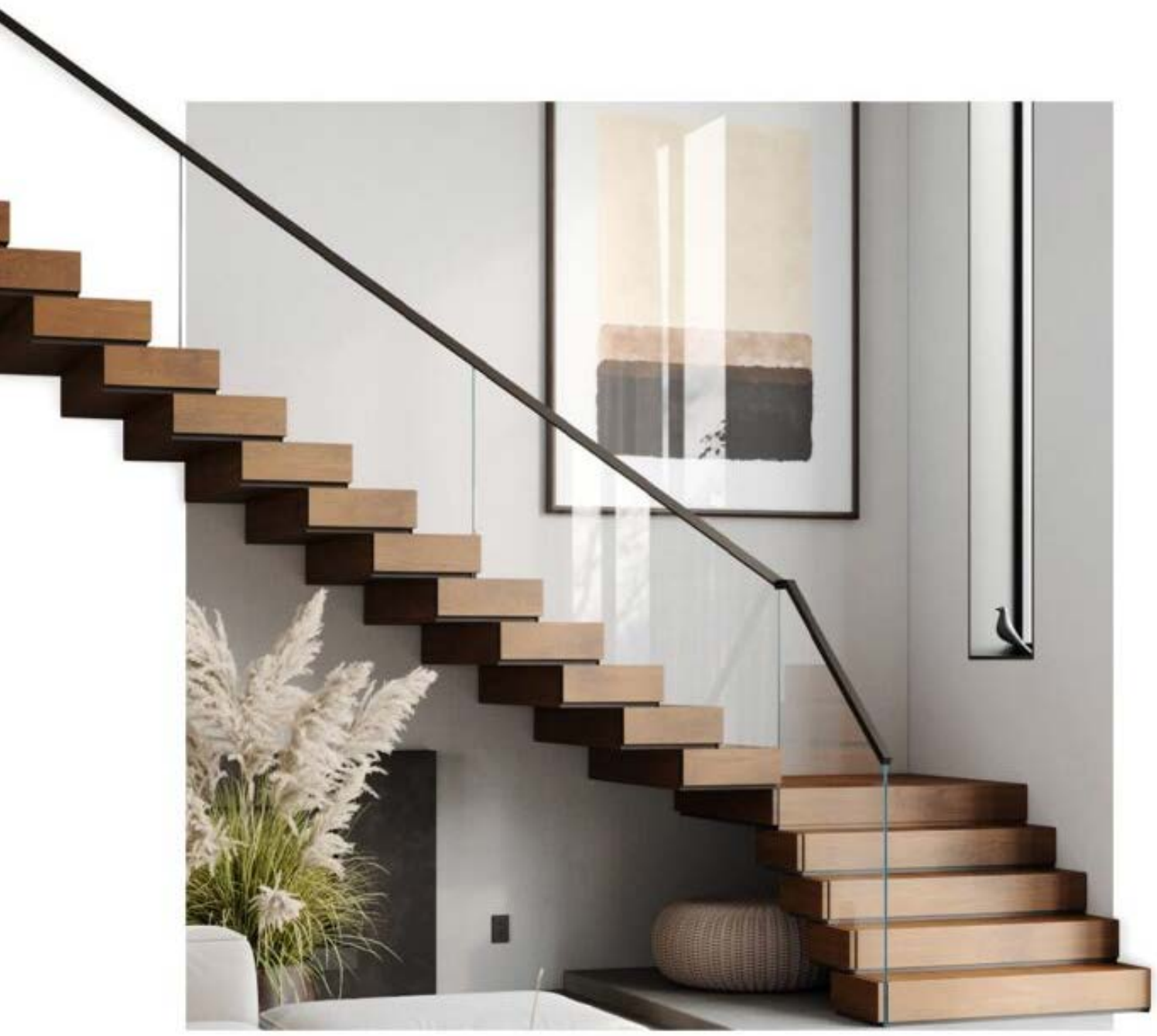
FLIGHT STACK
Information Packet



VIEWRAIL

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Stack Timeline

The goal of this timeline is to clarify all timeframes and important details necessary for the Viewrail Stack System. There are clear expectations of documents required before production, as well as for on-site installation requirements. Here are a few important points to keep in mind:

1. **Timeframe Start Date.** All timeframes start from the date we receive measurements or a processed scan.
2. **Revisions Add Time.** The more revisions, the longer the timeframe. Accurate measurements are key to expediting the process.
3. **Custom Designs.** "Outside the box" designs will always extend lead time. Products that are "firsts" or require testing inevitability require additional weeks or months in fabrication.
4. **Timeframe Scope.** Simpler "Straight" configurations require less time, while more complex configurations, like "U-Shape", extend the lead time. Complexity adds lead time.

1

2 WEEKS

Preliminary Drawings

Based off the on-site measurements, our engineers will draw preliminary drawings.

2

2 WEEKS

Revisions (Multiple)

Clear communication between the client and engineer is imperative for efficient and accurate revision drawings.

3

2 WEEKS

Final Drawings

Once revisions are complete, a final drawing will be sent for final approval.

4

2 WEEKS

Production Drawings & Data Entry

Detailed production drawings and data are generated for custom fabrication.

5

6 WEEKS

Production

By beginning with raw materials, we guarantee the highest standards of craftsmanship for your Stack system.

6

2 WEEKS

Shipping

Viewrail Delivers ensures your order arrives on time and damage-free.

AVERAGE TIMELINE: 16-20 WEEKS

Stack System Overview

With awe-inspiring artistry, FLIGHT Stack stands a level above the rest. As you travel from one level to the next, the beautiful tread blocks create a seamless waterfall effect, blending rise and run in seamless perfection. As the first of its kind, Stack hides all of its metal hardware and components, leaving the appearance of only wood treads connecting one floor to the next. This masterpiece is thoughtfully engineered and intentionally designed for open spaces, creating a bold statement in modern homes and business complexes alike.

Materials Needed for Wall & Floor Connections

Stack is similar to all of our FLIGHT Systems in Header and Footer Requirements. Triple 2X Blocking or Double LVL Blocking are the minimum requirements for code.

