IREDELL COUNTY HEALTH DEPARTMENT

Statesville Office (704) 878-5305 Mooresville Office (704) 660-3625 PERMIT # 164090

SEPTIC IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM

PIN # 4638237752.000

APPLICANT/OWNER: Marty Reiss. APPLICANT ADDRESS: 678 Normandy Rd Mooresville NC 28117

SITE ADDRESS: 678 Normandy Rd Mooresville NC 28117 PHONE: ALT. PHONE

SITE DIRECTIONS: Perth Rd To Normandy Rd Site on Right SAP CONTROLLED: ☐ YES ☐ NO

SUBDIVISION: CLT SECTION: 11 LOT # 199 LOT AREA: .85 DESIGN FLOW: 480 L.T.A.R.: .35

Septic Tank 1500 (gal) STB * Date *

Pump Tank 1500 (gal) PT * Date *

Pump Make * Model * Serial # *

Nitrification Fields 1 # Lines 6 Linear Ft 235

Trench Width * Trench Bottom Depth(Low side) * Gravel Depth *

☒ New System ☐ Repair ☐ Expansion System Type: I II III IV ⓥ VI

System Description: LD - Panel Block - Pre-Treated.

Repair System Description: LD-Panel Block Pre Treated-Ext Bed.

Maintenance Agreement Required: ☒ YES ☐ NO

☐ GRAVITY ☒ PRESSURE

☒ Residence ☐ Business ☐ Other ☐ Slab ☒ Basement w/plumbing

No. Bedrooms 4 No. Persons 8 No. Employees ☐ Crawl Space

☐ Basement w/o plumbing

Water Supply: ☒ Private ☐ Public ☐ Community

Comments / Conditions: See attached Site Design & Install Specs *

5yr Inspection conducted on 2/20/2019 with AQWA Report Received 2/26.

INITIAL SITE SKETCH

AS BUILT SKETCH

Permit can be suspended or revoked if any false information is supplied toward securing the permit / any unauthorized changes are made to the site / any unauthorized changes are made in the installation of the system. **CONTACT A LOCATOR SERVICE PRIOR TO ANY EXCAVATION**

☐ **IMPROVEMENT PERMIT** *with plat valid without expiration.* ☒ **IMPROVEMENT PERMIT** *with site plan valid for 60 mos.* ☒ **AUTHORIZATION TO CONSTRUCT** *valid for period equal to IMPROVEMENT PERMIT--not to exceed 60 mo.*

Owner / Applicant Signature: Date: Installed by:

IMPROVEMENT PERMIT by: Date: OPERATION PERMIT by: Benjamin A. Bolkin Date: 2/22/2019

AUTHORIZATION TO CONSTRUCT by: Date: Existing System Inspected by: Date:

FOR SEPTIC FINAL INSPECTION: CALL 704-664-3703 between 8am-9am the day the inspection is needed. Be sure to speak with an inpsector to confirm your inspection time.

SHEET TITLE
PRE-TREATMENT
DESIGN SITE PLAN

PROJECT NAME:
678 NORMANDY ROAD
TOWN, COUNTY, ST.

DRAWN BY:
DATE:
CHECKED BY:
PROJECT MGR.
JOB NO.
SCALE:
1"=40'
FILE

REVISIONS

Aquifer Environmental Consultants, Inc., P.A.
Concord Office
75 Old Airport Road
Concord, NC 28025
704-203-1877
Lexington Office
304 Brookcrossing Court
Lexington, NC 27292
336-596-7585

LAKE NORMAN

WOOD DOCK AND PIER

30' zone 1

N43°56'52"W 327.23' TOTAL

CONC. BLOCK BOAT HOUSE WOOD DECK (ABOVE)

FIELD LOCATED 780 CONTOUR

1500 Gal Septic Tank

1500 Pump Tank

Valve Box

1500 Repair Tank proposed future

AX 20

WELL HOUSE AND GRAVEL DRIVE CROSSES ONTO ADJOINER

10' SIDE SETBACK

Approx Location of 3br bed system repair

30' zone 1

50' rear build setback

S35°10'00"E 203.25' TOTAL

10' SIDE SETBACK

25' FRONT SETBACK

LOT 149
36,997 SQ. FT.
0.849 ACRE

NORMANDY ROAD

EDGE OF PAVEMENT

TELE. PED.

