Please Call ICHD
Plans For Site Visit

Penninger Soil Consulting, PLLC
Ph: 704-996-6330 Email: pgpenninger@gmail.com

July 8, 2015

Mr. Phillip Hurst
4246 Sigmon Cove Lane
Terrell, North Carolina 28682

Reference: **Technical Assistance with Fast Track Septic Permitting**
Revised Repair area and Proposed Pool Area
444 Bay Harbour Road
The Harbour Lot 31 Phase 5
Iredell County, North Carolina
Project No. 15-109

Dear Mr. Hurst:

Penninger Soil Consulting, PLLC has provided technical assistance to obtain a possible new 4-bedroom septic Improvement Permit from the Iredell County Health Department (ICHD) for the referenced lot. The technical assistance was performed in general accordance with our written proposal dated June 22, 2015.

Lot 31 Phase 5 The Harbour Subdivision has an existing 4-bedroom T&J Panel drainfield. The Operation Permit for the system was issued by the ICHD on November 17, 2014. Based on our site meeting, we understand you have the home for sale and want to revise the permitted repair area to allow a small pool pad off the right, rear corner of the house to facilitate the home sale. The lot was recorded in 1996 which allows use of part of the lake buffer for the repair area with pretreated effluent.

Mr. Paul Penninger visited the lot with you on June 18, 2015 to review the house location and possible pool location. Mr. Penninger visited the lot on June 26, 2015 to locate the existing drainfield, flag the proposed T&J Panel repair system, and place two hand auger borings in the lake buffer for the proposed TS-II pretreatment drip repair area. Your surveyor located the flagged existing system, the existing tanks, the flagged T&J Panel repair, staked the lake buffer, and staked the property lines.

We are proposing a split 100% repair area. Eighty percent of the repair area is proposed as a T&J Panel system outside the lake buffer and 20% of the repair is proposed as a TS-II drip system in the first 20 feet of the lake buffer. Similar split repair areas have been approved by the ICHD recently that specified an Orenco MVP-Duplex control panel to distribute the effluent to the drainfields. If the repair has to be installed in the future, a Professional Engineer may be required to design the system.

Mr. William Allison with the Iredell County Planning Department indicated in a phone conversation on June 30, 2015 that the pool can be located closer than 10 ft to the existing home, but if so it must maintain a 15 ft property line setback. The pool must be at least 15 feet from the propose repair drainfields. The pool decking can extend closer than 15 ft to the drainfield. The ICHD may make any changes deemed necessary for the proposed repair area on the Improvement Permit or the attached site plan.

The attached information is not an Improvement Permit or Authorization to Construct, and is only to assist you with the Fast Track site evaluation. The attached plan is not intended to be a Professional Engineer plan. The ICHD must approve each lot and only the ICHD can issue these permits. The ICHD should verify all soils and system specifications, required setbacks, and whether a professional engineer plan is required before permitting and/or septic system installation. Soil evaluations and system layouts are done based on interpretations of the rules governing wastewater treatment and disposal systems and are not guarantees for site approval or future septic system performance.

If you have any questions or require additional information please contact us at your convenience.

Sincerely,

Penninger Soil Consulting, PLLC

Paul G. Penninger, L.S.S.
Soil Scientist

Attachments:

1. ICHD Improvement Permit Application for Revised Repair Area
2. Site Plan and System Specifications
3. Existing ICHD Permits and Record Plat

C:\Users\Paul G. Penninger\Documents\2015 Projects\15-109 Phillip Hurst\444 Bay Harbour\15-109 Phillip Hurst - 444 Bay Harbour Fast Track Summary Letter.doc

The Harbour Lot 31 Phase 5 Fast Track System Specifications
Application to revise repair area to allow a future pool area.
Phillip Hurst - July 8, 2015

Number of Bedrooms	4
Basement or Crawl	**crawl/slab garage**
Design Flow (gpd)	480
LTAR (gpd/ft2)	0.3 per existing ICHD Permits

