AquaKlear

WASTEWATER TREATMENT SYSTEMS

INSTALLATION, OPERATION & MAINTENANCE & TROUBLE SHOOTING & REPAIR MANUAL CLASS I

COMMERCIAL & RESIDENTIAL
WASTEWATER TREATMENT SYSTEMS

AQUAKLEAR, INC.
876 N. BIERDEMAN ROAD
PEARL, MS 39208
(877) 936-7711

REVISED 10-01-05

NSF

Certified to NSF/ ANSI Standard 40

PRODUCT DESCRIPTION

The "AquaKlear" Wastewater Treatment system is an economical alternative for use in treating domestic wastewater generated by normal household activities. The system consists of a single tank extended aeration activated sludge system which is capable of producing a clear odorless effluent which meets applicable state discharge standards. This system has been successfully tested and listed by NSF International in accordance with NSF/ANSI Standard 40.

Raw wastewater flows into the aeration zone of the extended aeration system. Here, the oxygen supplied by the aeration system, along with the organic matter in the waste stream, creates an ideal environment for the growth of aerobic micro-organisms. These organisms convert the waste organic materials into gases and additional micro-organism cell material. In addition to supplying oxygen, the aeration system keeps the contents of the aeration zone well mixed to provide optimum exposure to the micro-organisms to the waste material. The action of the beneficial micro-organisms also result in a significant reduction in pathogenic bacteria.

After approximately 24 hours of detection in the aeration zone, the mixture enters the clarifier where quiescent conditions enable separation of the micro-organisms which are returned to the aeration zone and discharge of clear treated wastewater through the launder assembly. At the surface of the clarifier there is a skimmer which removes any floating solids and returns them to the aeration zone automatically, while not disturbing the quiescent conditions of the clarifier. Effluent may be discharged to an accepted discharge point that is in compliance with all state and local laws and regulations.

The "AquaKlear" Wastewater Treatment System exceeds all effluent water quality requirements for Class 1 designation (25 mg/L CBOD5 and 30 mg/L TSS) as set forth by NSF/ANSI Standard 40. The six month daily average for the AquaKlear, Inc. system is 10 mg/L CBOD5 and 11 mg/L TSS.

Model Numbers

- ❑ AK500C
- ❑ AK500CC
- ❑ AK500F
- ❑ AK500FC
- ❑ AK500FF
- ❑ AK500C3P
- ❑ AK5B1
- ❑ AK5B2
- ❑ AK5B3
- ❑ AK600C
- ❑ AK600CC
- ❑ AK600F
- ❑ AK600FF
- ❑ AK600F3P
- ❑ AK600FP5
- ❑ AK750C
- ❑ AK750F
- ❑ AK750FF
- ❑ AK800C
- ❑ AK800F
- ❑ AK800FF
- ❑ AK1000C
- ❑ AK1000F
- ❑ AK1000FF
- ❑ AK1500C
- ❑ AK1500F
- ❑ AK1500FF
- ❑ AK365F

Note: suffix C denotes Concrete
suffix F denotes Fiberglass
suffix FF denotes Fiberglass Flattop
suffix P denotes Trash or Pump Tank
suffix CC denotes Concrete with attached Chlorinator
suffix FC denotes Fiberglass with attached Chlorinator
suffix C3P denotes Concrete with 300 gal attached pretreatment
suffix F3P denotes Fiberglass with 300 gal attached pretreatment
suffix FP5 denotes Fiberglass with 500 gal pump tank

PARTS LIST - MODELS AK500, AK600, AK750, AK800, AK1000, AK1500

Refer to system drawings
(Page 7)

	ITEM	DRAWING REFERENCE
System Parts	Single Tank (with Access Cover)	A
	Air Diffuser	B
	4" PVC Inspection Part	C
	Grommets (3)	Not Shown
	4" PVC Effluent Outlet Assembly	D
	Air Pump and Warning Device	Not Shown
	Air Lift Pump and Sikimmer Assembly	E

Notes

PVC influent and effluent lines furnished by installer

MODELS AK500, AK600, AK750, AK800 AK1000, AK1500 are furnished with one clean cut adaptor and one threaded plug, which require a special tool to remove.

Includes control box with warning device.

A data plate with model number, treatment capacity, serial number and manufacturers' address, and phone number is installed on the front cover of the control box and on the top of the Access Port Cap. (Less serial # on port)

The warning device is located in the control box. The warning device is also directly wired to the float switch which serves as a high water alarm. A high water condition is indicated by an audible and visual alarm.

SPECIFICATIONS - MODELS AK500, AK600, AK750, AK800, AK1000, AK1500

Designation	AquaKlear Wastwater Treatment System Model AK500, AK600, AK750, AK800 AK1000, AK1500
Treatment Capacity/Class	500, 600, 750, 800, 1000, 1500, GPD/Class 1
Volumetric Capacity	Model AK500 -520Gal. Aeration Chamber, 188 Gal. Classification Chamber
	Model AK600 -633 Gal. Aeration Chamber, 220 Gal. Clarification Chamber
	Model AK750 -806 Gal. Aeration Chamber, 285 Gal. Clarification Chamber
	Model AK800 -794 Gal. Aeration Chamber, 297 Gal. Clarification Chamber
	Model AK1000 -987 Gal. Aeration Chamber, 339 Gal. Clarification Chamber
	Model AK1500 -1439 Gal. Aeration Chamber, 548 Gal. Clarification Chamber
BOD Loading	Model AK500 - 1-1.5 lbs./day
	Model AK600 - 1.2-1.8 lbs./day
	Model AK750 - 1.5-2.2 lbs./day
	Model AK800 - 1.6-2.3 lbs./day
	Model AK1000 - 2-3 lbs./day
	Model AK1500 - 3-4.5 lbs./day
Electrical Requirements	Model AK500 - 115V/60 HZ/1-phase
	Model AK600 - 115V/60 HZ/1-phase
	Model AK750 - 115V/60 HZ/1-phase
	Model AK800 - 115V/60 HZ/1-phase
	Model AK1000 - 115V/60 HZ/1-phase
	Model AK1500 - 115V/60 HZ/1-phase

COMPONENTS/MATERIALS OF CONSTRUCTION
MODELS - AK500, AK600 AK750, AK800, AK100, AK1500

Aeration/Clarifier Tank

Fiberglass and concrete tans will comply with all local, state, and federal standards related to their intended use.

Air Pump

Model AK500 -Diaphragm, linear, or piston air pump, approximately 1.67 CFM @ 1.82 psi.

Model AK600 -Diaphragm, linear, or piston air pump, approximately 2.4 CFM @ 1.95 psi.

Model AK750 -Diaphragm, linear, or piston air pump, approximately 2.35 CFM @ 2.09 psi.

Model AK800 -Diaphragm, linear, or piston air pump, approximately 2.35 CFM @ 2.09 psi.

Model AK100 -Diaphragm, linear, or piston air pump, approximately 2.95 CFM @ 2.04 psi.

Model AK1500 -Diaphragm, linear, or piston air pump, approximately 5.6 CFM @ psi.

INSTALLATION INSTRUCTIONS

Prior to installation, all state and local laws and regulations must be complied with. For long term, reliable and efficient operation, it is essential that the system be installed in accordance with these instructions. Refer to the system drawing for component arrangement.

Step 1 Prepare excavation for the single tank. Depth for the tank is controlled by the depth of the building sewer. Bottom excavation must be smooth and level (a 4" layer of sand may be used if desired).

Step 2 Install rubber grommets in tank inlet, outlet and access cover (3 total). Grommets should be installed with the fat flange on the exterior of the tank as shown on the drawing. A small amount of grease applied to the inside of the grommets will aid insertion of PVC pipes.

Step 3 Carefully place tank into excavation with lowest pipe opening on the effluent side. Slide 4" PVC building sewer (furnished by installer) approximately 2 inches through inlet grommet.

Step 4 Slide 4" PVC effluent pipe (furnished by installer) into grommet on effluent side of the tank. Install 4" PVC launder assembly as shown on the drawing. Attach high water alarm float to the 1/2" PVC pipe going to the diffuser.

Step 5 Place air diffuser into tank so that it rests on bottom of the tank with diffuser sitting parallel with baffle, against the front (the influent wall) end of tank, run air line for air lift pump.

Step 6 Cut a section 4" PVC pipe (furnished by installer) to suitable length for access port. Slide 2 inches through grommet in top cover of tank.

Step 7 Install air pump in a clean, well ventilated area within 90 feet of the tank. Should 90 feet not be enough length, increase size to 3/4" PVC at air compressor and decress size back 1/2" at air inlets to unit.

Step 8 Install ½" PVC air line (furnished by installer) from air pump to air diffuser assemble. Pipe should run in a trench at a recommended depth of 12 inches of cover. If vehicular traffic or other usual loading is anticipated, air line should be installed in a casing pipe (PVC, cast iron or steel pipe, etc.) for protection. Do not backfill until after step 10 is completed.

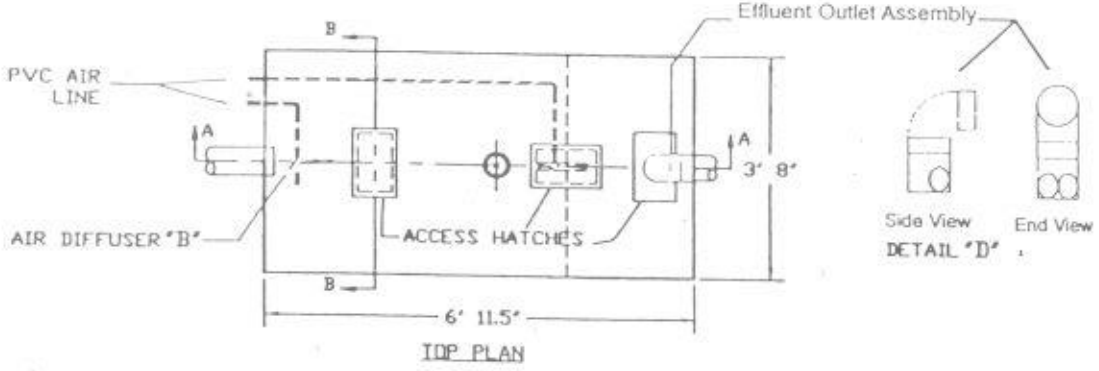
Step 9 Backfill excavation up to top of tank being careful not to dislodge piping. Special care is required around the effluent piping to insure that the effluent Outlet Assembly remains in proper position

Step 10 Fill tank to point of overflowing with water. Operate air pump and check air piping joints for leakage using a soapy water solution. Repair if necessary and then carefully backfill trench and remainder of tank excavation(s). Be sure access cover is properly in place.

While the AquaKlear Wastewater Treatment Systems do not include fragile components, care should always be taken when off-loading and unpacking the components. Rough handling may cause damage to electrical parts and should be avoided. If there is damage or flaws in any component part, notify AquaKlear, Inc. immediately.

Every effort is made by AquaKlear staff to ensure that no defective components leave the AquaKlear factory, although certain incidents occur that are beyond our control. Should an air compressor or control box be found to be defective, they are to be disconnected and returned to AquaKlear for replacement. No field repairs are allowed. There are no moving parts within the AquaKlear tank but should a part need to be replaced the procedure is to cut the PVC line, remove the damaged part and install the new part in exactly the same position and manner as the original.

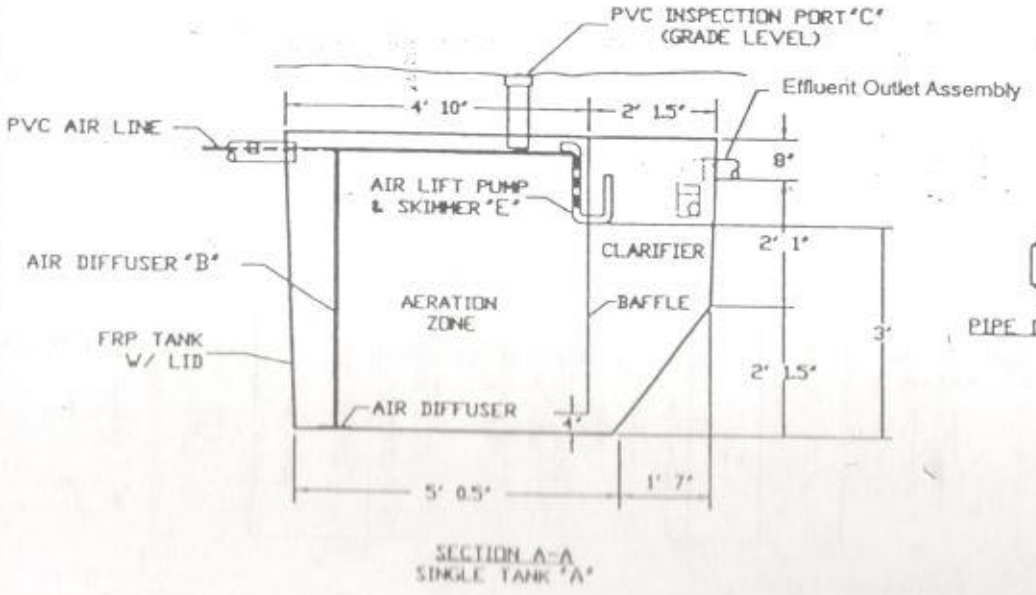
All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.



TOP PLAN

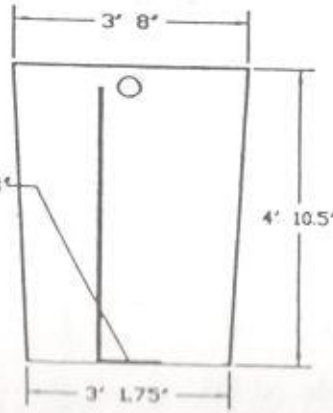
DETAIL "D"

AIR DIFFUSER "B" DETAIL



SECTION A-A
SINGLE TANK "A"

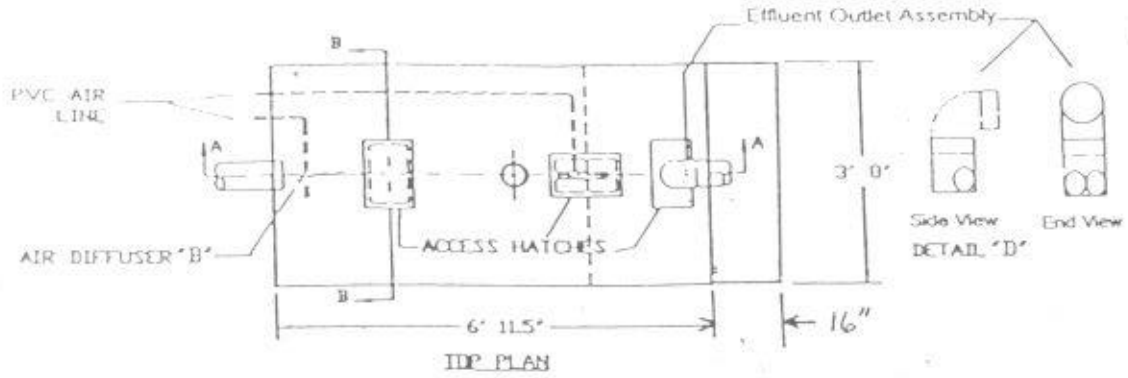
PIPE INSTALLATION



SECTION B-B

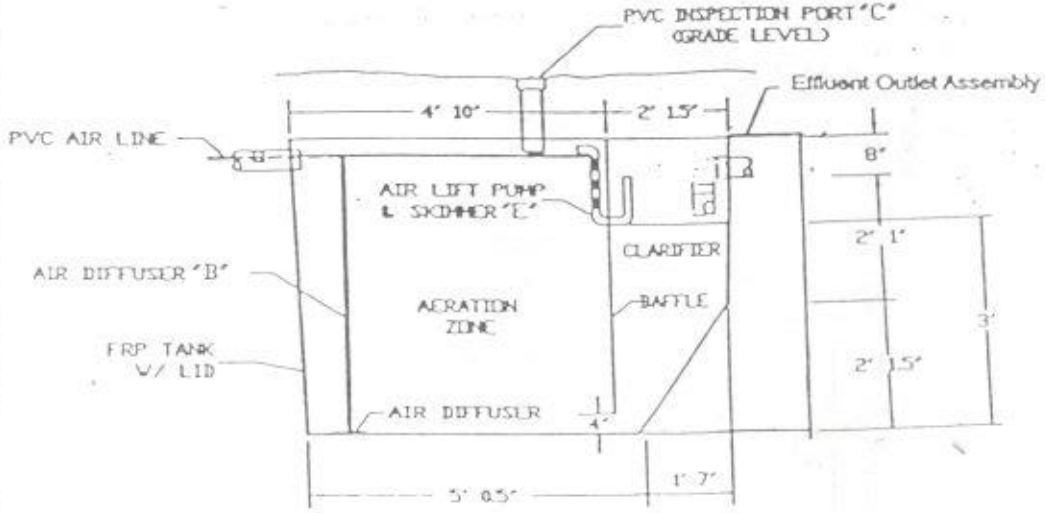
AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK500 C
CLASS I
NOT TO SCALE

All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.



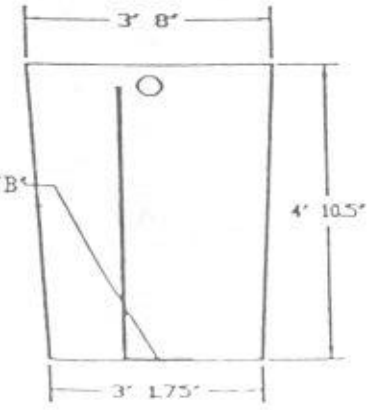
TOP PLAN

AIR DIFFUSER "B"
DETAIL



SECTION A-A
SINGLE TANK "A"

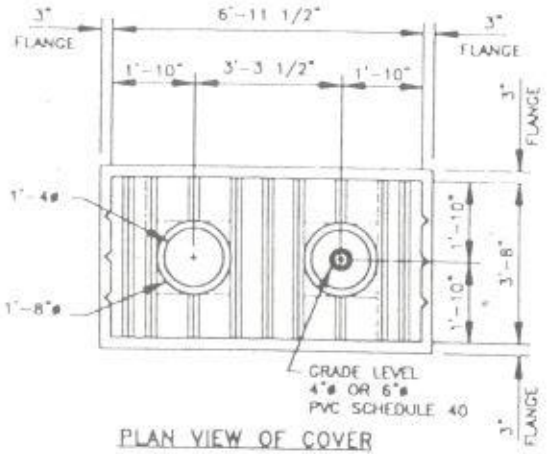
INSTALLATION



SECTION B-B

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK500CC CLASS 1
NOT TO SCALE

TANK PLAN VIEW W/OUT COVER

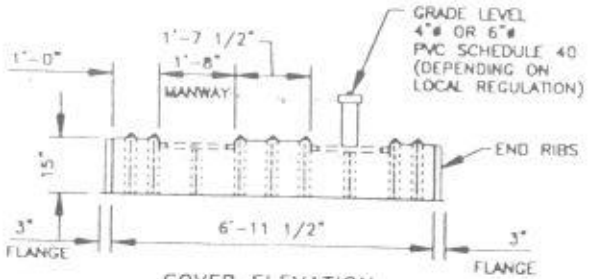


PLAN VIEW OF COVER

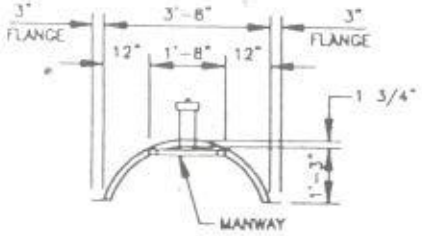
NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.
3. TOLERANCES: ±1/4"

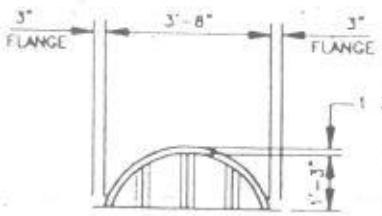
MATERIAL SPECIFICATIONS



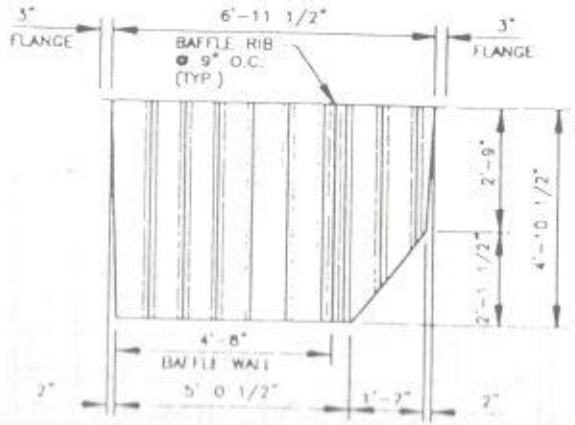
COVER ELEVATION
LONGITUDINAL SECTION VIEW



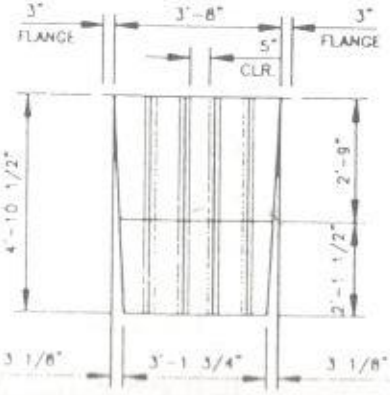
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



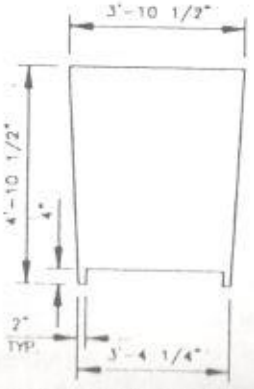
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



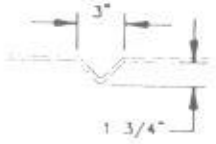
ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW



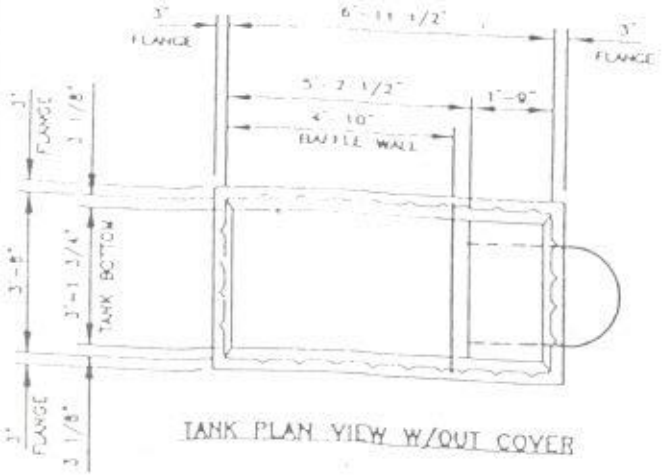
BAFFLE WALL DETAIL



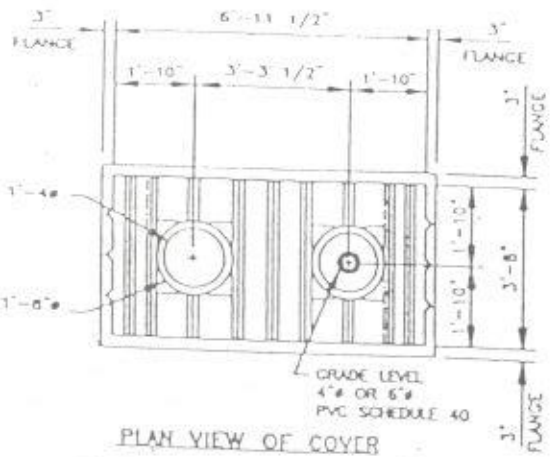
BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK500F

AK AquaKlear, Inc.