Header Template

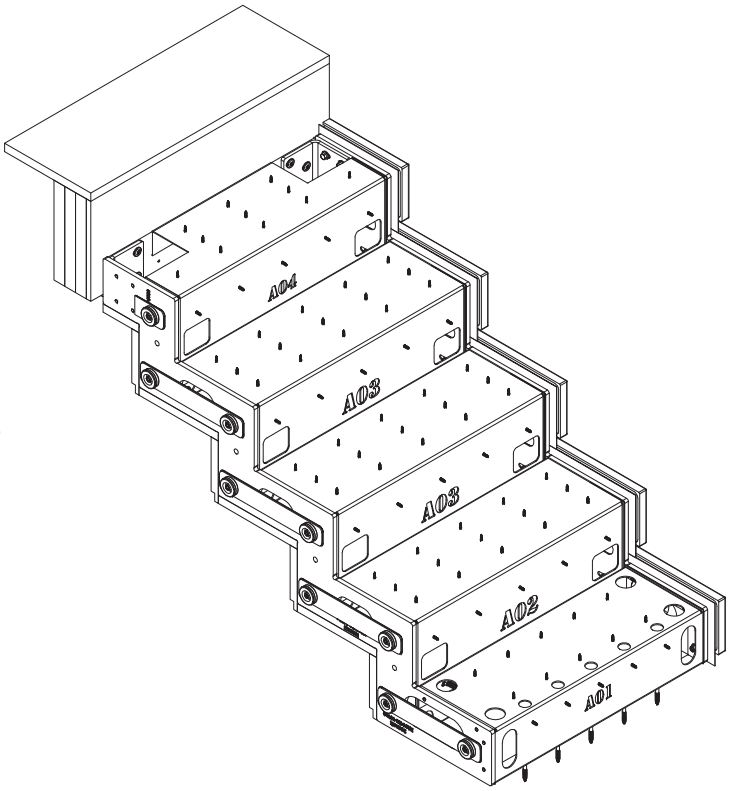
The first thing you will need to do is install your header template (as well as your wall template, if applicable). This is made from ½" or ¾" thick Plywood, based on header finish thickness. It is much easier to manipulate than a typical steel header. Connect the template directly to your blocking material. If necessary, cut out the drywall with a straight edge. Install the top of the template at the measurement supplied by our engineering team, measured down from the top of the finished floor. Ensure the template is completely level, as this determines how your stringers will attach and the overall level of your system.

Header Template

Installation Overview

Recommended Order of Operations

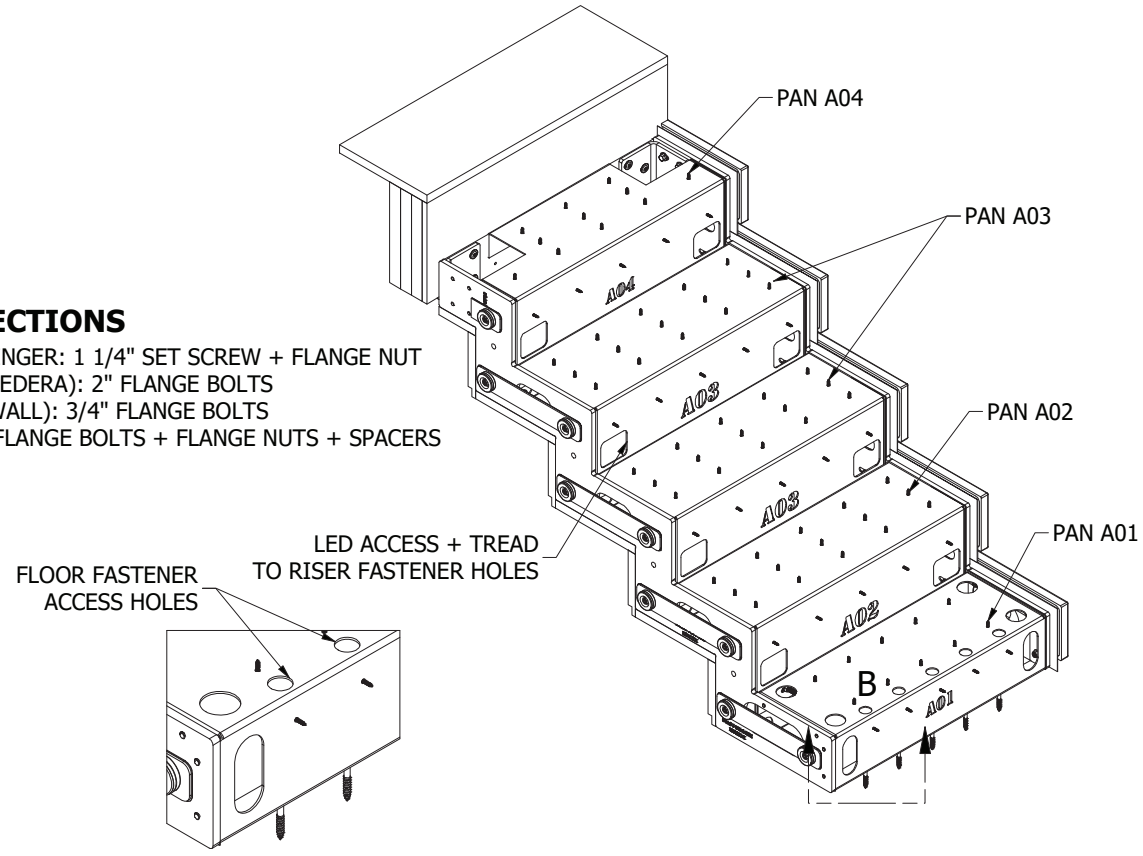
1. Install Header Template ***FIRST*** following the dimensions in your engineered drawings.
2. Fasten Header Brackets to steel and secure stringers to Header Template.
3. Install Steel Pans, Bottom ---> Up.
4. Install Treads to Steel, Top ---> Down.
5. Install Anti-Treads and Risers, Bottom ---> Up.
6. Install Vedera Gaskets.
7. Install Glass and Vedera hardware.
8. Install Tread Caps and Cap Rail.



