

Riley D. Burgess, Jr., PE
Land planning and civil engineering consultant

October 21, 2013

Mecklenburg County Ground Water and Wastewater Services
700 North Tryon Street, Suite 211
Charlotte, North Carolina 28202

Attn: Mr. Brad Hallman

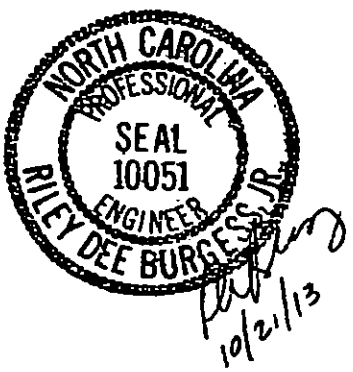
Subject: Final Certification of Installation for PPBPS Septic System
Lot 2 Chacewater Subdivision
13620 Castleford Drive, Mint Hill, North Carolina 28227

Dear Mr. Hallman:

This letter is to certify, based upon inspections by myself and/or others under my responsible charge, that the above referenced pressure dosed PPBPS septic system was completed in accordance with the approved design.

Sincerely,

Riley D. Burgess, Jr., PE



Phone: 704-896-8020 Post Office Box 2609 E-mail: r.burgess@edpa.net
Davidson, North Carolina 28036

STATE OF NORTH CAROLINA

INSPECTION AND MAINTENANCE AGREEMENT

THIS AGREEMENT is made and entered into this 22nd of Oct, 2013, by and between Classica Homes, LLC (hereinafter the "Owner") and Rollinsville Environmental Svcs PA (hereinafter the "Contractor")

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system" is installed, such system being designated a Type IV system under the rules for Sanitary Sewage collection, Treatment and Disposal found at 15A NC Admin. Code 18A.1900 et seq.; and

WHEREAS, 15A NC Admin Code 18A, 1961 requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit and said system; and

WHEREAS, 15A NC Admin Code 18A, 1961 requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity shall be in effect for as long as the system is in use, and

WHEREAS, the Contractor is a management entity of a type authorized by 15A NC Admin Code 18A.1961 to manage a Type IV system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below

1. The Contractor's Obligations. The Contractor shall perform the following services on the Owner's system located at Chosewater Subd. Lot #2.
   A. The Contractor shall inspect the system at least the frequency required in Table V (b) of 15A NC Admin. Code 18A.1961 (b) for a type IV system.
   B. The Contractor shall perform the maintenance procedures in accordance with the conditions of the Operation Permit.
   C. The Contractor shall report the results of its inspections to he local health department at the frequency specified in Table V (b) of 15A NC Admin. Code 18A 1961 (b) for a type IV system.
   D. If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.
   E. The Contractor shall notify the Owner of needed repairs that are outside of the scope of routine maintenance described in subparagraph (b) above. The Contractor shall perform necessary repairs to the system at the request of the Owner and shall be entitled to payment and therefore at the Contractor's normal charge for services and materials
   F. The Contractor shall employ or shall contract with a certified operator(s) if required by Table V (b) of 15A NC Admin. Code 18A.1961 (b) for a type IV system.
   G The Contractor shall respond to a request for a nonscheduled service or maintenance call within 24 hours after receipt of such request.
2. The Owner's Obligations.
   A. The Owner shall pay to the Contractor the sum of $ 300 per year for periodic inspections, routine maintenance procedures and periodic reports. The annual fee may be amended upon sixty (60) days advance notice to the Owner but may not be increased more than 20 percent per year. The owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. All fees are due and payable within thirty (30) days of billing. Payments due to the Contractor and unpaid by the Owner after thirty (30) days shall accrue interest from the due date until paid at a rate of 1 ½ percent per month

B Within 5 days or receipt of notice of needed repairs pursuant to paragraph 1.e. above, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

C The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement

3 Terms. This Agreement shall remain in effect until terminated.

A Automatic Termination
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or time for making an appeal has passed

B *Termination by Mutual Consent*
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination

C. Termination by Owner
The Owner may terminate this agreement by giving notice to the Contractor and to the local health department thirty (30) days in advance of the date of termination.

D Termination by Contractor
(1) The Contractor may terminate the Agreement for cause by giving written notice of intent to terminate this Agreement to the Owner and to the local health department thirty *(30) days in advance of the date of termination*
Cause shall be defined as:

(a) Failure to remit payment for any bill for services performed under and in accordance with the Agreement if said bill is not paid within thirty (30) days of receipt of termination is given but prior to the date of termination of this Agreement, the Agreement shall continue in effect; or

(b) Failure of the Owner to provide to the Contractor authorization to complete needed repairs or satisfactory evidence that needed repairs to the system were completed by another entity within 5 days of receipt of notice of needed repairs pursuant to paragraph 1.e above. If said authorization to complete needed repairs or evidence of completion said repairs is provided after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect; or

(c) Failure of the Owner to allow the Contractor such access to the system as is reasonably necessary in order for the Contractor to comply with the terms of this Agreement

(2) The Contractor may not terminate this Agreement without cause, but may assign its rights and duties under this Agreement as provided in paragraph 4 below

4. Assignments

A Assignment by the Owner The Owner shall notify the Contractor of the name and addresses of any purchases of the property on which the system is located. The owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser

B. Assignment by the Contractor. The Contractor may assign its rights and duties under this agreement to another management entity, which is qualified pursuant to 15A NC Admin Code 18A 1961, to manage a Type IV system upon thirty (30) days written notice to the Owner and to the local health department

5 Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers, and contractors, as it deems desirable to perform any of the Contractor's duties under this Agreement

6 Representations. The Parties represent to each other that each has the power, authority, and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future

8 No Implied Waiver. The waiver by either Party of a default or breach by other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision, and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement

9 Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows

To the Owner Classica Homes, LLC
1101 Woodridge Center Dr Suite 155 Charlotte NC 28217

To the Contractor Rollans So. Eng Environmental Services, PA
PO Box 832 Monroe, NC 28115

To the Local Health Department Mecklenburg County Groundwater & Wastewater Svcs
700 N Tryon St. Suite 211 Charlotte, NC 28202

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted delivery, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party

10 Place of Agreement. This Agreement and any question concerning its validity, construction or performance shall be governed by the laws of the State of North Carolina, notwithstanding the place of execution, or the order in which the signatures of the Parties are affixed.

11. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, an amendment or modification to this agreement must be in writing and must be signed by the Parties

12. Severability. In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal, or unenforceable in any respect, the Parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as shall, to the maximum extent practicable in light of such determination, implement and give effect to the intentions of the Parties as reflected in this Agreement, and the other provisions of this Agreement shall, as so amended, modified, supplemented or otherwise affected by such action, remain in full force and effect.

IN TESTIMONY WHEREOF, the Parties hereto have executed this Agreement in duplicate originals, one of which is retained by each of the parties, the day and year first above written.

Maintenance operation contract with Rollans Sol'Eng. Services PA certified operator) must run for minimum 12 month period. After 12 months, contract may be terminated by 30 days written notice by either party

Owner

Contractor

(Attest)

(Attest)

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 86833 Permit #: 30006473 Tax Parcel #: 195-091-39

Property Owner: Morita Properties

Job Location Address: 13620 Castleford D. 54½

City: Charlotte State: NC Zip Code: 28227

Operation Permit Issuance Date: 10/29/13 Contractor Name: Brad Russell

Permitted Design Flow: 720 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: 1500 gallons

Effluent Pump Model: Myers ME 50 SR21 ½hp

Drainfield Installation ☐ N/A

Trench Depth: 30 inches

Trench Width: 2 feet

Line Spacing: 8 feet (O.C.)

Total line length: 400 Lf feet

# of Lines: 8 @ 50' feet

Depth of Media: N/A inches (Type) Ila Panel

Depth of Cover: 12 inches

Distribution Device: Presstlp

Bed Installation *(For Repair Installations ONLY.)* ☒ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☒ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 9'± feet

Distance from Property Line: 10 feet

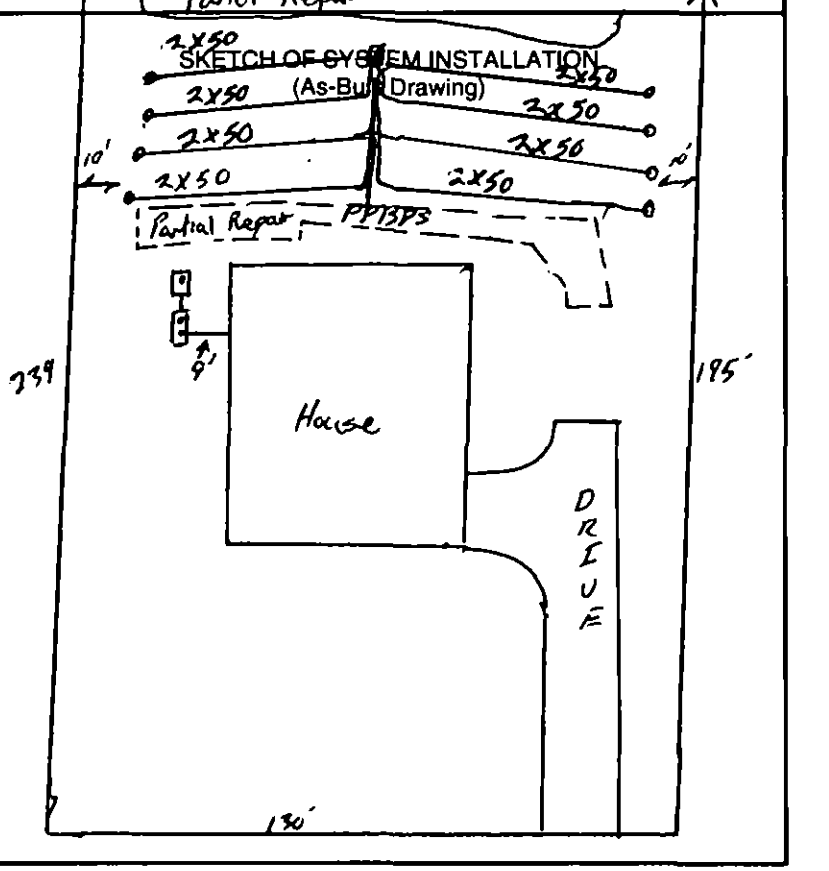
Distance from Water Supply Source: 10'± feet

Inspection Dates

Tank(s) Inspected: 10/9/13

Excavation Inspected: 10/17/13

Pump & Controls Inspected: 10/11/13 Myers ME 50 SR1 ½hp Panel Repair



The undersigned has inspected the Septic Tank System described above, and certifies it has been ☐ installed ☐ altered ☐ repaired ☐ as detailed in the plot above ☐ in accordance with the permit issued and meets the provisions of 15A NCAC 18A. 1900, "Laws and Rules for Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. The issuance of this Operation Permit does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 15A NCAC 18A. 1900 in addition to those listed below under "Comments." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

Notice: Disturbance of the designated repair area may result in the Suspension or Revocation of this permit.

