

# PLANET GRANITE

1405 NW 14th AVENUE, PORTLAND, OR

PERMIT #12-204811 LU

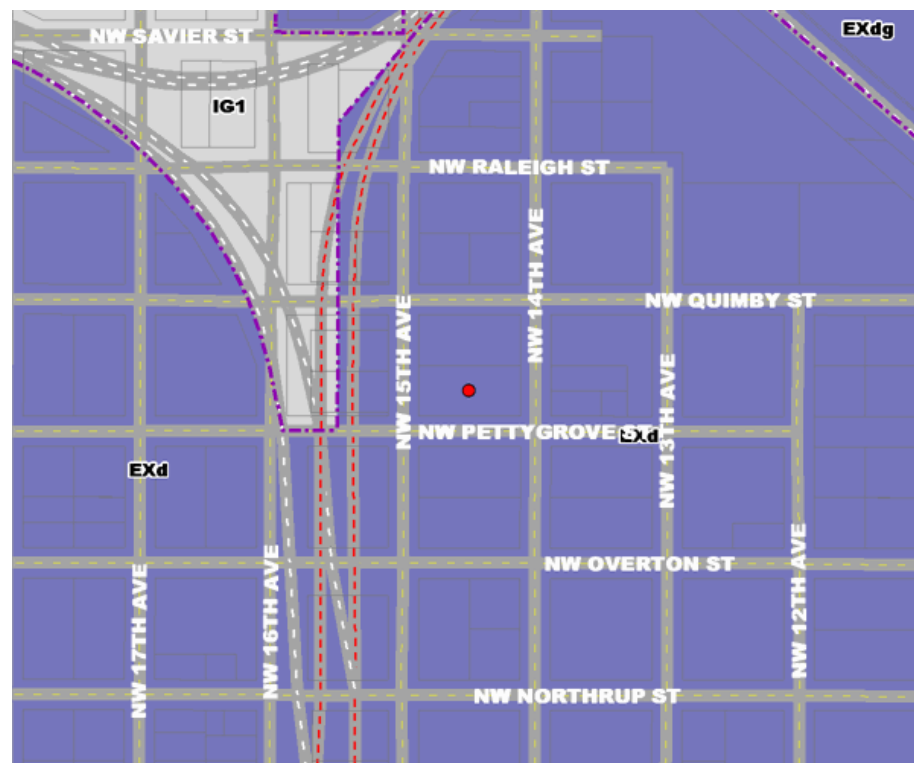
## DESIGN REVIEW APPLICATION SET

9 NOV 2012

REVISION 3 - 4 FEB 2013



**SITE LOCATION MAP**



**ZONING MAP**

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Sheet **DR.1**

Title TITLE SHEET



**SITE AERIAL**

- BUILDING LOCATION**
  
- EXISTING RESIDENTIAL BUILDINGS**
  
- EXISTING COMMERCIAL BUILDING**

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Title	SITE AERIAL



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Title	CONTEXT AND CHARACTER



**EAST ELEVATION**



**SOUTH ELEVATION**

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 RENDERED  
 ELEVATIONS



**WEST ELEVATION**



**NORTH ELEVATION**

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**DR.4a**

Title  
 RENDERED  
 ELEVATIONS



**KINGSPAN METAL WALL PANEL  
COPPER PENNY - REF. SHEET DR.6**



**KINGSPAN METAL WALL PANEL  
SPARTAN BRONZE - REF. SHEET DR.6b**

**GALVANIZED METAL CANOPY WITH TRANSLUCENT  
GLASS PANELS - REF. SHEET DR.6n**



**GALVANIZED STEEL TUBE  
COLUMN - CONCRETE BASE**

**ALUMINUM STOREFRONT  
SYSTEM REF. SHEET DR.6i**

**1.5" DIA. STAINLESS  
STEEL HANDRAIL**

**GROUND FACE CMU  
SANDSTONE - REF. SHEET DR.6j**

**CONCRETE STAIRS  
AND RAMP**

**GALVANIZED STEEL BIKE  
RACKS - REF. SHEET DR.6i**

**GROUND FACE CMU  
CHARCOAL - REF. SHEET DR.6j**

**ENLARGED BUILDING ENTRY ELEVATIONS**

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**EAST CORNER VIEW**

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 PERSPECTIVE  
 RENDERINGS



**SOUTH CORNER VIEW**

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**SOUTHWEST CORNER VIEW**

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**DR.5b**

PERSPECTIVE  
 RENDERINGS

# SAVILLE COMMUNITY SPORTS CENTRE

BASKETBALL • VOLLEYBALL • GYMNASISTICS

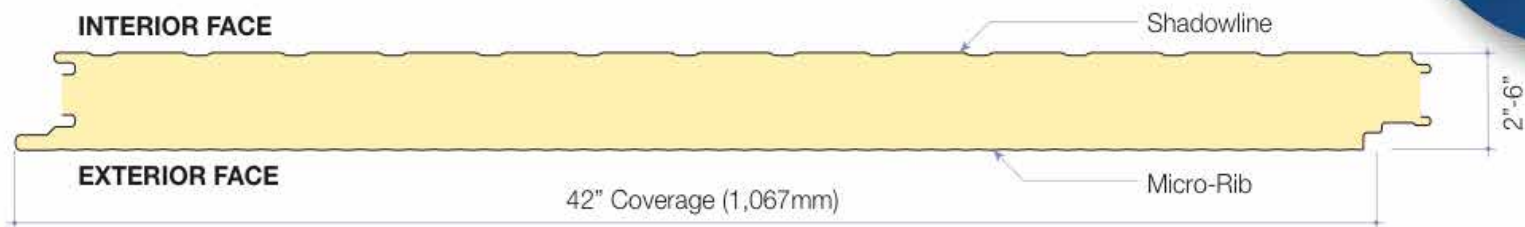


## Micro-Rib

INSULATED WALL PANEL SYSTEM

Kingspan's single component systems can increase speed of build by up to 50%

### Dimensions



### Specifications

<b>Dimensions:</b>	Panel Width – 42" (36", 30" & 24" optional) / Panel Length – Minimum 8'-0"; Maximum 52'-0"
<b>Joint Configuration:</b>	Double tongue and groove interlocking rainscreen joint.
<b>Insulation Core:</b>	Foamed-in-place polyisocyanurate (PIR) of 2.3-2.6 lbs./cu. ft.
<b>Material:</b>	<b>Exterior</b> – 24 or 22 Ga. Micro-Rib profiled embossed Galvalume® or G-90 galvanized pre-painted steel. <b>Interior</b> – 26 Ga. Shadowline profiled embossed Galvalume® or G-90 galvanized pre-painted steel.
<b>Finish Options:</b>	<b>Exterior</b> – Standard finish is Valspar® modified polyester high performance coating system. Valspar Fluropon® PVDF is a popular choice where extra protection against chalking and fade is desired. A wide range of color and finish options are available to enhance the aesthetic appeal. <b>Interior</b> – Standard finish is Valspar® modified polyester, USDA accepted and suited for most wash down environments. Valspar Fluropon® PVDF can also be used.

### HORIZONTAL EXTERIOR SIDING:

KINGSPAN INSULATED WALL PANEL SYSTEM

KS SERIES MICRO-RIB PATTERN - 3" PANEL THICKNESS

COLOR: COPPER PENNY

### Performance testing and approvals

Kingspan insulated panels meet specific building envelope performance criteria and requirements stipulated by US and Canadian building codes. Panels are tested in accordance with UL, ULC, FM and ASTM approval standards, testing methods and procedures. Kingspan insulated panels are listed by FM Global and Warnock Hersey.

Test	Procedure	Results
Fire	FM-4880	Passed: Class 1 Fire Rating of Insulated Wall or Wall and Roof / Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems
	ASTM E84	Flame spread <25, smoke developed <450
	CAN/ULC-S101	Fire endurance tests: 10 min and 15 min stayed in place
	CAN/ULC-S102	Flame spread: 20, Smoke developed: 350 for panel with facings
	CAN/ULC-S127	Flame spread <500 for foam core
	ULC/ORD-C376	Passed: Fire growth of foamed plastic insulated building panels in a full scale room configuration
	CAN/ULC-S134	Passed: Standard method of test for fire of exterior wall assemblies
Structural	NFPA 259	Tested for potential heat of building materials
	NFPA 268	Passed: Standard test method for determining ignitability of exterior wall assemblies using a radiant heat energy source
	NFPA 285	Passed: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.
Thermal Performance	FM-4881	Passed: Class +110/-154 Zone H Class +100/-140 Zone HM – LM
	ASTM E72	Vacuum chamber tested. Panel load / span and deflection tables are available
Air Infiltration	ASTM C518	R-value per inch = 7.5 h-ft <sup>2</sup> ·°F/Btu-in
Water	ASTM E283	0.003 CFM/ft <sup>2</sup> of Panel Area at 6.24 psf
	ASTM E331 AAMA 501.1	No uncontrolled water penetration at 20 psf differential pressure Dynamic water pressure testing – no sign of water leakage at 15 psf
Fatigue Tests	Cyclic test to positive and negative wind loading to ± L/180 deflection	The panels exceeded 2 million alternate cycles without failure or damage
Bond Strength	ASTM D1623	Sample placed in an autoclave device and pressurized to 2 PSI at 212 °F for 2 1/2 hours
		Panel tested for tensile bond strength of metal to foam No skin delamination with direct pull off pressure up to 1188 psf

### Weight Table

### KS Series

PANEL THICKNESS	WEIGHT PER SQ. FT.		
	26 GA / 26 GA	24 GA / 26 GA	24 GA / 24 GA
2"	2.30	2.49	2.66
2.5"	2.41	2.60	2.78
3"	2.50	2.69	2.86
4"	2.70	2.89	3.06
5"	2.89	3.08	3.26
6"	3.08	3.25	3.44



Copper Penny

SR:0.48 E:0.84 SRI:54

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**DR.6**  
WALL PANEL SYSTEM

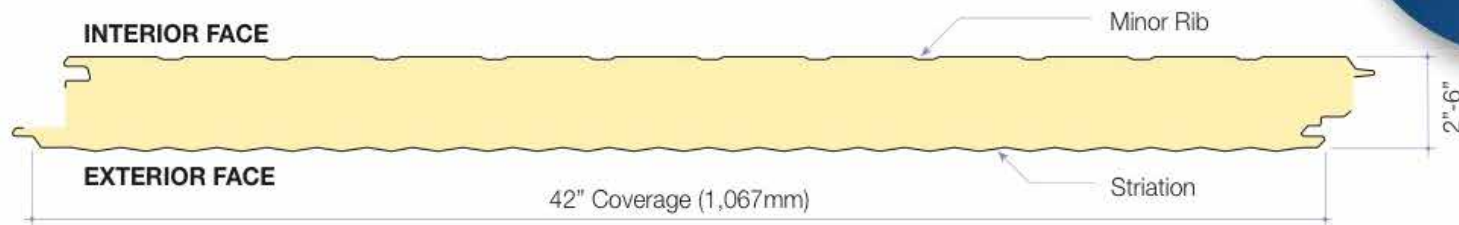


# 300 R Striated

INSULATED WALL PANEL SYSTEM

Kingspan's single component systems can increase speed of build by up to 50%

## Dimensions



## Specifications

- Dimensions:** Panel Width – 42" / Panel Length – Minimum 10'-0"; Maximum 48'-0"
- Joint Configuration:** Interlocking parallel tongue and groove
- Insulation Core:** Foamed-in-place polyisocyanurate (PIR) with nominal density of 2.3-2.6 lbs./cu. ft.
- Material:**  
**Exterior** – 26 gauge stucco embossed steel, AZ50 Galvalume® / Zinalume® or G90 galvanized. Also available in 24 and 22 gauge facings where extra durability is required.  
**Interior** – 26 gauge stucco embossed steel, AZ50 Galvalume® / Zinalume® or G90 galvanized. Also available in 24 and 22 gauge facings.
- Finish Options:**  
**Exterior** – Standard finish is Valspar® modified polyester high performance coating system. Valspar Fluoropon® PVDF is a popular choice where extra protection against chalking and fade is desired. A wide range of color and finish options are available to enhance the aesthetic appeal.  
**Interior** – Standard finish is Valspar® modified polyester, USDA accepted and suited for most wash down environments. Valspar Fluoropon® PVDF can also be used.

**VERTICAL EXTERIOR SIDING:**  
**KINGSPAN INSULATED WALL PANEL SYSTEM**  
**300R SERIES STRIATED PATTERN - 3" PANEL THICKNESS**  
**COLOR: REGAL WHITE**

200, 300, 300A, 300GS, 300R Series

# Wall Panels

## BUILDING CODE COMPLIANCE

Kingspan 200, 300 and 400 Series panels have been independently evaluated and found to be in compliance with the 2003 International Building Code. Evidence of compliance is found in ICC-ES Report number ESR-1143.

## FIRE

**Full Scale Corner:** Factory Mutual conducted the Building Corner Fire Test (FM 4880) for wall-ceiling construction. Kingspan 200, 300 and 400 Series panels have been approved for Class 1 fire classification with no height restriction subject to the conditions of approval as described in FM Report J.I.3006144.

**Surface Burning Characteristics:** The panel core was tested in accordance with the ASTM E-84 Tunnel Test. The core meets the code requirements of:  
 Flame Spread < 25  
 Smoke Developed < 450

UL Canada has evaluated Kingspan wall panels and found them to be in compliance with UL Canada Standards S-101, 102 and 127. Kingspan 200, 300 and 400 Series wall panels do not require the use of intermediate stitch fastening. Evidence of compliance is found in current year UL Canada listing reports.

## STRUCTURAL

**Vacuum Chamber:** The Kingspan 200, 300 and 400 Series panel assemblies were tested for positive and negative deflection and fastener pull-out in a vacuum chamber per the ASTM E-72 test method. The resultant values are used to derive allowable panel spans and fastener patterns.

## THERMAL TRANSMISSION

**Guarded Hot Box:** The insulation properties of the Kingspan 200, 300, and 400 Series panels were tested in accordance with ASTM C-236/C-1363 Hot Box apparatus conducted on completed panel assemblies corrected for 15 MPH wind outside and still air inside.

## Kingspan 200/300 Series:

2"	R 17	U 0.0588
2.5"	R 21	U 0.0476
3"	R 25	U 0.0400
4"	R 33	U 0.0303
5"	R 41	U 0.0244
6"	R 49	U 0.0204

## Kingspan 400 Series:

2"	R 18	U 0.0555
3"	R 27	U 0.0362

## VAPOR BARRIER

**Air Infiltration:** The Kingspan 200, 300 and 400 Series tongue and groove joints have been tested in accordance with the ASTM E-283 test method. Tests were conducted on completed panel assemblies including horizontal and vertical joints.

0.0 CFM/FT of Panel Joint at 6.24 PSF
0.0 CFM/FT <sup>2</sup> of Panel Area at 6.24 PSF
0.0 CFM/FT of Panel Joint Area at 20 PSF
0.0 CFM/FT <sup>2</sup> of Panel Area at 20 PSF

**Water Penetration:** The Kingspan 200, 300 and 400 Series tongue and groove joints have been tested in accordance with the ASTM E-331 test method. Tests were conducted on completed panel assemblies including horizontal and vertical joints.

No Water Penetration at 6.24 PSF
No Water Penetration at 20 PSF

## BOND STRENGTH AND STABILITY

**Fatigue Test:** A sample section of panel was subjected to 2 million alternate cycles of 20 PSF positive and negative wind loading without metal/foam delamination or metal fatigue.

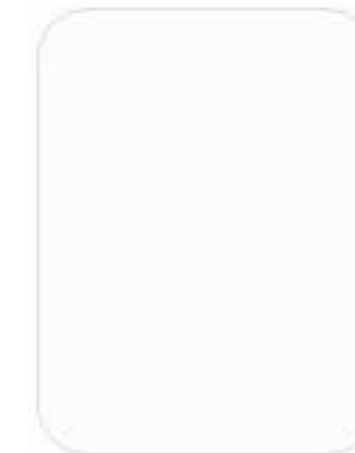
**Skin Delamination:** The panel was tested to determine the amount of force required to break the bond between the metal and foam. The result was no skin delamination with direct pull off pressure up to 1,188lb./ft<sup>2</sup>.

**Humidity Test:** A sample section of panel was subjected to 100% relative humidity at 158°F for 28 days with no more than 3% maximum volume increase.

## Weight Table

# 300R Series

PANEL THICKNESS	WEIGHT PER SQ. FT.		
	26 GA / 26 GA	24 GA / 26 GA	24 GA / 24 GA
2"	2.05	2.20	2.35
2.5"	2.13	2.28	2.43
3"	2.21	2.36	2.51
4"	2.34	2.51	2.68
5"	2.55	2.70	2.85
6"	2.72	2.87	3.02



Regal White  
 SR:0.70 E:0.86 SRI:85

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Title  
 WALL PANEL SYSTEM

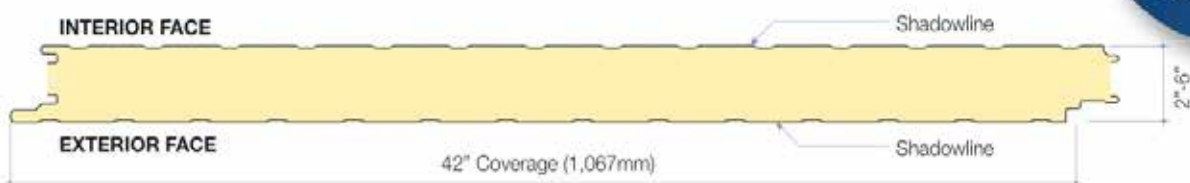


# Shadowline

INSULATED WALL PANEL SYSTEM

Kingspan's single component systems can increase speed of build by up to 50%

### Dimensions



### Specifications

<b>Dimensions:</b>	Panel Width – 42" (36", 30" & 24" optional) / Panel Length – Minimum 8'-0"; Maximum 52'-0"
<b>Joint Configuration:</b>	Double tongue and groove interlocking rainscreen joint.
<b>Insulation Core:</b>	Foamed-in-place polyisocyanurate (PIR) of 2.3-2.6 lbs./cu. ft.
<b>Material:</b>	<b>Exterior</b> – 26, 24 or 22 Ga. Shadowline profiled embossed Galvalume® or G-90 galvanized pre-painted steel. <b>Interior</b> – 26 Ga. Shadowline profiled embossed Galvalume® or G-90 galvanized pre-painted steel.
<b>Finish Options:</b>	<b>Exterior</b> – Standard finish is Valspar® modified polyester high performance coating system. Valspar Fluorpon® PVDF is a popular choice where extra protection against chalking and fade is desired. A wide range of color and finish options are available to enhance the aesthetic appeal. <b>Interior</b> – Standard finish is Valspar® modified polyester, USDA accepted and suited for most wash down environments. Valspar Fluorpon® PVDF can also be used.

### Weight Table

## KS Mineral Fiber

PANEL THICKNESS	WEIGHT PER SQ. FT.		
	26 GA / 26 GA	24 GA / 26 GA	24 GA / 24 GA
4"	4.68	4.90	5.12
6"	6.20	6.42	6.64
8"	7.72	7.94	8.16

Regal White  
SR:0.70 E:0.86 SRI:85



Spartan Bronze  
SR:0.31 E:0.85 SRI:31

**VERTICAL EXTERIOR SIDING:**  
KINGSPAN INSULATED WALL PANEL SYSTEM KS AND MF SERIES  
SHADOWLINE PATTERN - 4" PANEL TH. NON-RATED PANELS, 6" PANEL TH. 2 HR FIRE RATING  
COLOR: SPARTAN BRONZE, REGAL WHITE

MF™

Kingspan MF™ insulated panels are made from a mineral wool core bonded with metal facings, suitable for fire rated wall applications. Available with a unique hidden fastener for increased aesthetic appeal.

### Product Specification

Panel Lengths:	6'-0" to 40'-0"
Panel Joint:	Double tongue and groove interlocking rainscreen joint
Exterior Face:	24 or 22 Ga. Shadowline, Micro-Rib or V-Groove profiled embossed Galvalume® or G-90 galvanized pre-painted steel
Cover Widths:	42"
Panel Thickness:	4" 6" 8"
R-value:	3.6 per inch
Reveals:	Standard 1/8" vertical and horizontal application
Interior Face:	26 or 24 Ga. Shadowline profiled embossed Galvalume® or G-90 galvanized pre-painted steel



## Kingspan MF™ Product code KS42MF\*

### APPLICATIONS:

Kingspan MF™ insulated panels are factory-assembled with a fire resistant mineral fiber core bonded with metal facings, suitable for fire rated wall applications, such as: exterior wall cladding, interior partitions, liners, demising walls and boundary walls. Panels achieve one, two or three hour fire resistance ratings and are available with a unique hidden fastener for increased aesthetic architectural appeal.

### MANUFACTURING PROCESS:

Kingspan MF™ panels are factory-assembled on a continuous in-line method for optimum uniformity and quality. Top and bottom pre-painted and profiled steel facings are roll-formed and bonded mechanically with thermosetting adhesive to mineral fiber insulation. The core material is cut into lamella strips, and rotated 90 degrees for perpendicular fiber orientation.

### INSULATION CORE:

Kingspan MF™ panels come with rigid, VOCs and CFCs free, high dimensional stability and moisture resistant mineral fiber insulation core that is bonded to steel facings. Panels are offered in thicknesses of 4", 6" and 8" providing an R-value of 3.6 per inch.

### PERFORMANCE REQUIREMENTS AND PRODUCT LISTINGS:

Kingspan MF™ panels meet specific building envelope performance criteria and requirements stipulated by US and Canadian building codes. Panels are tested in accordance with UL, ULC and ASTM standards, testing methods and procedures. Kingspan MF™ Series panels as non-load bearing wall assembly are listed by Warnock Hersey under Design Number KIP-CWP 180-01 and KIP/PV 120-01

\*Product code based on cover width selected

Test	Procedure	Results
Fire	UL-263 ASTM E119 CAN/ULC-S101 NFPA 251	Fire rating achieved 4" panel thickness = 1 hour 6" panel thickness = 2 hour 8" panel thickness = 3 hour
	CAN/ULC-S102 (Mineral Fiber Core)	Flame spread: 0 Smoke developed: 0
	ASTM E84 (Mineral Fiber Core)	Flame spread: 0 Smoke developed: 0
Thermal Performance / Resistance	ASTM C518	R = 3.6 °F.ft <sup>2</sup> .h/BTU.in
Weather & Vapor Barrier	ASTM E283	Air leakage <0.001 CFM/sqft at 6.24psf pressure
	ASTM E331	No uncontrolled water penetration at 12psf differential pressure
	AAMA 501-94	Panel wall assembly meets air and water tightness criteria
Structural	ASTM E72	Vacuum chamber tested
Fire Penetration	ASTM E814 CAN/ULC S-115	Listed up to 30" dia. steel pipe through penetration
Bond Strength	ASTM D1623	Panels tested for tensile bond strength of metal to foam

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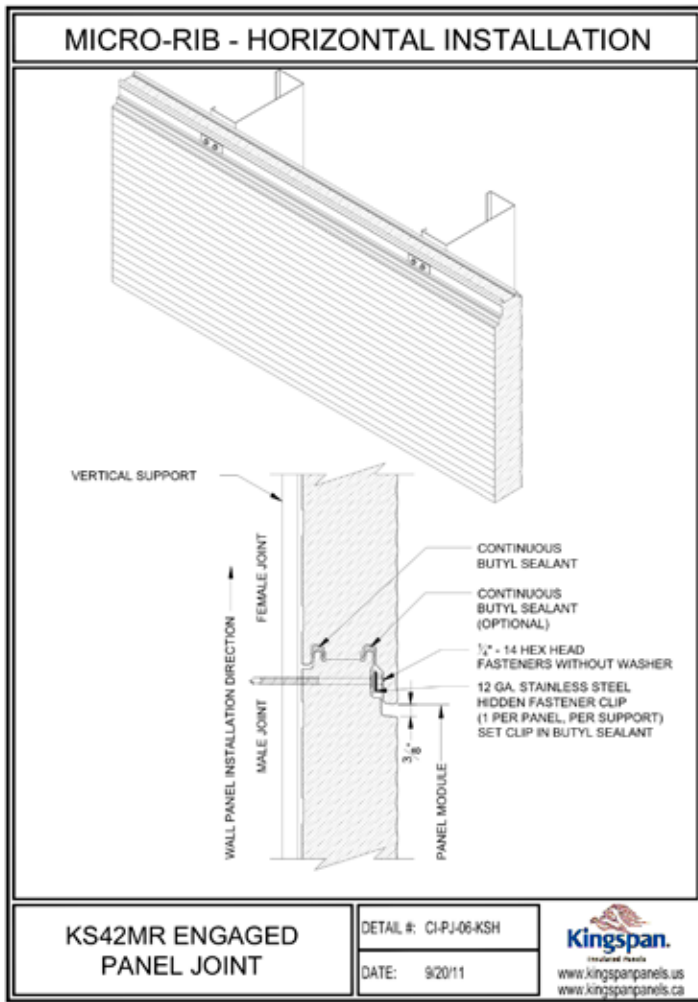
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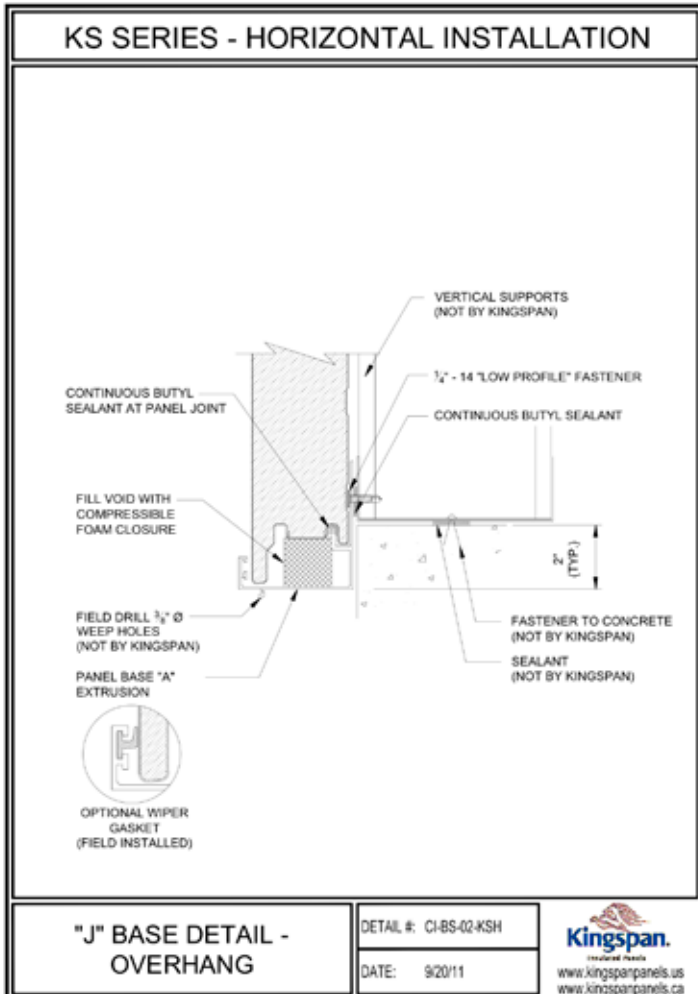
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WALL PANEL  
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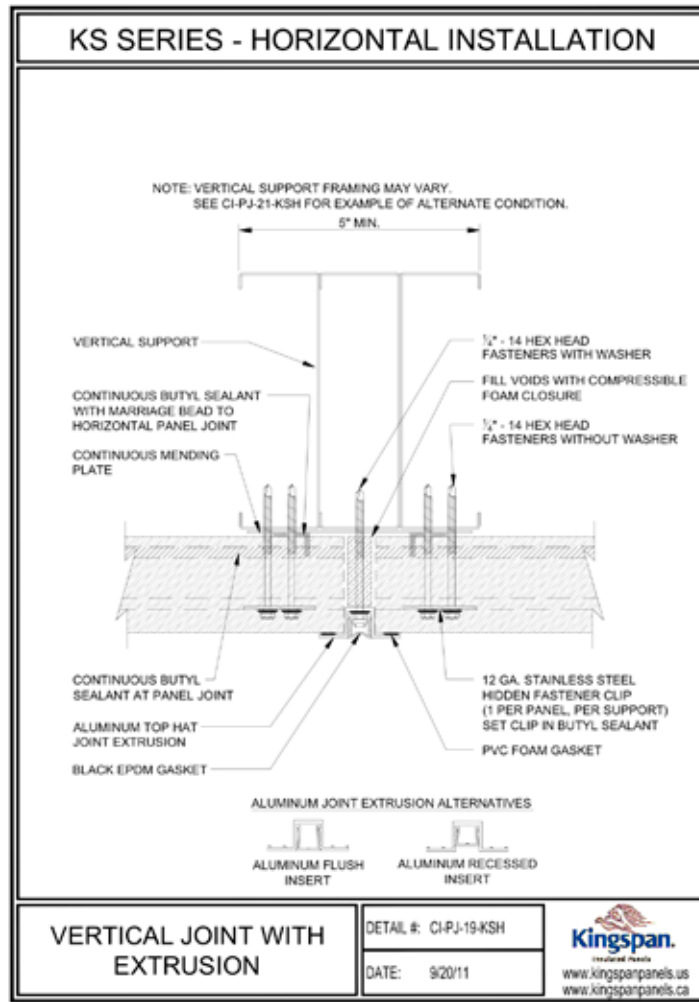


