

GENERAL NOTES:

1.

This Bison Wood Paver FS12-HW System is an Independent Exterior Elevated Flooring System structurally designed and tested in accordance with the 7th Edition (2020) Florida Building Code - Building (FBC) non-HVHZ regions, and the International Building Code - Building, 2018 Edition (IBC).

2.

This Product Evaluation Document (PED) is prepared by the Product Engineer and is generic. It does not include information prepared for a specific site.

3.

The Bison Wood Paver FS12-HW System is designed and tested to resist the following Design Loads used in Strength Design Load Combinations in accordance with Section 1605.2 of the FBC and IBC:

A. System Dead Load

6 psf ± 1 psf

B. Superimposed Dead Load

10 psf

Additional dead load features require additional pedestal supports and are outside the scope of these PEDs.

C. Live Load

100 psf

D. Positive Wind Load

60 psf

E. Negative Wind Load

- Reference Table 1 and General Note 4.

4.

The Bison Wood Paver FS12-HW System is designed to resist uplift in accordance with the referenced codes where the Basic Wind Speed 'V' and the applicable height 'h' are within the limits shown in Table 1 provided the building meets the limitations of ASCE 7-16 as defined in Figures 30.3-5A and 30.5-1. For non-conforming buildings, the Design Professional of Record shall evaluate the uplift resistance considering the site-specific conditions of the project.

5.

The maximum Basic Wind Speed 'V' for a given height 'h' is determined based on FIU's International Hurricane Research Center Test Report Numbers 2017-105E:IPE:11, 2015-45:4.1, and 2015-058:2 and Design Guidelines for Roof Pavers Against Wind Uplift, ASCE/SEI Structures Congress, April 2015. This testing and research address the pressure equalization below the roof tiles and provides data and design criteria that address roof paver uplift in compliance with FBC Section 104.11, FBC Section 3115.4.4, IBC Section 104.11, and ASCE 7-16 Section 30.1.5 & Chapter 31.

6.

This Bison Wood Paver FS12-HW System is suitable for use only with the direct involvement of the Design Professional of Record for a specific site, a Licensed Professional Engineer or Registered Architect. The Design Professional of Record shall review these document to verify the following:

A. The design criteria as indicated herein are applicable to the site-specific conditions.

B. The maximum Basic Wind Speed 'V' and applicable height 'h' for a specific project are within the limits of use defined herein.

C. The maximum Basic Wind Speed 'V' and applicable height 'h' values are based upon wind tunnel testing simulating the conditions outlined in ASCE 7-16 Figure 30.3-5A and 30.5-1. For non-conforming buildings or buildings utilizing wind tunnel testing to determine uplift loads, the Design Professional of Record shall evaluate the uplift resistance considering the site specific conditions of the project or consult with the project's wind consultant.

D. The 'V' and 'h' limits provided in Table 1 are based upon the following:

a. Basic Wind Speed is determined based on Risk Category and local requirements.

b. Exposure Category "B", "C", or "D" is determined based on location and local requirements.

c. Roof deck surfaces are consistent with monoslope roofs < 3°.

d. Building is an enclosed building. The system is not rated for open buildings or partially enclosed buildings.

e. Site conditions and location of host building are representative of a Topographic Factor, Kzt = 1.0.

E. The ledger connections, parapet, and existing structure are designed to resist the superimposed loads shown herein.

F. This PED addresses the structural performance of the system. Architectural, fire classification, and MEP issues are the responsibility of the Design Professional of Record.

G. The roofing system has the capacity to support the Dead and Live loads and is compatible with the Independent Exterior Elevated Flooring System as shown herein.

7.

The Bison Wood Paver FS12-HW System is not intended to be part of a Ballasted Roofing System and does not shield the underlying roofing system from wind loads. The underlying roofing system shall be capable of resisting the full design wind loads as appropriate for a specific project.

8.

This PED shall bear the original signature, date and seal of the Professional Engineer that prepared them.

9.

This PED is invalid if altered by any means.

10.

This PED is the installation instructions portion of a product evaluation and shall only be used with the corresponding Product Evaluation Report.

BISON WOOD PAVER FS12-HW SYSTEM NOTES:

1.

