

- GENERAL NOTES:**
- SINGULAR AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
  - FALL THROUGH SINGULAR<sup>2</sup> PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
  - ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC SYSTEM MOUNTING CASTING TO GRADE.
  - TANK REINFORCED PER ACI STD. 318-05.
  - REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
  - CONTACT THE LOCAL LICENSED SINGULAR DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

**PROJECT ENGINEER'S APPROVAL:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CRITICAL DIMENSIONS**

A	1'-0"	H	0'-3"
B	3'-0"	I	0'-6"
C	3'-4"	J	0'-3"
D	4'-5"	K	1'-4"
E	3'-7"	L	3'-8"
F	12'-2"	M	5'-0"
G	1'-0"	N	2'-0"
H	4'-0"	O	6'-0"
I	0'-3"	P	0'-3"
J	0'-3"	Q	0'-3"
K	1'-0"	R	0'-2"
L	0'-2"	S	0'-2"
M	3'-6"	T	0'-2"

U.S. AND FOREIGN PATENTS PENDING

**norweco** 3-28-07 B

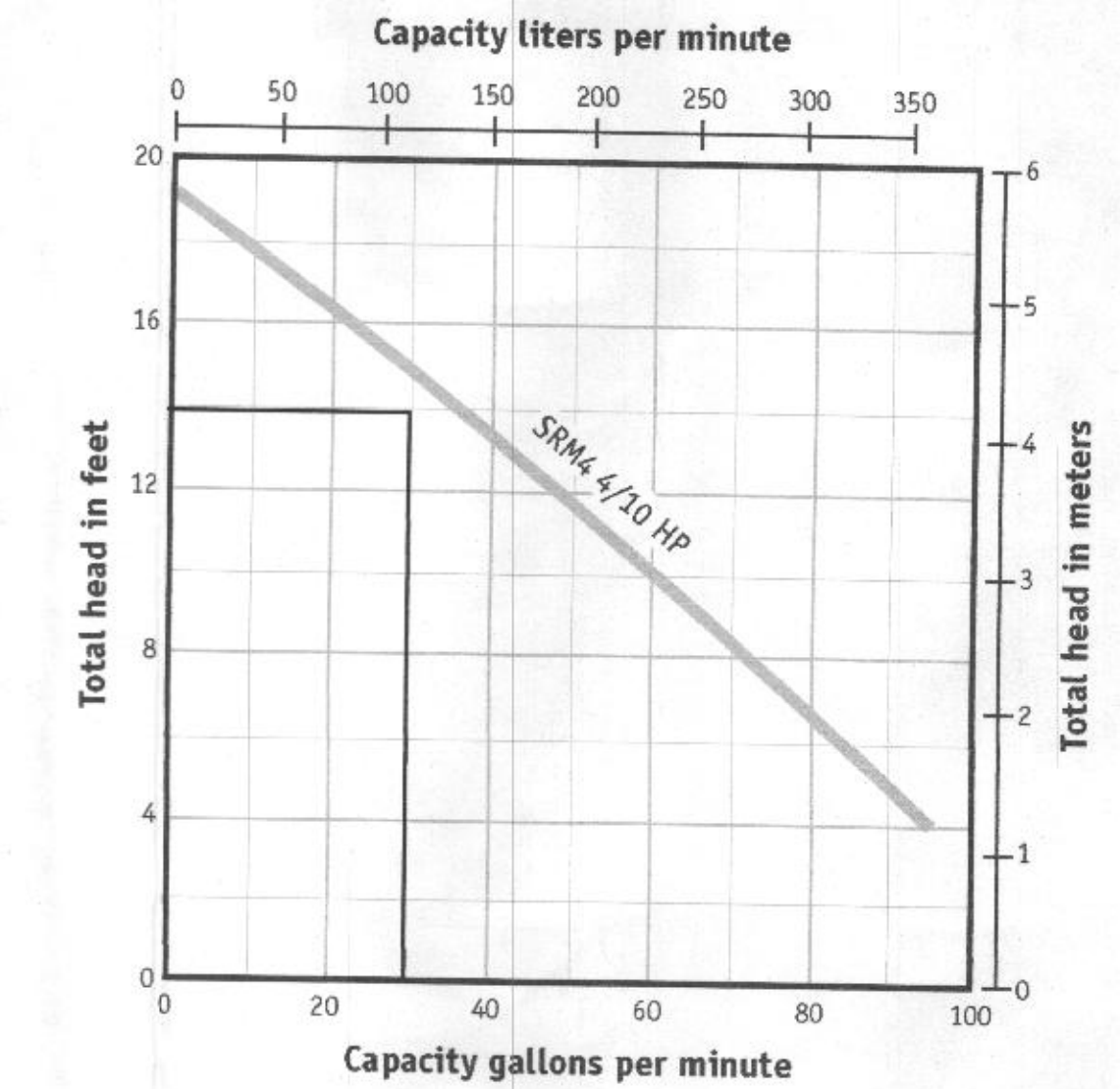
LOW-PROFILE SINGULAR<sup>2</sup> BIO-KINETIC WASTEWATER TREATMENT SYSTEM  
MODEL THT1P-500 GPD

DATE: 10-18-08  
PC-S-7091

**NOTE: TANK HAS MORE THAN 3 FEET OF COVER, SO MUST BE TRAFFIC BEARING.**

**NOTE: TOTAL SYSTEM CAPACITY: 1,300 GALLONS  
RATED CAPACITY: 500 GALLONS PER DAY**

**PUMP PERFORMANCE**



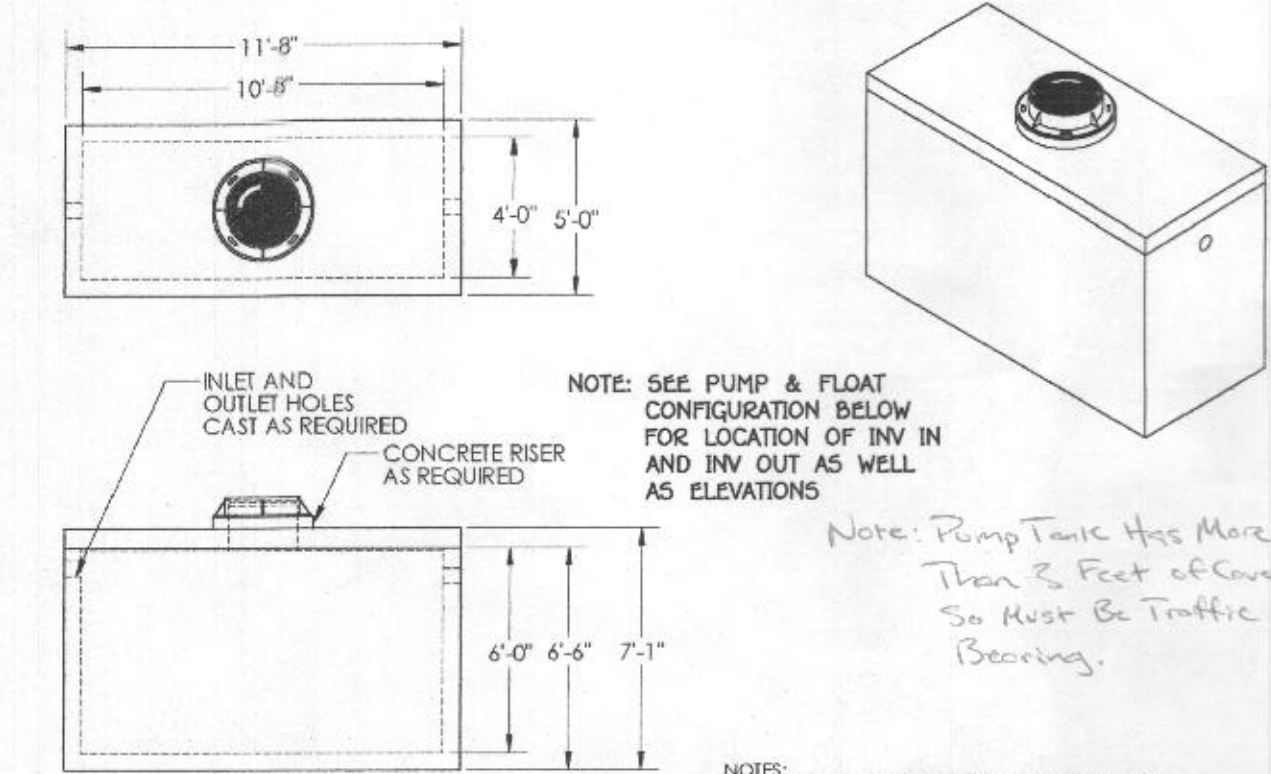
**ORDERING INFORMATION**

Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
SRM2P	4/10	115	1/60	12	2"	Tethered Automatic*	10'	43
SRM4PC-1	4/10	115	1/60	12	2"	Tethered Automatic*	20'	48
SRM4M1	4/10	115	1/60	12	2"	Manual	20'	39
SRM4PC-2	4/10	230	1/60	6	2"	Tethered Automatic*	20'	48
SRM4M2C	4/10	230	1/60	6	2"	Manual	20'	39
SRM4V-1	4/10	115	1/60	12	2"	Vertical Automatic*	20'	45
SRM4V-2	4/10	230	1/60	6	2"	Vertical Automatic*	20'	40
SRM4D-1	4/10	115	1/60	12	2"	Diaphragm Automatic*	20'	40

\*Piggyback style switch



**NOTE: USE A MYERS SRM4 PUMP**



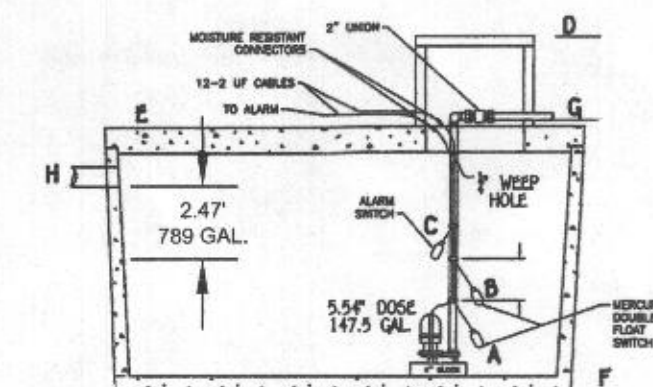
**NOTE: SEE PUMP & FLOAT CONFIGURATION BELOW FOR LOCATION OF INV IN AND INV OUT AS WELL AS ELEVATIONS**

*Note: Pump Tank Has More Than 3 Feet of Cover So Must Be Traffic Bearing.*

- NOTES:**
- CONCRETE TO BE 5000 PSI MIN. @ 28 DAYS
  - REINFORCING TO BE PER ASTM A615, GRADE 60
  - MAX DEPTH 6" BELOW GRADE - EXTRA STEEL REQUIRED

