical System

	Good	Fair	Poor	Critical	N/A			
Electrical System Power	Volt/Phase:							
Panel/Enclosures	NEMA4X	YES	(NO)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transformers (AEP)				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disconnect	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generator	KW	NO		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transfer Switch				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electrical System Control								
Breakers	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed control/VFD	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starters	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Control Relays	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Instrumentation/SCADA

					Good	Fair	Poor	Critical	N/A
Panel	NEMA4X	YES	NO		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation									
Level	Type:	ultra sonic			<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flow	Type:	No			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation/SCADA (continued)					Good	Fair	Poor	Critical	N/A
PLC	Type:				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SCADA					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NOT OBSERVED	RTU	Type:	?		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Radio/Antenna	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments	Visual Alarm								

Building and Grounds



Lift Station Perimeter



Lift Station Perimeter Gate

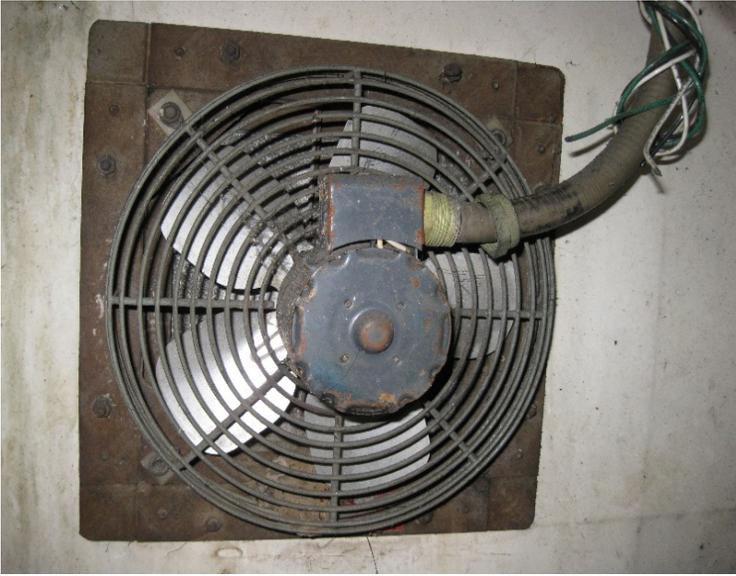


Lift Station Dog House Facing Gate



Dog House Side View
Door Latch Broken

Building and Grounds



Fan for Dog House Not Operational



On Site Lighting Needs to be Replaced



Slope of Ground & Erosion Causes Rain Water to Enter Lift Station During Wet Weather Events



Influent Gravity Line Manhole Lid Broken

Structural



Debris, Fat, Oil & Grease Deposits in Wet Well.



Deteriorated Concrete Wet Well Walls.

Mechanical



Corroded Piping Inside Dog House



Gorman-Rupp Pump



Corroded Piping Inside Dog House



Corroded Piping Inside Wet Well

Electrical



Electrical Panel Mounted on Pole



Safety Switch



Electrical Panel

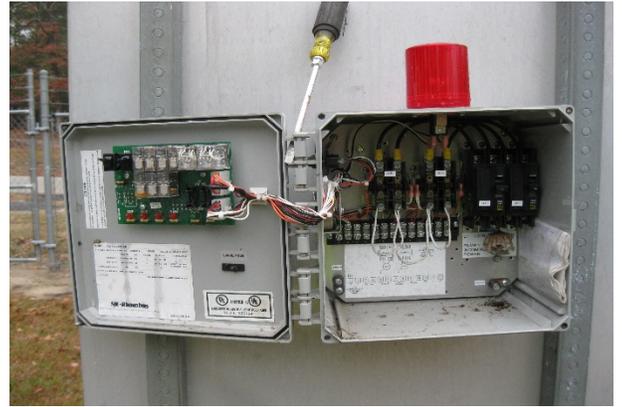


Electric Transformer

Electrical



Control Panel - Closed

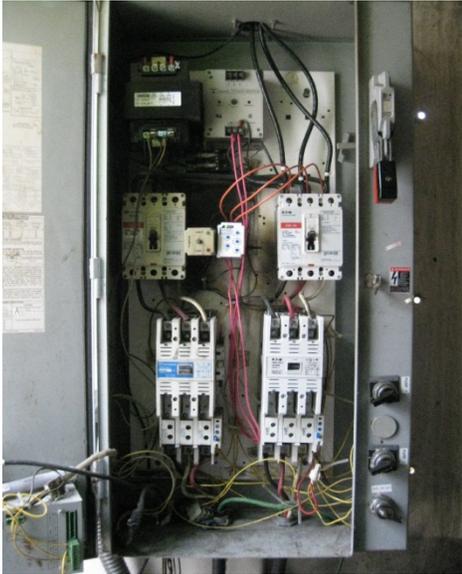


Control Panel- Open

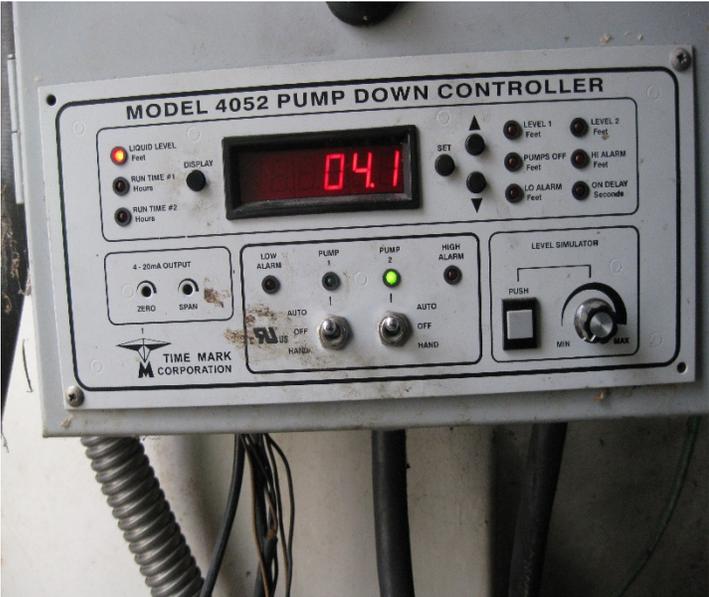
Instrumentation/SCADA



Front of Instrumentation Panel Facing East



Inside of Instrumentation Panel (1)
Breaker Missing for Pump 2



Pump Control Panel

DS

Self Priming Centrifugal Pump



Model T6A3S-B

Size 6" x 6"