After your Header Template is level and properly installed, mount your wall-side stringer to the header template and wall template, *if applicable*. Then, fasten your header brackets on either side of the steel stringers. If installing a steel stringer along a wall, it ***must*** be straight and plumb, *even if your wall is not*. Then, install the 1/2" Plywood stringer template on the wall, which is a spacer between the wall and the stringer to match the spacing for the finished wall. Use shims if needed. After this, attach the non-wall stringer to the header template, starting at the top floor and working your way down to the bottom. This will be the same for all Stack systems (Straight, Switchback, 90 Degree, or U-Shape).

Refer to your engineered prints to ensure your steel is at the appropriate measurement. Once your stringers are anchored in the header brackets, move down and install the first steel pan. This will be labeled "Letter-01" (e.g. A01"). Dry fit the steel pan in between both of the stringers. Pans should be 1/16" recessed below and back of the steel stringer. Lay a 4' or 6' level across both stringers and the pan to confirm overall levelness. Then, attach the pan to the stringer on both sides. Continue attaching the steel pans, working from the bottom to the top in a stair-stepping pattern. Once all pans are installed, mount to the first pan to the height of the finished floor.

***If you are installing LEDs,** this is the point at which you will run your wire from the bottom of the stringer up to the top, preferably using the inside stringer. We recommend powering your LEDs during installation to ensure they are all working properly.*



PAN CONNECTIONS

1ST PAN TO STRINGER: 1 1/4" SET SCREW + FLANGE NUT
PAN TO STEEL (VEDERA): 2" FLANGE BOLTS
PAN TO STEEL (WALL): 3/4" FLANGE BOLTS
PAN TO PAN: 2" FLANGE BOLTS + FLANGE NUTS + SPACERS

*If attaching to a landing, it is at this point you will attach to a cross-beam first. Leave it slightly loose to make sure that it's level before fully tightening.

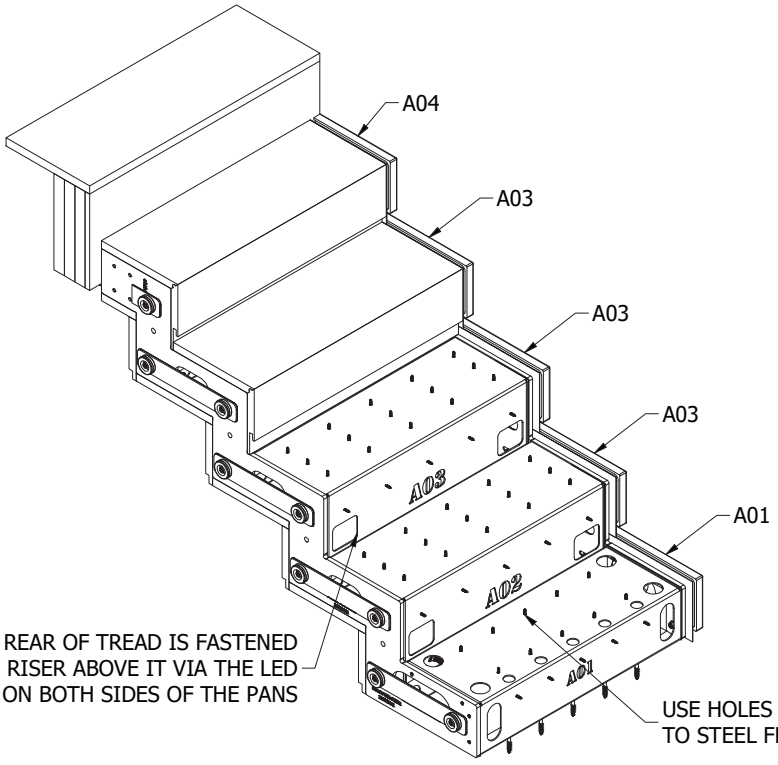
Please Note: "Steel First" applications install the ½" Plywood panel template railing at this point.

After all the steel pans are installed, the next step is to attach the treads and risers to the steel, this time working from the top of the system and down to the bottom (A01). If your system has a landing, install the landing first. The landings will be shipped out without the risers attached. Use wood glue and clamps to attach the riser to the landing. After the glue cures, take a router and do an ⅛" round over on the nosing. Use the stain provided to the order for touch-up. The anti landing will be secured using trim screws into the 2x4s.

After the landing is installed, you are ready for the treads. Beginning at the top, scribe your top tread to the header and finished wall, and test fit. Then, install your first tread and riser. Apply Construction Adhesive on the whole pan.Then, utilizing the #8-3/4" Pocket Holes underneath, screw through the stringer into the underside of the tread. Finally, secure the riser by screwing finish screws through the pan into the backside of the riser. Continue this process down the system on the top-side only. Once all top-side treads and risers are installed, you are ready for the underside.

