

File No. 001088

6150

(Warranty Deed - Bertha W. Amos to Lillian W. Knapheide and Donna A. Knapheide)

THE STATE OF TEXAS

§

COUNTY OF WALLER

§

KNOW ALL MEN BY THESE PRESENTS:

§

THAT I, BERTHA W. AMOS of the County of Harris, State of Texas, (hereinafter referred to as "Grantor"), for and in consideration of the sum of TEN AND NO/100 (\$10.00) DOLLARS, and other good and valuable considerations to me in hand paid by LILLIAN W. KNAPHEIDE and DONNA A. KNAPHEIDE, mother and daughter of the County of Waller, State of Texas, whose address is P.O. Box 548, Waller, Texas 77484 (hereinafter referred to as "Grantee"), the receipt and sufficiency of which is hereby acknowledged and confessed;

HAVE GRANTED, SOLD AND CONVEYED, and by these presents do GRANT, SELL AND CONVEY unto the said Grantee, her heirs and assigns, the following described real property, to wit:

Tracts Twenty Nine (29) and Thirty (30) of PINERIDGE SUBDIVISION, SECTION ONE, a subdivision located in the George A. Dennett Survey, Abstract 123, Waller County, Texas, according to the map or plat thereof recorded in Volume 283 at Page 596 of the Deed Records of Waller County, Texas.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereunto in anywise belonging to the said Grantee, her heirs, and assigns forever, and Grantor does hereby bind herself, her heirs, executors, administrators and assigns to WARRANT AND FOREVER DEFEND, all and singular the said premises unto the said Grantee, her heirs and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

This conveyance is executed, delivered and accepted subject to ad valorem taxes for the current and subsequent years, taxes for subsequent assessments for the current and prior years due to changes in land usage, ownership or both, zoning ordinances and utility district assessments, if any, applicable to and enforceable against the above described property, and all valid easements, restrictions, mineral reservations and maintenance fund liens, if any, applicable

inspection of the property or as shown by the clerk of the county in which the property is located.

Executed this 14th day of February, 2000.

Bertha W. Amos

BERTHA W. AMOS

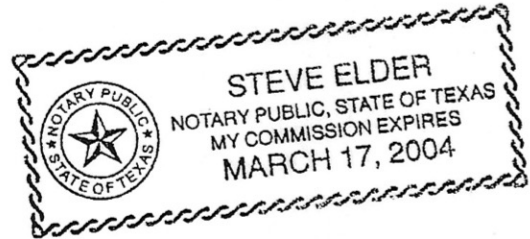
THE STATE OF TEXAS §

COUNTY OF WALLER §

ACKNOWLEDGED before me on the 14th day of February, 2000, by Bertha W. Amos.

Steve Elder

Notary Public, State of Texas



**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ON-SITE WASTEWATER SYSTEMS CHECKLIST
FOR PROFESSIONALLY DESIGNED SYSTEMS**

APPLICATION NO. _____
WALLER COUNTY, TEXAS

The following information must be included with the design package for review by the Texas Natural Resource Conservation Commission. Failure to include or address all of the following items may result in approval delays.

1. Plans and reports must bear a signed and dated seal of the responsible registered engineer or sanitarian. The address and telephone number of this person must also be included in the submittal. (Two originals with seal / signature / date.)
2. A report must be included in the submittal containing the following information:
- A. Basis of design;
 - B. Soil analysis and percolation test result;
 - C. System flow diagram and sizing calculation;
 - D. Material specification; and
 - E. Size and model number of approved aerobic system (if used.)
3. Construction drawings must include the following information:
- A. A scaled, legible site plan with boundary description;
 - B. The location of all buildings (existing or proposed) on the site plan;
 - C. The location of the wastewater treatment units and disposal area;
 - D. Buffer zones and water wells must be identified and located on the site plan;
 - E. The site plan must also include topographical countours for slopes greater than 15 percent;
 - F. Easements and bodies of water (lakes, streams, ponds) must also be identified; and
 - G. Installation details such as septic tank configuration, layouts and cross-sections of drainfields and disposal beds, irrigation systems, pump station including piping and controls

Charles Garland
Signature of Designer

7-19-07
Date

SITE EVALUATION FORM
WALLER COUNTY, TEXAS

DATE: 7/19/07
CLIENT: EDUARDO BAUTISTA ADDRESS 19613 FREY RD.
HEMPSTEAD, TX. 77445

LEGAL DESCRIPTION:
SUBDIVISION: PINERIDGE SUB. SEC 1 LOT 30 BL.

SURVEY:
ABSTRACT:
PROPERTY SIZE: 5.299 AC.
EXISTING OR PROPOSED STRUCTURE TO BE SERVED: A PROPOSED 3 BEDROOM
SING. FAM. DWELLING LESS THAN 2500 SQ.FT., W/ULF FIXTURES, 240 G.P.D.

TOPOGRAPHY

SLOPE:
FLAT(UNDER 2%) SLIGHT(UNDER 6%) * SEVERE(OVER 30%)

VEGETATION:
GRASS/BRUSH * LIGHTLY WOODED HEAVILY WOODED *

SITE DRAINAGE: POOR() ADEQUATE(*) GOOD() OTHER()

NOTE: IF SLOPE IS SEVERE A TOPO SURVEY WITH HALF FOOT CONTOURS MUST BE PROVIDED WITH THIS FORM ON THE DESIGN. IF SITE DRAINAGE IS POOR OR SLOPE IS FLAT THEN A DETAILED DRAINAGE PLAN MUST BE PROVIDED ON THE DESIGN IF A SUBSURFACE SYSTEM IS PROPOSED.

FLOOD HAZARD

PROPERTY IS LOCATED:
PARTIALLY IN 100 YEAR FLOOD PLAIN ()
OUTSIDE 100 YEAR FLOOD PLAIN (*)
IN 100 YEAR FLOOD PLAIN ()
IN 500 YEAR FLOOD PLAN AND FLOODWAY ()

WATER SUPPLY: WELL IS PROPOSED
PUBLIC () COMMUNITY () PRIVATE (*)

NAME OF WATER SUPPLIER:

NOTE: IF WELL IS ON-SITE COMPLETE THE FOLLOWING.
SIZE OF WELL N/A YEAR DRILLED N/A DRILLER N/A
DEPTH OF WELL: N/A FT.