PUMP SPECIFICATIONS

- Size:** 6" x 6" (152 mm x 152 mm) NPT - Female.
- Casing:** Gray Iron 30.
Maximum Operating Pressure 79 psi (545 kPa).*
- Semi-Open Type, Two Vane Impeller:** Ductile Iron 65-45-12.
Handles 3" (76.2 mm) Diameter Spherical Solids.
- Impeller Shaft:** Alloy Steel 4150.
- Shaft Sleeve:** Alloy Steel 4130.
- Replaceable Wear Plate:** Carbon Steel 1026.
- Removable Adjustable Cover Plate:** Gray Iron 30; 62 lbs. (28 kg).
- Flap Valve:** Neoprene w/Nylon and Steel Reinforcing.
- Seal Plate:** Gray Iron 30.
- Bearing Housing:** Gray Iron 30.
- Radial Bearing:** Open Single Row Ball.
- Thrust Bearing:** Open Double Row Ball.
- Bearing and Seal Cavity Lubrication:** SAE 30 Non-Detergent Oil.
- Flanges:** 125# Gray Iron 30.
- Gaskets:** Buna-N, Compressed Synthetic Fibers, PTFE, Vegetable Fiber, Cork, and Rubber.
- O-Rings:** Buna-N.
- Hardware:** Standard Plated Steel.
- Brass Pressure Relief Valve.**
- Bearing and Seal Cavity Oil Level Sight Gauges.**
- Optional Equipment:** Metal Bellows Seal. Automatic Air Release Valve. 120V/240V Casing Heater. High Pump Temperature Shutdown Kit. G-R Hard Iron Casing. Self-Cleaning Wear Plate.
- Gray Iron 30 Suction and Discharge Spool Flanges:
6" ASA (**Specify Model T6A3S-B /F**),
150 mm DIN 2527 (PN16) (**Specify Model T6A3S-B /FM**).

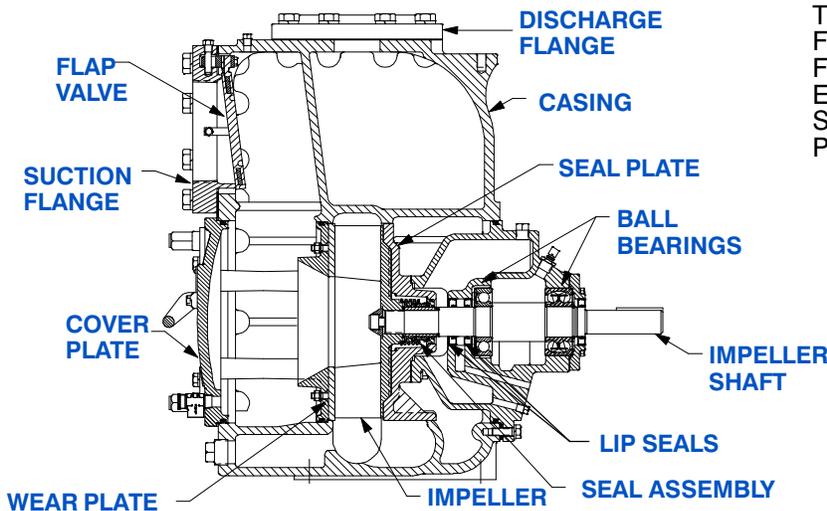
**Consult Factory for Applications Exceeding Maximum Pressure and/or Temperature Indicated.*



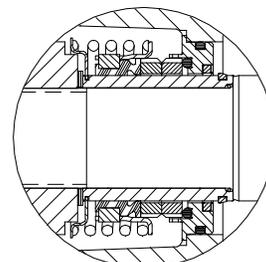
Shown with Optional Suction & Discharge Spool Flanges (Available in ASA or DIN Standard Sizes).

SEAL SPECIFICATIONS

Cartridge Type, Mechanical, Oil-Lubricated, Double Floating, Self-Aligning, Tungsten Titanium Carbide Rotating and Stationary Faces. Stainless Steel 316 Stationary Seat. Fluorocarbon Elastomers (DuPont Viton® or Equivalent). Stainless Steel 18-8 Cage and Spring. Maximum Temperature of Liquid Pumped, 160°F (71°C).*