TREAD LAYOUT

TREAD ID SKIPS A02 AS IT IS NOT CUSTOM LIKE THE PAN



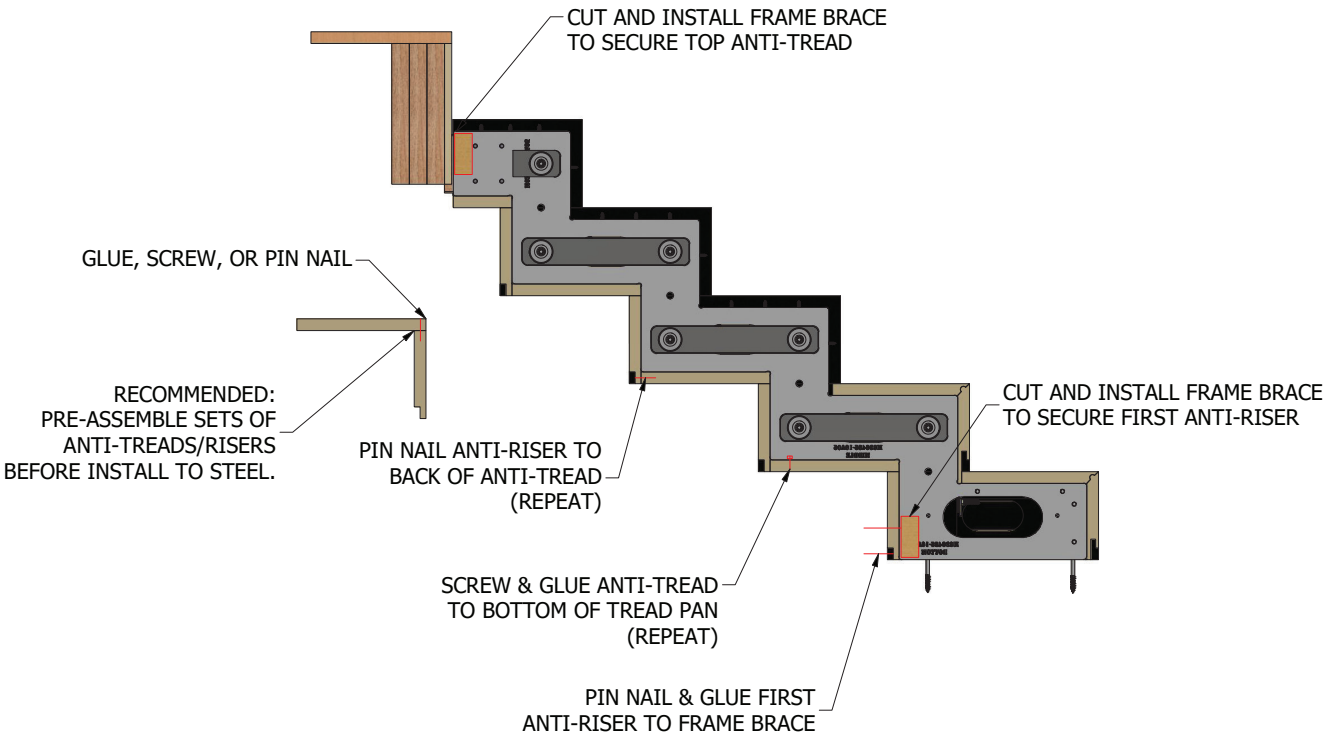
INSTALL TOP TO BOTTOM

**It is highly recommended to pre-assemble sets of anti-treads/ risers before installing and attaching them to the steel.*

Before you begin, cut and install the frame brace to secure your first anti-tread. At this point, we recommend test fitting your anti-tread and anti-risers, and modify as necessary. You can pre-assemble them at this point as well.. Beginning at the bottom, take your pre-assembled anti-riser and anti-tread and apply construction adhesive to the outer edges. Fit and press them up, utilizing finishing nails to hold them in place. Continue this process until you reach the top of the stringer. Predrill holes to the bottom of the risers 3/16" drill bit, ½'' above the bottom. use wood screws to attach the risers to the back of the treads once installed

**We recommend using screws for the anti-tread and pin nails for the anti-riser.* This is because the screws are used on the interior of the pan to pull the anti-tread in, but the pin nails are on the outside as a final measure to ensure attachment. Keep in mind the top 2x4 Frame Brace should be placed towards the anti tread

ANTI-WOOD INSTALL



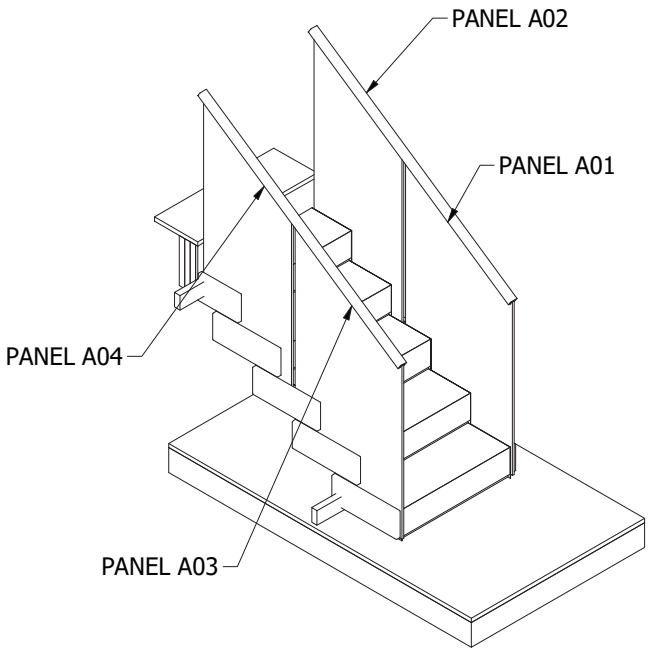
INSTALL BOTTOM TO TOP

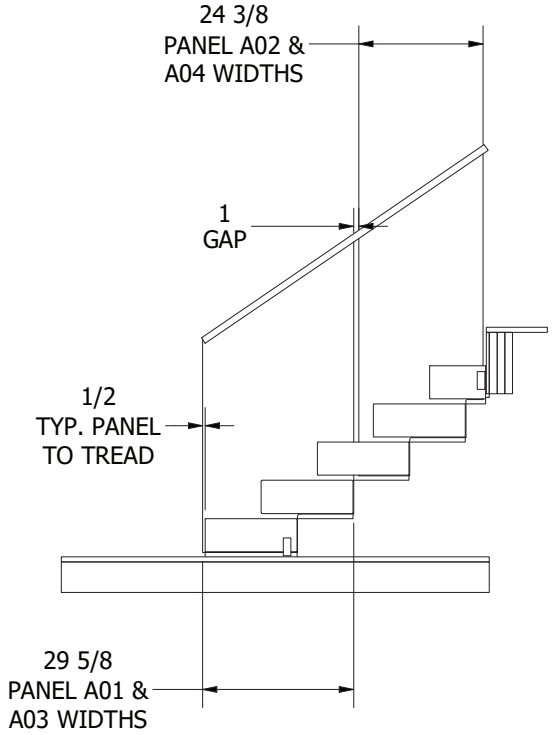
At this stage, it is important to make sure that your top-side and underside are completely flush with one another. Sand down any areas where there is overhang or the two wood systems are not flush. Once you are satisfied, you are ready to install the exterior rubber gasket, and prepare for glass railing installation. Use a black felt pen of stain to touch up any end cuts to the treads and risers

Starting at the top and working down to the bottom, install your black rubber gasket over the edge of the tread assembly to the edge of the other tread assembly. This will protect the glass from any sharp edges. Notch the gaskets out where the riser has the offset above the tread. After this install your Glass with the Vedera assemblies. Make sure all of the gaskets are installed so that no glass is touching the metal. Use all the steel-to-steel gaskets on the pans.