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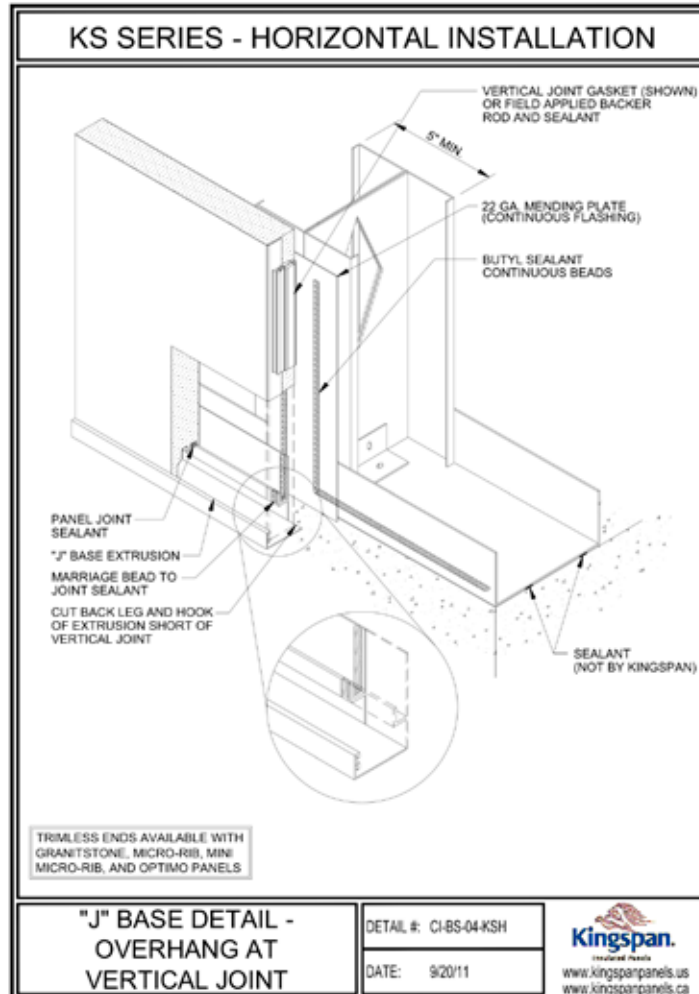


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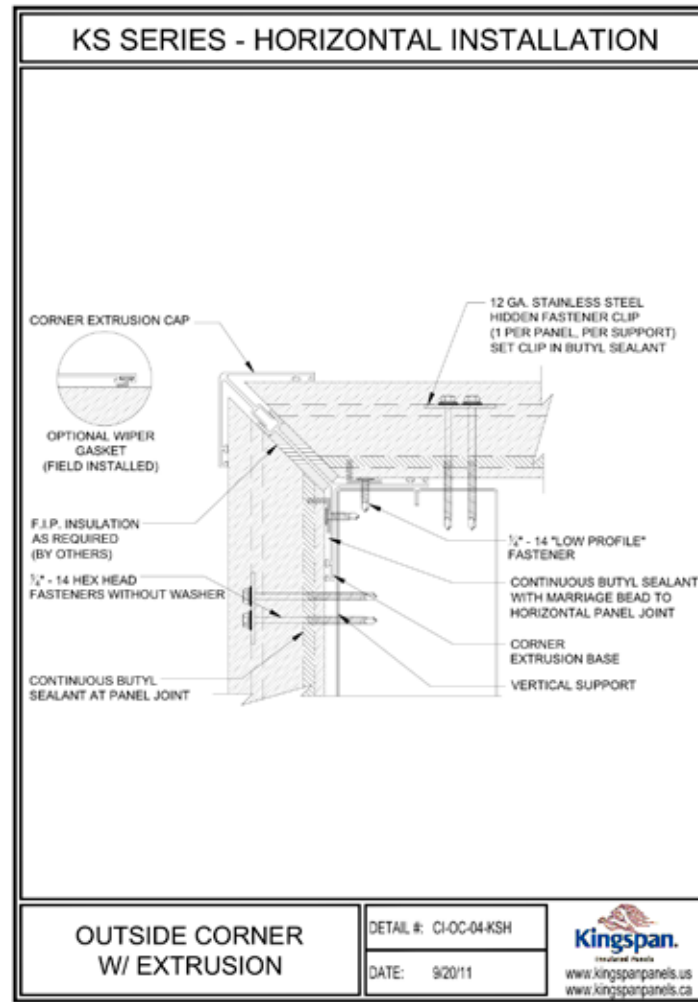
**SIDING: KINGSPAN INSULATED WALL PANEL SYSTEM CONSTRUCTION DETAILS**



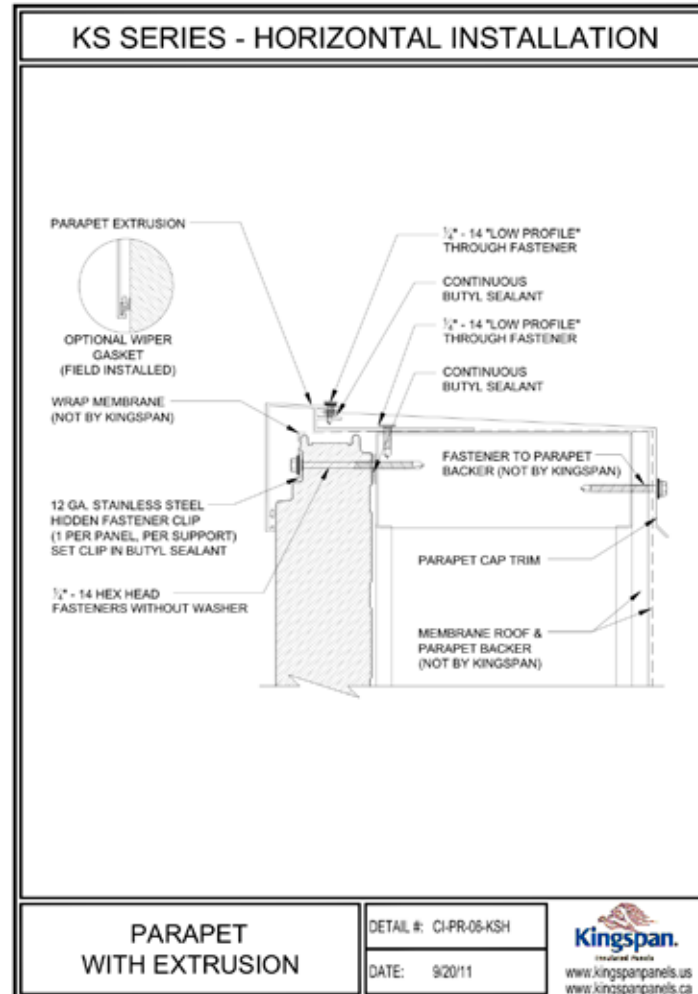
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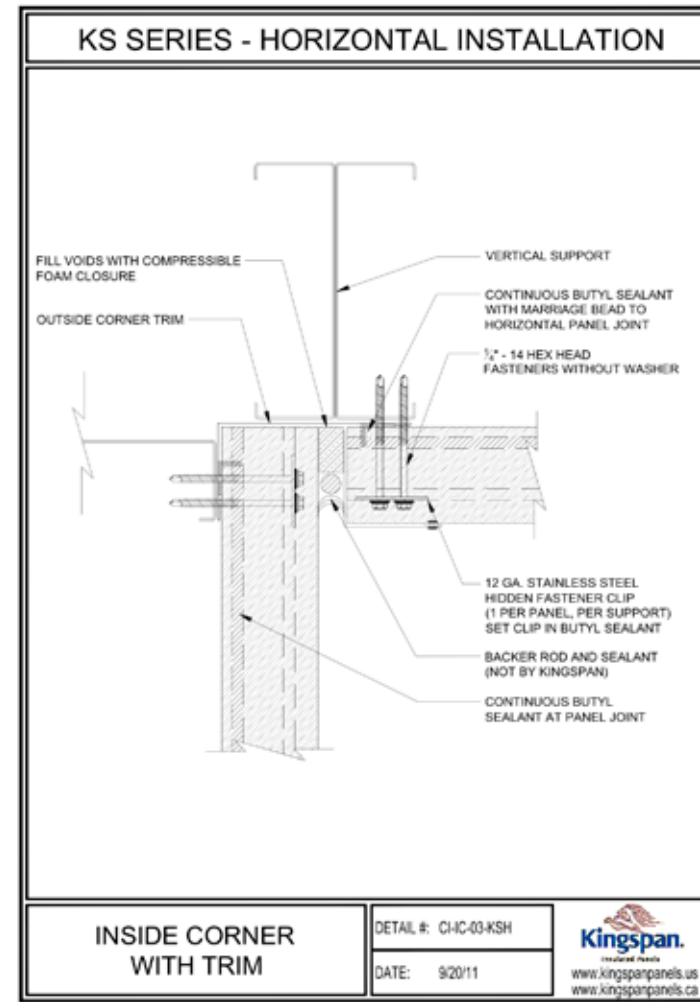
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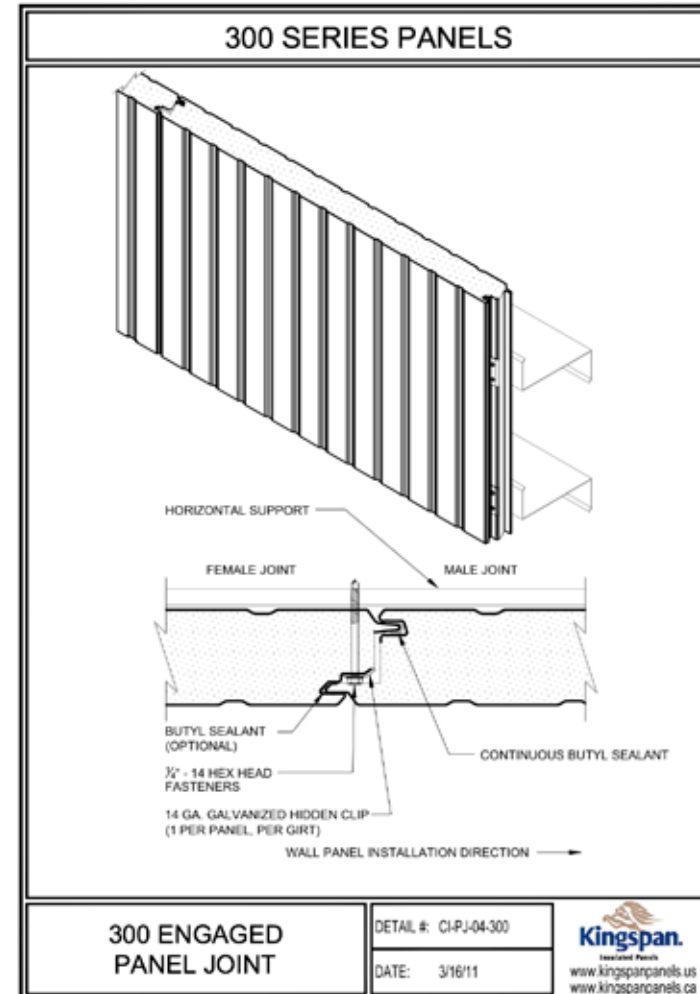
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WP7



WP4



WP8

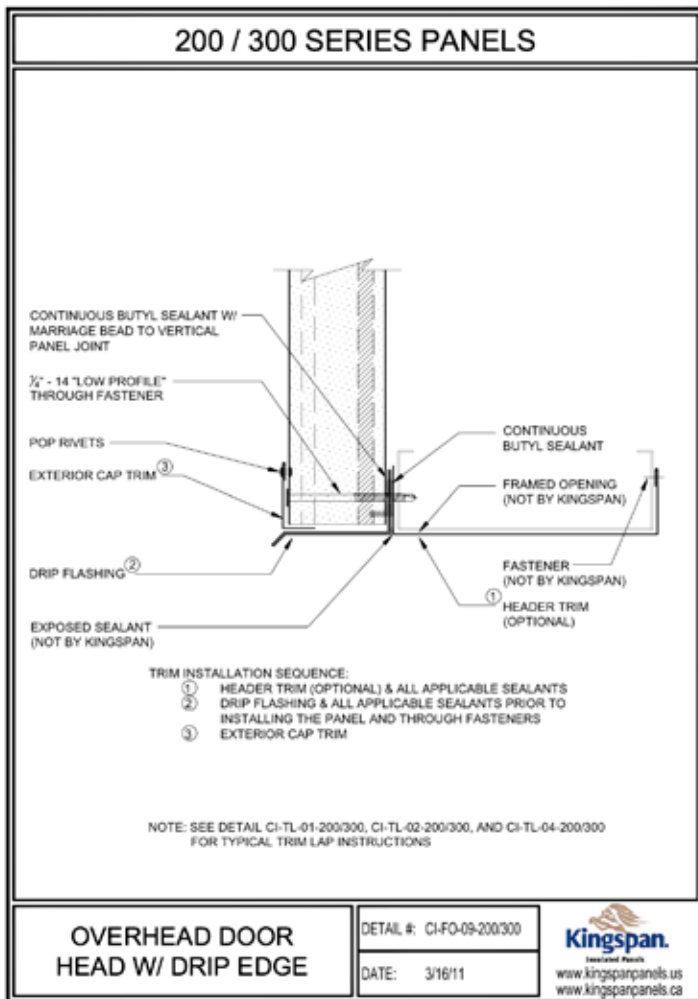
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503.241.9339

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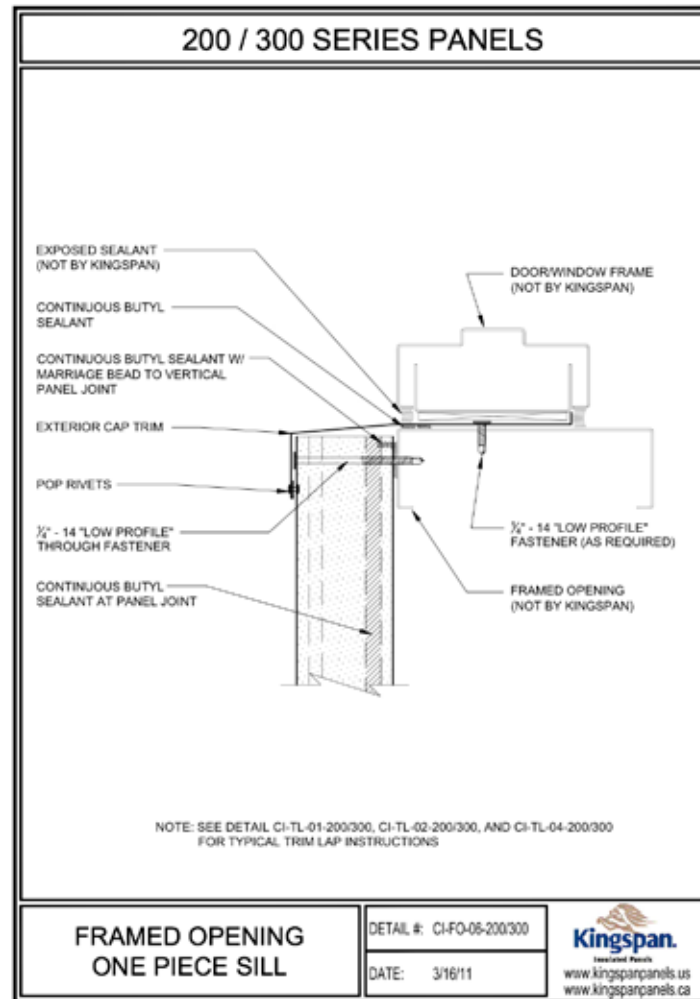
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Code: **DESIGN REVIEW**  
Set: **9 NOV 2012**  
Date: **R1 19 NOV 2012**  
**R2 19 DEC 2012**  
**R3 04 FEB 2013**

Revisions: **DR.6c**

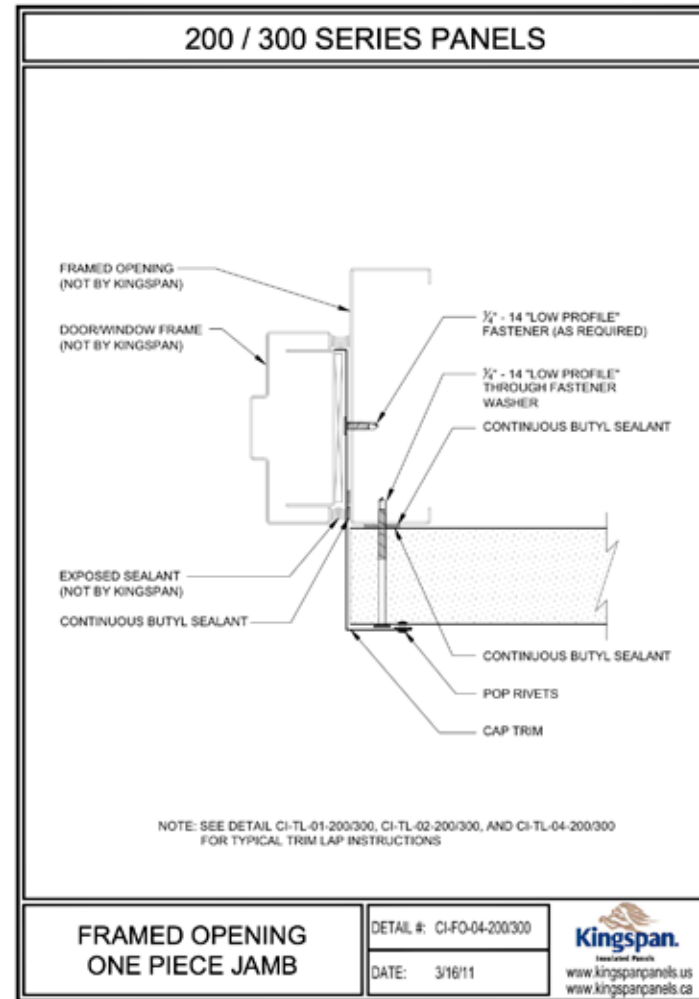
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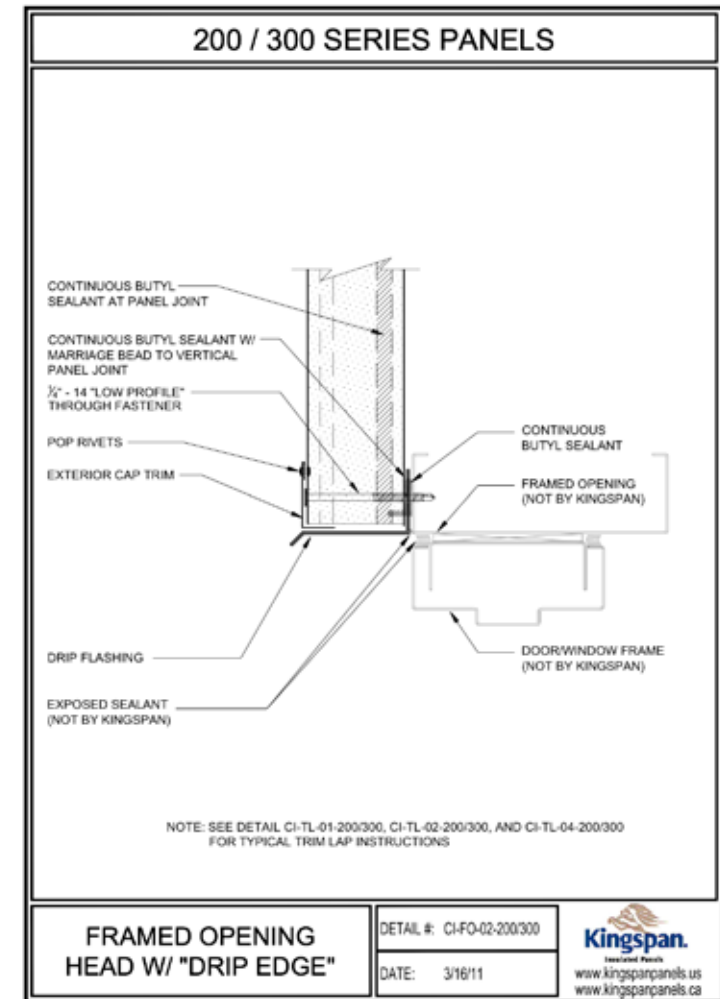
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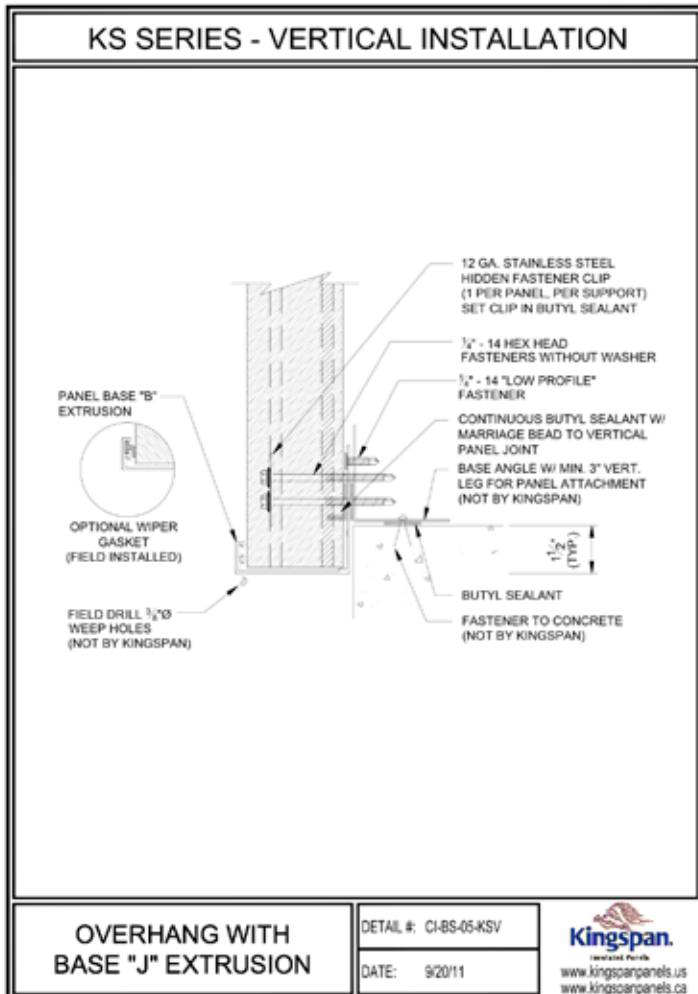
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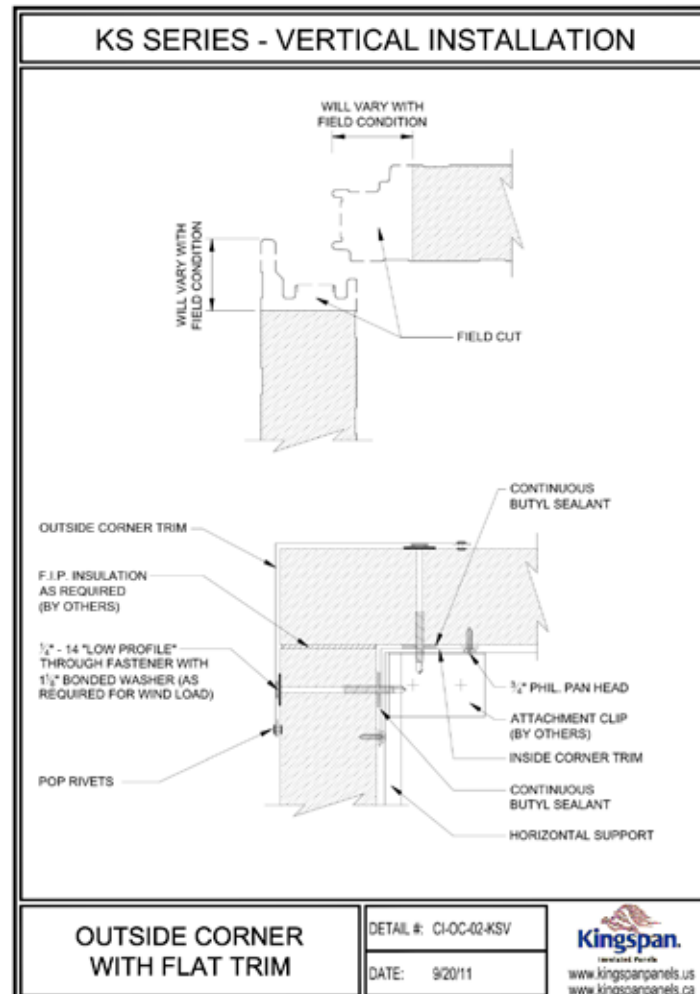
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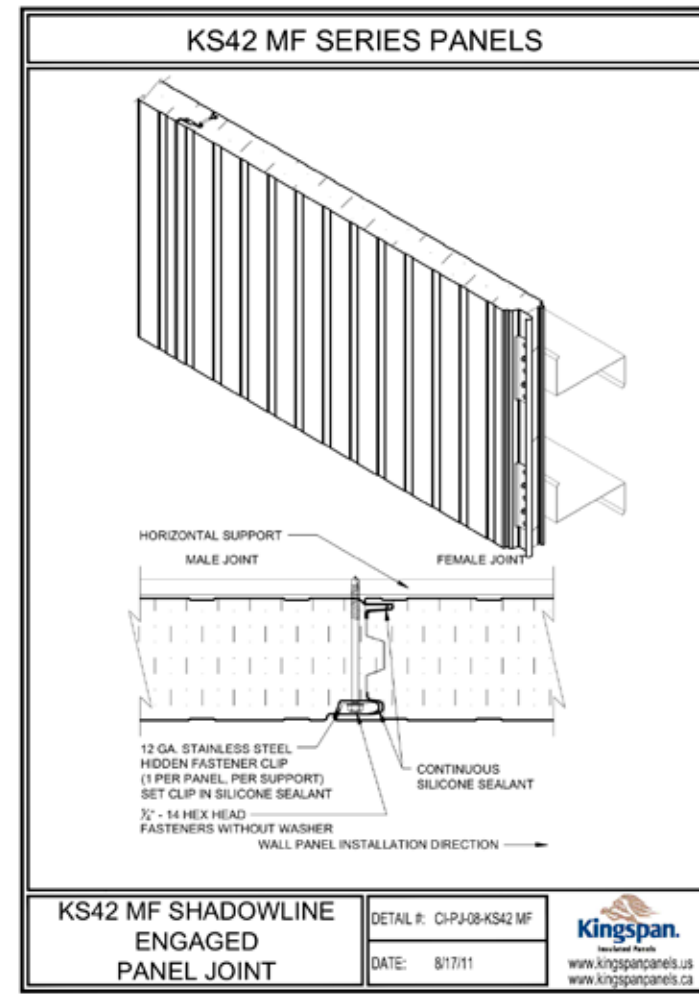
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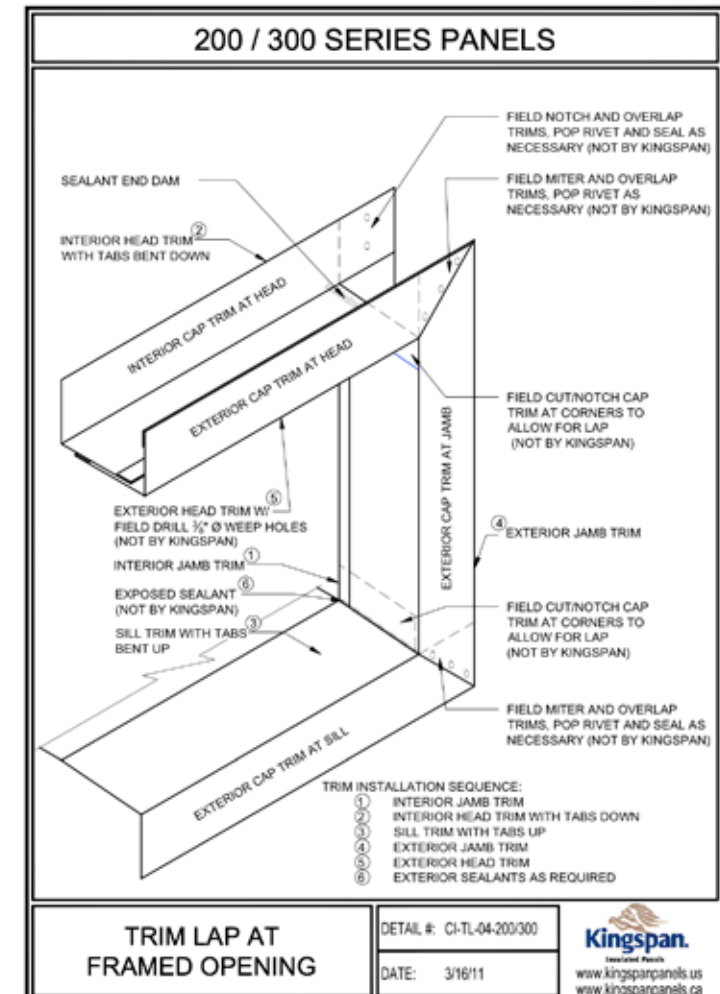
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**WP14**



**WP15**



**WP16**

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Code	PGP
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Revisions	R1 19 NOV 2012
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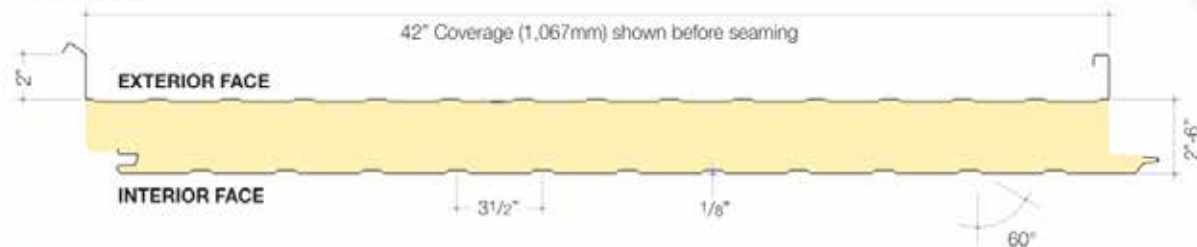
Title **WALL PANEL CONSTRUCTION DETAILS**

# KingZip™

INSULATED STANDING SEAM ROOF PANEL SYSTEM

Kingspan's single component systems can increase speed of build by up to 50%

### Dimensions



### Specifications

<b>Dimensions:</b>	Panel Width – 42" / Panel Length – Minimum 10'-0"; Maximum 48'-0"
<b>Joint Configuration:</b>	Mechanically seamed 2" nominal sidelap
<b>Insulation Core:</b>	Foamed-in-place polyisocyanurate (PIR)
<b>Slope:</b>	For applications as low as 1/4:12
<b>Material:</b>	<b>Exterior</b> – 24 gauge stucco embossed steel, AZ50 Galvalume® / Zinalume®, 22 gauge steel is also available. <b>Interior</b> – 26 gauge stucco embossed steel, AZ50 Galvalume® / Zinalume® or G90 galvanized. 24 and 22 gauge steel or stainless steel are also available.
<b>Finish Options:</b>	A wide range of color and finish options are available to enhance the aesthetic appeal of the roof. Energy Star® and Cool Roof® (CRRC) ratings are available for many Kingspan standard colors – contact Kingspan for more information.