Comments: System Classification & Type: IIa / PPBPS / P / NA / NA

10·9" @ 3.5min = 4"IN

DENR Authorized Agent: Bradley W. Hallman Signature: _____

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8683B Permit #: ~~30006473~~ Tax Parcel #: 195-081-39

Property Owner: Moritz Properties

Job Location Address: 17620 Castleford Dr.

City: Charlotte State: NC Zip Code: 28277

OPERATION PERMIT CONDITIONS:

I. Performance: System shall perform in accordance with 15A NCAC 18A .1961.

II. Monitoring: System shall be monitored as required by 15A NCAC 18A .1961.

III. Maintenance: Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank removed, periodically from all compartments, to ensure proper operation of the system. The contents shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.

IV. Operation: System shall be operated in accordance with 15A NCAC 18A .1961.

System Classification: IIa

*Operation Permits for Type V and VI systems expire five (5) years from the date of issuance (in accordance with Table V(a)). The system owner must contact GWS six (6) months prior to expiration for permit renewal.

Subsurface system operator required: Yes ☒ No ☐

☒ This type of system requires the system owner to maintain a contract with a certified operator to perform system inspection, maintenance, and reporting as required in 15A NCAC 18A .1961. and Table V(a). The system owner is responsible for all fees associated with these services.

☐ System does not require inspection by GWS on a routine frequency.

☐ System requires inspection by GWS once every five (5) years. The system owner is responsible for all fees associated with the inspection.

☒ System requires inspection by GWS once every three (3) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every twelve (12) months. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every six (6) months. The system owner is responsible for all fees associated with the inspection.

V. Other:

DENR Authorized Agent: Bradley W. Hallman Date: 10/29/13

Signature:

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

INSTALLATION APPROVAL for an ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8683B Permit #: 30006067 Tax Parcel #: 195-081-39

Property Owner: Morita Properties

Job Location Address: 13620 Cobleford Dr.

City: Mint Hill State: NC Zip Code: 28227

Installation Approval Issuance Date: 10/8/13

Permission is hereby given to ☑ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge, as specified herein at the described location. This approval is granted based upon the application information submitted to our office. All work shall be completed on or before 11/8/13, after which date this approval shall be null and void. The system shall meet all of the construction requirements of 15A NCAC 18A. 1900 which are in effect on the date of granting this approval. An **Operation Permit** must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now of hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

***NOTICE: This system shall not be installed while soils are in a wet condition.**

Permitted Design Flow: ~~600~~ 720 Rev GPD

Site LTAR: .3 GPD/ft² (For new installations only.)

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: 1500 gallons

Drainfield Design ☐ N/A

Trench Depth: 30 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 333 feet

# of Lines: 9a @ 55 feet

Depth of Media: N/A inches (Type) _____

Distribution Device: Manifold (LPP dist)

Bed Design *(For Repair Installations ONLY.)* ☑ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Distribution Device: _____

Water Supply Source

☑ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

Minimum System Setbacks

Distance from Building Foundation: >5' feet

Distance from Property Line: >10' feet

Distance from Water Supply Source: N/A. feet

SKETCH OF SYSTEM LAYOUT
(Proposed Layout)

See approved Plan on file.

Comments: System Classification & Type: Type IIA system design unit 5 bedroom Type IIA repair

DENR Authorized Agent: Joshua P. Gillespie Signature: Brad Linnell

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-5694

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30006473 GWS File #: 8683B Tax Parcel #: 195-081-39

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is NOT transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 10/16/2018

Type of Installation: Residential - Modified Plot Plan Lot Number: 2

Structure Type: HOUSE Size (ft^2): 4300 # Bedrooms: 6 # Occupants: 4

Building Foundation: Concrete Slab Water Supply: Private Well

II. Initial System Type: Low Pressure Pipe (LPP) **System Classification:** IVa

Initial System Specifications:

Design Flow (gpd):	720	LTAR (gpd/ft^2):	0.3	Septic Tank Size (gal):	1600	Pump Tank Size (gal):	1500		
Trench Width (ft):	2	Trench Spacing (ft):	8	Absorption Area (ft^2):	960	Total Trench Length (ft):	~~480~~ 400 LF		
Maximum Trench Depth (in):	30	Depth of Media (in):	N/A	Distribution Device:	Manifold (LPP Distri				

III. Repair System Type: Low Pressure Pipe (LPP) **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd):	720	LTAR (gpd/ft^2):	0.3	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500		
Trench Width (ft):	2	Trench Spacing (ft):	8	Absorption Area (ft^2):	1200	Total Trench Length (ft):	~~600~~ 400 LF		
Maximum Trench Depth (in):	30	Depth of Media (in):	N/A	Distribution Device:	Manifold (LPP Distri				

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Brad Hallman

Signature:

Date Issued: 10/16/2013

Owner/Legal Agent: Rick Jasinski
Print Name

Signature:

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-5894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30006473 GWS File #: 8883B

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 3 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- This type of repair system requires the installation of a pump tank and all associated components. This type of system will require routine inspections by our office. The system owner is responsible for all fees associated with these inspections.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 10 feet from any foundation drain.

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

- *No work shall be conducted on the septic system until an* INSTALLATION APPROVAL *is granted by the* Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- *The permitted system shall be installed in accordance with the included* PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Brad Hallman
Signature:
Date Issued: 10/16/2013

Owner/Legal Agent: Rick Jasinski
Print Name
Signature:

Page 2 of 2

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30006473** GWS File #: **8683B** Tax Parcel #: **195-081-39**

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is **NOT** transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 10/16/2018

Type of Installation: Residential - Modified Plot Plan Lot Number: 2

Structure Type: HOUSE Size (ft^2): 4300 # Bedrooms: 6 # Occupants: 4

Building Foundation: Concrete Slab Water Supply: Private Well

II. Initial System Type: Low Pressure Pipe (LPP) **System Classification:** IVa

Initial System Specifications:

Design Flow (gpd): 720 LTAR (gpd/ft^2): 0.3 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1500

Trench Width (ft): 2 Trench Spacing (ft): 8 Absorption Area (ft^2): 960 Total Trench Length (ft): ~~480~~ 400 LF

Maximum Trench Depth (in): 30 Depth of Media (in): N/A Distribution Device: Manifold (LPP Distri

III. Repair System Type: Low Pressure Pipe (LPP) **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd): 720 LTAR (gpd/ft^2): 0.3 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1500

Trench Width (ft): 2 Trench Spacing (ft): 8 Absorption Area (ft^2): 1200 Total Trench Length (ft): ~~600~~ 400LF

Maximum Trench Depth (in): 30 Depth of Media (in): N/A Distribution Device: Manifold (LPP Distri

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Brad Hallman Owner/Legal Agent: _____
Print Name

Signature: _____ Signature: _____

Date Issued: 10/16/2013

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700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30006473** GWS File #: **8683B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 3 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- This type of repair system requires the installation of a pump tank and all associated components. This type of system will require routine inspections by our office. The system owner is responsible for all fees associated with these inspections.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 10 feet from any foundation drain.

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Brad Hallman

Signature: _____

Date Issued: 10/16/2013

Owner/Legal Agent: _____
Print Name

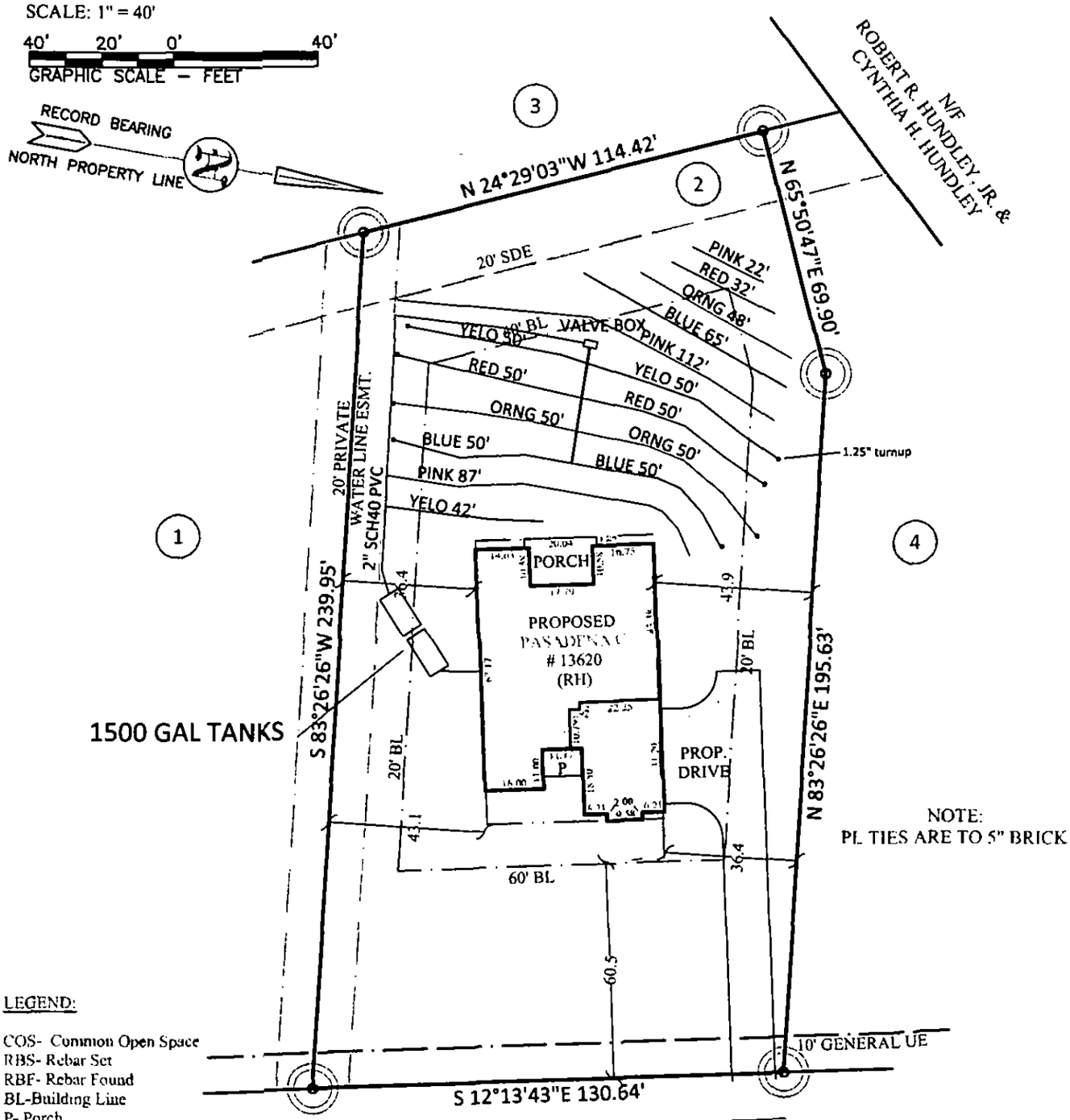
Signature: _____

GENERAL NOTES

1. NO FIELD WORK HAS BEEN PERFORMED.
2. THIS PROPERTY IS SUBJECT TO ADDITIONAL EASEMENTS OR RESTRICTIONS OF RECORD.
3. CARTER LAND SURVEYORS IS UNABLE TO WARRANT THE ACCURACY OF BOUNDARY INFORMATION, STRUCTURES, EASEMENTS, AND BUFFERS THAT ARE ILLUSTRATED ON THE SUBDIVISION PLAT.
4. THIS PLAT IS FOR EXCLUSIVE USE BY CLIENT. USE BY THIRD PARTIES IS AT THEIR OWN RISK.
5. DIMENSIONS FROM HOUSE TO PROPERTY LINES SHOULD NOT BE USED TO ESTABLISH FENCES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF DIMENSIONS PRIOR TO CONSTRUCTION.
7. THIS PLAT HAS BEEN CALCULATED FOR CLOSURE AND IS FOUND TO BE ACCURATE WITHIN ONE FOOT IN 10,000 FEET.