SEAL DETAIL



THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO

GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

www.grpumps.com

Specifications Subject to Change Without Notice

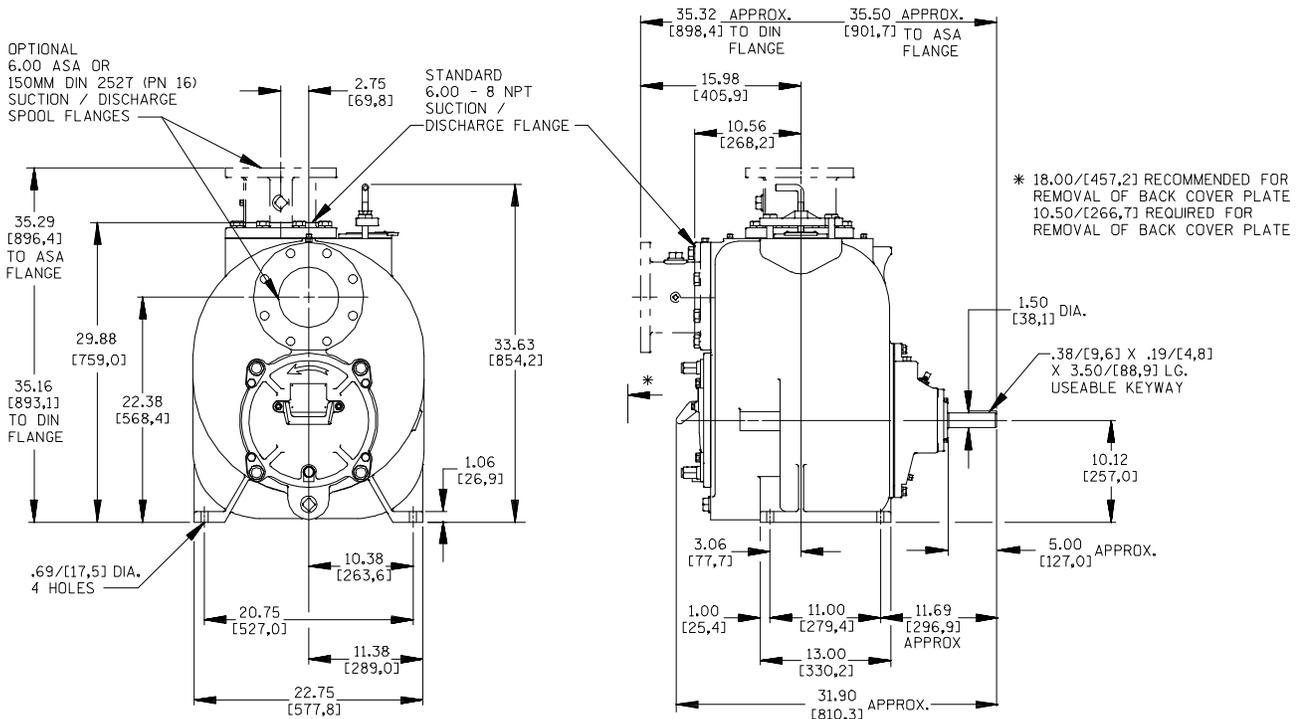
Printed in U.S.A.

Specification Data

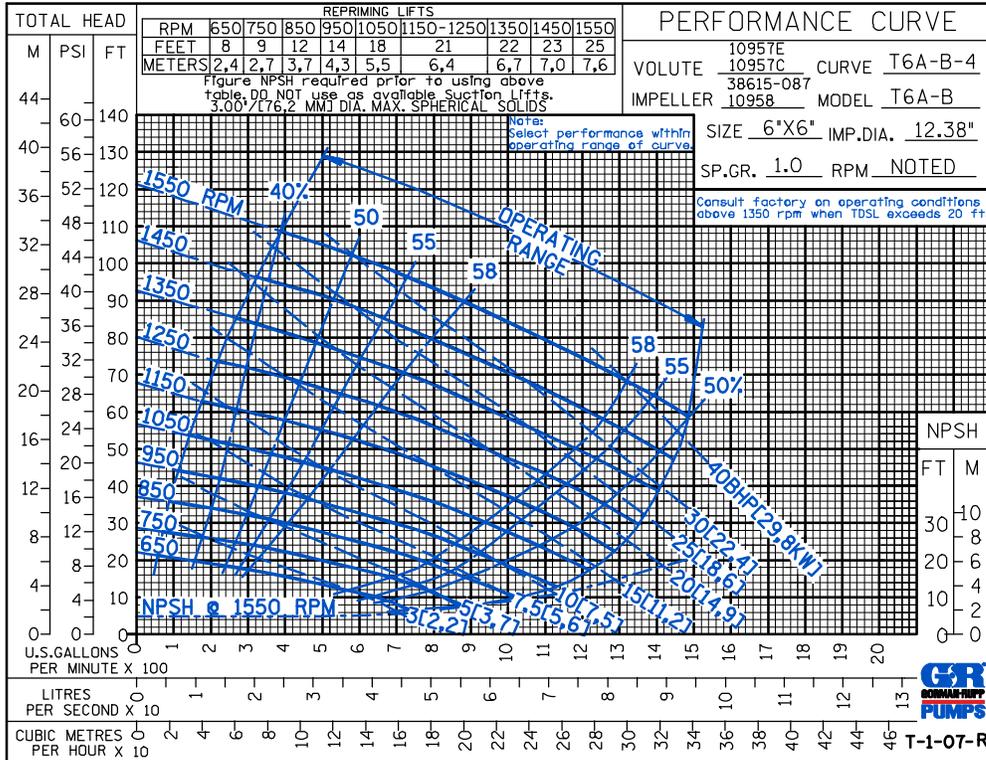
APPROXIMATE DIMENSIONS and WEIGHTS

NET WEIGHT: 855 LBS. (388 KG.)*
SHIPPING WEIGHT: 910 LBS. (413 KG.)*
EXPORT CRATE: 32.5 CU. FT. (0,92 CU. M.)
***ADD 25 LBS. (11,3 KG.) W/EACH SPOOL FLANGE**