SEALING BLOCK PRESENT YES () NO ()
WELL HOUSE PROTECTING WELL YES () NO ()
IS A WELL LOG AVAILABLE (ATTACHED IF AVAILABLE) YES () NO ()

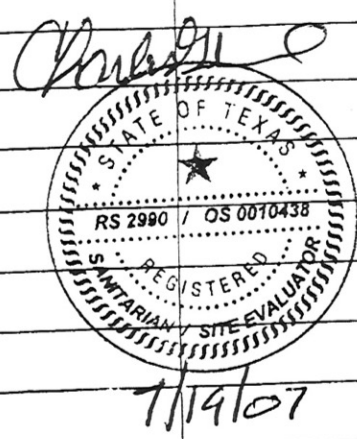
NEIGHBORING WELL WITHIN 100 FEET OF PROPERTY LINE. (IF NEIGHBORING WELL(S) EXIST, THEY MUST BE SHOWN ON THE DESIGN) YES () NO (*)
YES () NO (*)



SOIL EVALUATION

PROFILE DEPTH	TEXTURE (COLOR)	GRAVEL ANALYSIS (CLASS II & III)	RESTRICTIVE HORIZON	GROUND-WATER	COMMENTS
0	Brown/Tan	Less than 5%	No	Yes	
	Sandy Loam	↓			
24	Brown/Tan w/ red, orange mottles		Yes	Yes	
48	Sandy Clay	↓			
60"					

PROFILE DEPTH	TEXTURE (COLOR)	GRAVEL ANALYSIS (CLASS II & III)	RESTRICTIVE HORIZON	GROUND-WATER	COMMENTS
		SAME AS ABOVE			
60"					



SOIL CLASSIFICATIONS:

- CLASS Ib: Sand, Loamy Sand
- CLASS II: Sandy Loam, Loam
- CLASS III: Sandy Clay Loam, Sandy Clay, Clay Loam, Silty Clay Loam, Silt Loam, Silt
- CLASS IV: Silty Clay, Clay

EFFLUENT LOADING DETERMINATION

SOIL TEXTURE	SOIL CLASS	LONG TERM F. LOADING RATE
COARSE SAND/GRAVEL STANDARD	1a	> .50 (NOT SUITABLE FOR SYSTEMS.)
SAND/LOAMY SAND	1b	.38
SANDY LOAM/LOAM	II	.25
SANDY CLAY LOAM/ SANDY CLAY/CLAY LOAM/ SILTY CLAY LOAM/SILTY LOAM	III	.20
CLAY/SILTY CLAY STANDARD	IV	0.1 (NOT SUITABLE FOR SYSTEMS)

NOTE: SOIL MUST BE EVALUATED TO A MINIMUM OF TWO (2) FEET BELOW APPLICATION AREA

INDICATION OF SEASONAL WATER TABLE: YES (*) NO ()
DEPTH 18 - 24"

NOTE: SUBSURFACE HORIZONS WITH COLORS OF RED, YELLOW AND BROWN GENERALLY INDICATE GOOD SOIL AERATION AND DRAINAGE THROUGHOUT THE YEAR. SUBSURFACE HORIZONS THAT ARE IN COLORS OF GRAY, OLIVE OR BLACKISH COLORS INDICATE POOR AERATION AND POOR SOIL DRAINAGE. ANY SOIL PROFILE THAT HAS THE GRAYISH COLORS INDICATIVE OF HIGHWATER TABLES OR SOIL MOTTLING WITHIN 36 INCHES OF THE SURFACE OR HAS GROUND WATER VISIBLE IN THE TEST BORE HOLE LESS THAN 48 INCHES BELOW THE GROUND SURFACE SHALL BE DEEMED UNSUITABLE FOR CONVENTIONAL SUBSURFACE DISPOSAL DUE TO INTERNAL DRAINAGE.

IS SOIL SUITABLE FOR A CONVENTIONAL SYSTER? YES () NO (*)
APPLICATION RATE .1

NOTE: IF SOIL HAS AN APPLICATION RATE OF OVER .38 GPDSF OR LESS THAN .1 GPDSF OR A HIGH SEASONAL WATER TABLE THAN STANDARD SYSTEMS ARE PROHIBITED BY STATE LAW.

I CHARLES GERLAND, A REGISTERED SITE EVALUATOR DID PERSONALLY CONDUCT THIS SISTE EVALUATION ON 19613 FREY RD. HEMPSTEAD, TX. 77445. PINERIDGE SUB., TR. 30, SEC. 1, WALLER CO. TX.

I CERTIFY THESE RESULTS ARE TRUE AND CORRECT FOR THE PROPERTY EVALUATED.