Figure 1. Septic system layout and site plan.
Layout performed by S&FS

SCALE: 1" = 40'



NOTE:
PL TIES ARE TO 5" BRICK

LEGEND:

COS- Common Open Space
RBS- Rebar Set
RBF- Rebar Found
BL-Building Line
P- Porch
UE- Utility Easement
-X- Fence
CB- Catch Basin
SSE- Sanitary Sewer Easement
R/W- Right of Way
CONC- Concrete
Dk- Deck
Pat- Patio
S- Stoop
SDE- Storm Drainage Easement
FPE-Flood Protection Elevation
-D- Drainage Easement
-S- Sewer Easement

AREA: 32,311 SF [illegible] ACRES
PRELIMINARY PLAT

HOUSE LOCATION PLAN

BOX DIMENSION TO BE STAKED:
[illegible]' WIDTH X 79.3' DEPTH

HLP FOR:
CLASSICA HOMES

SUBDIVISION: CHACEWATER
LOT: [illegible]
TOWN OF MINT HILL,
MECKLENBURG COUNTY, NORTH CAROLINA
ORDER DATE: 03/07/2013

2013030202 CLASSICA

CARTER LAND SURVEYORS AND PLANNERS
2780 Peachtree Industrial Boulevard
Duluth, GA 30097
Ph: 770.495.9793
Toll Free: 866.637.1048
www.carterland.com
Atlanta • Charlotte • Houston • Dallas
Galveston • Beaumont

B

GENERAL NOTES

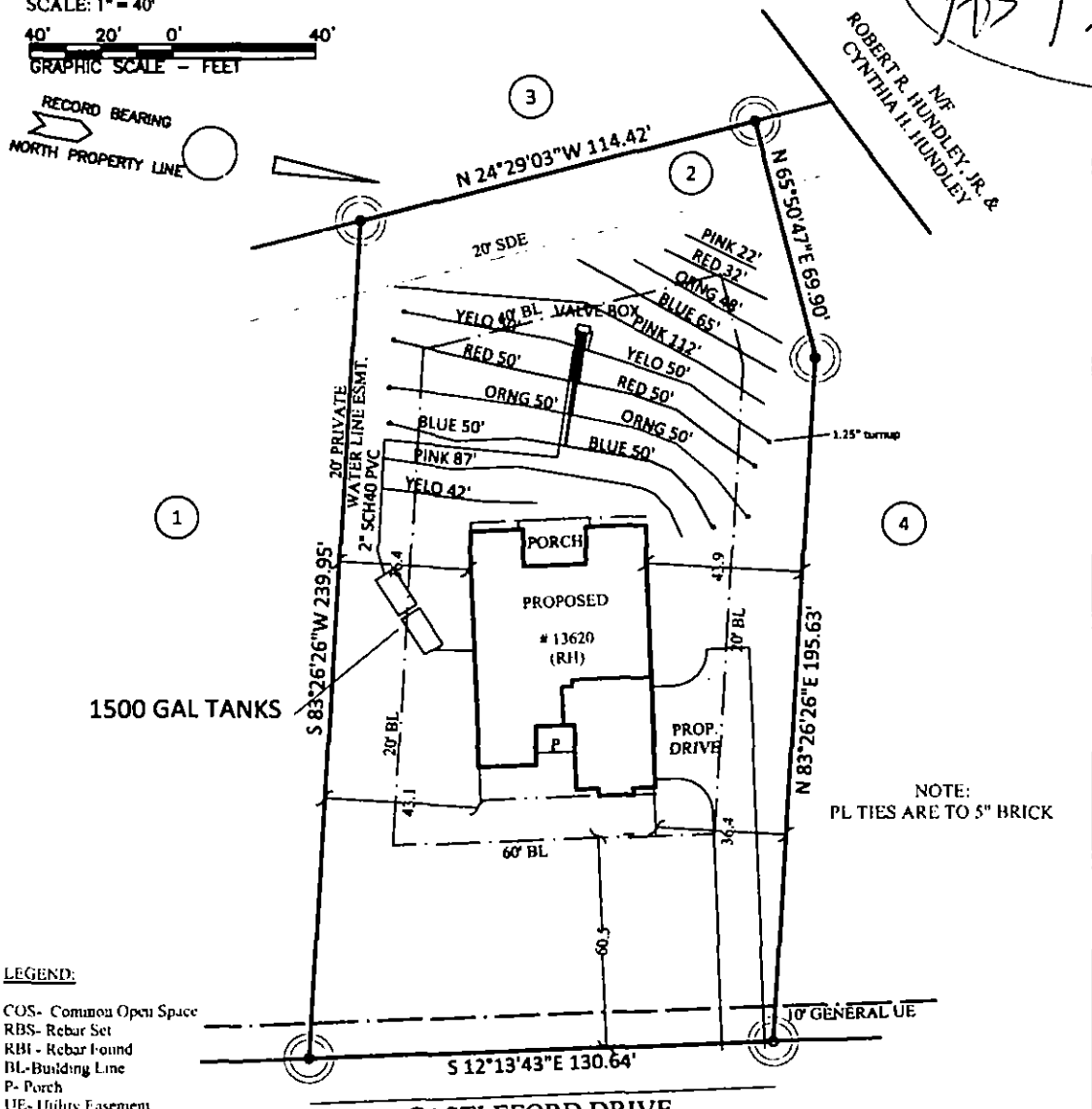
1. NO FIELD WORK HAS BEEN PERFORMED.
2. THIS PROPERTY IS SUBJECT TO ADDITIONAL EASEMENTS OR RESTRICTIONS OF RECORD
3. CARTER LAND SURVEYORS IS UNABLE TO WARRANT THE ACCURACY OF BOUNDARY INFORMATION, STRUCTURES, EASEMENTS, AND BUFFERS THAT ARE ILLUSTRATED ON THE SUBDIVISION PLAT.
4. THIS PLAT IS FOR EXCLUSIVE USE BY CLIENT. USE BY THIRD PARTIES IS AT THEIR OWN RISK.
5. DIMENSIONS FROM HOUSE TO PROPERTY LINES SHOULD NOT BE USED TO ESTABLISH FENCES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF DIMENSIONS PRIOR TO CONSTRUCTION.
7. THIS PLAT HAS BEEN CALCULATED FOR CLOSURE AND IS FOUND TO BE ACCURATE WITHIN ONE FOOT IN 10,000 FEET.

As Built

Figure 1. Septic system layout and site plan.
Layout performed by S&FS

SCALE: 1" = 40'

40' 20' 0' 40'
GRAPHIC SCALE – FEET



NOTE:
PL TIES ARE TO 5" BRICK

LEGEND:

COS- Common Open Space
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PRELIMINARY PLAT

HOUSE LOCATION PLAN

BOX DIMENSION TO BE STAKED:
WIDTH X 79.3' DEPTH

HLP FOR:
CLASSICA HOMES

SUBDIVISION: CHACEWATER
LOT :

MECKLENBURG COUNTY, NORTH CAROLINA
ORDER DATE:

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8683B

MECKLENBURG COUNTY HEALTH DEPARTMENT Apt #6473

APPLICATION FOR A RESIDENTIAL SITE IMPROVEMENT PERMIT/ CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER SYSTEM, NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

1. **SEPTIC / TYPE APPLICATION:** ○ N/A ○ NEW SYSTEM ○ ALTERATION ○ REPAIR ● MODIFIED PLOT PLAN

2. **WELL / TYPE APPLICATION:** ● N/A ○ NEW WELL ○ MAJOR REPAIR ○ ABANDONMENT

3. **JOB LOCATION INFORMATION:**
TAX PARCEL NUMBER: 19508139
STREET ADDRESS: 13620 Castleford Dr.
CITY: Charlotte
STATE: NC ZIP: 28227
SUBDIVISION NAME: Chancewater
LOT #: 82 LOT SIZE (acres): _____
TOWNSHIP:
○ MECKLENBURG ○ CORNELIUS ○ HUNTERSVILLE
○ DAVIDSON ○ CHARLOTTE ○ PINEVILLE
○ MATTHEWS ● MINT HILL

4. **BUILDING INFORMATION:**
BUILDING TYPE:
○ SINGLE MOBILE HOME ○ MODULAR HOME
○ DOUBLE WIDE ○ MULTIPLE FAMILY
● HOUSE ○ OTHER _____
HEATED SQUARE FOOTAGE: 4300
NUMBER OF BEDROOMS: 6 *
NUMBER OF OCCUPANTS: 4
FOUNDATION TYPE:
● CONCRETE SLAB ○ BASEMENT WITH PLUMBING
○ CRAWL SPACE ○ BASEMENT WITH NO PLUMBING

5. **IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM PLEASE COMPLETE THE FOLLOWING SECTION:** ☐ N/A

NUMBER OF BEDROOMS TO BE ADDED: _____ NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE: _____

6. **WATER SUPPLY:** ○ MUNICIPAL ● PRIVATE WELL ○ PUBLIC WELL ○ SHARED WELL ○ OTHER _____

7. **PROPOSED USE OF WELL:** ● N/A ○ IRRIGATION ○ POTABLE (DRINKING WATER) ○ OTHER _____

8. **PLEASE INDICATE AND RANK DESIRED SEPTIC SYSTEM TYPE(S) IN ORDER OF PREFERENCE** *(1-MOST DESIRED 5-LEAST DESIRED)*:

☐ N/A ☐ ANY TYPE ☐ CONVENTIONAL ☐ ACCEPTED ☐ INNOVATIVE ☐ ALTERNATIVE ☐ OTHER _____

8A. **RANK:** ____ ____ ____ ____ ____

9. **DO ANY OF THE FOLLOWING APPLY TO THE PROPERTY IN QUESTION? IF "YES" PLEASE ATTACH SUPPORTING DOCUMENTATION.**

BURIED CABLES, LANDFILLS, STUMPHOLES	○ YES ● NO	GRADING/SOIL REMOVAL PERFORMED	○ YES ● NO
EXISTING WASTEWATER (SEPTIC) SYSTEMS	○ YES ● NO	JURISDICTIONAL WETLANDS	○ YES ● NO
WELLS, SPRINGS, OR WATER LINES	○ YES ● NO	APPROVAL REQUIRED BY ANY OTHER PUBLIC AGENCY	○ YES ● NO
EASEMENTS OR RIGHT-OF-WAYS	○ YES ● NO	WASTEWATER OTHER THAN DOMESTIC SEWAGE	○ YES ● NO
CHEMICAL/PETROLEUM STORAGE TANKS	○ YES ● NO	KNOWN UNDERGROUND CONTAMINATION	○ YES ● NO
WASTE STORAGE	○ YES ● NO	GROUNDWATER USE RESTRICTIONS/VARIANCES	○ YES ● NO

10. **WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED?** 9/1/2008 ☐ UNKNOWN

11. **WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY?** 3/28/2013 ☐ N/A

12. **PROPERTY OWNER:**
NAME: Moritz Properties
ADDRESS: 1111 Metropolitan Ave #775
CITY: Charlotte
STATE: NC ZIP: 28204
WORK PHONE: 704-377-9996
MOBILE PHONE: 704-301-9466
FAX: _____
E-MAIL: _____

13. **OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:**
NAME: Rick Jasinski - Classica Homes
ADDRESS: 1101 Ridge Castle Dr.
CITY: Woodlawn Charlotte
STATE: NC ZIP: 28217
WORK PHONE: 704-940-3918
MOBILE PHONE: 704-301-8926
FAX: _____
E-MAIL: _____

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

_____ (Initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for a period of twelve (12) months from the date of issuance.

N/A (Initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. A proper signature is required in order to process your application. Please review the application carefully and sign in the space provided below. A PROPOSED PLOT PLAN is required to be submitted with each application.

_____ Classica Homes, LLC 10/15/13

Property Owner's or Owner's Legal Representative Signature Date

---

OFFICE USE ONLY

O SURVEY PLAT TO SCALE SUBMITTED O SCALED SITE PLAN SUBMITTED O UN-SCALED SITE PLAN SUBMITTED

SEPTIC APPLICATION FEE RECEIVED: $ _____ DATE FEE RECEIVED: _____

WELL APPLICATION FEE RECEIVED: $ _____ DATE FEE RECEIVED: _____

APPLICATION PROCESSED BY: Qwa

GWS FILE NUMBER ASSIGNED: 86838

APPLICATION ID NUMBER ASSIGNED: 6473

COMMENTS:

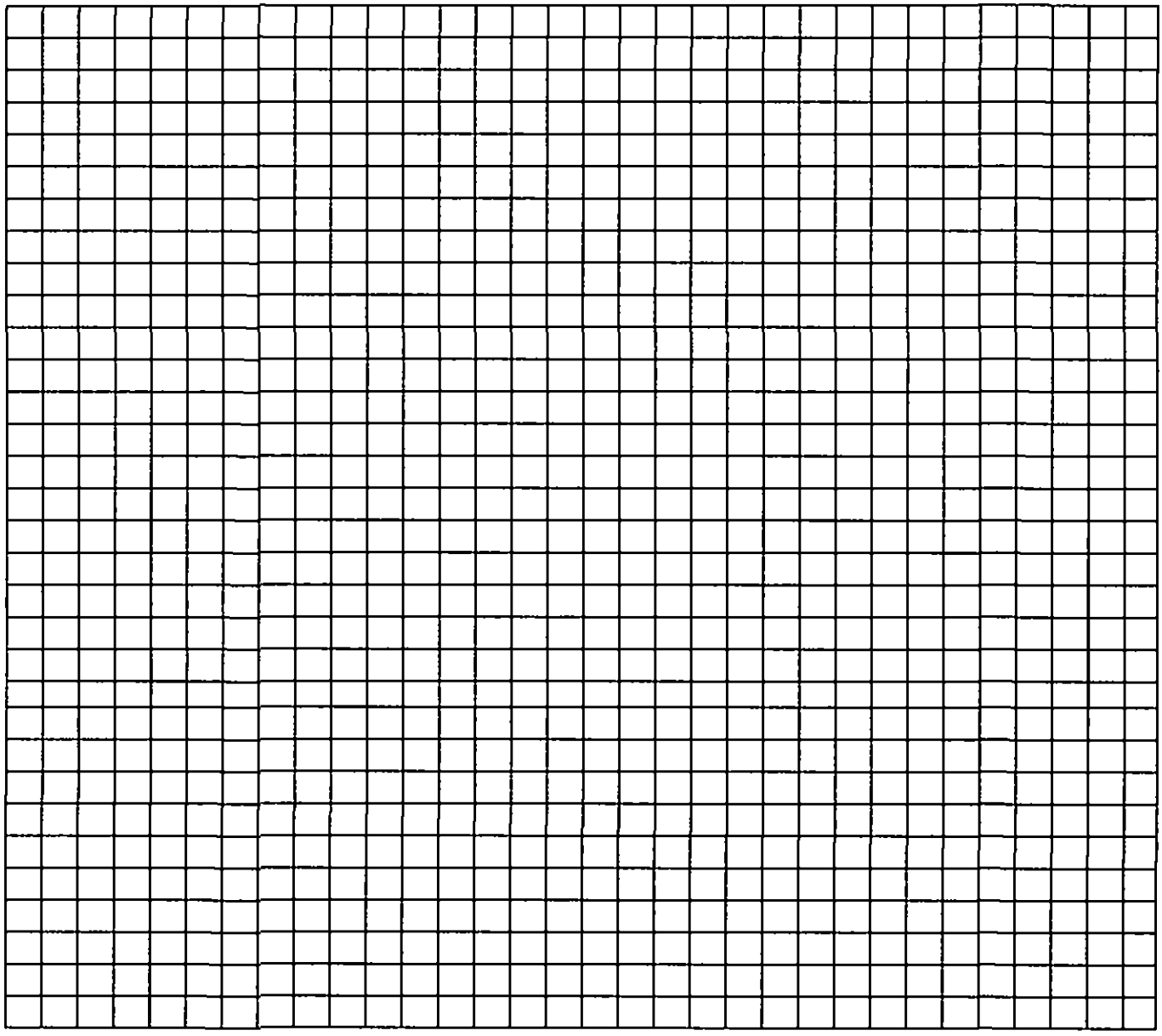
MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

File #: _____ **PROPOSED PLOT PLAN** Engineer Plan Submitted

A drawing showing the locations of the following items is required: existing and proposed property lines with dimensions, easements or right-of-ways, proposed building pad(s) or existing building footprint(s), all appurtenances (garage, driveway, deck, pool, etc.), location of existing or proposed well(s), location of existing or proposed sewer lines and sewage disposal systems, surface water bodies, and any aboveground or underground storage tanks. Provide names for all roads that adjoin the property.

Street Address: _____ Tax Parcel #: _____

Subdivision Name: _____ Lot #: _____



_____ _____

Property Owner's or Owner's Legal Representative Signature Date

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

Soil & Forestry Services of the Carolinas, PA

(704) 239-2001

A Pressure Dosed PPBPS Septic System: (6 BR) at
Lot 2 Chacewater Subdivision (Pin 19508139)
13620 Castleford Drive, Mint Hill, NC 28227

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
- Layout Specifications---------- 4
- System Flow---------- 5
- Repair Flow---------- 6

Site Plan---------- 7

Septic Tank Diagram---------- 8

Pump Tank Diagram---------- 9

Control Panel Specifications---------- 10-13

Pump Specifications---------- 14-15

Valve Box Specifications---------- 16

Calculations---------- 17

Electric Box Specifications---------- 18

GWS Septic System Design Review

October 14, 2013 **GWS File #:** 3683B **Approved** **Disapproved**

Wendell Overby, LSS
(704) 239-2001

Design Review: ☑ ☐

Field Review: ☑ ☐

***Projects are not considered "APPROVED" until both sections above are completed and indicate an APPROVED status.**

Soil & Forestry Services of the Carolinas, PA

(704) 239-2001

A Pressure Dosed PPBPS Septic System: (6 BR) at
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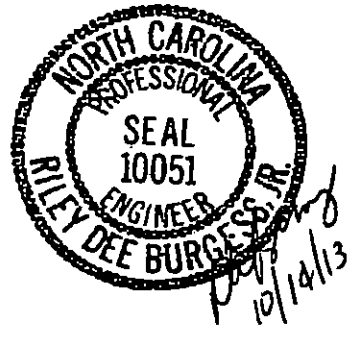
Pump Specifications ---- 14-15

Valve Box Specifications ---- 16

Calculations ---- 17

Electric Box Specifications ---- 18

October 14, 2013
Wendell Overby, LSS
(704) 239-2001



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
- Elevations at pinflag locations should be checked by the installer prior to installation.
- Pump tank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System and repair are specified as pressure dosed panel
- 2' wide trenches to be used, trenches raked and limed as per manufacturer
- 8, 1.25" gate valves required in valve box (see diagram)
- ***Grade boards required for installation***

PRESSURE DOSED PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Classica Homes
Address:	1101 Wood Ridge Center Drive 155 Charlotte, NC
Phone:	704 201-8976
County:	Mecklenburg
Location:	*Chacewater Lot 2*
Source of Wastewater Flow:	6 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	720 gpd
System Flow:	36.08

Design Specifications

Drainfield Size:	400
Loading Rate:	0.3 gpd/ft.^{2}
Depth of Gravel in Trench:	n/a
Gravel Size:	n/a
Trench Depth:	30 in
Trench Width:	24 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	125
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	21.75
Dosing Volume:	317.00
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	3.33
Elevation Head:	12.00
Total Dynamic Head:	23.37
Threaded Union:	In Tank
Gate Valves:	1 in Tank 8 in valve box
Check Valves:	In Tank
Anti-Siphon Hole:	No
Recommended Pump:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering 23 ft.of Head at 36 gpm Total Flow
Additional Comments:	Soil suitability was performed by Mecklenburg County G&W Services