**MONARCH PRODUCTS COMPANY, INC.**  
YORK HAVEN, PA.  
717-908-8303  
www.MonarchProducts.net

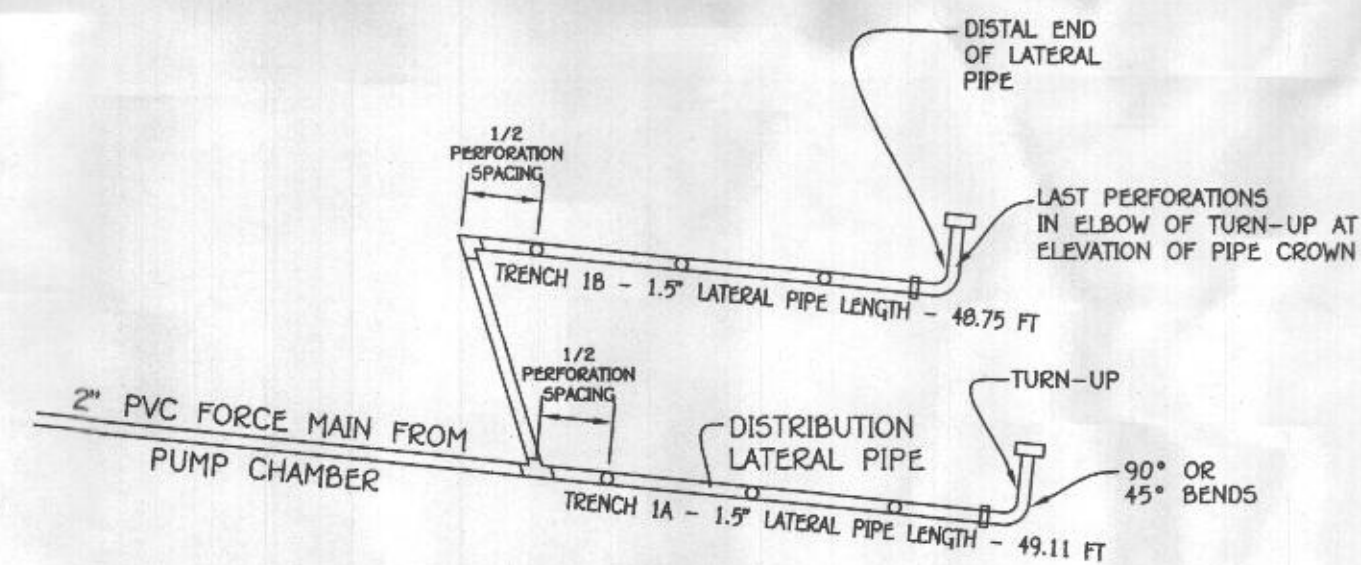
DATE: 10/22/2015  
TITLE: 1500 GAL PUMP TANK  
JOB NAME: PUMP TANK  
TOTAL STRUCTURE WEIGHT: 24020 lbs



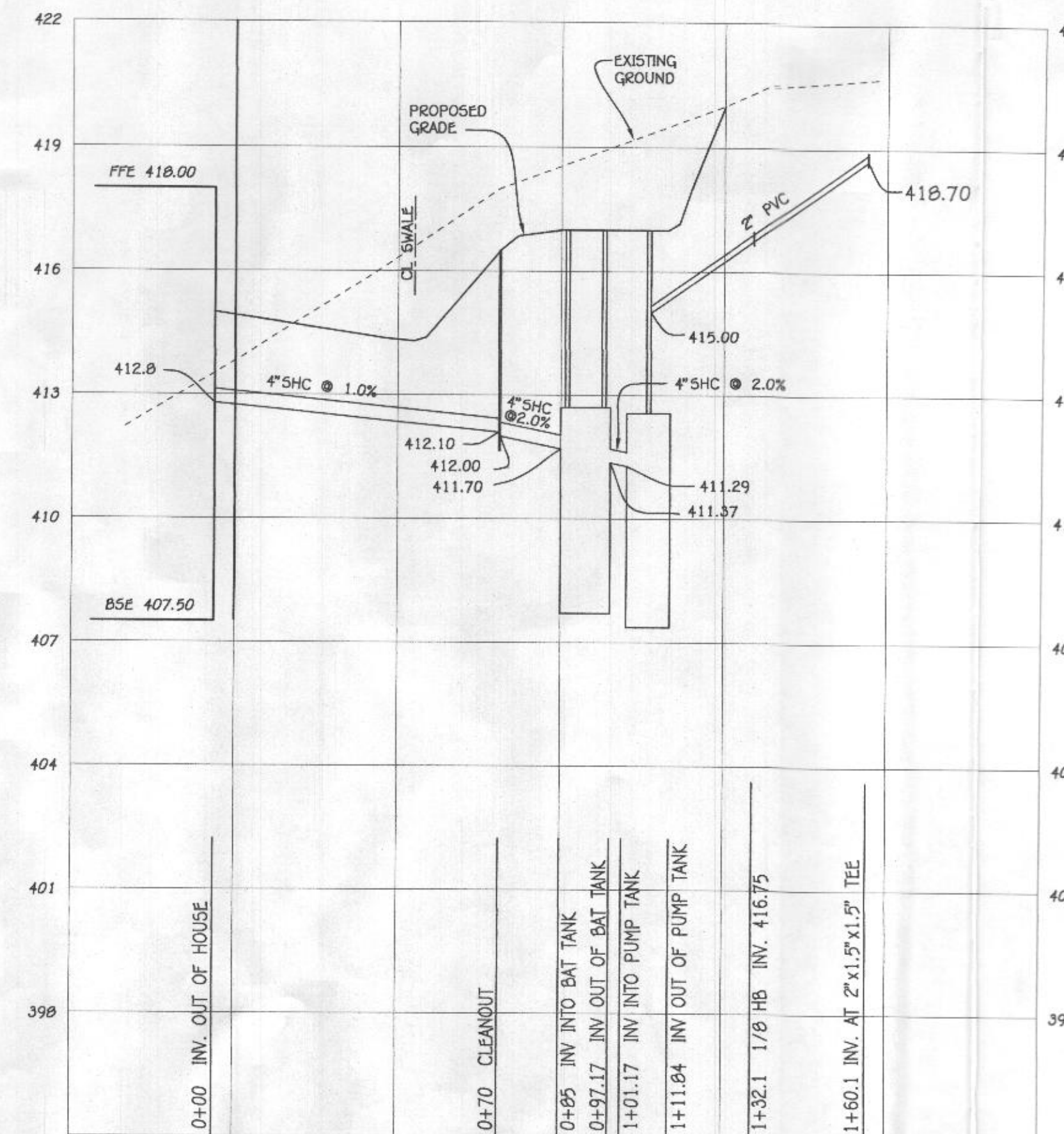
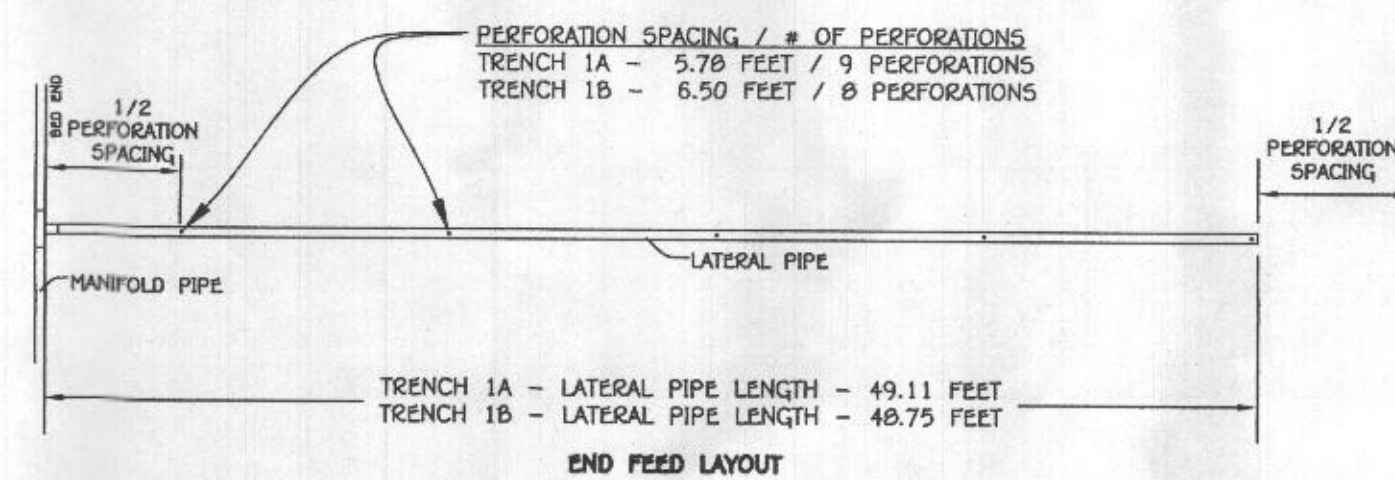
- PUMP ALARMS / INFORMATION**
- A PUMP OFF : 407.92
  - B PUMP ON : 408.30
  - C HIGH WATER ALARM : 408.84
  - D TOP OF ACCESS COVER : 417.00
  - E TOP OF TANK : 412.56
  - F BOTTOM OF TANK : 405.48
  - G DISCHARGE OUT OF TANK : 415.00
  - H INVERT INTO TANK : 411.31

**NOTE: SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.**

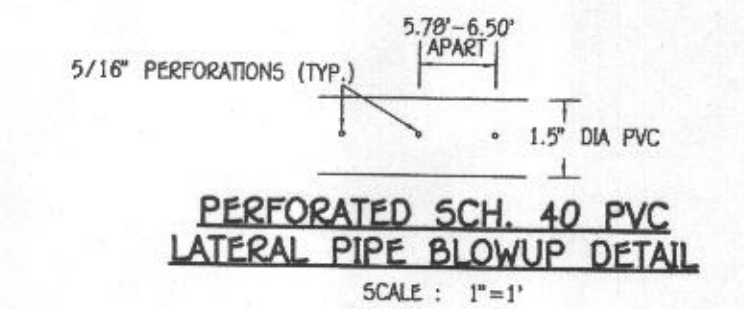
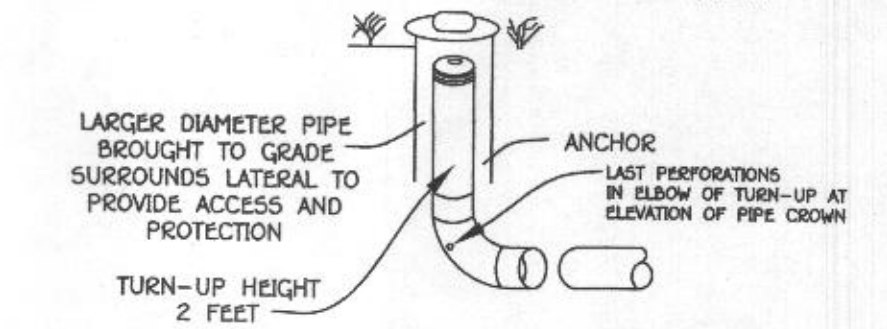
TOTAL EMERGENCY STORAGE = 789 GAL.  
**NOTE: THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.**



**FIGURE 4.1 END FEED MANIFOLD DISTRIBUTION NETWORK**



**NOTE: PLACE AN OBSERVATION PIPE IN THE GRAVEL BED AT THE DISTAL END OF EACH TRENCH SEGMENT.**



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2018.

