1. FRAMING:

All framing must be installed plumb, level and square.

_Walls_:  
- Apply (2) rows of our PVC gasketing on the bottom of track throughout the project. Anchor track to floor fasteners supplied by installation contractor.  
- Install the framing 24‌₀.o.c. unless otherwise noted on the drawing  
- Panel joints are a standard 48‌₀.o.c. However, if you aligning our battens with the ceiling grid system, please refer to the ceiling drawing for the type of grid being used on the project. Then refer to our Panel and Trim Layout for the panel sizes. Use the included framing screws on both sides of the stud, top and bottom, throughout the wall.  
- Brace the wall using our supplied materials and fasteners. Install diagonal bracing from top of wall to underside of bar joists, using our fasteners to attach the bracing at the top of our wall. Fasteners to attach the bracing material to the existing structure to be supplied by others.  
- Our MCP metal half corner post (a 3-leg component designed with two 45° angles) is to be installed at all inside corners, insert inside the corner and screwed to the stud. Please ensure that there’s a stud on each side of the corner to properly mount this component. Use our #8 x 1/2‌₀ washer-head type self-drilling screws to attach this component, one on each leg, every 2’ up the height of the wall.

_Windows_:  
- For the size of windows refer to our panel and trim layout drawing.  
- Precut the steel track that will create the sill and header of the window, top and bottom. **Important: Must be square cut.**  
- Precut the stud cripples for below window. Refer to the elevation drawings as to the window location off the floor.  
- Place precut steel track for the window sill on the floor track. Slide the window stud in the floor track, that’s for one side of the window, up to the sill track and fasten, with our framing screws, to the bottom track on one side only. Plumb window stud and fasten, with framing screws, to the top track on one side only.  
- Place stud cripples, for below the window, against the window stud on each side of the window opening and fasten to each window stud using our framing screws.  
- Using the precut EG Euro glazing window components (marked top and bottom) as a guide, place the EG over the sill track. Then place both the EG and track over the cripple studs, level the track, and fasten track, with our framing screws, on one side only. Check
and correct the squareness of the window stud, if needed, and screw the window stud on the other side to the bottom and top tracks. Repeat the same steps on the other side of the window opening.

- **Important:** Ensure that the screws will not interfere with our Euro glazing window components that wrap around the framing members by ¼”.

- Using the precut EG Euro glazing window components (marked sides) as a guide, place them against the window stud on each side of window tight against the EG sill component. Use blue tape or an approved clean room type tape to temporarily hold them in place. Make sure the inside corners of the EG window components, between the sill and side pieces are tight and even. Correct if needed, and screw, with our framing screws, the other side of the sill track to the cripple stud on each side.

- Take the precut header track of the window along with the EG window component (marked top and bottom) attached to it, and place both pieces above the window opening. Slide them down between the window studs until they rest on top of the EG window component side piece on each side of the window. Make sure the inside corners of the EG component, between the header and side pieces are tight and even on each side.

- Install the top cripple stud above the window to each side of the window stud, and then screw the top track to the cripple studs, with our framing screws.

- Install middle cripple stud(s) above and below windows as needed. Fasten to track members with our framing screws.

- This method of installation will pre-square the window assembly so that the aluminum window frame is tight in all the inside corners.

- Next, remove the Euro glazing window component and use that as a guide for the all windows on the project, then safely rewrap the component until final installation of the glass.

- After the window is framed it is best to install a bead of caulk between the track member and window stud on all four inside corners of the window unit. This is to seal out dust or particulate getting into the window cavity after installation.

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**Doors:**

- Refer to our Panel and Trim Layout for framing size of each door unit.

- Install studs on each side of the opening, ensuring that studding is plumb and level.

- Install the header track (similar installation as the windows), whereas cripples installed above the door and mounting the header track of the opening to the cripple studs. (Do not cut the track and bend and wrap it around the stud on each side that will create problems for the installation of our aluminum doors).