SECTION 55, PAGE 2200



OPTIONAL ASA OR DIN STANDARD SUCTION & DISCHARGE SPOOL FLANGES AVAILABLE



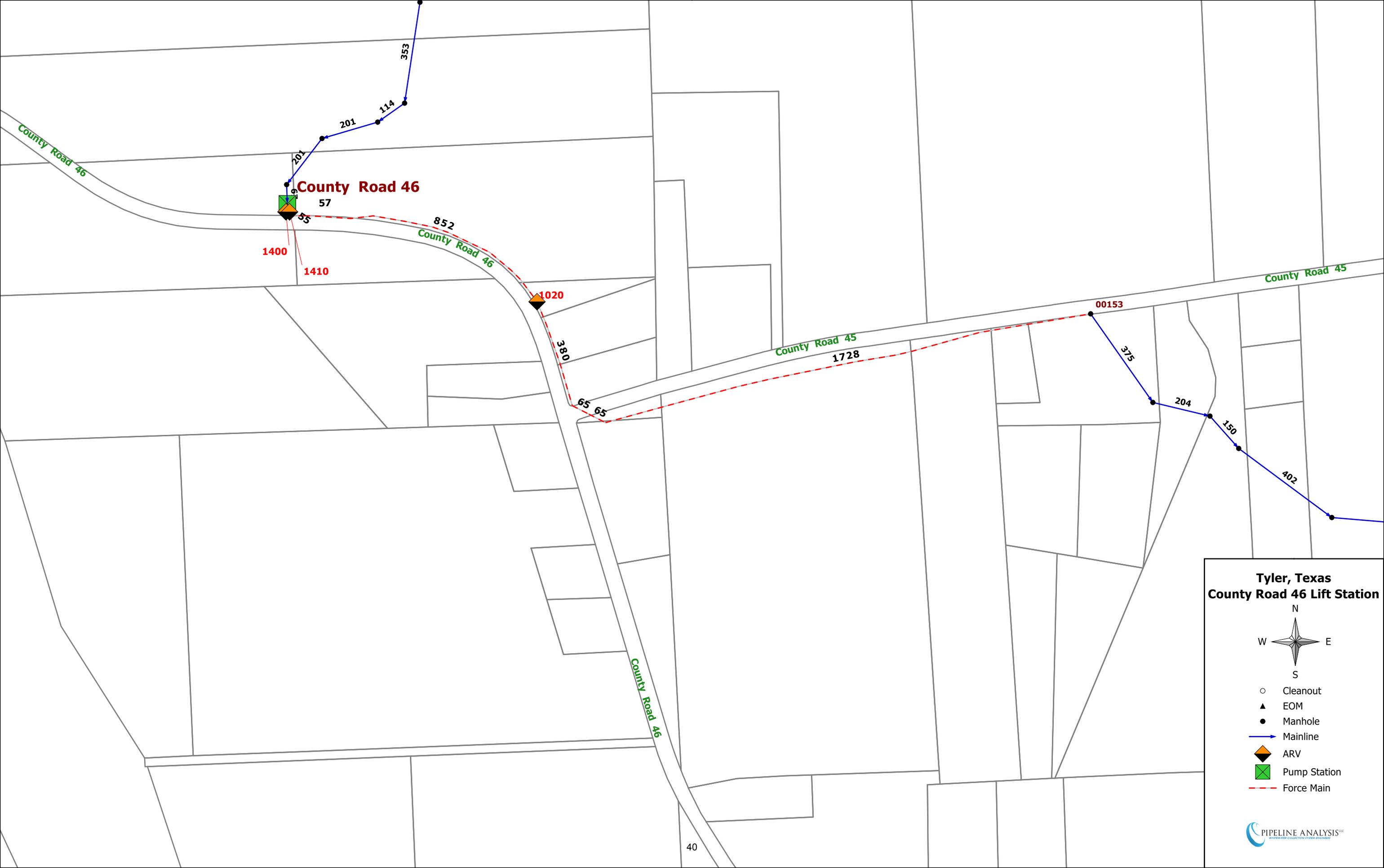
THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO

GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

Specifications Subject to Change Without Notice

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CR46 NEW HARMONY LIFT STATION



**Tyler, Texas
County Road 46 Lift Station**

N
W —+— E
S

- Cleanout
- ▲ EOM
- Manhole
- Mainline
- ◆ ARV
- ▣ Pump Station
- - - Force Main

PIPELINE ANALYSIS^{INC}
AN ADVANCED SOLUTION FOR WATER AND SEWER

Tyler Water Utilities - Lift Station Assessment Form

Lift Station Name NEW HARMONY Type Submersible
 Location/Address 15750 County Road 46
 Lift Station Asset ID _____ Number of Pumps 2
 Firm Capacity in GPM (all pumps operating) _____
 Firm Capacity in GPM (largest pump out of service) _____
 Inspector Don White Date Dec 15, 2017
 City Works Work Order _____

Building and Grounds

Good Fair Poor Critical N/A

Building Structure	Type:	Good	Fair	Poor	Critical	N/A
Building Roof/Ceiling	<u>NONE</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building Finishes		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building Doors and Windows		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building HVAC	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fencing	Type: <u>Chain Link</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>2 Gates, 1 Front, 1 Back</u> <u>Both Double 17'</u>	Type: <u>11</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site/Grounds	Size: <u>79' WIDE X 73' DEEP</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pavement (Driving)	Type: <u>Asphalt</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drainage	Type: <u>Surface</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor	Comment: <u>NONE</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control System	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Mechanical		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Media	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noise		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall Site Appearance		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Erosion on back side of grounds has undermined
fence post causing fence collapse. Rear gate post footing
undermined by erosion. Some ponding spots on Asphalt.

Lift hoist in place for pump removal - Fair condition, some
corrosion.

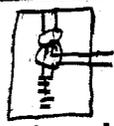
SURGE VALVE VAULT

↑ TOWARD ROAD

→ TOWARD WETWELL

WALLS: CONCRETE - GOOD
 COATING: NO
 HATCH: METAL DOUBLE 6'x4" - GOOD
 SUMP: 1-FLOOR DRAIN - GOOD
 VENTILATION: PIPE - GOOD

8" WALLS 14'-5" 7' DEEP

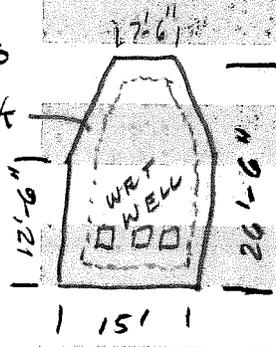


Structural

Good Fair Poor Critical N/A

Wet Well		Size:	Good	Fair	Poor	Critical	N/A
Debris			<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fats, oils, and grease			<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ventilation	Pipe		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walls	Material: Concrete		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coatings	Type: YES		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access Hatches	Number: 3- Metal 4'-4" x 3'-4"		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slab	Concrete		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WALLS 16" THICK



Dry Well/Valve Vault		Size:	Good	Fair	Poor	Critical	N/A
Walls	Material: Concrete		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coatings	Type: YES		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grating/Hatching	Number: 3- METAL 6'x3'		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stairway/Ladder	Material:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sump/Pump	Number: 1-Floor Drain		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ventilation	Type: PIPE		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WALLS 8" THICK



Comments Lift Station has two pumps installed with capacity for a third pump. Wet Well Vent Pipe needs recoating. Discharge Pipe and Valve in place in vault for third pump

Mechanical

Good Fair Poor Critical N/A

Bypass Connection	(Circle) YES / NO		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Piping and Valves							
Suction Valve	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Check Valve	Number: 2 12" DI		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discharge Valve	Number: 3- 12" DI		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mechanical (continued)

ONE DISCHARGE VALVE ON FUTURE THIRD PUMP DISCHARGE

Good Fair Poor Critical N/A

Riser Piping	Material: 12" DI		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Discharge Piping	Material:	12" P401	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fittings	Material:	LINED	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments RISER PIPES AND FITTINGS IN WET WELL CORROSION
FITTINGS IN VALVE VAULT- GOOD. Combined discharge/Force
main pipe not able to be observed.