TANK PLAN VIEW W/OUT COVER

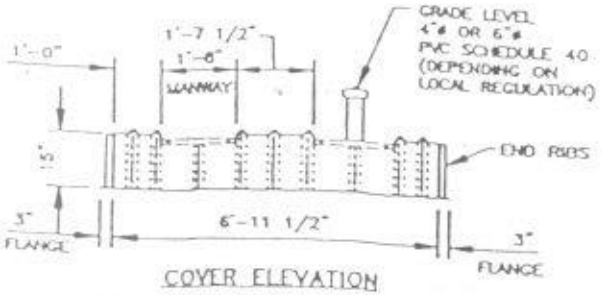


PLAN VIEW OF COVER

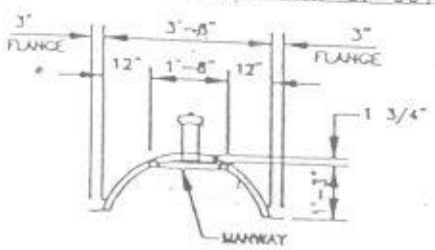
NOTES

1. ALL WALL THICKNESSES TO BE 3/16"
2. BAFFLE RIBS TO BE AT 9" SPACING MAX
3. TOLERANCES ±1/4"

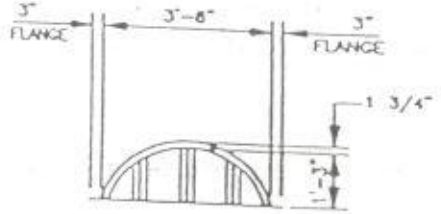
MATERIAL SPECIFICATIONS



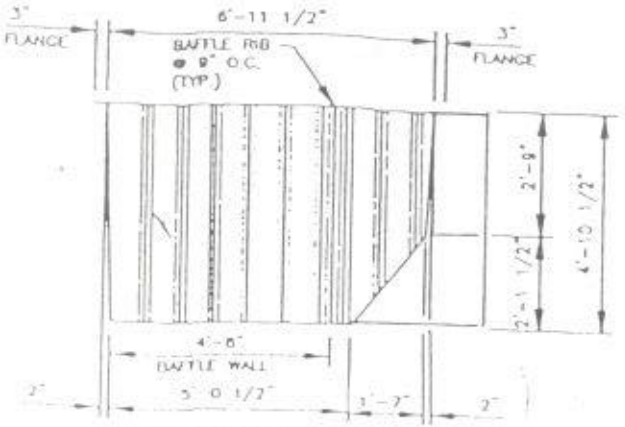
COVER ELEVATION
LONGITUDINAL SECTION VIEW



COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY

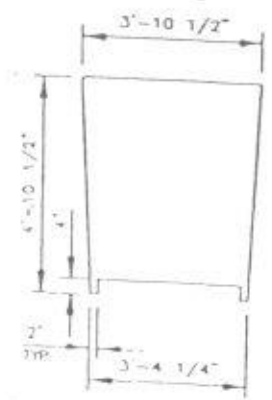


COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS

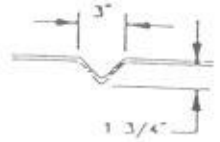


ELEVATION VIEW

RIGHT SIDE ELEVATION VIEW



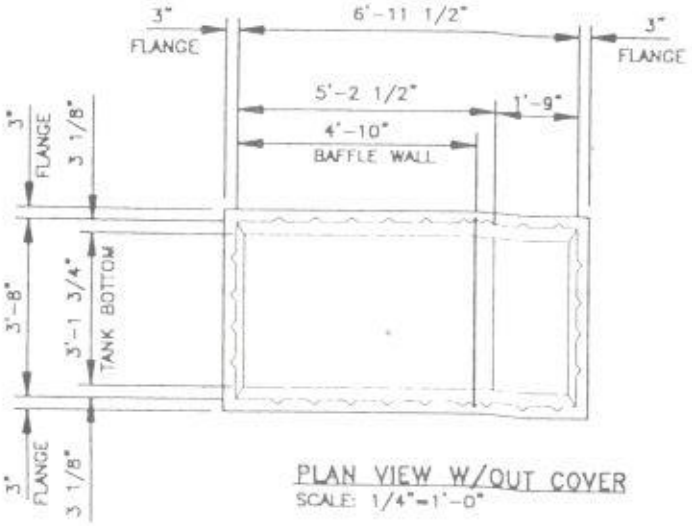
BAFFLE WALL DETAIL



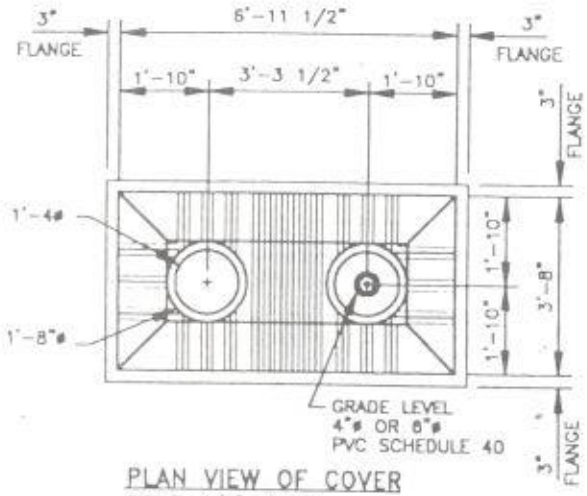
BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUACLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK500FC

AK AquaClear, Inc.



PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"

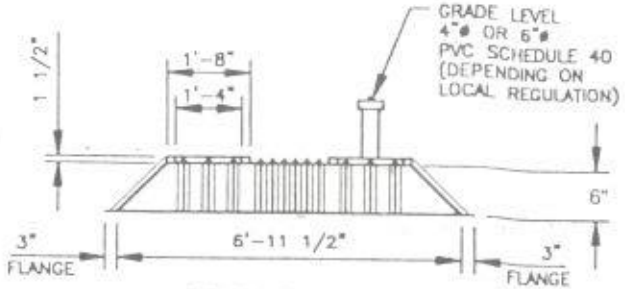


PLAN VIEW OF COVER
SCALE: 1/4"=1'-0"

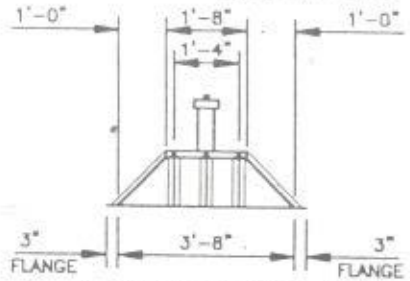
NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.
   COVER RIBS TO BE AT 8" SPACING MAX.
3. TOLERANCES: ±1/4"

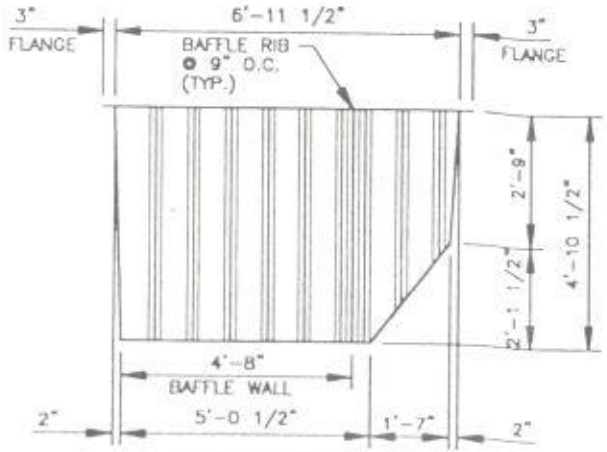
MATERIAL SPECIFICATIONS



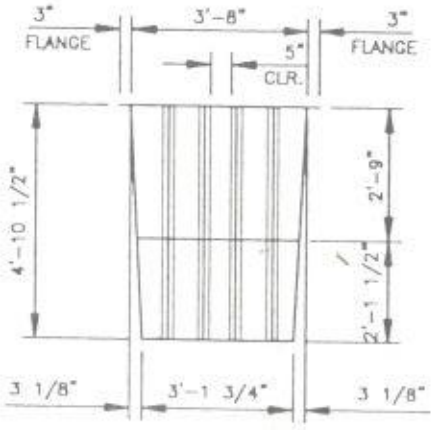
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



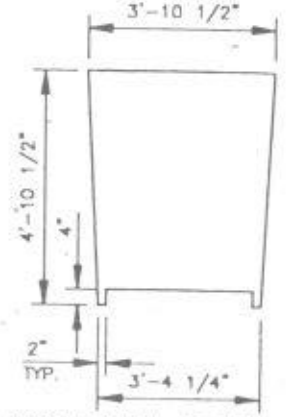
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



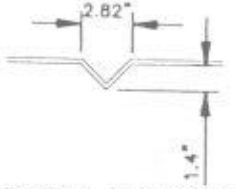
ELEVATION VIEW
SCALE: 1/4"=1'-0"



RIGHT SIDE ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE WALL DETAIL
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK500FF

AquaKlear, Inc.

AquaKlear AK500F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30" of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

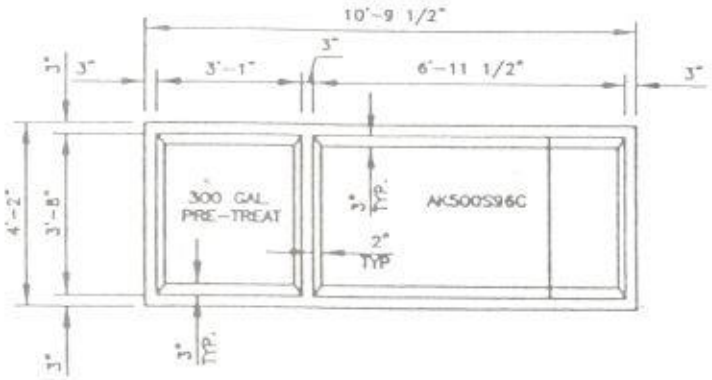
4. Backfilling the Top of Tank

- Once the tank is filled with water, backfill to the surrounding level to a maximum of 36" **(24" for FF models)** from inlet flow line.

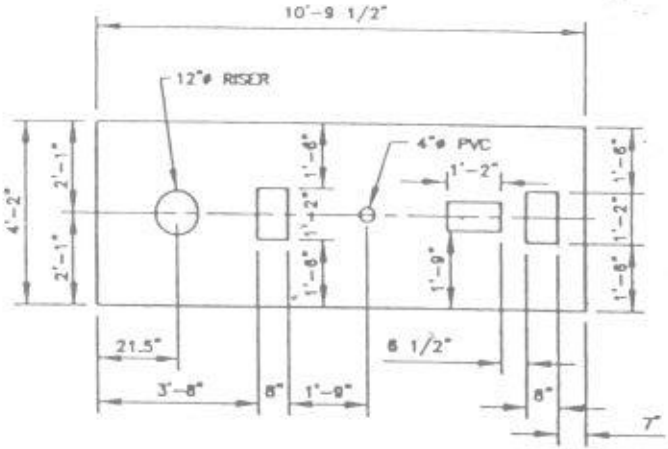
General Notes:

- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

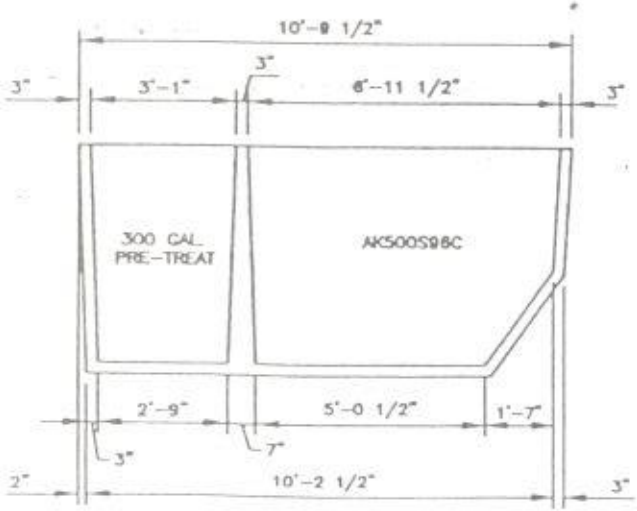
Failure to comply with these installation procedures and general notes will void the warranty.