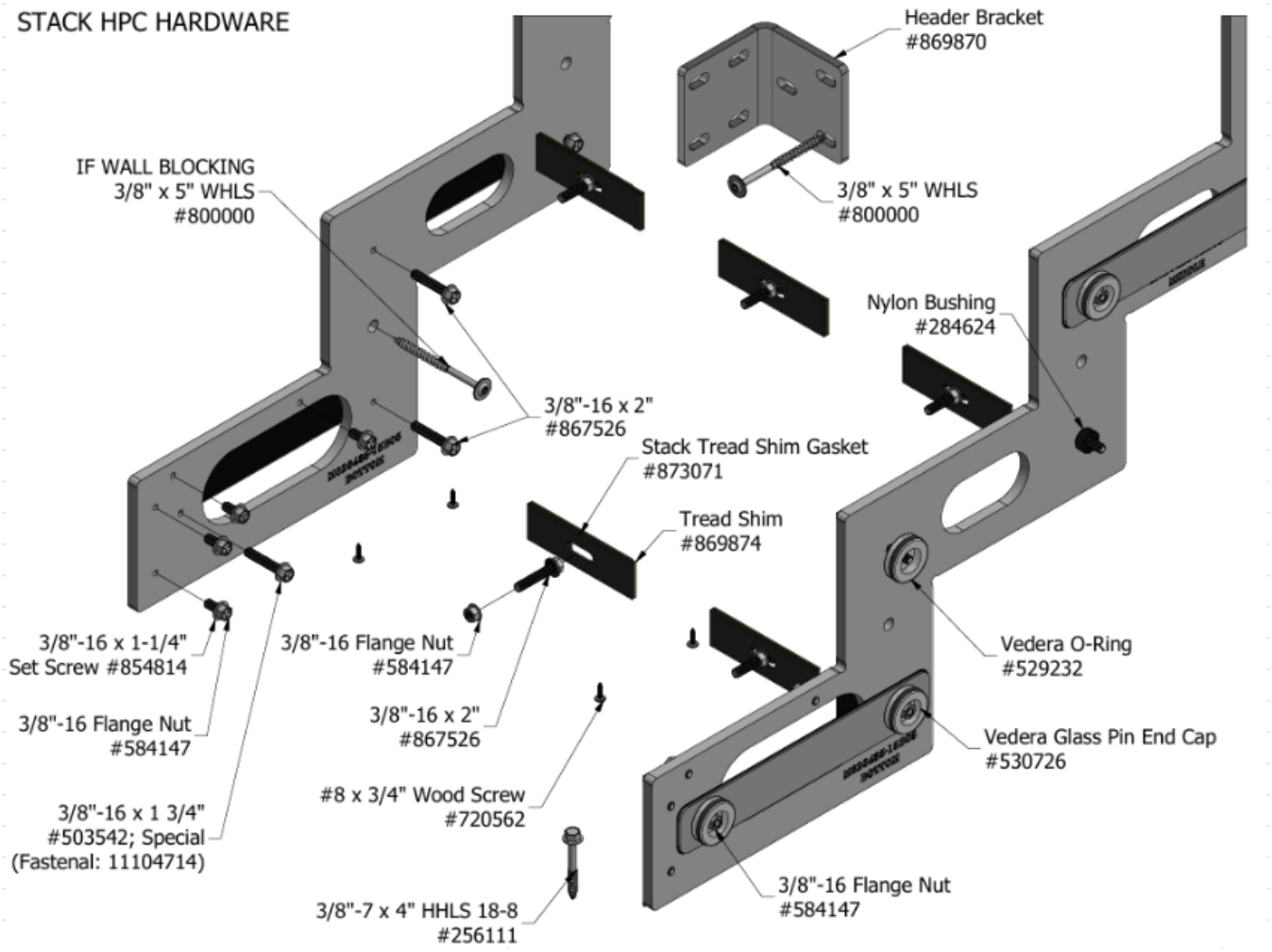
Once your components are installed, you are ready for glass installation. After your glass is installed, place the wood caps over top of the glass clamps to conceal your glass components. Finally, install your glass handrail top cap to complete the look of your Stack system.

PANELS TO BE MADE FROM 1/2" PLYWOOD





Stack HPC Hardware



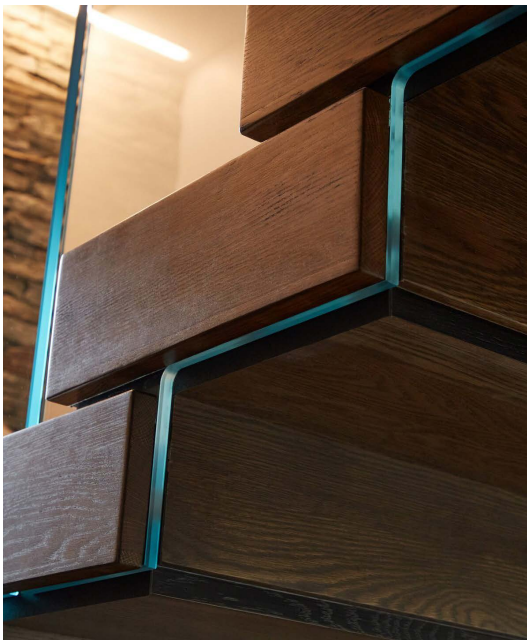
Stack Rules

Viewrail maintains certain standards and requirements that must be met. If these requirements are not reached, Viewrail will not be able to produce a Stack system for the client. Please verify your project meets our standard rules:

- **Max Width -** 60”
- **Min Width -** 27” between glass; 34” between opening
- **Max Depth -** 13”
- **Min Depth -** 11”, no nosing
- **Code Compliance** on the rise (min is 6-3/4”, max is 8-1/4” depending on code)
- **Railing -** Always Vedera Glass, no other option
  - 1/2” tempered or 9/16” laminate
- **Wall Support -** We will utilize any available wall for additional support
- **Systems at or over 20 treads -** Requires additional engineering; **must go through R&D**
  - Will utilize wall blocking on at least one side
  - Requires feasibility check, cannot be waived
- **LED Integration -** Transformer and Driver are not concealed within the system, and will need to be housed in another location (often a utility closet)
  - 28’ lead line from either header or footer location
  - No daisy-chaining; each additional system requires independent lead connections

Stack Reveal Feature

The Stack Reveal is a 1” black border that segments each tread across the Stack system providing contrast between each tread and riser. If the system has LEDs the reveal on the front will house the LED strip as well. The Glass Extension is how far the glass extends beneath and behind the caps in the Stack system. It is typically 1/8” in height.