- Install middle cripple stud(s) over door and attach to the header and top track with our framing screws.
2. INSTALLATION OF PANELS:

-General:
- Refer to our Panel and Trim Layout for size and approximate locations.
- Install the PVC gasket tape at the bottom of the wall on face of floor track and at the top of the wall on face of the top track.
- Install gasket tape at all panel joints, with one single gasket attach to stud on one side of the wall only, unless otherwise called for in the drawings; such as on return-air walls, where the gasket tape will be installed on all studs on both sides of the wall.
- Install (2) strips of gasket tape at all inside and outside corners on one side of the wall only, unless otherwise called for in the drawings; such as on return-air walls, where the gasket tape will be installed on both sides of the wall.
- Install (2) strips of gasket tape at all starter locations behind starter stud that will compress against the existing wall, and one strip of gasket tape on the face of the stud on one side of the wall only, unless otherwise called for in the drawings; such as on return-air walls where the gasket tape will be installed on both sides of the wall.
- For installation of panels on wall heights up to 12'; install panels against the steel framing, plumb and square, leaving 5/8" space between the panel joints to allow for the FMA, aluminum batten trim. Use either 1' or 2' pieces of our batten trim to temporarily hold panel in place. Install panels throughout the room, leaving out trim at the inside and outside corners.
- At inside corners, hold the panel back approximately 1/2" from the inside framing corner, on each side of the corner, to allow our inside corner trim to properly fit and snug against the panels on each side of the trim.
- At the outside corners, hold panel back approximately 3/4" on each side, again to allow our outside corner trim to properly fit and snug against the panels on each side of the trim.
- At all starter conditions, use our aluminum "J" trim (ET1/2A), to be installed prior to installing the panel. "J" trim will go the full height of the wall, from the floor to the top of the wall. Attach "J" trim approximately every 24" o.c. using our #8 x 1/2" washer head type self-drilling screws.
- When installing panels, place 3 to 4 dabs of FDA approved clear or white silicone caulking, or other approved caulkling/sealant, to the middle stud member(s) to keep the panel tight to these stud members. Attach the panels to the bottom and top track framing.
members by face screwing the panels with our #6 x 1-1/4" Phillips bugle-head type self-drilling screws; 3 screws at each the top and bottom of the panel. **This will be the only areas of the panel that screws will penetrate the surface. Under NO circumstances will screws be allowed to be seen in the exposed areas of the panel.**

- When installing panels on any return-air chase walls, place a full bead of FDA approved clear or white silicone caulking, or other approved caulking/sealant, to the middle stud member(s) over the gasket tape so as to keep the panel tight to these stud members and to create an individual air-tight cavity bay in the wall for air control.

- All cut-outs in the panels for return-air grilles or other penetrations will be foil taped with 1"(w) foil type material, installed before the panels are installed on wall (or after depending when the cut-out is made). This will seal the cutout, and ensure that no particulate is created around the penetrations that may get into the cavity of the wall

- The full height vertical aluminum batten (FMA) can be installed after the ceiling wall angle is attached to our wall, and after our PVC baseboard is installed at the bottom. The aluminum batten(FMA) should be installed from the top of our baseboard to the underside of the ceiling wall angle, with the joints at these locations tight, clean-cut, and even. Fasten the batten(FMA) with our #6 x 1-1/4" bugle-head type self-drilling screws every 12" o.c. (maximum).

- Make sure the FMA batten trim lays flat against the panel, and is not splayed in any way. This occurs when the panels on each side of the batten are not flat and even against the stud. Re-adjusting the stud, as needed, will eliminate this issue.

- **Important: When screwing the batten, the screws should only snug the batten to the panel. Do not over screw the batten, this will cause the batten to pinch inward and prevent our PVC insert from being installed properly. There is no need to over tighten our batten – it is meant to snug only against the panel.**

- Install the inside corner trim (ICMA) the same way as our FMA batten trim, from the top of our baseboard to the underside of the ceiling wall angle, using our #6 x 1-1/4" bugle-head type screws every 12" o.c. Make sure that the joints at these locations are tight, clean-cut, and even. Do not over tighten, snug only.

- Install the outside corner trim (OCMA) in the same fashion as described above.

- Outside corner trim (OCMA) can go from the floor to the underside of the wall angle, because our baseboard will lap over the outside corner. We have an outside metal base corner component to conceal this area.

- If a top trim is required at the top of our walls; typically in all non-ceiling areas, such as the outside of the clean room envelope; then our aluminum angle trim component (WF1/2A) will be used. The 1-1/4" x 1-1/4" aluminum angle trim will sit on top of the wall, with one leg of the angle resting on the framing top track of the wall, and the other leg of the angle resting tightly against the wall panels. It is important that the panels and trims at the top of the wall be even and flush with the top track, so that the angle trim sits flat and level on the steel top track. Use our #8 x 1/2" washer-head, self-drilling screws, to screw the angle trim to the steel top track to help keep the angle trim tight to the wall.
panels.