*Stephen J. [Signature]* 11/8/17  
DATE: 11/8/17



**BAT PROFILE**

HORIZONTAL SCALE : 1"=30'  
VERTICAL SCALE : 1"=3'

**BAT SITE PLAN**  
**CHAPEL RISE, LOT 2**  
11540 CHAPEL RISE  
ZONED RC-DEO PLAT NO. 22022  
TAX MAP NO.: 29 GRID NO'S.: 8 & 14  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: NOVEMBER, 2017  
SHEET 2 OF 2

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALFOUR NATIONAL PIKE  
GLUCCIOTT CITY, MARYLAND 21086  
(410) 481 - 2895

**OWNER**  
K-ONE CORPORATION  
209 RIVER BEND ROAD  
GREAT FALLS, VA 22066  
(703)-757-8757

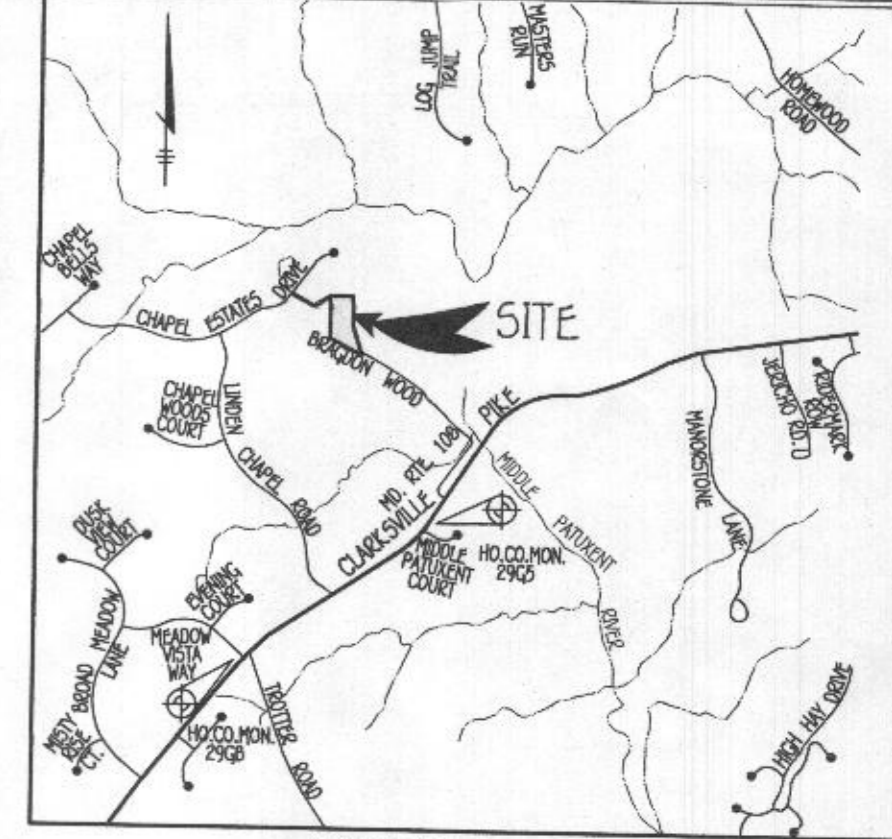
CHAPEL ESTATE DRIVE  
 (EXISTING PUBLIC COUNTY ROAD)  
 30' R.W. P.N. 2328 & 12380  
 N37°23'33"E 394.7'

562°37'39"E 261.94'  
 N62°37'39"W 204.43'

N60°00'00"E 197.07'  
 S60°00'00"W 197.97'

N90°00'00"E 239.52'  
 LOT 2  
 AREA = 3.0378 AC  
 ZONE: RC-DEO

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
X362.5	SPOT ELEVATION
-DF-DF-	DIVERSION FENCE
-SF-SF-	SUPER SILT FENCE
-SF-SF-	SILT FENCE
---	EROSION CONTROL MATTING
---	LIMITS OF DISTURBANCE
○	SPECIMEN TREE
○	TEMPORARY STONE OUTLET STRUCTURES
○	1005 FAILED PERC HOLE
○	1001 PASSED PERC HOLE



TRENCH DESIGN											
TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	PIPE INVERT ELEV.	DEPTH TO STONE FROM GROUND	DEPTH OF TRENCH	BOTTOM OF STONE ELEV.	EFFECTIVE DEPTH STARTS AT	EFFECTIVE DEPTH (D)	TRENCH DEPTH	WIDTH OF TRENCHES (W)	TRENCH SPACING
1A	420.7	419.2	418.7	1.5'	3.5'	415.7	2'	3'	5'	3.0'	10'
1B	420.1	419.6	418.1	1.5'	3.5'	415.1	2'	3'	5'	3.0'	10'

LOW PRESSURE DOSING SYSTEM - INITIAL INSTALLATION										
TRENCH	GROUND ELEV.	PIPE INVERT ELEV.	TRENCH LENGTH (FT)	LATERAL PIPE LENGTH (FT)	PERFORATION DIAMETER (IN)	HEAD (FT)	PERFORATION FLOW RATE (GPM)	PERFORATION SPACING (FT)	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)
1A	420.7	418.7	52	49.11	5/16	2	1.63	5.78	9	14.67
1B	420.1	418.1	52	48.75	5/16	2.6	1.85	6.50	8	14.80
TOTAL TRENCH FLOW RATE										29.47

FRICITION LOSS IN 2" PIPE FITTINGS:  
 1 1/8 HD x 4 FEET PER FITTING = 4 EQUIVALENT FEET OF PIPE  
 1 TEE/CROSS x 11 FEET PER FITTING = 11 EQUIVALENT FEET OF PIPE  
 1 UNION x 2 FEET PER FITTING = 2 EQUIVALENT FEET OF PIPE  
 1 ELBOWS x 9 FEET PER FITTING = 9 EQUIVALENT FEET OF PIPE  
 TOTAL EQUIVALENT FEET OF PIPE = 26 FT

TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 48.3 LF + 26 LF = 74.3 LF

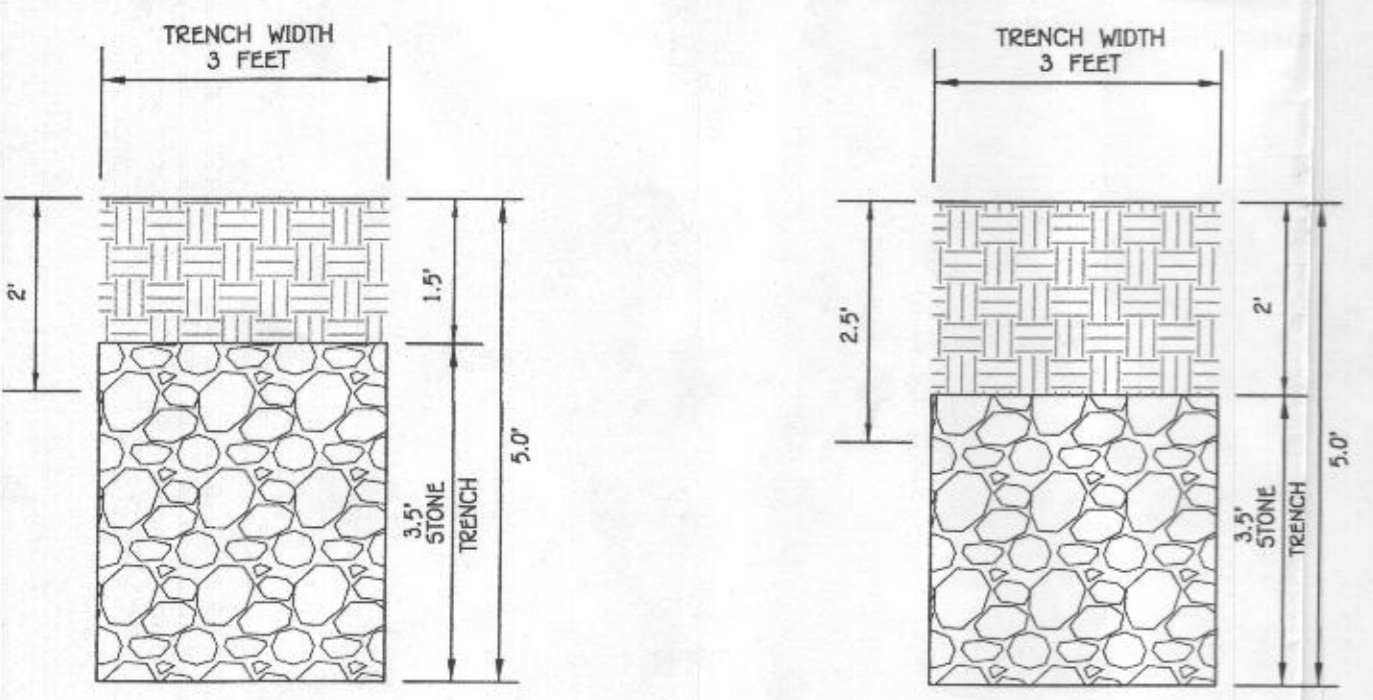
DYNAMIC HEAD  
 74.3 LF X 1.5 FT PER 100 LF OF PIPE = 1.1 FT OF FRICTION HEAD  
 DISTAL HEAD = 2.0 FT  
 VERTICAL FROM PUMP OFF TO DISCHARGE = 7.1 FT OF STATIC HEAD  
 VERTICAL FROM DISCHARGE TO HIGHEST ELEV OF MAIN = 3.7 FT  
 TOTAL DYNAMIC HEAD = 13.9 FT

PIPE VOLUMES  
 48.3 LF (2" SCH. 40 PIPE) X 17.4 GALLONS PER 100 LF = 8.4 GALLONS  
 97.86 LF (1.5" SCH. 40 PIPE) X 10.6 GALLONS PER 100 LF = 10.4 GALLONS

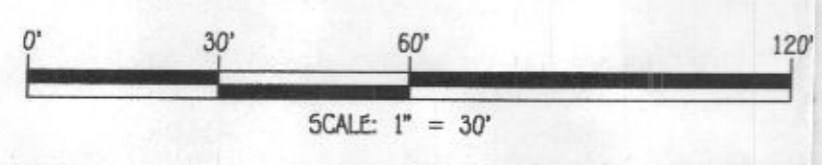
MINIMUM DOSE  
 MINIMUM DOSE = (5 X LATERAL PIPE VOLUME) + (FORCE MAIN & MANIFOLD)  
 = (5 X 10.4) + (8.4)  
 = 60.4 GALLONS

60.4 GALLONS IS LESS THAN 1/6 DESIGN FLOW (750/6=125)  
 USE 147.5 GALLON DOSE (125 GALLON MINIMUM)  
 (RUN TIME = 5 MIN (29.5 GPM X 5 = 147.5 GALLON DOSE))

PUMP NEEDS TO HANDLE 29.5 GPM AT 14.4 FT OF HEAD  
 USE 0.4 HP (MYERS SRM4 PUMP)



INITIAL TRENCH DETAIL SCALE: 1"=2'  
 1ST REPLACEMENT TRENCH DETAIL SCALE: 1"=2'



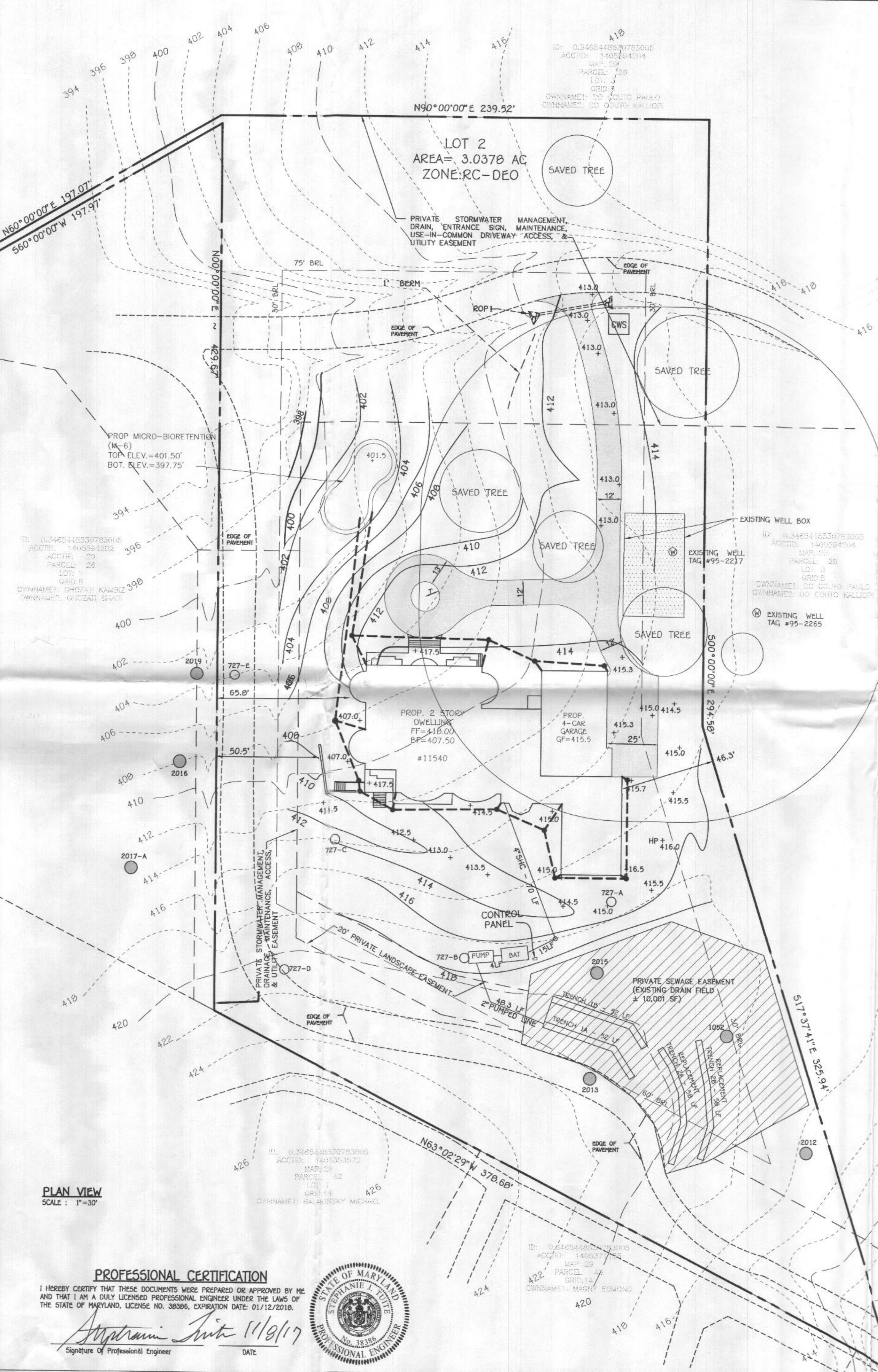
OWNER  
 K-ONE CORPORATION  
 209 RIVER BEND ROAD  
 GREAT FALLS, VA 22066  
 (703)-797-8757

PLAN VIEW  
 SCALE: 1"=30'

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2018.