CATV

ADJOINER'S ASPHALT DRIVE

GRAPHIC SCALE
1" = 40'

40 0 40 80

**** NOT A SURVEY

**** BASE MAP PROVIDED DAVIDSON COUNTY GIS

**** ACTUAL ALIGNMENT IN FIELD MAY VARY SLIGHTLY FROM MAP REPRESENTATION

311

INSTALL SPECS
FOR WASTEWATER TREATMENT

Owner: Marty Reiss

Address: Normandy Rd

Phone:
County: Iredell
Location: Normandy Rd
Source of Wastewater Flow: 4 Bedroom Home
Estimated Daily Wastewater Production: 480 gpd
System Flow: 21.73

Design Specifications

Drainfield Size: 235 LF
Loading Rate: 0.35
Depth of Gravel in Trench: NA
Gravel Size: NA
Trench Depth: 30
Trench Width: 36 in.
Septic Tank Size: 1500 Gal installed 12" burial depth
Pump Tank Size: 1500 Gal installed 24" burial depth
Recirculation Tank Size 1500 Gal installed 30" burial depth
Estimated Supply Line Length: 13
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 2.26
Dosing Volume: 190.80
Supply Manifold: NA
Supply Manifold Length: NA
Supply Manifold Volume: NA

3 Switch sequence

Recommended Effluent Filter FT 0444-36-NC

Recommended Float Controls: Orenco Mercury Float switches

Recommended Control Panel: Vericomm AXB1 Timer Dose Control Panel

Pressure Head: 2 ft.
Friction Head: 0.17
Elevation Head: 5.00
Total Dynamic Head: 11.69
Threaded Union: In Tank
Gate Valves: 1 in Tank
1 at Pressure Manifold
Check Valves: In Tank
Anti-Siphon Hole: YES
Recommended Dose Tank Pump: Myers Model ME50 or County Approved Effluent
in Dose Tank Rated Pump Capable of Delivering ~11.69 ft.of Head
at ~21.73 gpm Total Flow

Additional Comments: Soil suitability was performed by CEC
and Iredell County Health Dept.

Normandy Rd
PPBPS Design

DESIGN FLOW: 480
SOIL APPLICATION RATE: 0.35 gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM: 705

TOTAL LATERAL LENGTH: 235
NUMBER OF FIELDS: 1
LATERAL LENGTH REQUIRED PER FIELD: 235

SUPPLY LINE LENGTH: 13
TOTAL DYNAMIC HEAD: 11.69
MANIFOLD SIZE: NA

DOSING VOLUME: 190.80
PUMP TANK DRAW DOWN*: 6.6
SEPTIC TANK SIZE: 1500
PUMP TANK SIZE: 1500

RECOMMENDED DOSE TANK PUMP: Myers Model ME50 or County Approved Effluent
Rated Pump Capable of Delivering ~11.69 ft.of Head
at ~21.73 gpm Total Flow

Advantex Design Specifications

Pretreatment Unit Size: One AX-20 (Orenco Systems, Inc.)
Recirculation Tank Size: 1500 gal
Total Flow: 480 gpd
Pretreatment Unit Dosing Schedule: 16gal/dose @ 120 doses/day
Gal. per dose per orifice (0.08 to 0.25 range) 0.235 Gal
Required Pump: P3005-11 High Head Pump
Required Pump Vault: Biotube Pump Vault PVU 57 2425
Control Panel: Vericomm AXB1 Timer Dose
Disinfection Unit: NA

INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by DEHNR, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.
- Pumptank riser should be 12" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 12" above finished grade.
- The system is designed with Advantex Pretreatment
- System is specified as a pretreated PPBPS installation
- Repair is specified as existing bed system with additional line see design
- Supply line to be sch. 13' 2" sch 40 PVC
  Design requires 3 tanks see design

Pretreatment unit (AX20) should be 6" above finish grade
All tanks must be outfitted with Orenco risers. (Ribbed Risers)
A hose bib shall be located within 50' of Advantex unit for maintanence purposes
A non-dedicated phone line shall be installed and used for the verricomm control panel
Re-circ pump is specified as PF300511
Pump Vault is specified as PVU 57 2425
Control panel is specified as Vericomm AXB1 timer dosed
Effluent filter is specified as FT 0444-36-NC
All tanks should be outfitted for 20" lids and 24" risers

24"

Notes:

All transport & manifold pipe and fittings to be schedule 40.

All risers and lids to have tamper resistant bolts.

AX20 may straddle tank between risers.

AX20 should be bedded with gravel to prevent settling.

Tanks must be approved for use with AdvanTex.

Risers and lids to be a 12" and 2" +/- 1/2" respectively above final grade.

Installation must be done by AQWA certified installer.

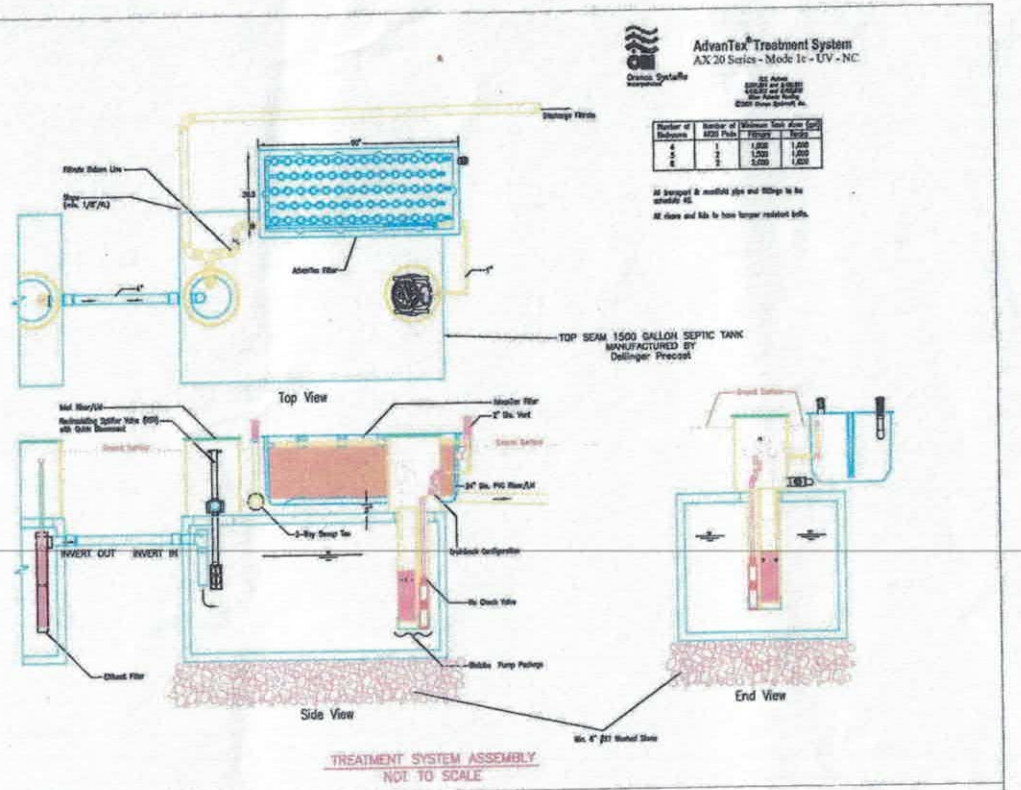
Operation contract must be executed with AQWA Inc. prior to start-up.