7/19/07
DATE



SIGNATURE Charles Gerland

MANDATORY

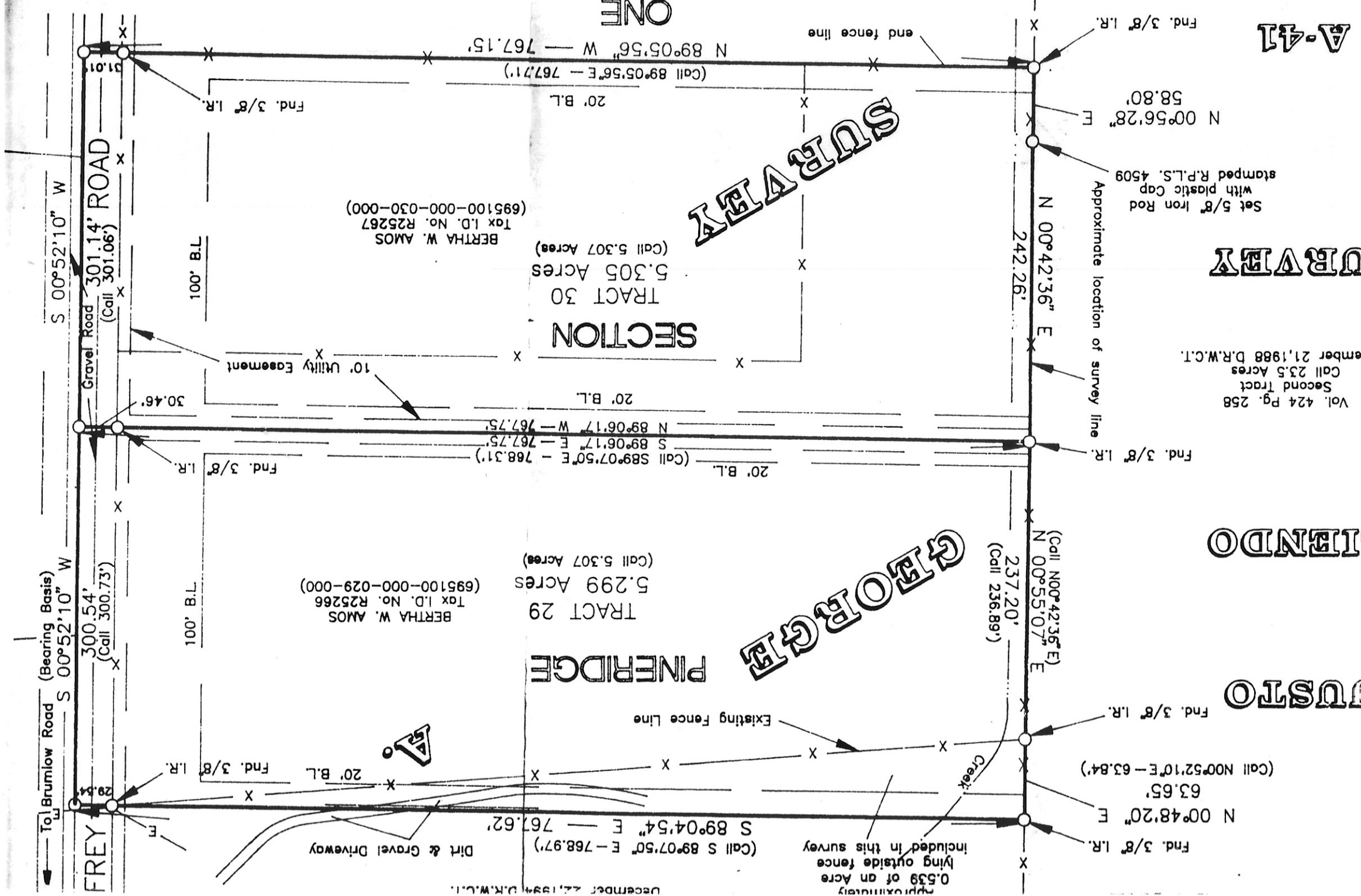
1. System installation must be installed by a registered installer of on-site sewerage facilities as required by **Article 4477-7E of Vernons Civil Statutes** or by the owner of the property under license. No component of this system shall be covered up without Waller County written approval.
2. If any discrepancies exist between this design and actual field condition it is the installers responsibility to immediately notify the designer and Waller County prior to start of any work.
3. All construction methods and materials must be in accordance with county and state rules and policies unless specifically noted on this drawing and approved by Waller County.
4. Site shall be carefully finish graded after completion of system installation to provide positive storm water runoff. Drainage swales shall be immediately constructed to adequately convey storm water away from the absorption area.
5. Grass shall be immediately planted in absorption area after completion of septic system.
6. This system, if installed and operated in accordance with this plan should not present a hazard to public health or threaten proposed or adjacent water wells.
7. Provide a detailed landscape plan for aerobic systems, including time table for completion and proper vegetation.
8. Application must be filled out completely, address, phone number, etc.
NO PERMIT WILL BE ISSUED IF APPLICATION IS NOT COMPLETE.



I hereby certify that this survey was made on the ground, that this plat correctly represents the facts found at the time of survey.

Vol. 283 Pg. 596 PINERIDGE SURVEY TRACT 29 - 5.299 ACRES GEORGE A. WALLI APPROVED BY ROBERT M. WALLI DATE: 8-10-99 SCALE: 1"=100'

Vol. 496 Pg. 624 Robert Sidney Pike Tract 31 Call 5.037 Acres



SURVEY

GEORGE

PINERIDGE

SECTION

TRACT 30

5.305 Acres (Call 5.307 Acres)

BERTHA W. AMOS Tax I.D. No. R25267 (695100-000-030-000)

TRACT 29 5.299 Acres (Call 5.307 Acres)

BERTHA W. AMOS Tax I.D. No. R25266 (695100-000-029-000)

SURVEY

TIENDO

JUSTO

Vol. 424 Pg. 258 Second Tract Call 23.5 Acres September 21, 1988 D.R.W.C.I.

Set 5/8" Iron Rod with plastic Cap stamped R.P.L.S. 4509

A-41

December 22, 1994 D.R.W.C.I.

Approximately 0.539 of an Acre lying outside fence included in this survey

(Call S 89°07'50" E - 768.97') S 89°04'54" E - 767.62'

N 00°48'20" E Fnd. 3/8" I.R.

(Call N00°52'10" E - 63.84') 63.65'

Fnd. 3/8" I.R.

(Call N00°42'36" E) N 00°55'07" E (Call 236.89') 237.20'

Fnd. 3/8" I.R.

20' B.L. (Call S89°07'50" E - 768.31') S 89°06'17" E - 767.75' N 89°06'17" W - 767.75'

Fnd. 3/8" I.R.

Fnd. 3/8" I.R.

N 00°42'36" E 242.26'

Approximate location of survey line

N 00°56'28" E 58.80'

Fnd. 3/8" I.R.

(Call 89°05'56" E - 767.71') N 89°05'56" W - 767.15'

ONE

To Brumlow Road (Bearing Basis) S 00°52'10" W 300.54' (Call 300.73') Gravel Road 301.14' ROAD (Call 301.06') S 00°52'10" W

T'B .001

T'B .001

Fnd. 3/8" I.R.