I understand and agree that my FLIGHT Stack system will be engineered and manufactured to the standards above, and that it will have both ~1” black reveal and ~1/8” glass extension.

“Steel First” Shipping

“Steel First” Shipping is an innovative step Viewrail is taking to provide a seamless installation experience for our customers. This initiative will both expedite the installation process and ensure accuracy of measurements for the final production of the finished wood products and glass panels. Currently, Viewrail is able to fabricate steel much faster than wood products. Instead of holding to longer lead times, it is highly beneficial for installers to receive the steel framing and internal wood supports ahead of time, expediting the in-field install time. Below are some of the benefits of the “Steel First” initiative:

- Your project is not held up by wood lead times
- You can see if in-field measurements are accurately applied in fabricated products
- You can install the steel structure with the plywood template ahead of time
- Viewrail will ship out temporary plywood panels to the dimensions of your glass panels

Here is a list of what you can expect to receive in your “Steel First” shipment:

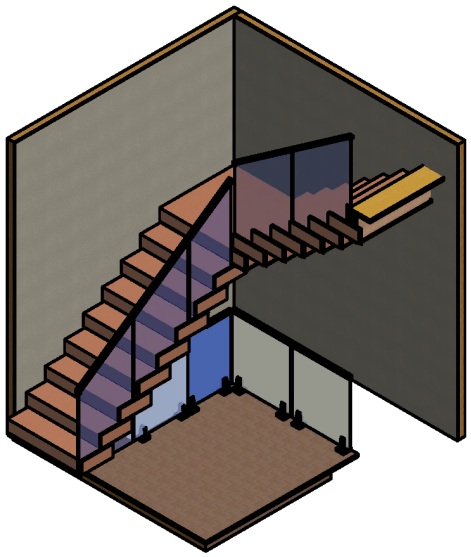
- Temporary plywood panels for temporary railing
- All steel structural supports, both for stringers, pans, and platforms
- All screws, hardware, and components necessary for on-site installation
- Installation instructions, engineered drawings, and paperwork for installation

As a final note, it is important to measure and level often when installing your stringers and support systems on site. Verify that all in-field measurements are correct and meet the requirements as laid out within the engineered drawings. This will ensure your wood treads, risers, and glass panels are fabricated correctly. If there is need for adjustment, contact your Project Engineer as soon as possible. This will enable them to correct your project before production in our wood and glass departments.