Pumps

Pump 1	Asset ID	_____	Make	_____	Model	_____
	Capacity	_____	GPM			
	Impeller Dia./Code	_____	Horsepower	_____		

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 1	<i>The following components are to be inspected during pump disassembly</i>				
Oil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impeller	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Packing Rings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internal Seals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pump 2 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 2 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 3 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 3

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 4

Asset ID _____

Make _____

Model _____

Capacity _____

GPM _____

Impeller Dia./Code _____

Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 4

The following components are to be inspected during pump disassembly

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 5 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 5 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 6 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable	<input type="radio"/>				
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 6

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Electrical System

	Good	Fair	Poor	Critical	N/A			
Electrical System Power	Volt/Phase:							
Panel/Enclosures	NEMA4X	<u>YES</u>	NO	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transformers (AEP)				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disconnect	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generator	KW	<u>YES</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transfer Switch		<u>YES</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electrical System Control								
Breakers	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed control/VFD	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starters	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Control Relays	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Door panels locked on Generator

Instrumentation/SCADA

				Good	Fair	Poor	Critical	N/A
Panel	NEMA4X	YES	NO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation								
Level	Type:	<u>ultra sonic</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flow	Type:	<u>No</u>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation/SCADA (continued)				Good	Fair	Poor	Critical	N/A
PLC	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SCADA				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RTU	Type:	<u>uplink</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio/Antenna	Type:	<u>n/uplink</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments	<u>Visual Alarm present</u>							

Building and Grounds



Lift Station Perimeter Facing West



Lift Station Rear Fencing Collapse



Erosion Around Lift Station Rear Gate



Rear Gate Affected by Erosion

Building and Grounds



Lift Hoist in Fair Condition with Minor Corrosion

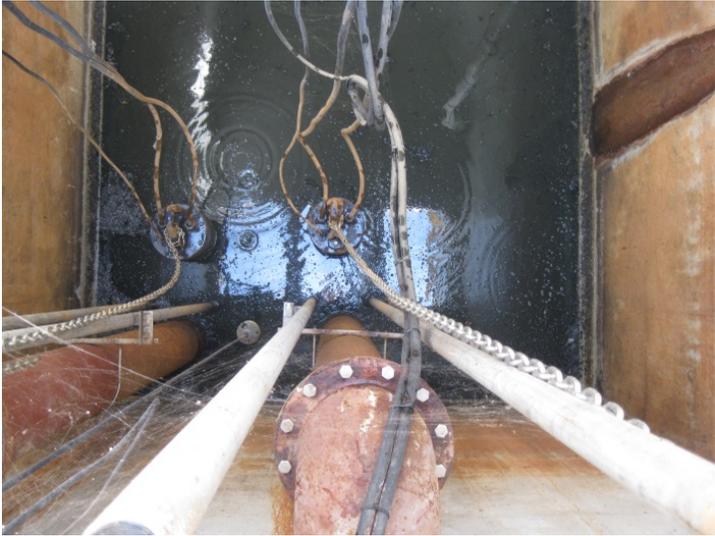


Poor Surface Drainage

Structural



Wet Well and Valve Vaults Facing East



Interior of Wet Well



Wet Well Vent Pipe Coating Peeling off



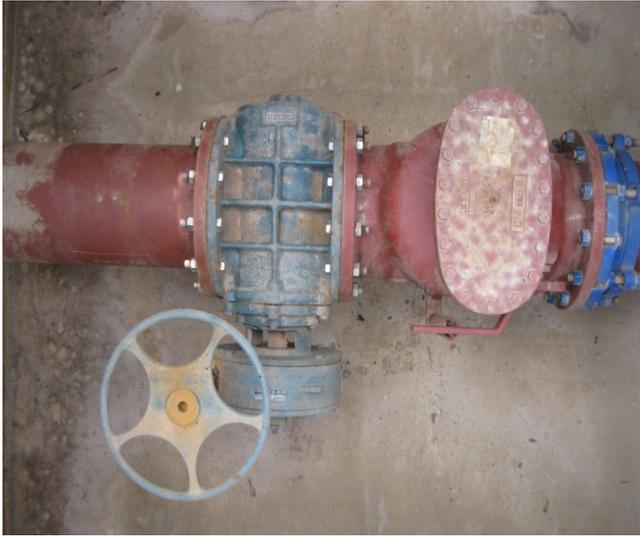
Wet Well Vent Pipe

Structural



Pipe Corrosion

Mechanical



12" Plug Valve on Existing Discharge Line in Good Condition



12" Plug Valve for Future Discharge Expansion in Good Condition



12" Surge Valve in Good Physical Condition. Based on Operational Input, Valve Trips and Causes Pumps to Shut Off

Electrical



Front of Electrical & Instrumentation Panel



Transfer Switch



Front of Electrical Panel



Inside Electrical Panel



Generator Facing West

Instrumentation and SCADA



Front of Instrumentation Panel Facing East



Inside of Instrumentation Panel (1)



Inside of Instrumentation Panel (2)



