Special Meeting
6:00 p.m., Monday, Sept. 21, 2026
Farmington City Hall
23600 Liberty Street
Farmington, MI 48335

STUDY SESSION AGENDA

1. **Roll Call**
2. **Approval of Agenda**
3. **Public Comment**
4. **Rapid Flashing Beacon**
5. **Mansion Trellis Design**
6. **Other Business**
7. **Public Comment**
8. **Council Comment**
9. **Adjournment**

The City will follow its normal procedures for accommodation of persons with disabilities. Those individuals needing accommodations for effective participation in this meeting should contact the City Clerk (248) 474-5500, ext. 2218 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations.

Farmington City Council **Staff Report**	**Council Meeting** **Date:** September 21, 2026	**Item Number** **4**

Submitted by: Joshua Leach, Superintendent

Agenda Topic: Rapid Flashing Beacon

Proposed Motion: Move to authorize City Administration to contract with Sawyer Services of Chesterfield, MI, OHM Advisors of Livonia, MI, and other contractors needed to install a new Rapid Flashing Beacon on Farmington Road. Located within the Road Commission of Oakland County Right of Way, South of State Street at the pedestrian refuge island for an amount not to exceed $58,000.00

Background: Following the Farmington Road streetscape project, Farmington City Council is responding to pedestrian requests to reinstall a Rapid Flashing Beacon (RFB) on Farmington Road, south of State Street.

The redesigned streetscape features a pedestrian refuge island and only one lane of traffic in each direction. The new traffic pattern and density of the vegetation combined with the crosswalk location being mid-block instead of at an intersection causes vehicle drivers not to see the pedestrians at the crosswalk.

During the streetscape construction the RFB was salvaged and placed in outdoor storage. J. Ranck Electric Incorporated, who installed the original RFB was contacted to inventory the materials salvaged from the Farmington Road RFB crosswalk to verify what could be reused to reinstall the RFB. Upon inspection J Ranck determined the solar panels, wireless communication equipment, push buttons, and the missing pole base doors would need to be replaced. Three vendors were contacted for quotes to purchase and install new flashing beacons.

QUOTES:

Sawyer Services $31,706.70
J. Ranck Inc. $37,600.00
Motor City Electric $36,500.00
Sawyer Services did not include separate push button posts at crosswalk, cost is approximately $2200.00

Additional costs not included in the quotes:

Design Engineering	$9,500.00
Construction Engineering	$5,000.00
Sidewalk / Brick paver restoration	$2,500.00
Tree / Landscaping removal	$3,000.00
Planter Curb restoration	$2,500.00
10% contingency Sawyer Services	$3,170.67

Materials:
Quotes
OHM Additional Cost Estimates

memorandum

Date: September 21, 2026

To: City of Farmington
From: OHM Advisors

Re: Farmington Rd Rapid Flashing Beacon (RFB)

We understand that the City wishes to re-install the RFB at the mid-block crossing on Farmington Rd. Below we have outlined additional services and construction costs to be included along with the construction quote received from Sawyer Services.

Design Engineering:

- RFB plan creation
- Utility coordination
- RCOC & MDOT permitting
  - MDOT would be necessary due to the anticipated traffic detour
- Traffic detour planning
- Cost: $9,500

Construction Engineering (CE) Services:

- This is anticipated to only be construction observation
- Cost: $3-5k

Additional Construction Costs (not included in Sawyer Services number):

- Sidewalk brick paver removal and resetting - $2,500
  - Anticipated to be needed on the west side and potentially the east side
- Tree/Landscaping removals - $3,000
  - Necessary on both sides
  - Will have to exercise more caution with removals due to sprinklers and electrical conduit close by underground
- Additional planter curb - $2,500
  - Anticipated removals necessary for the RFB foundation on the west side
  - Note: if removals are done properly, no curb should need to be poured back as the new RFB foundation should connect to it. Consider this contingency if plans have to change.

OHM Advisors
34000 PLYMOUTH ROAD
LIVONIA, MICHIGAN 48150
T 734.522.6711
F 734.522.6427
OHM-Advisors.com

Motor City Electric Utilities Co.

9440 Grinnell St.
Detroit, MI 48213-1151
(313) 921-5300 Phone
(313) 921-5310 Fax
www.mceco.com

August 10, 2026

City of Farmington Hills

Reference: **State St. & Farmington Rd – Flashing Beacon Install**

Quote #: **26-2483**
Attn: Joshua Leach

Motor City Electric Utilities Co. is pleased to provide our proposal for the above-mentioned project. **MCEU's pricing is $36,500.00**

Inclusions:

- Install (2) Solar Powered Flashing Beacons, Including:
  - Pedestal Foundations
  - Pushbutton Post
  - Signage

Exclusions: QA/QC testing, contaminated materials testing and/or removal, Engineering, Removal and/or repair of hidden obstructions, Dewatering, Utility company costs, QC testing, Badging/on-site training, pavement/sidewalk replacement, soft restoration, Bonds, Permit fees or coordination, Utility coordination, Directional Boring, Inspection fees, Traffic control devices, no DBE included in our quote.

Clarifications: Quote is based on standard working hours (Monday-Friday, 8 hours/day) using local 17 IBEW labor, MCEU will schedule crew based on availability upon receiving purchase order.

NOTICE: This proposal does not include costs associated with recent changes to tariffs related to exports or imports of material or equipment related to our scope of work. Our pricing may need to be adjusted when we become aware of any cost impacts associated with these tariffs.

Thank you for the opportunity to quote this work.
If you have any questions or require further clarification, please contact me directly.

Jalen Britt, PE

Project Manager/ Estimator
MOTOR CITY ELECTRIC UTILITIES CO.

Quote is valid for 30 days as of the date on this quote letter

Date
4/17/2026

56851 Gratiot Avenue
Chesterfield, MI 48051
Office: (586) 646-5181
Electrical@sawyerservices.net

sawyer services

Quoted for:
CITY OF FARMINGTON 33720 W 9 MILE RD FARMINGTON, MI 48335 ATTENTION: JOSHUA LEACH JLEACH@FARM.GOV

Service Location:
STATE STREET AND FARMINGTON RD FARMINGTON, MI 48336 OAKLAND COUNTY **RAPID FLASHING BEACONS**

Description:	**Total**
SAWYER SERVICES IS PLEASED TO SUBMIT A PROPOSAL FOR RAPID FLASHING BEACONS AT STATE STREET AND FARMINGTON RD FARMINGTON HILLS, OAKLAND COUNTY **QUOTE INCLUDES:** PLEASE SEE ATTACHED BID LINES ***RFRB PLACEMENT MY BE INHIBITED BY STREET LIGHTS** ***ADDITIONAL COSTS MAY INCUR IF PUSHBUTTONS REQUIRE SEPARATE LOCATIONS OR INDIVIDUAL PEDESTALS** **EXCLUDES: RESTORATION, BRICK PAVEERS, SIDEWALK REPLACEMENT, VEGETATION, RELOCATION OF LIGHT POLES** **STANDARD EXCLUSIONS:** No bond fees, no dues, no membership fees, no permits, or no locally assessed fees are included unless noted otherwise. Winter Conditions, Dewatering, Restoration, Spoil Removal, Large Rock / Boulder Removal, Sawcut / Patch of concrete and asphalt, Additional Mobilizations at a cost $2,500 for each additional mobilization, Design / PE Stamps, Power company and utility charges, Temp Power, Temp Lighting, Site Trailer Power, Cut / Patch / Paint, Saw Cutting / Coring, Any scope not specifically listed above, Overtime or off hour work, Dumpsters / Waste Removal, Hazardous Material Disposal, Barriers / Bollards for transformers or switchboards.	$31,706.70
TOTAL:	**$31,706.70**

J. RANCK ELECTRIC, INC.

Mt. Pleasant, Michigan
1993 Gover Parkway
Mt. Pleasant, MI 48858
phone 800-792-3822
fax 989-775-8830

April 1, 2026

City of Farmington
33720 W 9 Mile Rd
Farmington, MI 48335

Attn: Joshua Leach

Re: City of Farmington RRFB

Mr. Leach,

We have prepared two quotes below – one with the pushbutton attached to the RRFB and one with the pushbutton on a support post.

OPTION 1: RRFB with Pushbutton Attached

We are pleased to submit a quotation in the amount of Thirty-Four Thousand, Six Hundred (**$34,600.00**) dollars to provide the necessary labor, equipment, and materials to install two new RRFB assemblies per the information provided via email.

Scope Included:

- 1 Mobilization
- Traffic control for installation of RRFBs
- 2 Pedestal Foundations
- 2 Aluminum Pedestals (black)
- 2 Pushbuttons (black)
- 2 Solar Powered Rectangular Rapid Flashing Beacons (black)
- Type IIIB RRFB Signs

OPTION 2: RRFB with Pushbutton Support Post

We are pleased to submit a quotation in the amount of Thirty-Seven Thousand, Six Hundred (**$37,600.00**) dollars to provide the necessary labor, equipment, and materials to install two new RRFB assemblies per the information provided via email.

Scope Included:

- 1 Mobilization
- Traffic control for installation of RRFBs
- 2 Pedestal Foundations
- 2 Aluminum Pedestals (black)
- 2 Pushbuttons (black)
- 2 Pushbutton Support Posts (black)
- 2 Solar Powered Rectangular Rapid Flashing Beacons (black)
- Type IIIB RRFB Signs
- Conduit and wire to pushbutton support post

Qualifications:

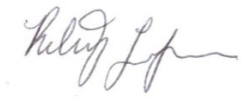
a) The proposed pricing DOES NOT include provisions for prime contractor bonds and/or associated dues. If a bond is requested, please add 1% to our price.
b) We exclude any removal or replacement of any concrete or asphalt areas.
c) We exclude any permit fees beyond a standard electrical permit.
d) We exclude all staking, QAQC, clearing, spoil removal or site restoration.
e) We exclude any handling or removal of contaminated soils.
f) We exclude any underground obstruction removals (abandon utilities, rail, concrete etc.).