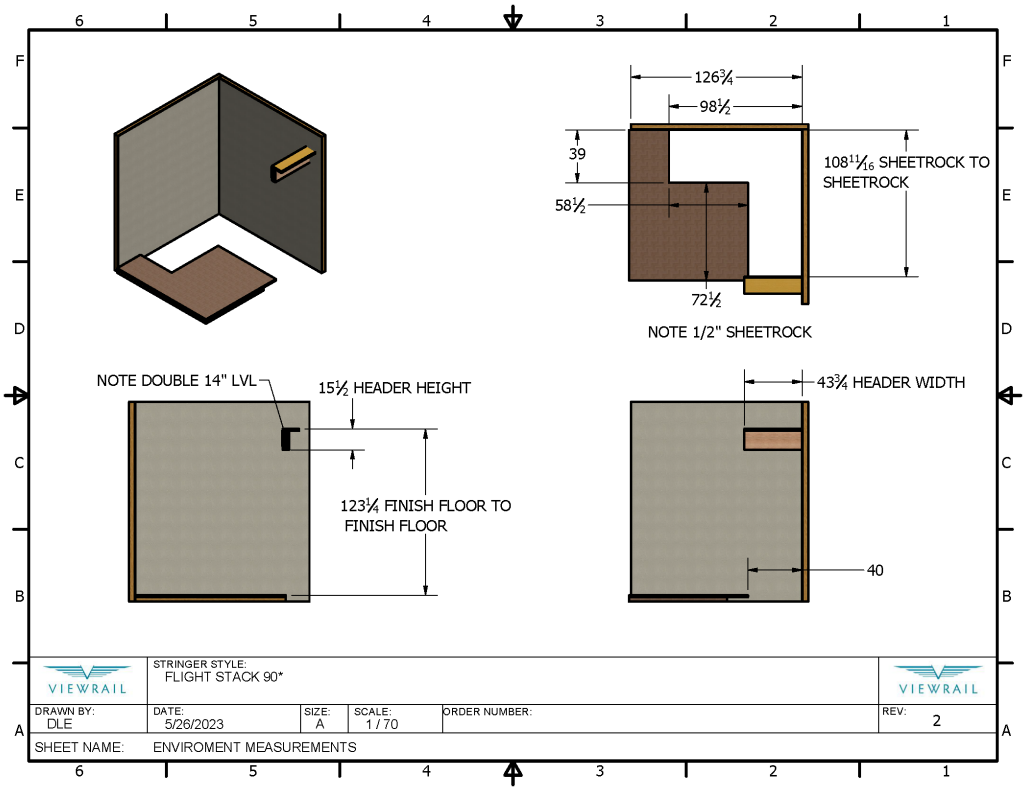
Example Drawings

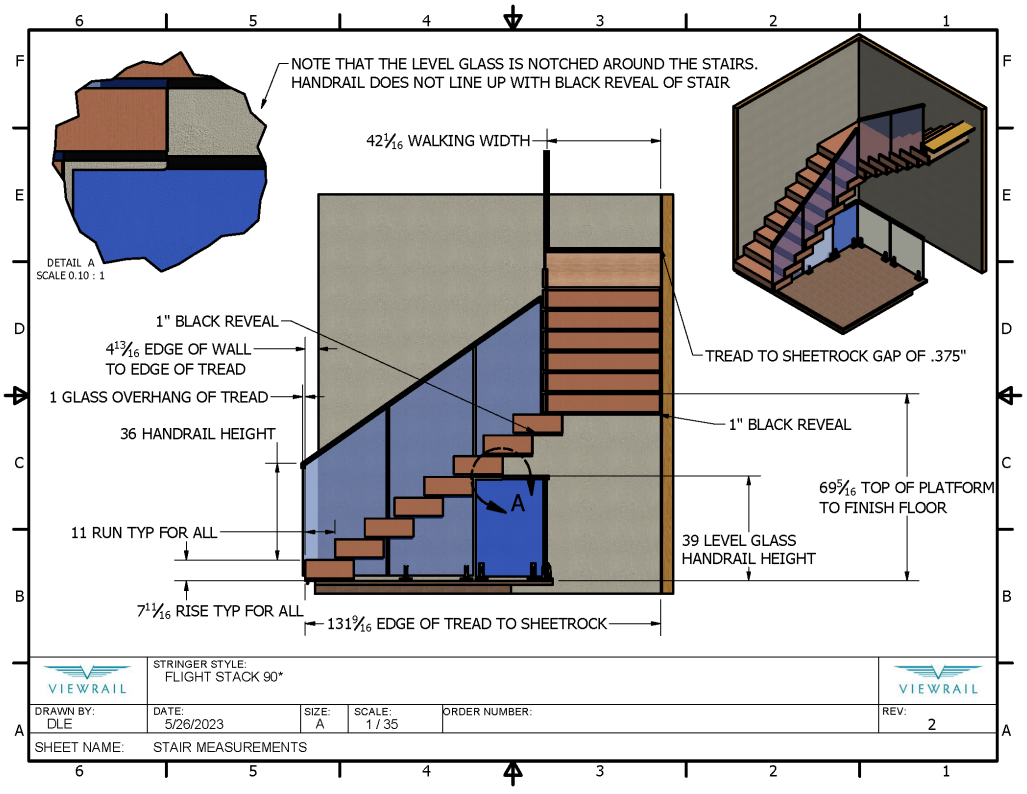
FINAL DESIGN/ MEASUREMENTS

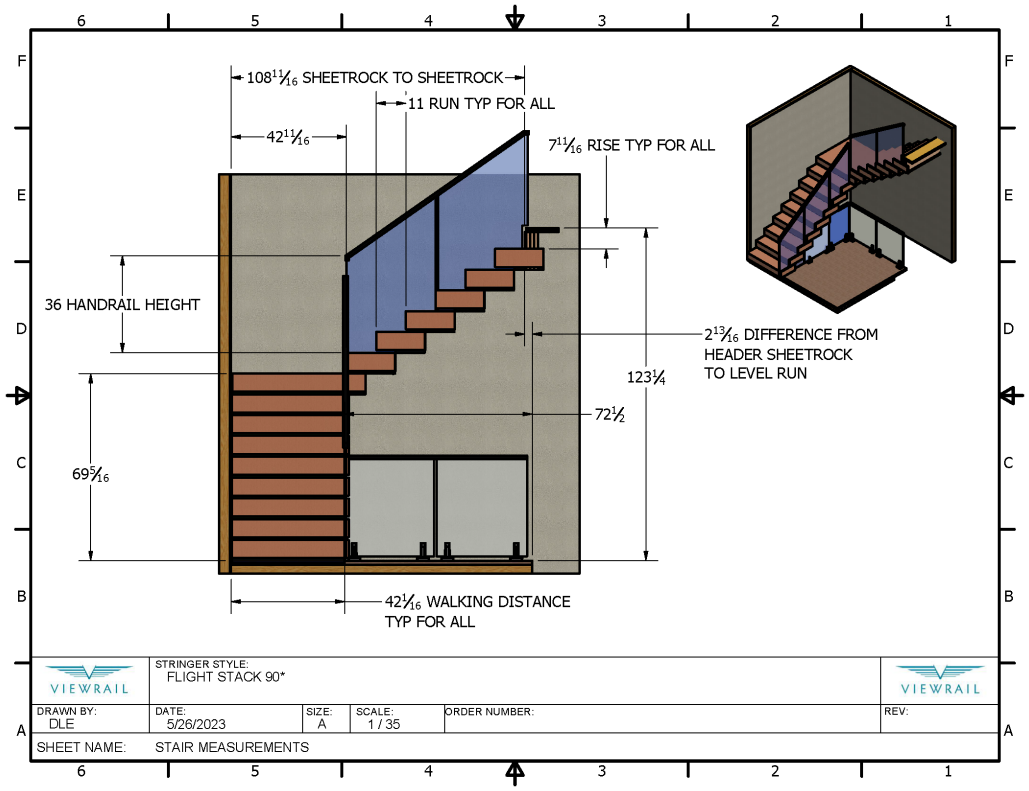
ORDER #
SYSTEM NAME: FLIGHT STACK 90
JOB TYPE: Residential
STRINGER MATERIAL: Mild Steel
STRINGER TYPE: ZAG
STAIR ANGLE: 35.0°
NUMBER OF TREADS (LOWER): 8
NUMBER OF TREADS (UPPER): 6
NUMBER OF LANDINGS (MIDDLE): 1
STRINGER FINISH: PC BLACK
TREAD TYPE: HARD MAPLE
TREAD FINISH: BRIAR 5 SHEEN
GRAB RAIL TYPE: WOOD CAP 6008
LED:YES
HEADER MOUNTING: WOOD LAG
HEADER MATERIAL: DOUBLE LVL 14"
FOOTER MOUNTING: WOOD LAG
LANDING MOUNTING: ½ LAG INTO SPECIFIED WALL BLOCKING.
FINISH FLOOR TO FINISH FLOOR HEIGHT: 123.25"