Engineer (or designer) must submit approval letter prior to issuance of the Operation Permit

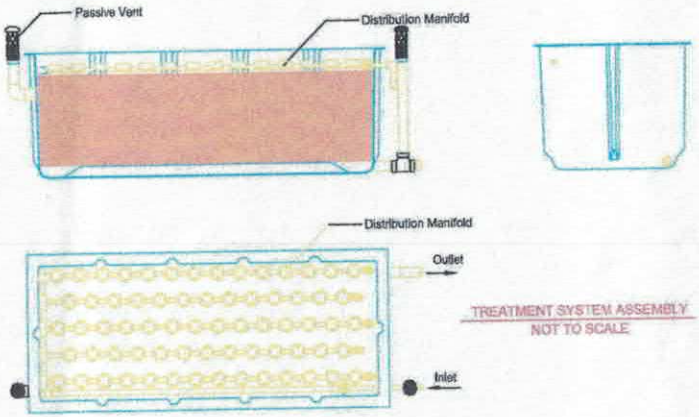
AdvanTex Treatment Systems are used to treat domestic strength wastewater. Industrial cleaners, antibiotics, chemotherapeutic agents, heavy metals, solvents, heavy greases, etc. will have an adverse affect on system performance.

A hose bibb shall be located within 50' of the AdvanTex unit for maintenance purposes.

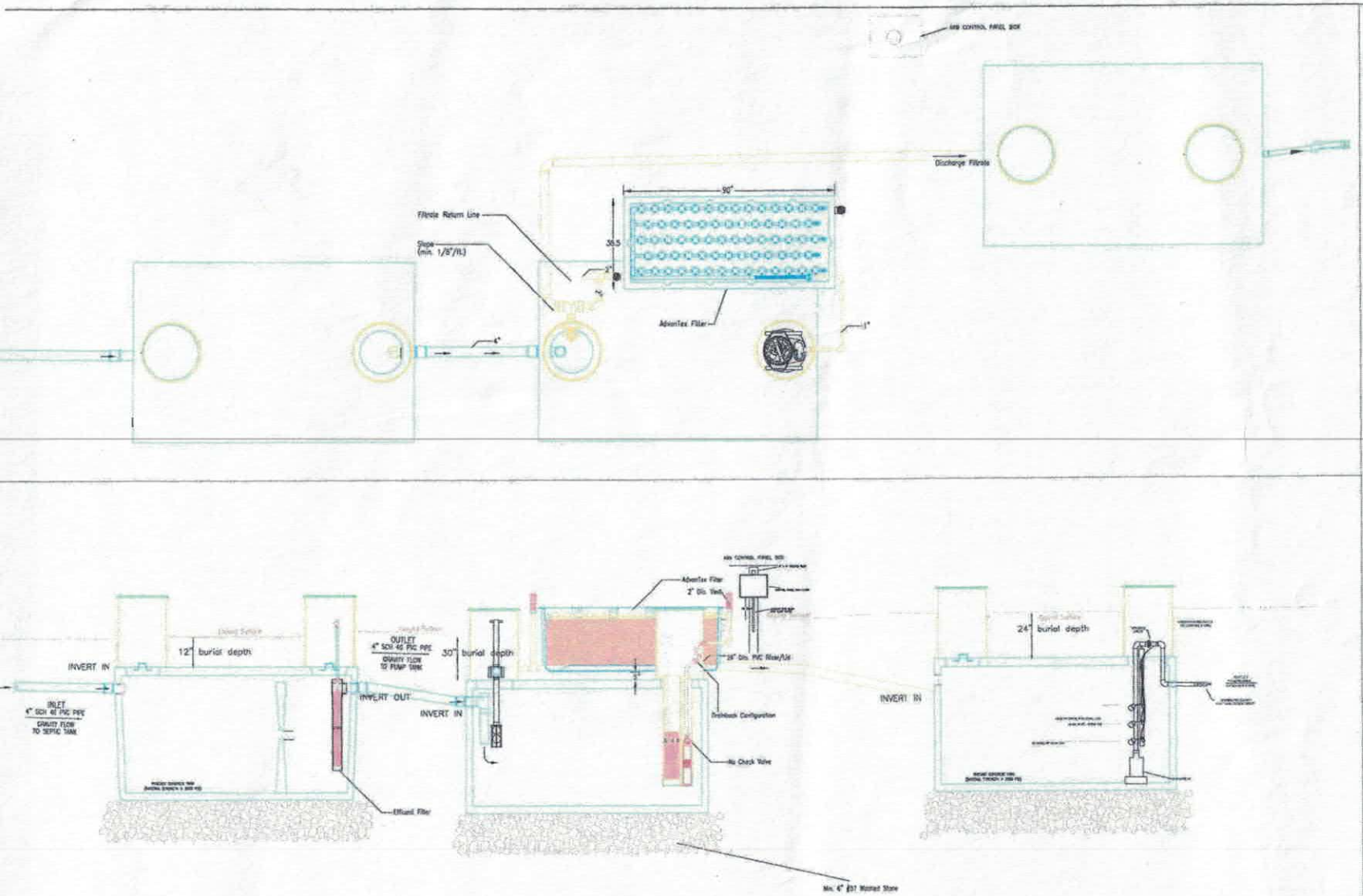
A non-dedicated phone line shall be installed and used for the VerriComm Control Panel.