Chacewater Lot 2
PPBPS Design

DESIGN FLOW:	720
SOIL APPLICATION RATE:	0.3 gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	125
TOTAL DYNAMIC HEAD:	23.37
DOSING VOLUME:	317.00
PUMP TANK DRAW DOWN*:	10.9
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.
RECOMMENDED PUMP:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering 23 ft.of Head at 36 gpm Total Flow

**Pump tank draw down based on a volume basis of 29 gallons per inch. Draw down may vary among pump tank manufacturers.*

Chacewater Lot 2

Layout for a 6 bedroom home

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	Oct 2013 FLAGGED LINE	DESIGN LINE
TBM		6.1			100.0		
INSTR. 1			106.1				
			REPAIR				
1	Pink			3.10	103.8	22	
2	Red	3.3		2.10	104.0	32	
3	Orange			2.40	103.7	48	
4	Blue			2.70	103.4	65	
5	Pink			3	103.1	112	
			SYSTEM				
6	Yellow			3.8	102.3	107	100
7	Red			4.50	101.6	114	100
8	Orange			5.10	101.0	113	100
9	Blue			5.80	92.4	100	100
			REPAIR				
10	Pink			6.30	92.2	87	
11	Yellow			6.90	91.9	42	

	LINE LENGTH	LTAR GPD/FT	SYSTEM TYPE	REDUCTION TYPE	DISTRIBUTION
SYSTEM	400	0.300	PPBPS	50%	LPP
REPAIR	408	0.300	PPBPS	50%	LPP

Notes:

** TBM is patio height

**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

Chacewater Lot 2

System (PPBPS)

DESIGN SPECIFICATIONS

Line #	Color	#Panels	#Holes Panel	Line Length	Hole Size	Line Head	Line Flow
6a	Yellow	11	1	50	5/32"	2	4.51
6b	Yellow	11	1	50	5/32"	2	4.51
7a	Red	11	1	50	5/32"	2	4.51
7b	Red	11	1	50	5/32"	2	4.51
8a	Orange	11	1	50	5/32"	2	4.51
8b	Orange	11	1	50	5/32"	2	4.51
9a	Blue	11	1	50	5/32"	2	4.51
9b	Blue	11	1	50	5/32"	2	4.51
		88		400			36.08

Chacewater Lot 2

REPAIR (PPBPS)

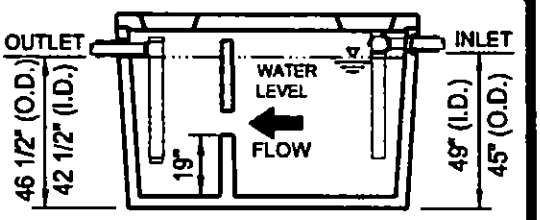
DESIGN SPECIFICATIONS

Line #	Color	#Panels	#Holes Panel	Line Length	Hole Size	Line Head	Line Flow
1	Pink	5	1	22	5/32"	2	2.05
2	Red	7	1	32	5/32"	2	2.87
3	Orange	11	1	48	5/32"	2	4.51
4	Blue	15	1	65	5/32"	2	6.15
5	Pink	25	1	112	5/32"	2	10.25
10	Pink	20	1	87	5/32"	2	8.20
11	Orange	9	1	42	5/32"	2	3.69
		92		408			37.72

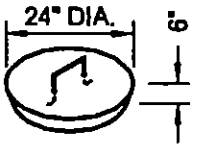
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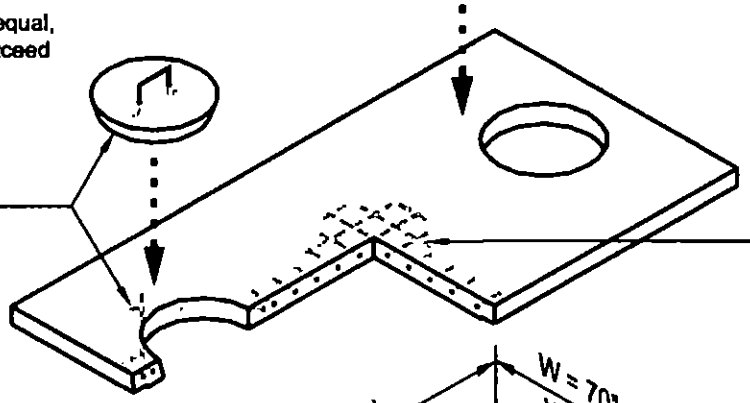
GENERAL NOTES:

1. Design specifications conform to latest ASTM C1227 specifications "Precast Concrete Water and Wastewater Structures"
2. Concrete compressive strength 4,000 psi minimum.
3. Steel reinforcing design to conform to the requirements of ASTM C890 specifications for "Structural Design Loading for Water and Wastewater Structures" and shall utilize grade 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 locations (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