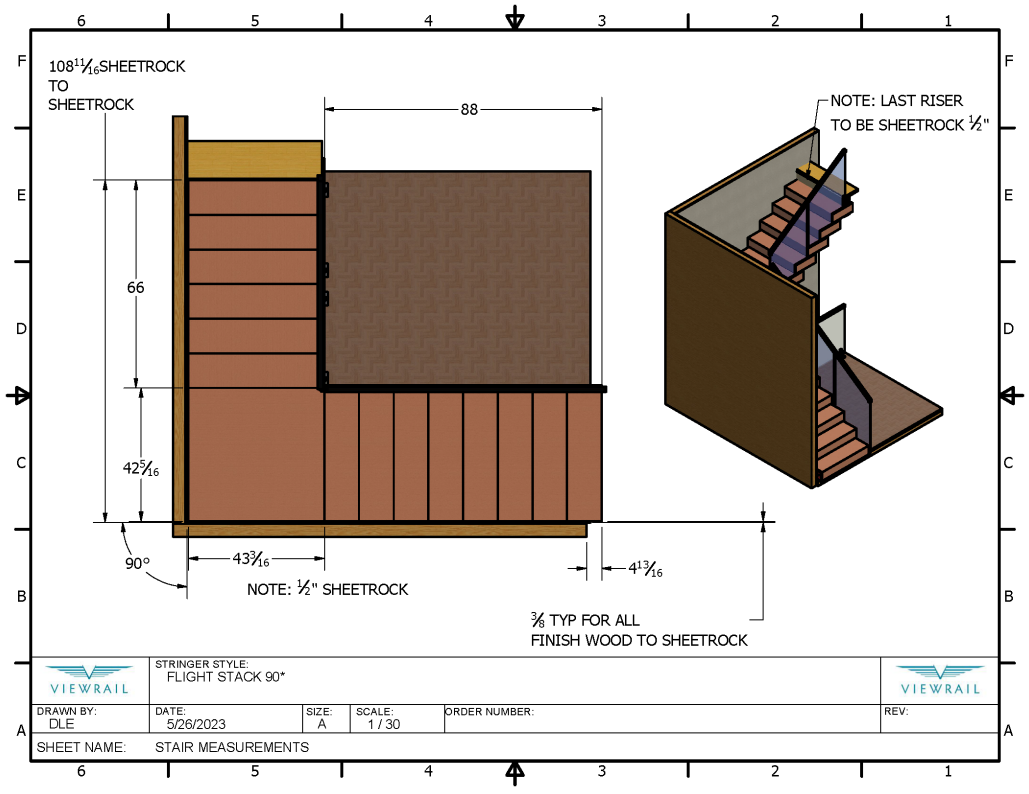


VIEWRAIL	STRINGER STYLE: FLIGHT STACK 90*				VIEWRAIL
DRAWN BY: DLE	DATE: 5/26/2023	SIZE: A	SCALE: 1 / 50	ORDER NUMBER:	REV: 2
SHEET NAME:	FINAL DESIGN/ MEASUREMENTS				


126¾
98½
39
58½
108 11/16 SHEETROCK TO SHEETROCK
72½
NOTE 1/2" SHEETROCK
NOTE DOUBLE 14" LVL
15½ HEADER HEIGHT
123¼ FINISH FLOOR TO FINISH FLOOR
43¾ HEADER WIDTH
40
STRINGER STYLE: FLIGHT STACK 90*
DRAWN BY: DLE
DATE: 5/26/2023
SIZE: A
SCALE: 1 / 70
ORDER NUMBER:
REV: 2
SHEET NAME: ENVIROMENT MEASUREMENTS


NOTE THAT THE LEVEL GLASS IS NOTCHED AROUND THE STAIRS. HANDRAIL DOES NOT LINE UP WITH BLACK REVEAL OF STAIR
42 1/16 WALKING WIDTH
DETAIL A
SCALE 0.10 : 1
1" BLACK REVEAL
4 13/16 EDGE OF WALL TO EDGE OF TREAD
1 GLASS OVERHANG OF TREAD
36 HANDRAIL HEIGHT
11 RUN TYP FOR ALL
7 11/16 RISE TYP FOR ALL
131 9/16 EDGE OF TREAD TO SHEETROCK
TREAD TO SHEETROCK GAP OF .375"
1" BLACK REVEAL
69 5/16 TOP OF PLATFORM TO FINISH FLOOR
39 LEVEL GLASS HANDRAIL HEIGHT
A
STRINGER STYLE: FLIGHT STACK 90*
DRAWN BY: DLE
DATE: 5/26/2023
SIZE: A
SCALE: 1 / 35
ORDER NUMBER:
REV: 2
SHEET NAME: STAIR MEASUREMENTS


108 11/16 SHEETROCK TO SHEETROCK
11 RUN TYP FOR ALL
42 11/16
7 11/16 RISE TYP FOR ALL
36 HANDRAIL HEIGHT
2 13/16 DIFFERENCE FROM HEADER SHEETROCK TO LEVEL RUN
123 1/4
72 1/2
69 5/16
42 1/16 WALKING DISTANCE TYP FOR ALL
STRINGER STYLE: FLIGHT STACK 90*
VIEWRAIL
DRAWN BY: DLE
DATE: 5/26/2023
SIZE: A
SCALE: 1 / 35
ORDER NUMBER:
REV:
SHEET NAME: STAIR MEASUREMENTS


108 11/16 SHEETROCK TO SHEETROCK
88
NOTE: LAST RISER TO BE SHEETROCK ½"
66
42 5/16
90°
43 3/16
NOTE: ½" SHEETROCK
4 13/16
⅜ TYP FOR ALL FINISH WOOD TO SHEETROCK
STRINGER STYLE: FLIGHT STACK 90*
VIEWRAIL
DRAWN BY: DLE
DATE: 5/26/2023
SIZE: A
SCALE: 1 / 30
ORDER NUMBER:
REV:
SHEET NAME: STAIR MEASUREMENTS

VIEWRAIL