MATERIAL LEAD TIME: 6-8 WEEKS

We appreciate the opportunity to quote this work to you. If you have any additional questions, please feel free to contact me at 989-775-7393.

Sincerely,

J. RANCK ELECTRIC, INC.



Riley Lafevor

Farmington City Council **Staff Report**	**Council Meeting** **Date:** Sept. 21, 2026	**Item Number 5**

Submitted by: City Manager David Murphy

Agenda Topic: Governor Warner Mansion Façade

Proposed Motion: Move to approve (Boston Ivy, Climbing Hydrangea, Virgin's Bower, Red Honeysuckle, or Virginia Creeper) and to continue to finalize the green screen façade structure design.

Background: At the September 8th City Council meeting, Council approved the Warner Mansion Rear Addition Project but made no decision on the façade extra as they requested more information to evaluate it. OHM has provided a memo outlining the different vegetation/ivy options as well as details of the currently proposed façade green screen.

Materials: Memo from OHM

memorandum

Date: September 21, 2026

To: Farmington City Council
From: OHM Advisors

Re: Governor Warner Mansion Façade

Vegetation/Ivy

Several ivy wall plant options are suitable for this application, offering the flexibility to create multiple successful planting combinations based on project goals and site conditions. A brief summary of each plant option, along with summer and winter appearances, are included. In addition to the primary ivy wall selections, several supplemental plant options are included to support community engagement, educational opportunities, and broader landscape interest.

OHM Advisors
34000 PLYMOUTH ROAD
LIVONIA, MICHIGAN 48150
T 734.522.6711
F 734.522.6427
OHM-Advisors.com

As a quick summary of the site conditions for the addition:

- The proposed addition is 27'-8" tall and located on the south side of the mansion, creating south-, east-, and west-facing walls with varying sun exposure conditions.
- East- and west-facing walls will receive partial sun, while the south-facing wall will receive full sun.
- Plant selections are being evaluated for their ability to thrive on all three exposures, allowing for a consistent appearance around the addition.
- As the design develops, different plant combinations could be used on each façade to create varied visual effects and enhance the surrounding landscape.

A standard for an ivy wall is English Ivy, below are a couple thoughts:

- English ivy, for our area, is an invasive evergreen species, but, is currently growing on the west side of the original addition and will be removed during demolition, and being it is an evergreen ivy, should remain green all year-around.
- Two options are to transplant and preserve the existing vegetation or remove the ivy due to its invasive nature; removal is our preferred approach.

Boston Ivy

- A fast-growing native deciduous vine that can exceed 30 feet in height and thrives in part to full sun.
- Creates the classic ivy-covered wall appearance with dense green foliage and strong vertical coverage.
- Provides exceptional seasonal interest with brilliant red, orange, and purple fall color.
- Loses its leaves in winter, exposing an attractive network of woody stems attached to the wall.
- Winter screening is minimal, with the mesh screen system and portions of the building façade remaining visible until spring growth returns

Summer:

Winter:

Climbing Hydrangea

- A deciduous flowering vine that can reach 30+ feet in height, thrives in part to full sun, and prefers moist soils.
- It is slow-growing but provides elegant, long-lasting wall coverage with minimal maintenance once established.
- Offers four-season interest, including glossy dark green foliage in spring, large white flower clusters in early summer, and attractive exfoliating bark in winter.
- Winter characteristics include reddish-brown stems, peeling bark, and persistent dried flower heads that add texture and visual interest against snow, mesh panels, and masonry walls.
- Suitable for creating a visually appealing green wall with year-round ornamental value, despite being deciduous.

Summer:

Winter:

Virgin's Bower

- A fast-growing native deciduous vine that reaches 10–20 feet, thrives in part to full sun, and produces masses of small white flowers in late summer.
- Provides excellent pollinator value and bird habitat, making it a strong choice for supporting local wildlife and biodiversity.
- Creates a naturalized appearance on an ivy wall while providing quick seasonal coverage.
- In winter, the foliage drops, but distinctive fluffy, silvery seed heads remain on the vines, adding texture and ornamental interest.
- The persistent seed clusters provide visual appeal against mesh panels and block walls throughout the winter months.

Summer:

Winter:

Red Honeysuckle

- A native, semi-evergreen vine that grows 10–20 feet tall, thrives in part to full sun, and produces vibrant red-orange tubular flowers from spring through summer.
- Its long bloom period attracts hummingbirds and other pollinators, providing strong ecological and seasonal interest.
- Offers colorful vertical coverage during the growing season and is well suited for supporting wildlife habitat.
- In Michigan, it typically loses most of its foliage in winter, leaving behind twining stems that maintain some structure but provide limited screening.
- Winter leaf drop would expose much of the mesh screen system and building façade during the colder months.

Summer:

Winter:

Virginia Creeper

- A vigorous native deciduous vine that can reach 30+ feet in height and thrives in part sun to full shade.
- Quickly provides dense vertical coverage and supports wildlife by serving as a pollinator plant and larval host for native moths, while also producing berries that benefit birds.
- Delivers exceptional fall color, turning brilliant shades of red and burgundy before dropping its leaves.
- Small white flowers are produced in late spring but are generally inconspicuous.
- In winter, the bare branching stems remain attached to walls and fences, creating architectural interest but providing little screening or privacy.

Summer:

Winter:

Several combinations to consider:

Option #1 - Boston Ivy for a backdrop with the climbing hydrangea, all three sides
Option #2 – Virgin's Bower with Red Honeysuckle, all three sides
Option #3 – Boston Ivy with Red Honeysuckle on East and West sides, Virgin's Bower on the south side
Option #4 – Any one plant noted above

If additional year-round screening is desired from adjacent residential properties, evergreen shrubs and trees such as arborvitae, spruce, or several other options, could be strategically incorporated along various lines-of-sight where there are current gaps in the landscaping. These plantings would complement the proposed ivy wall while enhancing visual buffering, privacy, and the existing landscape character.

Community engagement and educational planting opportunities can be integrated into the ivy wall design, using Ivy as a backdrop along with the following plants, to enhance visual interest and support interactive landscape experience:

- Grape vines: coordinate with a local winery to produce a special batch
- Hops: work with a local brewery to produce a special brew
- Passion Flower: able to produce teas, use for medicinal purposes
- Vegetables: Bean plants, pole squash, tomatoes, zucchini, cucumbers
- Fruits: tree espalier, may be an option to replace ivy in portions

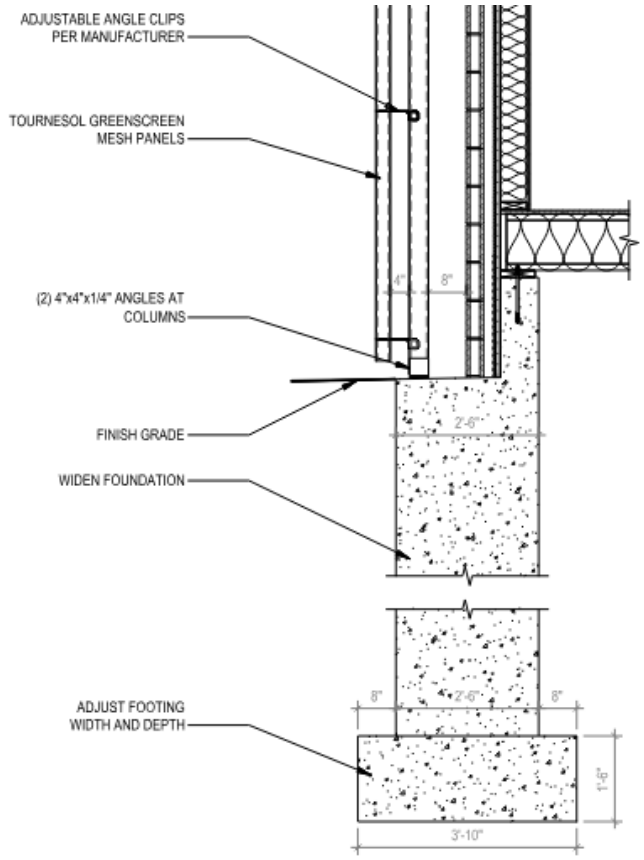
All plant options will require routine maintenance and training during the establishment period to ensure proper coverage and growth; however, once mature, maintenance needs are generally reduced to periodic pruning and trimming to maintain the desired form and screening effectiveness.

Below is the proposed direction for the screening wall.