## KingZip Series

### Test Data

#### FIRE

**Surface Burning Characteristics** - The panel core was tested in accordance with the ASTM E 84 Tunnel Test. The core meets the code requirements of:

Flame Spread	25 or Less
Smoke Developed	450 or Less

**Toxicity Test** - Kingspan panels are in compliance with the requirements for fire gas toxicity established by the state of New York, Article 15, Part 1120 of the New York State Uniform Fire Prevention Code.

#### STRUCTURAL

**Factory Mutual 4471 Wind Uplift Resistance** - The KingZip sample exceeded the 105 PSF (5.02 kPa) minimum FM Approvals requirement for Class 1-105 windstorm classification. A copy of this report is available upon request.

1105 @ 5'-0" spans with minimum 14 gauge panel support purlins

160 @ 6'-0" spans with minimum 14 gauge panel support purlins

**Vacuum Chamber** - The KingZip panel assembly was tested for positive and negative deflection and fastener pull-out in a vacuum chamber per the ASTM E 72 test method. The resultant values are used to derive allowable panels spans and fastener patterns.

#### VAPOR BARRIER

**Air Infiltration** - The KingZip mechanically seamed 2" nominal sidelap joint has been tested in accordance with the ASTM E 283 test method. The test was conducted on a completed panel assembly including horizontal and vertical joints.

0.003 CFM/ft<sup>2</sup> of Panel Area at 6.24 PSF

**Water Penetration** - The KingZip mechanically seamed 2" nominal sidelap joint has been tested in accordance with the ASTM E 331 test method. The test was conducted on a completed panel assembly including horizontal and vertical joints.

No Water Penetration at 20.0 PSF

#### BOND STRENGTH

**Fatigue Tests** - A sample section of a Kingspan insulated panel was subjected to 2 million alternate cycles of 20 PSF positive and negative wind loading without metal/foam delamination or metal fatigue.

**Humidity Test** - A sample section of a Kingspan insulated panel was subjected to 100% relative humidity at 140°F for 1000 hours. There was no evidence of metal primer corrosion.

**Autoclave Test** - A sample section of a Kingspan insulated panel was placed in an autoclave device and pressurized to 2 PSI at 212°F for 2-1/2 hours. There was no evidence of delamination.

**ROOFING:**  
KINGZIP INSULATED STANDING SEAM ROOF PANEL SYSTEM  
COLOR: REGAL WHITE

## Standard Colors

valspar

### Weather X – Siliconized Modified Polyester (SMP)

WEATHER X coating systems utilize only ceramic and inorganic pigments offering superior color stability, chalk and fade resistance as well as gloss retention.

#### SMP



Driftwood SR:0.55 E:0.86 SRI:64  
Sandstone SR:0.49 E:0.86 SRI:56  
Surrey Beige SR:0.41 E:0.86 SRI:45

#### MP (Modified Polyester)



Imperial White SR:0.62 E:0.86 SRI:74

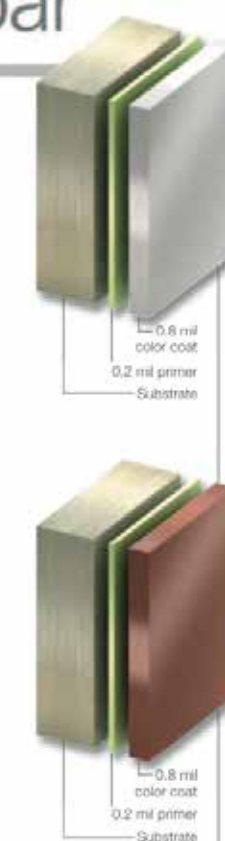
### Solid Fluoropon® PVDF Colors – Kynar 500® / Hylar 5000

Fluoropon coatings are durable polyvinylidene coating system containing 70% Kynar or Hylar resins, ceramic and other inorganic pigments. This system provides a powerful chemical bond, superior resistance to ultraviolet radiation resulting in exceptional color retention, resistance to chalking and chemical degradation.

#### Category 1



Regal White SR:0.70 E:0.86 SRI:85  
Ascot White SR:0.69 E:0.85 SRI:83  
Bone White SR:0.69 E:0.84 SRI:83  
Driftwood SR:0.45 E:0.86 SRI:50  
Sandstone SR:0.61 E:0.85 SRI:72  
Surrey Beige SR:0.48 E:0.86 SRI:51



### Performance testing and approvals

Kingspan insulated panels meet specific building envelope performance criteria and requirements stipulated by US and Canadian building codes. Panels are tested in accordance with UL, ULC, FM and ASTM approval standards, testing methods and procedures. Kingspan insulated panels are listed by FM Global and Warnock Hersey.

Test	Procedure	Results
Fire	FM 4880	Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems
	ASTM E84	Flame Spread: 25 or Less Smoke Developed: 450 or Less
Toxicity Test	State of New York, Article 15, Part 1120 of the New York State Uniform Fire Prevention Code	Kingspan panels are in compliance
Wind Uplift	Factory Mutual 4471	1-105 @ 5'0" spans with minimum 14 gauge roof purlins 1-60 @ 6' spans with minimum 14 gauge roof purlins
	UL 580 Class 90 uplift rating	5'0" spans with minimum 14 gauge purlins
	UL 580 Class 90 uplift rating	Panels attached to 20 gauge decking with 3' o.c. fastening
Strength	ASTM E72 Chamber Method	Panel load / span and deflection tables are available
Thermal Transmission	ASTM C1363 Guarded Hot Box	2" R = 15 U = 0.0667    3" R = 24 U = 0.0417 4" R = 33 U = 0.0303    5" R = 41 U = 0.0244 6" R = 48 U = 0.0208
Air Infiltration	ASTM E283 and ASTM E1680	0.003 CFM/ft <sup>2</sup> of Panel Area at 6.24 psf
Water Penetration	ASTM E331 and ASTM E1646	No Water Penetration at 20.0 psf
Fatigue Test	Subjected to 2 million alternate cycles of 20 PSF positive and negative wind loading	No metal / foam delamination or metal fatigue
Humidity Test	Sample subjected to 100% relative humidity at 140 °F for 1000 hours	No evidence of metal primer corrosion
Autoclave Test	Sample placed in an autoclave device and pressurized to 2 PSI at 212 °F for 2½ hours	No evidence of delamination
Skin Delamination		No skin delamination with direct pull off pressure up to 1188 psf

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Project  
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Portland, OR 97209  
PERMIT #12-204811 LU

Code  
**PGP**

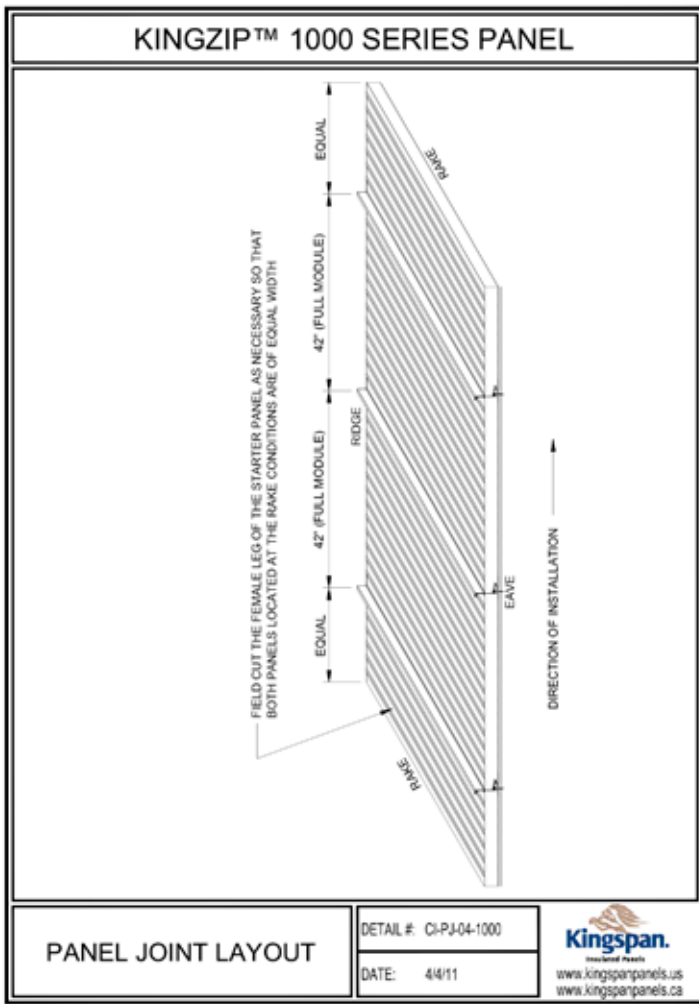
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Date  
9 NOV 2012

Revisions  
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R2 19 DEC 2012  
R3 04 FEB 2013

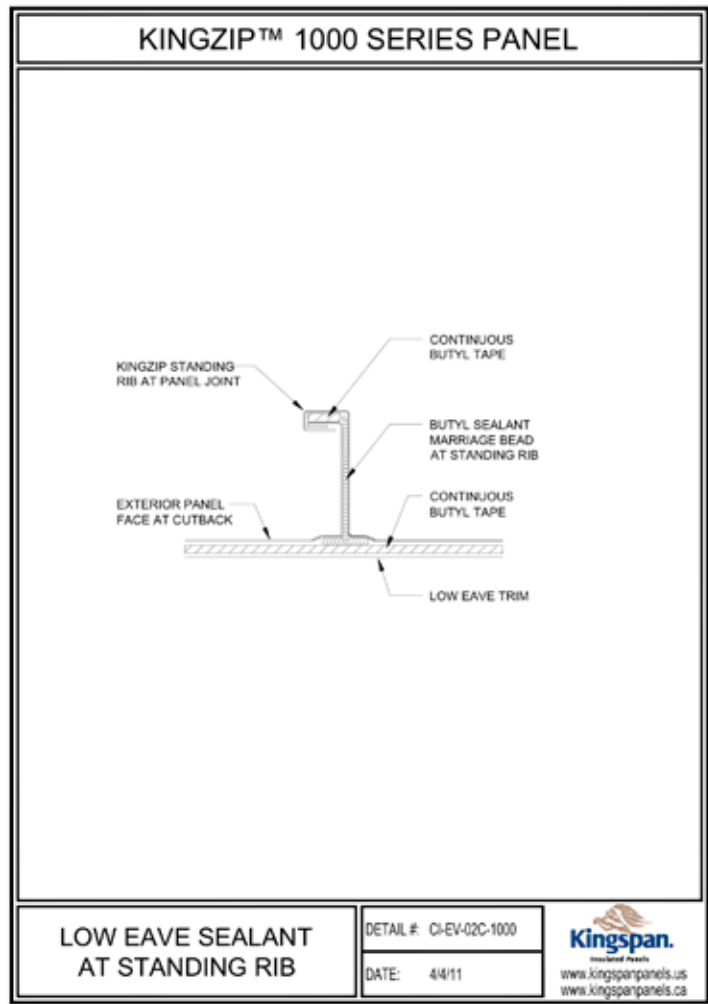
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Title  
ROOF SYSTEM



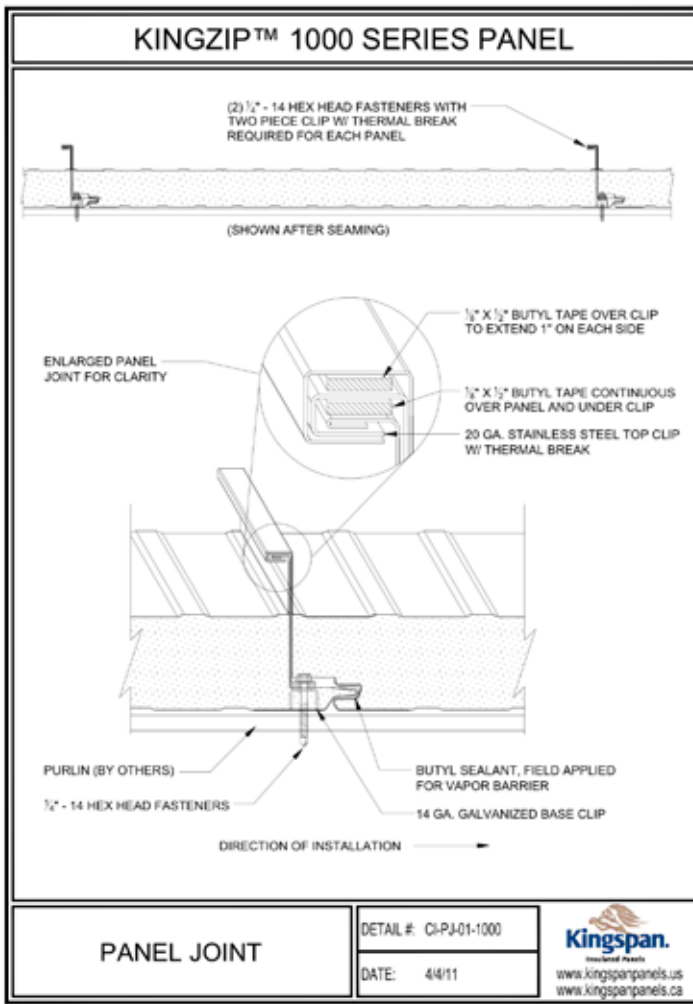
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 DATE: 4/4/11  
 Kingspan Insulated Panels  
 www.kingspanpanels.us

RP1



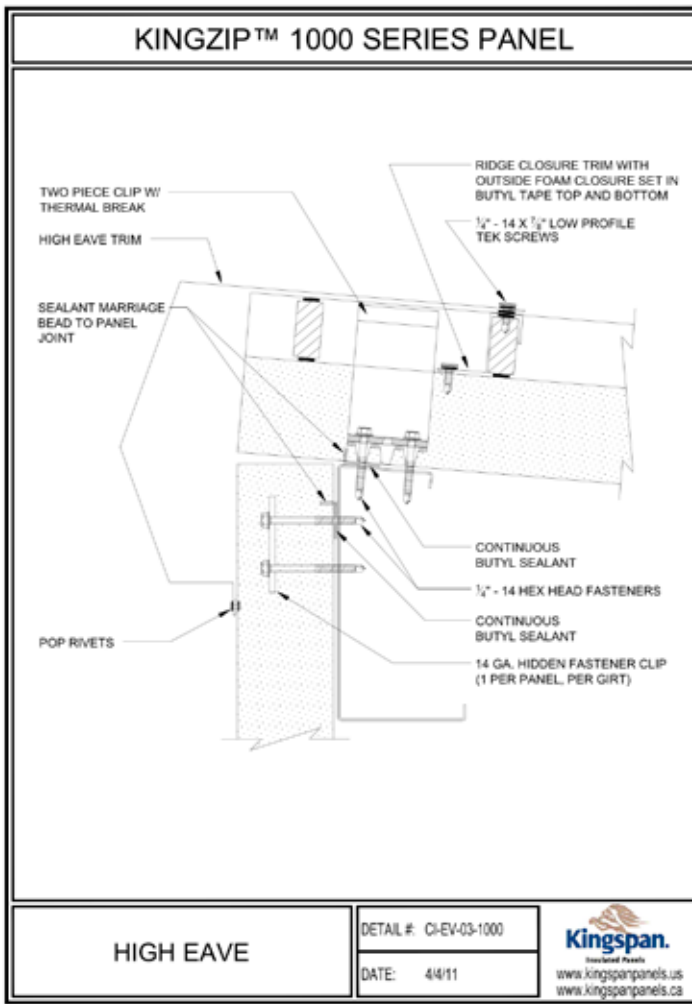
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 www.kingspanpanels.us

RP2 TYPICAL



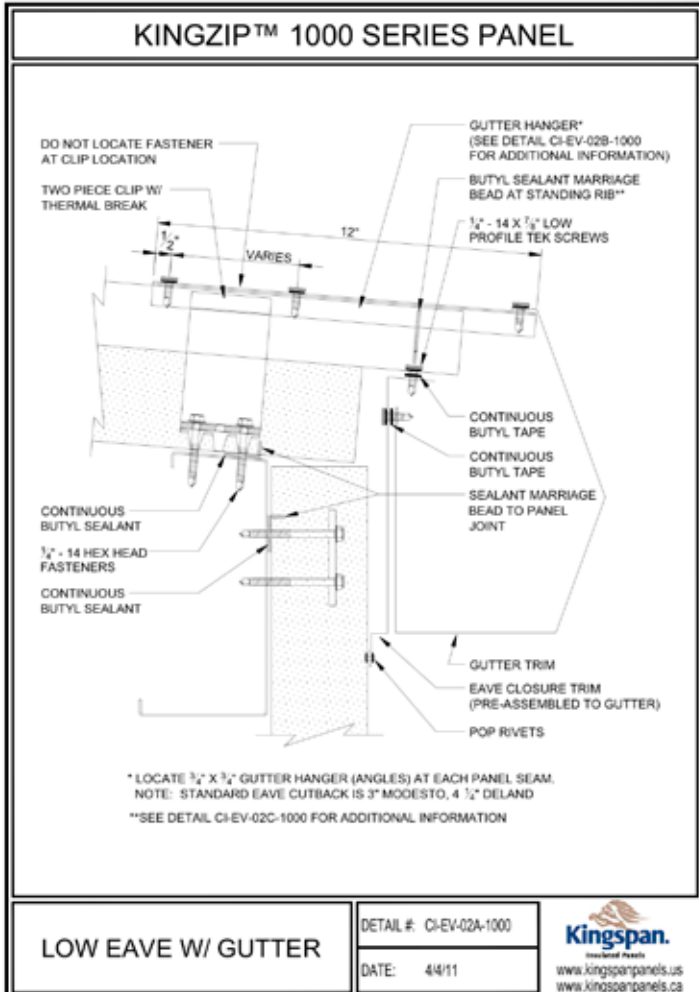
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 Kingspan Insulated Panels  
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RP3 TYPICAL



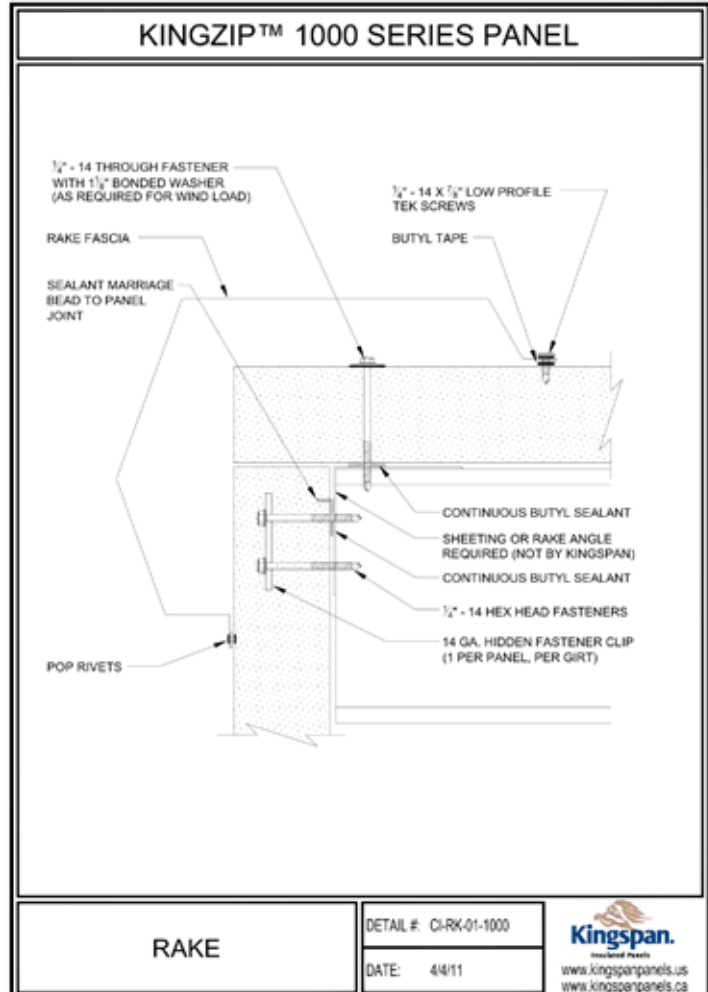
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 Kingspan Insulated Panels  
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RP4



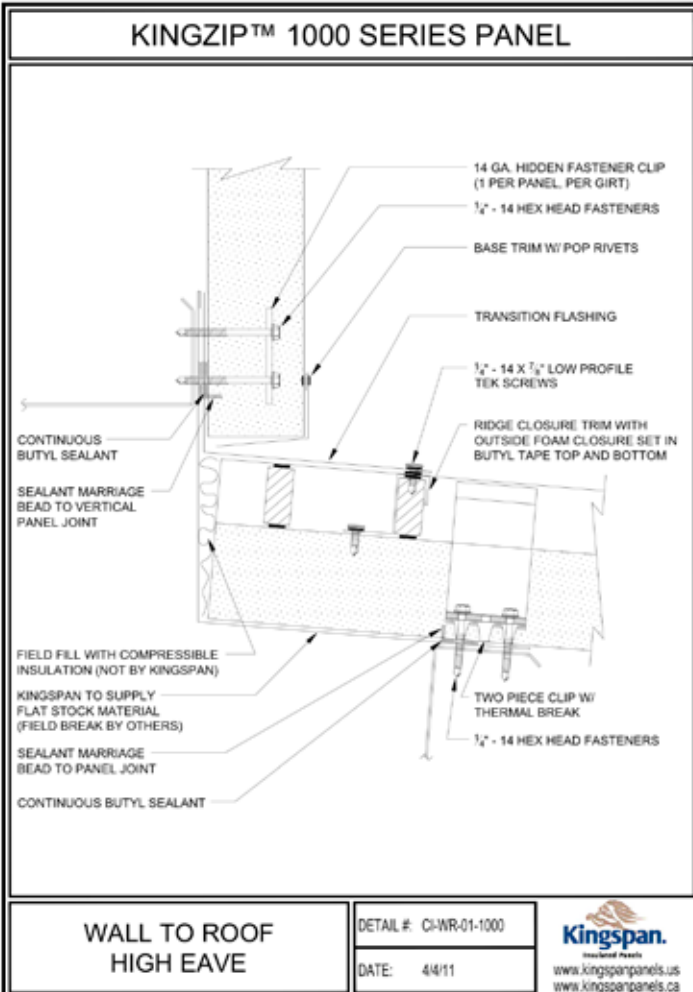
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 Kingspan Insulated Panels  
 www.kingspanpanels.us

RP5



RAKE  
 DETAIL #: CI-RK-01-1000  
 DATE: 4/4/11  
 Kingspan Insulated Panels  
 www.kingspanpanels.us

RP6



WALL TO ROOF HIGH EAVE  
 DETAIL #: CI-WR-01-1000  
 DATE: 4/4/11  
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RP7

**ROOFING: KINGSPAN INSULATED ROOF PANEL SYSTEM CONSTRUCTION DETAILS**

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PLANET GRANITE

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**PERMIT #12-204811 LU**

Project	PLANET GRANITE	Code	PGP
Set	DESIGN REVIEW	Date	9 NOV 2012
Revisions	R1 19 NOV 2012 R2 19 DEC 2012 R3 04 FEB 2013	Sheet	DR.6f
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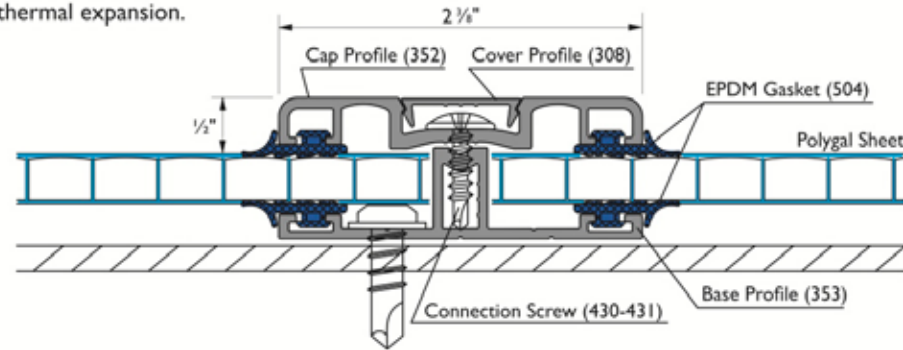
# Mega-Lock

## New Aluminum Glazing System

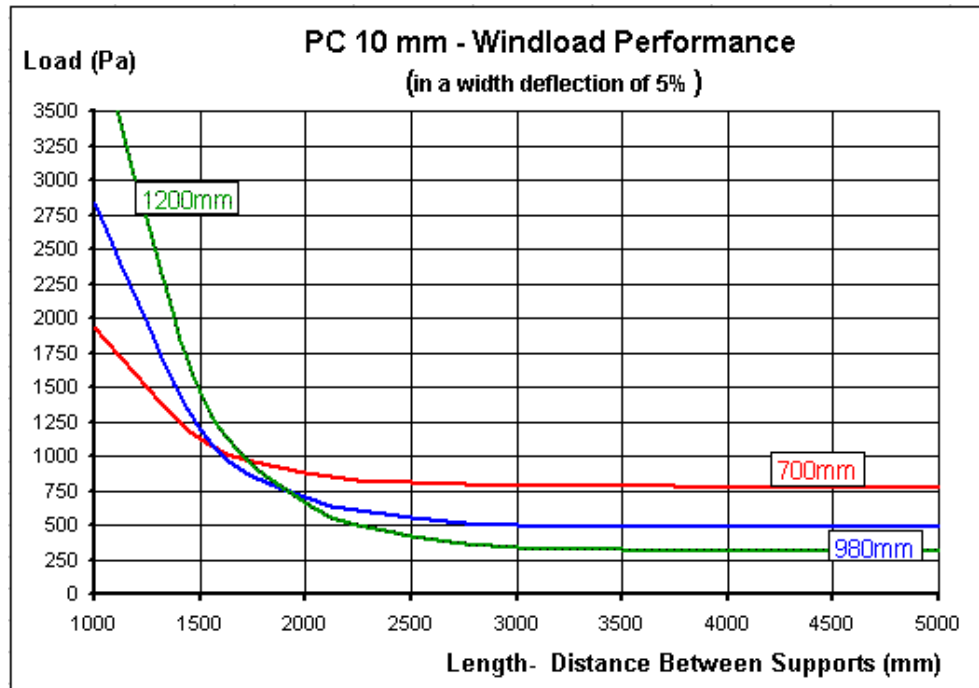
- Esthetic
- Strong
- Water Proof
- Easy Installation

Mega-Lock Glazing System is specially designed for use in glazing with 6 – 16 polycarbonate multi wall sheets in urban applications such as covered walkways, entrance-ways, parking spaces, bus stations and other similar applications.