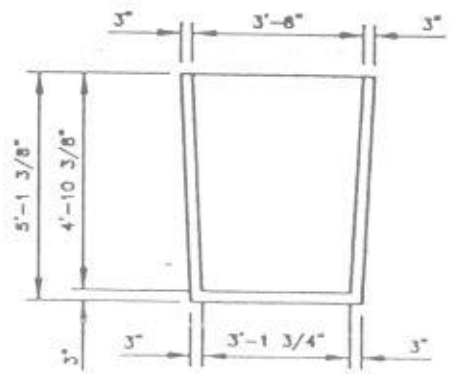
PLAN VIEW



COVER - PLAN VIEW



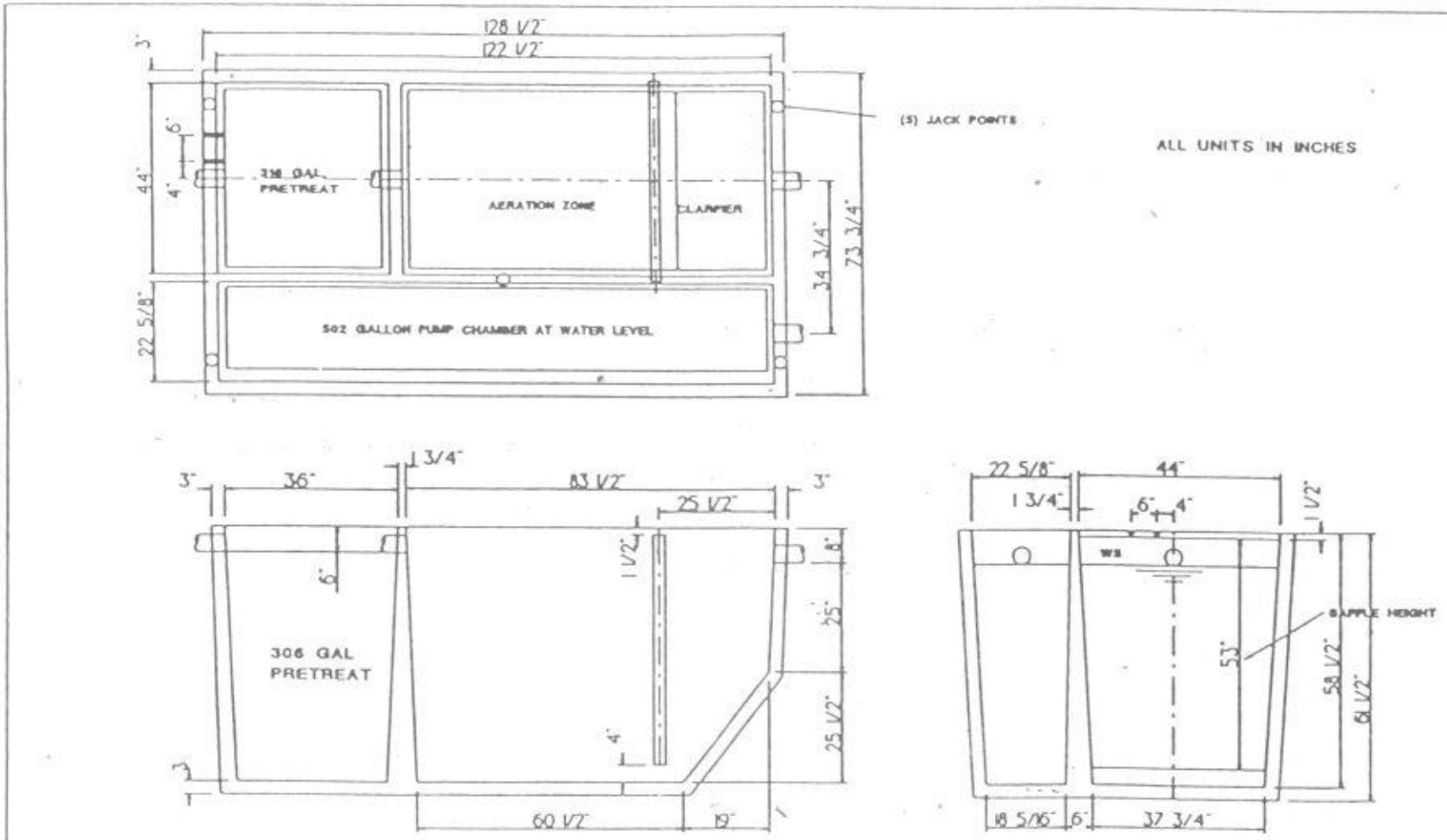
ELEVATION VIEW

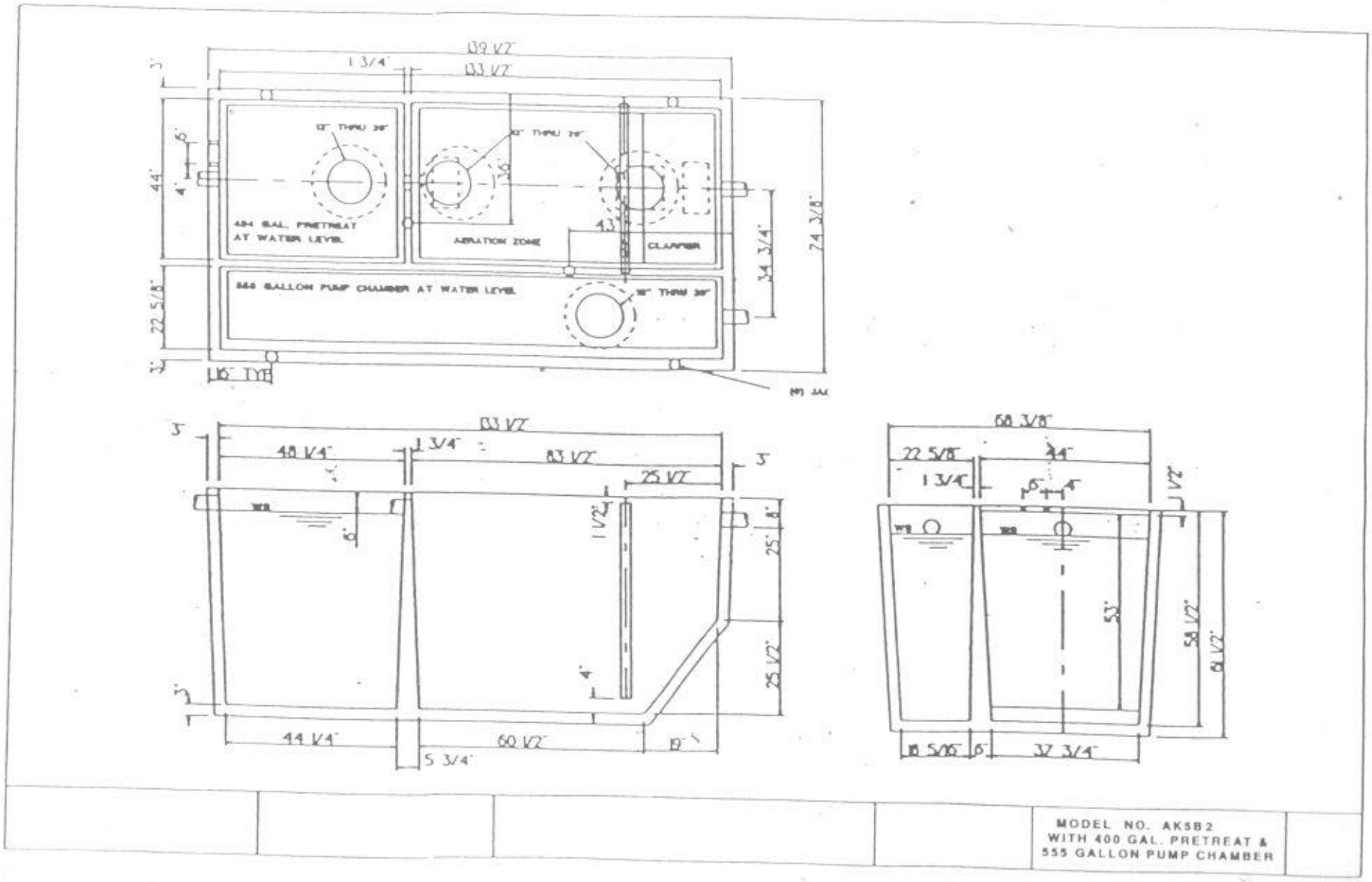


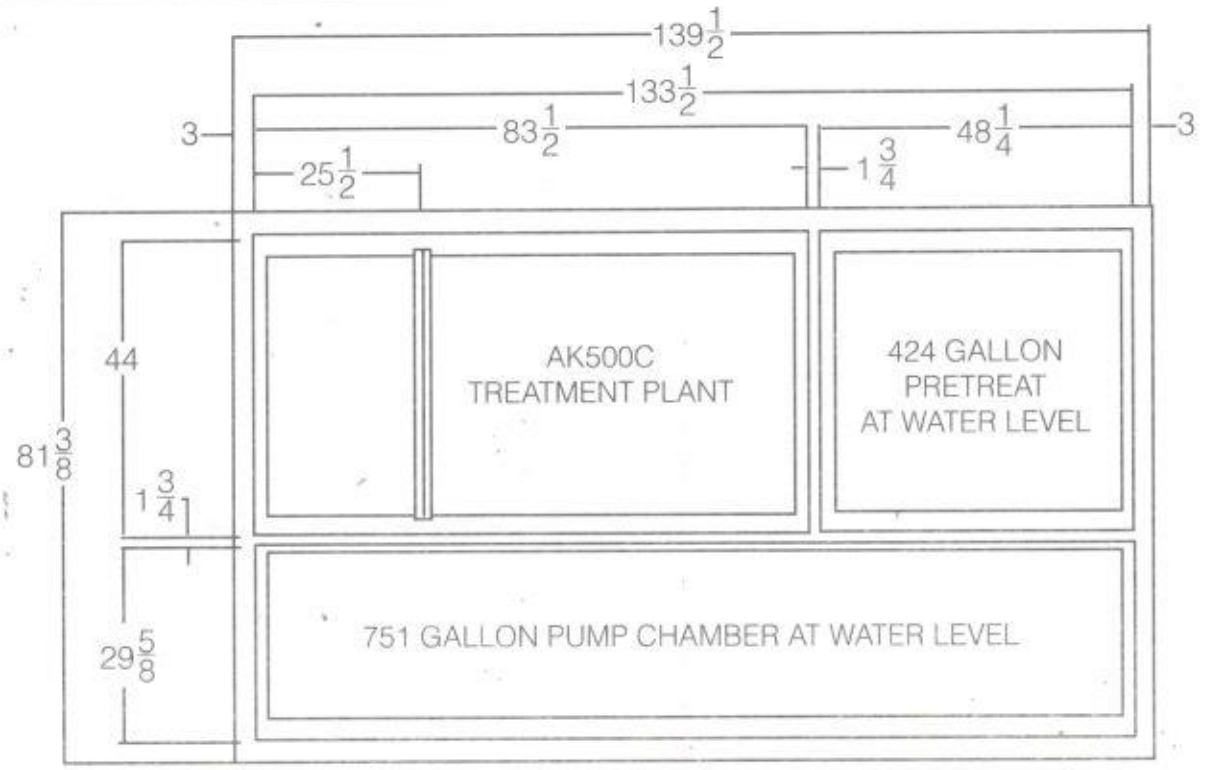
SIDE VIEW

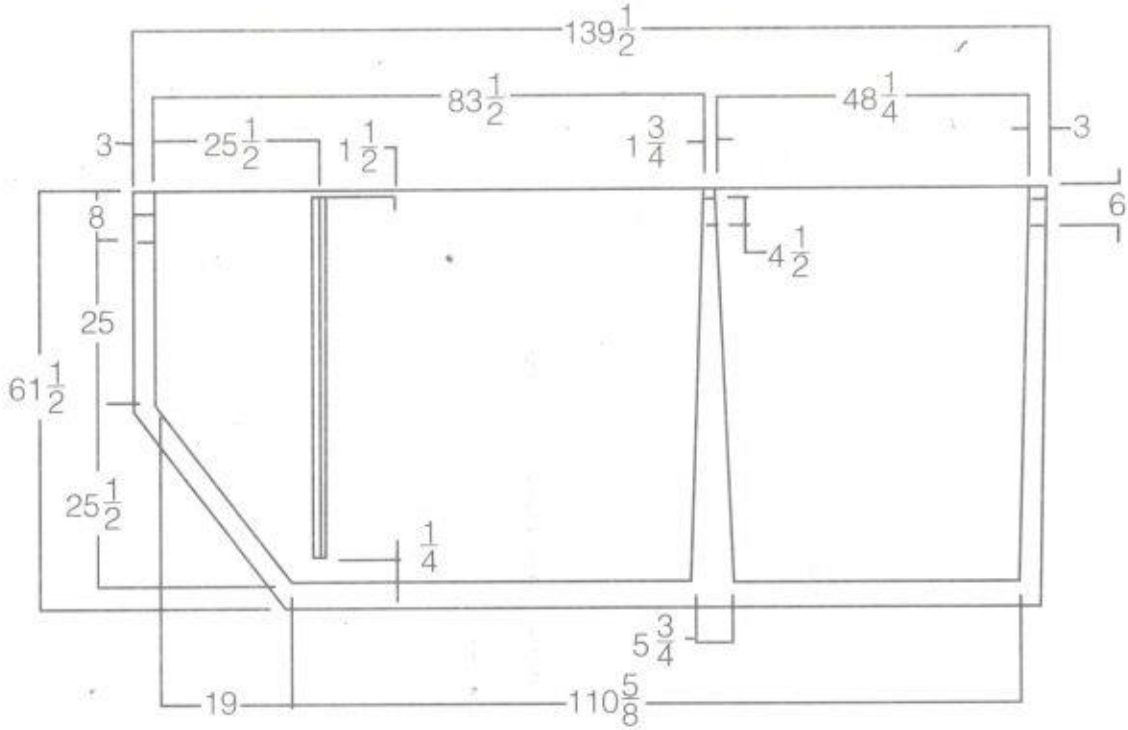
AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
MODEL AK500C3P

AquaKlear, Inc.

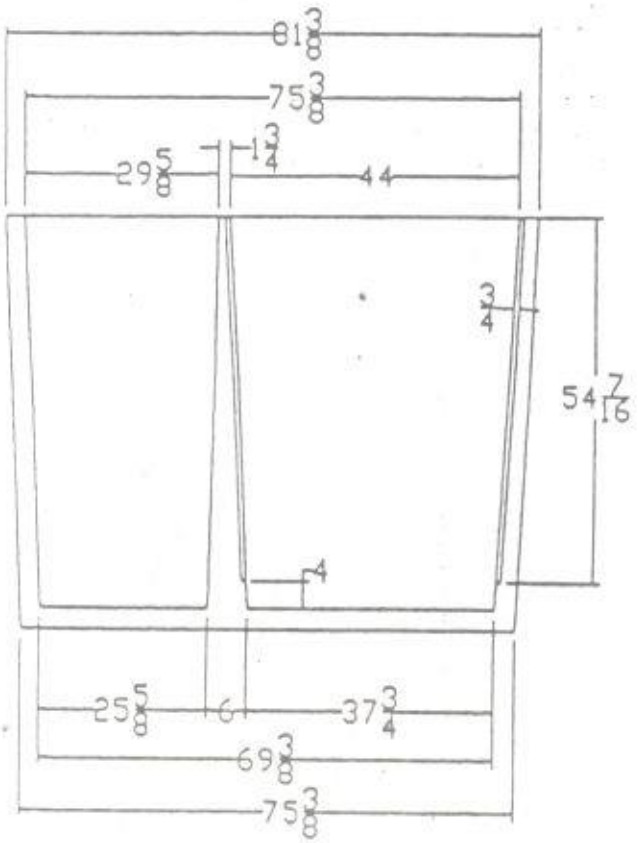

128 1/2"
122 1/2"
3"
6"
44"
4"
22 5/8"
(5) JACK POINTS
ALL UNITS IN INCHES
AERATION ZONE
CLARIFIER
34 3/4"
73 3/4"
502 GALLON PUMP CHAMBER AT WATER LEVEL
3"
36"
3/4"
83 1/2"
25 1/2"
3"
6"
1 1/2"
8"
25"
306 GAL
PRETREAT
4"
3"
25 1/2"
60 1/2"
19"
22 5/8"
44"
13/4"
6"
4"
1 1/2"
WS
BAFFLE HEIGHT
53"
58 1/2"
61 1/2"
18 5/16"
6"
37 3/4"
MODEL NO. AK5B1
WITH 300 GAL. PRETREAT &
500 GALLON PUMP CHAMBER


109 1/2"
103 1/2"
13 3/4"
12" THRU 24"
12" THRU 24"
36"
44"
6"
4"
484 GAL. PRETREAT
AT WATER LEVEL
AERATION ZONE
CLARIFIER
555 GALLON PUMP CHAMBER AT WATER LEVEL
12" THRU 24"
22 5/8"
34 3/4"
74 3/8"
103 1/2"
48 1/4"
13/4"
103 1/2"
25 1/2"
1 1/2"
25"
25 1/2"
4"
44 1/4"
60 1/2"
5 3/4"
68 3/8"
22 5/8"
34"
13/4"
1 1/2"
53"
58 1/2"
61 1/2"
15 5/16"
37 3/4"
MODEL NO. AK5B2
WITH 400 GAL. PRETREAT &
555 GALLON PUMP CHAMBER



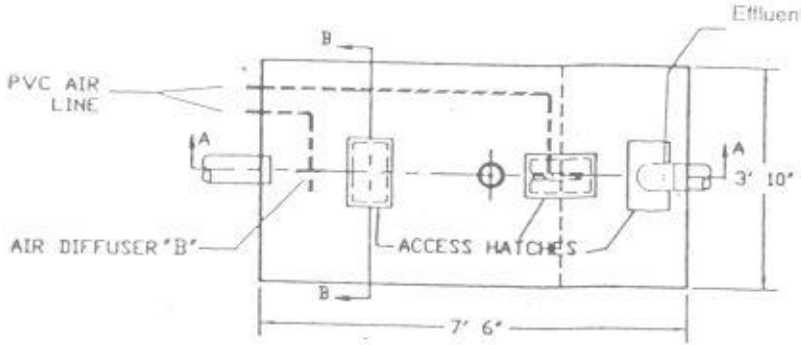


	AQUAKLEAR JACKSON, MISSISSIPPI MODEL NO. AK5B3 Sheet 1 of 2	

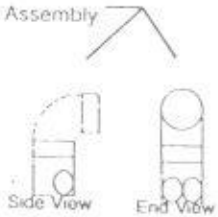


	MODEL AK5BESIDE3 WITH 424 PRETREAT & 751 SIDE PUMP CHAMBER	

All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.

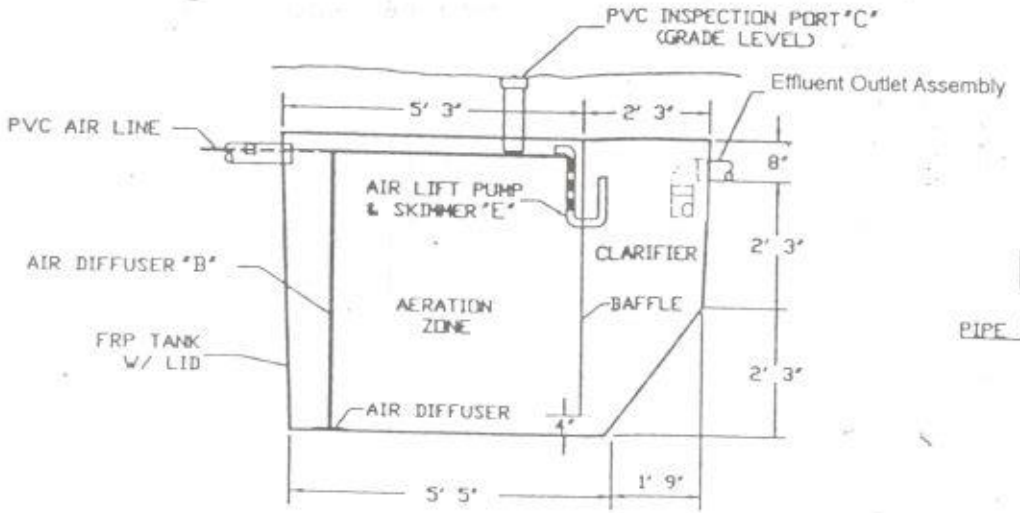


TOP PLAN



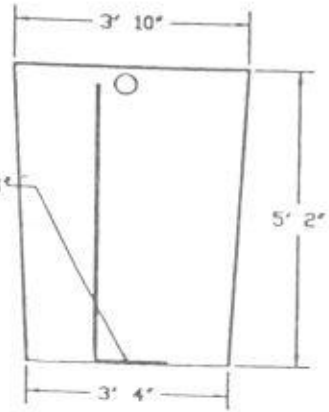
DETAIL "D"

AIR DIFFUSER "B" DETAIL



SECTION A-A
SINGLE TANK "A"

PIPE INSTALLATION



SECTION B-B

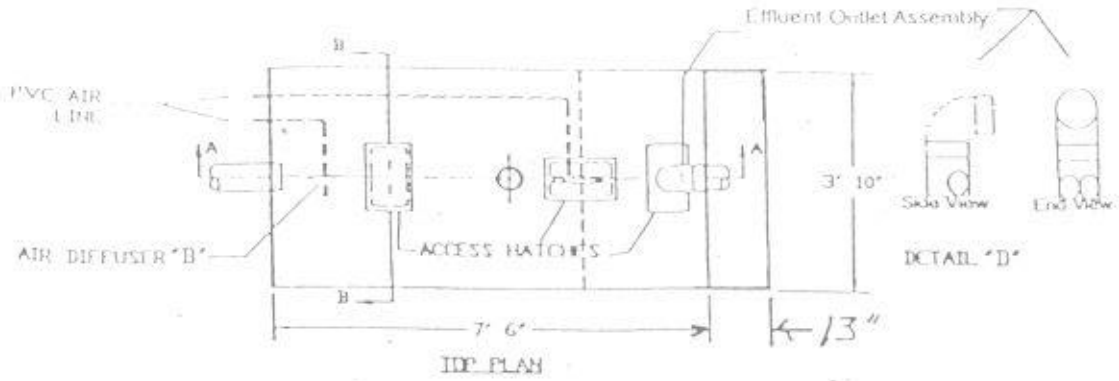
AQUAKLEAR

WASTEWATER TREATMENT SYSTEM

MODEL AK600 C

CLASS 1

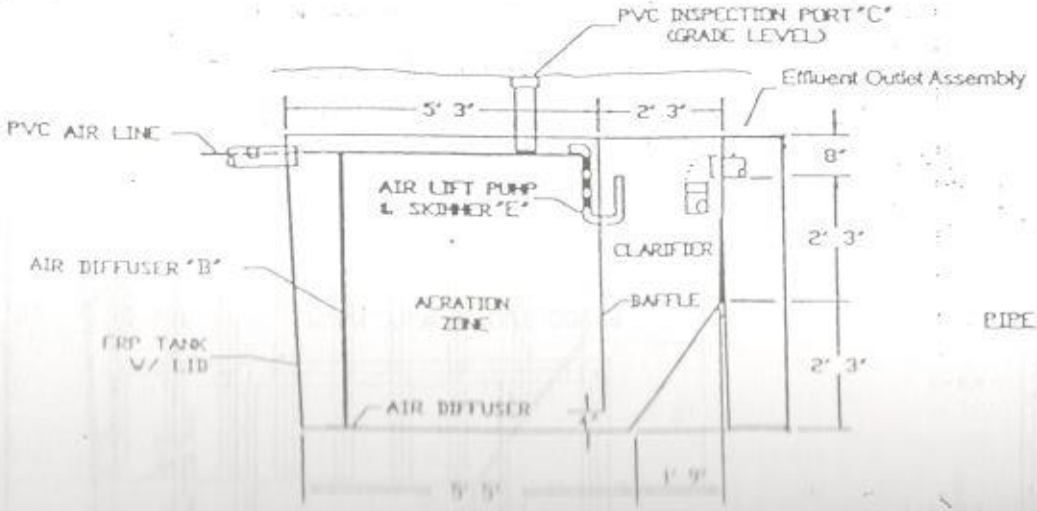
All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.

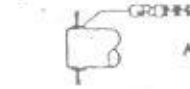


IDP PLAN

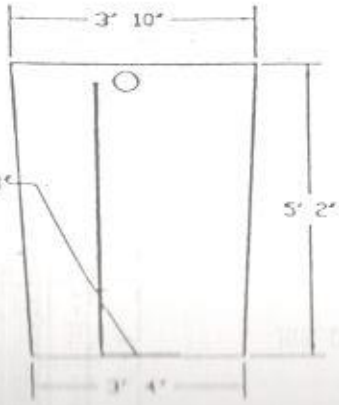
DETAIL "D"

AIR DIFFUSER "B" DETAIL

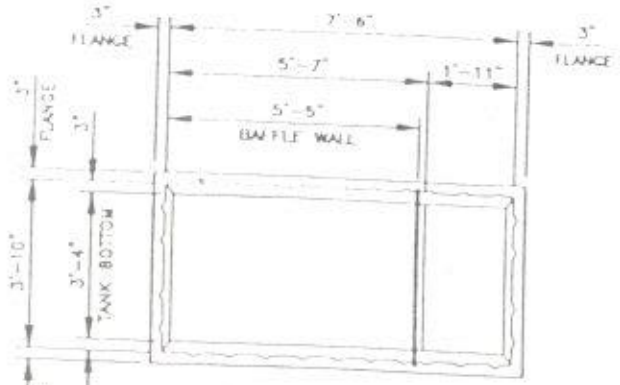




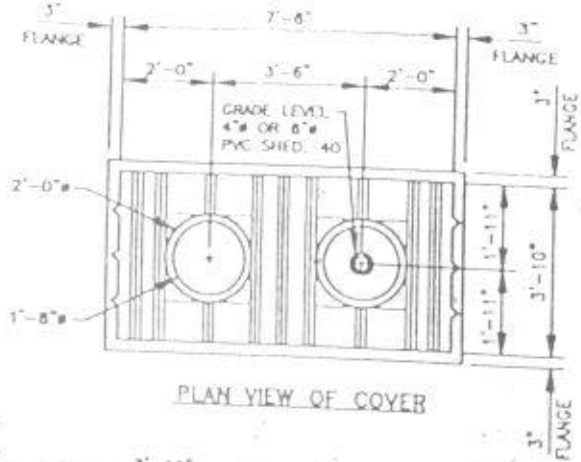
PIPE INSTALLATION



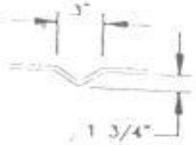
SECTION B-B



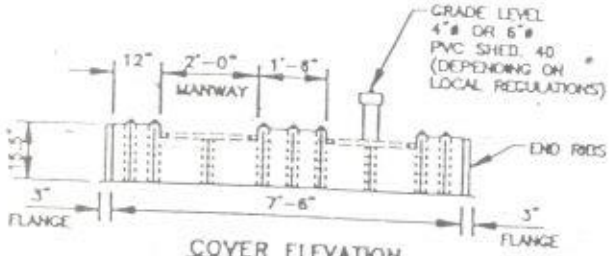
PLAN VIEW W/OUT COVER



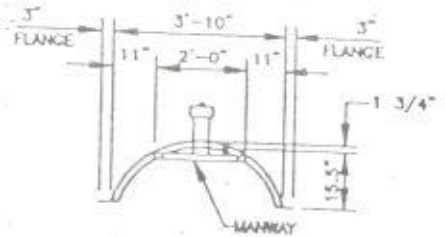
PLAN VIEW OF COVER



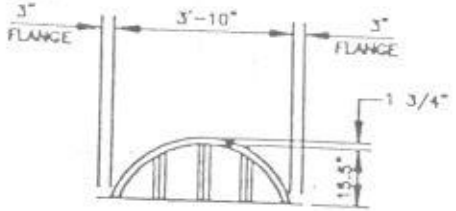
RIB DETAIL



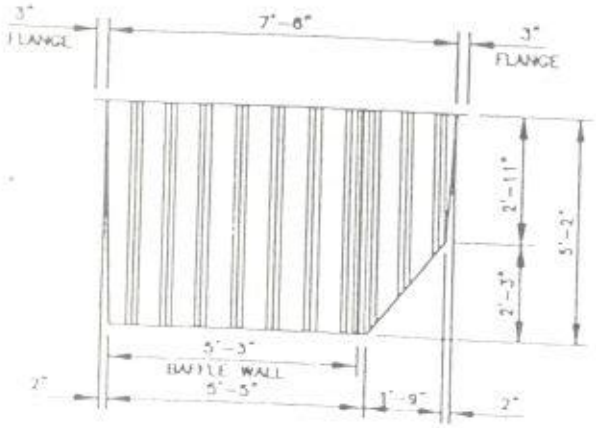
COVER ELEVATION
LONGITUDINAL SECTION VIEW