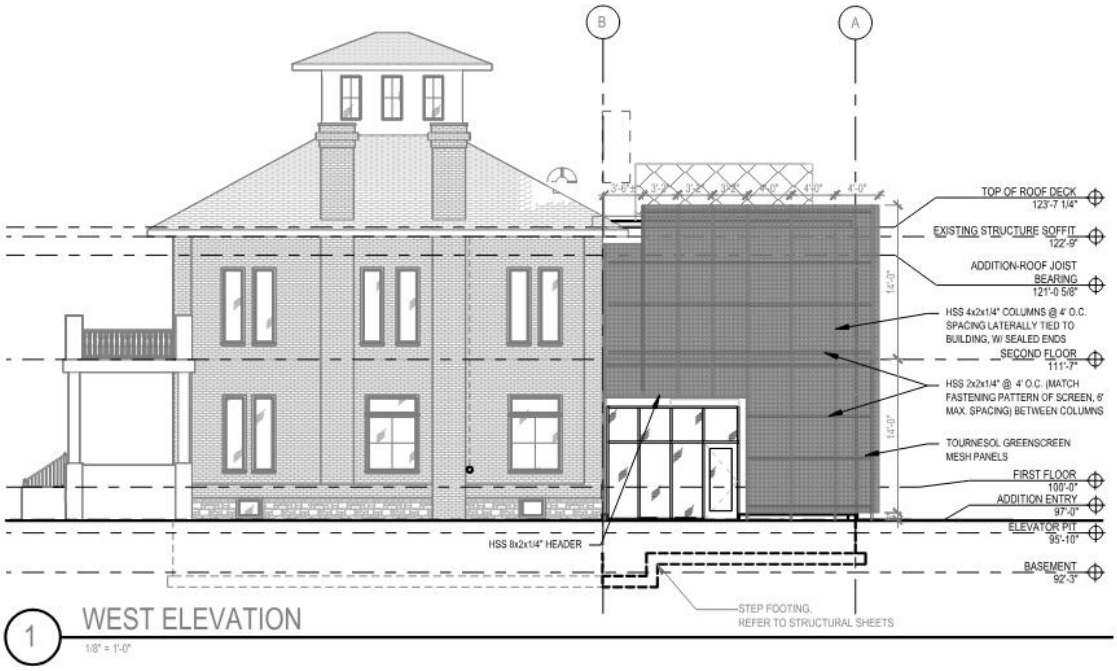
The overall intent was to provide a screen for the ivy or plants to grow on, rather than attach and embed itself into the building structure itself, which, over time, can be detrimental to the building. The mesh/frame system will be held off the exterior of the building veneer by approximately 16"; 8" between the veneer and framing members, approximate 4" framing members, and 4" offset distance for the mesh brackets. The originally

proposed metal scale siding will be replaced with a masonry veneer to assist in providing a solid barrier to prevent the plants from compromising the building structure.

The below detail shows the direction for the widened footing, extending the proposed building footing, and adding the tube framing and mesh panels, providing the structure for the plants to climb on. The following elevation provides a preliminary view of the East building elevation with only the mesh panels. The panels will cover the tube framing, and provide a blank canvas for the plantings selected.



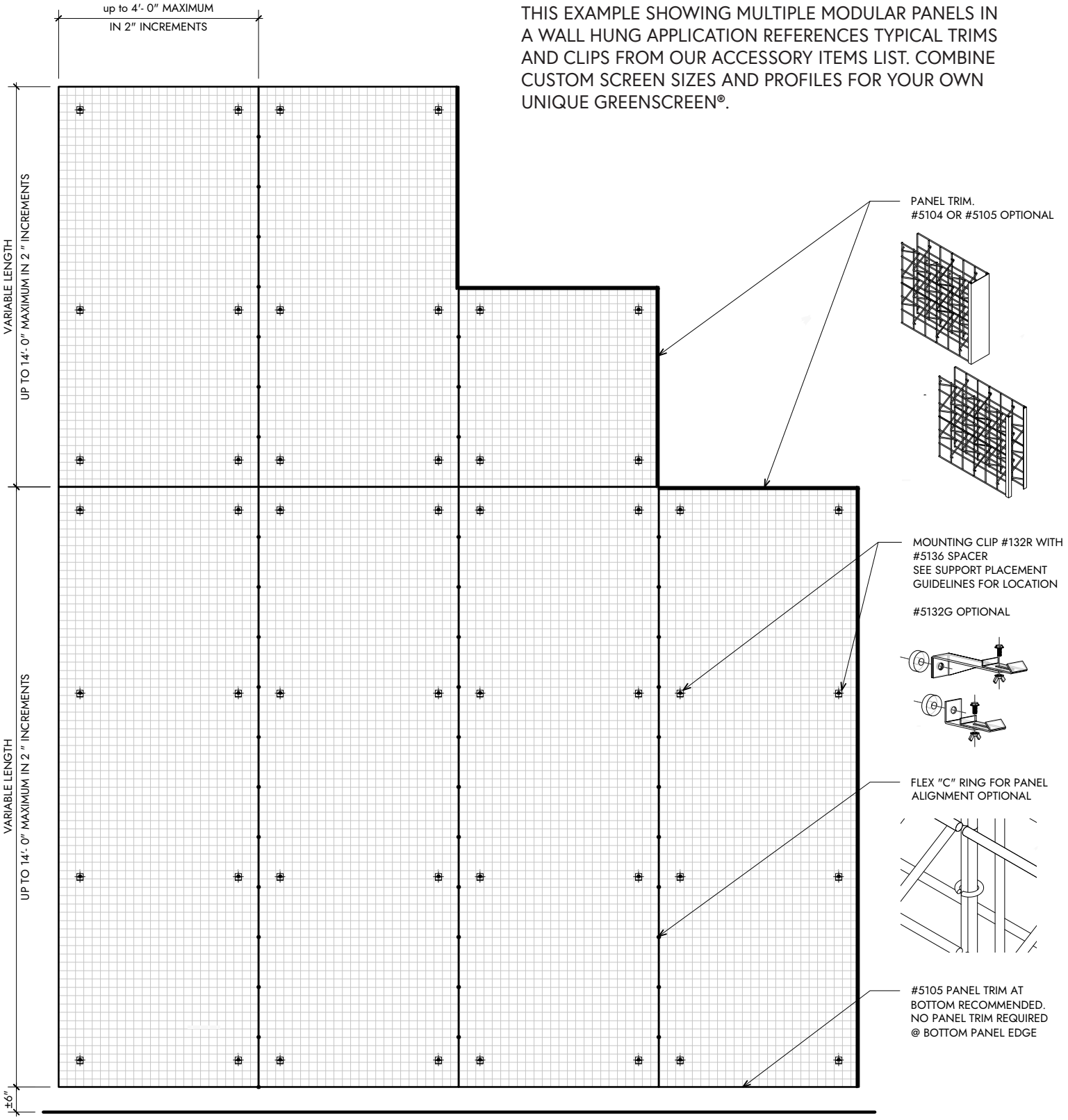
A Ivy Wall Section
1/2" = 1'-0"

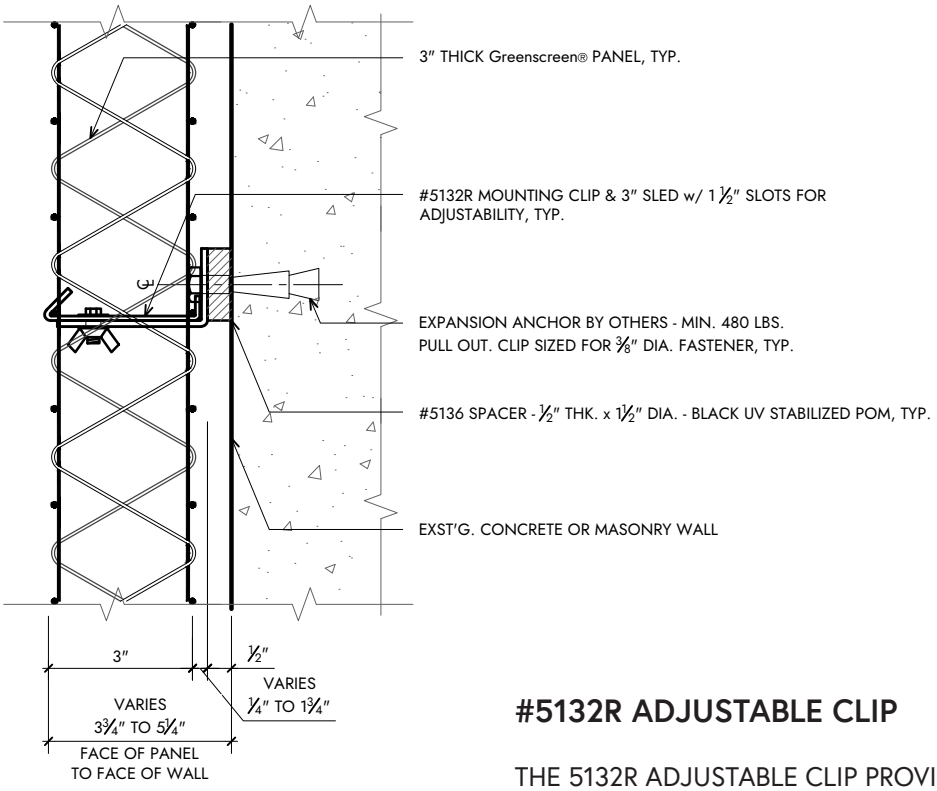


Façade Structure/Green Screen

Please see the attached product specification sheets for the mesh paneling system we are currently proposing.