Mega-Lock Glazing System has a rabbet depth of 1" which enhances its fastening properties and prevents glazing failures due to wind and snow loads or thermal expansion.



Polygal is the leading manufacturer of structured Polycarbonate sheets, and is known throughout the world for the outstanding quality of its products. Polygal was the first manufacturer in the world to create structured Polycarbonate sheets, and over the last 35 years has developed and produced a broad spectrum of these products, which are successfully covering a full array of structures worldwide.



**TRANSLUCENT WALL PANELS:**  
**POLYGAL TRANSLUCENT WALL PANEL SYSTEM**  
**10MM (3/8") THICKNESS, 48" WIDE PANELS**  
**COLOR: POLYSHADE SILVER**

### 4.3 Fire performance

Polygal has received high ratings in several major American & European 3<sup>rd</sup> Party Laboratories. More detailed information and official test reports are available from your local Service Center or authorized dealer. Much of this information can also be found on our website ([www.polygal-northamerica.com](http://www.polygal-northamerica.com)).

### Flammability

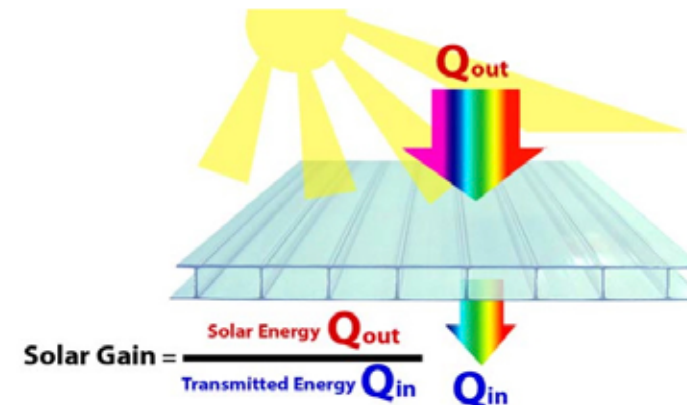
Method	Classification*
BS 476/7	Class 1
DIN 4102	B-1 (10&16 mm)
NSP 92501	M-1, M-2
ASTM D-635	CC-1
ASTM-E-84	Class A
EN 13501	B, s1, d0

\*Classifications depend on sheet type and thickness.

### 3.1 Solar gain:

The most common misconception in translucent materials is that in order to reduce the sun's heat we must reduce the light transmission whereas the value which determines the amount of solar heat is SHGC (solar heat gain coefficient or solar gain).

SHGC indicates how much of the sun's energy striking the sheet is transmitted as heat. As the SHGC increases, the solar gain potential through a given sheet increases.



A sheet with a SHGC of 0.6 will admit twice as much solar heat gain as one with a SHGC of 0.3.

The importance of the SHGC can be seen in the following table which compares two colors:

Sheet Color	LT [by ASTM D 1003]	SHGC
10mm Primalite	45 %	0.38
10mm ICE	32 %	0.48

It can be seen in the table that although the special color Primalite brings more light than the Ice color... it ultimately transfers less solar heat. This fact does not fit with the common sense which tells us that the Primalite will bring more heat than the Ice since it brings more light.

## 2. Thermal properties

### 2.1 Service temperature and Thermal expansion

Service Temperature

Polygal multiwall polycarbonate can be installed in a diversity of applications, with varying temperatures. However, the material's mechanical performance is known to remain stable in prolonged service in temperatures ranging from -40°F to +240°F. PVC has a maximum service temperature of 140°F while acrylic is 176°F.

Thermal Expansion

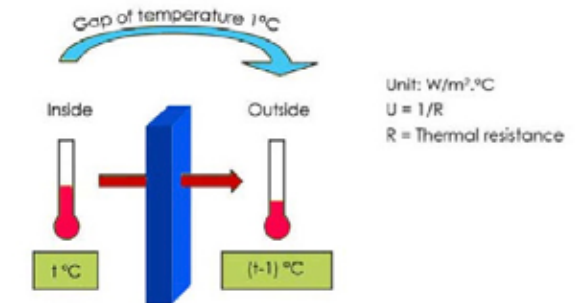
The coefficient of linear expansion of polycarbonate material is  $6.7 \times 10^{-5} \text{m/m} \cdot ^\circ\text{C}$ . This is high relative to that of most other materials in conjunction with which it is normally used. As a consequence careful allowance must be made for the thermal expansion of Polygal polycarbonate multi wall sheets, both longitudinally and laterally. In practical terms it is necessary to allow ~1/4" per 4' length or width for thermal expansion.

### 2.2 Thermal Insulation and the U-Value

Thermal Insulation definition is the resistance to heat transfer as a result of temperature differences between two material bodies.

In the case of MWPC (multi-wall polycarbonate) the Thermal insulation is important in application in which there is a difference between the outside to the inside air temperature. Examples for of thermal insulation can be seen in applications with closed structures such as sunrooms and indoor swimming pools. Whereas in roofing for open structures, such as bus shelters and/or a canopies... the thermal insulation has no meaning. U or R-Value is the coefficient which determines heat loss in the glazing walls of a building. As the U-Value decreases... the thermal insulation increases.

Definition: Heat will flow through a wall of 1 square meter at a temperature difference of one degree Celsius between the two environments.



Structure	Thickness	R-Factor- BTU (h/ft2/F)
[Diagram of 4mm structure]	4	1.449
	6	1.587
[Diagram of 8mm structure]	8	1.667
	10	1.887



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Code  
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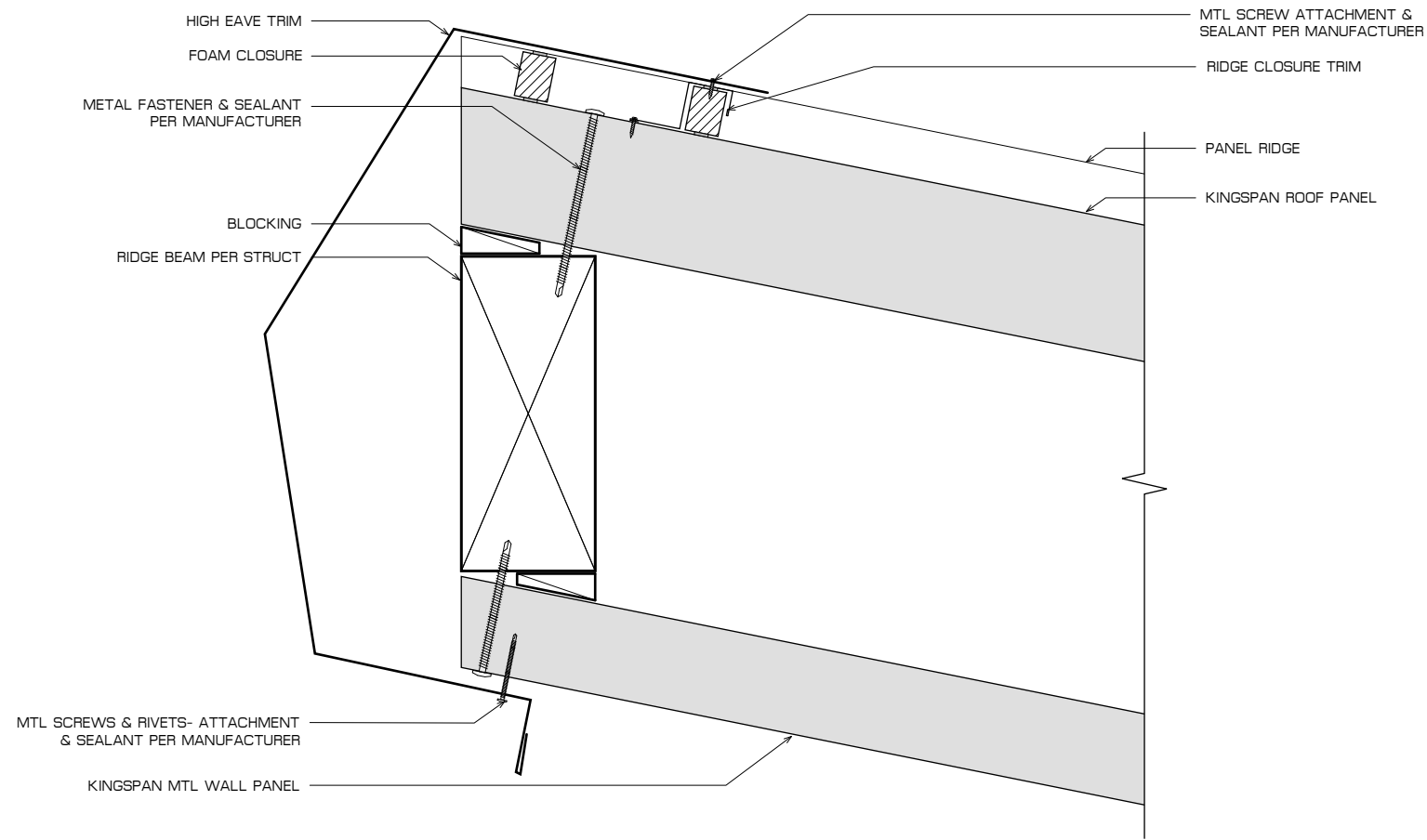
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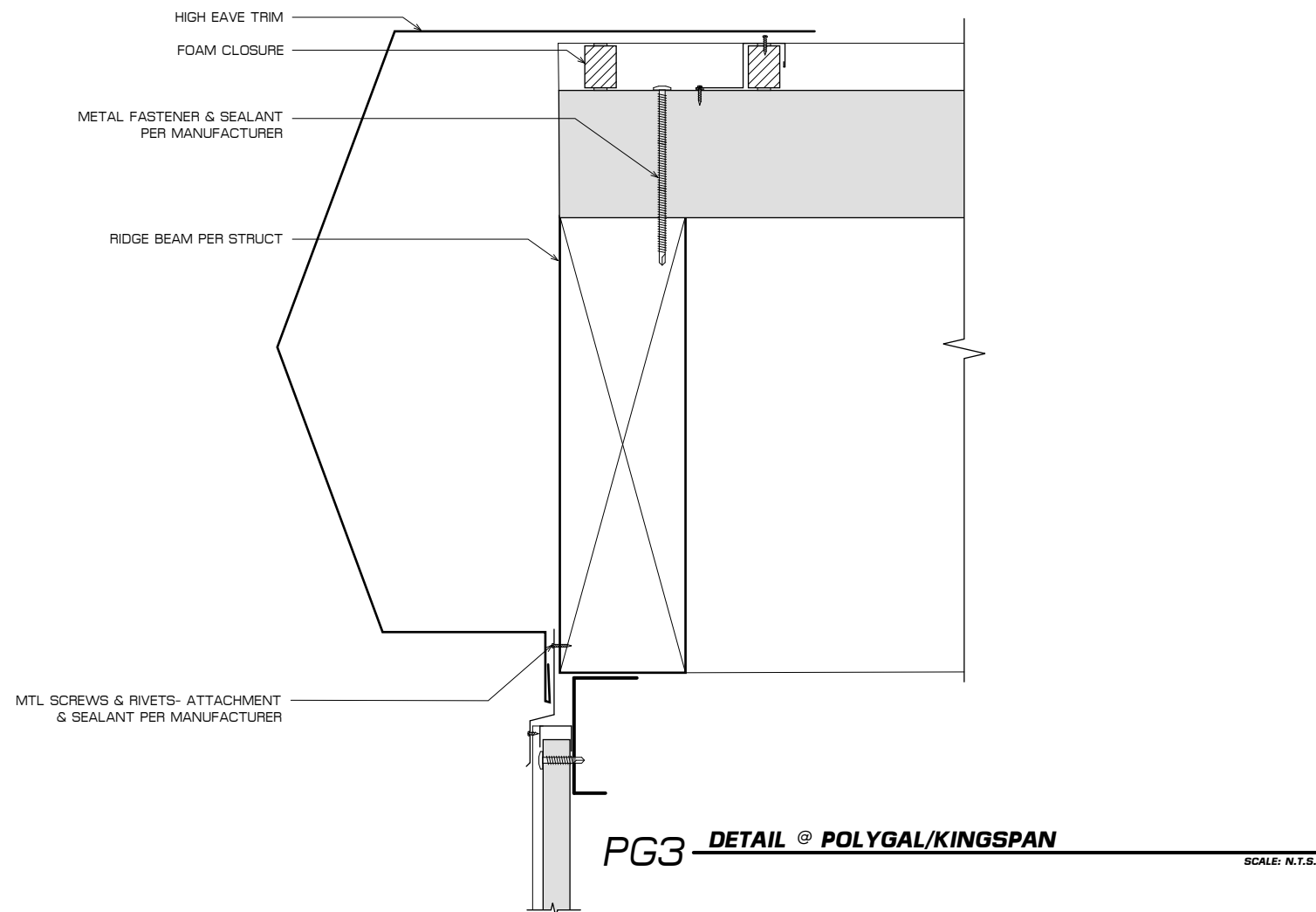
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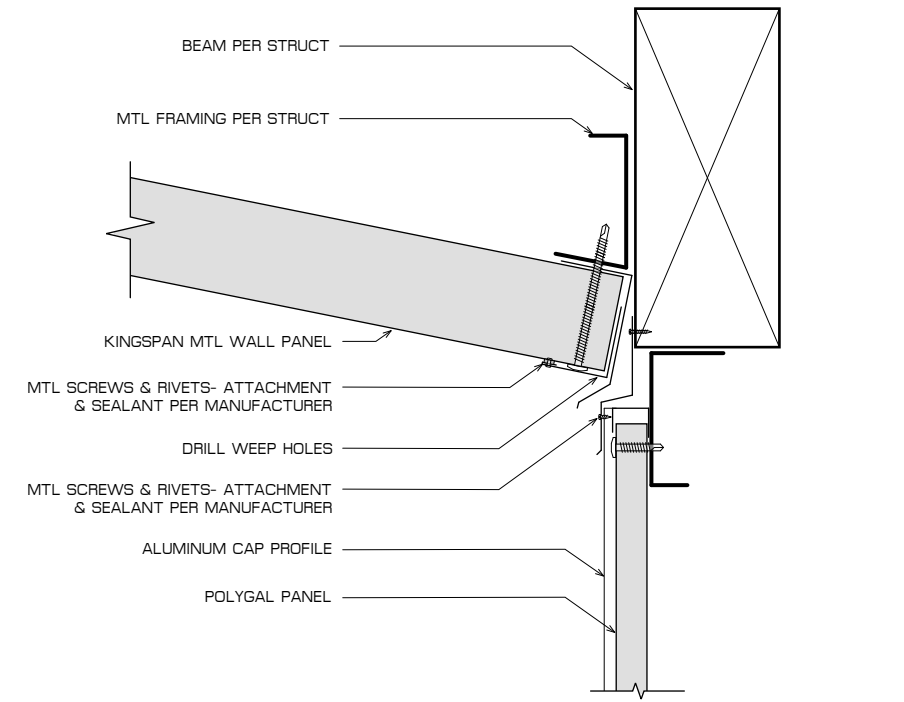
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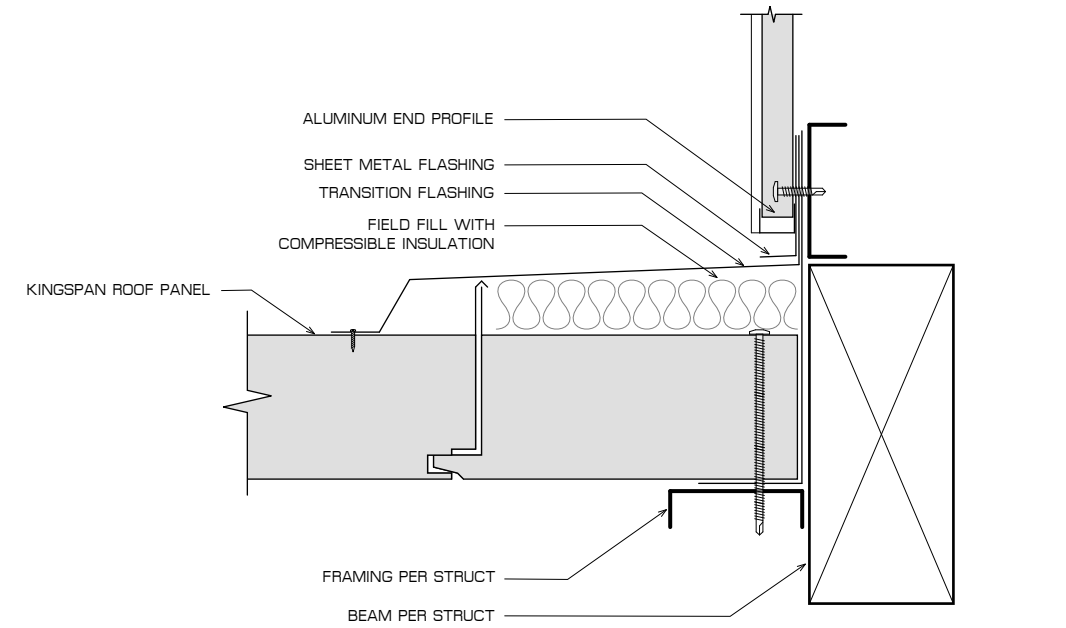
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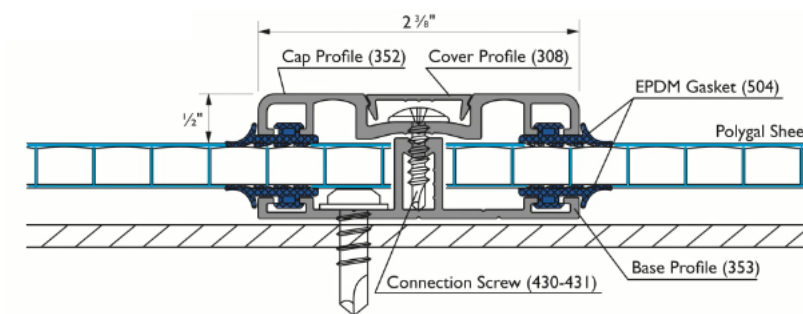
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**PG2 DETAIL @ EAVE** SCALE: N.T.S.



**PG4 DETAIL @ ROOF POLYGAL** SCALE: N.T.S.



**PG5 DETAIL @ PANEL JOINT** SCALE: N.T.S.

**TRANSLUCENT WALL PANEL SYSTEM:  
CONSTRUCTION DETAILS**

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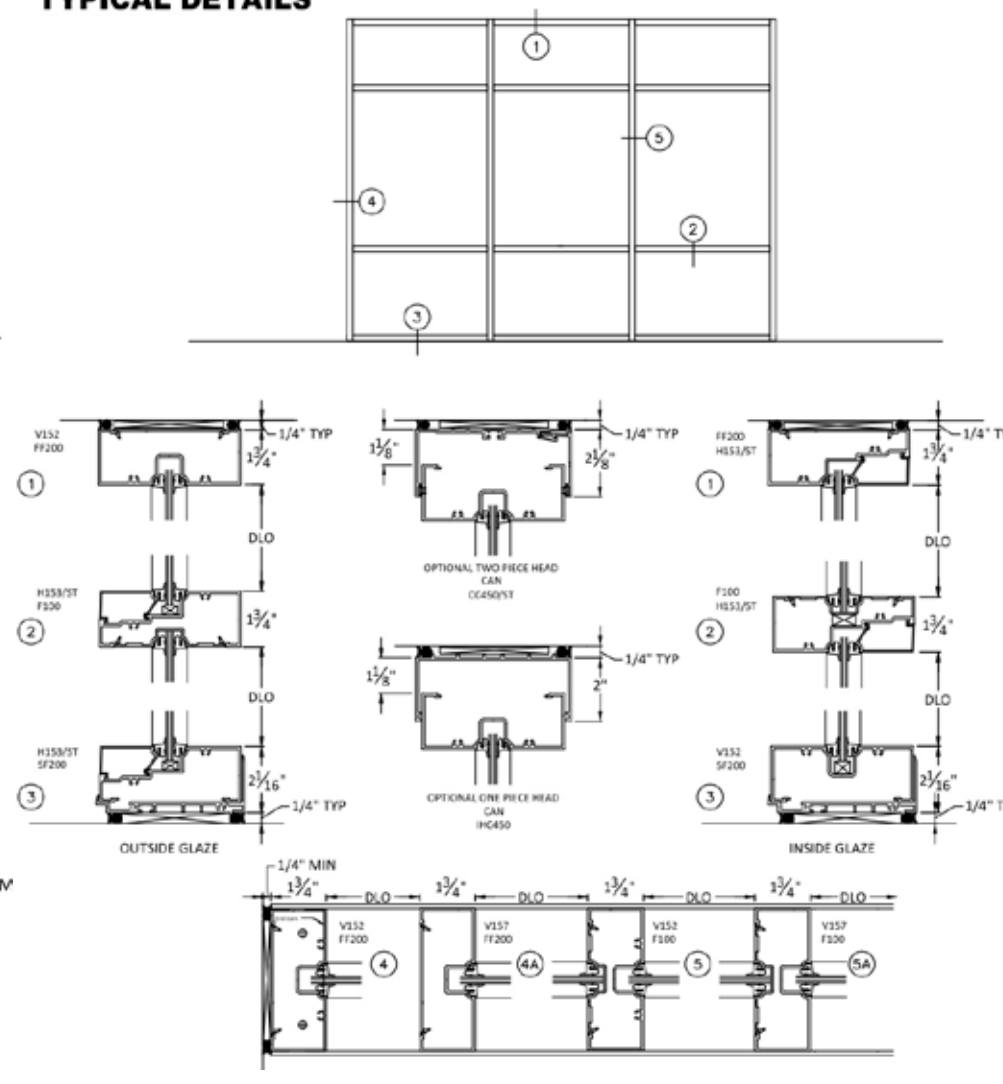
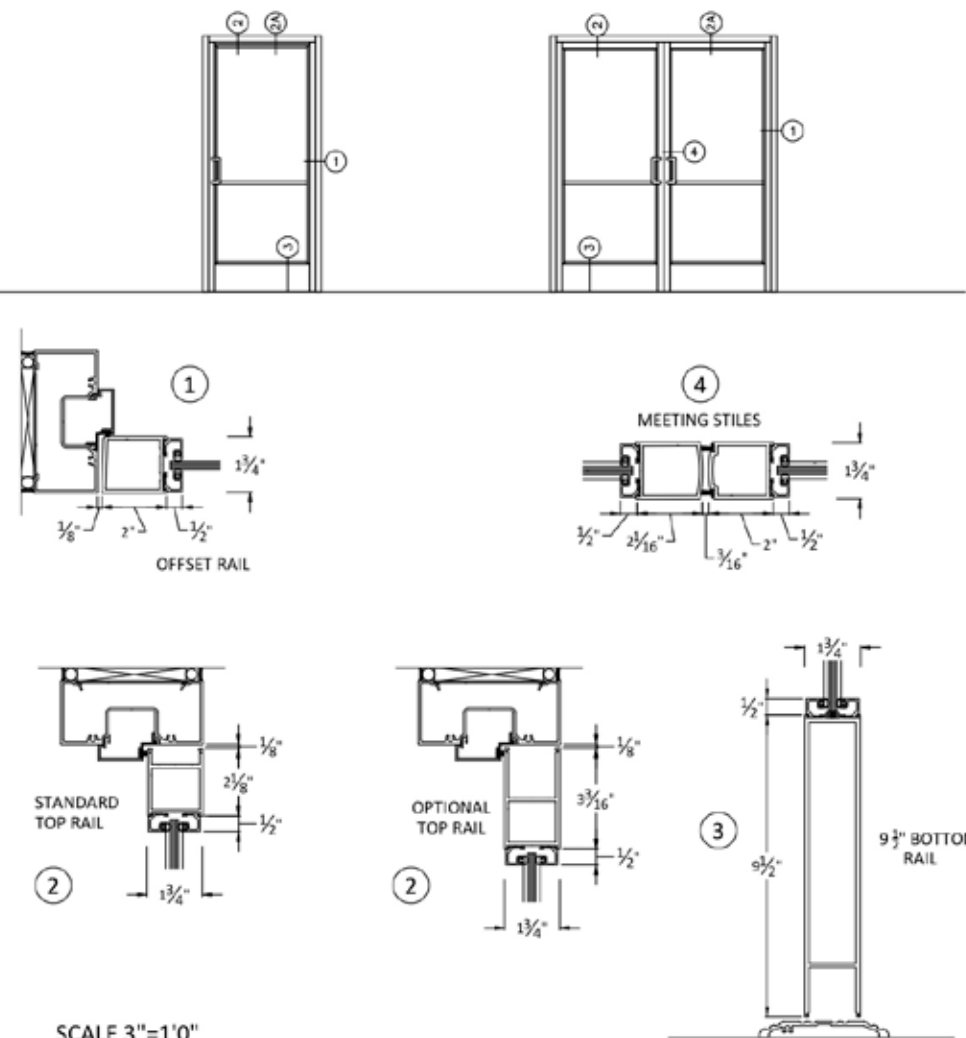
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TRANSLUCENT WALL PANEL SYSTEM CONSTRUCTION DETAILS

**TYPICAL DETAILS**

**NARROW STILE DOORS  
NON THERMAL FRAME**

**TYPICAL DETAILS**

**150-CS SCREW SPLINE**



**Fabrication and Availability**  
Solarban 70XL glass is available through more than 65 locations of the PPG Certified Fabricator Network. Solarban 70XL glass, manufactured utilizing the MSVD sputter-coating process, is available for annealed, heat-strengthened and tempered applications.

**Additional Resources**  
Solarban 70XL glass is just one of the Ecological Solutions from PPG™. For more information, or to obtain samples of this product, call 1-888-PPG-IDEA (774-4332), or visit www.ppgideas.com. All PPG architectural glass is Cradle to Cradle® Certified.