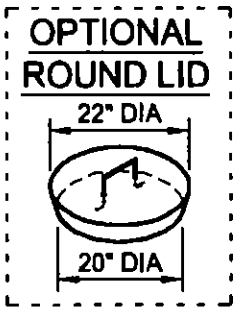


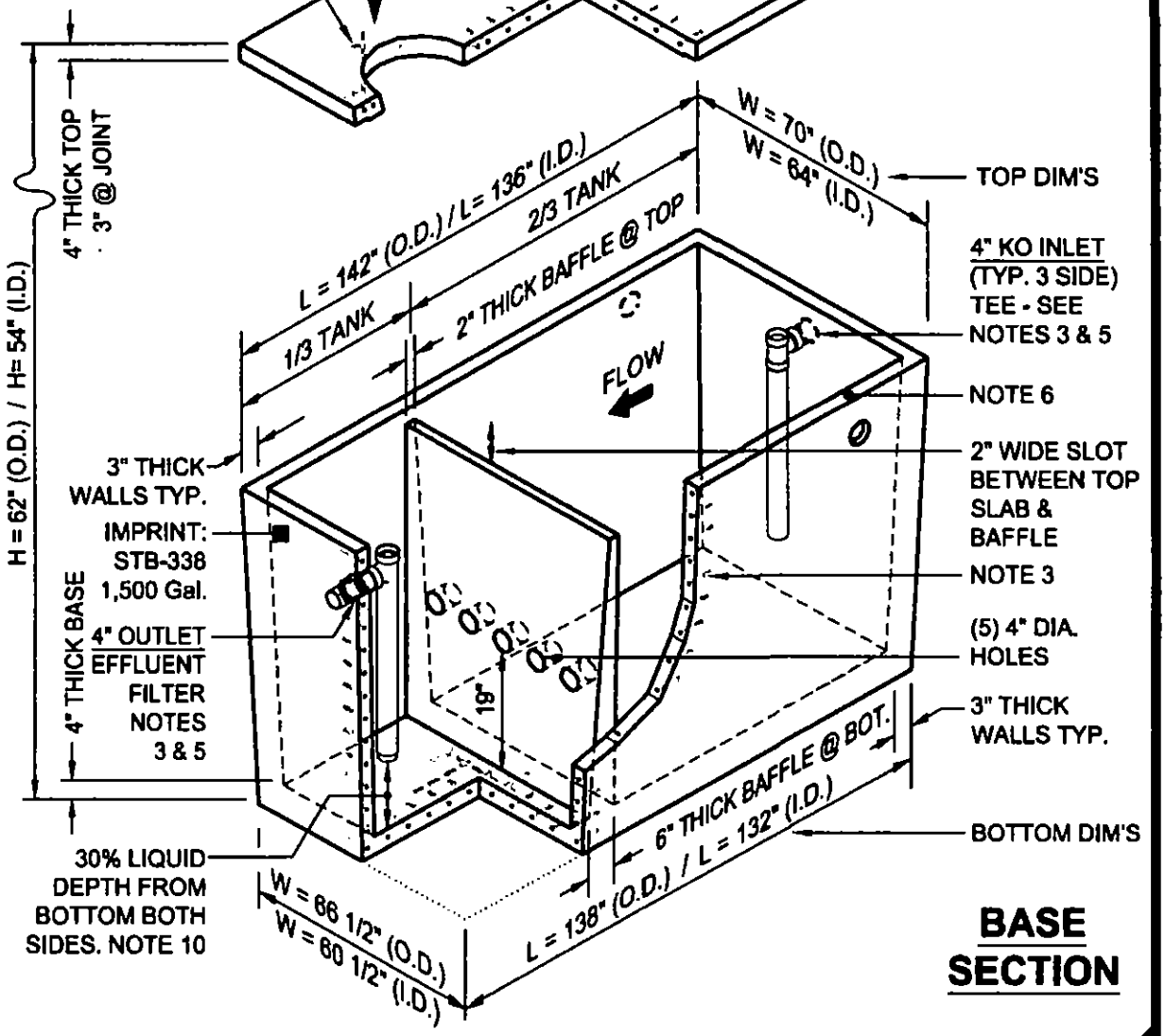
ELEVATION





TOP SLAB





BASE SECTION

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

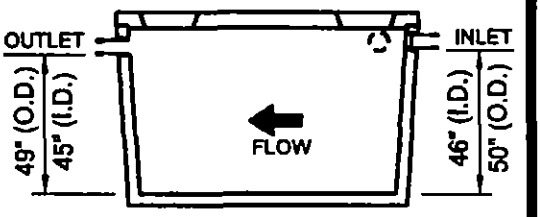
Revision Date: February 2008

Detail # ST-1,500-TS

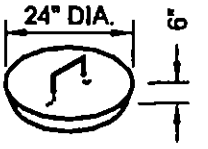
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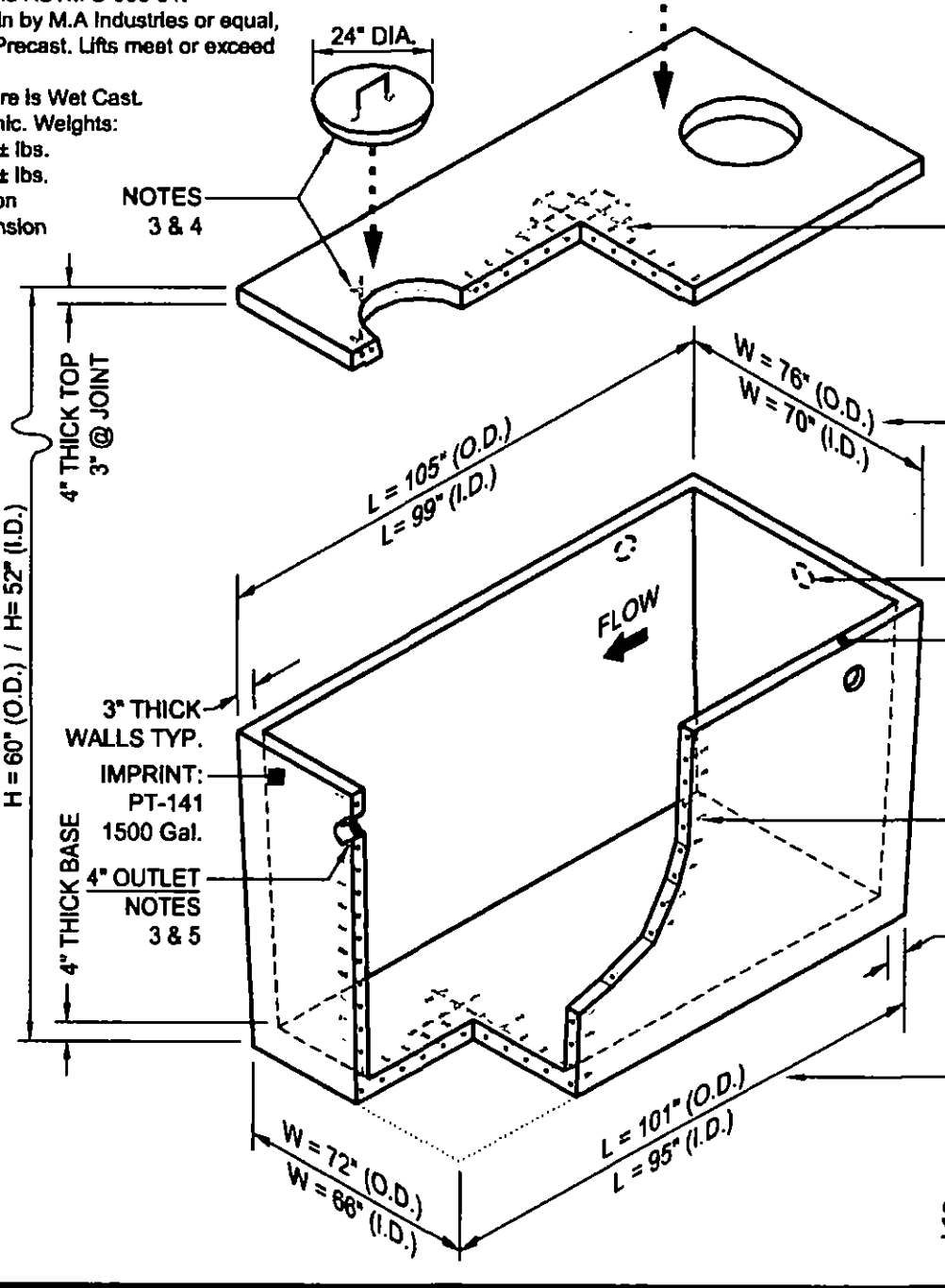
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4. Optional EZ set lid cast in place. Supplied by Dellinger Precast. To be field adjusted using approved methods by contractor.
5. Pipe penetration locations as per job requirements. Pipe inlet and outlet locations to have PSX Direct Drive boots or equal. Pipe inlet locaions (typical 3 sides) to be knock out pannels. Pipe supplied & installed 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 2,636 ± lbs.
   Base Section 7,453 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height



ELEVATION

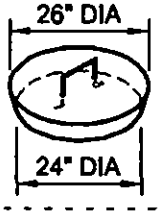




TOP SLAB

BASE SECTION

OPTIONAL ROUND LID



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) PUMP TANK

Scale: Not To Scale

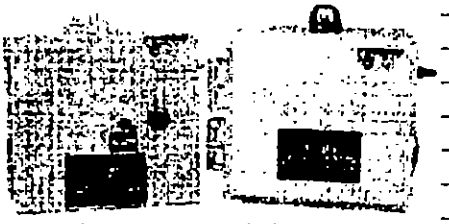
Revision Date: February 2008

Detail # PT-1,500-TS

MODEL 112 Control Panel

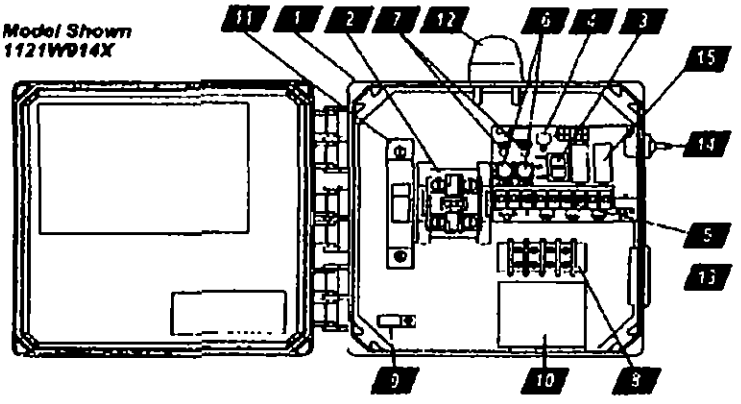
Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single-phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.



Indoor *Indoor/outdoor*

Model Shown
1121W914X



1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).

   * Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching hot electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
11. **Circuit Breaker** *(optional)* provides pump disconnect and branch circuit protection.

STANDARD ALARM PACKAGE (other options available)

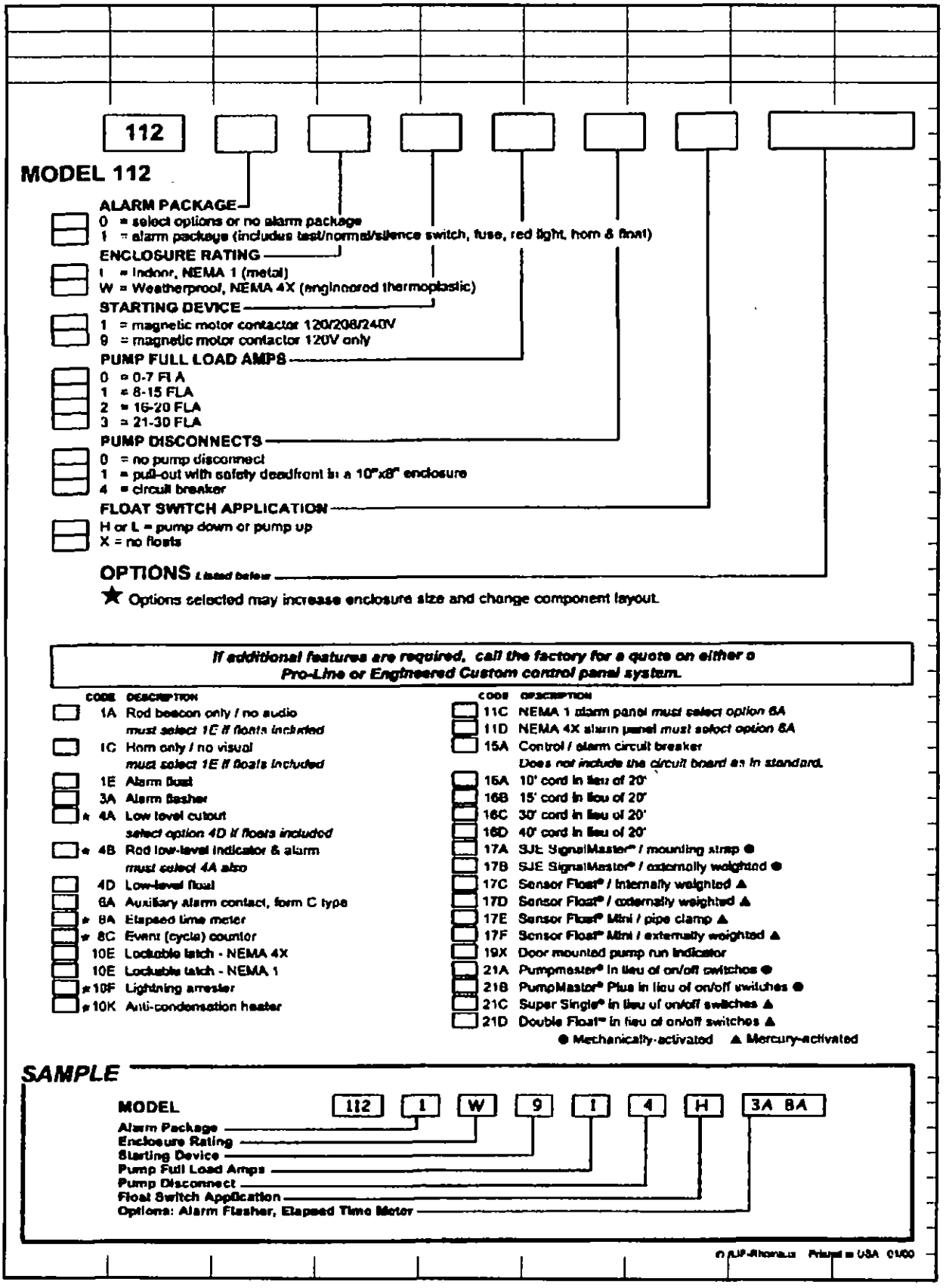
12. **Red Alarm Beacon** provides 360° visual check of alarm condition. **Note:** NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating). **Note:** NEMA 1 style utilizes an internally mounted buzzer (83 to 85 decibel) in lieu of horn.
14. **Exterior Horn Test/Normal/Silence Switch** allows alarm horn to be silenced and testing of horn and light to ensure proper operation of alarm system.
15. **Horn Silence Relay** automatically resets alarm after alarm condition has been resolved (mounted on circuit board).

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty

c UL us
LISTED

SJE Rhombus CONTROLS
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE (1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com



112 | | | | | | | |

MODEL 112

ALARM PACKAGE
0 = select options or no alarm package
1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING
I = Indoor, NEMA 1 (metal)
W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE
1 = magnetic motor contactor 120/208/240V
9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS
0 = 0-7 FLA
1 = 8-15 FLA
2 = 16-20 FLA
3 = 21-30 FLA

PUMP DISCONNECTS
0 = no pump disconnect
1 = pull-out with safety deadfront in a 10"x8" enclosure
4 = circuit breaker

FLOAT SWITCH APPLICATION
H or L = pump down or pump up
X = no floats

OPTIONS *(Listed below)*

★ Options selected may increase enclosure size and change component layout.

If additional features are required, call the factory for a quote on either a Pro-Line or Engineered Custom control panel system.