Primary System Type
Linear Feet

Existing LP PPBPS (T&J Panel)
270 per Operation Permit

Proposed Revised 100 Percent Repair System

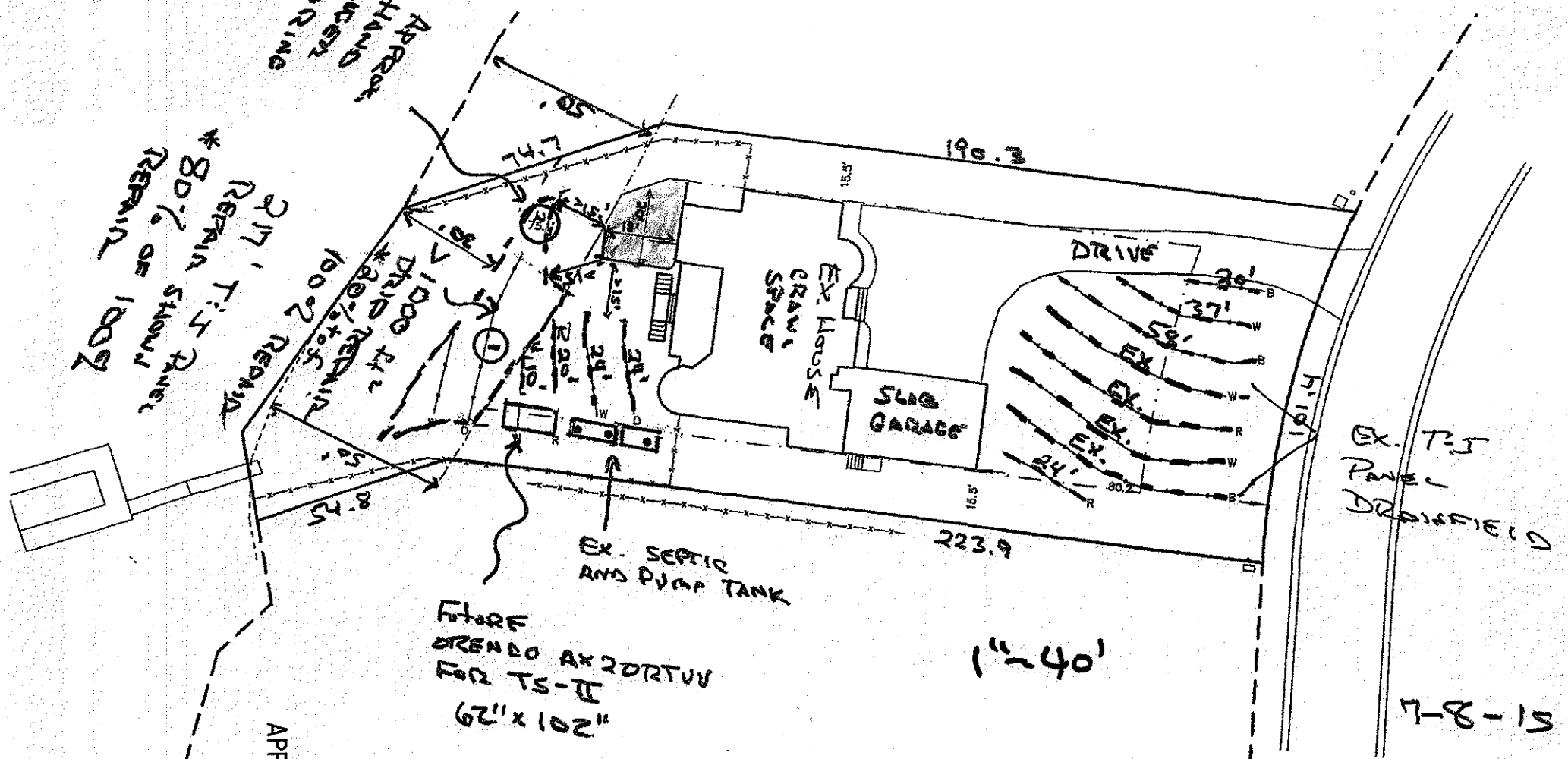
LP PPBPS (T&J Panel) - 80% of 100% Repair Area
*217 feet T&J Panel Repair shown (80% of the required 270 ft. of T&J Panel)
Use 0.3 gpd/sqft LTAR per Existing ICHD Permit and 2015 Hand Auger Borings

APPROVED JUL 15 2015

TS-II Pretreatment Drip - 20% of 100% Repair Area
Need Drip repair for 20% of the 480 gpd design flow (need drip repair for 96 gpd flow)

TS-II Drip LTAR per IWWS-93-1-R6B (approved February 4, 2010)
Use 34 inch tubing depth in clay loam soil material with LTAR range of 0.2 to 0.6 gpd/sqft.
*LTAR cannot exceed midrange for reduced setbacks - 0.4 gpd/sqft.
*Use low end of range - 0.2 gpd/sq ft.
***480 sq ft repair required - over 1,000 sq drip repair shown.**

If tubing depth of less than 34 inches use LTAR must be 0.1 gpd/sqft for clay soil
*960 sq ft repair required - over 1,000 sq ft shown