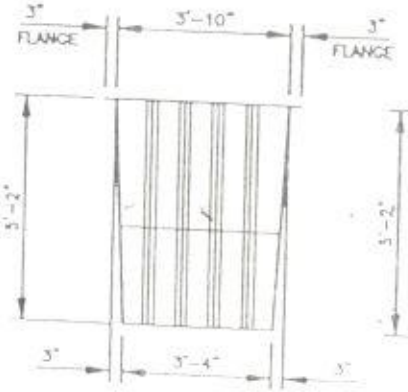
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



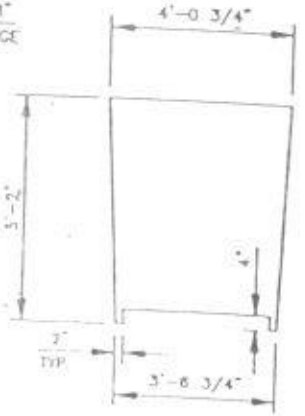
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW



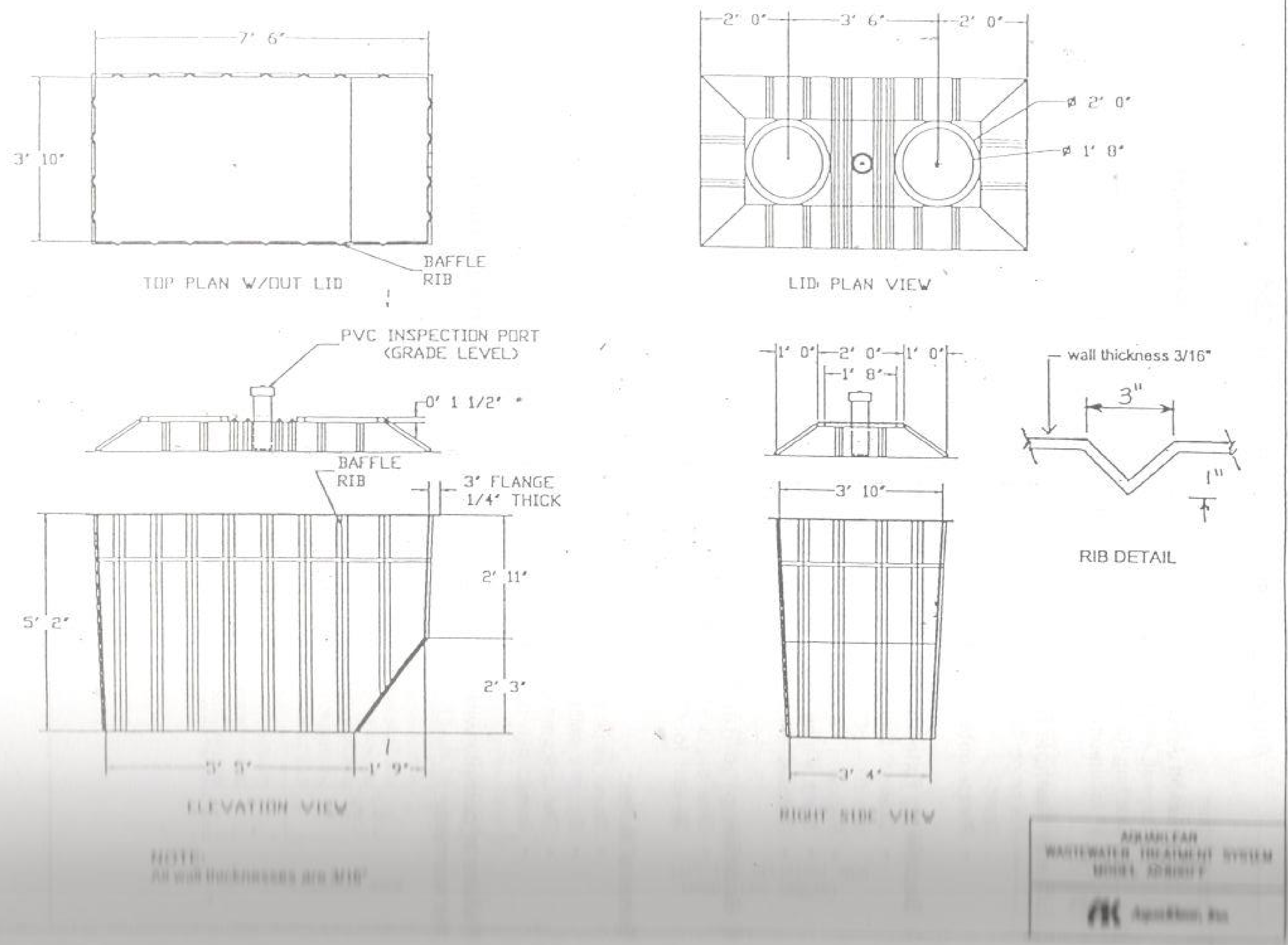
BAFFLE WALL DETAIL

NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.

AQUACLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK600F

AK AquaClear, Inc.


7' 6"
3' 10"
BAFFLE RIB
TOP PLAN W/OUT LID
2' 0"
3' 6"
2' 0"
ø 2' 0"
ø 1' 8"
LID PLAN VIEW
PVC INSPECTION PORT (GRADE LEVEL)
0' 1 1/2"
1' 0"
2' 0"
1' 0"
1' 8"
wall thickness 3/16"
3"
1"
RIB DETAIL
BAFFLE RIB
3' FLANGE 1/4' THICK
5' 2"
2' 11"
2' 3"
5' 5'
1' 9"
ELEVATION VIEW
3' 10"
3' 4"
RIGHT SIDE VIEW

AquaKlear AK600F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30", of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

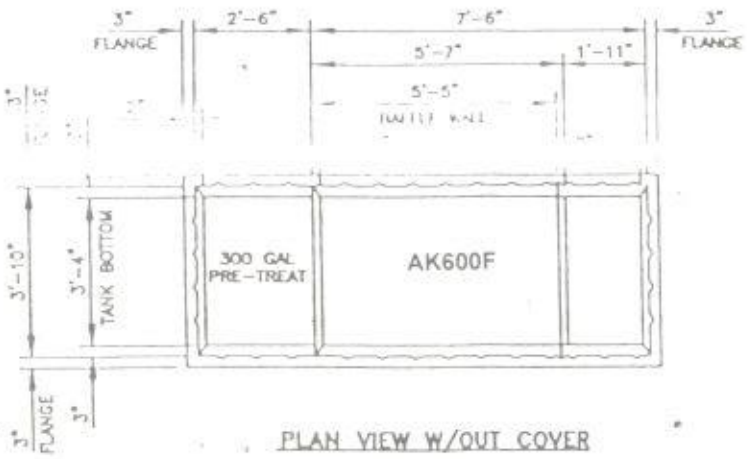
4. Backfilling the Top of Tank

- Once the tank is filled with water, backfill to the surrounding level to a maximum of 36" **(24" for FF models)** from inlet flow line.

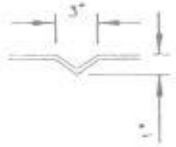
General Notes:

- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

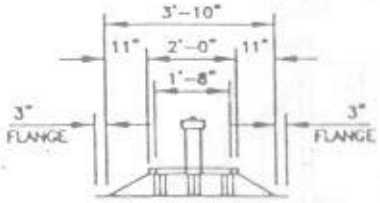
Failure to comply with these installation procedures and general notes will void the warranty.



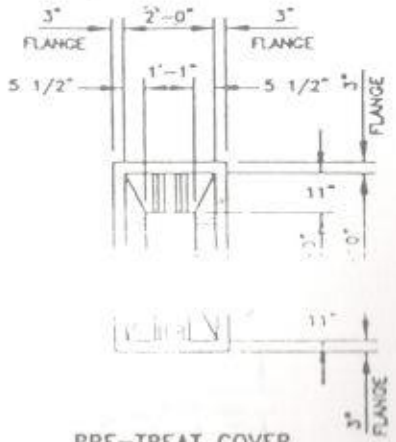
PLAN VIEW W/OUT COVER



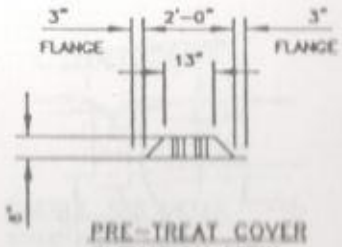
RIB DETAIL



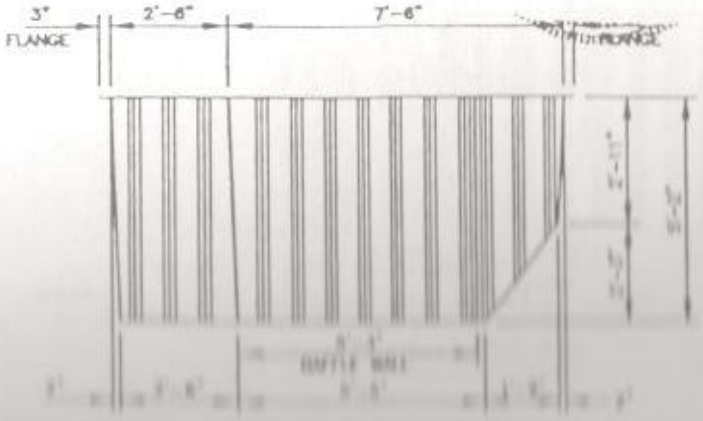
PRE-TREAT COVER
SIDE ELEVATION VIEW



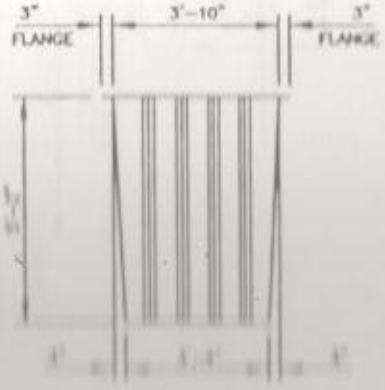
PRE-TREAT COVER
PLAN VIEW



PRE-TREAT COVER
ELEVATION VILW



ELEVATION VIEW



LEFT END ELEVATION VILW
(RIGHT END SIMILAR)

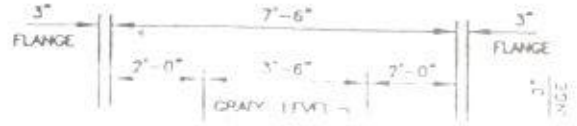
NOTES

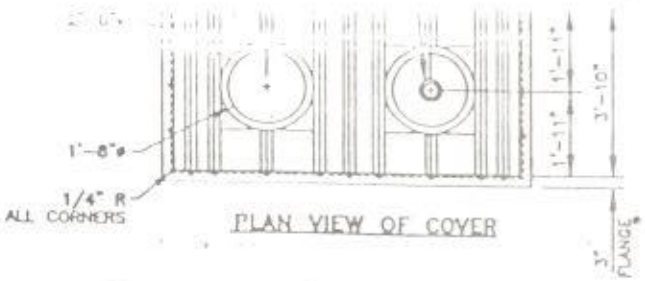
1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.
3. SEE SHEET 2 FOR TREATMENT TANK COVER.

SHEET 1 OF 3

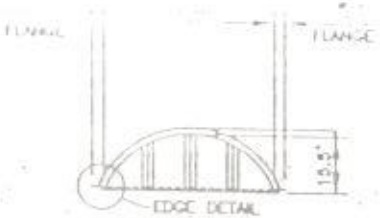
AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
MODEL AK600F3P

AK AquaKlear, Inc.

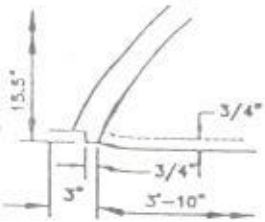




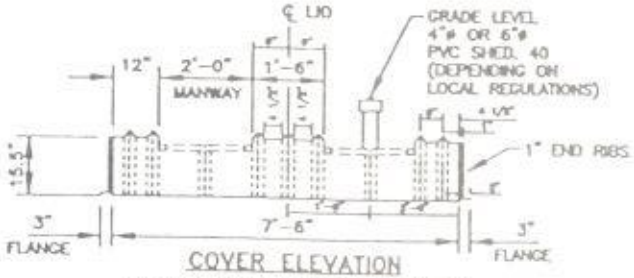
PLAN VIEW OF COVER



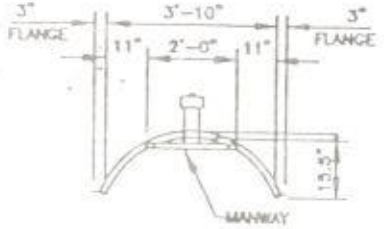
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



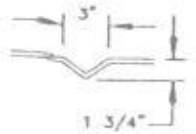
EDGE DETAIL



COVER ELEVATION
LONGITUDINAL SECTION VIEW



COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



RIB DETAIL

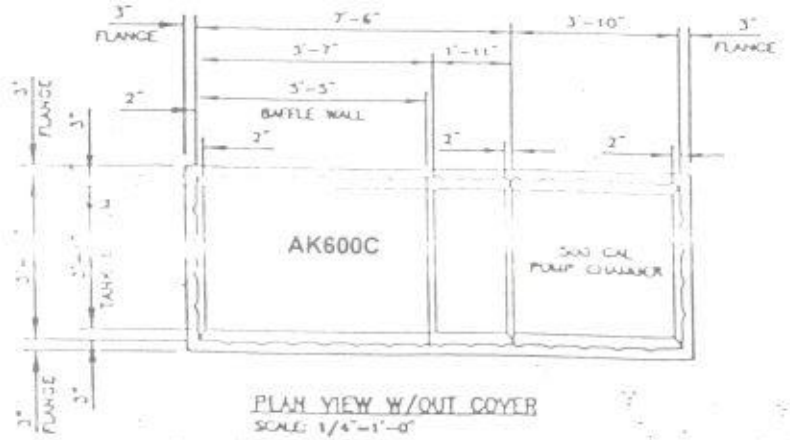
NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.

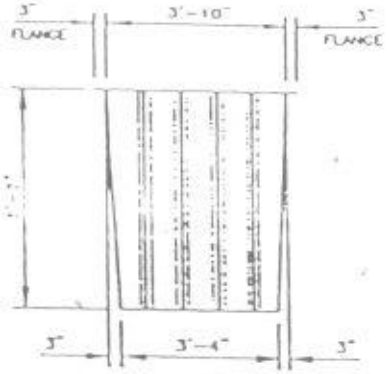
SHEET 2 OF 2

AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
MODEL AK600F3P

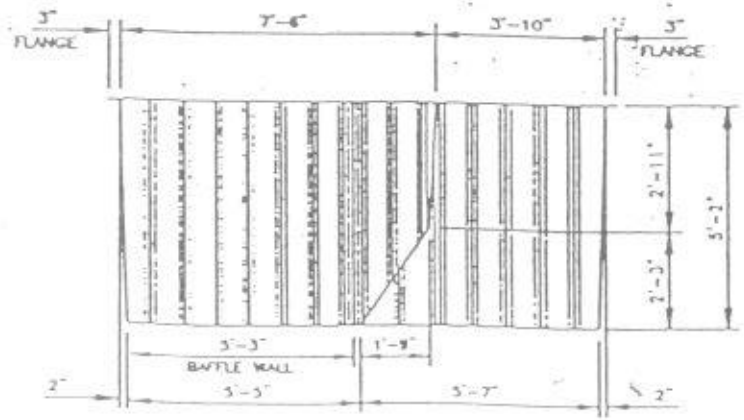
AK AquaKlear, Inc.



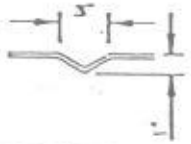
PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"



LEFT & RIGHT END ELEVATION VIEW
SCALE: 1/4"=1'-0"



ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

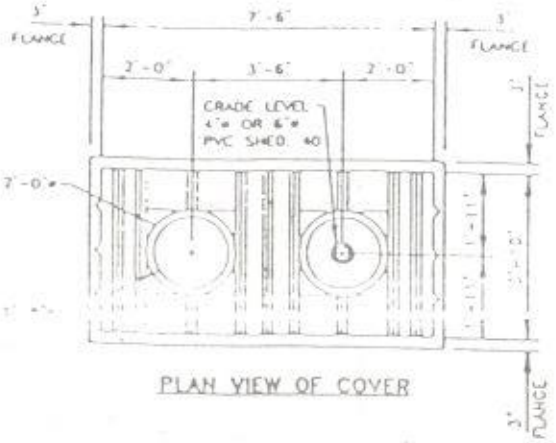
NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.

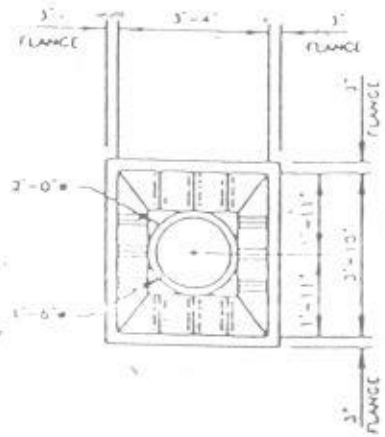
SHEET 1 OF 2

AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
Model AK600FP5

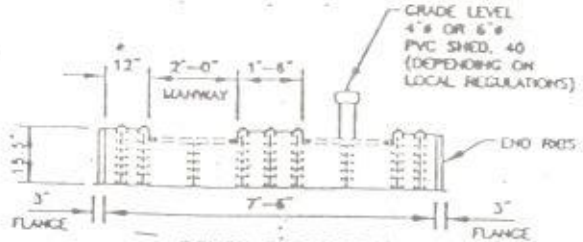
AK AquaKlear, Inc.



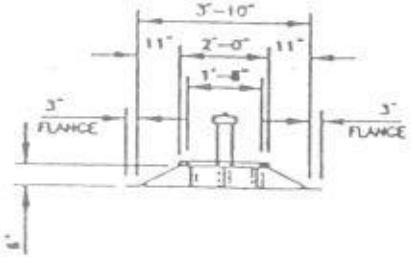
PLAN VIEW OF COVER



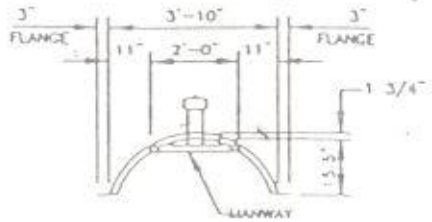
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



COVER ELEVATION
LONGITUDINAL SECTION VIEW



COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



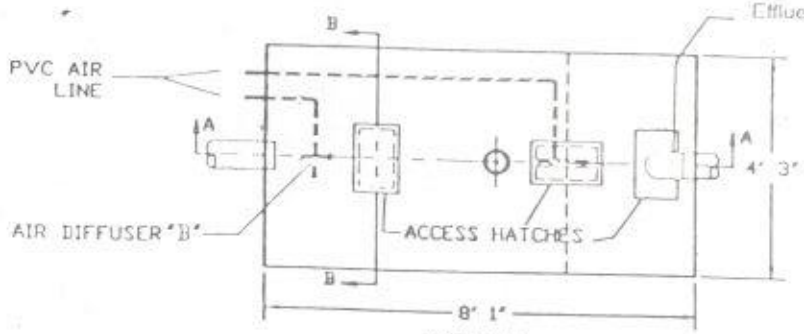
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY

SHEET 2 OF 2

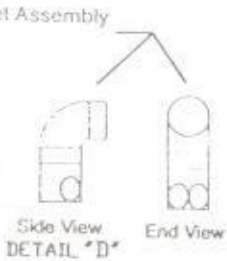
AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
Model AK600FP5

AK AquaKlear, Inc.

All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.