TREATMENT SYSTEM ASSEMBLY
NOT TO SCALE



TREATMENT SYSTEM ASSEMBLY
NOT TO SCALE



Side View
Not To Scale

CALCULATIONS

Location Normandy Rd

Project Number CEC-141-S

Lot No: NA

Facility 4 Bedroom Home

Design Flow	480 $^{gal}/_{day}$	
LTAR	0.35 $^{gal}/_{ft^2\,day}$	BPJ
Innovative? (YES OR NO)	Yes	
Supply Line Length	13 ft.	
Supply Line Volume	2.262 gal.	
Required Feet of Line	228 ft.	
Amount of Line from Layout	235 ft.	
Gallons per Minute	21.73 $^{gal}/_{min}$	
Required Septic Tank Capacity	1500 gal.	
Minimum Standard Tank Size	1500	
Lateral Line Volume	18.33 gal.	
Dosing Volume	190.80 gal.	

Note: Dosing Volume based on 3.6 Gal per panel

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
20.2	0.89
21.73	1.27
	-0.07
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
40.67	3.13
45	3.77
48.14	4.28
50	4.58
53.28	5.18
58.47	6.14
60	6.42

Tank Draw Down	6.6	*Generic Draw Down of 29 gal.per in.*
Pump Run Time	8.78 minutes	
Estimated Elevation Head	5 ft.	
Pressure Head	2 ft.	
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	0.17 ft.	
Total Dynamic Head (+15%)	11.69 ft.	

Normandy

SYSTEM

DESIGN SPECIFICATIONS

Line #	Color	#Panels	#Holes Panel	Line Length	Hole Size	Line Head	Line Flow
1	Red	9	1	40	5/32"	2.0	3.69
2	Pink	9	1	40	5/32"	2.0	3.69
3	Blue	8	1	35	5/32"	2.0	3.28
4	Yellow	9	1	40	5/32"	2.0	3.69
5	Orange	9	1	40	5/32"	2.0	3.69
6	Red	9	1	40	5/32"	2.0	3.69
	Total	**53**		**235**			**21.73**