Signature of Professional Engineer: *Stephen J. Lutz* DATE: 11/18/17



BAT NOTES

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- SINCE COVER OVER THE BAT AND PUMP TANK EXCEEDS 3 FEET, TRAFFIC BEARING TANKS TO BE INSTALLED.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
- ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- AN AGREEMENT AND EASEMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER 1 FOLIO
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- SURFACE RUNOFF SHALL BE DIRECTED AROUND THE BAT TANK.

SEPTIC SYSTEM ELEVATIONS

- FFE = 418.00
- BSE = 407.50
- INV. OUT OF HOUSE = 412.8
- PROP GROUND AT C/O = 416.5
- INTO C/O = 412.10
- INV. OUT OF C/O = 412.00
- PROP GROUND AT BAT TANK = 417.0
- TOP OF BAT TANK = 412.70
- COVER OVER BAT TANK = 4.3 FT
- INVERT INTO BAT TANK = 411.70
- INVERT OUT OF BAT TANK = 411.37
- PROP GROUND AT PUMP TANK = 417.0
- TOP OF PUMP TANK = 412.56
- COVER OVER PUMP TANK = 4.44 FEET
- INVERT INTO PUMP TANK = 411.31
- INVERT OUT OF PUMP TANK = 415.00

SEWAGE DISPOSAL SYSTEM DATA (INITIAL)

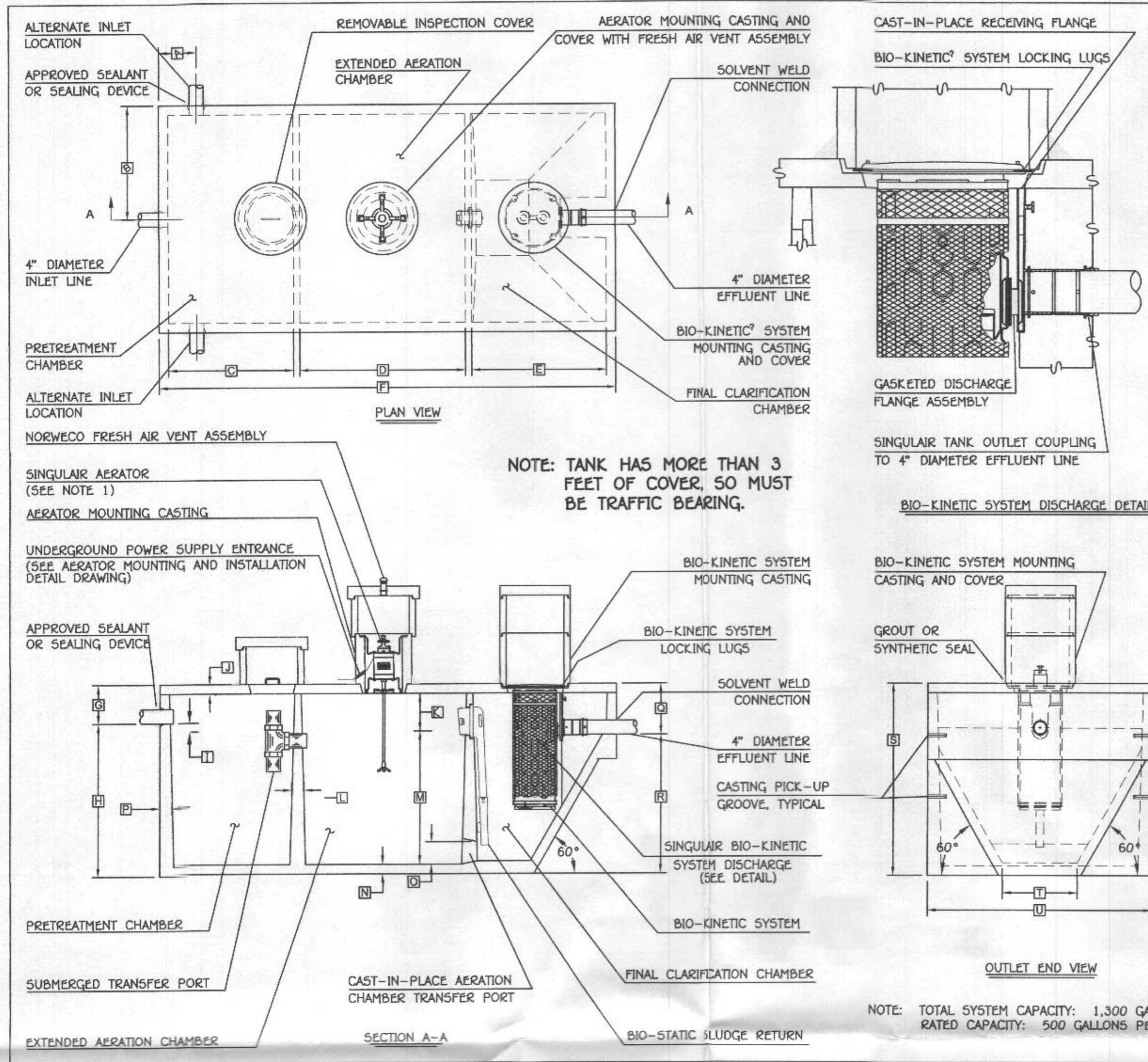
- 5 BEDROOMS
- LOADING RATE = 5 BEDROOMS X 150 GPD/BEDROOM = 750 GPD
- APPLICATION RATE = 1.2
- EFFECTIVE SIDEWALL BEGINS AT 2 FEET
- TRENCH DEPTH = 5 FEET
- TRENCH WIDTH (W) = 3 FEET
- EFFECTIVE DEPTH (D) = 3 FEET
- SF OF DRAINFIELD = 750 GPD / 1.2 = 625 SF
- COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+(2x3)) = 0.50
- TRENCH LENGTH = 625 SF x 0.50 / 3 = 104.2 FEET
- TRENCH SPACING = 2D+W = ((2x3) + 3) = 9 USE 10'

SEWAGE DISPOSAL SYSTEM DATA (FIRST REPLACEMENT)

- 5 BEDROOMS
- LOADING RATE = 5 BEDROOMS X 150 GPD/BEDROOM = 750 GPD
- APPLICATION RATE = 1.2
- EFFECTIVE SIDEWALL BEGINS AT 2.5 FEET
- TRENCH DEPTH = 5 FEET
- TRENCH WIDTH (W) = 3 FEET
- EFFECTIVE DEPTH (D) = 2.5 FEET
- SF OF DRAINFIELD = 750 GPD / 1.2 = 625 SF
- COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+(2x2.5)) = 0.556
- TRENCH LENGTH = 625 SF x 0.556 / 3 = 115.0 FEET
- TRENCH SPACING = 2D+W = ((2x2.5) + 3) = 8 USE 10'

Approved Septic System Plan  
 Howard County Health Department  
 Signature: *[Signature]* Date: 11/17/17

BAT SITE PLAN  
 CHAPEL RISE, LOT 2  
 11540 CHAPEL RISE  
 ZONED RC-DEO PLAT NO. 22022  
 TAX MAP NO.: 29 GRID NO.: 8 & 14  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: NOVEMBER, 2017  
 SHEET 1 OF 2



**GENERAL NOTES:**

- SINGULAR AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
- FALL THROUGH SINGULAR<sup>®</sup> PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC SYSTEM MOUNTING CASTING TO GRADE.
- TANK REINFORCED PER ACI STD. 318-05.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL, LICENSED SINGULAR DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

**PROJECT ENGINEER'S APPROVAL:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CRITICAL DIMENSIONS**

A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	3'-8"
F	12'-2"	S	5'-0"
G	1'-0"	T	2'-0"
H	4'-0"	U	6'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
M	3'-6"	Z	

U.S. AND FOREIGN PATENTS PENDING

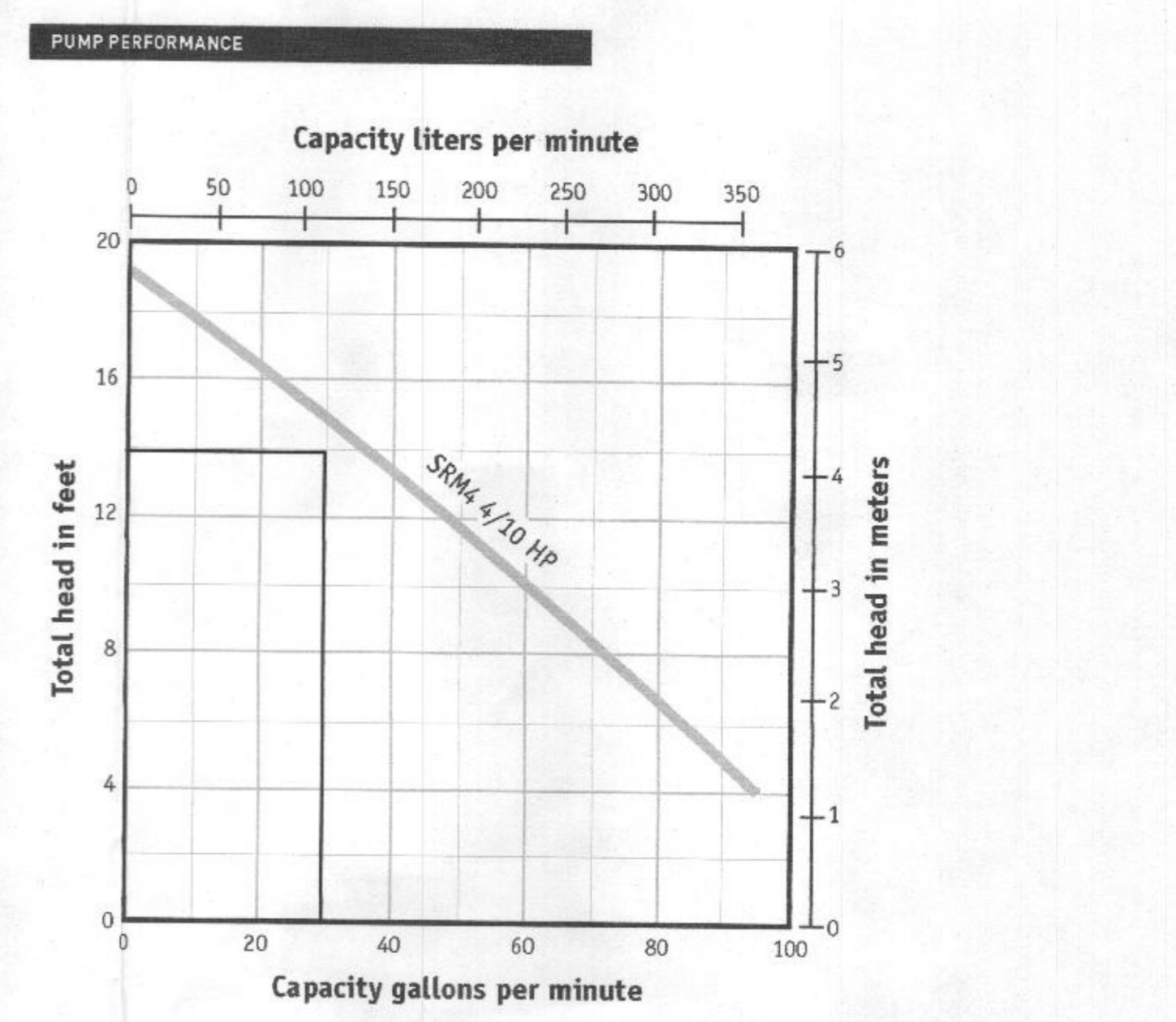
**norweco** 3-20-07 B

LOW-PROFILE SINGULAR<sup>®</sup> BIO-KINETIC WASTEWATER TREATMENT SYSTEM  
MODEL: INTL-500 (P)