D1.01'

Dirt & Gravel Driveway

Existing Fence Line

Creek

NOTES:

1. AEROBIC SEWAGE TREATMENT PLANT - PRO FLOW 500 G.P.D. AEROBIC SEWAGE TREATMENT PLANT OR EQUAL.
2. PUMP - FLINT & WALLING 1/2 H.P. MODEL #4F19A05 SUBMERSIBLE PUMP, PUMPING 19 G.P.M. OR EQUAL.
3. SPRINKLER HEADS - HUNTER PROFESSIONAL SERIES ADJUSTABLE GEAR DRIVEN OR RAIN-BIRD AG-5, POP-UP, LOW ANGLE, 40 P.S.I. MAX., OR EQUAL.
4. PUMP CONTROLS - B.I.O. INC. AEROBIC PUMP CONTROL, MODEL # BIO500C OR EQUAL. TIMER IS OPTIONAL ON THIS SYSTEM.
5. CALCULATIONS:

CALCULATIONS ARE FOR A PROPOSED 3 BEDROOM SING. FAM. DWELLING, LESS THAN 2500 SQ.FT., PROPERTY LOCATION IS 19613 FREY RD., HEMPSTEAD, TX. 77445.

A. TOTAL FLOW RATE - 240 G.P.D.

B. 240 G.P.D. / .045 GAL/SQ.FT./DAY = 5333.33 → 5334 SQ.FT. REQUIRED

C. $A = \pi * 30 * 30 * 2$ SPRAY AREAS

D. TOTAL AREA GIVEN - 55654 SQ.FT.

6. ACCEPTABLE SURFACE APPLICATION AREAS. LAND ACCEPTABLE FOR SURFACE APPLICATION SHALL HAVE FLAT TERRAIN (WITH LESS THAN OR EQUAL TO 15 % SLOPE) AND SHALL BE COVERED WITH GRASSES, EVERGREEN SHRBS, BUSHES, TREES OR LANDSCAPED BEDS CONTAINING MIXED VEGETATION. THERE SHALL BE NOTHING IN THE SURFACE APPLICATION AREA WITHIN TEN FEET OF THE SPRINKLER WHICH WOULD INTERFERE WITH THE UNIFORM APPLICATION OF THE EFFLUENT. SLOPED LAND (WITH GREATER THAN 15%) MAY BE ACCEPTABLE IF IT IS PROPERLY LANDSCAPED AND TERRACED TO MINIMIZE RUNOFF.
7. UNACCEPTABLE SURFACE APPLICATION AREAS. LAND THAT IS USED FOR GROWING FOOD, GARDENS, ORCHARDS, OR CROPS THAT MAY BE USED FOR HUMAN CONSUMPTION AS WELL AS UNSEEDED BARE GROUND, SHALL NOT BE USED FOR SURFACE APPLICATION.
8. LANDSCAPING PLAN - SPRAY IRRIGATION AREAS MUST BE PLANTED WITH GRASSES SUITABLE FOR THE WALLER COUNTY AREA. GRASSES THAT ARE THE BEST FOR THIS AREA ARE: ST. AUGUSTINE, CENTIPEDE, AND ZOYSIA. A QUICK GROWING TEMPORARY GRASS SUCH AS GULF COAST RYE, MAY BE UTILIZED UNTIL ONE OF THE PERMANENT GRASSES LISTED ABOVE ARE PLANTED. ANY SPRAY AREAS THAT HAVE NATIVE GRASSES GROWING NATURALLY, DO NOT NEED TO BE MODIFIED, BUT ANY BARE AREAS MUST BE SEEDDED OR SODDED WITH ONE OF THE ABOVE.
9. NO EXISTING OR PROPOSED ADDITIONAL TREES MAY BE WITHIN 10 FT. OF ANY SPRAY AREA. LOCATION OF SPRAY HEADS MAY BE ADJUSTED TO ACCOMODATE ANY EXISTING TREES.
10. ALL ELECTRICAL CONNECTIONS MUST BE 2 FT. MIN. ABOVE FLOOD PLAIN LEVEL (IF APPLICABLE)
11. CONTAMINATES SUCH AS HYDROCARBON WASTE, PESTICIDES, OR TRASH SUCH AS PAPER TOWELS, SANITARY NAPKINS, CONDOMS, ET.C SHOULD NOT BE ALLOWED TO ENTER THIS SYSTEM.
12. EXISTING SEPTIC TANKS MAY BE RE-USED. THEY MUST BE PUMPED AND CLEANED AND BROUGHT UP TO ALL CONSTRUCTION STANDARDS AS REQUIRED BY THE TCEQ MANDATE OF JAN. 1997. IF TANK(S) ARE NOT RE-USED THEY MUST BE ABANDONED BY THE SAME TCEQ MANDATE.
13. SITE DRAINAGE - INSTALLER OR PROPERTYOWNER SHALL ADD ADDITIONAL FILL ON DISPOSAL AREA TO PROVIDE POSITIVE STORM WATER RUNOFF AND CONSTRUCT DRAINAGE SWALES TO EXISTING ROADSIDE DRAINAGE AS NECESSARY.

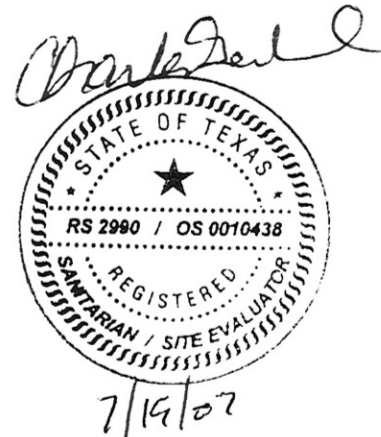


14. IT IS THE OWNERS RESPONSIBILITY TO KEEP A MAINTENANCE/SERVICE CONTRACT WITH AN APPROVED AEROBIC SYSTEM MAINTENANCE COMPANY. ONLY APPROVED CHLORINE TABLETS ARE TO BE USED IN THIS SYSTEM. LIQUID CHLORINATORS ARE ACCEPTABLE.