Normandy

ct No. CEC-141-S

LAYOUT FOR 4 BEDROOM HOME

Dec-10

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH
TBM		5.7			100.0	
INSTR. 1			105.7			
			SYSTEM			
1	Red			2.10	103.6	40
2	Pink			3.30	102.4	40
3	Blue			4.80	100.9	35
4	Yellow			7.90	97.8	40
5	Orange			9.20	96.5	40
6	Red			10.40	95.3	40
					Total	**235**
			REPAIR			
1	Red					30
2	Pink					33

Existing Bed system

Total

	LINE LENGTH	LTAR GPD/FT	SYSTEM TYPE	DISTRIBUTION
SYSTEM	235	0.35	PPBPS	LP
REPAIR		0.35	Pretreated PPBPS and Bed	D-box

Notes:

** TBM of system = front eip

**TBM is assumed to be 100'

**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**BS and FS indicate rod readings

Normandy Iredell County NC
Dosing Tank - Pump Schedule

Dose **190.8gal @21.73gpm = 8.78 min pump run time**

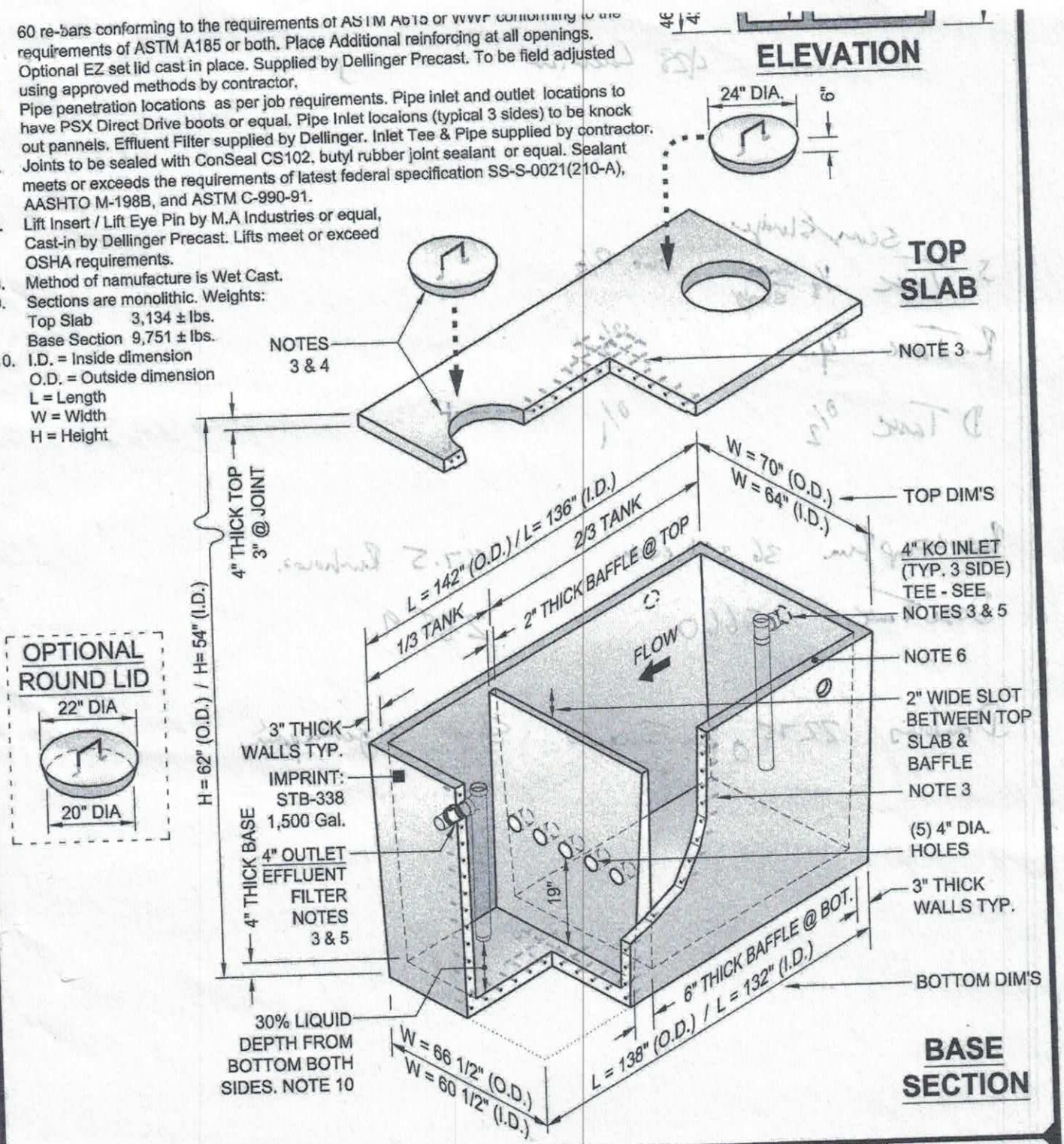
Dosing tank dosing schedule based on demand dosed system

