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Dear Mr. Turrell:

I realize that you do not have time right now to focus on this project but I wanted to present you with a few concept plans for consideration. To that end, please find a preliminary Sail Plan and two Deck and Outboard Profile plans within this package which based off the previously submitted general arrangement plans.

Since I have not had input other than your initial thoughts, the plans enclosed are slightly different approaches on solving the overall concept layout. However, without detail input, I am not proposing a specific plan or layout. My goal is to demonstrate that there are options available and the final solution may be a merger of ideas between each plan – or even in another direction.

Note, I have also enclosed an invoice for design work. We normally bill monthly, on a first of the month basis, as I mentioned to you. However, given that we did not start until halfway through the month of October (after the Chesapeake Schooner Race) the work to date provides you with a complete level of design as outlined above. Please give me a call if you have any questions.

## **Deck Plan and Outboard Profile Version 1**

This version reflects your profile and deck layout. In this version, the Pilot House structure is raised up 11.5" compared to Version 2. The pilot house is narrower than Version 2 with a structure beam of 9' 10". This is approximately 16" narrower than the Pilot House shown on Version 2. Since the Pilot House is raised up, there is only need for 3 stairs down the companionway into the house – though at present I have not incorporated a "bridge deck" (which is discussed in general comments). This layout also has a large deck coach roof which the Pilot House sits on top of. The primary below deck sole level can therefore be raised somewhat on this version which helps with sole run out issues but also requires some re alignment of the interior layout since head room is now focused in the coach roof. The interior of this Pilot House is based on a narrower layout with a center -6' 2" standing headroom walkway, seats on a 6" plinth which allows seating view out of the side windows. Finally, this layout also incorporates a forward Navigation / Pilot Station on a 6" plinth to Port with direct forward visibility out of the forward Pilothouse windows.

## Deck Plan and Outboard Profile Version 2

In this version, the Pilot House sits on the main deck but is recessed compared to Version 1. Therefore, there are two less steps needed on the companionway stairs into the Pilot House compared with Version 1 Layout. This layout, like Version 1 makes use of a centerline walkway with standing height room of 6' 2" inches with side seating on plinths – though higher than Version 1. Since the Pilot house is lower and the fact that the cockpit Helm station is raised 6" (same on both deck layouts), this allows clear visibility over the top of the Pilot House from the cockpit helm. Since visibility is not an issue, the Pilot House has been widened to add more interior functionality. One of the features here is that we can make use of a narrow table for dinning purposes which also allows someone to seat on the port side Pilot House settee and brace themselves on the table foot brace if the boat is heeling. The Pilot House in this version is also shown as a rectangular structure with a vertical forward face with 3 large glass panels to see out of. Visibility is somewhat blocked by the Butterfly hatch and forward scuttle but it is surprising how much visibility there is from the interior of the Pilot House viewed forward. Note, the Deck Plan on version 2 also shows the cockpit helm station with a centerline walk through to the aft deck. We have done this on various designs but this does change the feel of the cockpit somewhat. We have designed variations of this open theme with removable centerline sections as well. However, from a safety perspective, there would still be life lines on the transom cap / taff rail.

## **General Comments:**

- The hull lines BMAX at present is 20' 0". However, we feel that we could easily add 6" to 8" to the BMAX which will add a couple of inches to the aft beam. We would reflect this addition throughout the hull lines increasing the water line beam as well which would assist with sole run out issues.
- You mentioned an interest to have 16" (I believe) of walkway between the cap rail and the cockpit coaming. Currently there is approximately 12 plus inches here but I feel we can gain adequate room with the addition of beam and some refinements to the cockpit shape while still maintaining the cockpit outboard side seat and outboard helm stations for full visibility forward.
- We also intend to add some beam to the forward sections which will provide a little more deck width forward.
- At present, the hull lines do not incorporate aft tumblehome. We will add this sculpting to the hull lines when the lines are further advanced. This will allow for the wine glass transom development you are interested in. This would be developed in the next phase of the design.
- Note, the cockpits for each version are currently set at the same heights. The cockpit soles are sloped aft and would incorporate large scupper drains sized to drain all water out of the cockpit.
- We designed Victoria of Strathearn, one of our classic yachts which also had a recessed Pilot House with 5 steps down and with raised seating to view out the side and front pilot house windows. However, the seat plinth heights need to be higher here - in order to view out of the side windows from a seating position. We could explore a step to assist getting onto the plinth.
- Version 2 layout also incorporates AFT crew quarter access from the Pilot House with a hatch slider to close off the stairs. I have also shown an alternative layout with a forward Nav / Pilot Station with Port and Starboard seating. If this concept layout is of interest, there are layout variations that could be further explored.