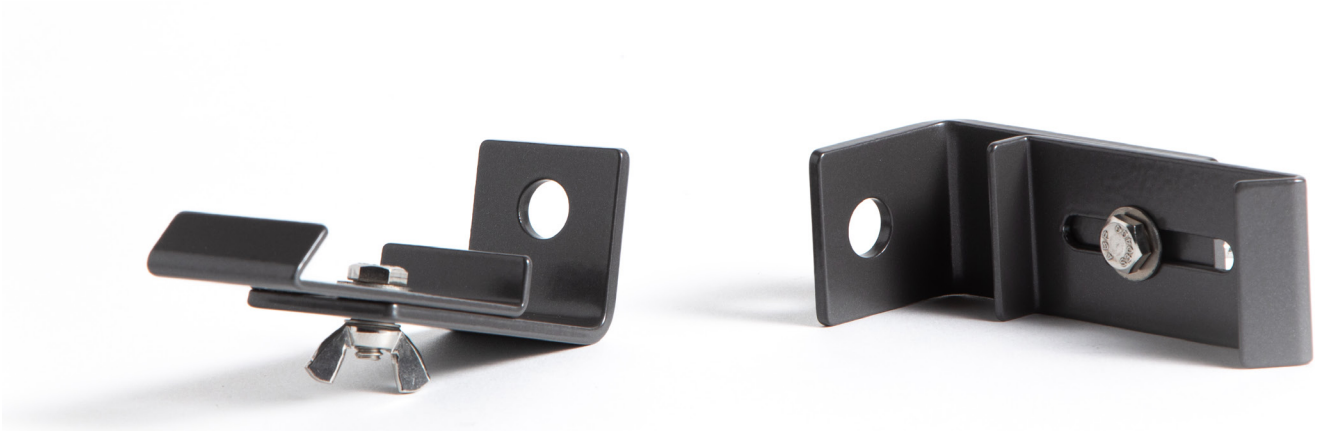
THIS EXAMPLE SHOWING MULTIPLE MODULAR PANELS IN A WALL HUNG APPLICATION REFERENCES TYPICAL TRIMS AND CLIPS FROM OUR ACCESSORY ITEMS LIST. COMBINE CUSTOM SCREEN SIZES AND PROFILES FOR YOUR OWN UNIQUE GREENSCREEN®.

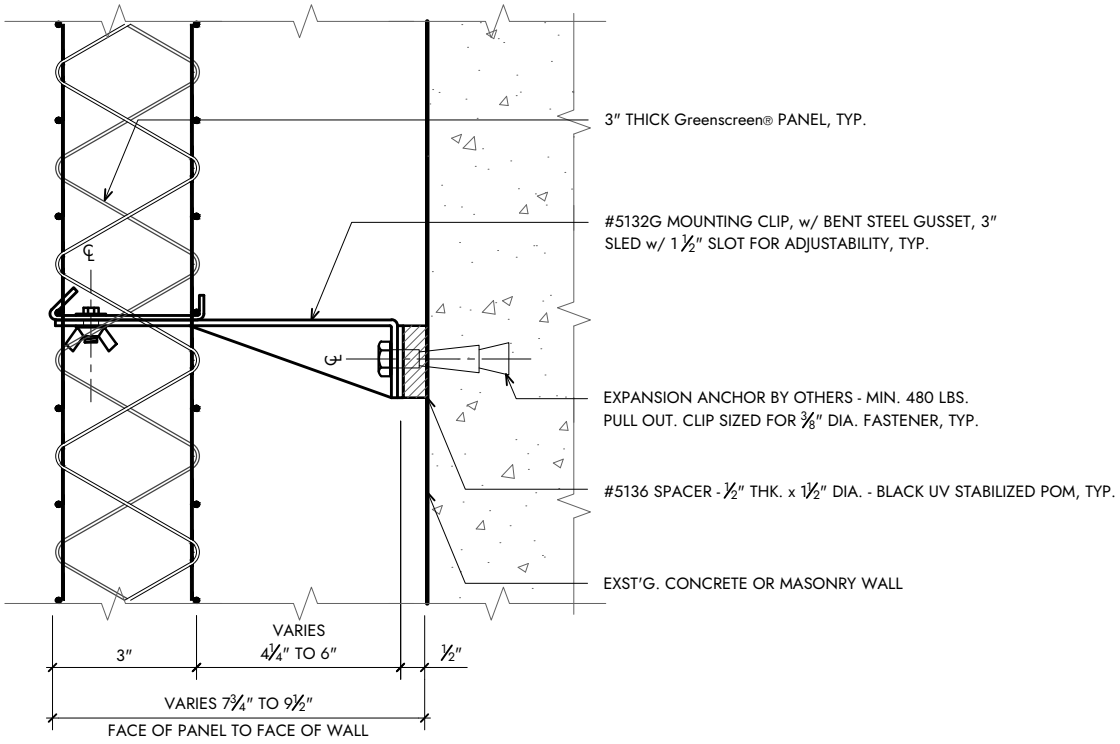




#5132R ADJUSTABLE CLIP

THE 5132R ADJUSTABLE CLIP PROVIDES PANEL SUPPORT FOR BOTH DOWNLOAD AND UPLIFT. THE CLIP CAN HHMOUNT TO WALL SURFACES OR TO A STEEL FRAME. THE SLOT ALLOWS FOR PANEL ADJUSTMENT AND EASE OF INSTALLATION.





#5132G ADJUSTABLE CLIP

THE #5132G ADJUSTABLE CLIP PROVIDES PANEL SUPPORT FOR BOTH DOWNLOAD AND UPLIFT. THE CLIP CAN MOUNT TO WALL SURFACES OR TO A STEEL FRAME. THE SLOT ALLOWS FOR PANEL ADJUSTMENT AND EASE OF INSTALLATION. MAXIMUM BRACKET EXTENSION IS 9½" TO OUTSIDE OF PANEL.

#5104 CHANNEL TRIM

USED AS A CLOSURE STRIP AT EDGES OF GREENSCREEN® PANELS. RECOMMENDED ON PANEL EDGES ADJACENT TO PEDESTRIAN TRAFFIC OR WHERE EDGE REINFORCEMENT FOR PLANT MAINTENANCE IS DESIRED.
NOT RECOMMENDED AT BOTTOM EDGE OF PANELS TO PREVENT POOLING OF WATER.

SIZE: 1/2" LEG x 31/8" WIDE x 1/2" LEG

MATERIALS: 20 GAUGE GALVANIZED STEEL

COLORS: FACTORY WELDED TO PANELS AND POWDER COATED IN ONE OF OUR STANDARD COLORS (CUSTOM COLORS AVAILABLE BY REQUEST)

#5105 EDGE TRIM

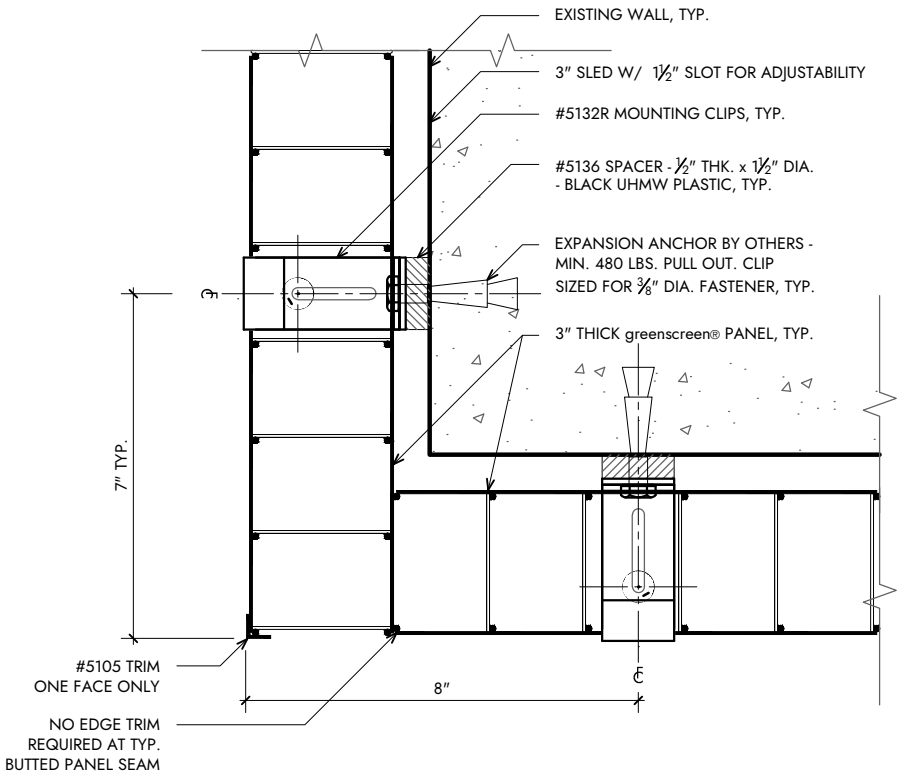
USED AS A CLOSURE STRIP AT EDGES OF GREENSCREEN® PANELS. RECOMMENDED ON PANEL EDGES ADJACENT TO PEDESTRIAN TRAFFIC OR WHERE EDGE REINFORCEMENT FOR PLANT MAINTENANCE IS DESIRED. USE ON TOP, SIDE OR BOTTOM EDGES.