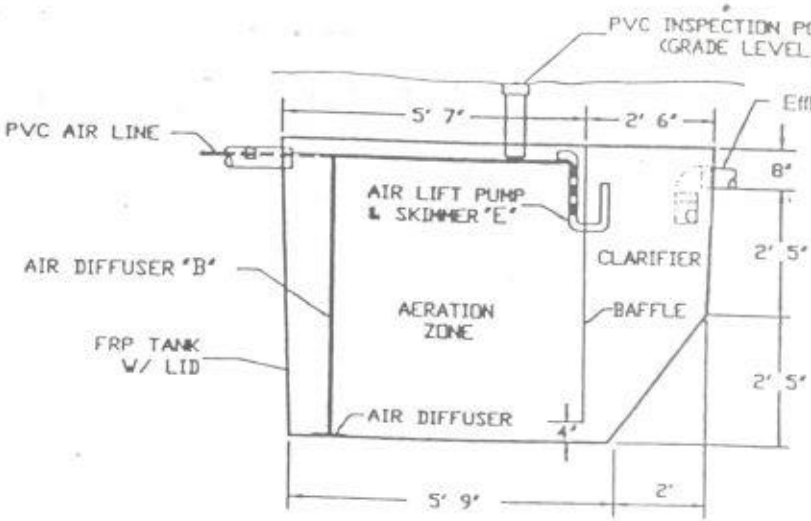


TOP PLAN



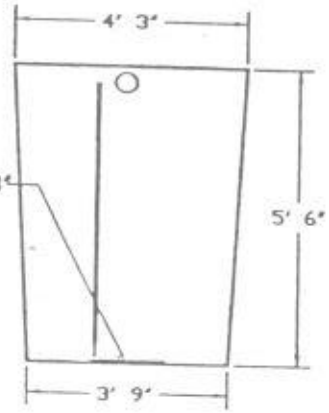
DETAIL "D"

AIR DIFFUSER "B" DETAIL



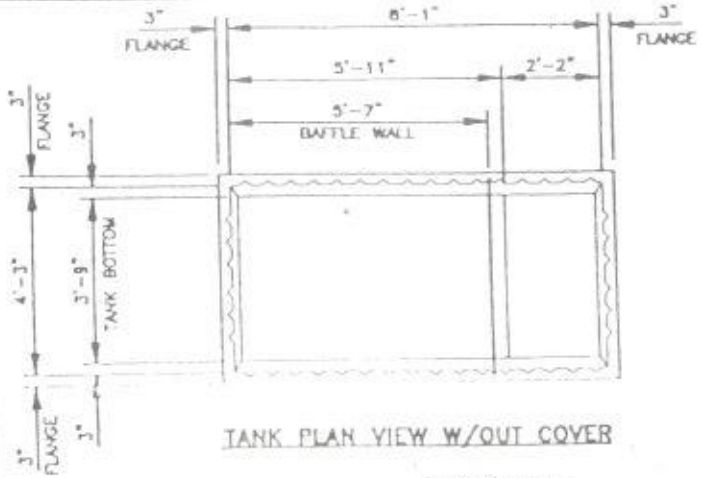
SECTION A-A
SINGLE TANK "A"

PIPE INSTALLATION

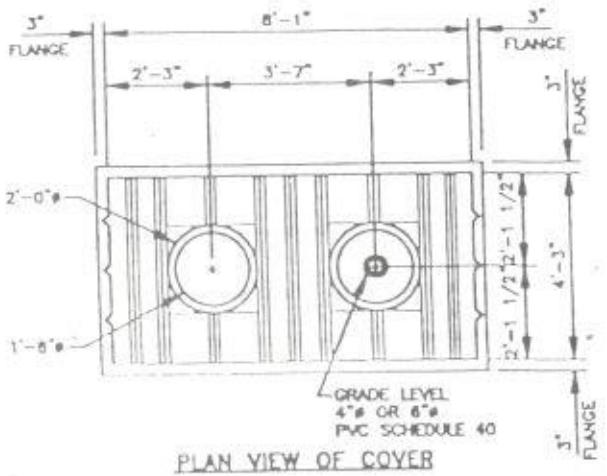


SECTION B-B

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK750 C CLASS 1
NOT TO SCALE



TANK PLAN VIEW W/OUT COVER

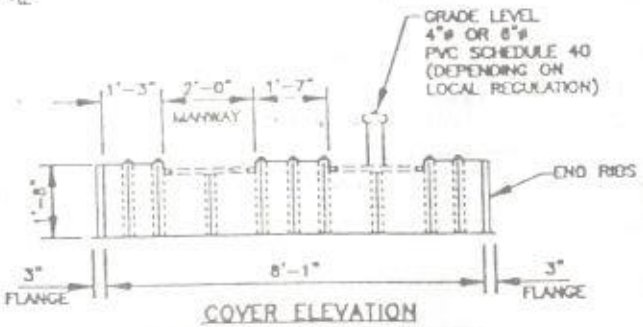


PLAN VIEW OF COVER

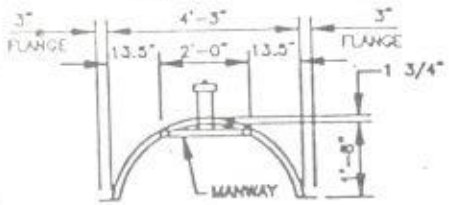
NOTES

1. ALL WALL THICKNESSES TO BE 1/4".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"

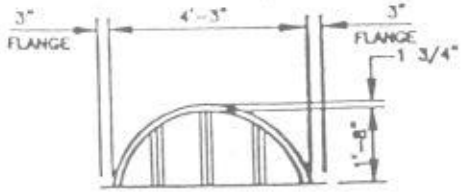
MATERIAL SPECIFICATIONS



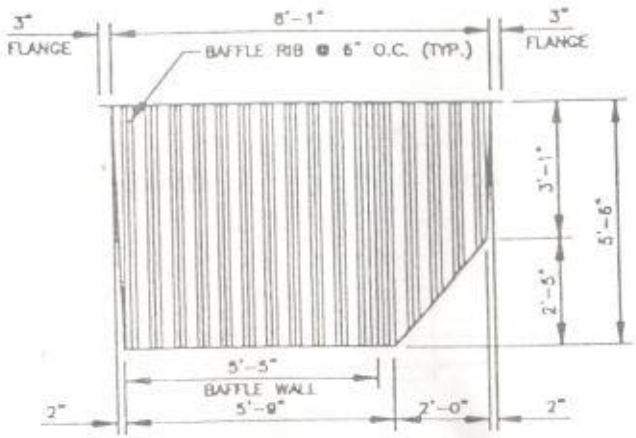
COVER ELEVATION
LONGITUDINAL SECTION VIEW



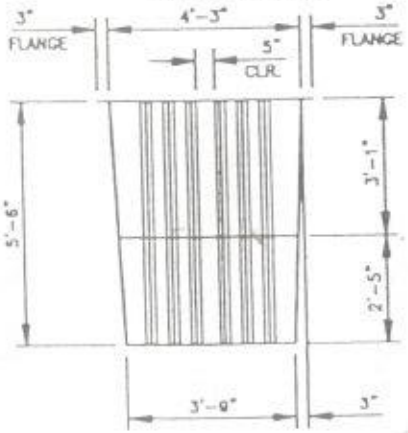
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



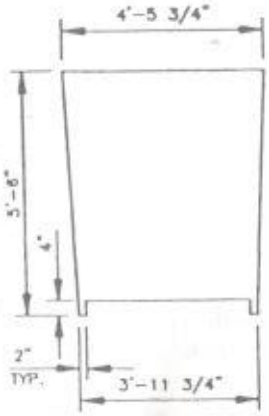
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



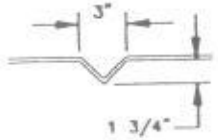
ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW



BAFFLE WALL DETAIL

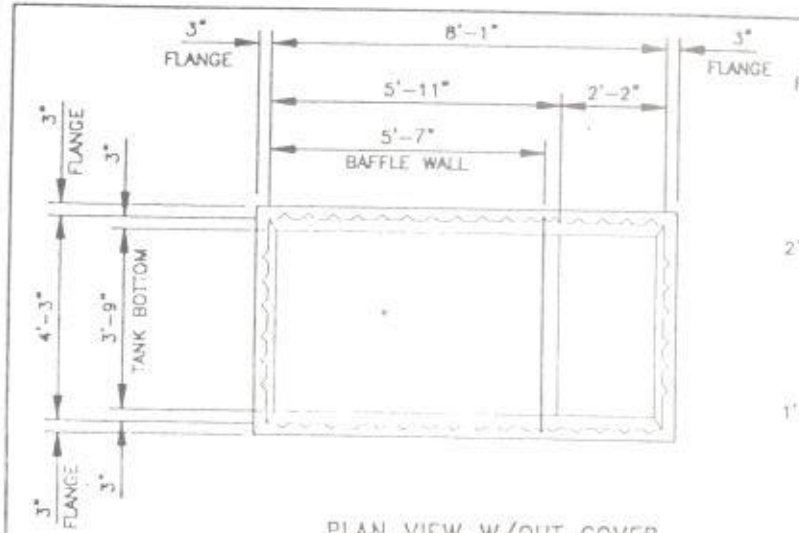


BAFFLE RIB DETAIL

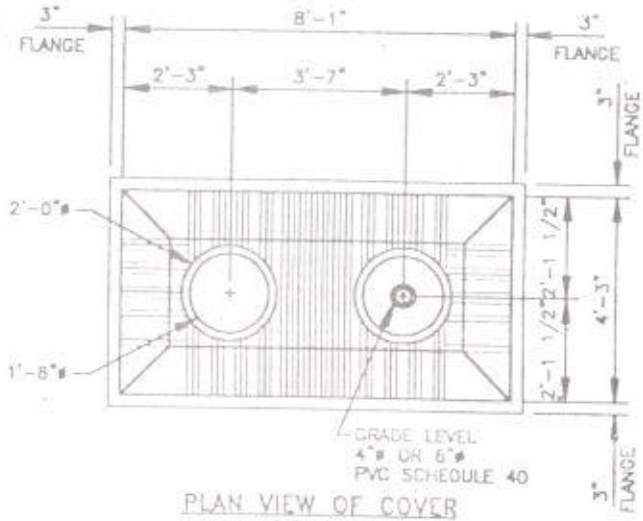
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK750F

AquaKlear, Inc.



PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"

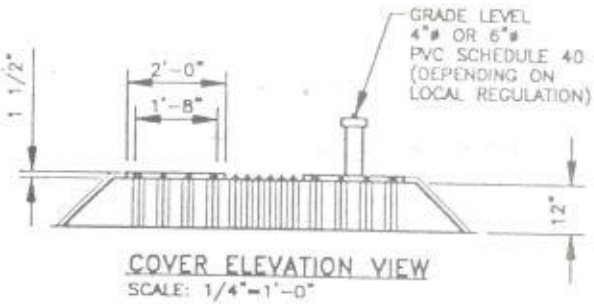


PLAN VIEW OF COVER
SCALE: 1/4"=1'-0"

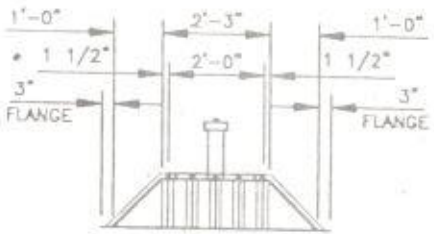
NOTES

1. ALL WALL THICKNESSES TO BE 1/4".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"

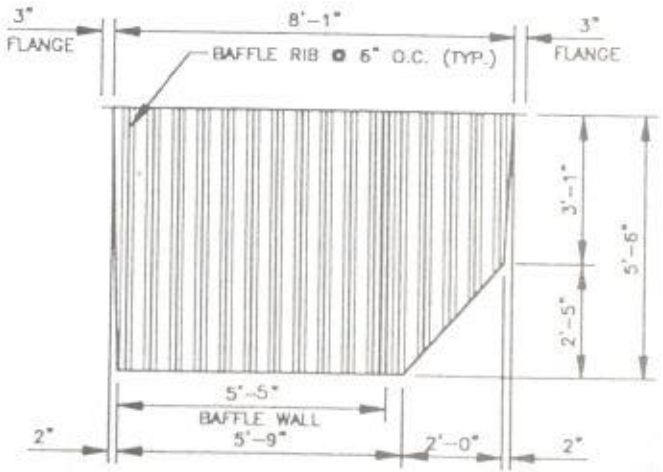
MATERIAL SPECIFICATIONS



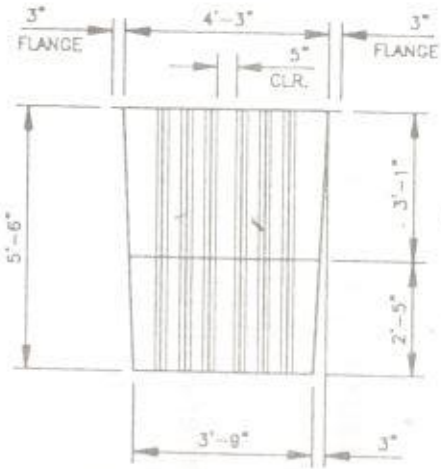
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



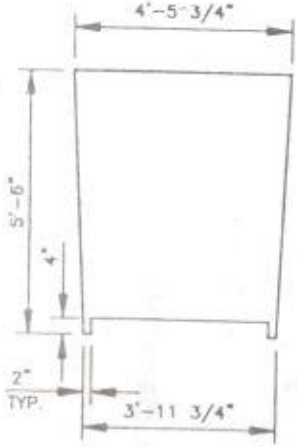
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



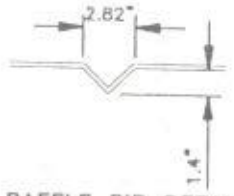
ELEVATION VIEW
SCALE: 1/4"=1'-0"



RIGHT SIDE ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE WALL DETAIL
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK750FF

AquaKlear, Inc.

AquaKlear AK750F & 800F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30" of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

4. Backfilling the Top of Tank

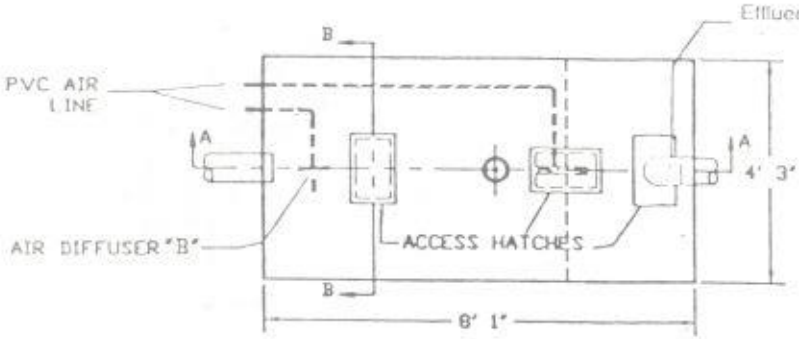
- Once the tank is filled with water, backfill to the surrounding level to a maximum of 40" **(30" for FF models)** from inlet flow line.

General Notes:

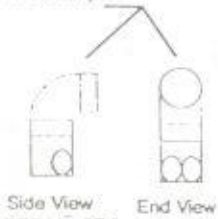
- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

Failure to comply with these installation procedures and general notes will void the warranty.

All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.

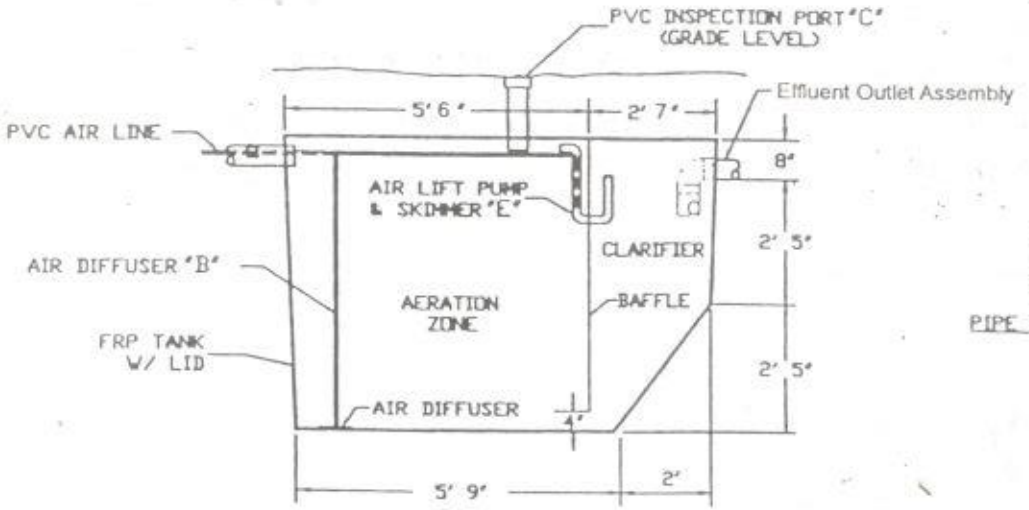


TOP PLAN

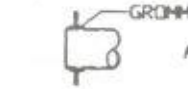


DETAIL "D"

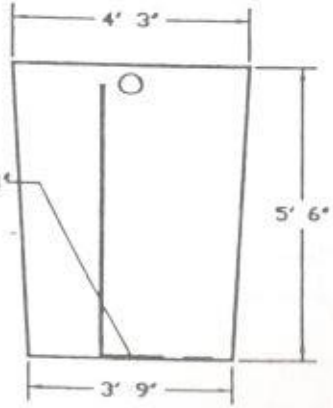
AIR DIFFUSER "B" DETAIL



SECTION A-A
SINGLE TANK "A"

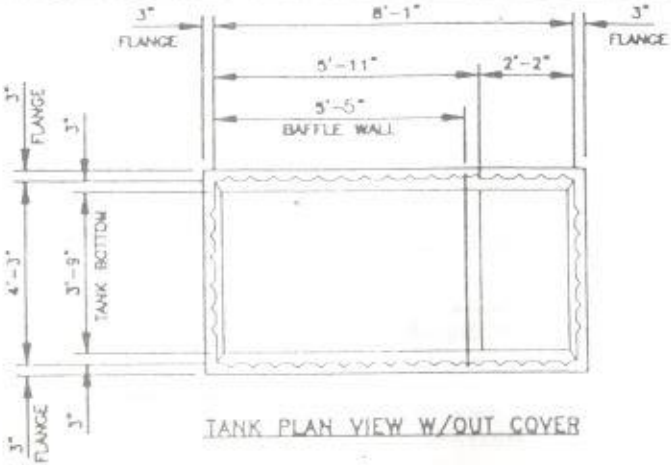


PIPE INSTALLATION

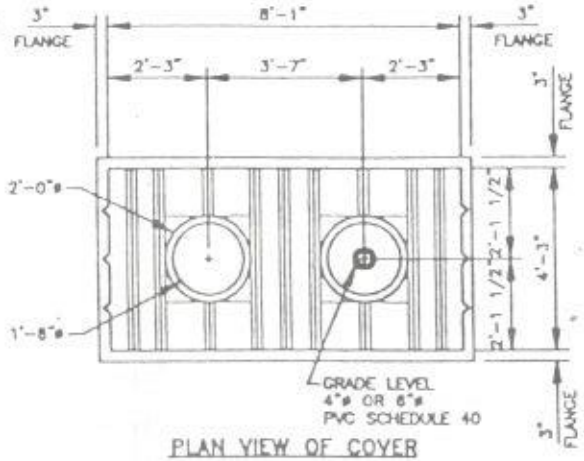


SECTION B-B

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK 800 C
CLASS 1
NOT TO SCALE



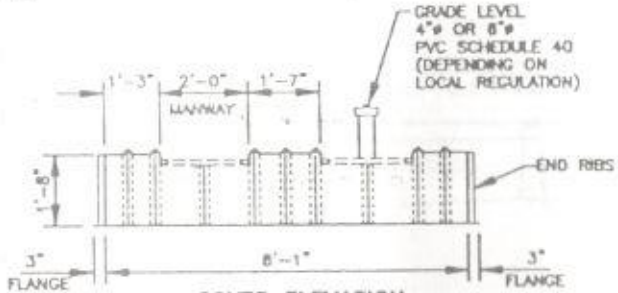
TANK PLAN VIEW W/OUT COVER



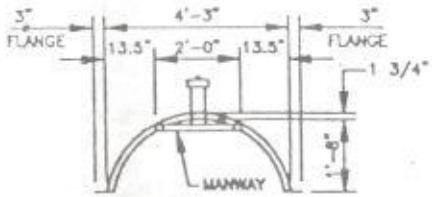
PLAN VIEW OF COVER

NOTES

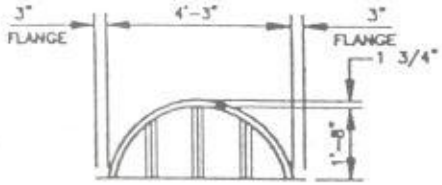
1. ALL WALL THICKNESSES TO BE 1/4".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"



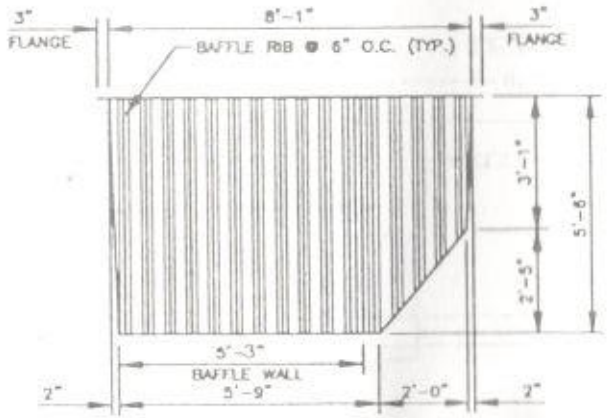
COVER ELEVATION
LONGITUDINAL SECTION VIEW



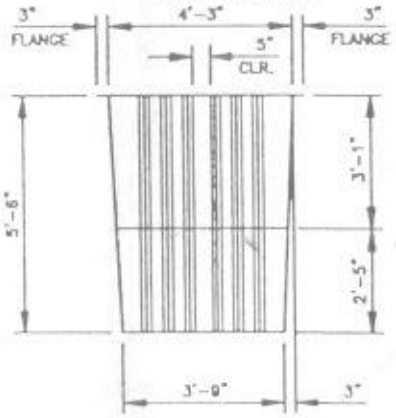
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



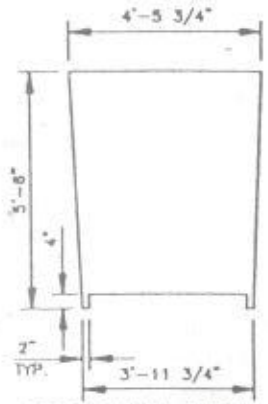
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



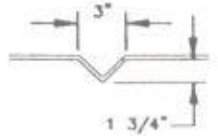
ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW



BAFFLE WALL DETAIL

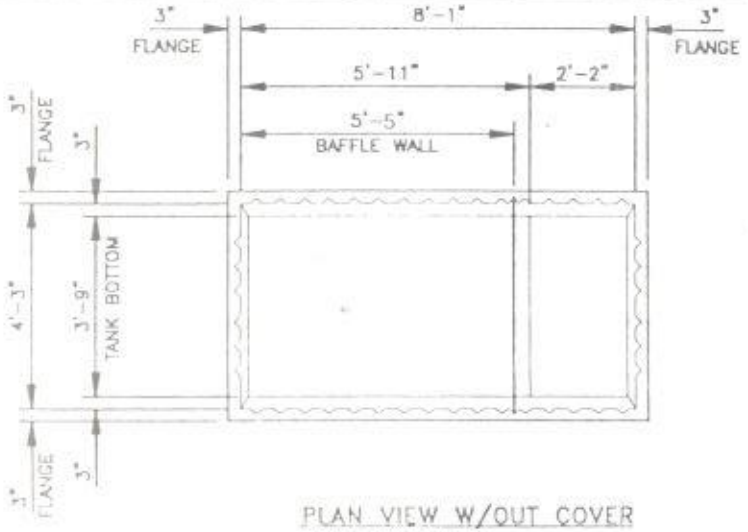


BAFFLE RIB DETAIL

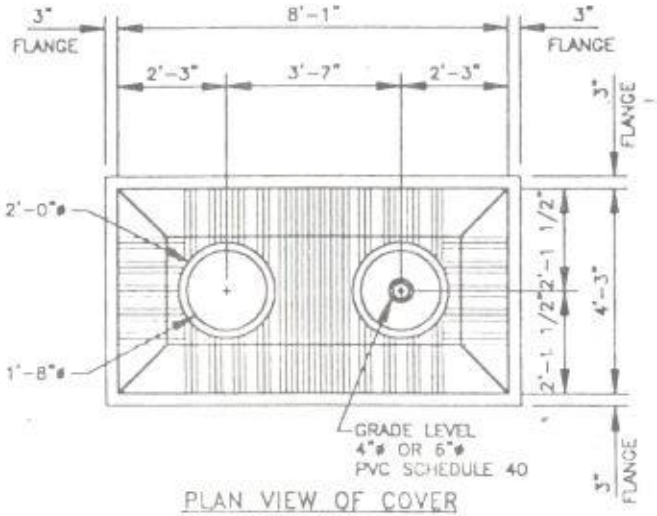
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK800F

AquaKlear, Inc.



PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"

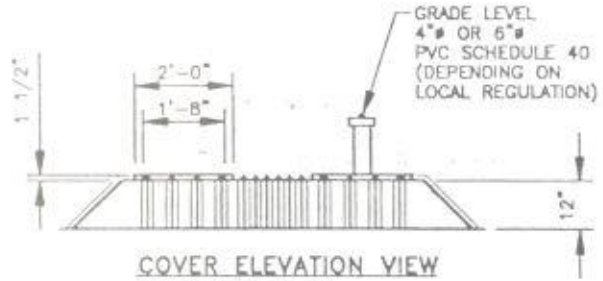


PLAN VIEW OF COVER
SCALE: 1/4"=1'-0"

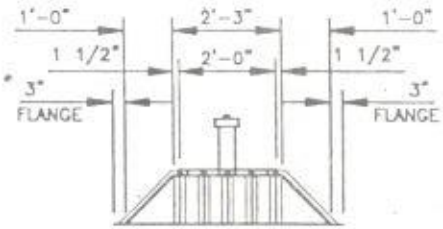
NOTES

1. ALL WALL THICKNESSES TO BE 1/4".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"

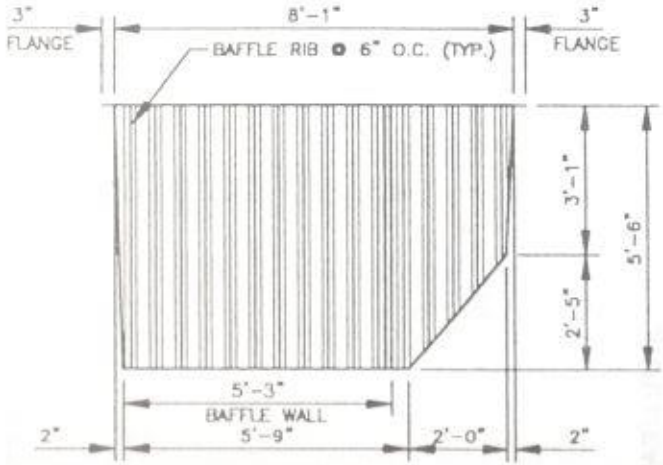
MATERIAL SPECIFICATIONS



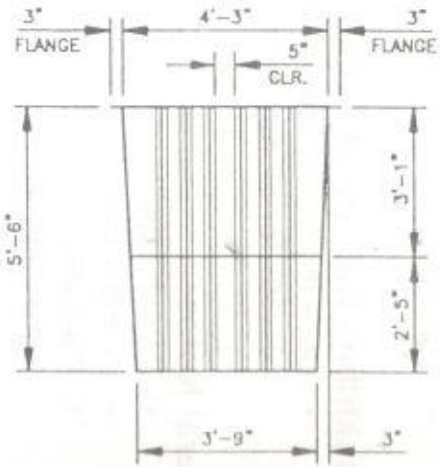
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



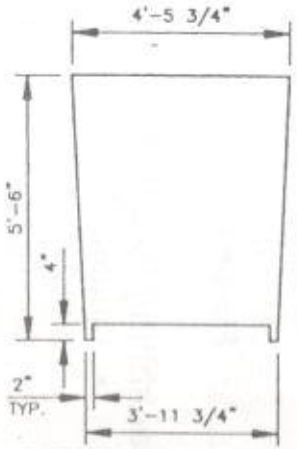
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



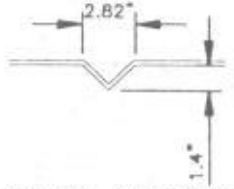
ELEVATION VIEW
SCALE: 1/4"=1'-0"



RIGHT SIDE ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE WALL DETAIL
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK 800FF

AK AquaKlear, Inc.

AquaKlear AK750F & 800F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30" of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

4. Backfilling the Top of Tank

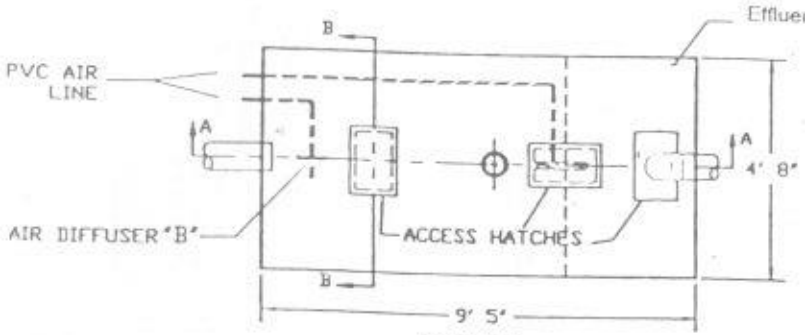
- Once the tank is filled with water, backfill to the surrounding level to a maximum of 40" **(30" for FF models)** from inlet flow line.

General Notes:

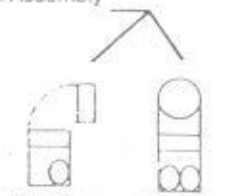
- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

Failure to comply with these installation procedures and general notes will void the warranty.

All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.

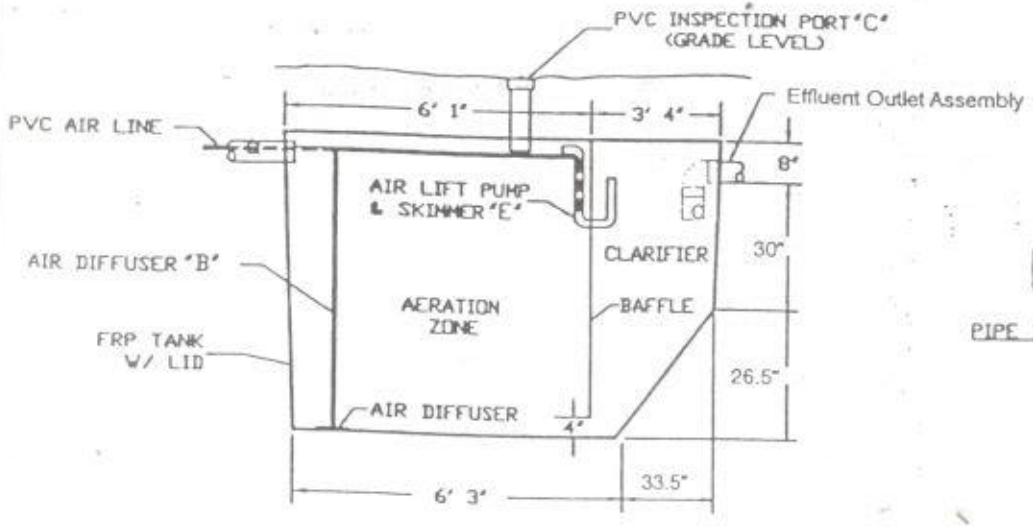


TOP PLAN



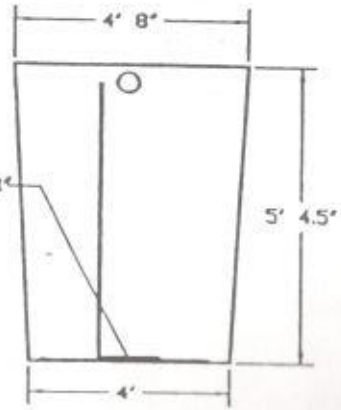
DETAIL "D"

AIR DIFFUSER "B" DETAIL



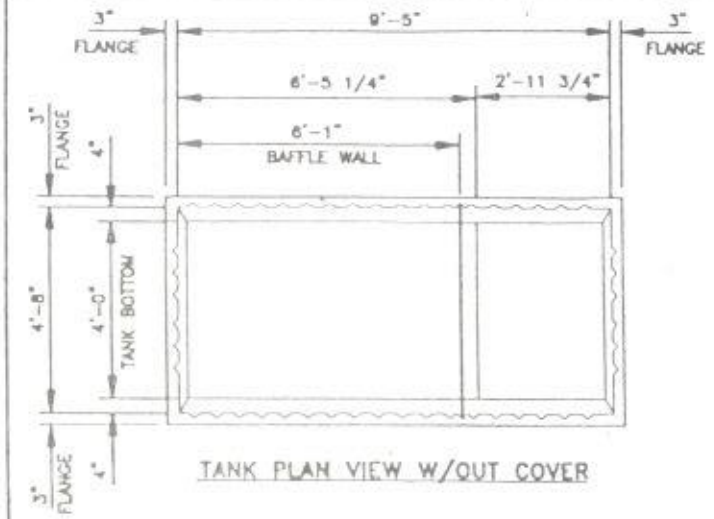
SECTION A-A
SINGLE TANK "A"

PIPE INSTALLATION

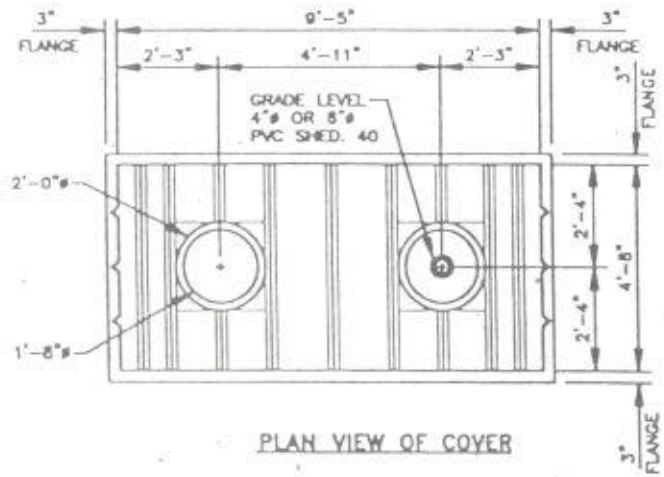


SECTION B-B

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK1000 C — CLASS I
NOT TO SCALE



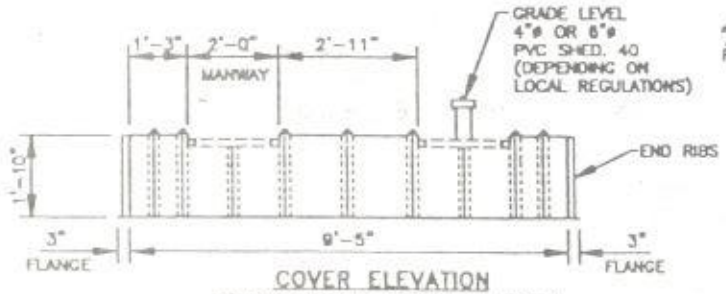
TANK PLAN VIEW W/OUT COVER



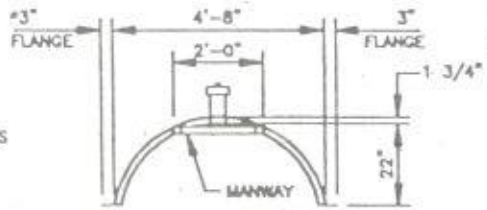
PLAN VIEW OF COVER

NOTES

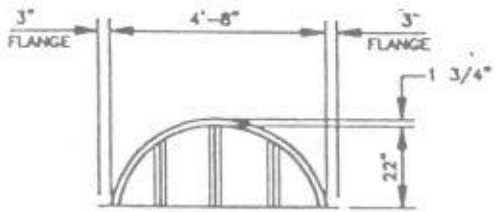
1. ALL WALL THICKNESSES TO BE 5/16".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/2"



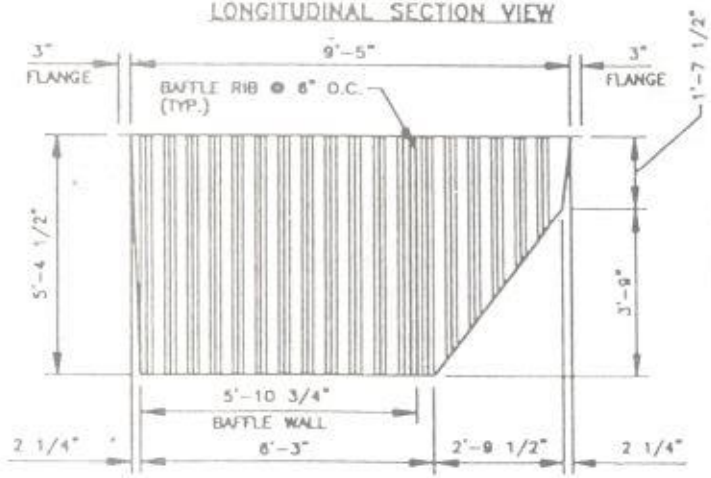
COVER ELEVATION
LONGITUDINAL SECTION VIEW



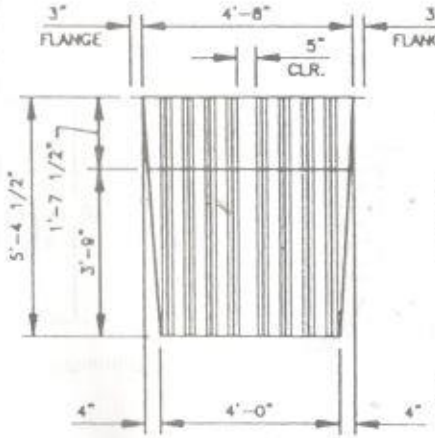
COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY



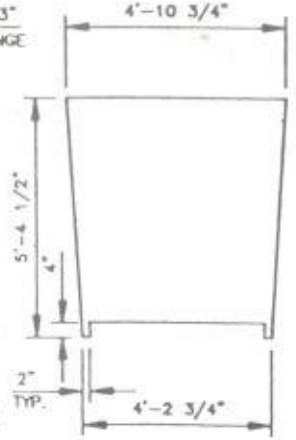
COVER ELEVATION
TRANSVERSE SECTION
SHOWING END RIBS



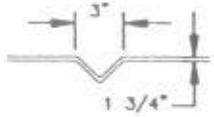
ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW



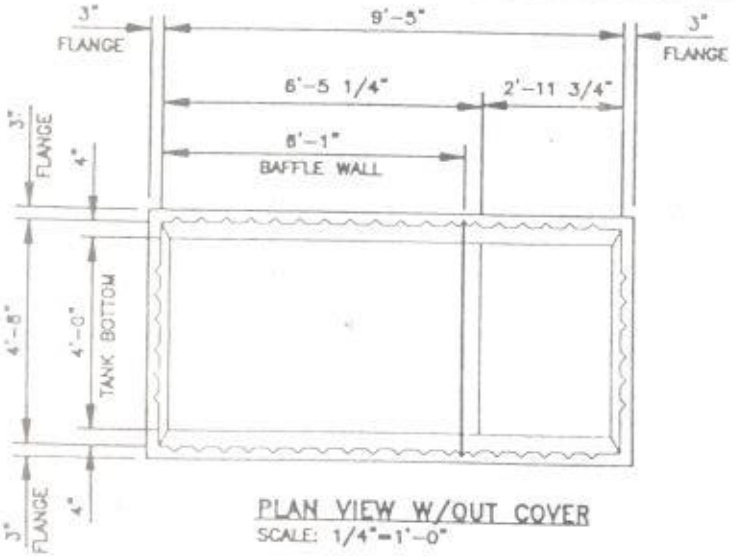
BAFFLE WALL DETAIL



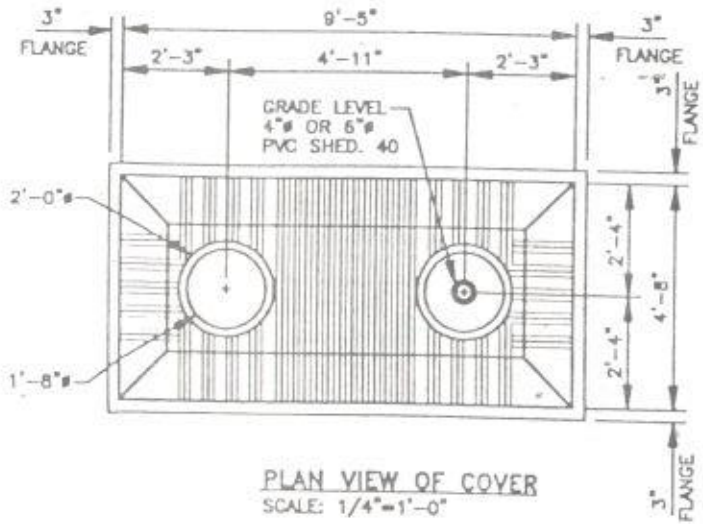
BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK1000F

AK AquaKlear, Inc.



PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"

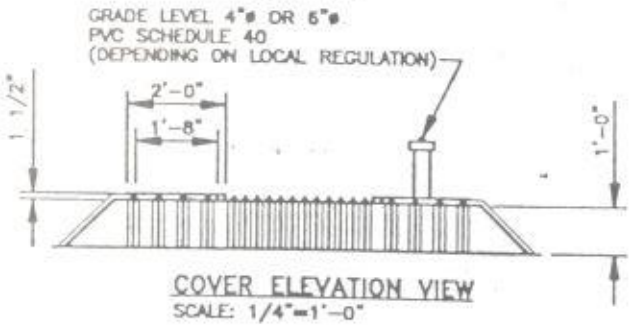


PLAN VIEW OF COVER
SCALE: 1/4"=1'-0"

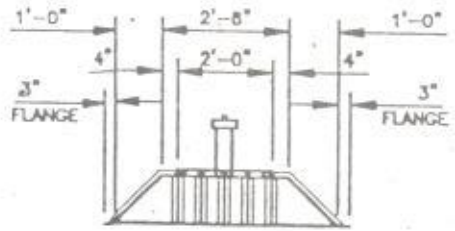
NOTES

1. ALL WALL THICKNESSES TO BE 5/16".
2. BAFFLE RIBS TO BE AT 8" SPACING MAX.
3. TOLERANCES: ±1/2"

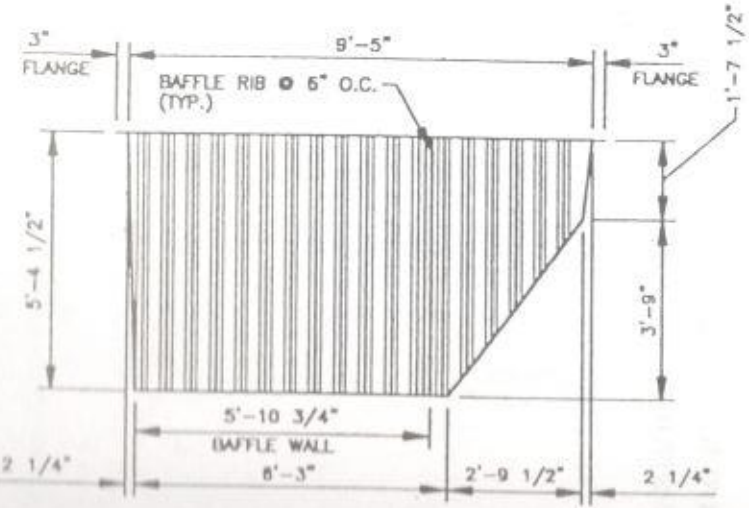
MATERIAL SPECIFICATIONS



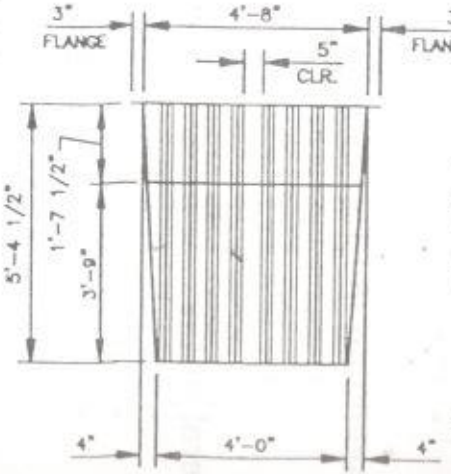
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



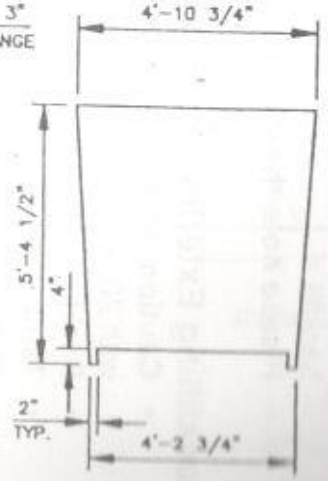
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



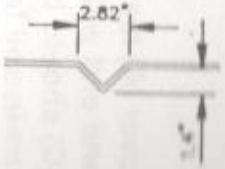
ELEVATION VIEW
SCALE: 1/4"=1'-0"



RIGHT SIDE ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE WALL DETAIL
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK1000FF

AK AquaKlear, Inc.