Inside of Instrumentation Panel Door

Instrumentation and SCADA



Uplink RTU Inside Instrumentation Panel



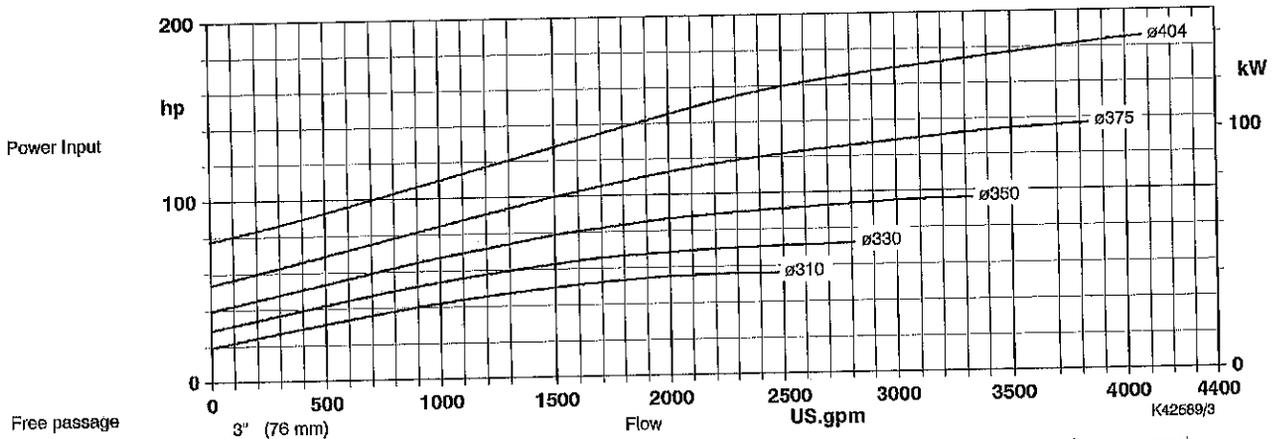
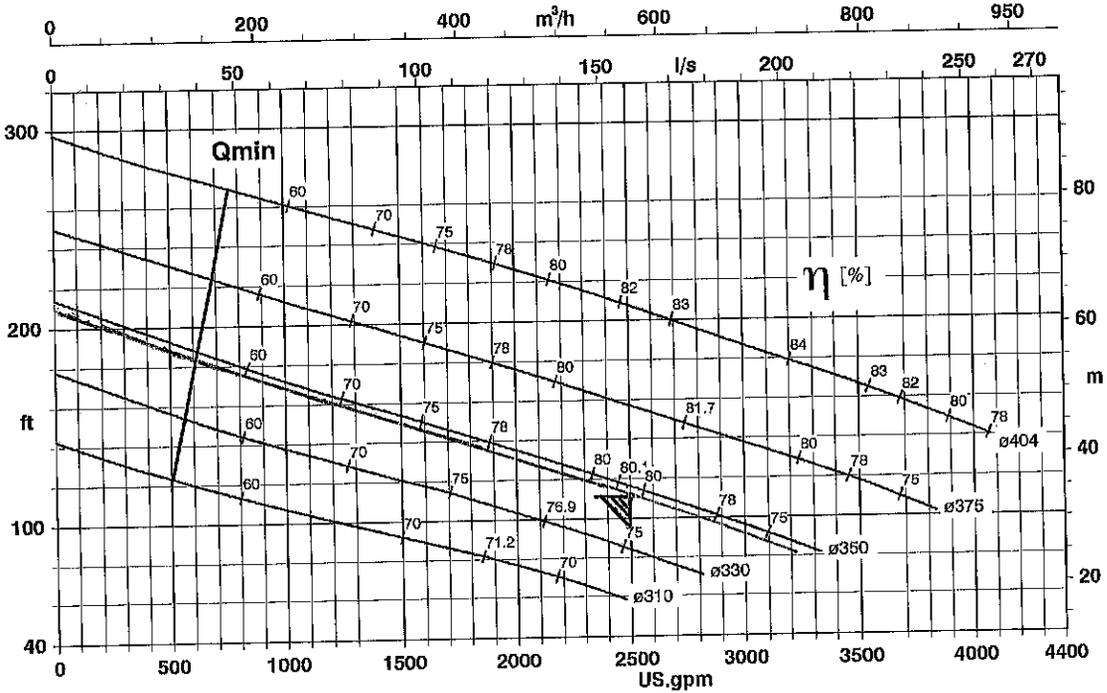
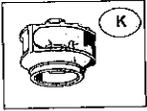
KSB Model KRT K150-401/804XNG, 107HP,
460V, 3 Phase, Explosion Proof
Electrical Submersible Pumps each with 110'
Power Cable.
2500gpm @ 115'

KRT

KRT K 150-401

1750 rpm

6 inch



MOTOR RATING Material				MAX. LIQUID TEMP.		MOTOR CODE
G, G1, GH, H		C1, C2		°F	°C	
50	37.3	-	-	140	60	504WN 504Z *) 504U 504X *)
65	48.5	56	41.8	104	40	654W 654Z *)
83	61.9	74	55.2	140	60	854U 854X *)

G, G1, GH, H				C1, C2		MAX. LIQUID TEMP.		MOTOR CODE
S/P		S/P		°F	°C			
100	74.6	75	55.9	140	60	804WN 804ZN *)		
107	79.8	90	67.1	104	40	804UN 804XN *)		

G, G1, GH, H		C1, C2		MAX. LIQUID TEMP.		MOTOR CODE
S/P		S/P		°F	°C	
121	90.2	95	70.8	140	60	954WN 954ZN *)
127	94.7	100	74.6	104	40	954UN 954XN *)
134	99.9	115	85.8	140	60	1104WN 1104ZN *)
148	110.4	125	93.2	104	40	1104UN 1104XN *)
168	125.3	125	93.2	140	60	1304WN 1304ZN *)
174	129.8	150	111.9	104	40	1304UN 1304XN *)
194	144.7	150	111.9	140	60	1554WN 1554ZN *)
208	155.1	175	130.5	104	40	1554UN 1554XN *)
-	-	175	130.5	140	60	1754WN 1754ZN *)
-	-	200	149.1	104	40	1754UN 1754XN *)

*) FM/CSA = Explosionproof to Class I, Division 1, Groups C & D

For Motor Data
Installation Type S&P
Consult the back of
this manual

For Motor Data
Installation Type S&P
Consult the back of
this manual

DIXIE LIFT STATION

Tyler Water Utilities - Lift Station Assessment Form

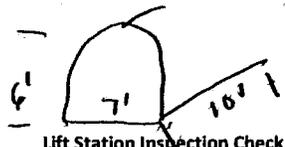
Lift Station Name DIXIE Type Submersible
 Location/Address 168 Eisenhower Dr.
 Lift Station Asset ID _____ Number of Pumps 2
 Firm Capacity in GPM (all pumps operating) _____
 Firm Capacity in GPM (largest pump out of service) _____
 Inspector Don White Date Dec 15, 2017
 City Works Work Order _____