— EXISTING T:J PANEL SYSTEM
— EXISTING + PROPOSED REPAIR
— POSSIBLE FUTURE POOL
PROPOSED REPAIR AREA
EXISTING T:J PANEL SYSTEM
100% REPAIR
100% REPAIR
100% REPAIR
74.7
.05
190.3
15.5'
DRIVE
EX. HOUSE CRAWL SPACE
SLAB GARAGE
EX.
EX.
EX.
EX.
37'
24'
80.2'
191.4
EX. T:J PANEL DRAINFIELD
EX. SEPTIC AND PUMP TANK
223.9
52.8
.05
FUTURE ORENDO AX20RTVV FOR TS-II 62" x 102"
1"=40'
7-8-15
APPROVED JUL 15 2015
- 444 BAY HARBOUR - LOT 31 PH.5
- FUTURE POOL - REVISED 100% REPAIR SKETCH
* MUST ACCOMPANY PERRINGER SOIL CONSULTING, PLLC WRITTEN REPORT

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

Sheet 1 of 1
PROPERTY ID #:
COUNTY:

SOIL/SITE EVALUATION
***for* ON-SITE WASTEWATER SYSTEM**
(Complete all fields in full)

APPROVED JUL 15 2015
BA

OWNER: Phillip Hogg
ADDRESS: 444 Bay Haven
PROPOSED FACILITY: 4 Bdr
LOCATION OF SITE: Harbor Lot 31 Ph 5
APPLICATION DATE
DATE EVALUATED: 6-26
PROPOSED DESIGN FLOW (.1949): 480
PROPERTY SIZE:
PROPERTY RECORDED: N/A

WATER SUPPLY: Private (Public) Well Spring Other
EVALUATION METHOD: (Auger Boring) Pit Cut
TYPE OF WASTEWATER: (Sewage) Industrial Process Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L ~10	0-10	cl wsbk	fr ss/sp	br - A horizon w/ fill				PS -.3-.4
		10-33	C msbk	fr ss/se	red				
		33-52	cl wsbk	fr ss/ss	red	fr - c	sap		
		52-60	D vwsbk	fr ss/ss	multi-colored		SAP		
2	L ~10%	0-10	cl wsbk	fr ss/sp	A horizon w/ fill				PS .3
		10-32	C msbk	fr ss/se	red w/ some OM				
		32-60	cl m-wsbk	fr ss/ss	red	fr	sap		
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	Ex	PS
System Type(s)	T.S	T.S – Shallow Drip
Site LTAR	.3	.3/.2 Drip

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948):
EVALUATED BY: PGP
OTHER(S) PRESENT: must be Approved by ICPD

COMMENTS:

between the trench bottom or point of application, whichever is deeper, and any UNSUITABLE soil horizon, rock, or soil wetness condition shall be 12 inches

3. Except as provided for herein, all requirements for existing fill sites and systems of Rule 1957(b)(2) are applicable to all drip systems in existing fill.

Q. The minimum horizontal setback requirements of Rule .1970 shall be met for systems receiving effluent meeting the NSF-40, TS-I, or TS-II standard, as applicable.

R. For drip systems used on sites where there is at least 18 inches of naturally occurring soil to an UNSUITABLE soil horizon, rock, or soil wetness condition, the horizontal setback reductions of Rule .1970 for NSF-40, TS-I or TS-II, as applicable, may be concurrently taken with LTARs as allowed in Section III.H of this Approval.

S. For drip systems used on sites where there is less than 18 inches of naturally occurring soil to an UNSUITABLE soil horizon, rock, or soil wetness condition, effluent treated to TS-II or a more stringent standard, shall be required in order for reductions in horizontal setbacks allowed for TS-II in Rule .1970 to be taken. The LTAR shall be as allowed in Section III.I. A special site evaluation, pursuant to Section IV of the Approval, shall be required.

T. A special site evaluation, including a hydraulic assessment, shall be provided to the local health department on behalf of the owner, when required pursuant to Section IV of this Approval.

III. System Sizing

A. The LTAR shall be based on the most hydraulically limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the trench bottom or point of application, whichever is deeper.

B. The following table shall be used in determining the LTAR for the American Perc-Rite® aerobic subsurface drip system.

Soil Group	LTAR (area basis) (gpd/ft^2)		
	NSF-40	TS-I	TS-II
I.	1.0-0.6	1.2-0.8	1.5-0.8
II.	0.6-0.4	0.8-0.5	0.8-0.6
III.	0.4-0.15	0.6-0.2	0.6-0.2
IV.	0.15-0.05	0.2-0.05	0.2-0.05

C. Special site and soil limitations in Rule .1970(f)(2)(E) and (F) apply where the LTAR exceeds 1.2 gpd/ ft^2 for TS-II systems on Group I Soils.