**PPG Certified FABRICATOR NETWORK**

**ecological SOLUTIONS**

**Solarban® 70XL Glass Performance — Commercial Insulating Glass Unit**

Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear unless otherwise noted

Glass Type	Transmittance			Reflectance		U-Value (Imperial)		European U-Value	Shading Coefficient	Solar Heat Gain Coefficient	Light to Solar Ratio (LSR)
	Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
<b>Coated</b>											
<b>SOLARBAN® 70XL Solar Control Low-E Glass</b>											
SOLARBAN 70XL (2) + Clear	6	64	25	12	52	0.28	0.26	1.50	0.32	0.27	2.37
SOLARBAN 70XL (2) SOLEXIA + Clear	3	54	19	10	12	0.28	0.26	1.50	0.29	0.25	2.18
SOLARBAN 70XL (2) ATLANTICA + Clear	2	48	16	9	8	0.28	0.26	1.50	0.26	0.23	2.07
SOLARBAN 70XL (2) CARIBIA + Clear	2	48	16	9	7	0.28	0.26	1.50	0.27	0.23	2.07
SOLARBAN 70XL (2) AZURIA + Clear	4	48	17	9	7	0.28	0.26	1.50	0.27	0.23	2.09
SOLARBAN 70XL (2) PACIFICA + Clear	1	30	11	6	7	0.28	0.26	1.50	0.21	0.18	1.63
SOLARBAN 70XL (2) SOLARBLUE + Clear	3	40	15	7	15	0.28	0.26	1.50	0.25	0.21	1.84
SOLARBAN 70XL (2) SOLARBRONZE + Clear	2	37	14	7	19	0.28	0.26	1.50	0.23	0.20	1.87
SOLARBAN 70XL (2) SOLARGRAY + Clear	2	31	12	7	15	0.28	0.26	1.50	0.22	0.19	1.65
SOLEXIA + SOLARBAN 70XL (3)	3	56	20	11	13	0.28	0.26	1.50	0.37	0.32	1.74
ATLANTICA + SOLARBAN 70XL (3)	2	49	17	10	8	0.28	0.26	1.50	0.32	0.28	1.74
CARIBIA + SOLARBAN 70XL (3)	2	49	17	9	8	0.28	0.26	1.50	0.32	0.28	1.75
AZURIA + SOLARBAN 70XL (3)	4	49	17	9	8	0.28	0.26	1.50	0.33	0.29	1.70
PACIFICA + SOLARBAN 70XL (3)	2	31	12	6	7	0.28	0.26	1.50	0.26	0.22	1.38
SOLARBLUE + SOLARBAN 70XL (3)	3	40	16	8	16	0.28	0.26	1.50	0.32	0.27	1.48
SOLARBRONZE + SOLARBAN 70XL (3)	3	38	15	8	20	0.28	0.26	1.50	0.30	0.26	1.48
SOLARGRAY + SOLARBAN 70XL (3)	2	32	13	7	15	0.28	0.26	1.50	0.27	0.24	1.34
GRAVLITE II + SOLARBAN 70XL (3)	<1	7	3	4	5	0.28	0.26	1.50	0.13	0.11	0.58
<b>VISTACOOD™ and SOLARCOOL™ with SOLARBAN® 70XL Solar Control Low-E (3)*</b>											
VISTACOOD (2) AZURIA + Low-E	4	38	14	21	12	0.28	0.26	1.50	0.27	0.24	1.59
VISTACOOD (2) PACIFICA + Low-E	1	24	9	11	9	0.28	0.26	1.50	0.22	0.19	1.24
VISTACOOD (2) CARIBIA + Low-E	2	38	13	20	11	0.28	0.26	1.50	0.27	0.23	1.65
VISTACOOD (2) SOLARGRAY + Low-E	2	25	10	11	17	0.28	0.26	1.50	0.23	0.20	1.24
SOLARCOOL (2) SOLEXIA + Low-E	1	22	8	24	16	0.28	0.26	1.50	0.20	0.17	1.28
SOLARCOOL (2) CARIBIA + Low-E	1	19	6	19	10	0.28	0.26	1.50	0.18	0.15	1.27
SOLARCOOL (2) AZURIA + Low-E	1	19	7	19	10	0.28	0.26	1.50	0.18	0.15	1.27
SOLARCOOL (2) PACIFICA + Low-E	1	12	4	10	8	0.28	0.26	1.50	0.15	0.13	0.89
SOLARCOOL (2) SOLARBLUE + Low-E	1	16	6	14	16	0.28	0.26	1.50	0.18	0.15	1.03
SOLARCOOL (2) SOLARBRONZE + Low-E	1	15	6	14	19	0.28	0.26	1.50	0.17	0.15	1.01
SOLARCOOL (2) SOLARGRAY + Low-E	1	13	5	11	15	0.28	0.26	1.50	0.16	0.14	0.89
SOLARCOOL (2) GRAVLITE II + Low-E	<1	3	1	5	5	0.28	0.26	1.50	0.11	0.09	0.27

\*Solarban 70XL glass for annealed applications is applied to Starphire glass, heat treated applications will require either clear or Starphire glass depending on manufacturing process.

All performance data calculated using LBNL Window 5.2 software, except European U-value, which is calculated using WinDat version 3.0.1 software. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit www.ppgideas.com or request our Architectural Glass Catalog.



MILL FINISH ALUMINUM



BRONZE FINISH ALUMINUM

**WINDOWS AND ENTRY DOORS:**  
ALUMINUM STOREFRONT SYSTEM, NON-THERMAL, MILL FINISH TYPICAL, BRONZE AT COPPER PENNY SIDING  
PPG SOLARBAN 70XL LOW-E INSULATED GLAZING, CLEAR (OR EQUAL) - TRANSLUCENT GLASS AT LOCKER ROOM EXTERIOR WINDOWS

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Sheet Title  
**DR.6i**  
WINDOWS ENTRY DOORS

# Ground-Face Colors



**NOTE:** GROUND FACE CMU IN SANDSTONE COLOR USED BENEATH THE COPPER PENNY WALL PANELS; GROUND FACE IN CHARCOAL COLOR USED IN ALL OTHER AREAS ON EAST, SOUTH AND WEST ELEVATIONS; STANDARD FINISH CMU IN CHARCOAL USED NORTH ELEVATION

PAGE 14 TO ORDER CALL: 315-265-6200

Photo currently not available  
**6" 2 Hour Fire Rated**  
 • Three Core

**SPECIAL ORDER**

**6" 2 Hour Fire Rated**  
 Percent Solid: 53.24 %  
 Equivalent Thickness: 4.06 inches  
 40 lbs. Per unit  
 90 per pallet

PAGE 3 TO ORDER CALL: 315-265-6200

**4" Regular (Plain End)**  
 Percent Solid: 72.31 %  
 Equivalent Thickness: 2.62 inches  
 25.5 lbs. Per unit  
 150 per pallet

**6" Regular (Plain End)**  
 Percent Solid: 54.01 %  
 Equivalent Thickness: 3.04 inches  
 29.5 lbs. Per unit  
 120 per pallet

**8" Pilaster (Plain End)**  
 Percent Solid: 53.12 %  
 Equivalent Thickness: 4.05 inches  
 43 lbs. Per unit  
 30 per pallet

**CONCRETE MASONRY UNITS:**  
 GROUND FACE AND STANDARD FINISH  
 COLORS: CHARCOAL, SANDSTONE

## PERVIOUS PAVERS:

UNI-GROUP  
 'ECO-PRIORA'  
 PERVIOUS PAVERS  
 8"X8" OR 4"X8"



## Eco-Priora® Permeable Interlocking Concrete Paver

Eco-Priora® is an environmentally beneficial paving system designed to reduce stormwater runoff from residential, municipal, and commercial pavements. Eco-Priora® permeable pavements are a site-scale infiltration technology that is ideal for meeting NPDES regulations, LID and Smart Growth objectives, LEED® certification, impervious cover restrictions, and green building requirements.

- Can be designed to accommodate a wide variety of stormwater management objectives
- Runoff volume reductions of up to 100% depending on project design parameters
- Maximizes groundwater recharge and may be used for rain water harvesting for re-use
- Reduces nonpoint source pollutants in stormwater, thereby mitigating impact on surrounding surface waters, and may lessen or eliminate downstream flooding/streambank erosion
- Allows better land-use planning and more efficient use of available land for greater economic value, especially in high-density, urban areas
- May decrease project costs by reducing or eliminating drainage and retention/detention systems
- May reduce cost of compliance with stormwater regulatory requirements and lower utility fees
- May reduce heat island effect and thermal loading on surrounding surface waters
- Are an EPA-recommended Best Management Practice

Eco-Priora® offers the same attributes and features of our other UNI® permeable pavers with the added benefit of patented, interlocking spacers. These interlocking spacers offer superior structural stability under loading when compared to other rectangular-shaped permeable pavers on the market. Eco-Priora® joints are filled with aggregate to facilitate the infiltration of stormwater runoff. The minimal chamfer and narrower joints make Eco-Priora® ideally suited to pedestrian and ADA pavement applications. Eco-Priora® may be mechanically installed for added cost savings.

For information on design and construction, please consult the UNI Eco-Stone® Family of Permeable Interlocking Concrete Pavers Design Guide and Research Summary.

Eco-Priora® is a registered trademark of F. von Langsdorff Inc. Ltd., Colton, Ontario, Canada ©2010 UNI-GROUP U.S.A.



**UNI-GROUP U.S.A. - National Headquarters Office**  
 4352 Northlake Blvd. • Suite 204 • Palm Beach Gardens, FL 33410  
 (561) 626-4566 • FAX (561) 627-6103 • 1-800-872-1864  
 www.uni-groupusa.org • E-mail: info@uni-groupusa.org



Physical Characteristics	
Height/Thickness	3.125" = 80mm
Width	4.75" = 120mm
Length	9.5" = 240mm
Pavers per sq ft	= 3.28

Composition and Manufacture	
Minimum compressive strength	- 8000psi
Maximum water absorption	- 5%
Meets or exceeds	ASTM C-936 and freeze-thaw testing per section 8 of ASTM C-67.

Note: Eco-Priora may be made in different size rectangles and squares. Check with your local manufacturer for sizes and shapes.

Eco-Priora® pavers are ideal for residential, municipal, and commercial applications, such as walkways, patios, driveways, courtyards, plazas, retail areas, entry areas, parking lots, and streets. It can be installed in a number of patterns such as herringbones, running bond, and basketweaves.

Eco-Priora® pavement infiltration rates can be maintained by periodic street sweeping/vacuuming. Replenish joint and drainage void aggregate as needed when cleaning.

**PERVIOUS PAVERS:**  
 UNIGROUP "ECO-PRIORA"  
 PERVIOUS PAVERS

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Title **CMU PERVIOUS PAVERS**



**Standard Features At a Glance**

Panel thickness	1 3/4" (45 mm)
Maximum standard width	162" (4147 mm)
Maximum standard height	161" (4092 mm)
Material	6063-T6 aluminum
Standard finish	2048-1 clear anodized
Center stile width	2 1/2" (63 mm)
End stile width	2 3/4" (70 mm)
Top rail width	2 3/8" (60 mm) or 3 3/4" (95 mm)
Top intermediate rail width	3/4" (19 mm)
Bottom intermediate rail width	5/8" (16 mm)
Bottom rail width	2 3/8" (60 mm) or 3 3/4" (95 mm) or 4 1/2" (114 mm)
Weatherseals	Bottom, flexible PVC
Standard springs	10,000 cycle
Track	2" (51 mm)
Mounting	Angle
Operation	Manual pull rope
Hinges and fixtures	Galvanized steel
Lock	Galvanized, interior-mounted single unit

**197 Standard Powder Coat Finishes**

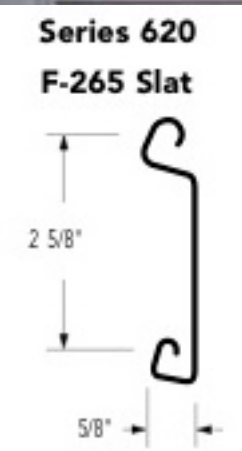
**The Color Palette for Sectional Aluminum Door Products**  
197 powder coat finishes are available from your Overhead Door distributor.

**Options**

- Glazing options: 1/8" (3 mm) DSH, 1/8" (3 mm) or 1/4" (6 mm) plexiglass; 1/8" (3 mm) or 1/4" (6 mm) tempered; 1/8" (3 mm) or 1/4" (6 mm) clear Lexan®; 1/4" (6 mm) wire glass; 1/2" (12 mm) insulated glass
- Electric operator or chain hoist
- Bottom sensing edge
- 3" track
- Bracket mounting (not available on full vertical door track)
- Higher-cycle springs in 25k, 50k, 75k, 100k cycles
- Exhaust ports

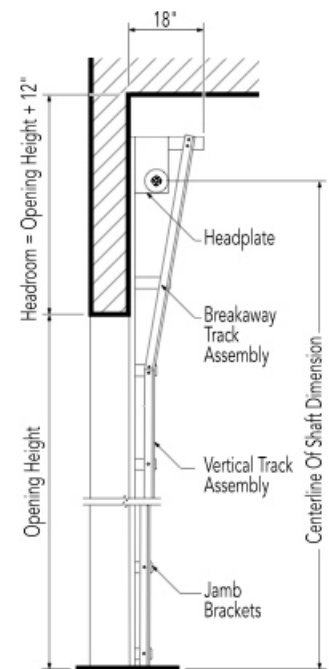
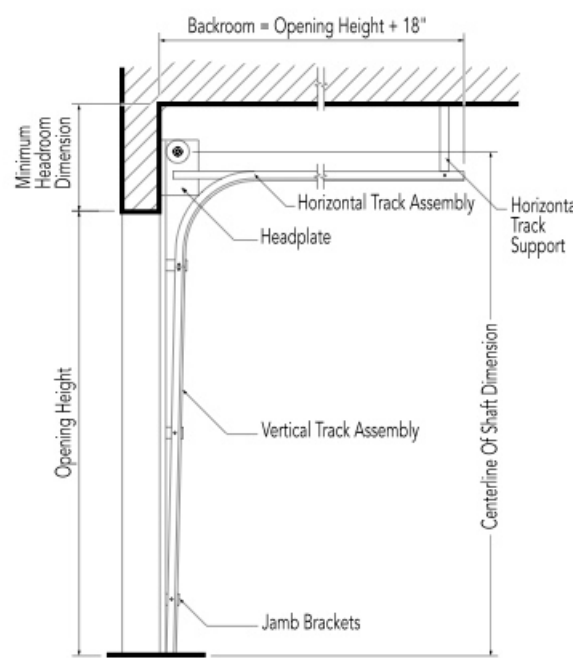
The 511 Series doors are designed in sizes up to 16'2" wide and 16'1" high (4928 mm and 4902 mm). Featuring a narrow center stile width of 2 1/32" (17 mm), these doors are sleek, attractive and permit maximum visibility. An array of glazing choices, top- and bottom-rail widths, finishes and special options customizes the 511 Series to satisfy nearly any project requirement.

Panel Schedule		Section Schedule	
Door Width	Number of Panels	Door Height	Number of Sections
to 8'0" (2438 mm)	2	to 8'0" (2438 mm)	4
9'0" to 11'11" (2743 mm to 3632 mm)	3	8'7" to 10'0" (2616 mm to 3073 mm)	5
12'0" to 14'11" (3658 mm to 4547 mm)	4	10'2" to 12'0" (3299 mm to 3683 mm)	6
15'0" to 16'2" (4572 mm to 4928 mm)	5	12'2" to 14'0" (3708 mm to 4293 mm)	7
		14'2" to 16'1" (4318 mm to 4902 mm)	8



**Standard Lift Track**

**Full Vertical Track**



2" (51 mm) Track [15" (381 mm) Radius]		
Door Height	Centerline of Shaft	Minimum Headroom
Thru 12'0" (3658 mm)	O.H. + 11 5/8" (295 mm)	14 1/4" (362 mm)
Thru 16'0" (4877 mm)	O.H. + 12 5/8" (321 mm)	20 1/2" (521 mm)
3" (76 mm) Track [15" (381 mm) Radius]		
Thru 18'0" (5486 mm)	O.H. + 14 5/8" (372 mm)	18" (457 mm)
Thru 32'0" (9754 mm)	O.H. + 16 7/8" (429 mm)	21 1/2" (546 mm)

2" (51 mm) Track [15" (381 mm) Radius]		
Door Height	Centerline of Shaft	Minimum Headroom
Thru 11'0" (3353 mm)	O.H. + O.H. + 3/8" (10 mm)	O.H. + 10 1/4" (260 mm)
Thru 16'0" (4877 mm)	O.H. + O.H. + 3/8" (10 mm)	O.H. + 10 1/4" (260 mm)
3" (76 mm) Track [15" (381 mm) Radius]		
Thru 18'0" (5486 mm)	O.H. + O.H. + 3/8" (10 mm)	O.H. + 10 1/4" (260 mm)

**OVD1**

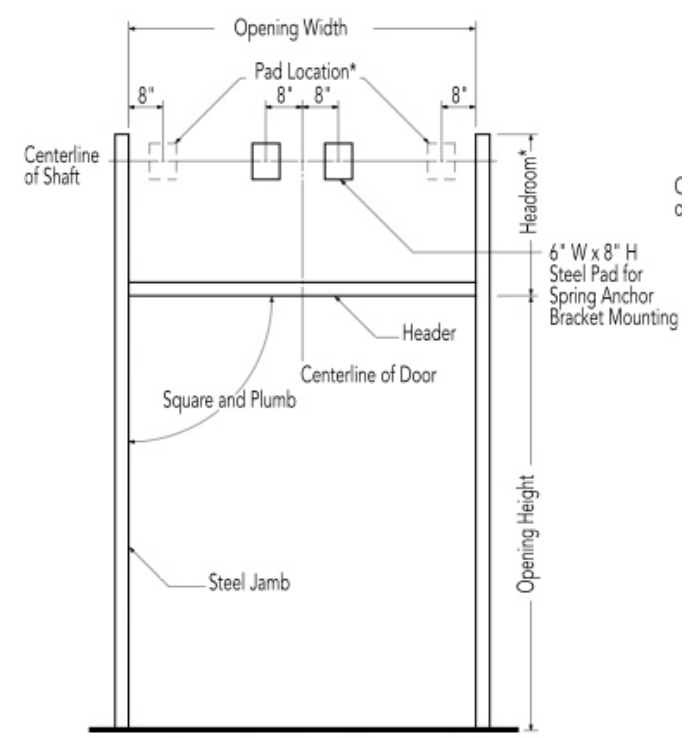
**OVD2**

**OVERHEAD PANEL DOORS WITH GLAZING:**  
OVERHEAD DOOR CORP. (OR EQUAL)  
511 SERIES ALUMINUM AND GLASS PANEL DOOR  
COLOR: MILL FINISH ALUMINUM; CLEAR GLASS



**MILL FINISH ALUMINUM**

**Steel Jamb**



**OVD3**

**OVERHEAD STEEL PANEL AND STEEL COILING DOORS:**  
OVERHEAD DOOR CORP. (OR EQUAL)  
SERIES 620 COILING STEEL DOOR  
COLOR TO MATCH TRANSLUCENT PANEL SYSTEM

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Title OVERHEAD PANEL AND COILING DOORS

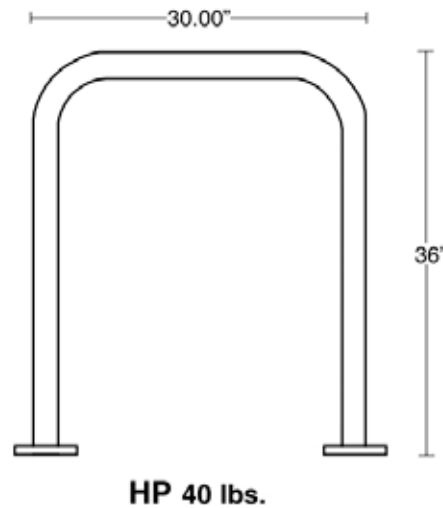
INNOVATION.



TRADITION.

## The HP Rack

- Each unit is constructed of  
**2.375" (6.0 cm) O.D. 2" (5.0 cm) I.D. x 0.154" (.39 cm) wall  
 ASTM A53 schedule 40 steel pipe**
- The HP is 36" (91.4 cm) or optional 42" (91.4 cm) high x 30" (76.2 cm) wide.
  - Mounting Options (see detail)
    - Flange Mount ■ Free-Standing ■ In-Ground
  - Choice of four finishes:
    - Hot Dipped Galvanized
    - Powder Coating (weather resistant Polyester TGIC, 6-8 mils thick) in an unlimited range of colors.
    - ASTM A314 schedule 40 TP304 Stainless Steel, #4 Satin Finish.
    - Thermoplastic Coating (10-12 mils thick) in red, black, green, blue, gray, white, yellow and brown.



Call HUNTCO at **1.800.547.5909** or **503.224.8700** Fax HUNTCO at **503.274.2055**  
 Visit our website at **www.huntco.com** or see us at **www.sweets.com**

**BIKE RACKS:**  
 HUNTCO SITE FURNISHINGS  
 THE HP RACK  
 HOT DIPPED GALVANIZED FINISH



**plane**  
MARKER

**io**

**Application**  
 The **plane** marker is an LED-based luminaire that casts light from the edge of the housing, creating the illusion of a "floating plane." Outdoor applications include building and bridge demarcation. Excellent for interior applications where ambient illumination levels typically do not compete (e.g., restaurants, clubs and some retail). **plane** mounts directly to a junction box for wall mount applications. UL listed for wet / damp locations.

**Light Output**  
 Reference detail section of this catalog for more information on luminous distribution for all LED colors of light.

**Construction**  
 Environmentally sealed, enclosed and gasketed 5.9" ss. corrosion resistant metal casting (stainless steel optional). Mounts directly to a UV stable, optically clear, high strength polycarbonate housing. LED luminaire module contained within the housing is replaceable.

**Mounting Options**  
**plane** mounts directly to a junction box while the driver (power supply) resides within the junction box. Three types of junction box configurations are compatible with **plane**:

- 1) 1 1/2" deep, 4" octagonal junction box. Hanger bars must be side mounted.
- 2) 2 1/4" deep, 4" octagonal junction box with side mounted hanger bars.
- 3) 2 1/4" deep, 4" square junction box with blaster ring.

**Electrical**  
 120v or 277v energy saving current limiting Class 2 power supply (pwriv) is located within a 1 1/2" or 2 1/4" deep, 4" octagonal junction box.

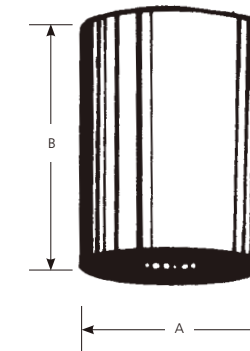
**Power Consumption**  
 Standard Output: 6.4 w

**Finish**  
 Metal die-cast face plate may be polyester powder coated or plated. Plated finishes are for interior applications only. Face plate may also be specified in stainless steel.



## BUILDING WALL LIGHTING: IO LIGHTING PLANE MARKER RECESSED WALL FIXTURE COLOR: STAINLESS HOUSING WITH WHITE PERIMETER LIGHTING

Catalog No.	Finish			Lamping	Dimensions (Inches)	
	Bronze	White	Black		A	B
P5774	-20	-30	-31	1-75PAR30 or BR30	5	6-1/2



**Specifications:**

General

- One piece Aluminum construction with sealed top
- Powder coat Bronze (-20), White (-30) or Black (-31) outer finishes
- Interior finish matches exterior finish

Mounting

- Ceiling mount
- Covers standard outlet box

Electrical

- Medium based ceramic socket with nickel plated brass screw shell
- Pre-wired

Labeling

- UL-CUL wet location listed

**BUILDING SOFFIT LIGHTING (AT MAIN ENTRY):  
 PROGRESS LIGHTING (OR EQUAL) SURFACE MOUNTED CYLINDER FIXTURE  
 COLOR: BRONZE**

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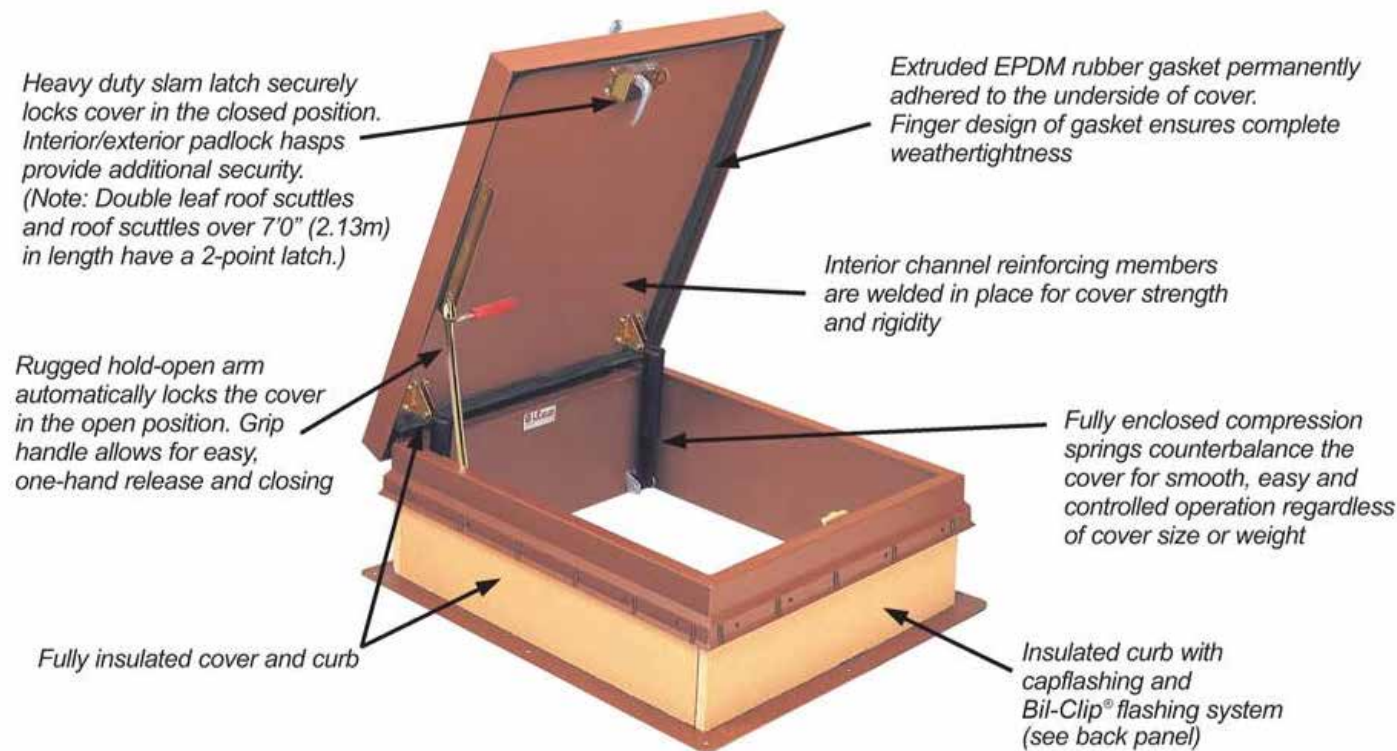
Title

**BIKE RACKS  
 BUILDING  
 LIGHTING**



### Type S & Type E

Provides access to roof area by means of a fixed interior ladder.



Heavy duty slam latch securely locks cover in the closed position. Interior/exterior padlock hasps provide additional security. (Note: Double leaf roof scuttles and roof scuttles over 7'0" (2.13m) in length have a 2-point latch.)

Extruded EPDM rubber gasket permanently adhered to the underside of cover. Finger design of gasket ensures complete weathertightness

Interior channel reinforcing members are welded in place for cover strength and rigidity

Rugged hold-open arm automatically locks the cover in the open position. Grip handle allows for easy, one-hand release and closing

Fully enclosed compression springs counterbalance the cover for smooth, easy and controlled operation regardless of cover size or weight

Fully insulated cover and curb

Insulated curb with capflashing and Bil-Clip® flashing system (see back panel)

### ROOF HATCH AND LADDER:

BILCO (OR EQUAL)

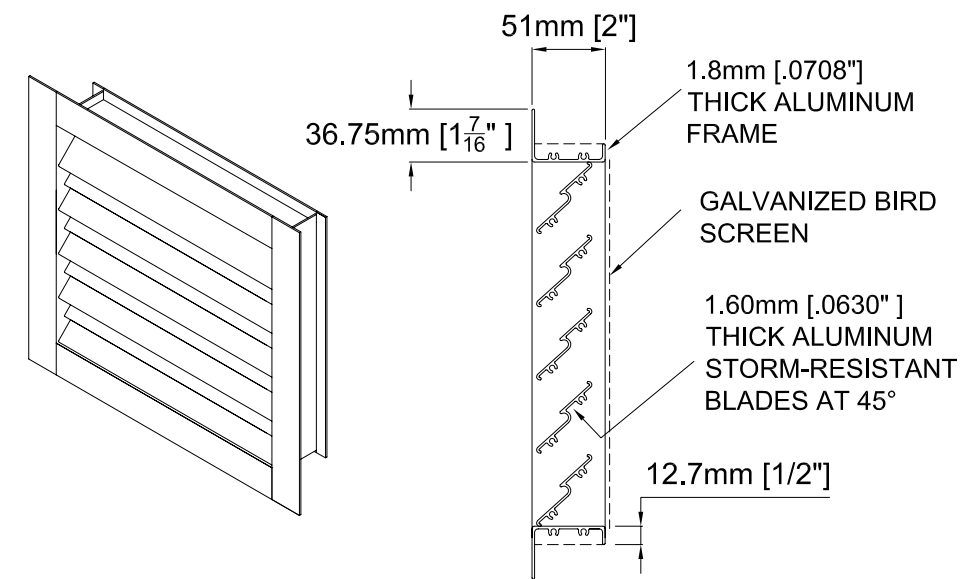
ROOF HATCH, PERSONNEL ACCESS WITH FIXED WALL LADDER

GALVANIZED STEEL



Three Generations of Quality Metal Products

### MODEL MAF 2W - Fixed Blade Extruded Louvers 36.75mm (1 7/16") Flange with 51mm (2") Deep Frame



MAXAM louvers are aesthetically pleasing and allow air flow to designated areas, while providing for weather protection. MAXAM louvers are fabricated from extruded aluminum, making them lightweight and durable for easy handling. The flange style covers the the rough opening edge.