AquaKlear AK1000F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30" of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

4. Backfilling the Top of Tank

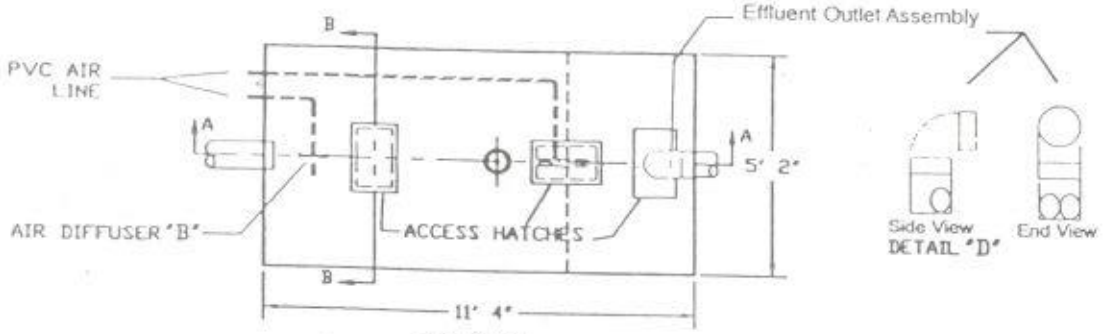
- Once the tank is filled with water, backfill to the surrounding level to a maximum of 42" **(30" for FF models)** from inlet flow line.

General Notes:

- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

Failure to comply with these installation procedures and general notes will void the warranty.

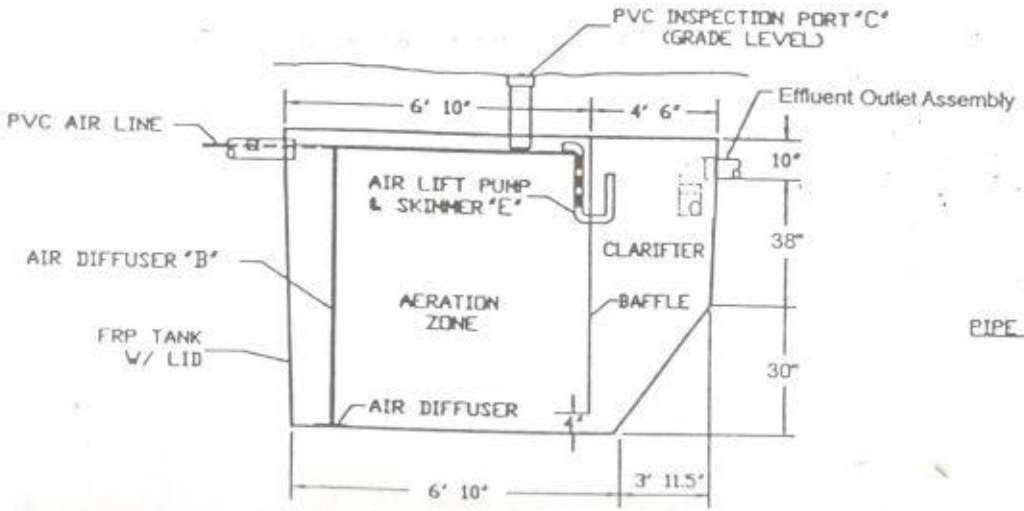
All Measurements are inside Clearances.
Outside Dimension is determined by Tank Material.
All Concrete Tanks have 3" thick walls.
Fiberglass thickness indicated on fiberglass drawings.



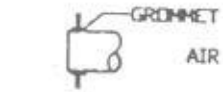
TOP PLAN

DETAIL "D"

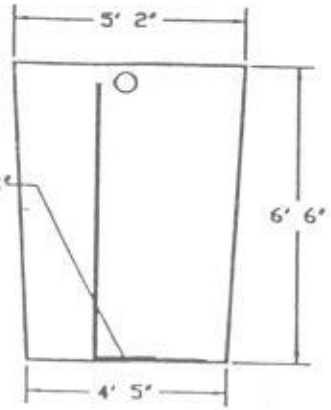
AIR DIFFUSER "B" DETAIL



SECTION A-A
SINGLE TANK "A"

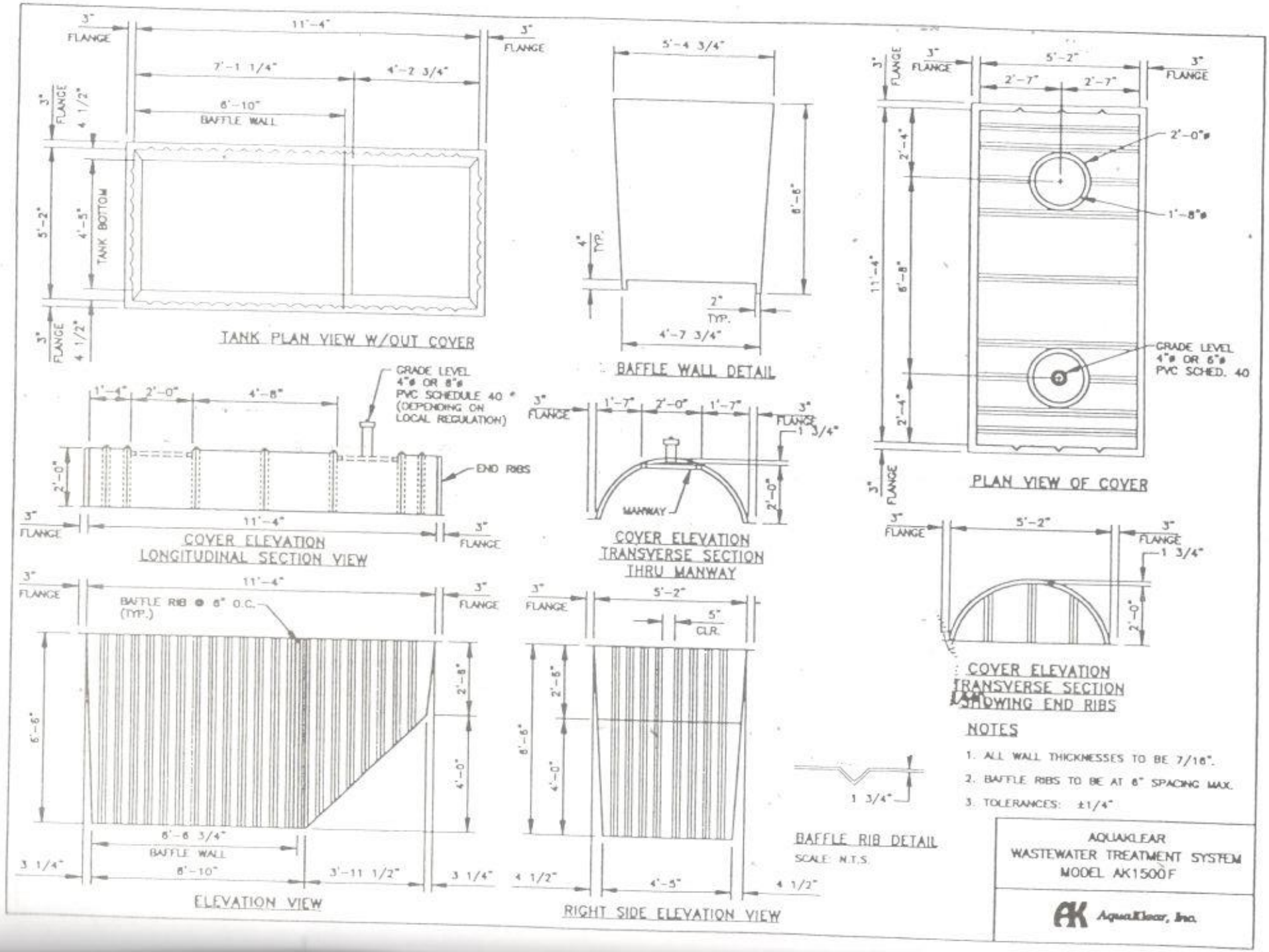


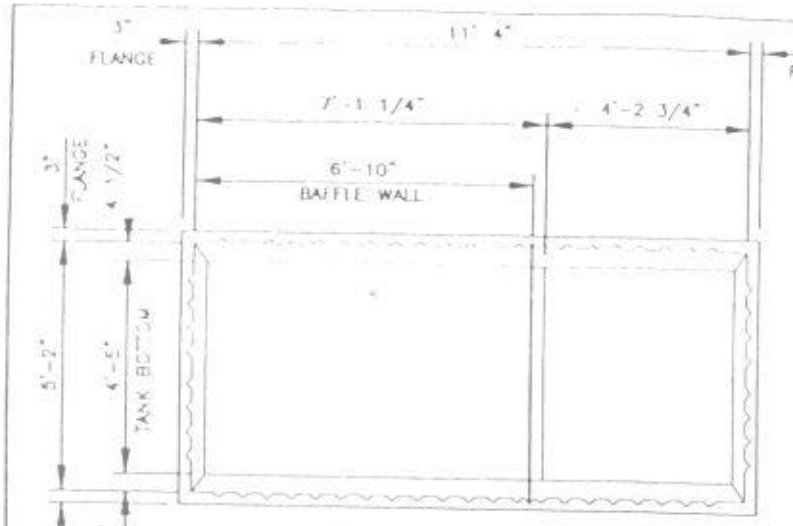
PIPE INSTALLATION



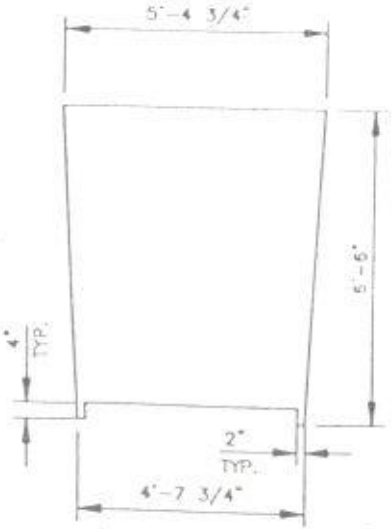
SECTION B-B

AQUAKLEAR
WASTEWATER TREATMENT SYSTEM
MODEL AK1500 C
CLASS 1
NOT TO SCALE

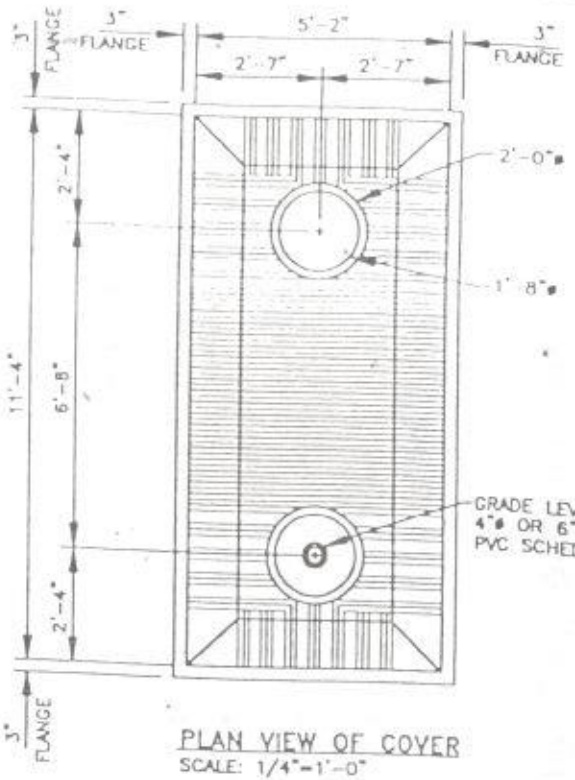

3" FLANGE
11'-4"
3" FLANGE
7'-1 1/4"
4'-2 3/4"
6'-10" BAFFLE WALL
3" FLANGE
4 1/2"
5'-2"
4'-5" TANK BOTTOM
3" FLANGE
4 1/2"
TANK PLAN VIEW W/OUT COVER
5'-4 3/4"
6'-8"
4" TYP.
2" TYP.
4'-7 3/4"
BAFFLE WALL DETAIL
3" FLANGE
3" FLANGE
5'-2"
2'-7"
2'-7"
3" FLANGE
2'-0"ø
1'-8"ø
11'-4"
6'-8"
2'-4"
2'-4"
GRADE LEVEL 4"ø OR 6"ø PVC SCHED. 40
3" FLANGE
PLAN VIEW OF COVER
1'-4"
2'-0"
4'-8"
GRADE LEVEL 4"ø OR 6"ø PVC SCHEDULE 40 * (DEPENDING ON LOCAL REGULATION)
END RIBS
2'-0"
3" FLANGE
11'-4"
3" FLANGE
COVER ELEVATION LONGITUDINAL SECTION VIEW
3" FLANGE
1'-7"
2'-0"
1'-7"
3" FLANGE
1 3/4"
MANWAY
2'-0"
COVER ELEVATION TRANSVERSE SECTION THRU MANWAY
3" FLANGE
5'-2"
3" FLANGE
1 3/4"
2'-0"
COVER ELEVATION TRANSVERSE SECTION SHOWING END RIBS
3" FLANGE
11'-4"
3" FLANGE
BAFFLE RIB @ 6" O.C. (TYP.)
6'-6"
2'-8"
4'-0"
6'-6 3/4"
BAFFLE WALL
3 1/4"
6'-10"
3'-11 1/2"
3 1/4"
ELEVATION VIEW
3" FLANGE
5'-2"
5" CLR.
6'-6"
2'-8"
4'-0"
4 1/2"
4'-5"
4 1/2"
RIGHT SIDE ELEVATION VIEW
1 3/4"
BAFFLE RIB DETAIL
SCALE: N.T.S.
NOTES
1. ALL WALL THICKNESSES TO BE 7/16".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"
AQUAKLEAR WASTEWATER TREATMENT SYSTEM MODEL AK1500F
AK AquaKlear, Inc.



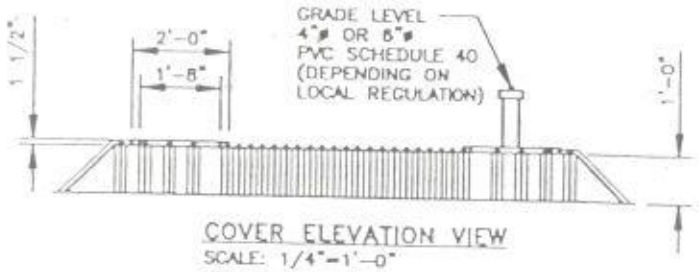
PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"



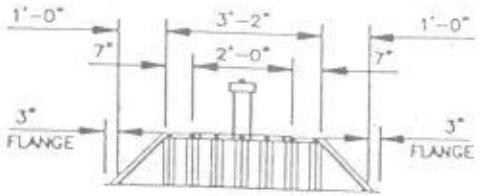
BAFFLE WALL DETAIL
SCALE: 1/4"=1'-0"



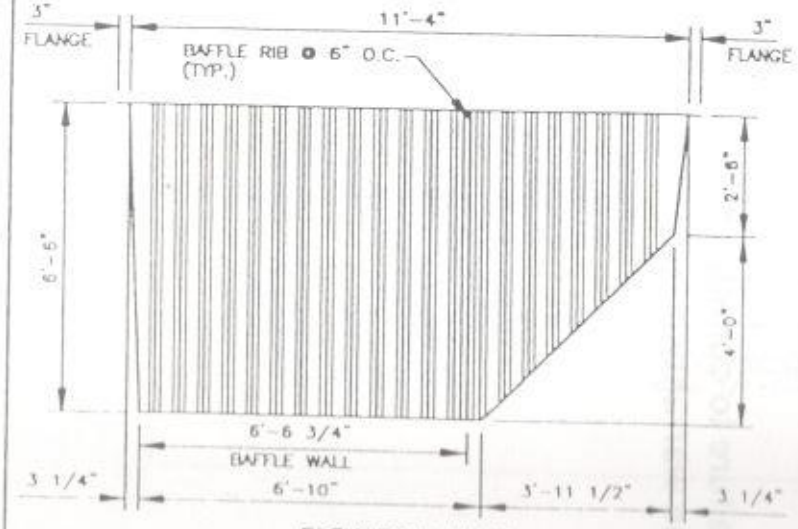
PLAN VIEW OF COVER
SCALE: 1/4"=1'-0"



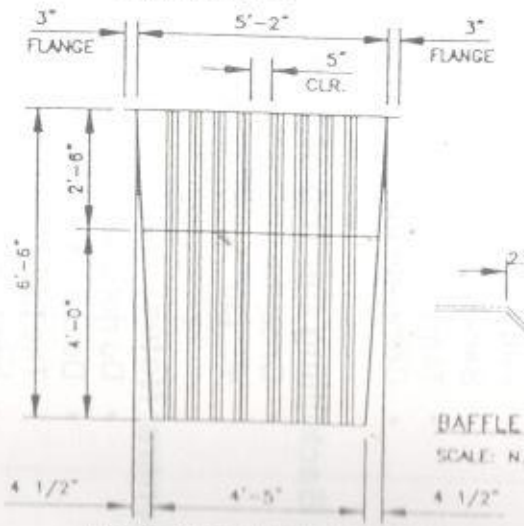
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



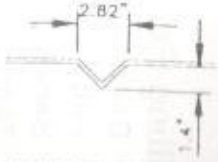
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



ELEVATION VIEW
SCALE: 1/4"=1'-0"



RIGHT SIDE ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.

NOTES

1. ALL WALL THICKNESSES TO BE 7/16".
2. BAFFLE RIBS TO BE AT 6" SPACING MAX.
3. TOLERANCES: ±1/4"

ARTHALEAH
WASTEWATER TREATMENT SYSTEM
MODEL ARTSERIES

AK Aqua-Klear, Inc.

AquaKlear AK1500F tank installation procedures

1. Excavation

- **Backfill cover (A) may range from 6" to 24" (6"tp 12" for FF models).**
- **Sidewall and end wall allowance (B) should be 18" tp 24".**
- **Bedding (C) should be well compacted sand/or soil.**
  6" minimum in soil terrain, 12" minimum in rock terrain.

2. Lift and Manhole Extension

- For proper fit, install the lid and/or manhole extension before you put water in tank and backfill.
- **Please note the direction of flow — the inlet is higher than the outlet.**

3. Backfilling Exterior and Filling With Water

- **Caution:** Start filling the tank with water before you begin to back fill, fill with 20" – 30" of water, then start to backfill.
- Backfill in 12" maximum layers with well compacted sand/or soil.
- **Tamp** and **compact** back fill under inlet and outlet pipe.
- Complete the filling of tank with water.

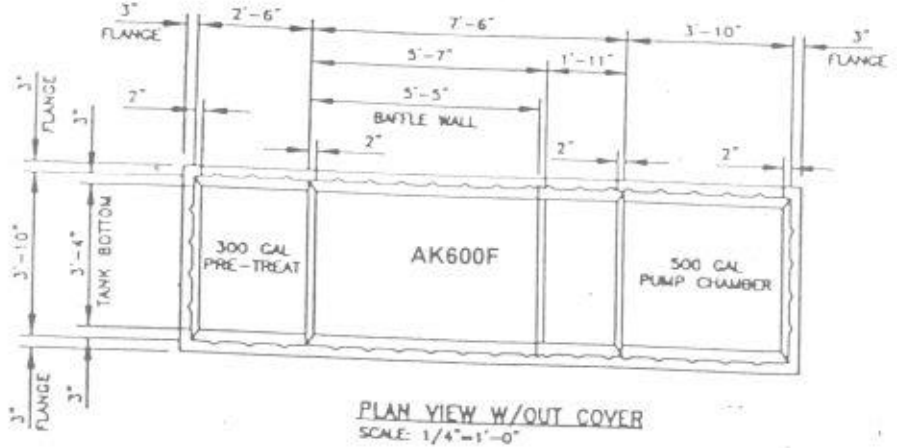
4. Backfilling the Top of Tank

- Once the tank is filled with water, backfill to the surrounding level to a maximum of 46" **(30" for FF models)** from inlet flow line.