Building and Grounds

Good Fair Poor Critical N/A

Building Structure	Type: <u>DOGHOUSE</u>					
Building Roof/Ceiling	<u>MISSING IN PLACES</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Building Finishes		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Building Doors and Windows		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Building HVAC	Type: <u>—</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fencing	Type: <u>Chain Link</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Vehular - Double 18'</u> Gates Type: <u>11</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Pedestrian - 3'</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site/Grounds	Size: <u>25' X 25'</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting	<u>OUTSIDE Bulb broken, INSIDE NO BULB</u>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pavement (Driving)	Type: <u>Dirt/Gravel</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drainage	Type: <u>Surface</u>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor	Comment: <u>NONE</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control System	Type: <u>—</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Mechanical		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Odor Control Media	Type: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noise		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall Site Appearance		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Lift station concrete slab flush with asphalt drive allowing surface drainage to enter Doghouse. Tarp covering 1/2 missing roof. 1/2 walls missing on rear h side. Door not attached to Jam in places, latch missing. Grade of drive will not allow vehicular Gate to fully open. Tree Fell on Dog House COVER DEMOLISHING MOST OF IT.



Structural

Good Fair Poor Critical N/A

Wet Well		Size:	Good	Fair	Poor	Critical	N/A
Debris			<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fats, oils, and grease:			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ventilation	Pipe		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walls	Material:	CONCRETE	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coatings	Type:	—	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2' Manhole lid	Access Hatches	Number: 1	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slab	Concrete 14'x20'		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry Well/Valve Vault		NONE					
Walls	Material:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coatings	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grating/Hatching	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stairway/Ladder	Material:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sump/Pump	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ventilation	Type:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Manhole lid and ring need cleaning. Aggregate exposed in wet well walls. Significant debris in wet well, oil and grease - Fair.

Mechanical

Good Fair Poor Critical N/A

Bypass Connection		(Circle)	YES	/	(NO)	Good	Fair	Poor	Critical	N/A
Piping and Valves										
Suction Valve	Number:		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Check Valve	Number:	2 - 4" DI	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>					
Discharge Valve	Number:	2 - 4" DI	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>					

Mechanical (continued)

Good Fair Poor Critical N/A

Riser Piping	Material:	3" DI	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Above slab - good								
		Below slab - poor - corrosion								

Pump 2 Asset ID _____ Make _____ Model _____

Capacity _____ GPM _____

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 2 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 3 Asset ID _____ Make _____ Model _____

Capacity _____ GPM _____

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 3

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 4

Asset ID _____

Make _____

Model _____

Capacity _____

GPM _____

Impeller Dia./Code _____

Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 4

The following components are to be inspected during pump disassembly

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 5 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable					
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 5 *The following components are to be inspected during pump disassembly*

Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Pump 6 Asset ID _____ Make _____ Model _____

Capacity _____ GPM

Impeller Dia./Code _____ Horsepower _____

	Good	Fair	Poor	Critical	N/A
Pump	<input type="radio"/>				
Seals	<input type="radio"/>				
Motor	<input type="radio"/>				
Shaft	<input type="radio"/>				
Electrical Cable	<input type="radio"/>				
Noise	<input type="radio"/>				
Vibration/Heat	<input type="radio"/>				

Pump 6

The following components are to be inspected during pump disassembly

	Good	Fair	Poor	Critical	N/A
Oil	<input type="radio"/>				
Impeller	<input type="radio"/>				
Packing Rings	<input type="radio"/>				
Internal Seals	<input type="radio"/>				

Electrical System

	Good	Fair	Poor	Critical	N/A
Electrical System Power	Volt/Phase:				
Panel/Enclosures	NEMA4X	YES	NO	<input type="radio"/>	<input type="radio"/>
Transformers (AEP)	<input type="radio"/>				
Disconnect	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generator	KW	NO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transfer Switch	<input type="radio"/>				
Electrical System Control					
Breakers	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed control/VFD	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starters	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Control Relays	Type:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments Panel door cracked at Dog House Center Roof Beam,
door does not close shut, latches not operational, bolt
secures door

Instrumentation/SCADA

				Good	Fair	Poor	Critical	N/A
Panel	NEMA4X	YES	NO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation								
Level	Type:	<u>ultrasonic</u>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flow	Type:	<u>No</u>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instrumentation/SCADA (continued)				Good	Fair	Poor	Critical	N/A
PLC	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SCADA				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RTU	Type:	<u>Not observed</u>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio/Antenna	Type:			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments	<u>Visual Alarm</u>							

Building and Grounds



Lift Station Perimeter Facing West



Lift Station Dog House Facing South- Cover in Critical Condition



Lift Station Dog House Facing North- Cover in Critical Condition



Lift Station Dog House Cover in Critical Condition Facing West



Door Not Attached to Hinge Facing South



Site Grading Impedes Movement of Vehicular Entrance Gate

Building and Grounds



Concrete Slab Flush with Natural Ground-
Allows Water to Enter Dog House



Light Bulb Missing Inside Dog House



Light Bulb Broken Outside Dog House (1)



Light Bulb Broken Outside Dog House (2)

Structural



Manhole Lid Facing South



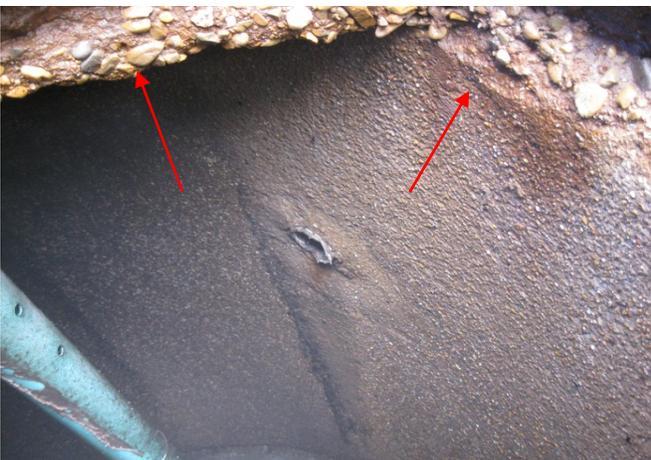
Manhole Lid & Ring Need Cleaning



Debris, Fat & Oil Deposits in Dry Well (1)