#### Materials

Extruded aluminum Type 6063-T5  
Frame - 1.80mm (.0708")  
Blades - 1.60mm (.0630")

#### Finish

**Standard**  
Aluminum mill finish  
**Optional Finishes**  
Powder coated  
Prime coat

#### Blades

Storm-resistance blades angled at 45° for proper drainage.

#### Frame Depth

51mm (2") deep

#### Flange Width

36.75mm (1 7/16") wide

#### Fasteners

Cadmium plated

#### Screen

**Standard**  
Galvanized bird screen

**Optional Screens**  
Insect screen  
Aluminum bird screen

#### Ordering

Please order by rough opening size. Louvers are non-returnable.

#### Optional Assembly

Frames and blades welded in position

### WALL VENTILATION LOUVERS:

MAXAM METAL PRODUCTS (OR EQUAL)

FIXED BLADE EXTRUDED LOUVER

ALUMINUM MILL FINISH

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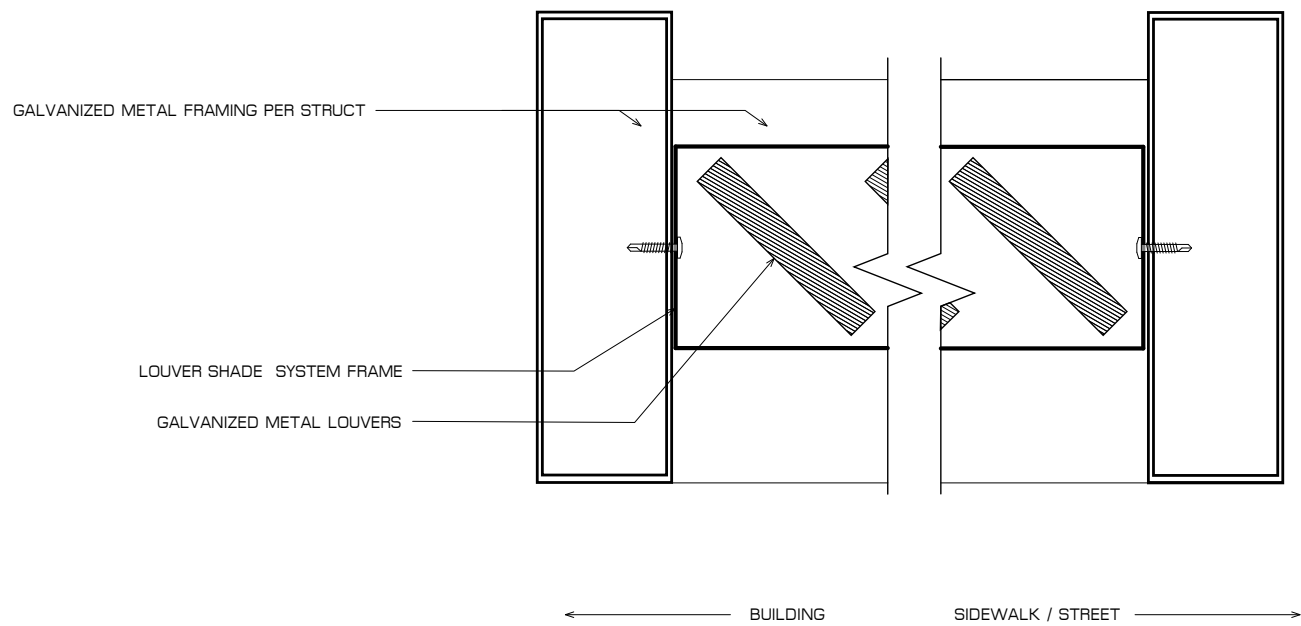
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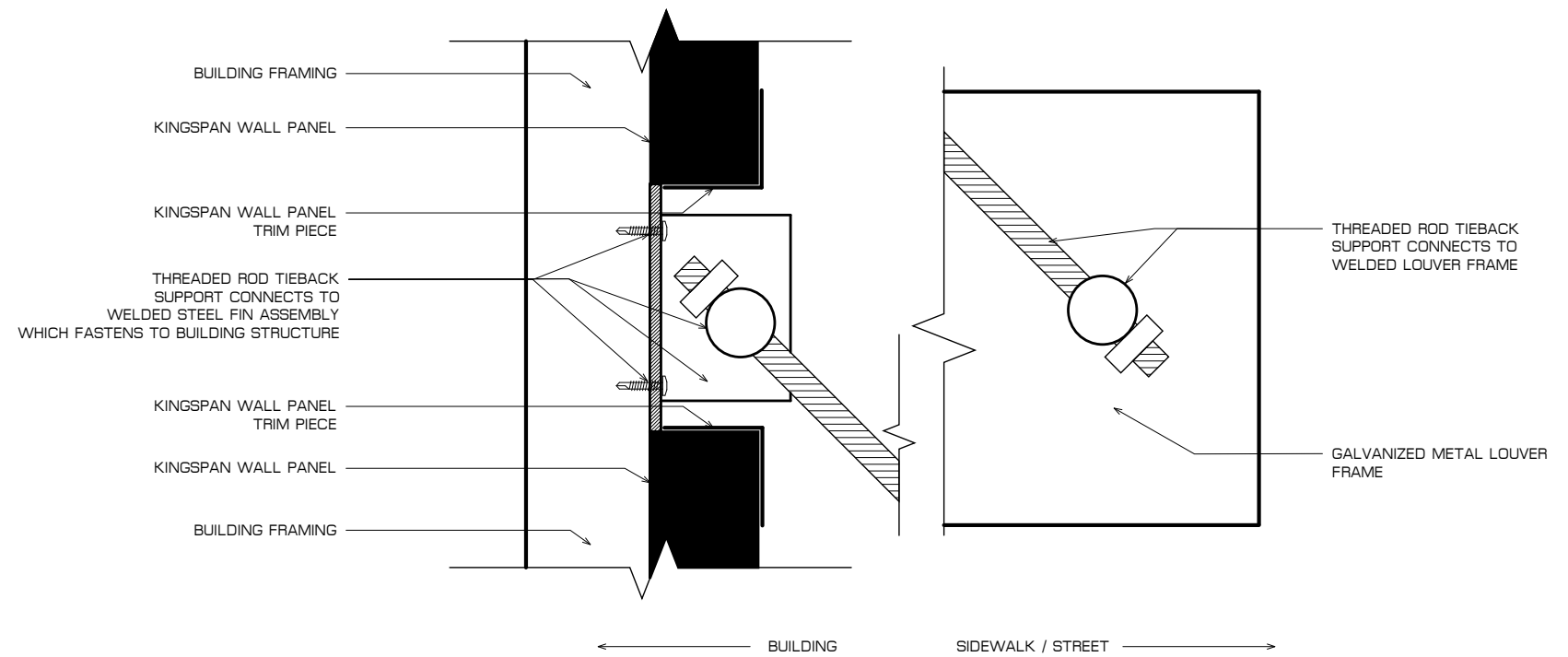
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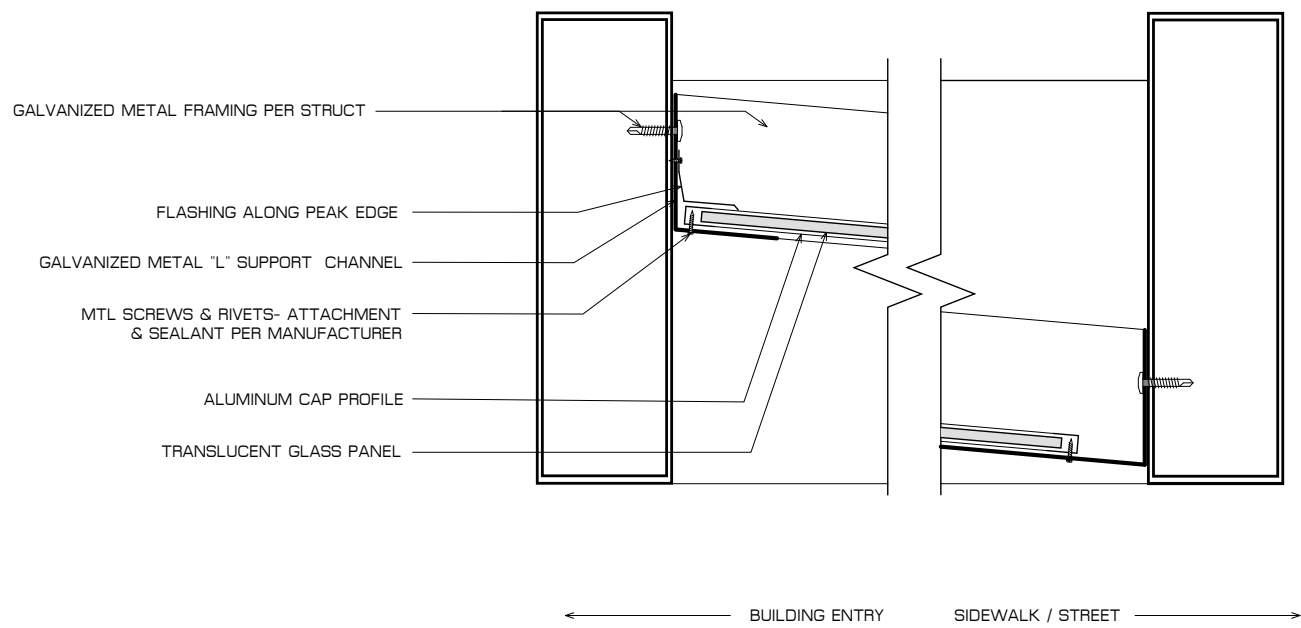
Title  
ROOF HATCH /  
WALL  
VENTILATION  
LOUVERS



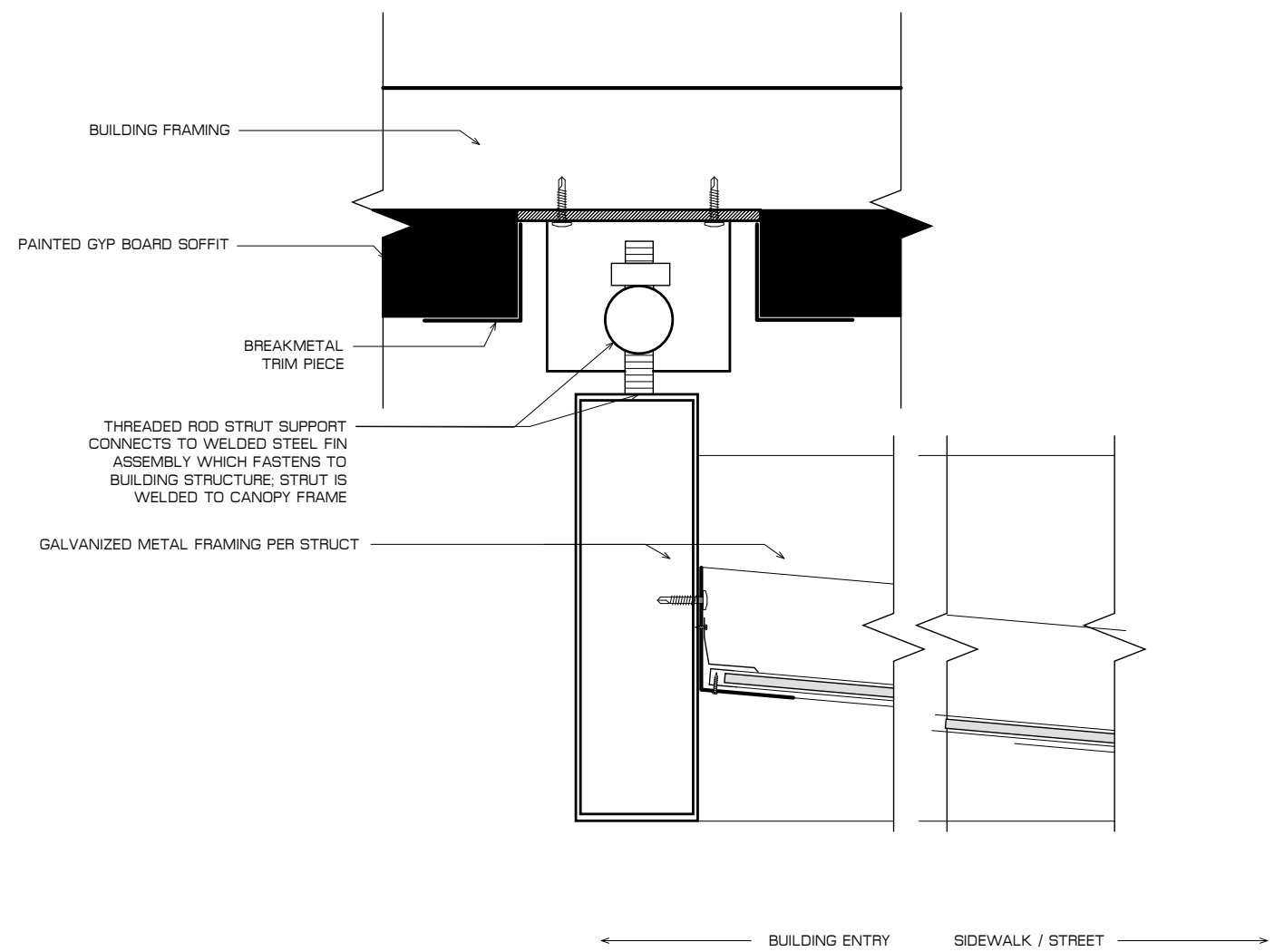
**C1 SECTION DETAIL @ WINDOW AWNING** SCALE: N.T.S.



**C2 DETAIL @ WINDOW AWNING TIEBACK** SCALE: N.T.S.



**C3 SECTION DETAIL @ GROUND FLOOR CANOPY** SCALE: N.T.S.

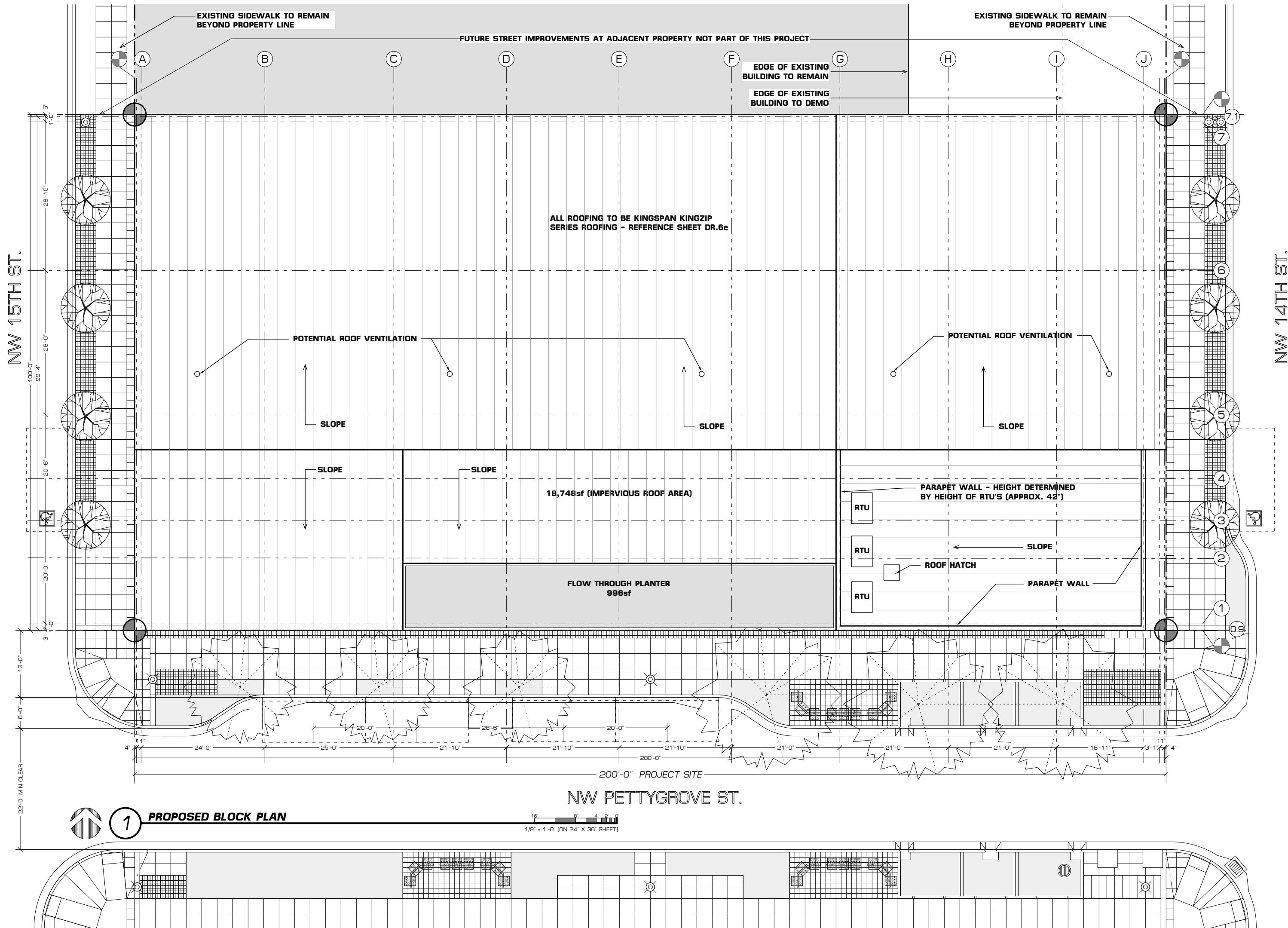


**C4 DETAIL @ GROUND FLOOR CANOPY / SOFFIT / COLUMNS** SCALE: N.T.S.

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1 PROPOSED BLOCK PLAN

1/8" = 1'-0" (ON 24" X 36" SHEET)

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**PLANET GRANITE**  
 1405 NW 14th  
 Portland, OR 97209  
**PERMIT #12-204811 LU**

Project	PGP
Set	DESIGN REVIEW
Date	9 NOV 2012
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Sheet **DR.7**  
 Title **SITE PLAN  
 ROOF PLAN**

NW 15TH ST.

NW 14TH ST.

ADJACENT EXISTING BUILDING

**FIRE LINE WATER SERVICE:**  
 BACKFLOW ASSEMBLY TO BE INSTALLED AT THE POINT WHERE THE WATER SERVICE ENTERS THE PROPERTY. IF APPROVED TO BE INSTALLED INSIDE A BUILDING, ASSEMBLY MUST BE INSTALLED AT THE POINT WHERE SERVICE ENTERS, BETWEEN ONE AND FIVE FEET ABOVE THE FLOOR. ALTERNATE LOCATIONS MUST BE APPROVED BY WATER QUALITY INSPECTIONS, BUREAU OF WATER WORKS (503.823.7479).  
 DOUBLE CHECK DETECTOR ASSEMBLY (DCCA) REQUIRED

NOTE: FIRE SPRINKLER SYSTEMS WITH 20 OR MORE SPRINKLERS MUST BE ELECTRONICALLY SUPERVISED BY AN APPROVED OFF-SITE STATION

NOTE: INSTALLATION OF A BACKFLOW ASSEMBLY MAY CAUSE THERMAL EXPANSION. BACKFLOW ASSEMBLY INSTALLERS ARE RESPONSIBLE FOR ADDRESSING THERMAL EXPANSION CONCERNS AND IMPLEMENTING APPROVED PRACTICES TO PROTECT PLUMBING AGAINST ITS EFFECTS.

NOTE: SEE PLUMBING DRAWINGS FOR SPECIFIC LOCATIONS OF WATER AND SANITARY LINES AND BRANCHES

FLOOR DRAIN W/ LYNCH CATCH BASIN  
 RECYCLING/TRASH STORAGE AREA

SPRINKLER CONTROLS  
 DCCA

DCVA (NOTE: CHECK VALVE ASSEMBLY TO BE INSTALLED PRIOR TO DOMESTIC BRANCHES)

FLOW THRU PLANTER  
 SEE A1 LANDSCAPE PLAN FOR DETAILS

6" PLANTER OVERFLOW

6" PLANTER OVERFLOW

GAS

(E) WATER METER

(N) CLEANOUT

(N) WYE CONNECTION

USE EXISTING TAPS AND CONNECTIONS

6" PLANTER OVERFLOW

NW PETTYGROVE ST.

(E) MANHOLE

(E) WATER

(E) COMBINED SEWER

(E) SEWER CONNECTION

1 UTILITY PLAN

1/8" = 1'-0" (ON 24" X 36" SHEET)

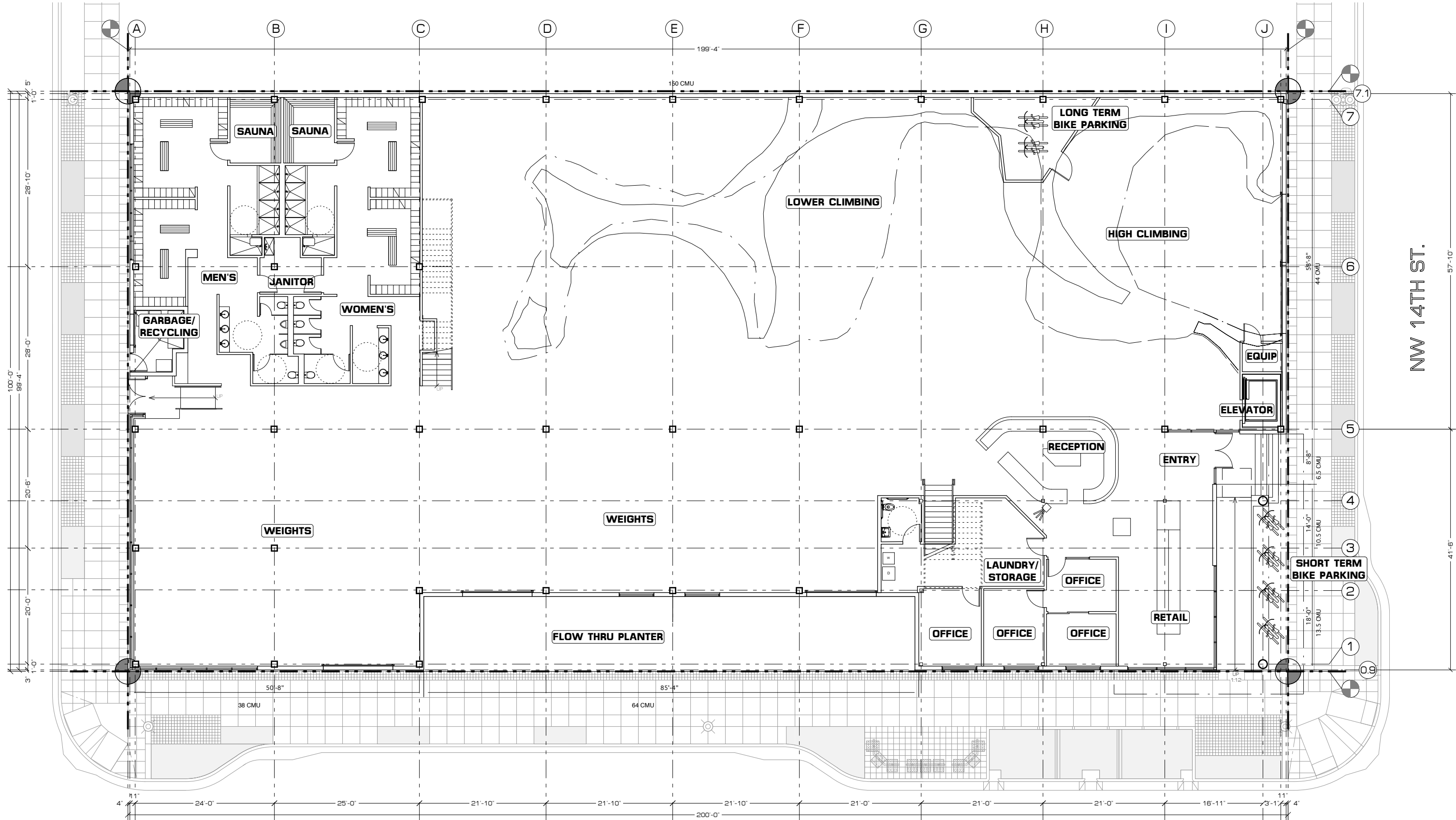
**FOSLER**  
*Portland*  
 architecture  
 1930 NW LOVEJOY STREET  
 PORTLAND, OREGON 97209  
 503.241.9339

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Sheet: **DR.7a**  
 Title: UTILITY PLAN

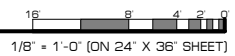
NW 15TH ST.



NW 14TH ST.

NW PETTYGROVE ST.

**1 GROUND LEVEL PLAN**



**BUILDING CODE ANALYSIS**

New Construction  
 Building Type: Type II-B  
 Building Height: 2 & 3 Floors - see elevations for varying heights (sheets DR.12 to DR.15). Min. building height: 36'-0"; Max. height: 60'-0"  
 Sprinklers: Yes  
 Alarm: Yes  
 Area of Work: Approx. 30,417 S.F. (20,000 S.F. building footprint)  
 Proposed Occupancy: A-2: rock climbing, yoga, gym

**ZONING CODE ANALYSIS**

Zoning: EXd  
 Use Category: Recreation Center  
 Car Parking: None Required Due to Transit Service Available  
 One Off-Street Loading Bay Required: Modification to 0 Requested thru Design Review  
 Bike Parking: Long Term Spaces Required: 1 per 12,000 sq ft = 3  
 Provided: 4 Spaces Inside  
 Short Term Spaces: Required: 1 per 5,000 sq ft = 7  
 Provided: 8 Spaces Under Cover at Front Entry

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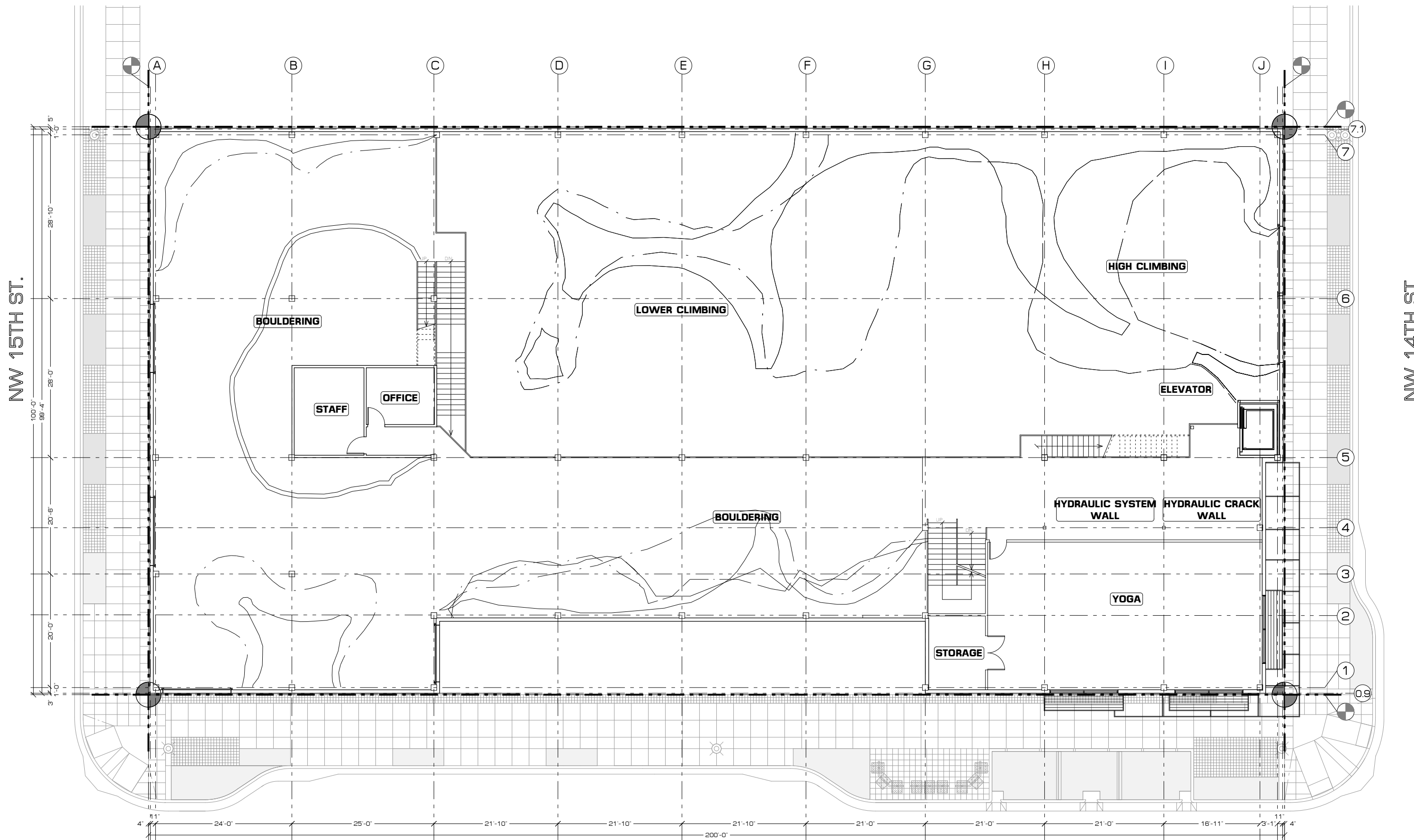
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**DR.8**

GROUND LEVEL PLAN



NW 15TH ST.