- When trimming the top of the wall, with our angle trim (WF1/2A) at an outside corner condition; the easiest and neatest method is to cut a groove on the top portion of the angle and wrap the angle trim around outside corner trim. This will create a tighter and cleaner look than trying to cut and miter the angle at the corner, which never looks good because you can’t get the mitered joint tight enough.

-Windows:

- When installing our panels above, below, and around the windows, it is extremely important to hold the panel back from the edge of the framed window opening by 1". This will allow for our EG Euro glazing window component and our batten (FMA or FMAG) to properly fit when installing the glass. If the panels are not held back enough when you are ready to install the glass in the windows, then the panels will have to be either removed from the wall to be recut or recut in place. This, in either case, will create possible problems with particulate getting into the wall cavity and finding its way into the window cavity, thus raving havoc with keeping the window units clean and particulate free. So extra care and attention is a must when installing the wall panels around the window units.

- Once the panels are installed around the windows, install 1" (w) foil tape on the exposed edges of the wall panels around the window opening, to seal the edges and eliminate any chance of particulate working its way into the window cavity.

- When installing our panels above the window openings, use our 1-1/4" bugle-head type self-drilling screws and install 2-3 of them in the framing header of the window opening to temporarily hold the panel in place and prevent it from slipping down past the 1" hold back mark. When the glass is installed in the window units, then the horizontal batten trim (FMA or FMAG) will be installed above and below the windows that will permanently hold the panels and glass in place.

-Doors:

- When using our aluminum door units, there are two ways you can install our panels and trim around the door openings in a 3-5/8" framed wall;

Method #1: Install the panels right to the edge of the framed opening, at each side and at the top of the door opening on both sides of the wall. After the door unit is installed, install our aluminum angle trim (WF1/2A) around the door unit, with mitered corners, on both sides of the wall. Slide the angle trim right up to the edge of the door frame, making sure that there’s a tight joint between the angle trim and door frame, and also clean and tight miter joints at the corners. Use an FDA approved clear silicone caulking, or other approved caulking/sealant to attach the angle trim to the panel around the door unit. Then install our batten trim (FMA) over the door opening on each side on both sides of the wall, running the FMA from the top of our angle trim to the bottom of the ceiling of wall.
INSTALLATION OF NESLO CLEAN ROOM WALL SYSTEM

angle. Unless, our battens are lining up with the ceiling grid, then the actual location of the batten trim over the door units will vary depending on the ceiling layout. Refer to the reflected ceiling plan on the project drawings for these locations.

Method#2: Install the panels almost to the edge of the framed opening, at each side and at the top on one side of the wall only, leaving approximately 5/8" space between the framed opening and the edge of the panel to allow for our batten trim (FMA). After the door unit is installed, which should be flush with the wall panel, install our batten trim (FMA) on each side of the door frame jamb that will run from the bottom of the wall to the top of wall, or to the bottom of the ceiling wall angle. Then install our batten trim (FMA) horizontally over the top of the door, with the batten butt fitting to the vertical battens that are on each side of the door. Make sure that the butt joints on each side are clean cut and tight.

On the other side of the wall; the panels will go right to the edge of the framed opening at each side and at the top of the door opening. Depending on the stud depth, our panels may have to be installed around the inside of the opening to cover the steel stud framing that remain exposed after the door unit is installed. In this case, we will supply our aluminum J-trim component (ET1/2A) that will be installed around the door frame, so as to trim and finish-off the exposed edge of the panel that butts against the door frame. The J-trim should be attached to the steel stud, using our #8 x 1/2" washer-head type self-drilling screws, spaced approximately 18" o.c., with the inside corner joints cut, mitered and fitted tight. If need be, and to create a finished and clean-looking detail, a small bead of FDA approved clear or white silicone caulking, or other approved caulking/sealant may need to be applied where the J-trim butts the door frame, where the panel slides into the J-trim, and at the inside corners of the door opening, where the panels meet together.

Our aluminum angle trim component (WF1/2A) will be supplied to wrap-around the outside edge of the panels around the door opening. The angle trim will be cut and fitted around the opening with the corners mitered, and fitted tight. Our angle trim will be attached to the panels using an FDA approved clear silicone caulking, or other approved caulking/sealant. Use either blue painters tape or clean room approved tape to hold the angle in place until the caulk sets.