- You indicated an interest to have straight companion / stairways which definitely can be achieved. However, this will impact the layout. For present purposes, a slight curve to the top few stair treads is shown for consideration which we have done of various designs. To make this work the stairs are designed as true stairways with risers which are 5.75" high and mean tread widths which are approximately 8" with bullnose. With hand rails on both sides this produces a very safe stairway. Note that this is something that can be mocked up to verify if it works for you or not.
- You indicated an interest in a "bridge deck" within the cockpit just in front of the companionway. Note, we have reviewed large angle stability and the Down Flood angle and there is no issue regarding down flooding if the yacht took a sudden knock down. I realize that there is an offshore sailing philosophy regarding the safe companionways. We would address this with the use of an 8" to 10" riser at the companionway along with the addition of large scupper drains. Furthermore, we would also recommend incorporating vertical drop wash board which can be raised when at sea if desired but also allows quick access below.
- Hull Ports: We did not discuss this topic but I have indicated that the hull could incorporate Hull Ports which would really help the interior. Note, these would be fixed non-opening ports. The larger ones are in the Salon. We could simplify this by eliminating some ports if desired but on a blue hull, the hull ports tend to not be as apparent as the drawing shows.
- Rub Rails: I believe we talked about incorporating a rub rail. A rub rail is also helpful to drop the appearance of high freeboards or said another way allows us to explore possibly raising the freeboards since the rub rail helps drop the perceived height. It also allows us to incorporate some longitudinal structure to the hull shell which is helpful.
- Coach Roof Portholes: At this stage I have not shown any port holes but the Coach Roof version could include opening ports. I have shown fixed port lights on Version 2 Outboard Profile under the Butter Fly Hatch which could be incorporated to bring light into the interior if desired.
- Sail Plan, Sail Area and Mast Height: We have designed various 80 to 85 foot sloops. For reference, the mast height of one of the more performance yachts was 31.06 m (101' 11") above DWL. Since we have two rigs, we do not need as much rig height and therefore we have developed the sail plan with the main mast at 88' 6" above DWL (to the band) which is 86.8% the height of our sloop rig along. The Foremast is set at 82' 4" above DWL to the band which is 80.75% of the sloop rig height. This produces an aggressive sail plan with 300^2 meters based on the Mainsail (122.8 m^2), Staysail (79.8 m^2) and Outer Jib (97.6 m^2). Note, we would want to start discussions with possible sail makers sooner rather than later to discuss the sail plan and possible alternative solutions and innovations.
- Rig Plan and Mast Rake: You mentioned an interest to have less rake than the traditional schooner rig layout. Therefore, the rake shown is more representative of modern yachts. The foremast has approximately 1.25 degrees (not including the mast tapper) and the Main Mast has approximately 1.75 degrees (not including the mast tapper). Note, the aft mast needs slightly more rake than the forward mast as indicated from a visual perspective.
- Swept Back Spreaders: Following the modern approach here, we have incorporated a 3 Spreader rig with approximately a 20 to 22 degree sweep back angle on carbon rigs. Since the main boom is shown over hanging the transom, we will need to incorporate running backstays which are shown on the sail plan. However, due to the spreader sweep back angle and carbon fiber masts, the runners may not be a needed in light to moderate winds. Note, the spar builder

will have input on all the above topics and there could be some interesting innovations to incorporate as well.

- I have a preliminary 3d model for each Deck Plan / Profile version with a layout A interior and bulkheads. When this gets to a clean point, I can pass the 3d model to you for review / comment.
- Finally, I just wanted to state that the initial performance review that my partner, Tom Degremont put together was preliminary. The focus was at this stage to demonstrate the relative differences between your existing yacht and proposed new yacht. Since the hull displacement, sail plan and appendages have not been finalized, the input for generating the VPP was based on assumptions rather than actual design data. Therefore, to focus should not be on actual performance output at this stage. Once all the design details are known, we would be able to produce a much more accurate VPP.

The drawings developed to date bring this project to a stage that gives you adequate information on a base line design with general arrangement layouts, Deck Plans and Sail Plan for consideration. Note, though I have spent some time on this, we have not completed the Preliminary Design phase since I have not had feedback from you. However, at this stage, it makes no sense to proceed until we get feedback and direction. For this reason, I will put this project on HOLD until I hear from you.

I have other current projects but am very keen on seeing this design advance. If it would help, I am willing to fly down to meet with you or if it works better for you, to have you come to Newport. If you would like to proceed with this design, I feel it would be helpful to review the plans in person.

Please feel free to give me a call when you have a moment.

All the best,

Sam Howell