DATE: 10-16-08

NTS

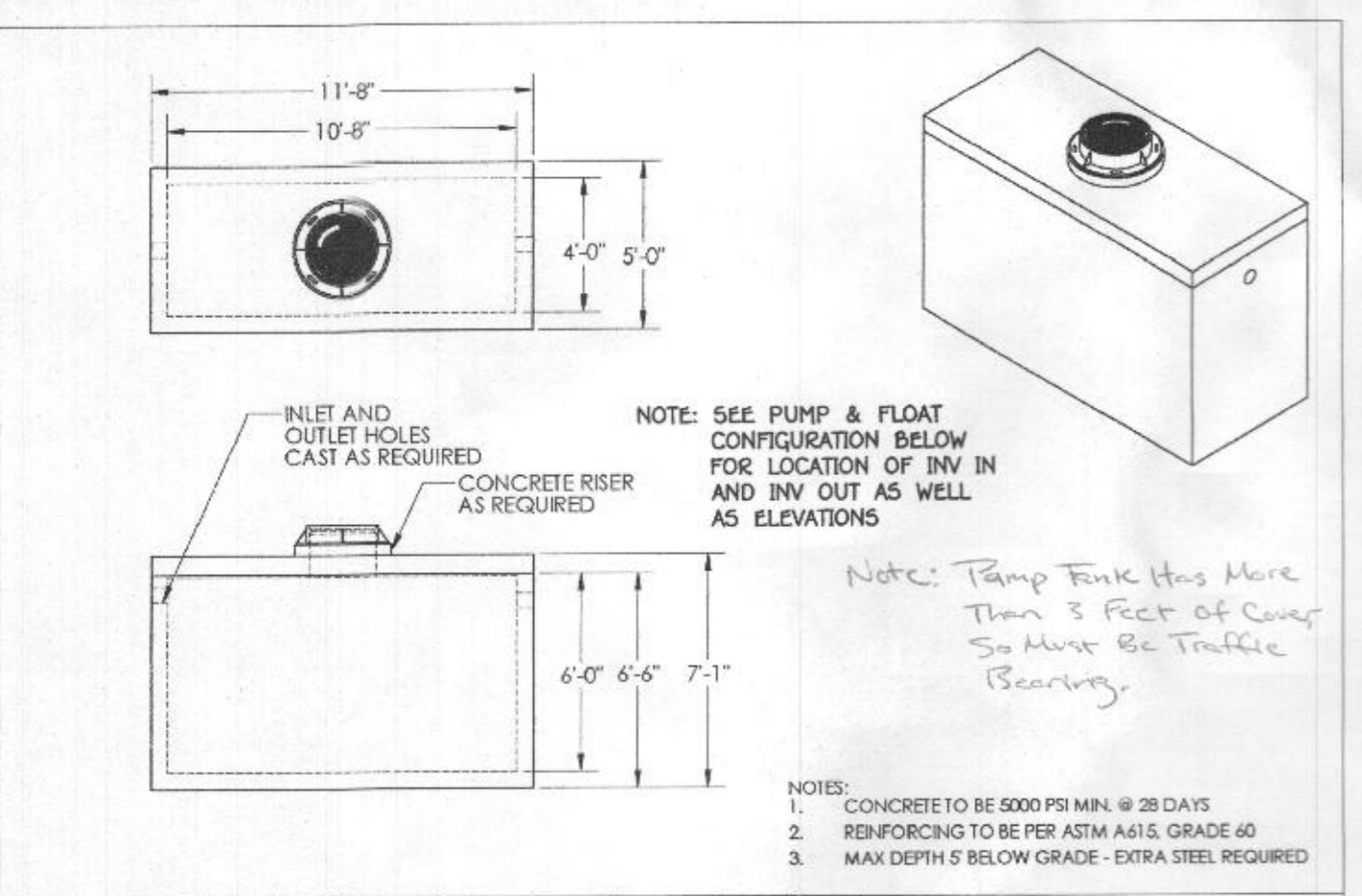
PC-5-7091



**ORDERING INFORMATION**

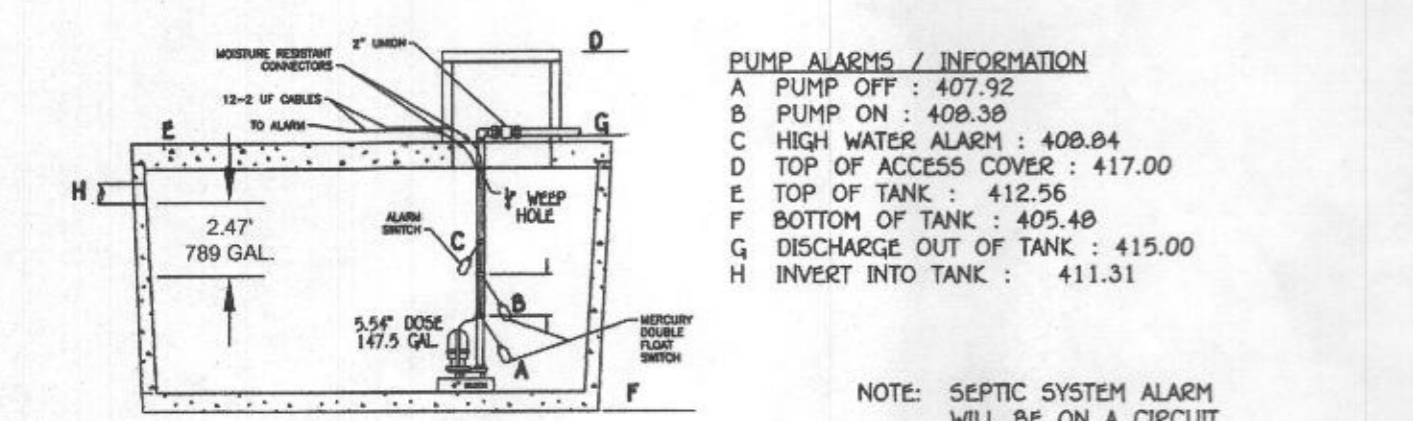
Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
SRM4P	4/10	115	1/60	12	2"	Tethered Automatic*	10'	40
SRM4PC-1	4/10	115	1/60	12	2"	Tethered Automatic*	20'	40
SRM4M1	4/10	115	1/60	12	2"	Manual	20'	39
SRM4PC-2	4/10	230	1/60	6	2"	Tethered Automatic*	20'	40
SRM4M2	4/10	230	1/60	6	2"	Manual	20'	39
SRM4V-1	4/10	115	1/60	12	2"	Vertical Automatic*	20'	40
SRM4V-2	4/10	230	1/60	6	2"	Vertical Automatic*	20'	40
SRM4D-1	4/10	115	1/60	12	2"	Diaphragm Automatic*	20'	40

\*Piggyback style switch



**MONARCH PRODUCTS COMPANY, INC.**  
YORK HAVEN, PA.  
717-538-5303  
www.MonarchProducts.net

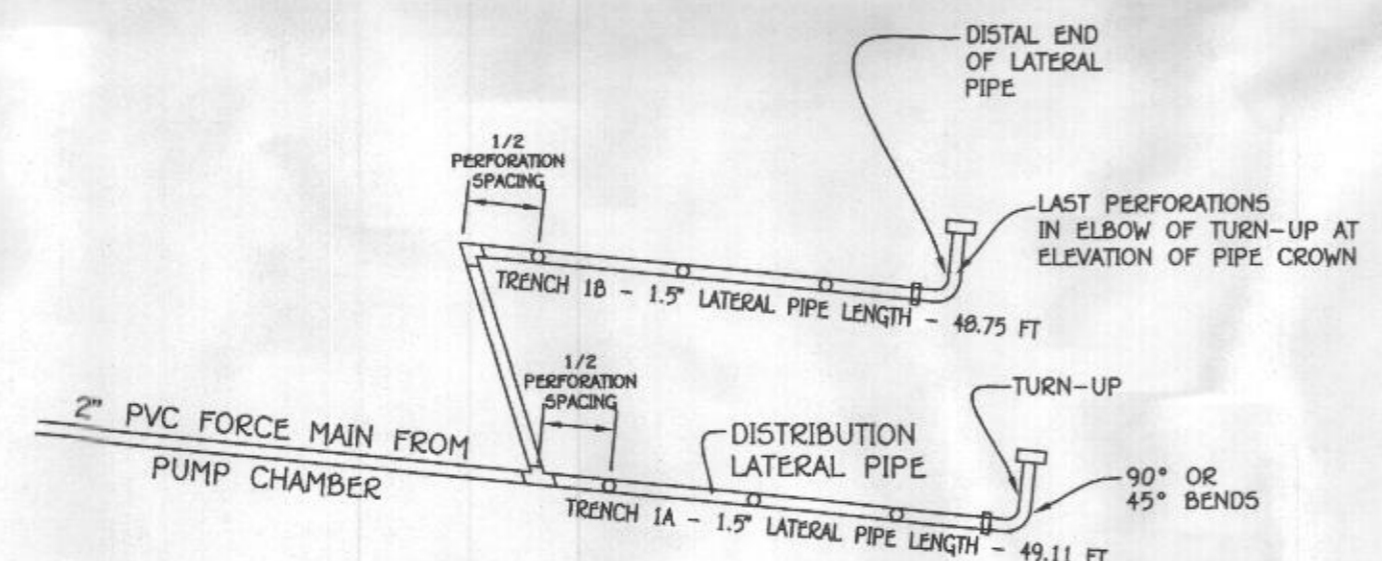
NAME: 1500 GAL PUMP TANK  
JOB NAME: PUMP TANK  
TOTAL STRUCTURE WEIGHT: 24020 lbs



**PUMP ALARMS / INFORMATION**

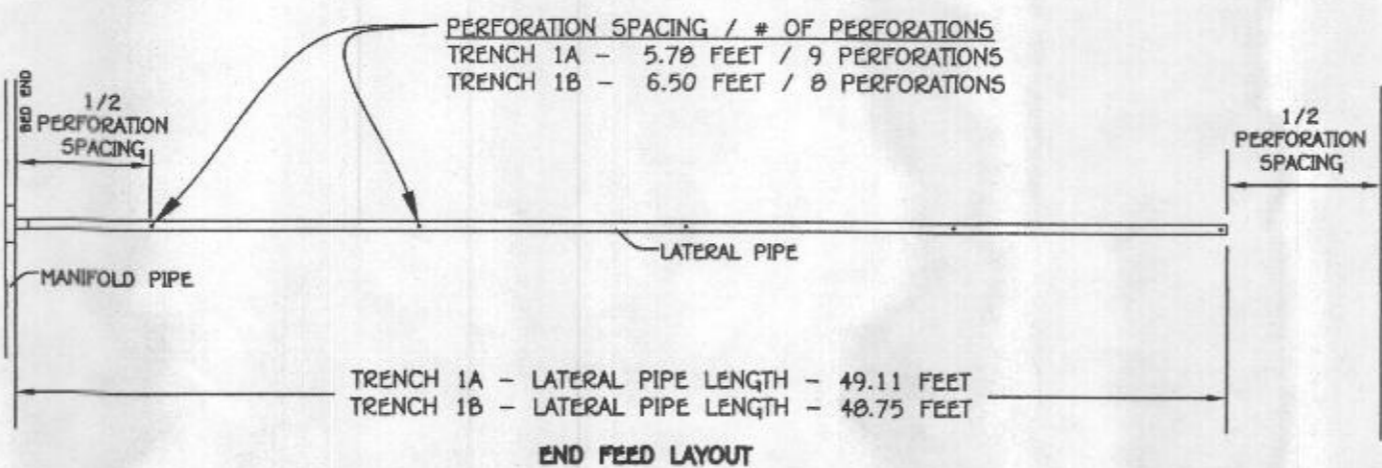
A PUMP OFF: 407.92  
B PUMP ON: 409.39  
C HIGH WATER ALARM: 408.84  
D TOP OF ACCESS COVER: 417.00  
E TOP OF TANK: 412.56  
F BOTTOM OF TANK: 405.48  
G DISCHARGE OUT OF TANK: 415.00  
H INVERT INTO TANK: 411.31

NOTE: SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.