15. WHEN A WATER SUPPLY LINE MUST BE CROSSED BY A SPRAY IRRIGATION LINE, OSSF INSTALLERS WILL LOCATE IRRIGATION LINES AT LEAST 6 INCHES BELOW THE WATER SUPPLY LINE, UTILIZE 150 PSI OR GREATER PRESSURE PIPE AND CENTER AT LEAST AN 18 FT. LONG PIPE ON THE WATER LINE THUS MAKNG THE PIPE JOINTS AT LEAST 9 FT. FROM THE WATER LINE. IN INSTANCES WHEN THE IRRIGATION LINE CANNOT BE PLACED BELOW THE WATER LINE, THE IRRIGATION LINE MUST BE PLACED AT LEAST SIX INCHES ABOVE THE WATER LINE, USE 150 PSI PIPE, CENTER AN 18 FT. OR LONGER PIPE ON THE WATER LINE, AND SLEEVE THE IRRIGATION LINE INSIDE ANOTHER PRESSURE RATED PIPE. (IF APPLICABLE)

16. THIS PLAN IS INTENDED FOR USE AS AN INSTALLATION GUIDE THE DIMENSIONS OF THE PROPERTY ARE TAKEN FROM SURVEYS AND APPROXIMAT FIELD MEASUREMENTS. THIS IS NOT INTENDED AS A LEGAL LAND SURVEY AND SHOULD NOT BE TREATED AS SUCH.

17. A 500 G.P.D. AEROBIC TREATMENT UNIT WILL DO ABOUT 1.25 Lbs. OF BOD/DAY. A TYPICAL PERSON WILL PRODUCE ABOUT .21 Lbs/DAY. THERE SHOULD BE NO MORE THAN 5 PERSONS LIVING AT THIS LOCATION.



DATE: 7/19/07
SCALE: 1" = 40'

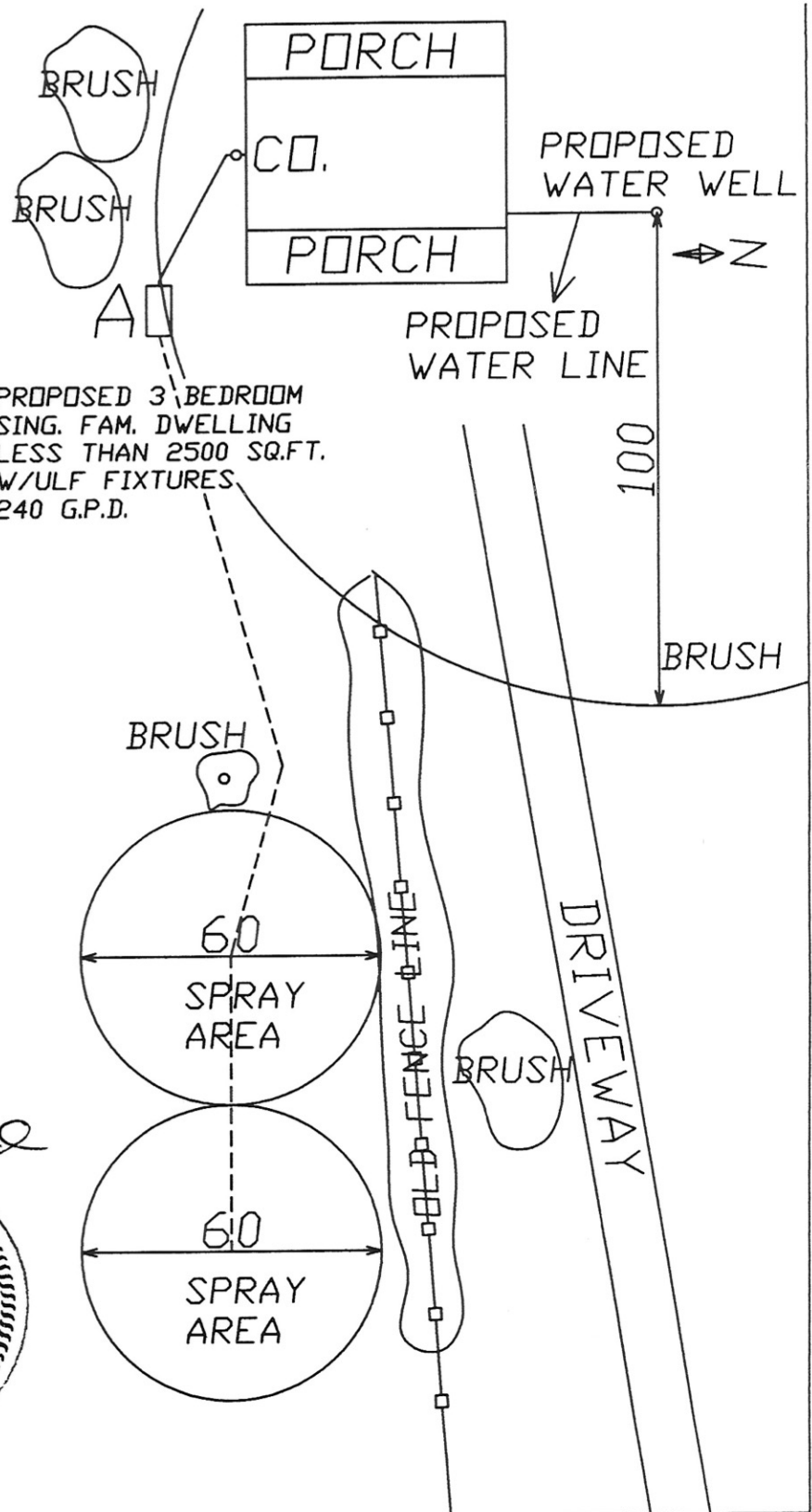
PINERIDGE SUB.
SEC. 1, TR. 30
5.299 AC.
WALLER CO. TX.

EDUARDO BAUTISTA
19613 FREY RD.
HEMPSTEAD, TX. 77445

TANK A
PROFLOW 500
G.P.D. AEROBIC
SEWAGE TREATMENT
PLANT OR EQUAL

SUPPLY LINE
1 IN. SCH. 40
PVC

PROPOSED 3 BEDROOM
SING. FAM. DWELLING
LESS THAN 2500 SQ.FT.
W/ULF FIXTURES
240 G.P.D.