CODE	DESCRIPTION
1A	Rod beacon only / no audio *must select 1C if floats included*
1C	Horn only / no visual *must select 1E if floats included*
1E	Alarm float
3A	Alarm flasher
★ 4A	Low level cutout *select option 4D if floats included*
★ 4B	Rod low-level indicator & alarm *must select 4A also*
4D	Low-level float
6A	Auxiliary alarm contact, form C type
★ 8A	Elapsed time meter
★ 8C	Event (cycle) counter
10E	Lockable latch - NEMA 4X
10E	Lockable latch - NEMA 1
★ 10F	Lightning arrester
★ 10K	Anti-condensation heater

CODE	DESCRIPTION
11C	NEMA 1 alarm panel *must select option 6A*
11D	NEMA 4X alarm panel *must select option 6A*
15A	Control / alarm circuit breaker *Does not include the circuit board as in standard.*
16A	10' cord in lieu of 20'
16B	15' cord in lieu of 20'
16C	30' cord in lieu of 20'
16D	40' cord in lieu of 20'
17A	SJE SignalMaster® / mounting strap ●
17B	SJE SignalMaster® / externally weighted ●
17C	Sensor Float® / internally weighted ▲
17D	Sensor Float® / externally weighted ▲
17E	Sensor Float® Mini / pipe clamp ▲
17F	Sensor Float® Mini / externally weighted ▲
19X	Door mounted pump run indicator
21A	Pumpmaster® in lieu of on/off switches ●
21B	PumpMaster® Plus in lieu of on/off switches ●
21C	Super Single® in lieu of on/off switches ▲
21D	Double Float™ in lieu of on/off switches ▲

● Mechanically-activated ▲ Mercury-activated

SAMPLE

MODEL	112	1	W	9	I	4	H	3A 8A
Alarm Package								
Enclosure Rating								
Starting Device								
Pump Full Load Amps								
Pump Disconnect								
Float Switch Application								
Options: Alarm Flasher, Elapsed Time Meter								

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SENSOR FLOAT® control switch

Mercury-activated, narrow-angle float switch designed to activate pump control panels and alarms.



This narrow-angle sensing device is used to accurately monitor liquid levels in sewage and non-potable water applications. The Sensor Float® control switch is not sensitive to rotation and is suitable for use with intrinsically safe circuits. Contact SJE-Rhombus regarding specific intrinsically safe applications.

Normally Open Model (high level)
The control switch turns on (closes) when the float tips slightly above horizontal signaling a high level, and turns off (opens) when the float drops slightly below horizontal.

Normally Closed Model (low level)
The control switch turns on (closes) when the float drops slightly below horizontal signaling a low level, and turns off (opens) when the float tips slightly above horizontal.

FEATURES

- Suitable for use with intrinsically safe circuits.
- Not sensitive to rotation.
- Control differential of .5 inches (1 cm) above or below horizontal.
- UL Listed for use in non-potable water and sewage.
- CSA Certified.
- Three-year limited warranty.

LISTED

Hydraulic

OPTIONS

This switch is available:

- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 8, or 10 meters.
- with three mounting options that allow for flexibility in installation:

  Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

  Internally Weighted: for applications where the switch can be suspended from above.

  Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL,CSA) SJOW, water-resistant (CPE) jacket

FLOAT: 3.38 inch diameter x 4.55 inch long (8.58 cm x 11.56 cm), high-impact, corrosion resistant, PVC housing for use in sewage and non-potable water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

MERCURY TILT SWITCH: single pole, single throw, mercury-to-mercury contacts, hermetically sealed in a steel capsule and epoxy sealed in the float housing

ELECTRICAL: 5 amp, 120/230 VAC, 50/60 Hz

SJE Rhombus
SJ ELECTRO SYSTEMS, INC.
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1-218-847-4817 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

Sensor Float® control switch installation instructions

⚠WARNING **ELECTRICAL SHOCK HAZARD**
Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠WARNING **EXPLOSION OR FIRE HAZARD**
Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

MOUNTING THE SWITCH

1. Place the cord into the clamp as shown in Figure B.
2. Locate clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. Note: Do not install cord under hose clamp.
3. Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
4. Bring cable leads back to control device and wire according to Figure C.
5. Check installation. Allow system to cycle to insure proper operation.

Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus supplier for replacements.

Figure A

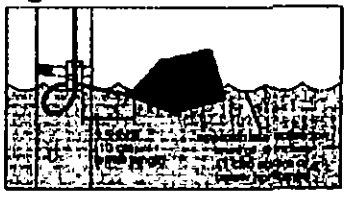
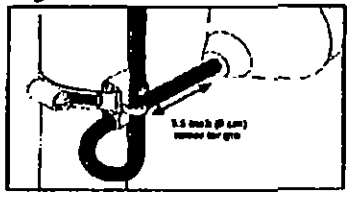


Figure B



INTERNAL WEIGHT

1. Determine desired activation level.
2. Suspend switch 7 inches (18 cm) below desired activation level as shown in Figure D. Switch remains partially submerged during the "on" tipping action. Switch can be totally submerged and still continue to operate properly.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Figure C - Wiring Diagram

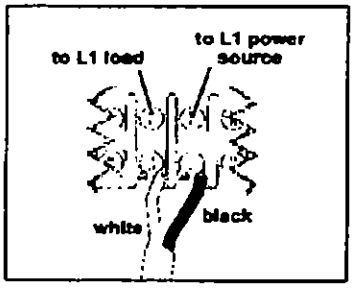
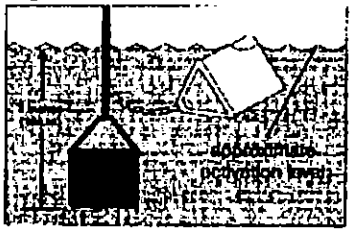


Figure D



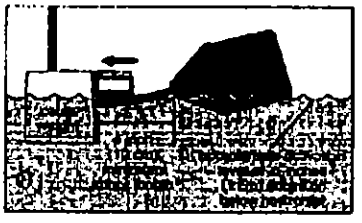
CABLE WEIGHT

1. Determine desired activation level.
2. Suspend switch and cable weight at desired activation level as shown in Figure E.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Cable weight is attached to switch cable at the factory. To adjust:

1. Release clip.
2. Adjust cable weight to desired position.
3. Lay switch cable in weight channel.
4. Align clip with weight channel and slide towards switch cable as shown in Figure E.
5. Snap clip snugly up to cable, moving clip to tightest possible position.

Figure E

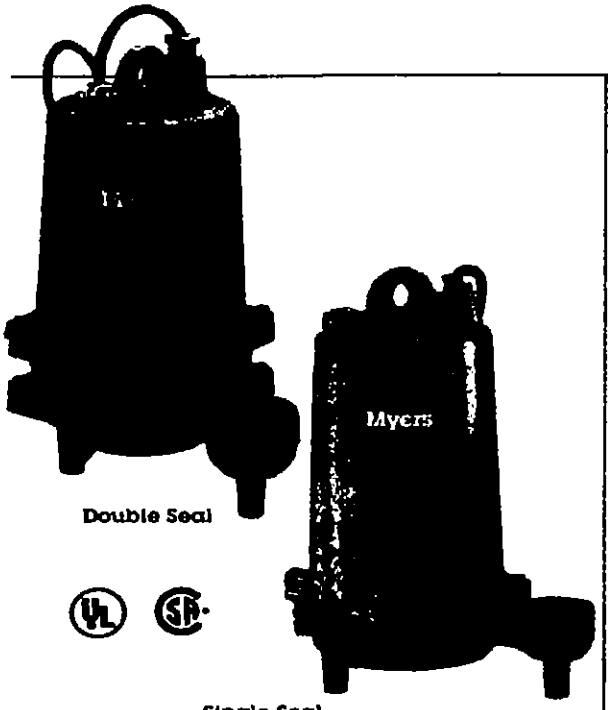


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ME SERIES

1/2 through 1-1/2 HP
Effluent Pumps



Double Seal

Single Seal

THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS. The ME Series effluent pumps with their efficient two vane, enclosed impellers, provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

ADVANTAGES BY DESIGN

IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full ¾ inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage.
- Motors have an winding current and temperature sensitive overload. (Single phase only.)

THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

PRODUCT CAPAILITIES

Capacities To	120 GPM	454 LPM
Heads To	95 ft.	28.9 m
Max. Spherical Solids	¾ in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp	up to 140° F	up to 60° C
Motor Electrical Data	1/2 HP 115 volts, 1 ph 1/2 to 1-1/2 HP 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130° C)	
Third Party Approvals	UL, CSA	
Acceptable pH Range	6-9	
Specific Gravity	0-1.1	
Viscosity	28-35 SUS	
Discharge, NPT	2 in.	50.8 mm
Min. Sump Dia. Simplex	24 in.	61 cm
Duplex	36 in.	91.4 cm

Construction Materials	
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76
Enclosed Two Vane Impeller Standard	engineered thermoplastic
Optional	bronze
Impeller Wear Ring	304 SST
Volute Sealing Ring	Buna-N
Shaft	416 SST
Power Cord	
1/2 HP 1 Ph	20 ft. 16/3 SJOW/SJOW-A
3/4 - 1-1/2 HP 1 Ph	20 ft. 14/3 SJOW/SJOW-A
All 3 Ph	20 ft. 14/4 SOW/SOW-A
Shaft Seals Standard	single carbon & ceramic
Optional	tandem carbon & ceramic
Opt. Lower	tungsten carbide
Fasteners	300 Series SST

WHERE INNOVATION MEETS TRADITION

ISO 9001 Certified Company

Myers
PENTAIR PUMP GROUP

ME SERIES

1/2 through 1-1/2 HP
Effluent Pumps

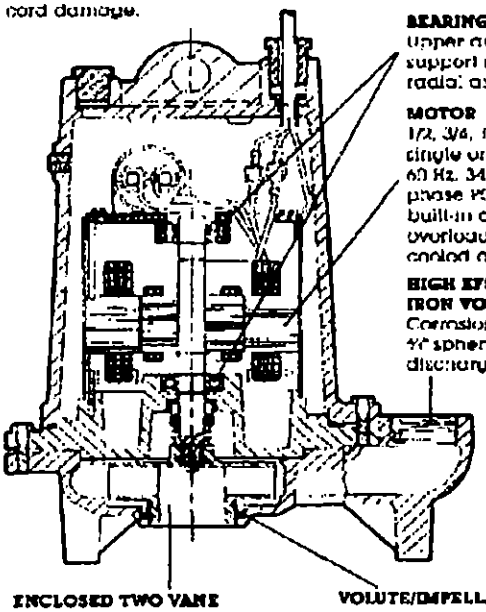
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

MOTOR HOUSING
Cast iron for efficient heat transfer and corrosion resistance.

BEARINGS
Upper and lower ball support rotor. Take radial and thrust loads.

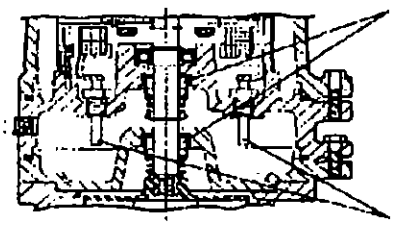
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in oil winding overload protection, oil-cooled and lubricated

HIGH EFFICIENCY CAST IRON VOLUTE
Corrosion resistant. Passes ½" spherical solids. 2" NPT discharge.