NOTE: SEE PLAN VIEW FOR LATERAL PIPE CONFIGURATION / HORIZONTAL BENDS, DETAIL TO SHOW SPACING AND TURN UPS ONLY.

**FIGURE 4.1 END FEED MANIFOLD DISTRIBUTION NETWORK**



**PERFORATION SPACING / # OF PERFORATIONS**

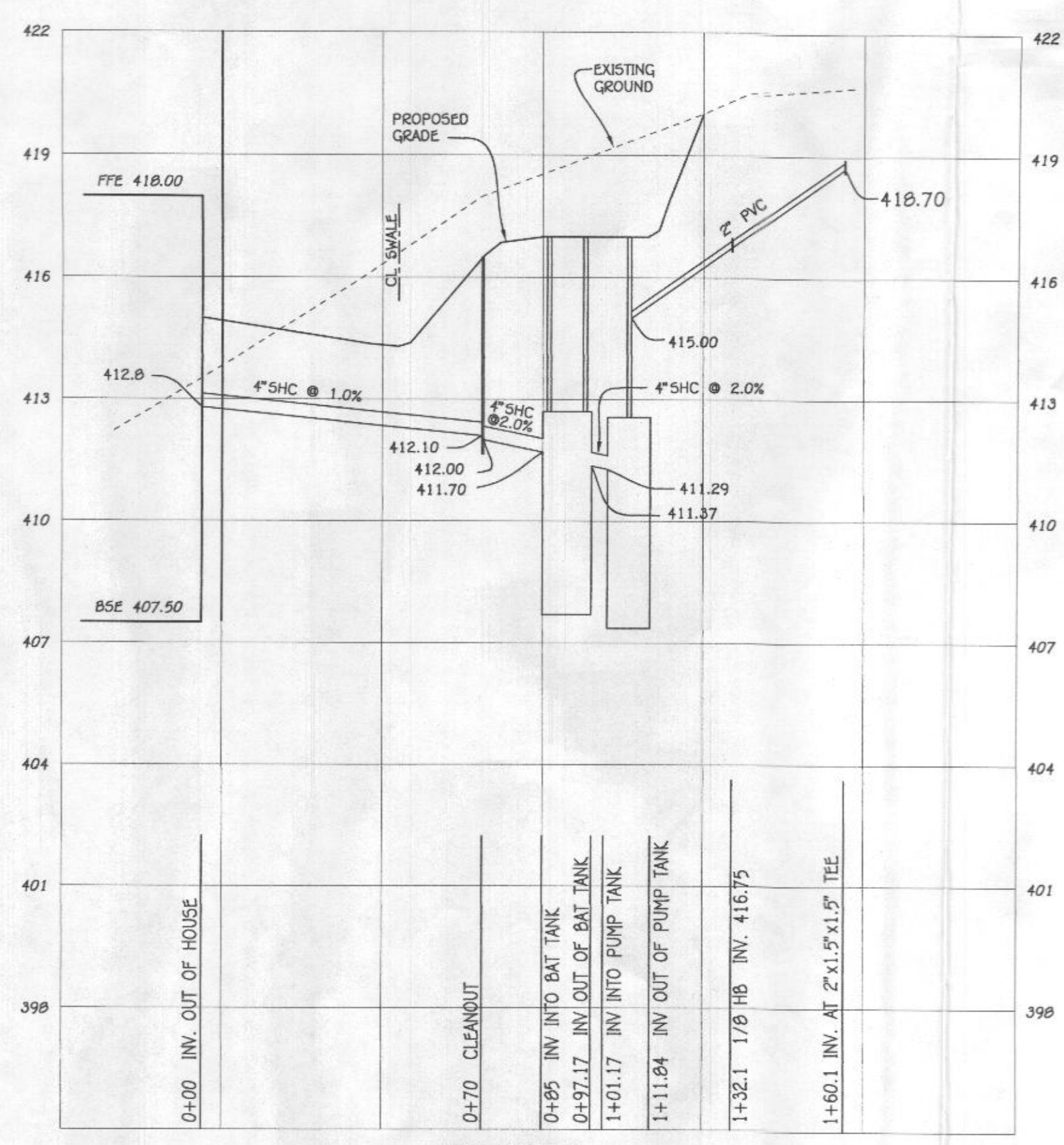
TRENCH 1A - 5.75 FEET / 9 PERFORATIONS  
TRENCH 1B - 6.50 FEET / 8 PERFORATIONS

**END FEED LAYOUT**

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30386, EXPIRATION DATE: 01/12/2018.

*Signature of Professional Engineer* 11/8/17  
DATE

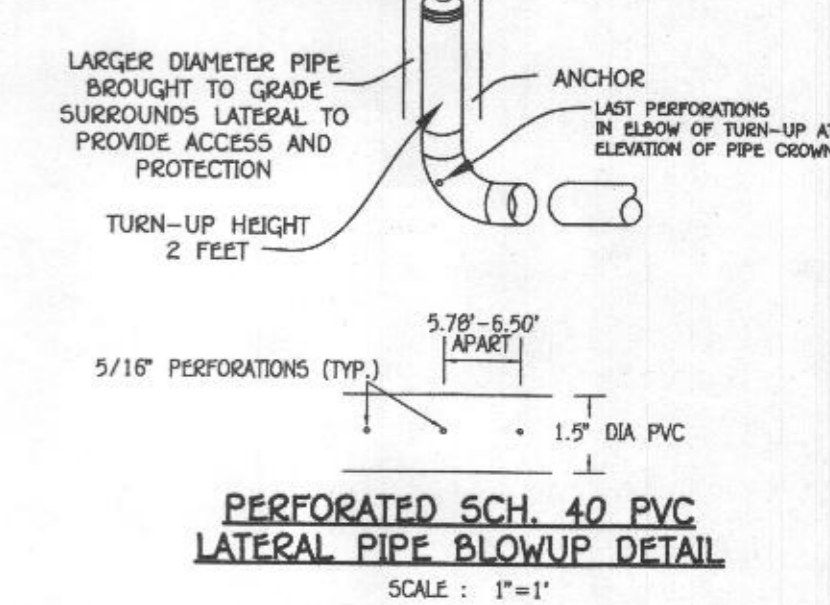


**BAT PROFILE**

HORIZONTAL SCALE: 1"=30'  
VERTICAL SCALE: 1"=8'

NOTE: USE A MYERS SRM4 PUMP

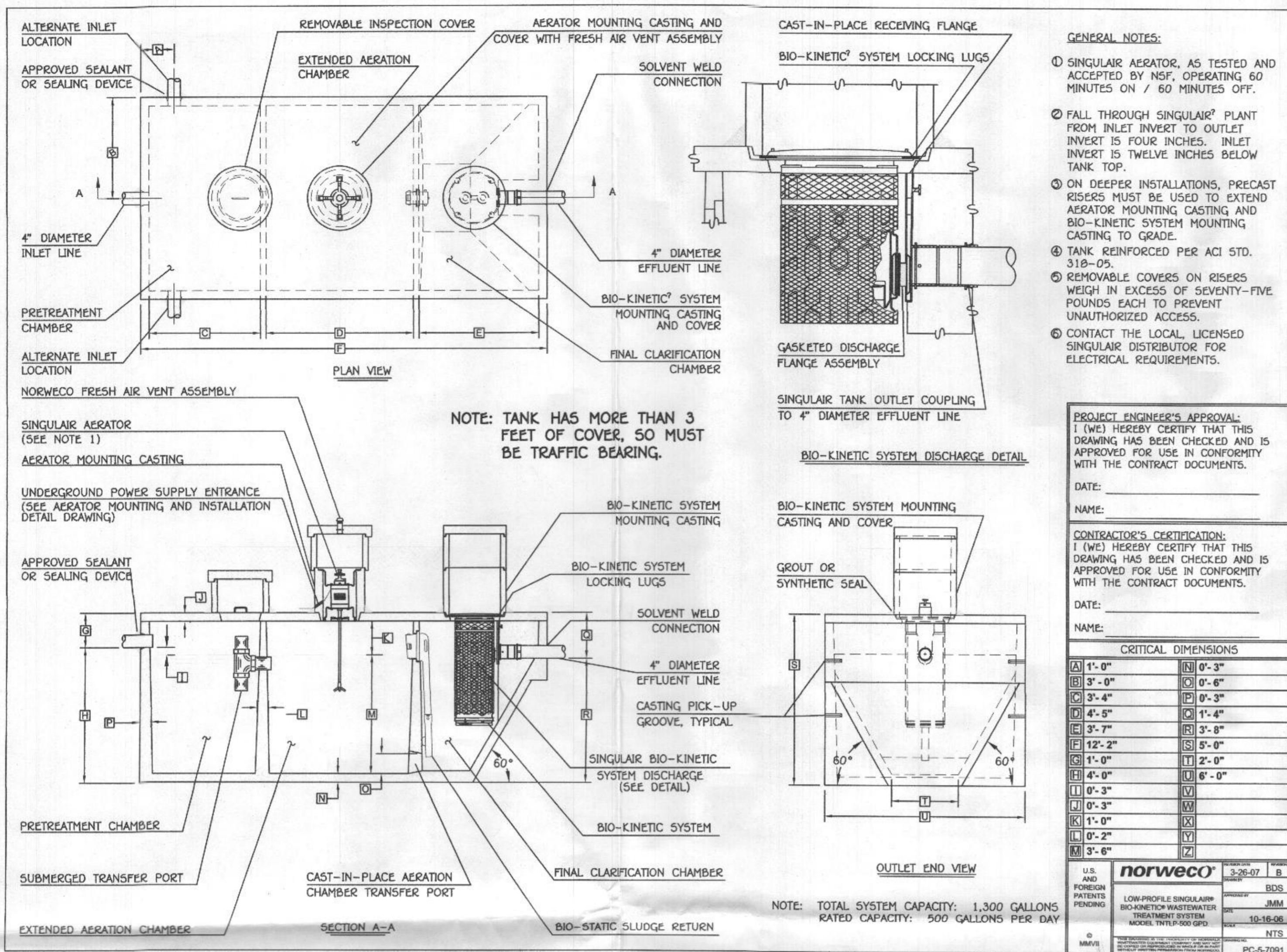
NOTE: PLACE AN OBSERVATION PIPE IN THE GRAVEL BED AT THE DISTAL END OF EACH TRENCH SEGMENT.