-Baseboard:

- Our baseboard is a rigid type PVC material in 10' lengths that fastens to the wall with screws. The type of screw required will depend on the type of wall you are fastening the baseboard to. If you are fastening the baseboard to our MCP Clean Room panel, then we will supply our #6 x 1-1/4" bugle-head, hi-thread type screws that will go through the baseboard into the clean room panel quickly and easily. These screws will go into the grooved-out section of the baseboard, every 12" o.c., and will be concealed with our matching insert bead that snaps into the grooved area after the base is installed.

- Prior to installing our baseboard, apply a bead of an FDA approved clear silicone caulk, or other approved caulk/sealant, at the bottom of the wall, along the floor line, to seal the wall to the floor. Install our baseboard tight to the wall and floor, making sure that all joints are tight and even. Be careful that the baseboard joints don't line-up with the panel
joints, because it will cause the joints to be open, uneven, and unsightly.

- The base at the inside corners will be a butt joint. Run the baseboard into the aluminum corner trim (ICMA) at each side of the corner, then install the insert bead (RFBV) for the inside corner trim that will run from the top of the base to the underside of the wall angle.

- At the outside corner, run the baseboard onto the aluminum outside corner trim (OCMA), but stopping at the edge and exposing where the insert bead (RFBV) goes into the corner trim. Then install our metal base corner component (MBC-4) over the baseboard on each side of the corner to finish off the base corner. Apply a dab or two of silicone caulk on the inside of the MBC-4 to hold the base corner in place.

- At all door locations or any other locations where the cut end of the base is exposed, install our end plinth component (EP-4), slipped in behind the screwable portion of the base and screw the tab portion of the EP-4 through the baseboard and into the panel. You may need to apply a dab of silicone caulk to hold the end plinth in place.

- After the base is installed and the aluminum trim is also installed to the top of the base, apply a bead of an FDA approved white silicone caulk at the top of the base to hold the baseboard tight to the wall, and to eliminate any waviness or spacing that may have occurred.

**Flash Cove Type Baseboard:**

- If the drawings call for the flooring (either epoxy or vinyl) to cove onto our wall system to form the baseboard, then the following installation method will required.

- The clean room panels will be held off the floor a distance as indicated on the drawings.

- A special aluminum J-trim component will be supplied that will be used as a horizontal trim member between the clean room panels and the coved flooring material. This trim component is a typical J-trim design that has an added back leg below the “J”, that will give the installers the option to screw the component either above or below the “J” depending on field conditions and ease of installation.

- Install the special aluminum J-trim component around the perimeter of the area that will require flash cove baseboard, using a laser to keep the J-trim level and true throughout the run of the wall. Use our #8 x 1/2” phillips washer-head type self-drilling screws to attach the J-trim to all stud members along the run of the wall.

- Make sure all joints are clean cut and tight, and land on a stud member so that there’s a solid connection at these locations. At the outside corners, the J-trim will be a mitered joint, cleanly cut and fitted tightly. At the inside corner, the J-trim will be a butt joint, again cleanly cut and tightly fitted.

- When using this J-trim component on our wall system for the flash cove baseboard, our
standard inside and outside corner trim components (ICMA, & OCMA) will not be used, because the three leg design of these components will not provide a tight streamline joint at the J-trim juncture. So, we will provide our 1-1/4" x 1-1/4" aluminum angle trim component (WF1/2A) at these corner conditions, which will create a tight, clean, flush type joint at the J-trim juncture.

- The angle trim will be attached to the panels using an **FDA** approved clear silicone caulking, or other approved caulking/sealant. Use either blue painters tape or clean room approved tape to hold the angle in place until the caulk sets.

3. **STACKING PANELS:**

- Panel installation above 12' high will require our horizontal "H" molding (HFMA), since the maximum height of our panels are 12' high. The height of the wall will determine how panels are stacked. For example, a 14' (h) wall will typically use a 10' panel and a 4' panel section stacked above. The horizontal "H" molding (HFMA) is installed prior to installing any panels, using a laser to keep the "H" molding level and true throughout the run of the wall. Use our #8 x 1/2" phillips washer-head type self-drilling screws to attach the HFMA to all stud members along the run of the wall. Make sure all joints are clean cut and tight, and land on a stud member so that there's a solid connection at these locations.