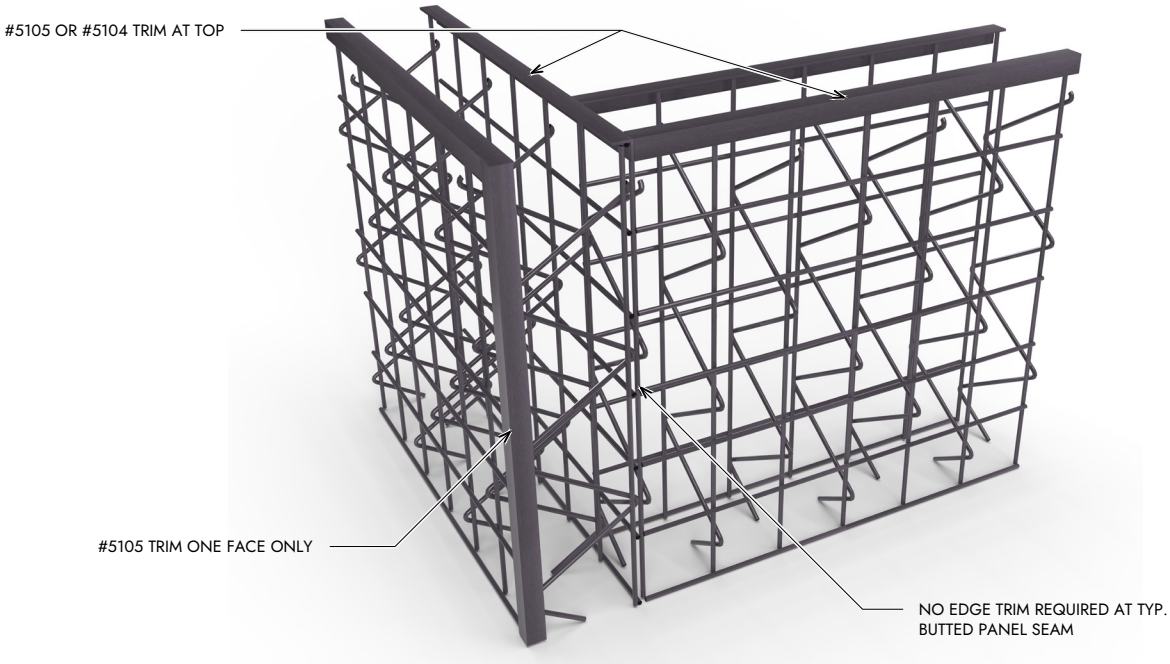
SIZE: 1/2" LEG x 1/2" LEG

MATERIALS: 20 GAUGE GALVANIZED STEEL

COLORS: FACTORY WELDED TO PANELS AND POWDER COATED IN ONE OF OUR STANDARD COLORS (CUSTOM COLORS AVAILABLE BY REQUEST)

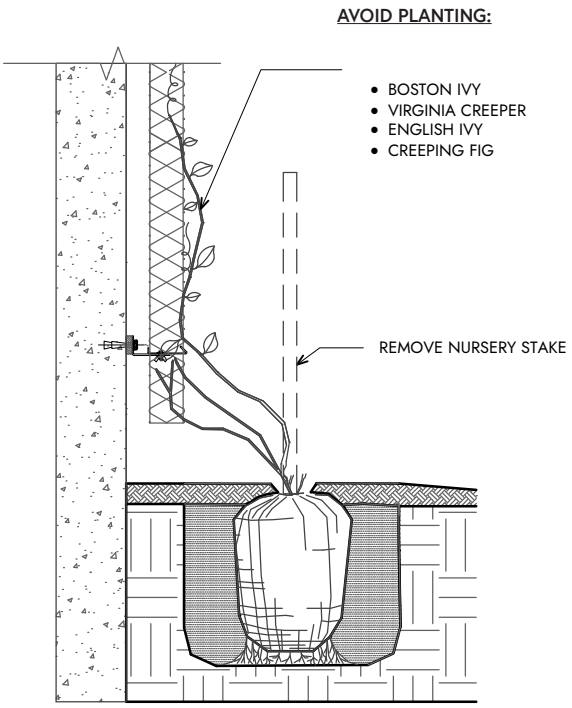
NOTE: TRIM IS NOT NEEDED AT PANEL TO PANEL SEAMS. EXCEPTION - CRIMP TO CURVE PANELS


EXISTING WALL, TYP.
3" SLED W/ 1½" SLOT FOR ADJUSTABILITY
#5132R MOUNTING CLIPS, TYP.
#5136 SPACER - ½" THK. x 1½" DIA.
- BLACK UHMW PLASTIC, TYP.
EXPANSION ANCHOR BY OTHERS -
MIN. 480 LBS. PULL OUT. CLIP
SIZED FOR ⅜" DIA. FASTENER, TYP.
3" THICK greenscreen® PANEL, TYP.
3"
7" TYP.
#5105 TRIM
ONE FACE ONLY
NO EDGE TRIM
REQUIRED AT TYP.
BUTTED PANEL SEAM
8"
℄

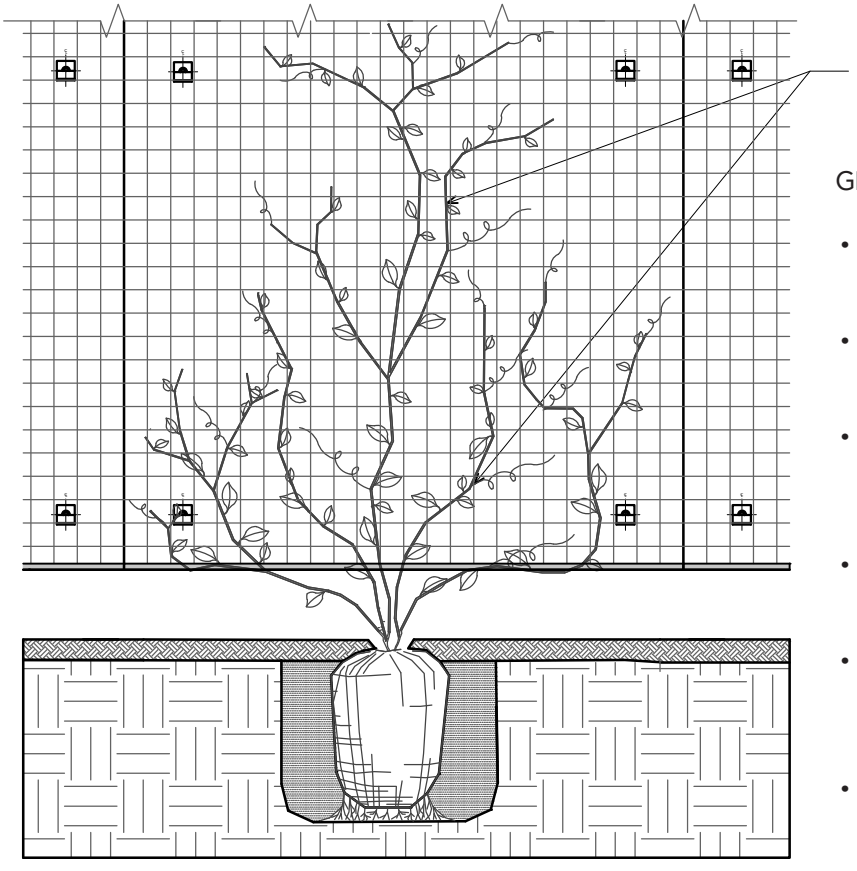

#5105 OR #5104 TRIM AT TOP
#5105 TRIM ONE FACE ONLY
NO EDGE TRIM REQUIRED AT TYP.
BUTTED PANEL SEAM

VINE CONSIDERATIONS:

- VINES THAT GROW BY TWINING ARE BEST FOR GREENSCREEN® SUCH AS HONEYSUCKLE, JASMINE, TRUMPET VINE, FIVELEAF AKEBIA AND CLEMATIS.
- SCRAMBLING VINES SUCH AS ROSA BANKSIAE AND BOUGAINVILLEA DO WELL ON GREENSCREEN® BUT REQUIRE ADDITIONAL MAINTENANCE/PRUNING.
- VINES THAT GROW BY "SUCTION CUPS" OR "AERIAL ROOTS" SHOULD ALWAYS BE AVOIDED FOR WALL MOUNTED APPLICATIONS AS THEY WILL ATTACH TO THE WALL INSTEAD OF THE GREENSCREEN® PANEL. AVOID BOSTON IVY, VIRGINIA CREEPER, ENGLISH IVY & CREEPING FIG.
- GREENSCREEN® RECOMMENDS THAT A LANDSCAPE ARCHITECT, OR HORTICULTURIST BE CONSULTED FOR EACH SPECIFIC APPLICATION.
- CHOOSING THE APPROPRIATE VINE REQUIRES CAREFUL CONSIDERATION OF CLIMATE ZONE, SUN EXPOSURE AND DESIRED VISUAL EFFECT.
- WHEN SELECTING VINES, NATIVES SHOULD BE GIVEN PREFERENCE AND SPECIES THAT ARE CONSIDERED INVASIVE SHOULD BE AVOIDED.



SECTION



ELEVATION

GENERAL NOTES:

- FOR PROJECT SPECIFIC PLANTING DETAILS REFER TO LANDSCAPE/CIVIL DRAWINGS.
- THE CROWN OF THE VINE IS TYPICALLY PLANTED ±12" FROM FACE OF PANEL.
- TYPICAL VINE SPACING VARIES FROM 1' TO 4' O.C. DEPENDING UPON VINE SPECIES AND CONTAINER SIZE.
- IRRIGATION WILL BE REQUIRED IN MOST CLIMATE ZONES.
- GREENSCREEN® DOES NOT PROVIDE DESIGN SERVICES FOR PLANTING, IRRIGATION OR DRAINAGE.
- GREENSCREEN® DOES NOT SUPPLY PLANT MATERIAL OR INSTALLATION.

GENERAL

Metal components (except fasteners) are factory finished with general purpose, alkaline, water based cleaner / degreaser applied at 240 degrees F. and primed with zinc-rich epoxy powder coat. The topcoat is comprised of polyester or polyester-urethane powder coat in one of our six standard colors.

PANELS

Panels are a rigid, three-dimensional welded wire grid fabricated of 14-gage ASTM A641 galvanized steel wire. Wires along the face are welded at each intersection to form a 2" x 2" face grid on the front and back of panels. The face grids are separated by bent wire trusses spaced at 2" centers and welded to front and back face grids at each truss apex. The standard panel thickness is 3". Length and width of panels are in 2" nominal increments. Allow for a tolerance: ⅛" in width and ¼" in length.

ACCESSORIES

Trim is fabricated from 20-gage ASTM A879 galvanized steel. Typically, #5105 trim is placed around the full perimeter of each panel group, but not at panel seams. Refer to submitted sketches or shop drawings for exact trim placement. Clips are fabricated from ASTM A879 galvanized steel. Spacers are made from UHMW black plastic will hold the clip away ½" from the mounting surface. Spacers are optional when mounting directly to steel. Anchors for attaching to a structure are excluded and should be provided by the installer based on site conditions. A min. 460 lbs. pull out value is recommended when attaching to concrete, masonry, structural steel, light-gage steel framing, or wood framing. EIFS applications typically require additional blocking for clips and anchors to attach to.