**PERFORATED SCH. 40 PVC LATERAL PIPE BLOWUP DETAIL**

SCALE: 1"=1'

**BAT SITE PLAN**  
**CHAPEL RISE, LOT 2**  
11540 CHAPEL RISE  
ZONED RC-DEO PLAT NO. 22022  
TAX MAP NO.: 29 GRID NO'S.: 8 & 14  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: NOVEMBER, 2017  
SHEET 2 OF 2



**GENERAL NOTES:**

- SINGULAR AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
- FALL THROUGH SINGULAR<sup>®</sup> PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC SYSTEM MOUNTING CASTING TO GRADE.
- TANK REINFORCED PER ACI STD. 318-05.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL LICENSED SINGULAR DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

**PROJECT ENGINEER'S APPROVAL:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CRITICAL DIMENSIONS**

A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	3'-8"
F	12'-2"	S	5'-0"
G	1'-0"	T	2'-0"
H	4'-0"	U	6'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
M	3'-6"	Z	

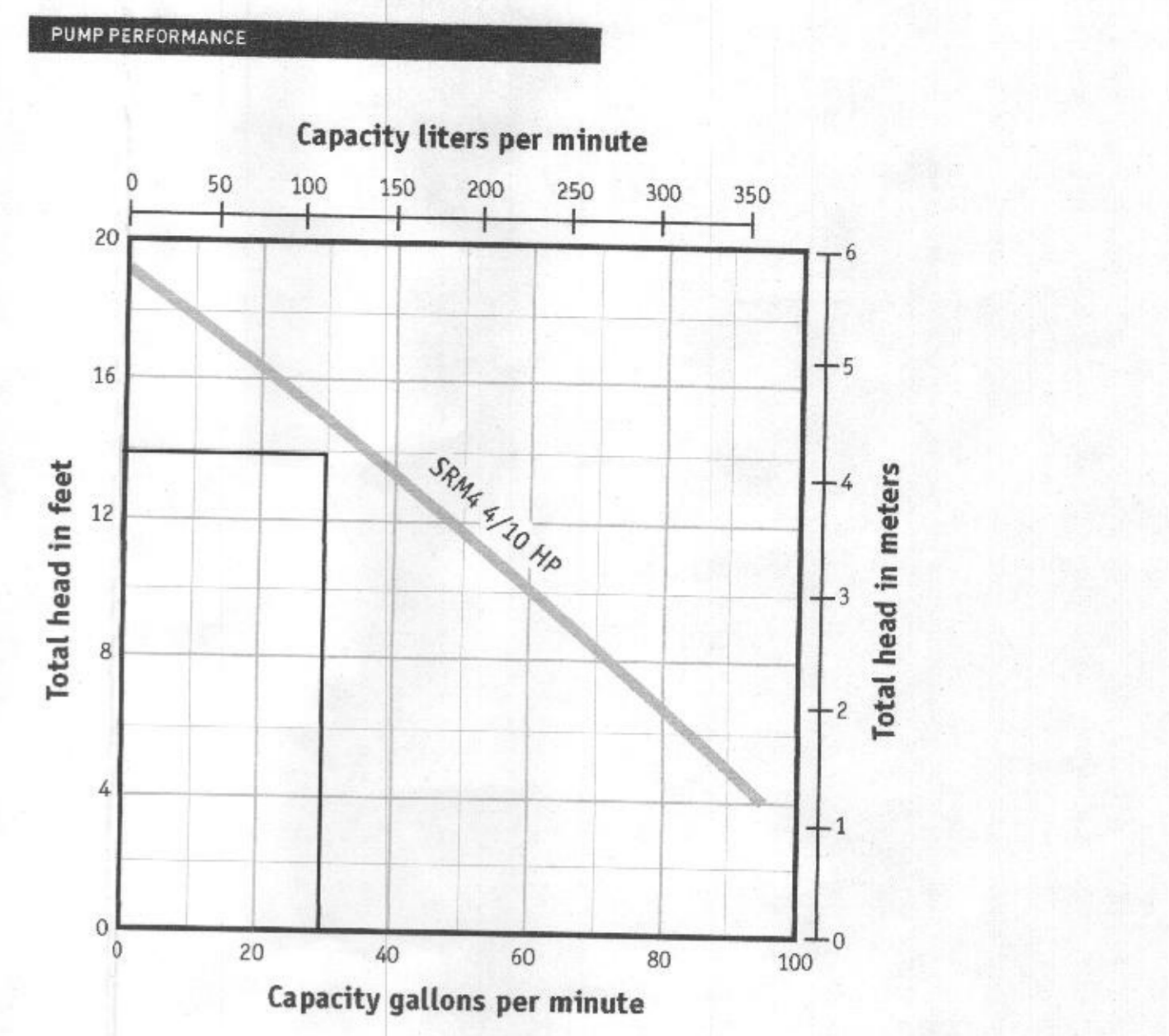
**norweco** 3-26-07 B

U.S. AND FOREIGN PATENTS PENDING

LOW PROFILE SINGULAR<sup>®</sup> BIO-KINETIC WASTEWATER TREATMENT SYSTEM MODEL TW11P-500 GPD

© 2007 NORWECO

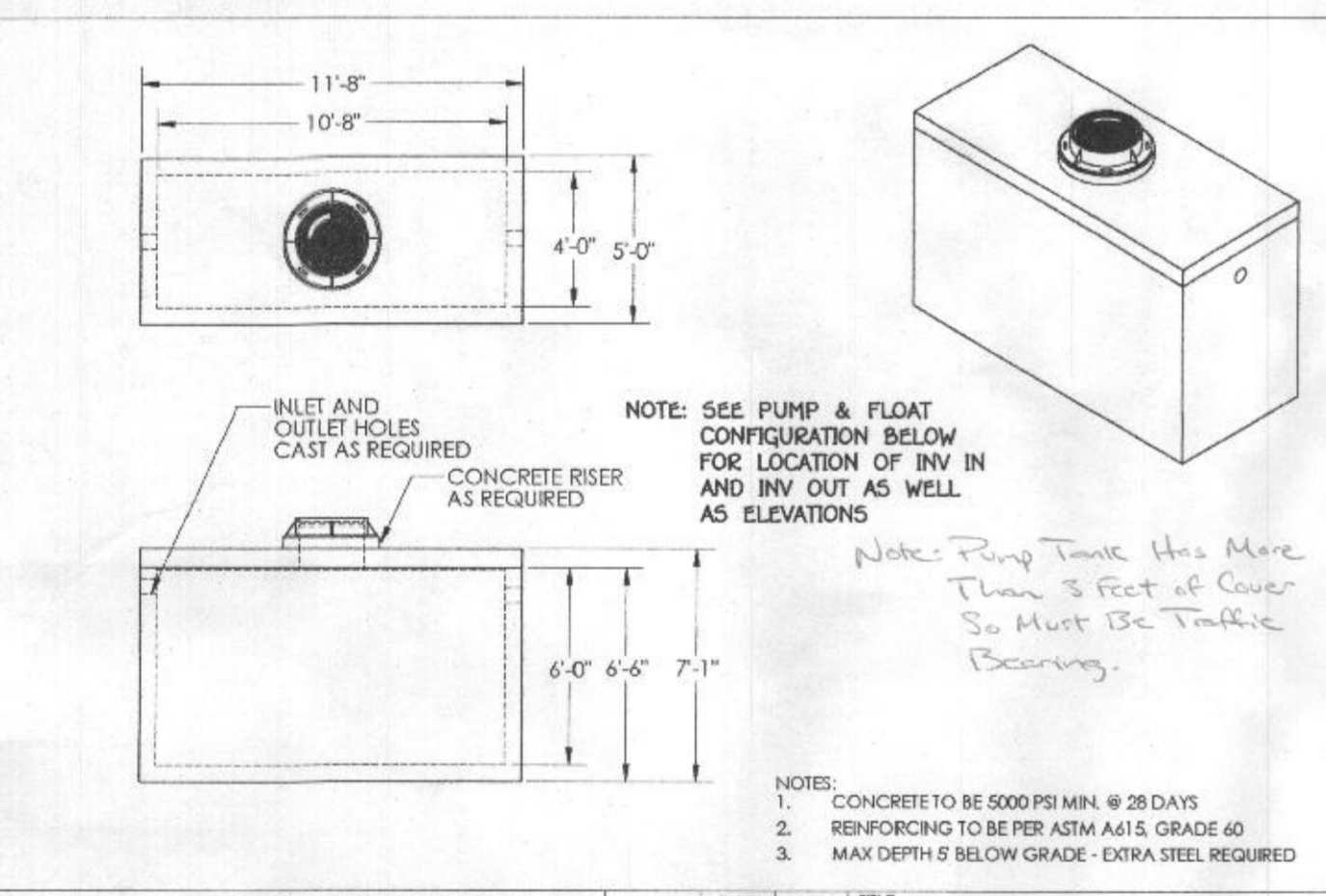
PC-5-7091



**ORDERING INFORMATION**

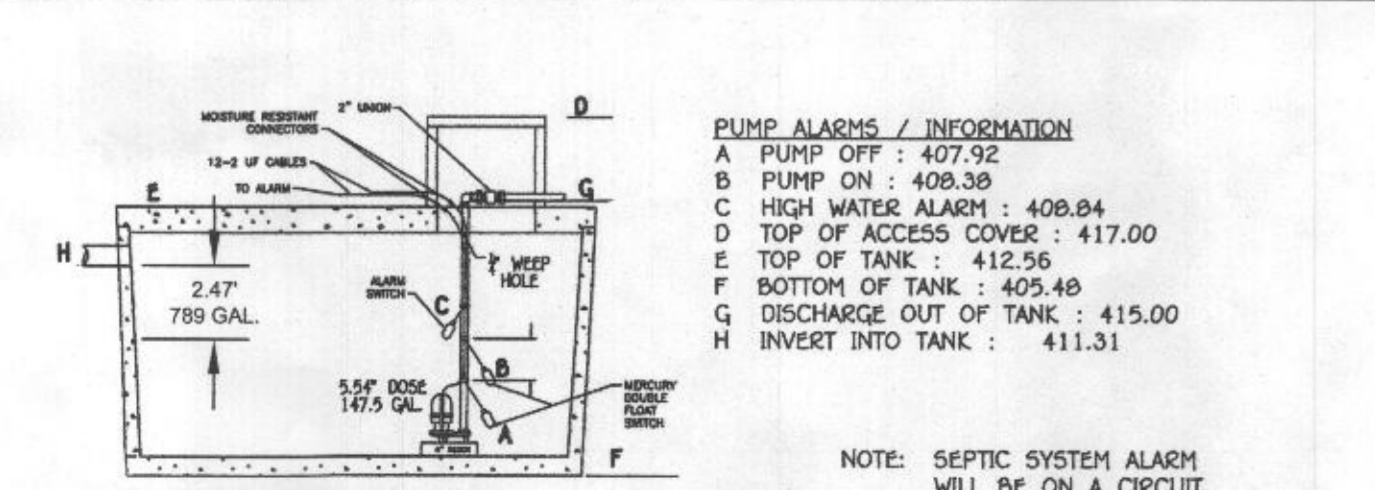
Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
SRMAP-1	4/10	115	1/60	12	2"	Tethered Automatic*	10'	40
SRMAP-2	4/10	115	1/60	12	2"	Tethered Automatic*	20'	40
SRMAP-3	4/10	115	1/60	12	2"	Manual	20'	39
SRMAP-4	4/10	230	1/60	6	2"	Tethered Automatic*	10'	40
SRMAP-5	4/10	230	1/60	6	2"	Manual	10'	39
SRMAP-6	4/10	115	1/60	12	2"	Vertical Automatic*	10'	40
SRMAP-7	4/10	230	1/60	6	2"	Vertical Automatic*	10'	40
SRMAP-8	4/10	115	1/60	12	2"	Diaphragm Automatic*	20'	40