ENCLOSED TWO VANE IMPELLER
High efficiency. Passes ½" spherical solids with stainless steel wear ring. Optional bronze construction available

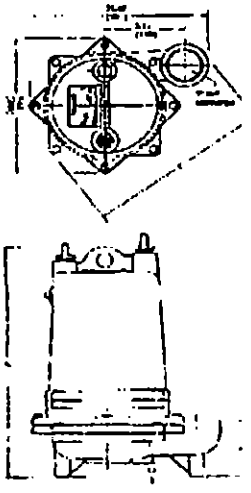
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable



SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

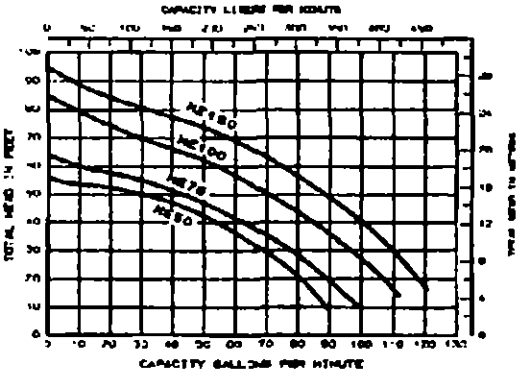
SEAL LEAK PROBES
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light

DIMENSIONS



Model Series	Inches (millimeters) A	B	C	F
ME50S	16.8 (427)	4.09 (104)	1.03 (26)	12.13 (308)
ME50D	18.6 (472)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

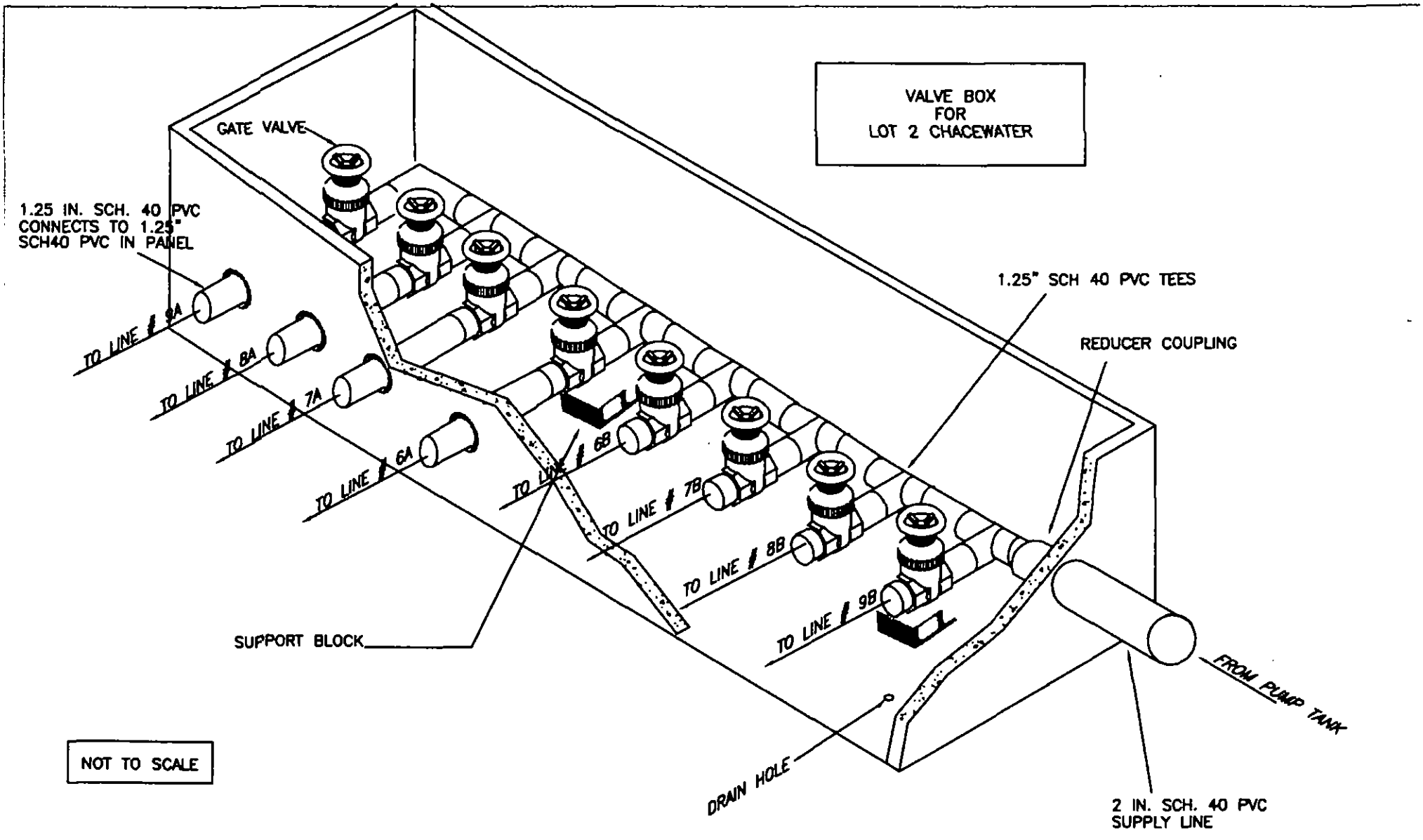
PERFORMANCE CURVE



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Myers (Canada), 200 Trillium Drive, Kitchener, Ontario N2G 4W5
519/748-5170, FAX: 519/748-2553


VALVE BOX
FOR
LOT 2 CHACEWATER
GATE VALVE
1.25 IN. SCH. 40 PVC
CONNECTS TO 1.25"
SCH40 PVC IN PANEL
1.25" SCH 40 PVC TEES
REDUCER COUPLING
TO LINE # 9A
TO LINE # 8A
TO LINE # 7A
TO LINE # 6A
TO LINE # 6B
TO LINE # 7B
TO LINE # 8B
TO LINE # 9B
SUPPORT BLOCK
FROM PUMP TANK
DRAIN HOLE
2 IN. SCH. 40 PVC
SUPPLY LINE
NOT TO SCALE

CALCULATIONS

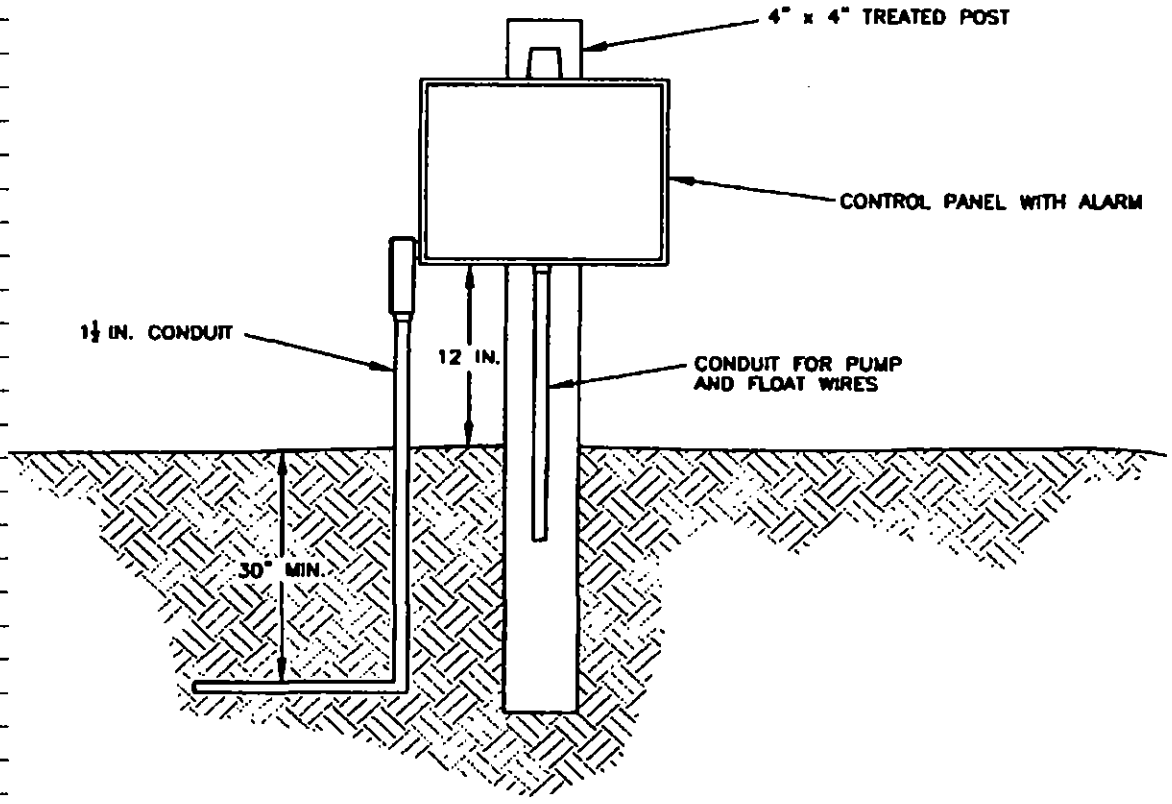
Location Chacewater Subdivision

Project Number	13-1006	
Lot No:	2	
No. of Bedrooms	6	
Design Flow	720	$^{gal}/_{day}$
LTAR	0.3	$^{gal}/_{ft^2\,day}$
Innovative? (YES OR NO)	no	
Supply Line Length	125	ft.
Supply Line Volume	21.75	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	400	ft.
Gallons per Minute	36.08	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Lateral Line Volume	261.2	gal.
Dosing Volume	317.00	gal.
	Note: Dosing Volume 88 panels times 3.6 gallons	
Tank Draw Down	10.9	*Generic Draw Down of 29 gal.per in.*
One Dose Pump Run Time	8.79	minutes
Elevation Head	12	ft.
Pressure Head	2	ft.
Friction Factor	2.66	ft./100 ft. *(From the interpolater.)*
Friction Head	3.33	ft.
Lateral friction loss	3	
Total Dynamic Head (+15%)	23.37	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
31.5	2.10
32.8	2.37
36	2.66
40	3.03
42.4	3.39
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42

ELECTRIC BOX



NOTES: ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE #12 MINIMUM, AND RATED FOR DIRECT BURY. PROVIDE GROUNDING AS REQUIRED, AND PROVIDE 30" MINIMUM BURY ON CABLES. PROVIDE ONE 20 AMP, DOUBLE POLE, 230 VOLT CIRCUIT BREAKER (FOR PUMP), AND ONE 20 AMP, SINGLE POLE, 115 VOLT CIRCUIT BREAKER (FOR ALARM) IN MAIN PANEL.