- At the inside corners, hold back the "H" molding (HFMA) the width of the inside corner trim (ICMA) so that the inside corner trim will run by it, and the HFMA will butt to it. The HFMA will never will butt together at the inside corner. Use our **inside corner marking guide (supplied)** to hold against the MCP, half corner post, and mark accordingly, to give you a location as to where to stop the HFMA molding on each side of the inside corner. Use our #8 x 1/2" washer-head type self-drilling screws to fasten the HFMA to the MCP, half corner post at this location.

- At the outside corner condition, hold back the "H" molding (HFMA) the width of the outside corner trim (OCMA) so that the outside corner will run by it, and the HFMA will butt to it. The HFMA will never go beyond the outside corner to form a miter, because it protrudes past the wall, creating a possible dust cavity. Use our **outside corner marking guide (supplied)** to hold against the corner stud, and mark accordingly, to give you a location as to where to stop the HFMA molding on each side.

- At the starter locations, run our "J" trim (JT1/2A or ET1/2A) all the way to the top of the wall and butt our HFMA molding to the "J" trim with a clean butt joint at that location.

- When installing the panels, slip the lower panel up into the "H" molding (HFMA), and the upper panel down into the HFMA, ensuring the panel joints line up between the upper and lower panels. When installing the battens (FMA) it's important that it goes from the top of the baseboard to the underside of the HFMA with a clean, tight joint at this location. **Do not let the FMA go into the HFMA.** Use this same method for installing the
FMA above the HFMA molding, with the FMA butting from the top of the HFMA molding to the underside of the ceiling, with a clean, tight joint at these locations. The top FMA must line up with the bottom FMA. Same when installing the insert bead, with all joints and seams clean cut and tight.

- When installing our HFMA molding up to a door opening, or any other opening, that is higher than the HFMA (10' or 12' high) (such as an overhead door or high speed roll-up door), then the HFMA must be held back from the edge of the opening the distance of the aluminum trim, such as our WF1/2A, 1-1/4" x 1-1/4" angle trim. This way the HFMA will sit tight and flush to the door opening trim, without exposing the cut end of the HFMA molding. Make sure that butt joint between the HFMA and vertical angle trim is clean cut and tight.

4. INSTALLATION OF WINDOWS:

- To eliminate dust particles finding their way into the window cavity, we highly recommend that the windows in our wall system be the last thing installed on the project, after initial cleaning of the walls and clean room area and mechanical blow-downs are completed.

- Install our precut aluminum Euro glazing components (EG3A, EG6A, or EG-Specials) around the window. Refer to the backside of the components as to where it fits in the window and marked top/bottom or side pieces. Once the window components are installed in the framed opening, install a fine bead of an FDA approved clear silicone caulk at all inside corners around the window unit.

- The glazing bead, which is already installed on the EG component, should always extend past each end of the window component by approximately 1". After the EG components are installed around the framed opening, it may be required to trim the glazing bead a little bit on the side EG component pieces only to properly fit the glazing bead to the top and bottom EG components of the window unit. Do not cut the window glazing bead even with the edge of the aluminum window component. It must always extend beyond the window components at each inside corner to eliminate any spacing at the inside corners.

- When ready to insert glass, use gloves and glass cups. Ensure that the glass is clean using a clean room acceptable cleaning agent and cleaning cloths that are both static and particulate free. Clean glass thoroughly leaving no smudges or marks inside or outside. Insert glass in the opening, ensuring that it fits in the aluminum edge of the window component and is snug against the bead. Insert battens (FMA or FMAG) on each side, using our #6 x 1-1/4" bugle-head type self-drilling fasteners (1) per foot.

- When installing the glass on the opposite side of the window, it is very important that any debris or particles are wiped clean on all aluminum window components and that the glass has no smudges, marks or particulate on it prior to installing.

- Then cut our battens (FMA or FMAG) for the horizontal trim members that are above
and below the window unit, on each side, ensuring you have a clean, tight joint against the vertical batten member, at each joint location of the window unit.

- An easy preferable and time saving method when cutting battens, is to insert the PVC insert bead prior to cutting the batten, thus making one clean cut through both parts so once installed, the batten and bead are exact the same cut.

- **When screwing the battens, the screws should only snug the batten to the panel and glass. Do not over screw the batten, over screwing may cause the batten to put too much pressure on the glass, which may result in breakage.**