\*Piggyback style switch



**MONARCH PRODUCTS COMPANY, INC.**  
YORK HAVEN, PA. 17350-8000  
www.MonarchProducts.net

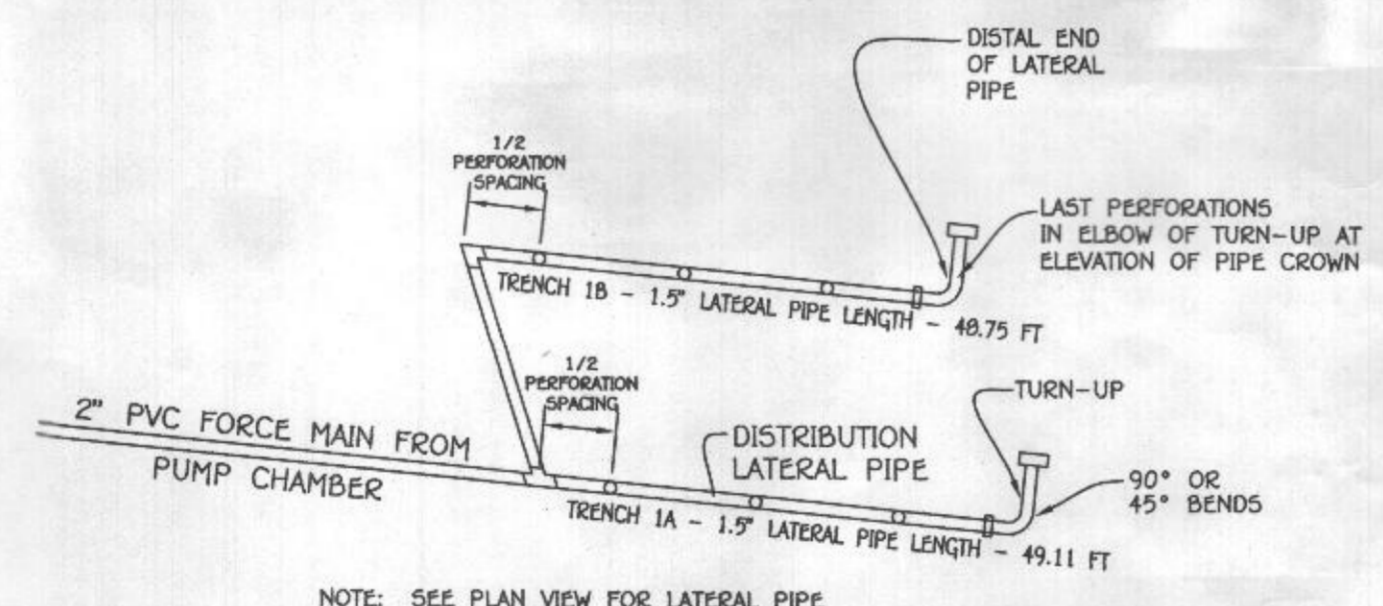
NAME: 1500 GAL PUMP TANK  
DATE: 10/22/13  
JOB NAME: PUMP TANK  
STRUCTURE NO.:  
TOTAL STRUCTURE WEIGHT: 24200 lbs



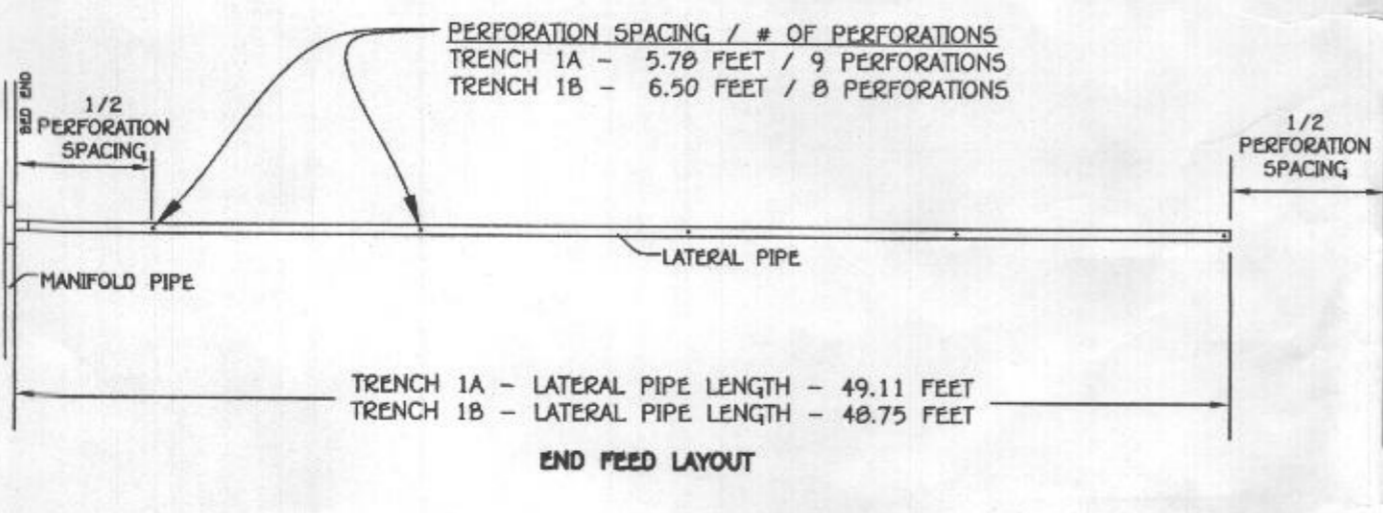
**PUMP ALARMS / INFORMATION**

A PUMP OFF : 407.92  
B PUMP ON : 409.38  
C HIGH WATER ALARM : 406.84  
D TOP OF ACCESS COVER : 417.00  
E TOP OF TANK : 412.56  
F BOTTOM OF TANK : 405.48  
G DISCHARGE OUT OF TANK : 415.00  
H INVERT INTO TANK : 411.31

NOTE: SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.



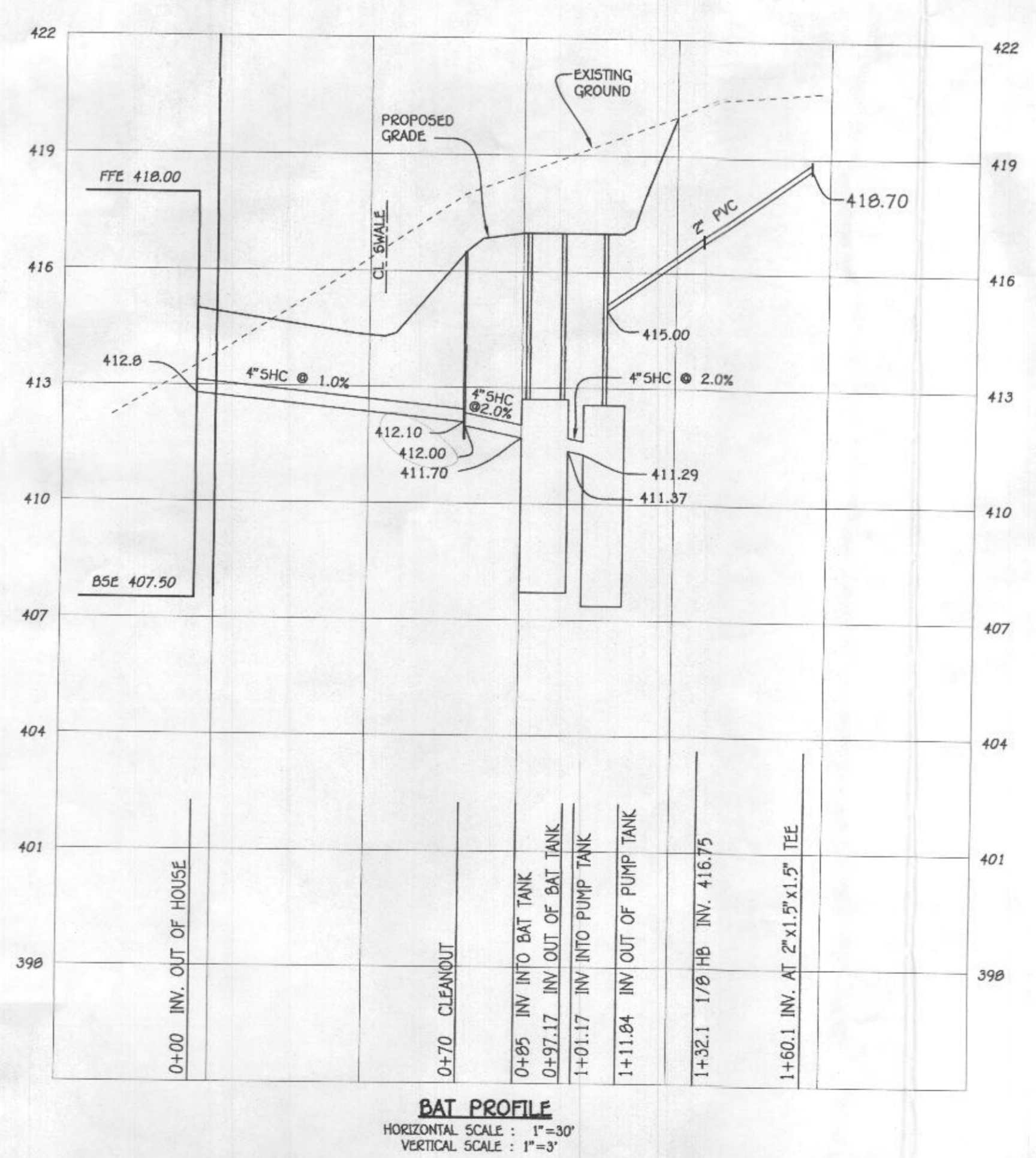
**FIGURE 4.1 END FEED MANIFOLD DISTRIBUTION NETWORK**



**PROFESSIONAL CERTIFICATION**

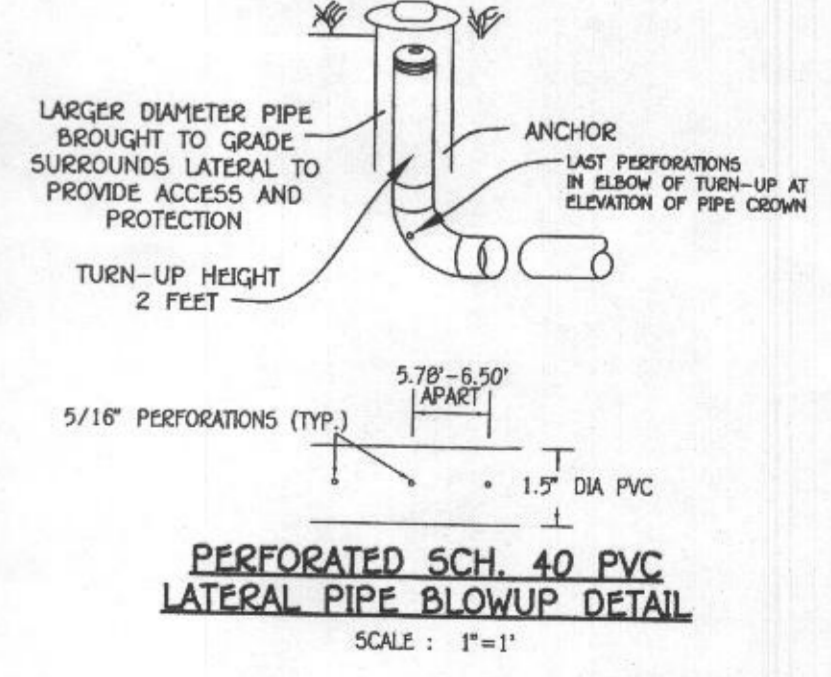
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2018.

Signature of Professional Engineer: *Stratton Lint* DATE: 11/01/17



NOTE: USE A MYERS SRM4 PUMP

NOTE: PLACE AN OBSERVATION PIPE IN THE GRAVEL BED AT THE DISTAL END OF EACH TRENCH SEGMENT.



**BAT SITE PLAN**  
**CHAPEL RISE, LOT 2**  
11540 CHAPEL RISE  
ZONED RC-DEO PLAT NO. 22022  
TAX MAP NO.: 29 GRID NO'S.: 8 & 14  
5TH ELECTION DISTRICT DATE: NOVEMBER, 2017  
SCALE: AS SHOWN SHEET 2 OF 2

1:2017120601Engineering\Drawings\2006-0008 Septic Plan.dwg, BAY 52, 11/8/2017 3:37:35 PM, 1:1