EXAMINATION & INSTALLATION

Inspect substrates and conditions aff ecting work of section. Do not proceed until unsatisfactory conditions have been corrected. Install panels plumb and square, and align to maintain modular grid. Avoid cutting panels in field. Where field cutting is essential, apply touch-up paint to cut edges. Custom formulated touch-up paint can be purchased from Greenscreen®. Install panels securely with fasteners as shown on drawings/product data sheets. Repair bent or damaged panels. If panels cannot be repaired to satisfaction of architect, remove from job site and replace with new panels.

DELIVERY, STORAGE, AND HANDLING

Protect materials from damage and store panels flat. Provide edge protection when strapping is used. Do not apply loads to panel edges. Panels should never be transported on a fl atbed truck or moved with a forklift.

PANEL WEIGHT

The 3" thick panels weigh .70 pounds per square foot. #5104 channel trim adds .50 pounds per lineal foot and #5105 edge trim adds .30 pounds per lineal foot. The weight of plant materials grown on the panels is an issue that has been analyzed on previously completed projects. There are a number of variables that affect the overall weight; including type of plant material, level of maturity, and moisture content. We have taken what we assume to be the worst case scenario which accounts for panel weight with full perimeter #5104 channel trim and fully mature vines on a cold wet day. In this case it has been our experience that this weight would never exceed between 2 to 3 pounds per square foot. (Refer to ASTM E 2397, Report Annex, p.4, Plant Weight).

PANEL OPENNESS

It has been calculated that a standard 4' x 8' panel without any plant growth gives 8.25% coverage in elevation, meaning the panel is 91.75% open. However, most engineers when calculating wind loads, consider the panel to have 50% blow- through when fully covered with mature plant material. Plant material is frangible, and will be removed at higher wind speeds.

WIND EFFECTS ON PANELS

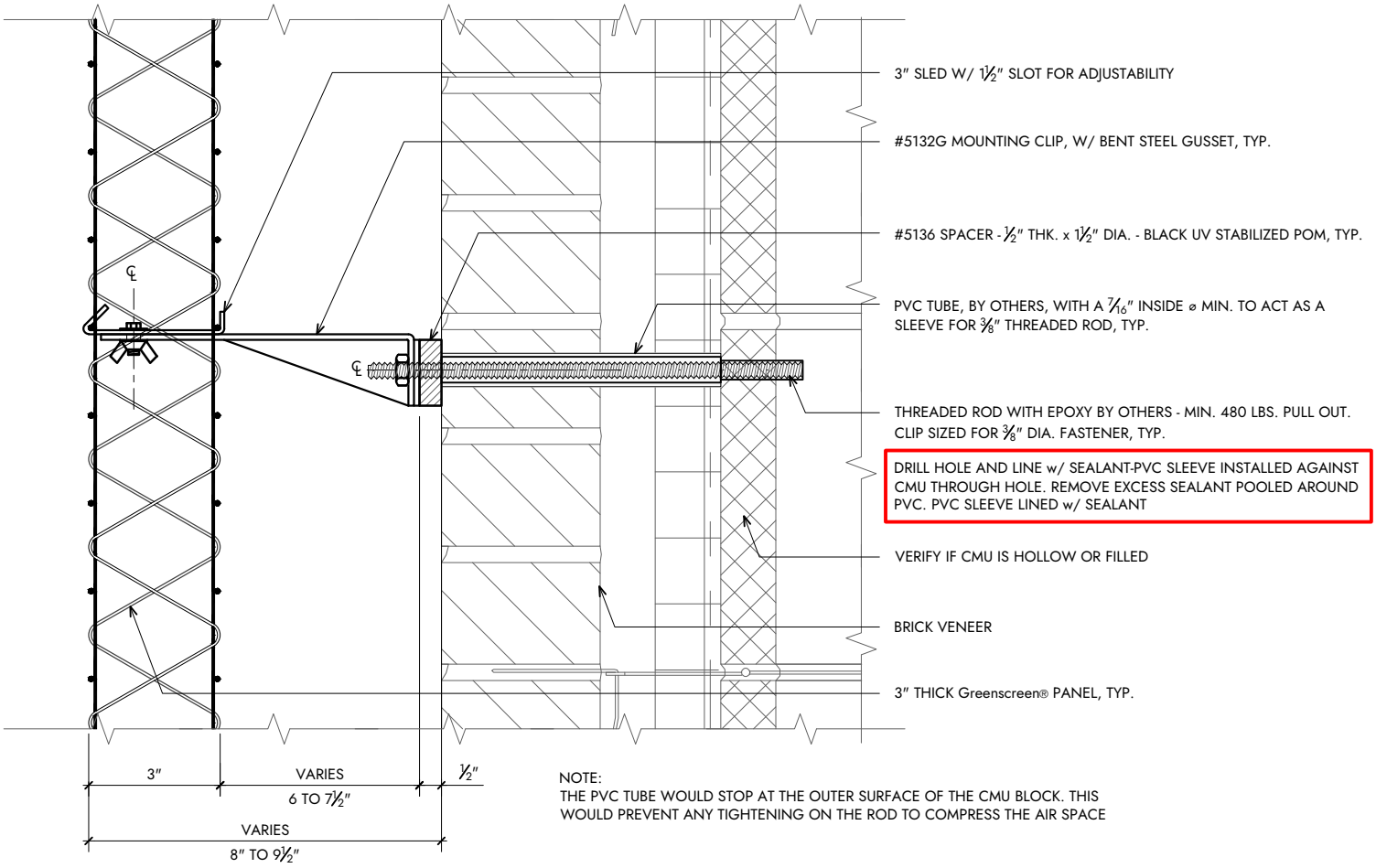
It is assumed that plant material is frangible and will blow off in a mild wind long before hurricane speeds are reached (a 140 mph 3 second gust is considered to be a low category 3 hurricane.) What this means is that as the wind blows harder it will remove more and more plant material, thereby controlling the amount of lateral wind pressure to an indeterminate amount. Furthermore, loss of plant material will also decrease the vertical load on the mounting clips more and more as wind speeds increase. Lastly, it should be noted that the Gcpi (internal pressure coefficient) is 0 when considering an Exposure C location.

PANELS ARE NOT CLADDING

The panels do NOT meet the definitions of "Main Wind Force Resisting Systems" or "Components and Cladding" (Building Envelope) as given in section 26.2 of ASCE 7-10. This means that the panels are not required to be designed for wind resistance.

WIND LOAD RESISTANCE QUALIFIER

Generally vegetated Greenscreen® panels will adequately resist wind load when mounted to structure according to our recommendations. Rooftops and conditions >20 feet above ground involve higher wind speed and may require engineering calculations to validate the panel size, span, and number and type of clips and their fastening method. If required, we are able to provide stamped calculations to validate the Greenscreen® application in a given wind speed. We do not design or provide engineering for the structural support system.

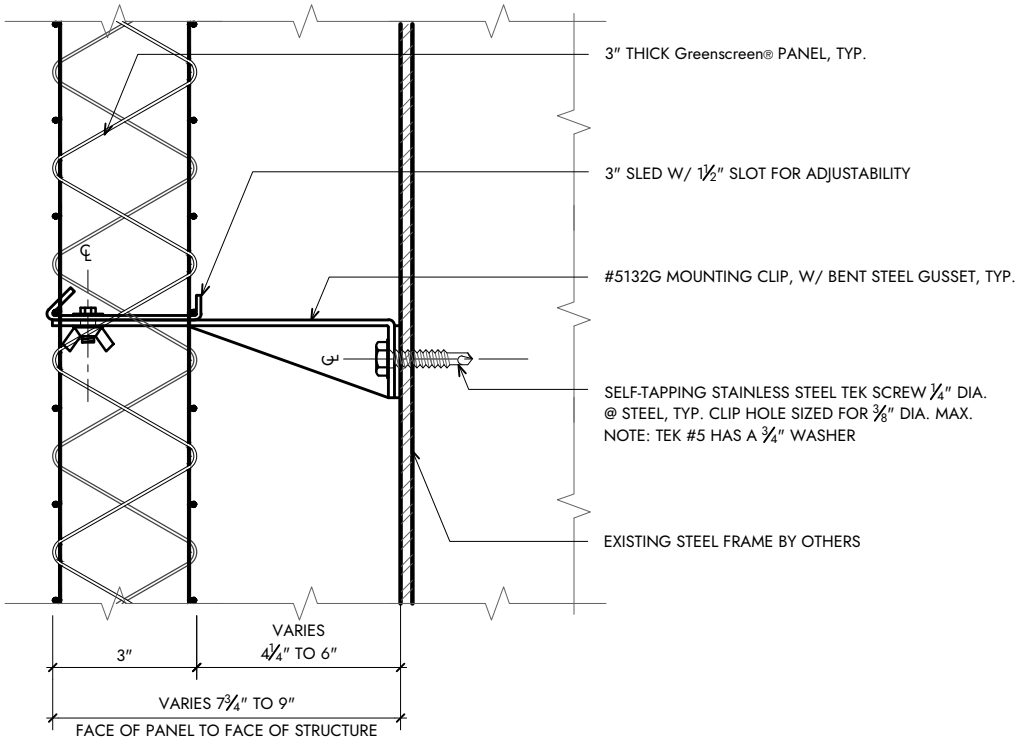


NOTE:
THE PVC TUBE WOULD STOP AT THE OUTER SURFACE OF THE CMU BLOCK. THIS WOULD PREVENT ANY TIGHTENING ON THE ROD TO COMPRESS THE AIR SPACE

#5132G ADJUSTABLE CLIP

THE #5132G ADJUSTABLE CLIP PROVIDES PANEL SUPPORT FOR BOTH DOWNLOAD AND UPLIFT. THE CLIP CAN MOUNT TO WALL SURFACES OR TO A STEEL FRAME. THE SLOT ALLOWS FOR PANEL ADJUSTMENT AND EASE OF INSTALLATION. MAXIMUM BRACKET EXTENSION IS 9½" TO OUTSIDE OF PANEL.