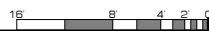
NW 14TH ST.

NW PETTYGROVE ST.



1

SECOND LEVEL PLAN

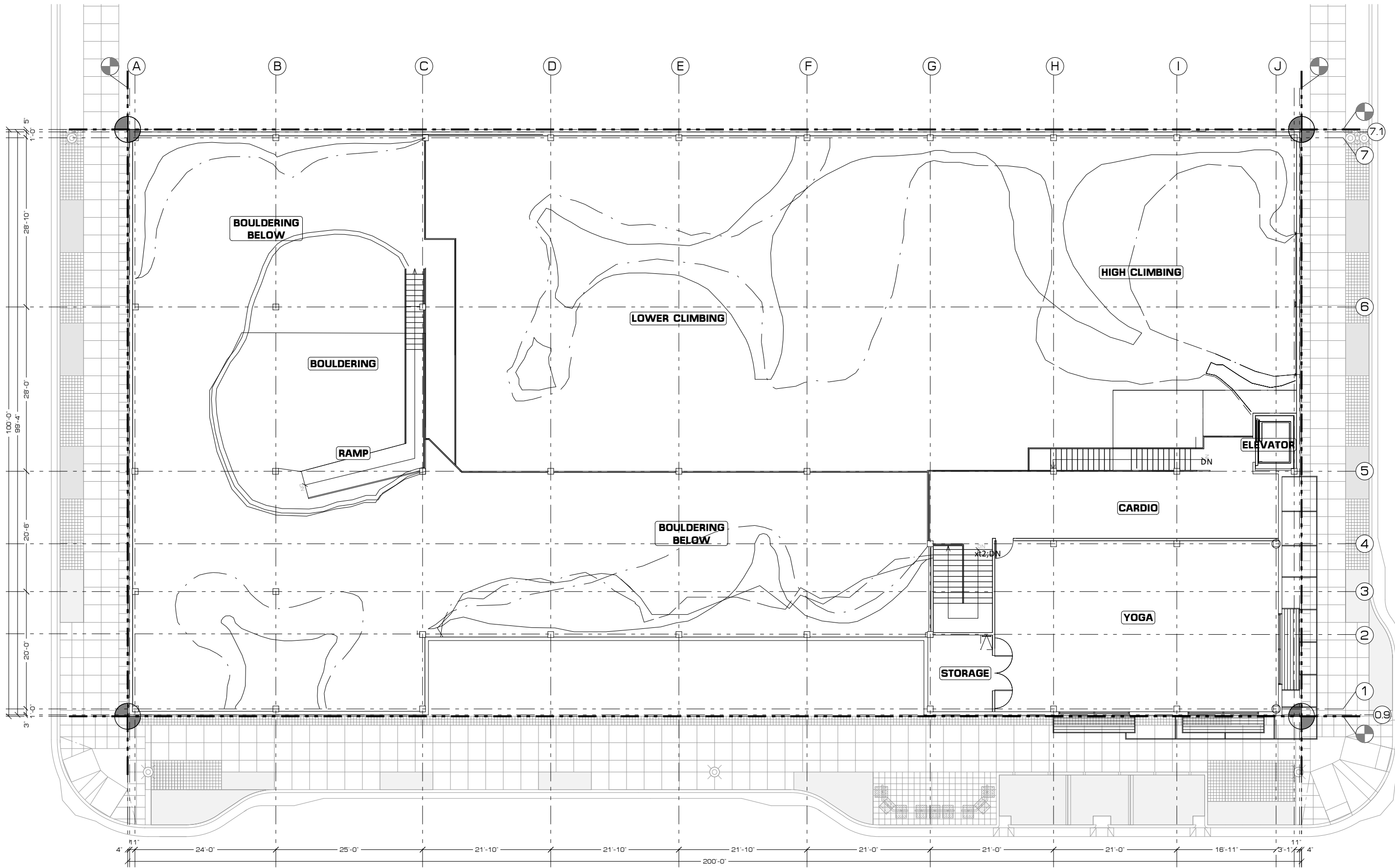


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Title	SECOND LEVEL PLAN		

NW 15TH ST.

NW 14TH ST.

NW PETTYGROVE ST.



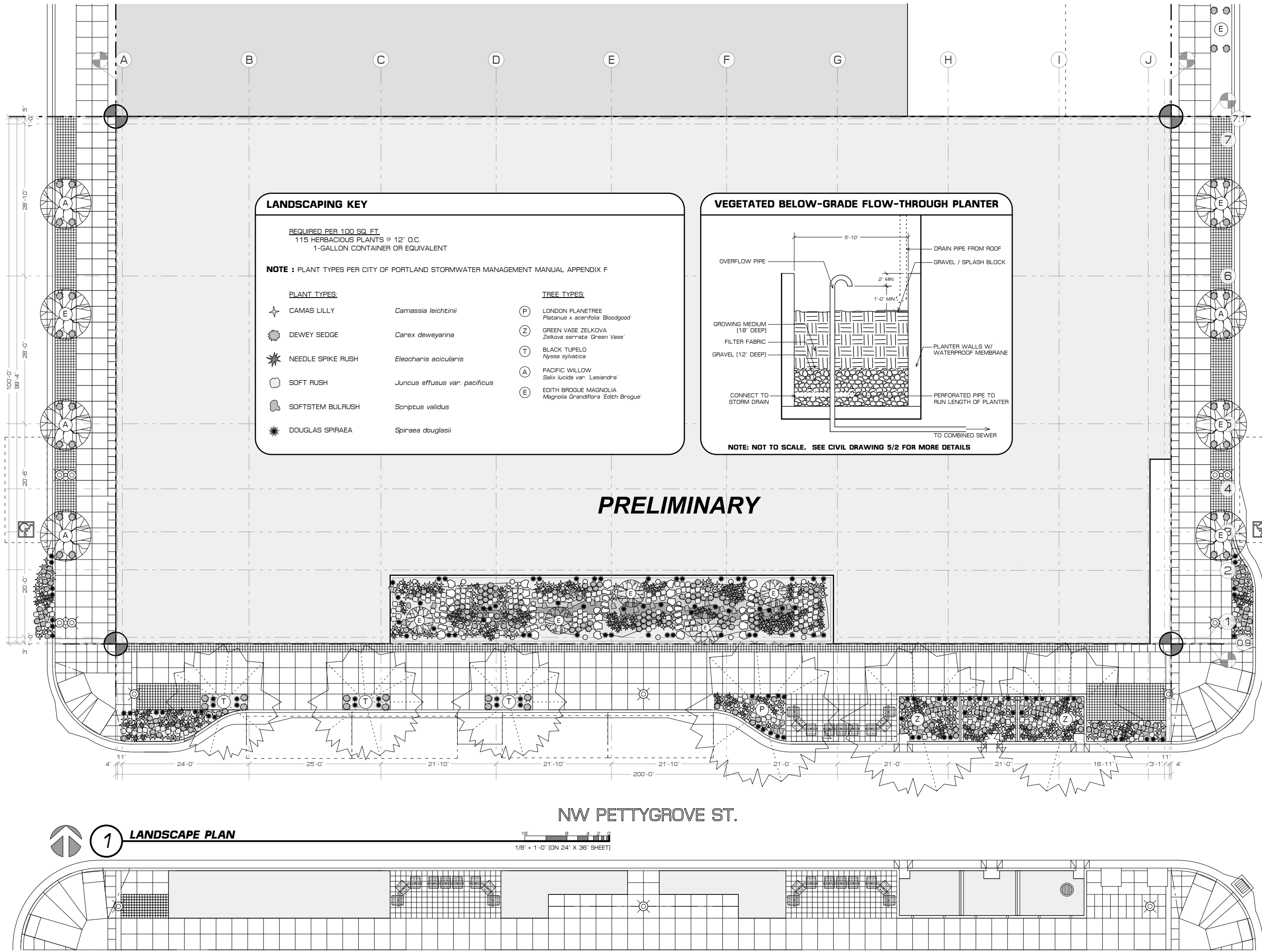
**1** THIRD LEVEL PLAN



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Title	THIRD LEVEL PLAN

NW 15TH ST.

NW 14TH ST.

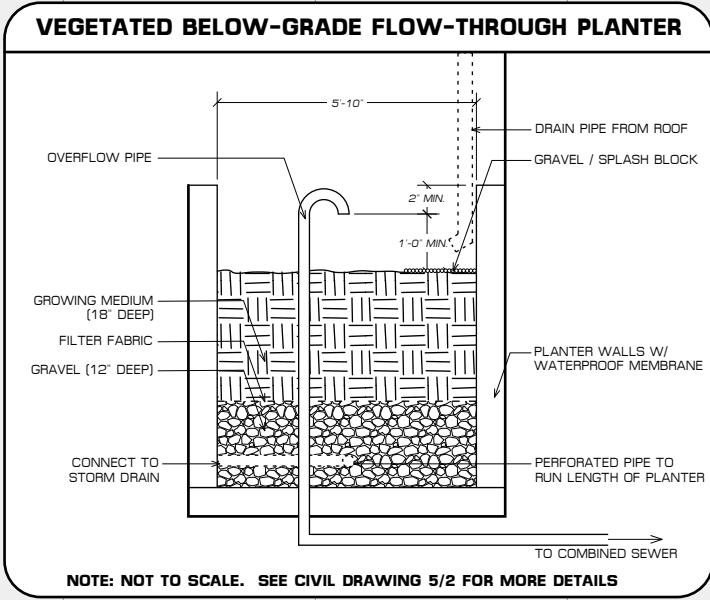


**LANDSCAPING KEY**

REQUIRED PER 100 SQ. FT.  
115 HERBACIOUS PLANTS @ 12" O.C.  
1-GALLON CONTAINER OR EQUIVALENT

**NOTE :** PLANT TYPES PER CITY OF PORTLAND STORMWATER MANAGEMENT MANUAL APPENDIX F

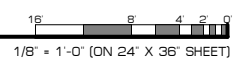
<b>PLANT TYPES:</b>		<b>TREE TYPES:</b>	
★ CAMAS LILLY	<i>Camassia leichtinii</i>	(P) LONDON PLANETREE	<i>Platanus x acerifolia 'Bloodgood'</i>
☼ DEWEY SEDGE	<i>Carex deweyana</i>	(Z) GREEN VASE ZELKOVA	<i>Zelkova serrata 'Green Vase'</i>
☼ NEEDLE SPIKE RUSH	<i>Eleocharis acicularis</i>	(T) BLACK TUPELO	<i>Nyssa sylvatica</i>
○ SOFT RUSH	<i>Juncus effusus var. pacificus</i>	(A) PACIFIC WILLOW	<i>Salix lucida var. 'Lasiandra'</i>
☼ SOFTSTEM BULRUSH	<i>Scirpus validus</i>	(E) EDITH BROGUE MAGNOLIA	<i>Magnolia Grandiflora 'Edith Brogue'</i>
☼ DOUGLAS SPIRAEA	<i>Spiraea douglasii</i>		



**PRELIMINARY**

NW PETTYGROVE ST.

**1 LANDSCAPE PLAN**



**FOSLER**  
*Portland*  
architecture

1900 NW LOVEJOY STREET  
PORTLAND, OREGON 97209  
503.241.9339

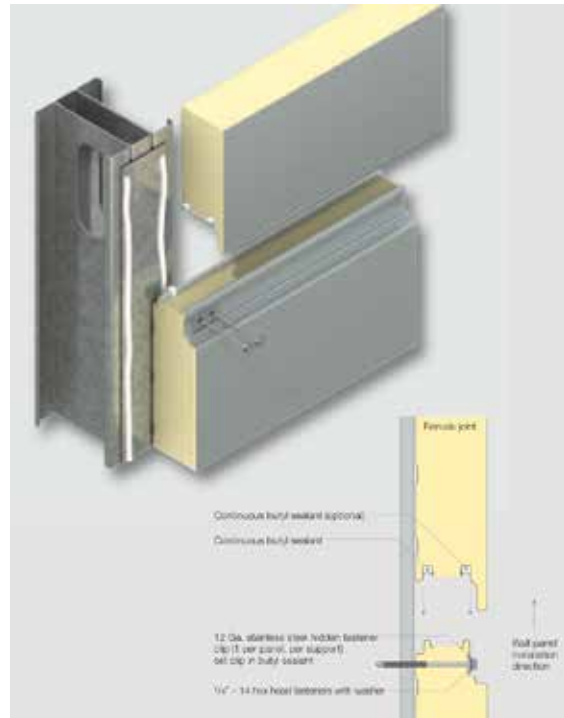
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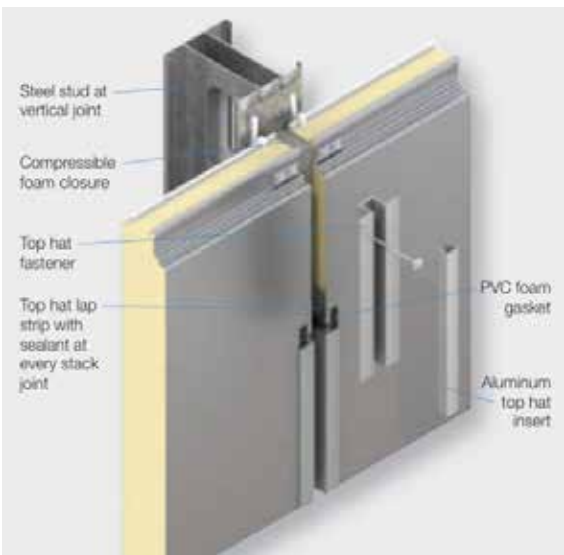
Title **LANDSCAPE PLAN**



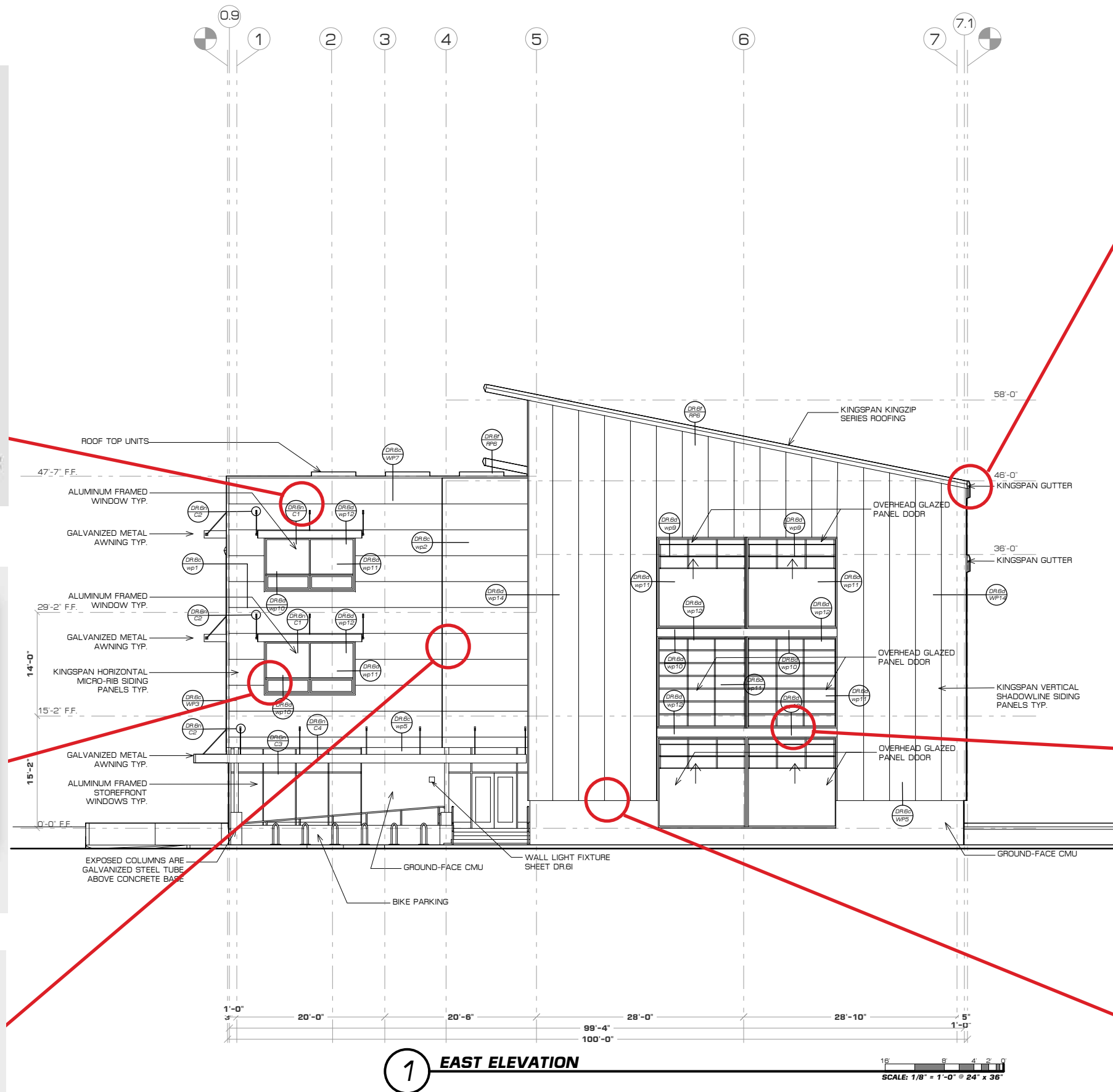
TYPICAL HORIZONTAL PANEL JOINT SHOWING CONCEALED FASTENERS



WINDOW ASSEMBLY DETAIL



EXTRUDED VERTICAL JOINT DETAIL

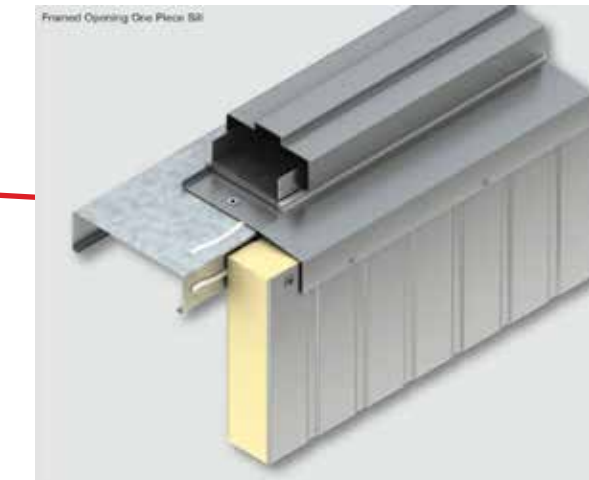


1 EAST ELEVATION

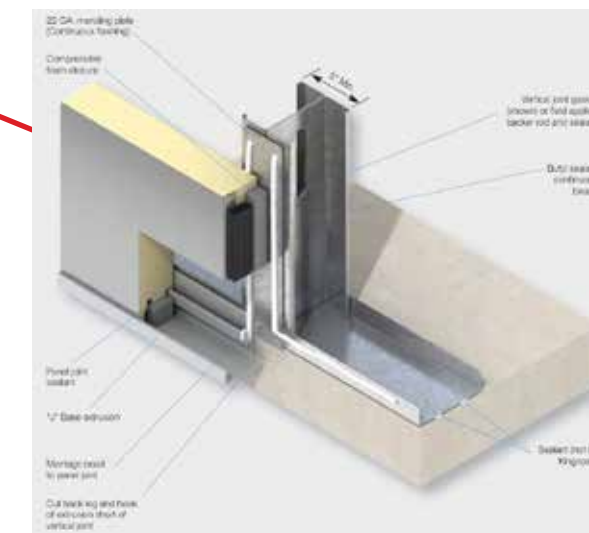


TYPICAL GUTTER DETAIL

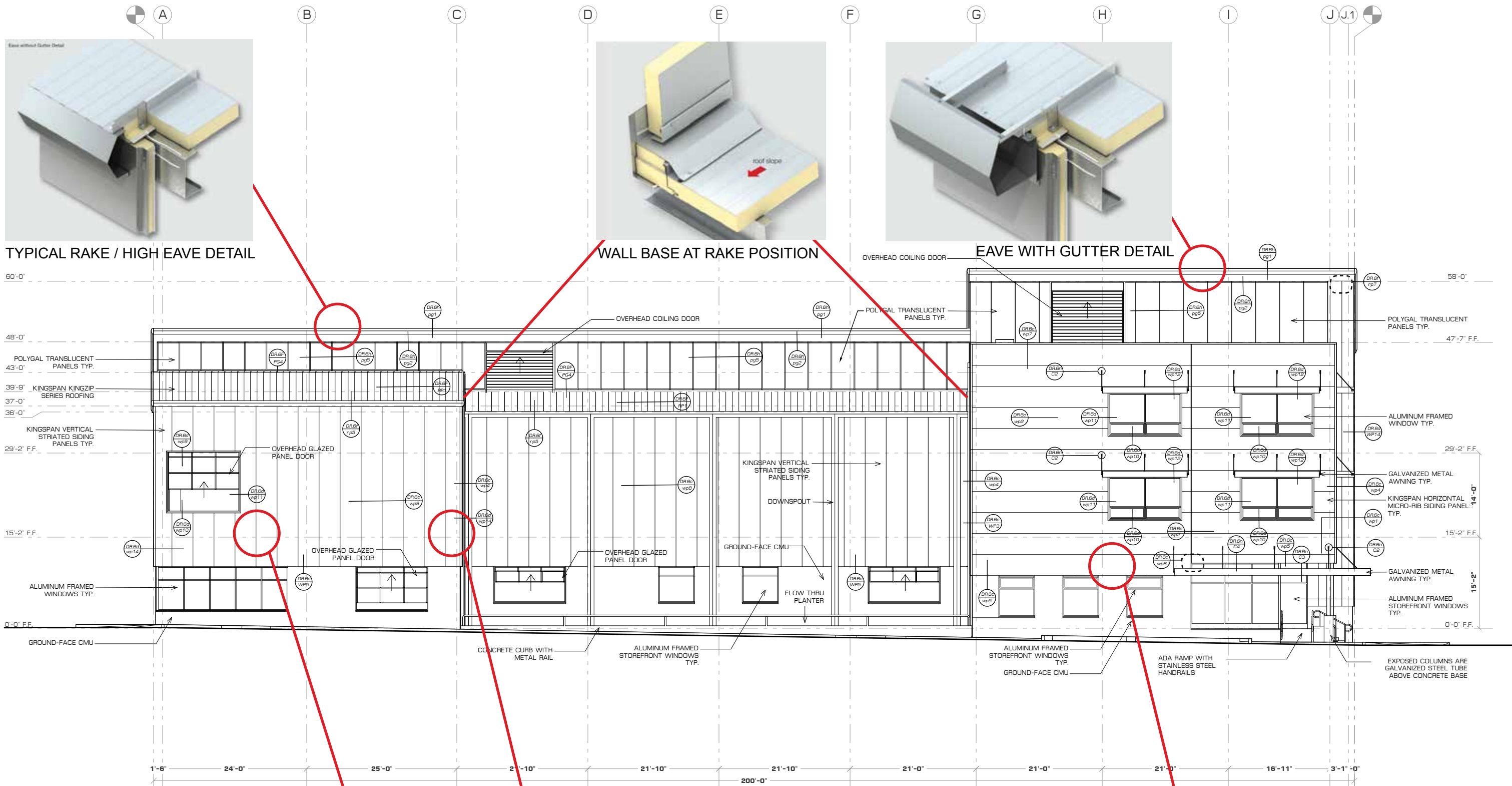
NOTE: ALL WALL AND ROOF PANELS HAVE CONCEALED FASTENERS. PANEL JOINTS ARE SHOWN; JOINTS AND EMBOSSED METAL PANEL FACE PATTERNS FORM ALL PATTERN ON WALLS AND ROOF. BOTTOM EDGE OF WALL PANELS AT CMU HAS EXTRUDED TRIM PIECE WITH CONCEALED FASTENERS.



TYPICAL SILL DETAIL

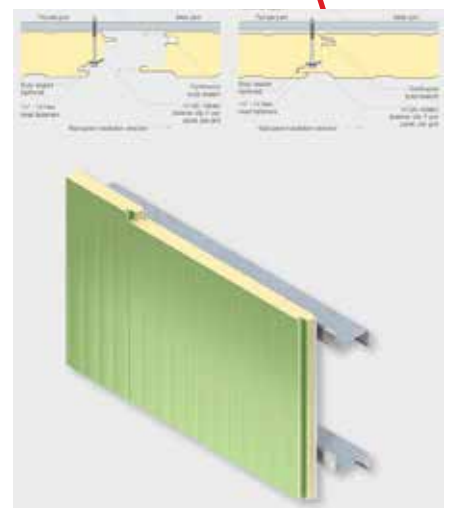


EXTRUDED BASE TRIM DETAIL

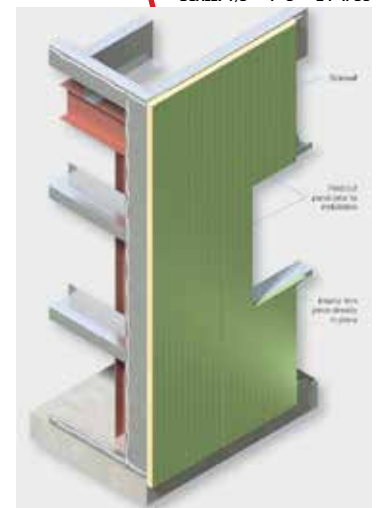


**1 SOUTH ELEVATION**

SCALE: 1/8" = 1'-0" @ 24" x 36"

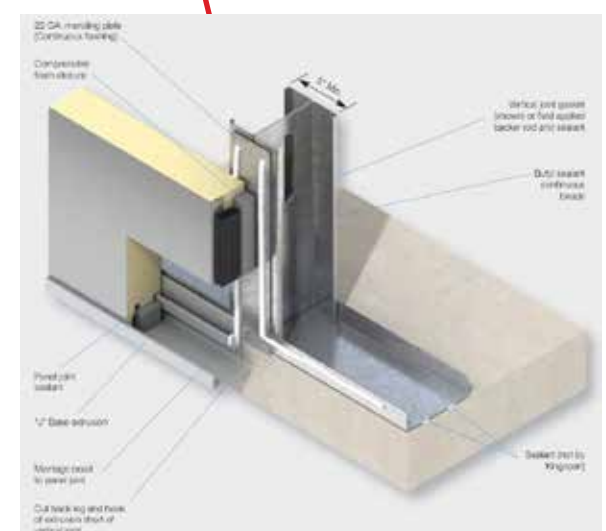


VERTICAL WALL PANEL JOINT



TYPICAL WALL ASSEMBLY

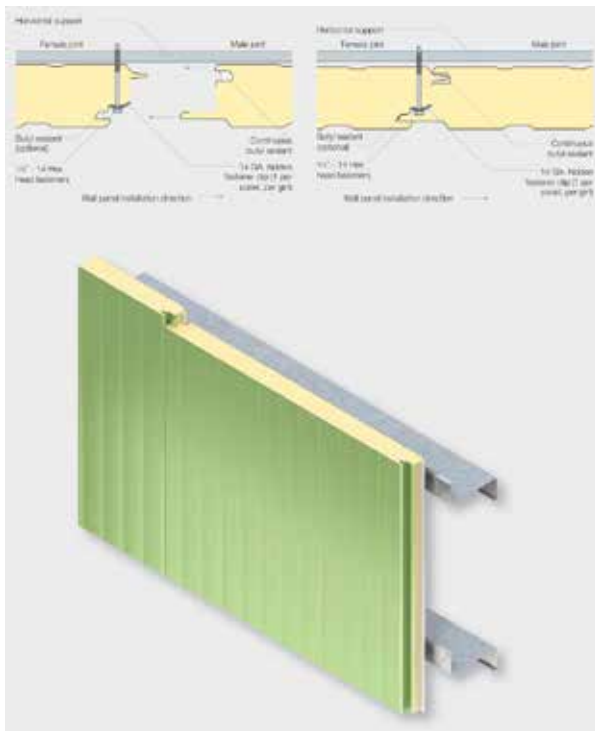
NOTE: ALL WALL AND ROOF PANELS HAVE CONCEALED FASTENERS. PANEL JOINTS ARE SHOWN; JOINTS AND EMBOSSED METAL PANEL FACE PATTERNS FORM ALL PATTERN ON WALLS AND ROOF. BOTTOM EDGE OF WALL PANELS AT CMU HAS EXTRUDED TRIM PIECE WITH CONCEALED FASTENERS.