D. For aerobic drip systems in new fill [Rule .1957(b)(1)] receiving effluent treated to the NSF-40 standard, the LTAR shall not exceed 0.6 gpd/ft^2 for Group I, 0.4 gpd/ft^2 for Group II, 0.15 gpd/ft^2 for Group III, or 0.05 gpd/ft^2 for Group IV soils, respectively. Soil group is based on the most hydraulically limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or 12 inches below the trench bottom or point of application, whichever is deeper.

E. For aerobic drip systems in new fill [Rule .1957(b)(1)] receiving effluent treated to the TS-I standard, the LTAR shall not exceed 1.0 gpd/ft^2 for Group I, 0.5 gpd/ft^2 for Group II, 0.2 gpd/ft^2 for Group III, or 0.07 gpd/ft^2 for Group IV, respectively. Soil group is based on the most hydraulically limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or 12 inches below the trench bottom or point of application, whichever is deeper. An LTAR above 0.05 gpd/ft^2 in Group IV soil must be supported by a special site evaluation and hydraulic assessment, pursuant to Section IV of this Approval.

F. For aerobic drip systems in new fill [Rule .1957(b)(1)] receiving effluent treated to the TS-II standard, the LTAR shall not exceed 1.0 gpd/ft^2 for Group I, 0.6 gpd/ft^2 for Group II, 0.2 gpd/ft^2 for Group III, or 0.07 gpd/ft^2 for Group IV, respectively. Soil Group is based on the most hydraulically limiting naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or 12 inches below the trench bottom or point of application, whichever is deeper. An LTAR above 0.05 gpd/ft^2 in Group IV soil must be supported by a special site evaluation and hydraulic assessment, pursuant to Section IV of this Approval.

G. For aerobic drip systems in existing fill [Rule .1957(b)(2)] receiving effluent treated to NSF-40, TS-I, or TS-II, the LTAR shall not exceed 0.8 gpd/ft^2 (NSF-40) and 1.0 gpd/ft^2 (TS-I or II)

H. When any reductions are taken in horizontal setbacks pursuant to the use of an NSF-40, TS-I, or TS-II system pursuant to Rule .1970 of this Approval, on sites where there is at least 18 inches of naturally occurring soil to an UNSUITABLE soil horizon, rock, or soil wetness condition, any one of the following LTAR allowances may apply:
   1. The LTAR may be determined pursuant to Section III.B when the only horizontal reductions taken are reduced setbacks to drainage devices.
   2. When effluent is treated to NSF-40, or a more stringent standard, the LTAR in gallons per day per square foot shall not exceed the lowest LTAR for the applicable soil group for Soil Groups I, II and III, pursuant to Section III.B, and 0.10 gpd/ft^2 for Soil Group IV.
   3. When effluent is treated to TS-II or a more stringent standard, the LTAR in gallons per day per square foot shall not exceed the mid-range LTAR for the applicable soil group for Soil Groups I, II and III, pursuant to Section III.B, and 0.10 gpd/ft^2 for Soil Group IV.

I. For drip systems receiving effluent treated to TS-I, or a more stringent standard, on sites with less than 18 inches of naturally occurring soil to any UNSUITABLE soil horizon, rock, or soil wetness condition, the LTAR shall not shall not exceed the lowest LTAR for the applicable soil group for Groups I, II and III, pursuant to Section III.B, and 0.10 gpd/ft^2 for Group IV, and a special evaluation must be provided pursuant to Section IV of this Approval.

J. The following table shall be used in determining the LTAR for American Perc-Rite® aerobic subsurface drip systems installed in saprolite pursuant to Rule .1956(6). The LTAR shall be based on the most hydraulically limiting, naturally occurring saprolite to a depth of 24 inches below the trench bottom or point of application, whichever is deeper.

Saprolite Group	Texture	LTAR (area basis) (gpd/ft^2)	
		NSF-40	TS-I & II
I.	Sand	0.5-0.4	0.6-0.4
	Loamy sand	0.4-0.3	0.5-0.3
II	Sandy loam	0.35-0.25	0.4-0.25
	Loam	0.25-0.2	0.3-0.2
	Silt loam	0.1-0.05	0.15-0.05
III.	Sandy clay loam	0.1-0.05	0.15-0.05

K. In calculating the minimum number of square feet for the drainfield, the daily design flow shall be divided by the LTAR determined from the appropriate table above.

L. In calculating the minimum length of dripline to be used, the total square footage of drainfield as derived in Section III.K shall be divided by two feet, unless additional linear footage is determined to be needed pursuant in Subparagraph III.M of this approval or at the recommendation of the designer as soil and site conditions allow.

M. The required total linear footage of dripline shall not be less than 0.5 x Q for Group I, 0.83 x Q for Group II, 1.25 x Q for Group III, or 3.33 x Q for Group IV Soils (Q = daily design flow). This shall not affect the total area required for the system based on Section III.K above.