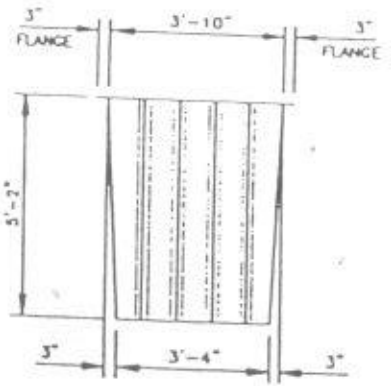
General Notes:

- Do not install tank in water-satured clay or in high water table.
- Do not install tank across the path of vehicles or heavy equipment.
- The tanks are designed for below ground use only.
- Immediately refill the tank with water after pumping.

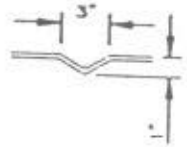
Failure to comply with these installation procedures and general notes will void the warranty.



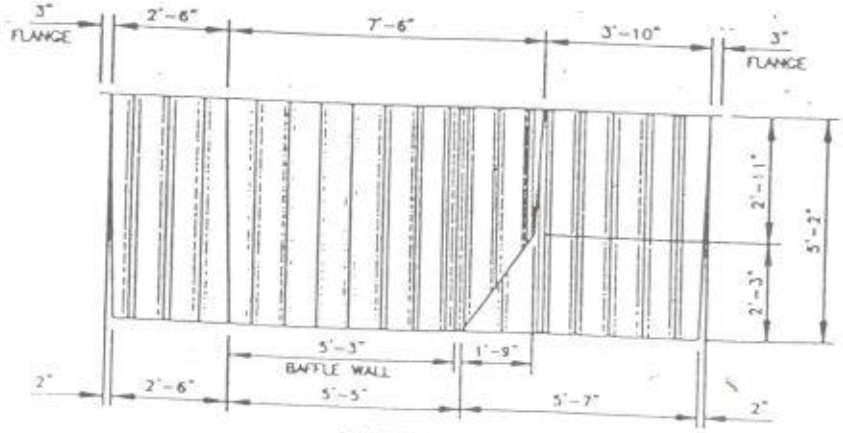
PLAN VIEW W/OUT COVER
SCALE: 1/4"=1'-0"



LEFT & RIGHT END ELEVATION VIEW
SCALE: 1/4"=1'-0"



BAFFLE RIB DETAIL
SCALE: N.T.S.



ELEVATION VIEW
SCALE: 1/4"=1'-0"

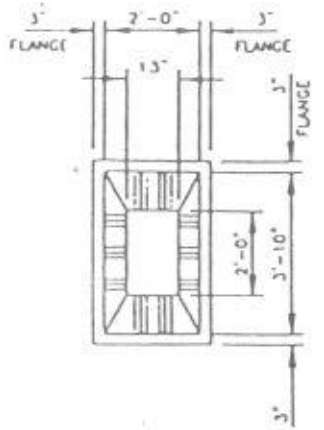
NOTES

1. ALL WALL THICKNESSES TO BE 3/16".
2. BAFFLE RIBS TO BE AT 9" SPACING MAX.

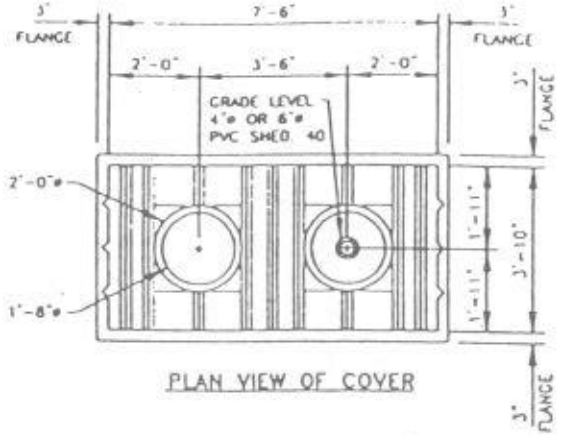
SHEET 1 OF 2

AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
Model AK365F

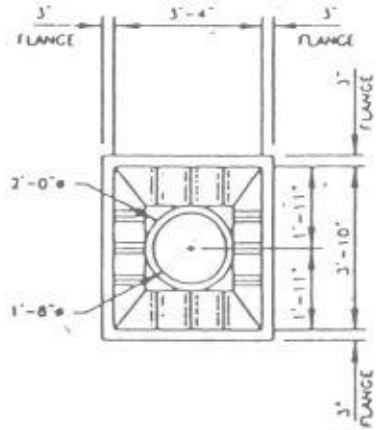
AK AquaKlear, Inc.



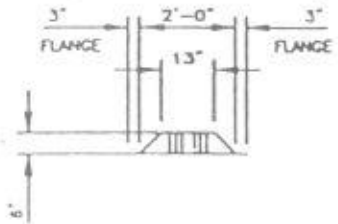
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



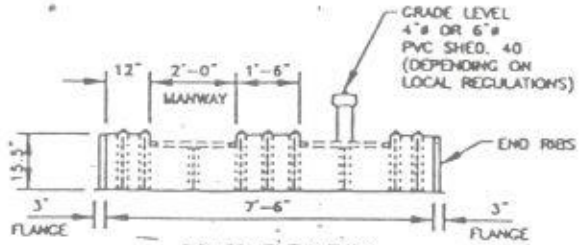
PLAN VIEW OF COVER



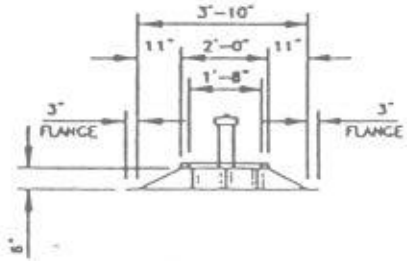
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



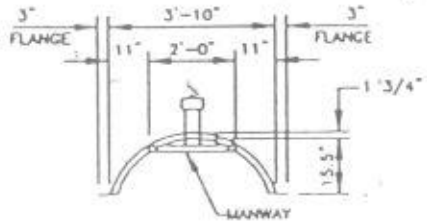
COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"



COVER ELEVATION
LONGITUDINAL SECTION VIEW



COVER ELEVATION VIEW
SCALE: 1/4"=1'-0"

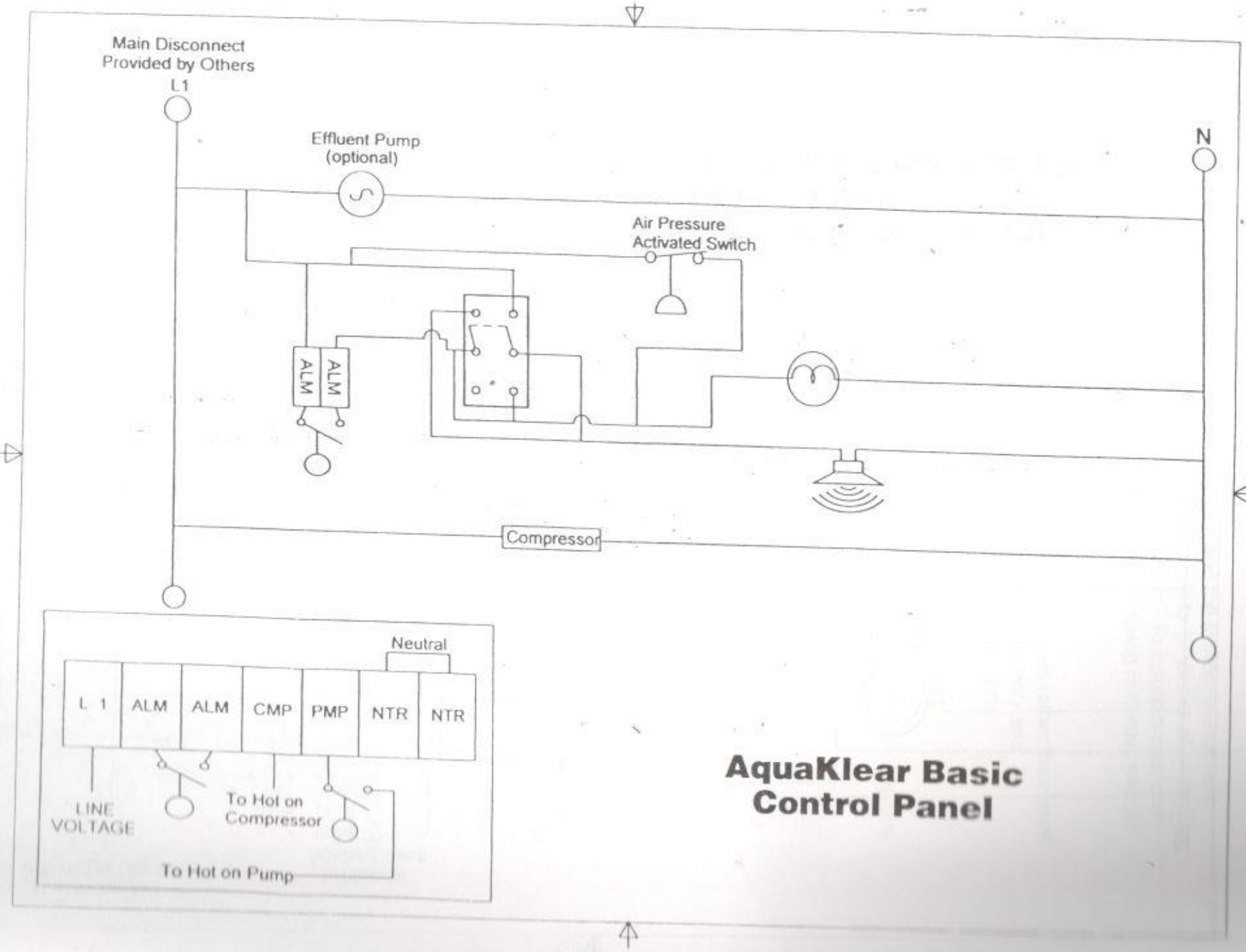


COVER ELEVATION
TRANSVERSE SECTION
THRU MANWAY

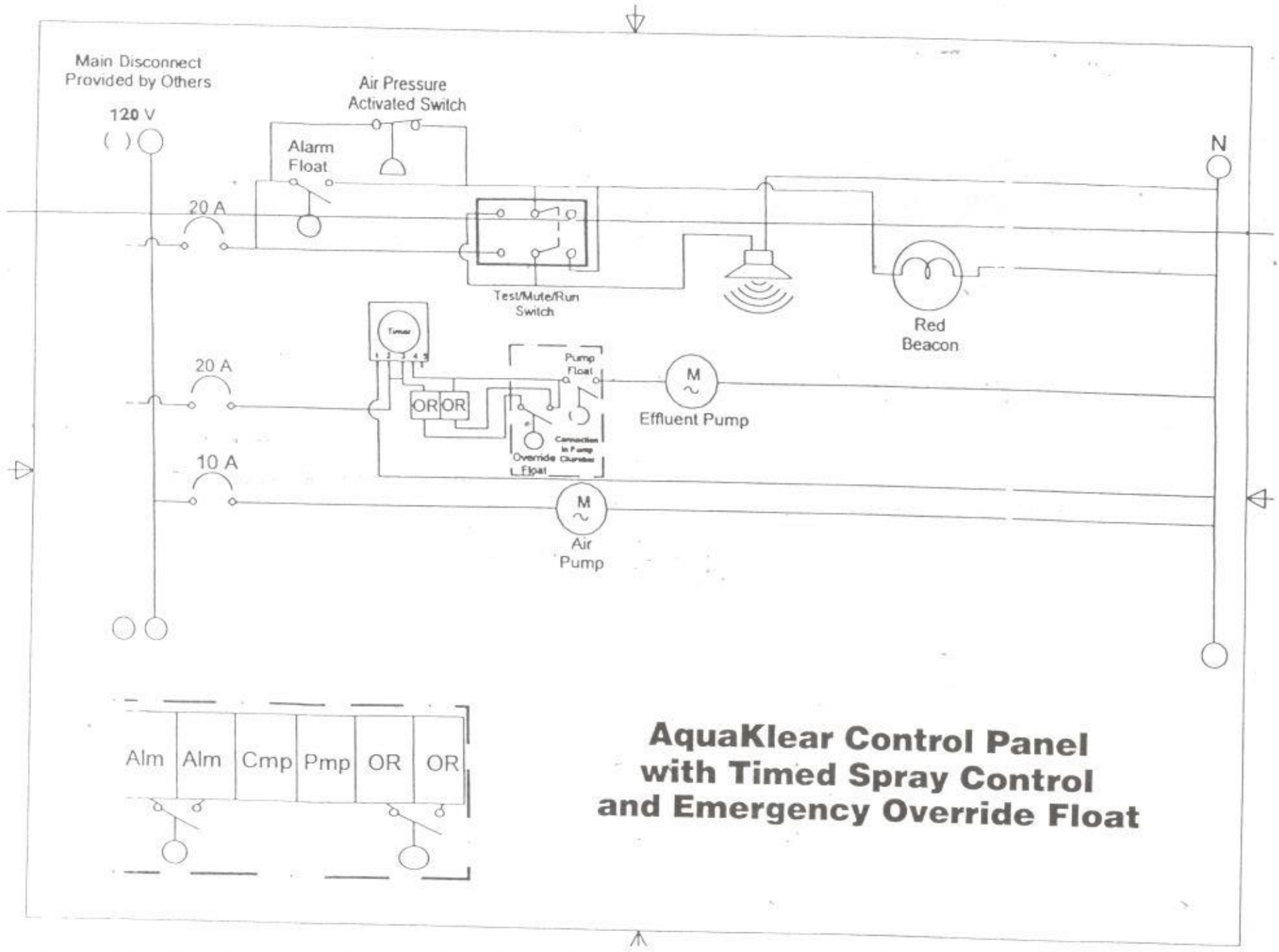
SHEET 2 OF 2

AQUAKLEAR, INC.
WASTEWATER TREATMENT SYSTEM
Model AK365F

AK AquaKlear, Inc.



AquaKlear Basic Control Panel



AquaKlear Control Panel with Timed Spray Control and Emergency Override Float

OPERATING INSTRUCTIONS

Once installed, the blower will run continuously and the system will operate with a minimal amount of attention. It will take from 6 to 12 weeks after startup to develop an optimum population of micro-organisms. To insure proper operation and minimize maintenance requirements, the following materials should not be permitted to enter the system.

Items to Avoid

Strong disinfectant or bleaches (other than small amounts normally used in laundry and house cleaning - be conservation).

Oil, greases and chemical wastes

Disposable diapers, tampons, sanitary napkins, cigarette butts and similar items.

Discharge from water softener.

The AquaKlear Wastewater Treatment System has been designed and tested to treat common and ordinarily expected wastewater and sewage from commercial and residential sources.

ROUTINE SYSTEM CHECKS

Checking Pump

Check air pump daily to be sure it is operating. Once accustomed to the soft humming sound of a properly operating unit, any unusual noise is an indication of a malfunction. If any unusual noise is detected, or if alarm signals, check power source, then call dealer for service.

Checking Access Port

Check access port weekly for sour or "rotten egg" odor. If odor develops, call dealer for service. Always reference the system data plate when calling for service.

Checking Inlet Filter

Check inlet filter on air pump every three months and change or wash, if necessary. Filter should be cleaned or changed more often if conditions warrant.

Checking Effluent

Check effluent pipe weekly. Effluent should be clear and odor free. Effluent samples should be collected after treated wastewater has been discharged from the end of the pipe for several minutes. Care should be taken to insure that there is no algae growing in the pipe end which may be collected in the effluent sample.

Residual Removal

While the accumulation of residuals is largely dependent upon the characteristics of the wastewater treated, it is recommended that residuals be removed every 5 years, by a state certified removal service. The service should remove the lower (bottom) 1/2 of the liquor in both chambers and then refill with clear water.

Intermittent Operation

The air pump should always be operating during intermittent use of the treatment system.

Electrical Wiring

An electrical wiring diagram is included in this manual.

Effluent Collection

When collecting an effluent sample the sample should be taken at the closest point to the clarifier as possible. The water should have been flowing for two minutes before collecting the sample.

SERVICE POLICY

Service Calls

The purchase price for the system includes an initial two year service policy which includes all service calls as needed due to equipment failures or manufacturers' defect. These service calls will be made by the installing dealer or his authorized representative and shall cover the following:

Adjustment

Adjust and servicing of air pump, including replacement or cleaning of inlet filter if necessary.

Examination

Examination of the aeration zone to detect mixing regime and presence of sour or rotten egg odor.

Notification

Immediate notification of owner in writing of any improper operation observed which cannot be immediately remedied. Notice shall advise owner of problem and if covered by warranty, the estimated date for correction of the problem.

Inspection

The unit is to be inspected every six (6) months during the initial 2 year service policy period. Servicing should include a check of the filter in the air compressor for proper air flow, and inspection of all electrical connections. Check for effluent quality including a visual check for color, turbidity and scum overflow, and check for odors.

If a problem arises or serivce is required, please reference one of the two system data plates.

REPLACEMENT POLICY

During Warranty

There shall be no charge to the owner for the service calls, nor or repair or replacement of components covered by warranty, during the initial 2 year period.

Post Warranty

A continuing service policy is available from dealer to system owners whose initial service policy has expired.

TROUBLE SHOOTING INSTRUCTIONS

Once installed, the blower will run continuously and the system will operate with a minimal amount of attention. It will take from 6 to 12 weeks after startup to develop an optimum population of micro-organisms. To insure proper operation and minimize maintenance requirements, the following materials should not be permitted to enter the system.

Items to Avoid

Strong disinfectant or bleaches (other than small amounts normally used in laundry and house cleaning - be conservative).

Oil, greases and chemical wastes.

Disposable diapers, tampons, sanitary napkins, cigarette butts and similar items.

Discharge from water softener.

The Aquaklear Wastewater Treatment System has been designed and tested to treat common and ordinarily expected wastewater and sewage from commercial and residential sources.

ROUTINE SYSTEM CHECKS

Checking pump

Check air pump daily to be sure it is operating. Once accustomed to the soft humming sound of a properly operating unit, any unusual noise is an indication of a malfunction. If any unusual noise is detected, or if alarm signals, check power source, then call dealer for service.

Checking Access Port

Check access port weekly for sour or "rotten egg" odor and for color of liquid in aeration chamber. Liquid color should be light to dark brown. If odor develops, or liquid color is gray or black, call dealer for service. Always reference the system data plate when calling for service.

Checking Inlet Filter

Check inlet filter on air pump every three months and change or wash, if necessary. Filter should be cleaned or changed more often if conditions warrant.

Checking Effluent

Check effluent pipe weekly. Effluent should be clear and odor free. Effluent samples should be collected after treated wastewater has been discharged from the end of the pipe for several minutes. Care should be taken to insure that there is no algae growing in the pipe end which may be collected in the effluent sample.

Residual Removal

While the accumulation of residuals is largely dependent upon the characteristics of the wastewater treated, it is recommended that residuals be removed every 5 years, by a state certified removal service. The service should remove the lower (bottom) 1/2 of the liquor in both chambers and then refill with clear water.

Intermittent Operation

The air pump should always be operating during intermittent use of the treatment system.

Electrical Wiring

An electrical wiring diagram is included in this manual.

Effluent Collection

- When collecting an effluent sample the sample should be taken at the closest point to the clarifier as possible. The water should have been flowing for two minutes before collecting the sample.

DIRECTIONS FOR START UP/SHUT DOWN FOR AQUAKLEAR SYSTEMS

Due to the many different situations which give cause for shut down and start up of AquaKlear wastewater treatment systems, the following addresses a worst case situation for both.

Shut Down Period For Extended Period: (water supply to building shut off)

The air compressor should be disconnected and removed, air line capped and compressor stored in a safe place (for protection from theft). Unit should be left in this condition (all tanks full) until start up.

Start up Procedures After Extended Shut Down:

Replace and reconnect air compressor, pump empty the aeration zone, clarifying zone, and refill with potable water. Turn air compressor on, check for proper air flow, and allow homeowner to begin using system.

For Intermittent Use:

Unit should be in full operational mode at all times.

System failures that may occur will fall into one of two general categories; unacceptable effluent quality or mechanical malfunction. Unacceptable effluent quality or mechanical malfunction may be indicated by discolored or odorous effluent discharge; discolored or odorous aeration chamber liquid; or solids in the effluent discharge. Causes are generally due to reduced or no air delivered to the aeration chamber, toxic material in the raw wastewater stream, or unusual wastewater flow (very high or very low). If any of these conditions are indicated, the following procedure should be followed.

1. Check the air compressor to insure that it is delivering air to the system. If necessary, perform regular maintenance. If the compressor is not delivering air it should be replaced as soon as possible.

2. Assess from the home-owner if toxic or other inappropriate material have been placed in the system. If toxic material has been introduced to the system, it may be necessary to pump out the contents of the tank and restart the system.

3. Visually inspect the aeration chamber. If there is not a readily apparent "roll" of the aeration chamber liquid in the direction of the effluent line, the aerator bar may be clogged or out of position. Expose the access hatch nearest the influent end of the tank; adjust or remove the aerator bar; clean and unclog and place in the proper position.

4. If solids appear in the system discharge, expose the two access hatches nearest the effluent end of the tank. Clean and unclog in place, the air lift pump and skimmer apparatus at the surface of the clarifier chamber. Clean in place, the effluent outlet assembly.

Data Plate with Serial Number

AQUAKLEAR, INC.
876 N. Bierdemen Rd. - Pearl, MS 39208
Model No. AK500C
Capacity: 500 g.p.d.
Serial Number: xxxx
Performance Rated: Class 1

Data Plate

AQUAKLEAR, INC.
876 N. Bierdman Rd. - Pearl, MS 39208
Model No. AK500C
Capacity: 500 g.p.d.
Performance Rated: Class 1