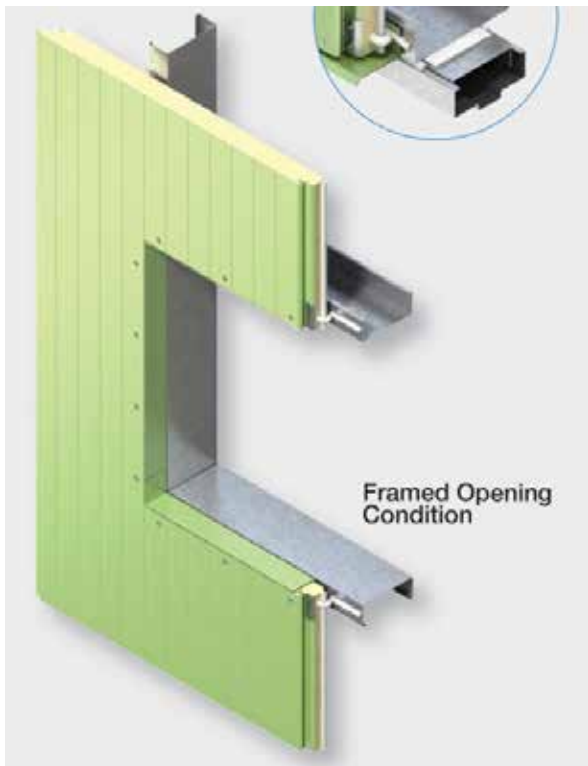
EXTRUDED BASE TRIM DETAIL

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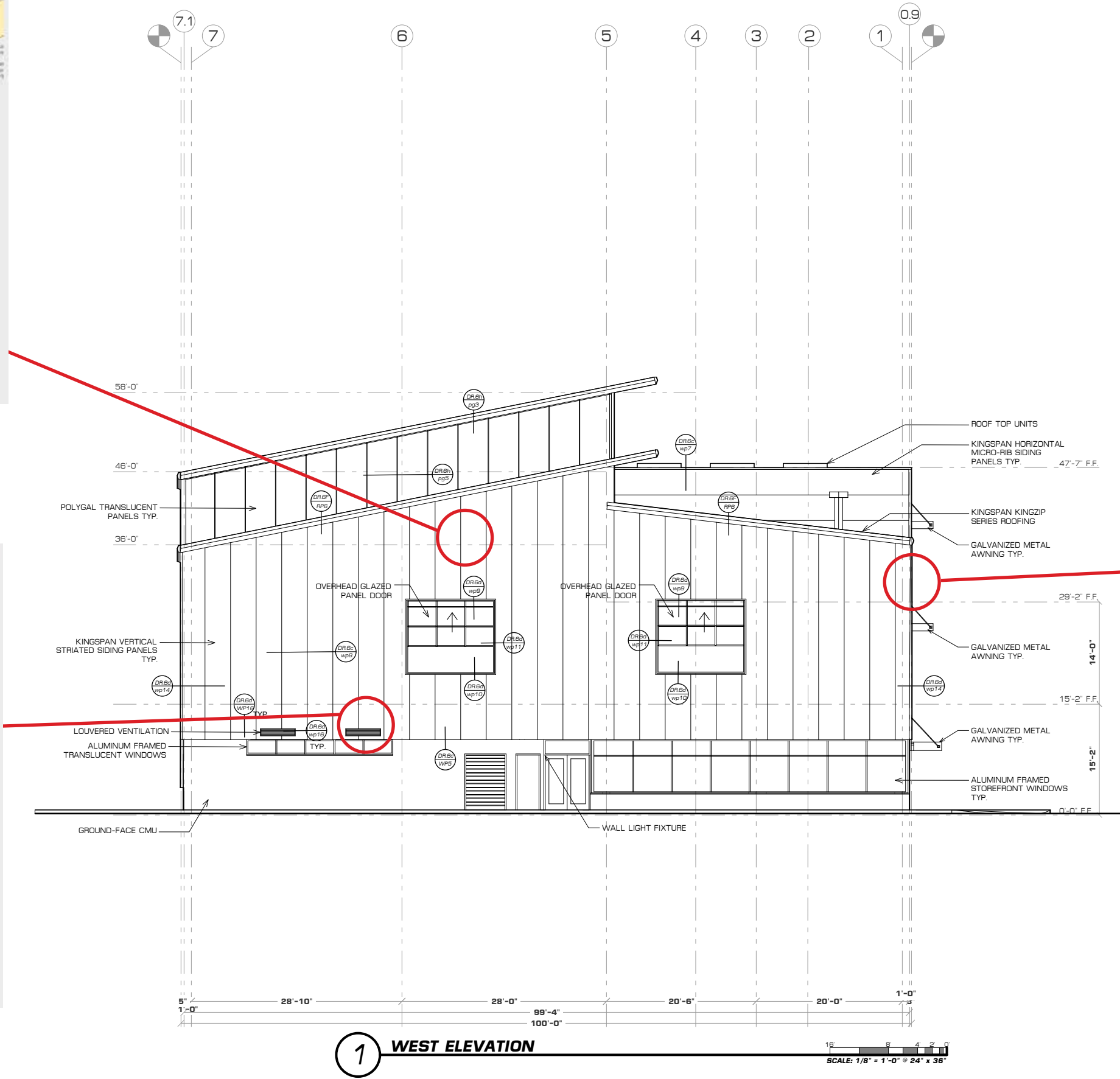




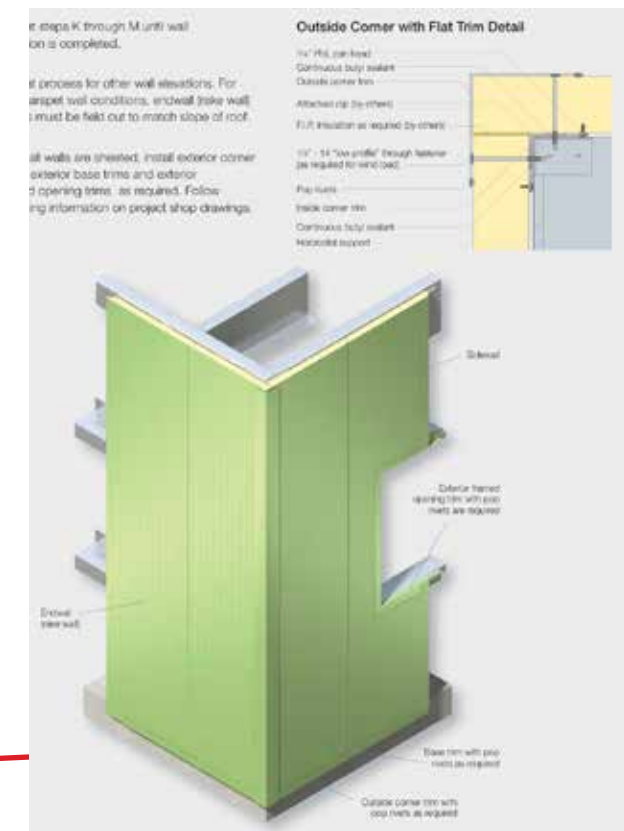
VERTICAL JOINT PANEL SHOWING CONCEALED FASTENERS



FRAMED OPENING DETAIL AT LOUVERS

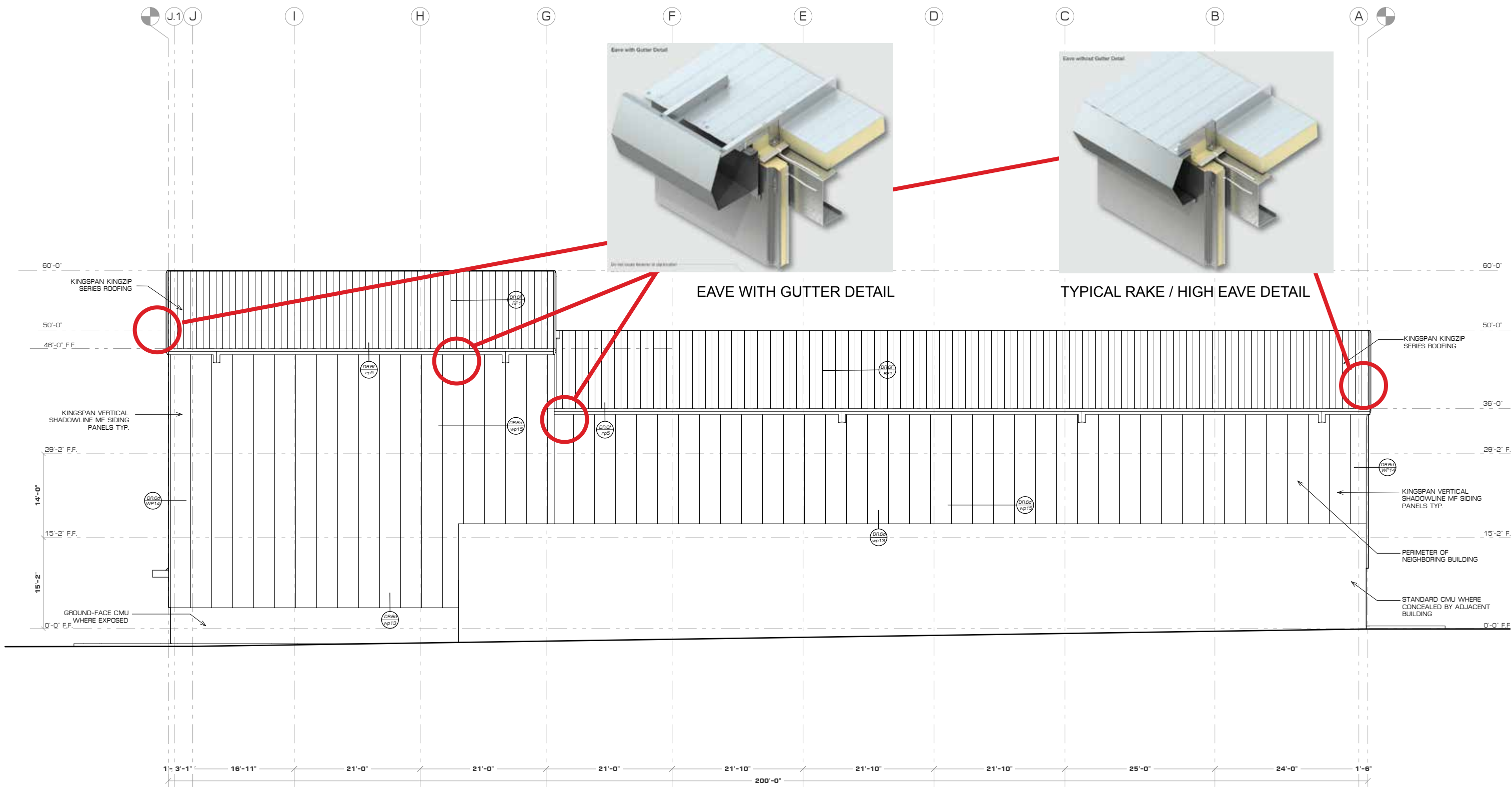


1 WEST ELEVATION



NOTE: ALL WALL AND ROOF PANELS HAVE CONCEALED FASTENERS. PANEL JOINTS ARE SHOWN; JOINTS AND EMBOSSED METAL PANEL FACE PATTERNS FORM ALL PATTERN ON WALLS AND ROOF. BOTTOM EDGE OF WALL PANELS AT CMU HAS EXTRUDED TRIM PIECE WITH CONCEALED FASTENERS.

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Title	KEYED ELEVATIONS

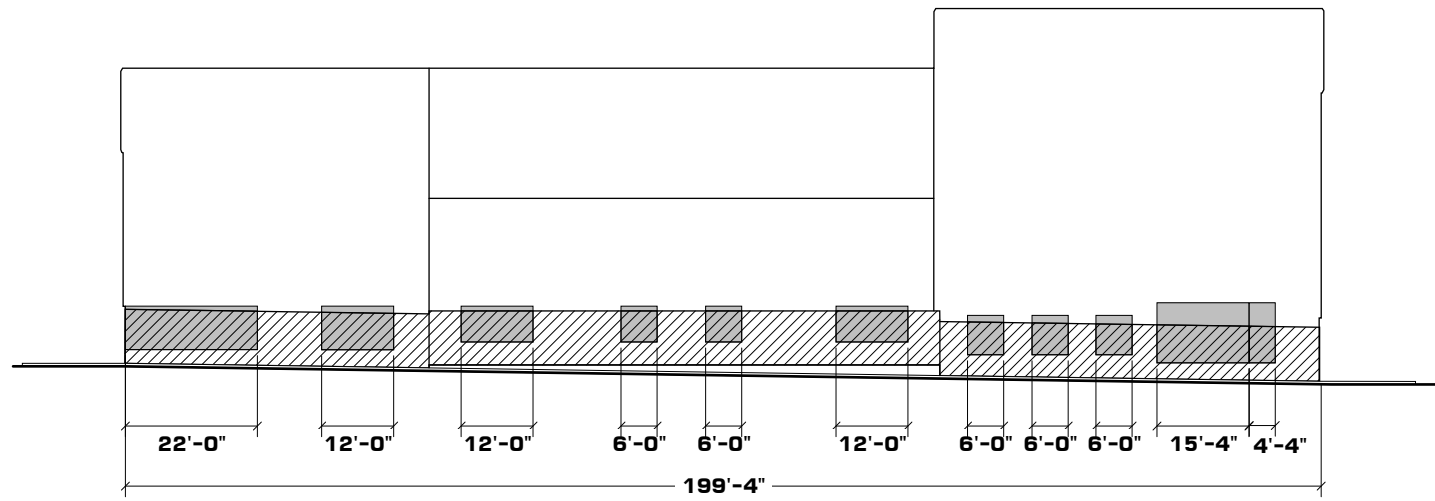


**1 NORTH ELEVATION**

SCALE: 1/8" = 1'-0" @ 24" x 36"




NOTE: ALL WALL AND ROOF PANELS HAVE CONCEALED FASTENERS. PANEL JOINTS ARE SHOWN; JOINTS AND EMBOSSED METAL PANEL FACE PATTERNS FORM ALL PATTERN ON WALLS AND ROOF.

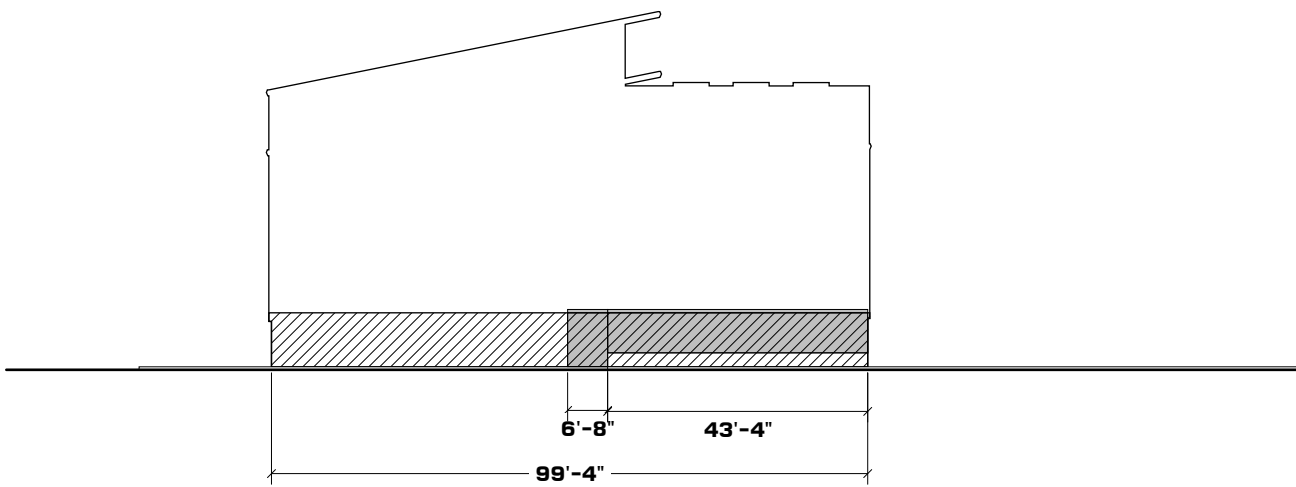
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1 SOUTH ELEVATION




SCALE: 1/16" = 1'-0" @ 24" x 36"

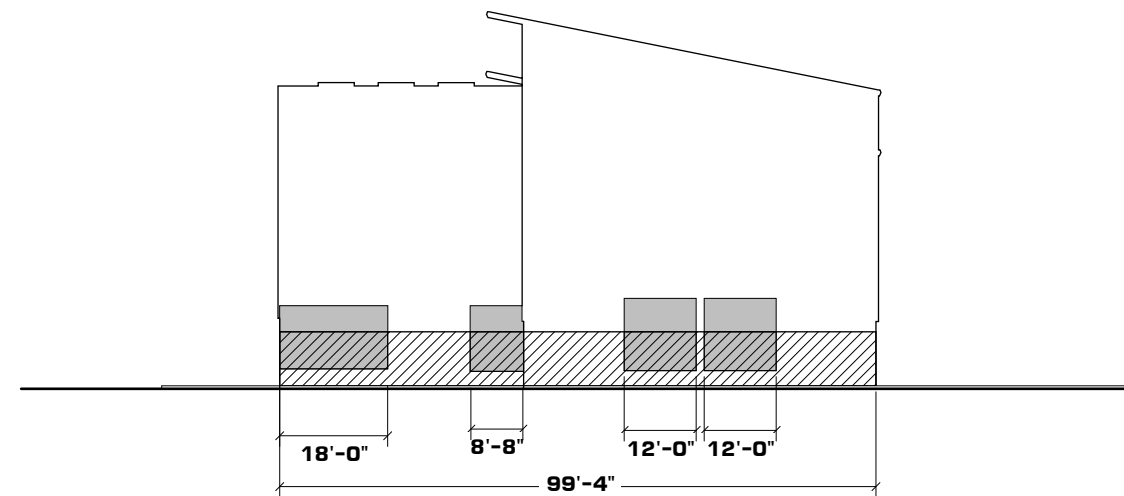
GLAZING FRONTAGE CALCULATIONS		LINEAR = 107.75' / 199.3' = 54.1%	AREA = 622 sf / 1792 sf = 34.7%
	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	
	AREA OF FACADE ALONG STREET FRONT UP TO 9'	1792 sf	
	QUALIFIED STREET FRONT GLAZING ALONG STREET FRONT BELOW 9'	622 sf	



2 WEST ELEVATION




SCALE: 1/16" = 1'-0" @ 24" x 36"

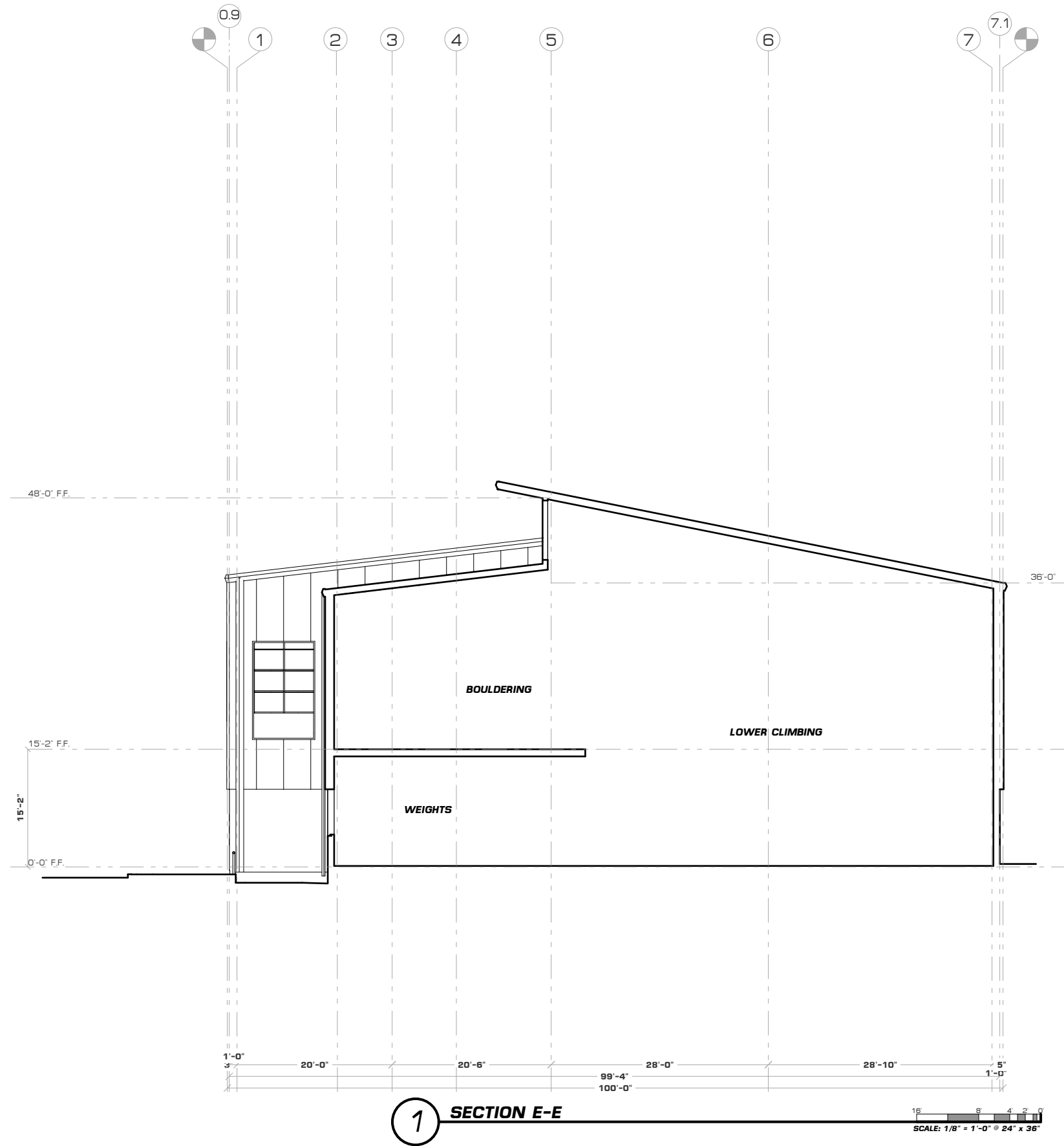
GLAZING FRONTAGE CALCULATIONS		LINEAR = 50.0 / 99.33 lf = 50.3%	AREA = 349 sf / 895 sf = 39%
	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	
	AREA OF FACADE ALONG STREET FRONT UP TO 9'	895 sf	
	QUALIFIED STREET FRONT GLAZING ALONG STREET FRONT BELOW 9'	349 sf	

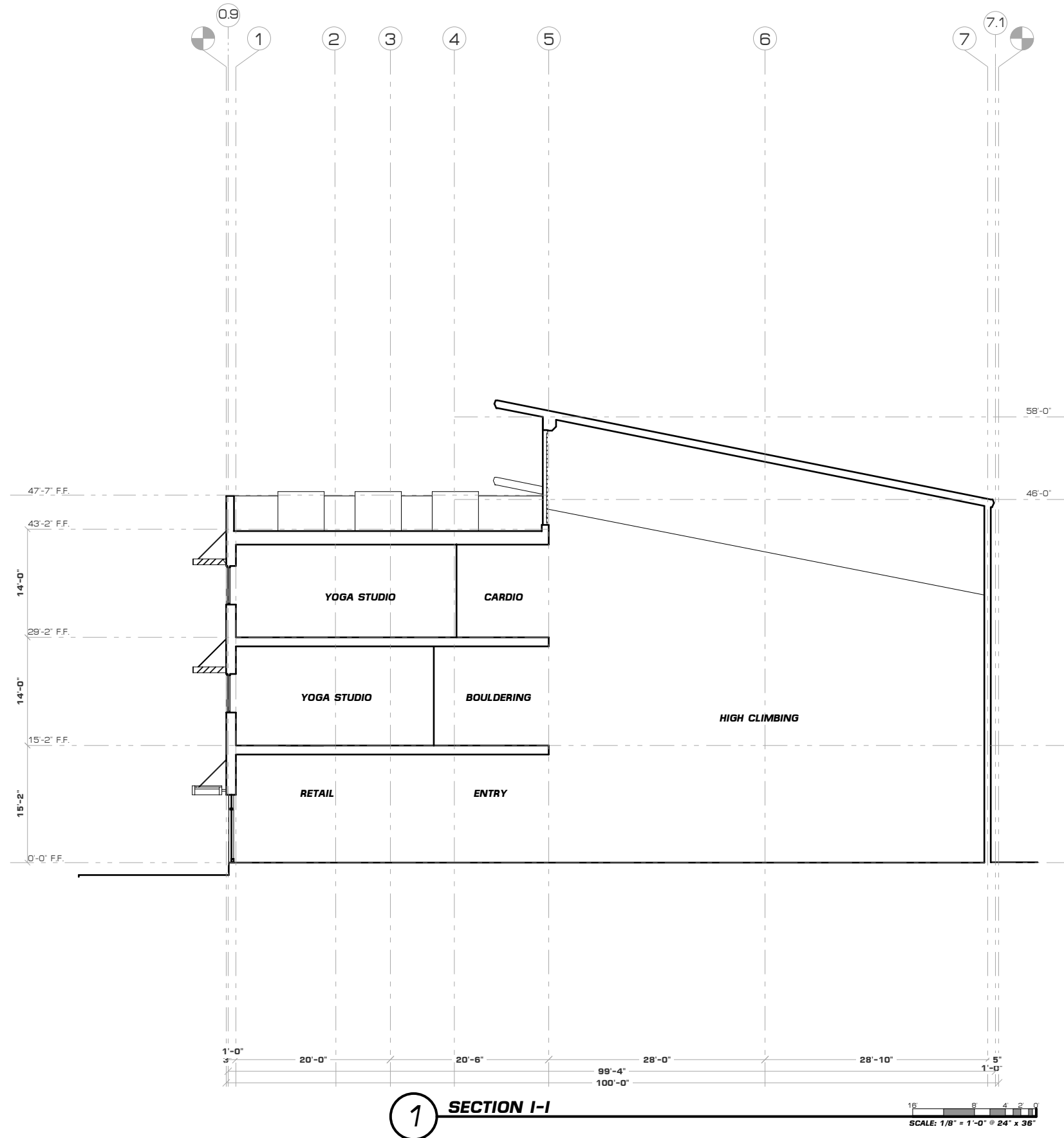


3 EAST ELEVATION

SCALE: 1/16" = 1'-0" @ 24" x 36"

GLAZING FRONTAGE CALCULATIONS		LINEAR = 50.6' / 100.0' = 50.6%	AREA = 325 sf / 894 sf = 36%
	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	OPENINGS W/ SILLS @ 48" OR LESS ABV GRADE	
	AREA OF FACADE ALONG STREET FRONT UP TO 9'	894 sf	
	QUALIFIED STREET FRONT GLAZING ALONG STREET FRONT BELOW 9'	325 sf	





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