CHARLES GERLAND R.S.
P.O. BOX 1202
CALDWELL, TX. 77836
979/218/2042
OS0010438 RS2990
JOB NO. 5750707

19613 FREY RD.

301.14

7/19/07

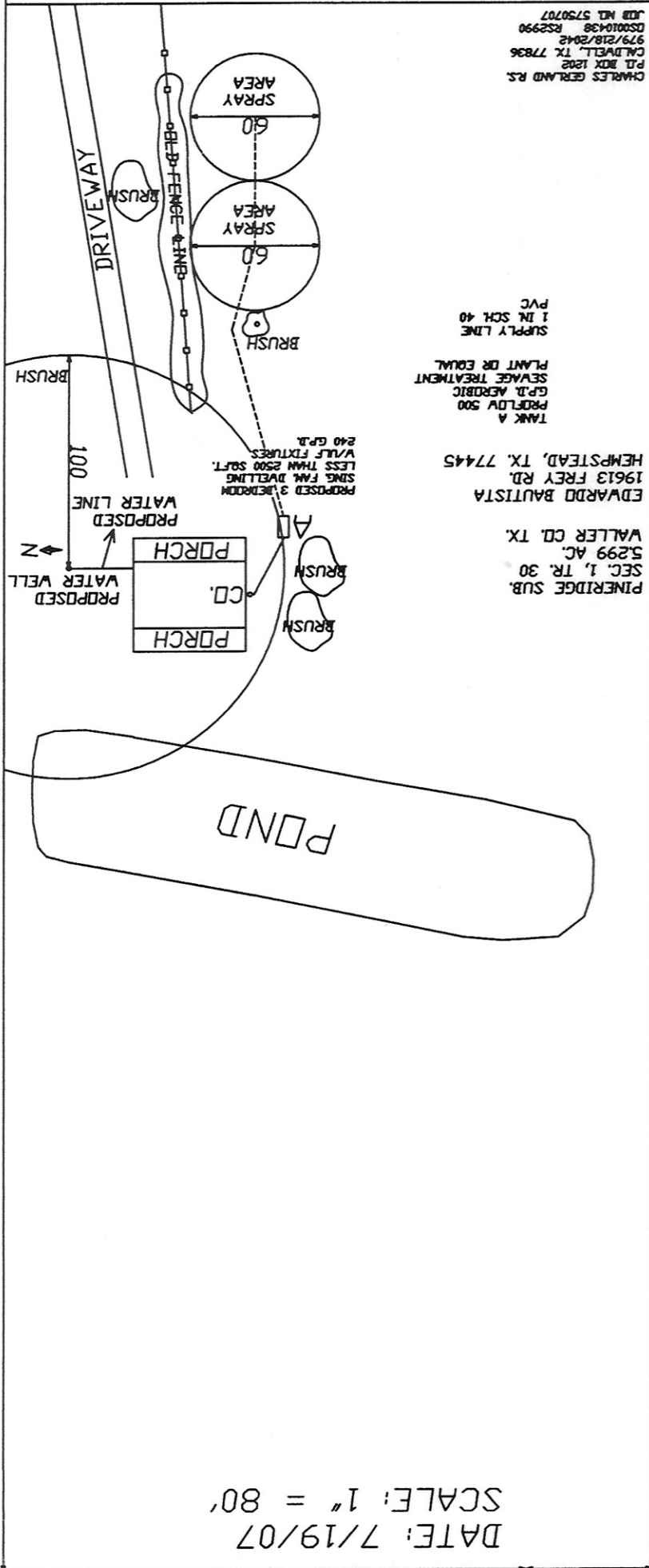


Charles Gerland

301.14

19613 FREY RD.

CHARLES GERLAND P.E.
P.O. BOX 1202
CALDWELL, TX 77836
979/218/2042
RS2990
OS0010438
JOB NO. 5750707



TANK A
PROFLOW 500
G.P.D. AEROBIC
SEWAGE TREATMENT
PLANT OR EQUIV.
SUPPLY LINE
1 IN. SCH. 40
PVC

EDUARDO BAUTISTA
19613 FREY RD.
HEMPSTEAD, TX. 77445
WALLER CO. TX.
5.299 AC.
SEC. 1, TR. 30
PINERIDGE SUB.

DATE: 7/19/07
SCALE: 1" = 80'