COLORS: POWER COATED IN ONE OF OUR STANDARD COLORS



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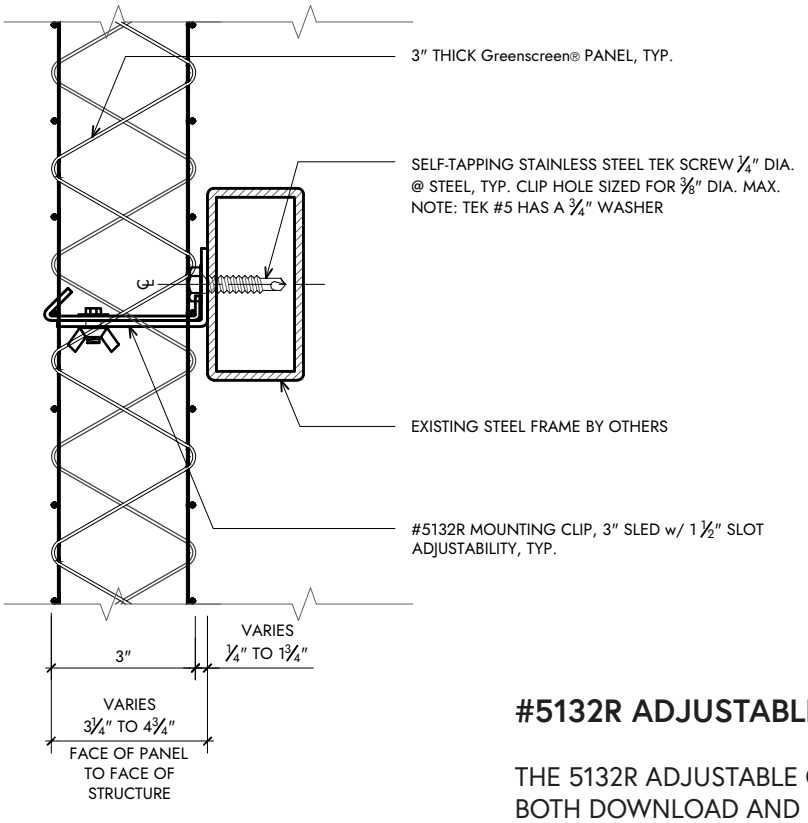

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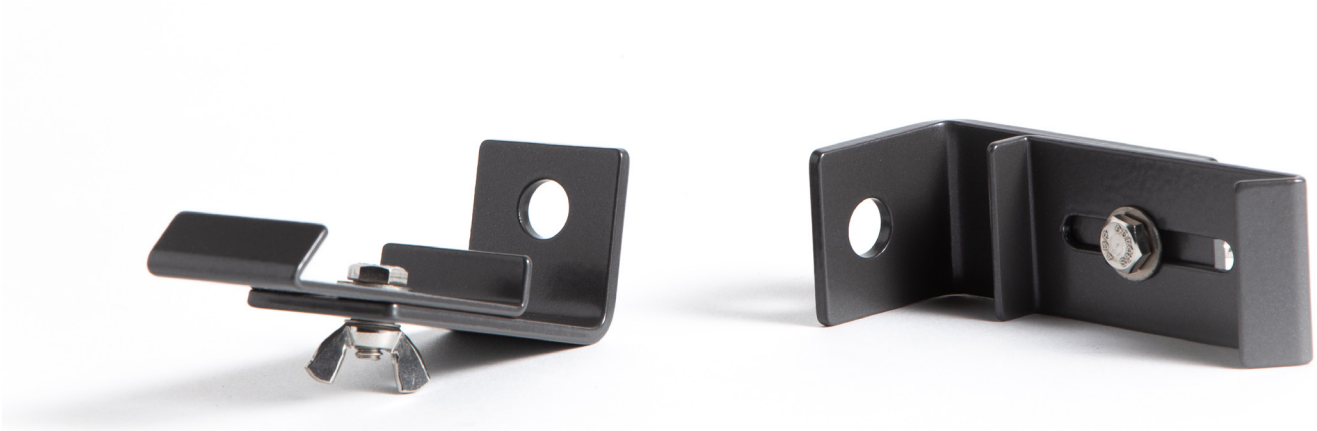

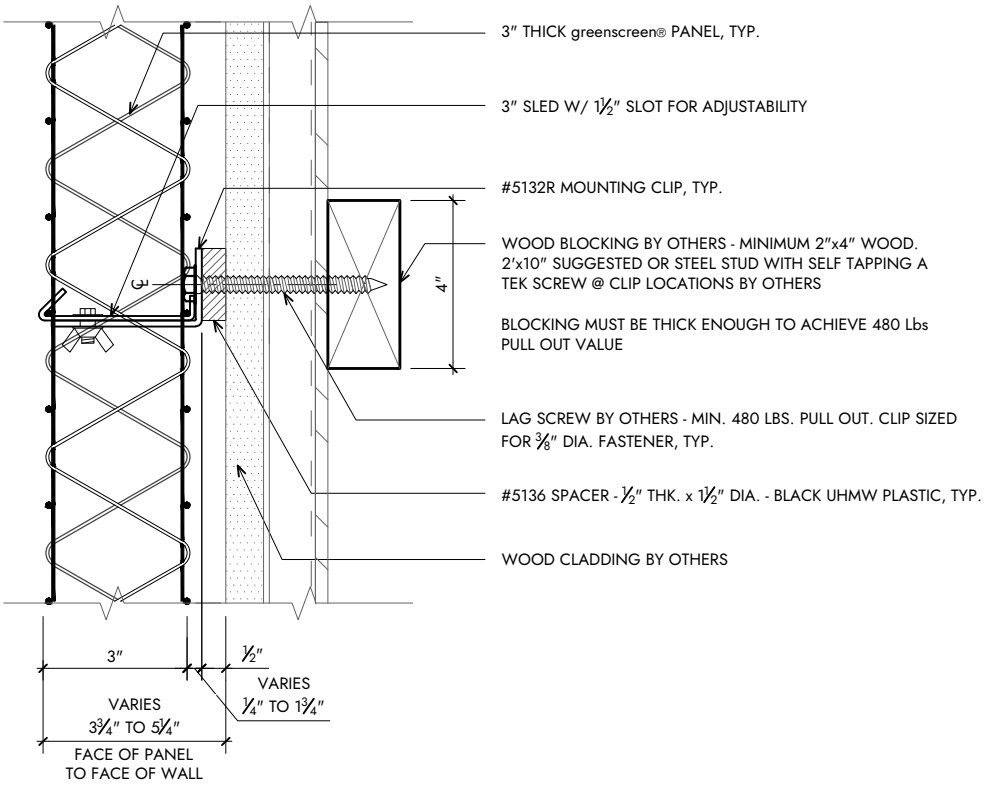

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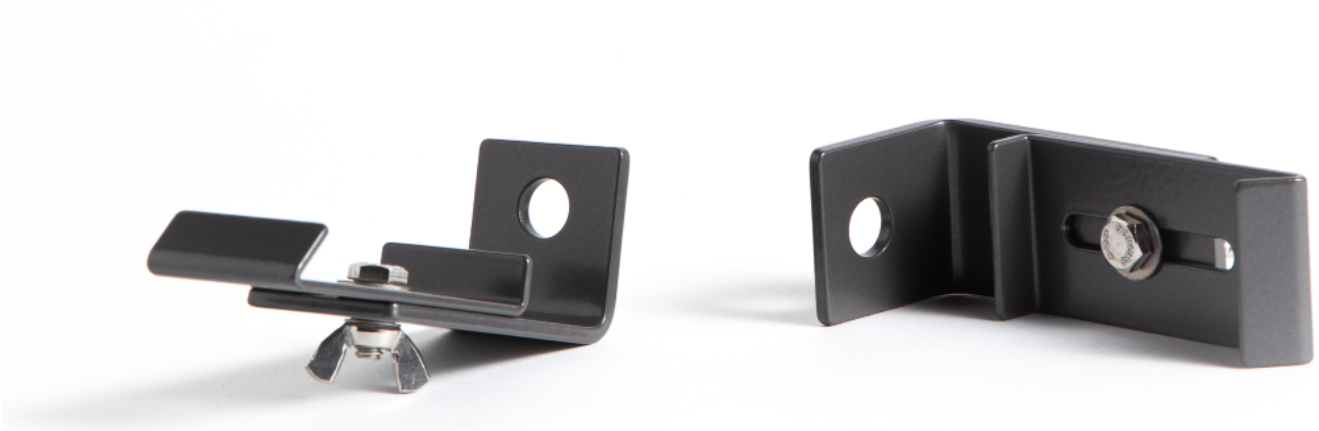