Re-circulating tank - Pump Schedule

Dose Volume: 16
Re-circulating doses per day: 120
Re-circulating doses per day: 0.75 min per dose (0.75x120 = 90 min per day)
Doses to dosing tank per day: 30

60 re-bars conforming to the requirements of ASTM A615 or WWF conforming to the requirements of ASTM A185 or both. Place Additional reinforcing at all openings.

4. Optional EZ set lid cast in place. Supplied by Dellinger Precast. To be field adjusted using approved methods by contractor.
5. Pipe penetration locations as per job requirements. Pipe inlet and outlet locations to have PSX Direct Drive boots or equal. Pipe Inlet locaions (typical 3 sides) to be knock out pannels. Effluent Filter supplied by Dellinger. Inlet Tee & Pipe supplied by contractor.
6. Joints to be sealed with ConSeal CS102, butyl rubber joint sealant or equal. Sealant meets or exceeds the requirements of latest federal specification SS-S-0021(210-A), AASHTO M-198B, and ASTM C-990-91.
7. Lift Insert / Lift Eye Pin by M.A Industries or equal, Cast-in by Dellinger Precast. Lifts meet or exceed OSHA requirements.
8. Method of namufacture is Wet Cast.
9. Sections are monolithic. Weights:
   Top Slab 3,134 ± lbs.
   Base Section 9,751 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height



DELLINGER PRECAST

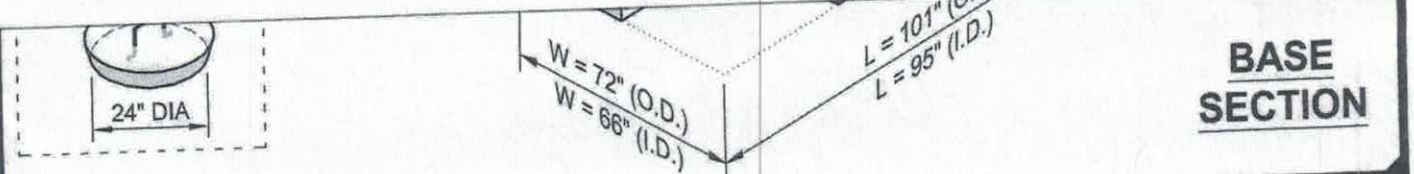
4531 North Hwy 16 ▪ Denver, N.C. 28037 ▪ Phone: 800-948-1666 ▪ 704-483-2868 ▪ Fax: 704-483-2363

1,500 Gallon (Top Slab) SEPTIC TANK

Scale: Not To Scale

Revision Date: February 2008

Detail # ST-1,500-TS



Scale:

4/28 Lakeview

S. Tank	1/8 scum/sludge	out 0/8
R. Tank	0/4.	0/3.
D Tank	0/2	0/1

Reserve Pump Run	36,321 cycles	967.5 Run hours.
Dose Tank	5660	238.9.

Drawings 22.75 0 per Inspector Start 21 gallons/min