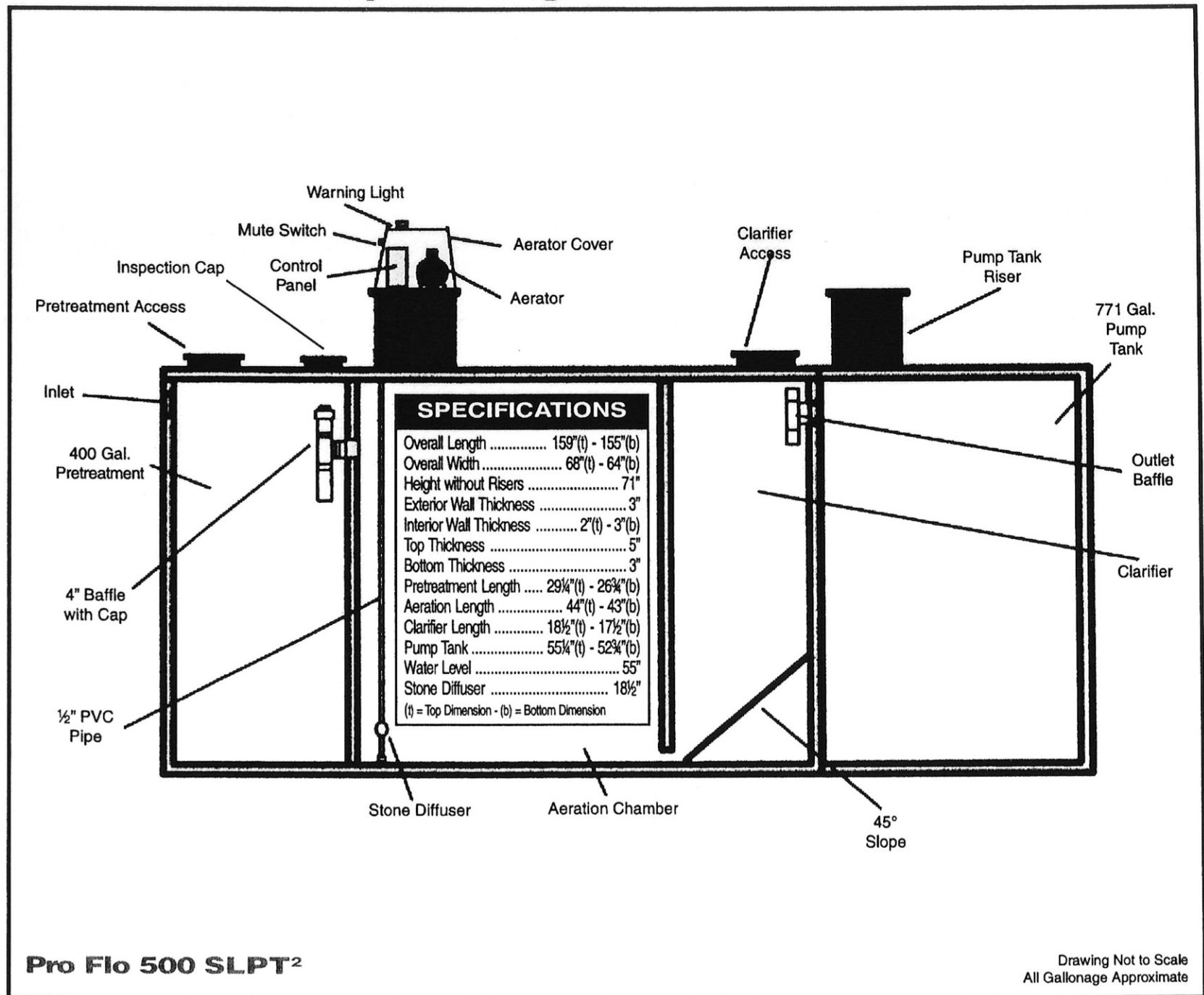
242.26

58.80

767.75

767.15

Pro Flo 500 SLPT² System Diagram



Pro Flo 500 SLPT²

Drawing Not to Scale
All Gallonage Approximate

Performance Data

Hunter Professional Series

STANDARD NOZZLES - RED

Nozzle	PSI	Radius ft.	GPM
1	30	28'	.5
	40	29'	.6
	50	29'	.7
	60	30'	.8
2	30	29'	.7
	40	30'	.8
	50	30'	.9
	60	31'	1.0
3	30	30'	.9
	40	31'	1.0
	50	31'	1.2
	60	32'	1.3
4	30	32'	1.2
	40	33'	1.4
	50	34'	1.6
	60	34'	1.8
5	30	34'	1.6
	40	36'	1.8
	50	38'	2.0
	60	38'	2.2
6	30	36'	2.0
	40	38'	2.4
	50	40'	2.7
	60	40'	2.9
7	30	36'	2.6
	40	40'	3.0
	50	42'	3.4
	60	42'	3.7
8	30	37'	3.2
	40	40'	3.7
	50	43'	4.2
	60	44'	4.6
9	30	38'	4.2
	40	43'	4.9
	50	46'	5.5
	60	47'	6.0
10	40	45'	6.0
	50	48'	6.8
	60	49'	7.6
	70	51'	8.2
11	30	46'	8.0
	40	48'	8.9
	50	50'	9.8
	70	51'	10.5
12	40	46'	11.4
	50	48'	12.2
	60	50'	13.2
	70	52'	14.4

LOW ANGLE NOZZLES - GRAY

Nozzle	PSI	Radius ft.	GPM
4	30	22'	1.4
	40	24'	1.7
	50	26'	1.8
	60	28'	2.0
5	30	25'	1.6
	40	27'	1.9
	50	28'	2.1
	60	30'	2.3
6	30	27'	2.1
	40	30'	2.5
	50	33'	2.8
	60	35'	3.0
7	30	29'	2.8
	40	32'	3.1
	50	35'	3.5
	60	37'	3.8
8	30	31'	3.4
	40	34'	3.9
	50	37'	4.4
	60	38'	4.7
9	30	33'	4.3
	40	37'	5.0
	50	40'	5.6
	60	42'	6.1
10	40	38'	6.5
	50	40'	7.3
	60	42'	8.0
	70	44'	8.6

X2 heads = 5.0gpm

P

Blank nozzle plug for turning off selected sprinklers during repairs, maintenance, etc.

Data represent test results in zero wind. Adjust for local conditions. Radius can be reduced by up to 30% with nozzle retaining screw. (This may alter the uniformity of the spray pattern.)

Matched Precipitation

Matched Precipitation - GPM at 50 PSI

Square Spacing	90° Nozzle No.	90° GPM	180° Nozzle No.	180° GPM	360° Nozzle No.	360° GPM
25'	1	.7	3	1.2	6	2.7
30'	2	.9	5	2.0	8	4.2
35'	3	1.2	6	2.7	9	5.5
40'	4	1.6	7	3.4	10	6.8
45'	5	2.0	8	4.2	11	8.9

When the arc/nozzle combinations are spaced as indicated, the precipitation rate will be approximately .4"/hr. at 50 PSI.

Data represent test results in zero wind. Adjust for local conditions. Radius can be reduced by up to 30% with nozzle retaining screw. (This may alter the uniformity of the spray pattern.)