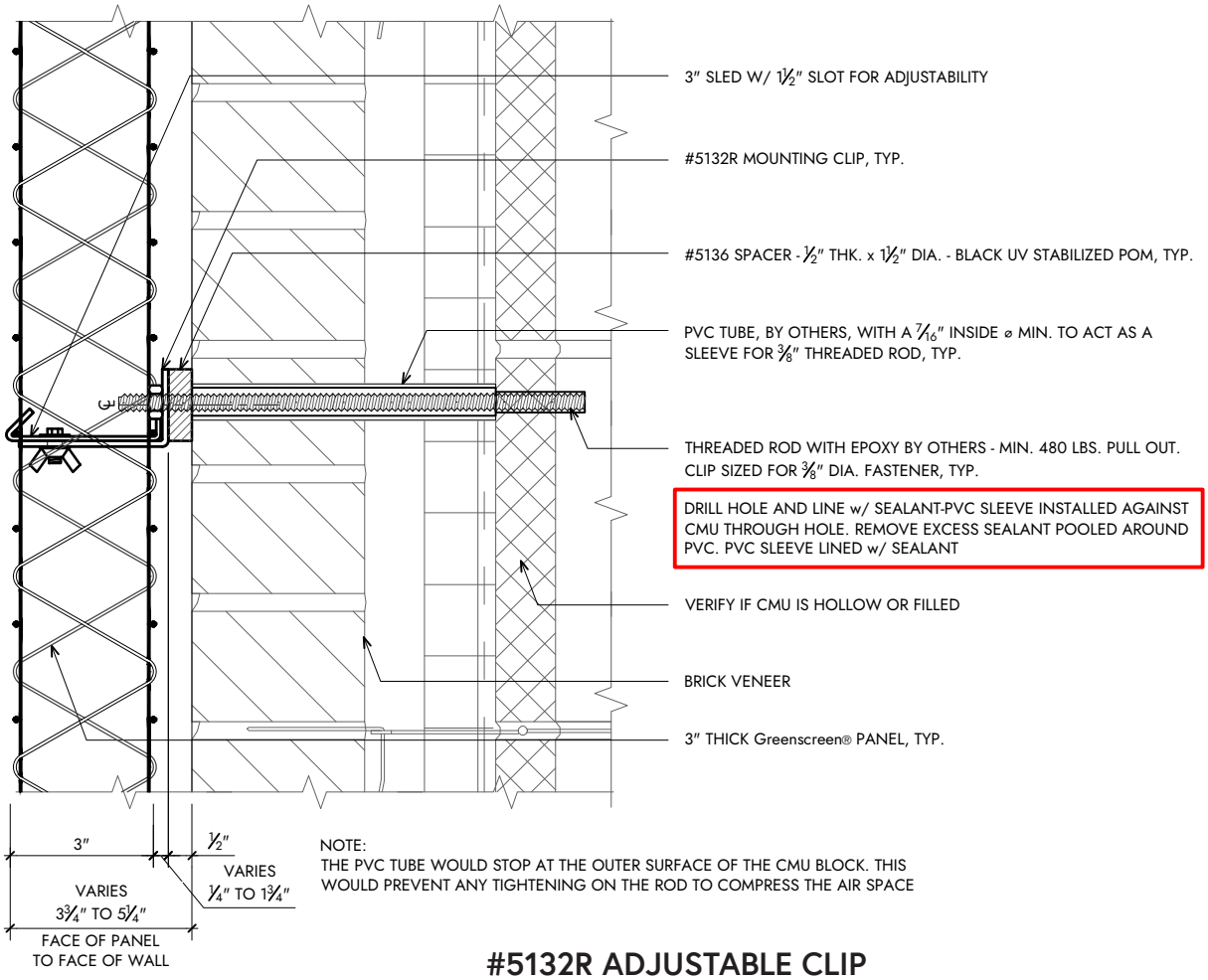

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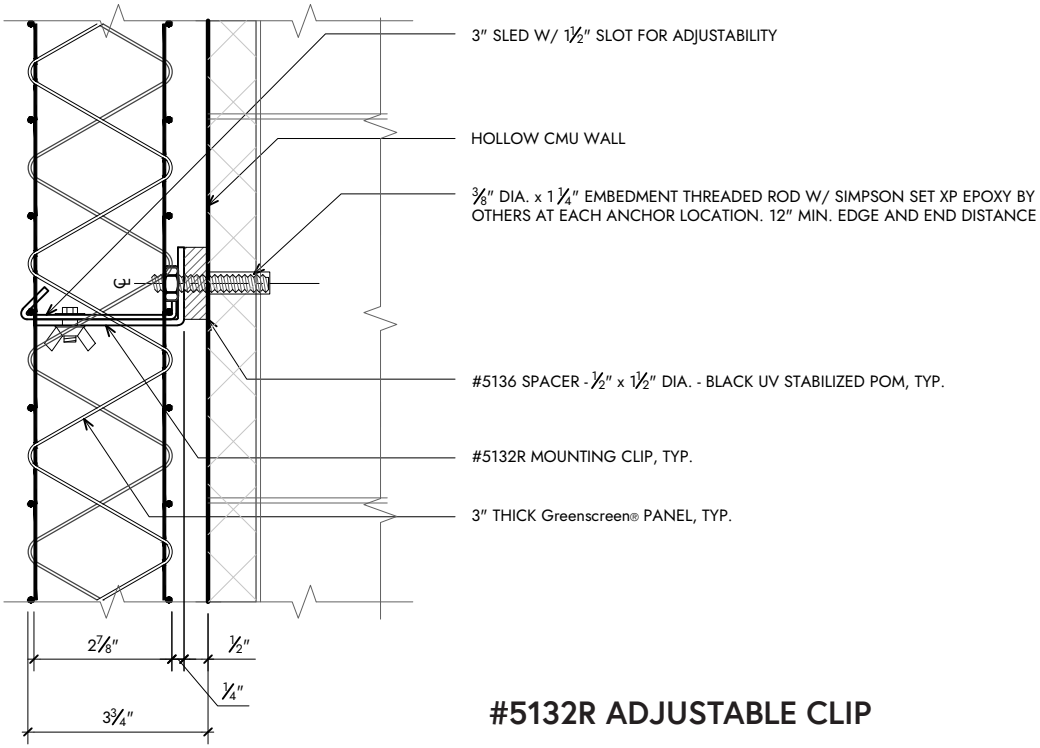

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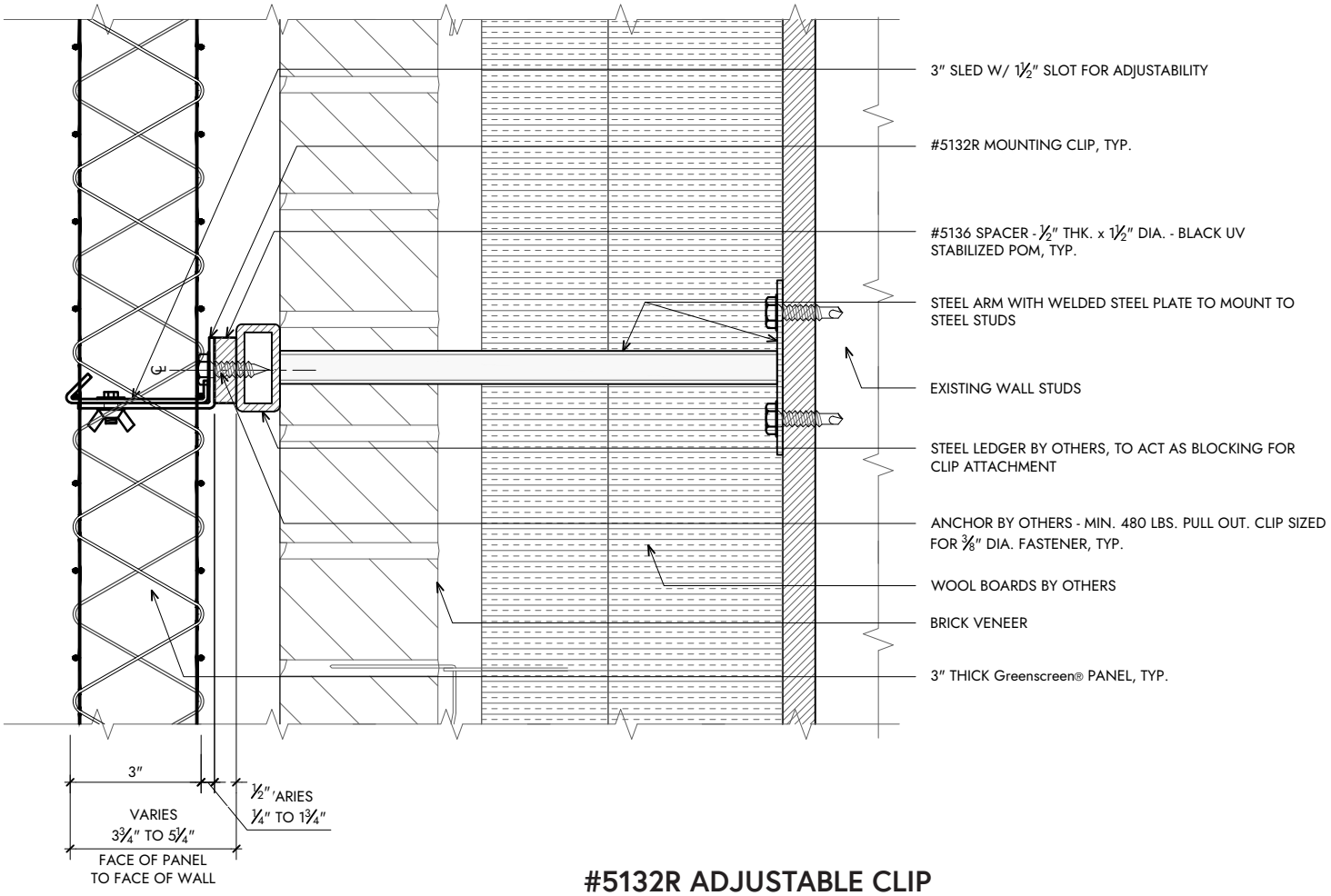

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