Debris, Fat & Oil Deposits in Dry Well (2)



Concrete Deterioration in Dry Well

Mechanical



Suction & Discharge Piping Corrosion (1)



Suction & Discharge Piping Corrosion (2)

Electrical



Front of Electrical Panel



Pump Control Panel Door Cracked at Dog House Center Roof Beam



Company:
Name:
Date: 3/20/2013

Pump:

Size: T3A-B-4
Type: T-SERIES
Synch speed: Adjustable
Curve: T3A-B-4
Specific Speeds:
Dimensions:
Speed: 1610 rpm
Dia: 8.75 in
Impeller: 11406
Ns: ---
Nss: ---
Suction: 3 in
Discharge: 3 in

Search Criteria:

Flow: 132 US gpm Head: 62 ft

Fluid:

Water
SG: 1
Viscosity: 1.105 cP
NPSHa: ---
Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 14.7 psi a

Motor:

Standard: NEMA ---
Enclosure: TEFC ---
Speed: ---
Frame: ---
Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: ---
Pressure: ---
Sphere size: 2.5 in
Power: ---
Eye area: ---

---- Data Point ----

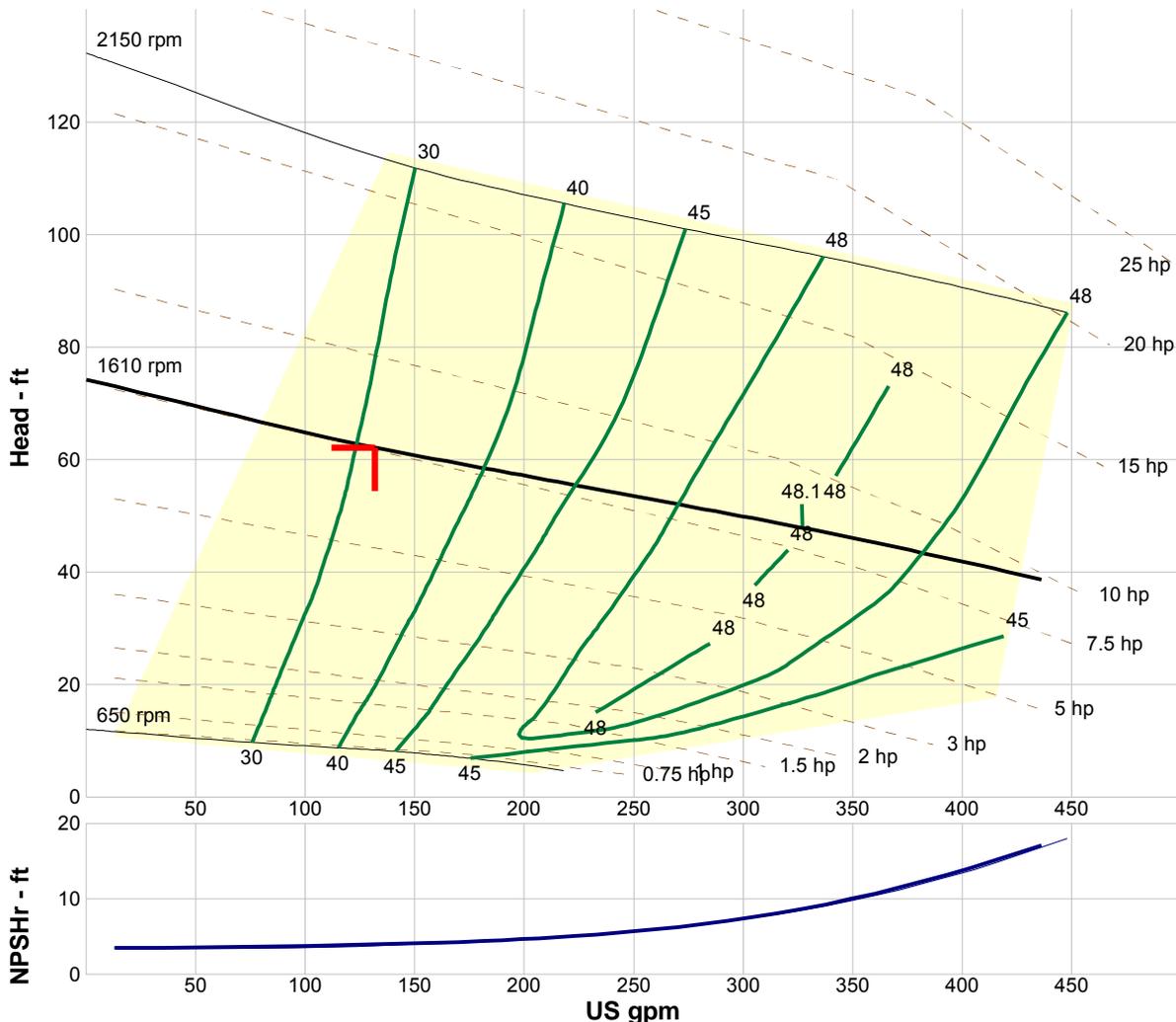
Flow: 132 US gpm
Head: 62.2 ft
Eff: 31%
Power: 6.55 hp
NPSHr: 4.03 ft

---- Design Curve ----

Shutoff head: 74.2 ft
Shutoff dP: 32.1 psi
Min flow: ---
BEP: 48% @ 327 US gpm
NOL power:
9.77 hp @ 436 US gpm

-- Max Curve --

Max power:
20.3 hp @ 448 US gpm



This curve is provided for preliminary selection only. Please consult factory before making final pump or motor selections.

Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
158	1610	60.2	36	6.63	4.26
132	1610	62.2	31	6.55	4.03
106	1610	64.4	26	6.69	3.89
79.2	1610	66.9	19	6.94	3.79
52.8	1610	69.3	13	7.19	3.7