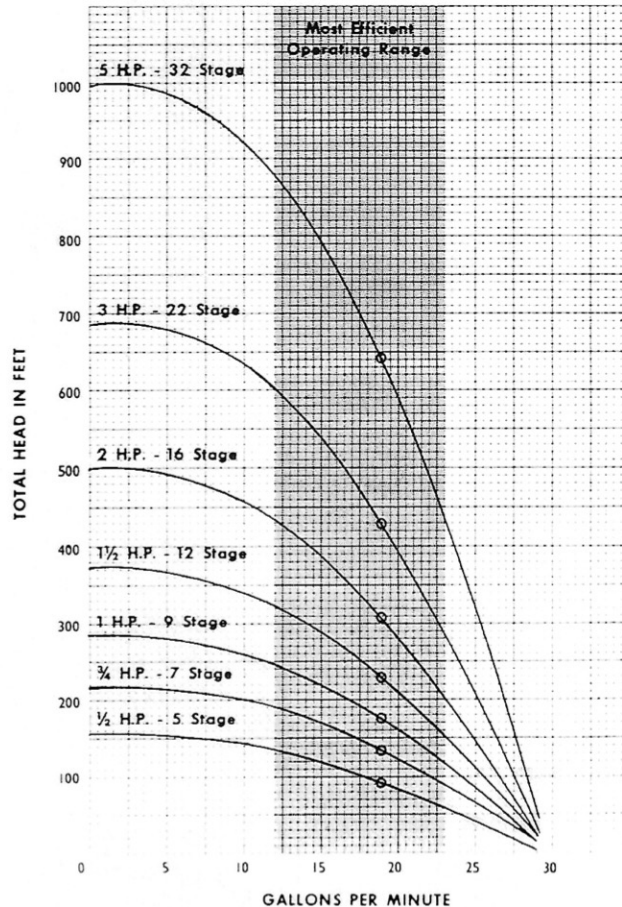
SUBMERSIBLE SELECTION CHART

4" 19 G.P.M. 1/2 THRU 5 H.P.

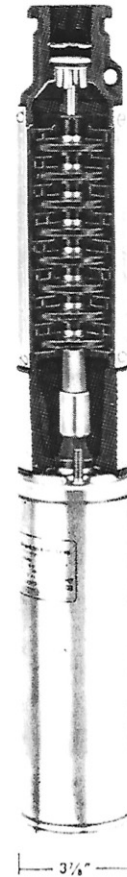
H.P. Size And Model No.	Stages	Discharge Pressure P.S.I.	DEPTH TO WATER LEVEL IN FEET - CAPACITIES IN GALLON PER HOUR																								Maximum Pressure Ft. PSI																	
			20	40	60	80	100	120	140	160	180	200	225	250	275	300	325	350	400	450	500	550	600	650	700	800			900															
1/2 H.P. 4F19A05 4F19B05	5	0	1596	1476	1362	1230	1074	900	624																																			
		20	1320	1188	1026	840	354																																					
		40	960	732	210																																							
		60																																										
		80																																										
3/4 H.P. 4F19A07 4F19B07	7	0	1644	1572	1476	1398	1302	1200	1092	960	798	576																																
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		40	1236	1122	996	858	660	330																																				
		60	972	816	612																																							
		80	480																																									
1 H.P. 4F19A10 4F19B10	9	0	1650	1596	1530	1464	1392	1326	1242	1164	1068	972	822	642	300																													
		20	1512	1440	1374	1302	1224	1140	1044	936	822	684	372																															
		40	1350	1272	1188	1104	1008	912	768	624	336																																	
		60	1170	1074	984	870	732	576	210																																			
		80	942	822	690	480																																						
1-1/2 H.P. 4F19A15 4F19B15	12	0	1670	1625	1578	1530	1476	1428	1374	1320	1266	1206	1134	1050	906	858	708	522																										
		20	1566	1512	1464	1410	1362	1302	1242	1194	1134	1062	978	860	732	570	216																											
		40	1452	1398	1344	1284	1230	1170	1110	1044	978	894	762	582	342																													
		60	1326	1266	1212	1152	1092	1026	948	864	762	624	378																															
		80	1194	1128	1068	1002	924	822	714	552	354																																	
2 H.P. 4F19A20 4F19B20	16	0	1685	1650	1610	1575	1540	1505	1470	1430	1390	1350	1305	1255	1200	1140	1080	1010	850	630	200																							
		20	1600	1565	1530	1495	1460	1420	1380	1345	1305	1260	1210	1150	1090	1020	955	865	650	300																								
		40	1515	1480	1445	1410	1370	1330	1290	1250	1205	1155	1095	1030	955	875	775	660	320																									
		60	1435	1395	1360	1320	1280	1235	1190	1145	1100	1045	975	890	790	680	550	370																										
		80	1345	1305	1265	1220	1175	1135	1085	1030	970	905	810	695	570	400																												
3 H.P. 4F19A30 4F19B30	22	0	1690	1665	1640	1615	1590	1565	1540	1510	1485	1460	1430	1390	1355	1320	1290	1250	1170	1095	980	860	700	495																				
		20	1630	1610	1585	1560	1535	1510	1480	1455	1430	1400	1370	1330	1290	1255	1220	1175	1090	995	880	730	520																					
		40	1575	1550	1525	1500	1470	1445	1415	1390	1360	1330	1300	1260	1220	1185	1140	1090	995	880	730	550																						
		60	1515	1490	1460	1435	1410	1380	1350	1325	1290	1260	1230	1190	1150	1100	1055	1005	890	750	560																							
		80	1450	1435	1400	1370	1340	1315	1285	1255	1220	1190	1150	1105	1060	1015	960	895	760	570																								
5 H.P. 4F19A50 4F19B50	32	0	1700	1680	1665	1650	1630	1615	1600	1580	1565	1550	1525	1500	1475	1455	1430	1410	1360	1310	1260	1210	1150	1090	1020	850	620																	
		20	1660	1643	1628	1610	1590	1575	1555	1540	1525	1510	1485	1460	1440	1410	1390	1365	1315	1265	1210	1155	1095	1030	850	620																		
		40	1620	1605	1590	1570	1555	1535	1520	1500	1480	1465	1445	1420	1390	1370	1345	1315	1270	1215	1155	1100	1030	850	620																			
		60	1580	1560	1545	1530	1510	1490	1470	1450	1435	1420	1395	1370	1345	1320	1295	1270	1215	1155	1100	1030	850	620																				
		80	1540	1520	1505	1490	1470	1450	1430	1410	1390	1370	1350	1330	1300	1275	1250	1225	1165	1105	1040	870	670	310																				

NOTE: Pipe friction loss in drop pipe is not included in chart above.

COMPOSITE PERFORMANCE CURVES



1 1/2" NPT



3/4"