Wood pavers shall be 1-11/16 thick ± 1/16" at the perimeter with a minimum weight of 5 psf.

2.

Wood pavers shall be constructed using wood with a specific Gravity ranging from 0.90 to 1.1 with a minimum ASD bending strength, Fb = 1,600 psi or a modulus of rupture of 20,000 psi when tested in accordance with ASTM D198. Wood pavers shall be constructed in accordance with the details shown herein.

3.

All pavers shall have a continuous perimeter kerf cut to accommodate the required spline. Kerf cuts in wood pavers shall be a maximum of 0.16" high and 0.78" wide, unless noted otherwise.

4.

Typical paver size shall be a minimum of 12" x 12" and a maximum of 24" x 72". Rectangular and irregular shaped pavers within these sizes are acceptable. At perimeter rows or atypical locations such as diagonal or curved perimeters, a minimum paver dimension of 8" shall be maintained and the paver shall be engaged by a perimeter ledger support with splines engaging the appropriate edge or edges. Additional pedestals shall be used at all edge discontinuities and the FS12 spline shall be fastened to each pedestals.

5.

Pavers may be placed in stack bond, running bond, or parquet (basket weave) pattern.

6.

A solid parapet or curb with a minimum height of 12 inches above the finished pavers is required at the perimeter of paver installations. A flush curb is acceptable at entrances to enclosed spaces and interior deck finish transitions.

7.

All pavers shall be continuously supported at the perimeter of the installation and all discontinuous interior edges with the ledger support details shown herein.

8.

Pavers shall be installed with a 3/16" gap between pavers and a maximum gap of 3/16" between edge paver and perimeter constraint. Spacers shall be used to control the gap.

9.

Paver shall be installed with a cavity height between the bottom of pavers and the top of the underlying roof surface of no less than 1/2" and no more than 18".

10.

Pedestal support system shall be either the Screwjack or Versadjust pedestal assemblies shown herein with a minimum weight of 0.4 psf.

11.

Pedestal shall be placed at a maximum spacing of 24" o.c. each way and at all paver intersections with additional pedestals installed as required to support atypical conditions. Reference Bison installation instructions.

12.

Pedestals and FS12 spline shall be fabricated from Bison's B-PP-2025 polypropylene copolymer with a minimum tensile strength at yield in accordance with ASTM D638 of 3,200 psi loaded at 0.2"/min and a minimum flexural modulus in accordance with ASTM D790 of 275 ksi. B-PP-2025 subjected to 4500 hours of accelerated weathering in accordance with ASTM G155 exhibits less than a 10% change in yield strength.

13.

All paver joint intersections shall utilize the FS12 spline and screw detail shown herein to connect adjacent pavers and fasten to the pedestals. For atypical conditions, reference Paver Layout Diagram shown herein.

14.

Screws used for connecting the FS12 spline to the pedestals shall be Bison FS-Trim Screws. Full screw diameter shall penetrate the pedestal a minimum of 1/8".

15.

Installation of the paver system shall comply with Bison's installation instructions and this PED.

F1 BISON WOOD PAVER FS12-HW SYSTEM ISOMETRIC
N.T.S.

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Bison Wood Paver FS12-HW System

Client / Manufacturer:

Bison Innovative Products

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Bldg 2 #120

Denver, CO 80204

T: 800-333-4234

Revisions

No.	Date	By	Description

Scale: AS NOTED

Drawn by: JWK

Date: 10/15/2020

J.W. Knezevich

Professional Engineer

FL License No. PE 41961

This item has been digitally signed and sealed by John W. Knezevich, PE on the date adjacent to the seal.

Digitally signed by John W. Knezevich, PE

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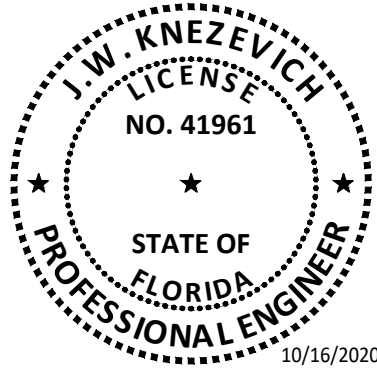
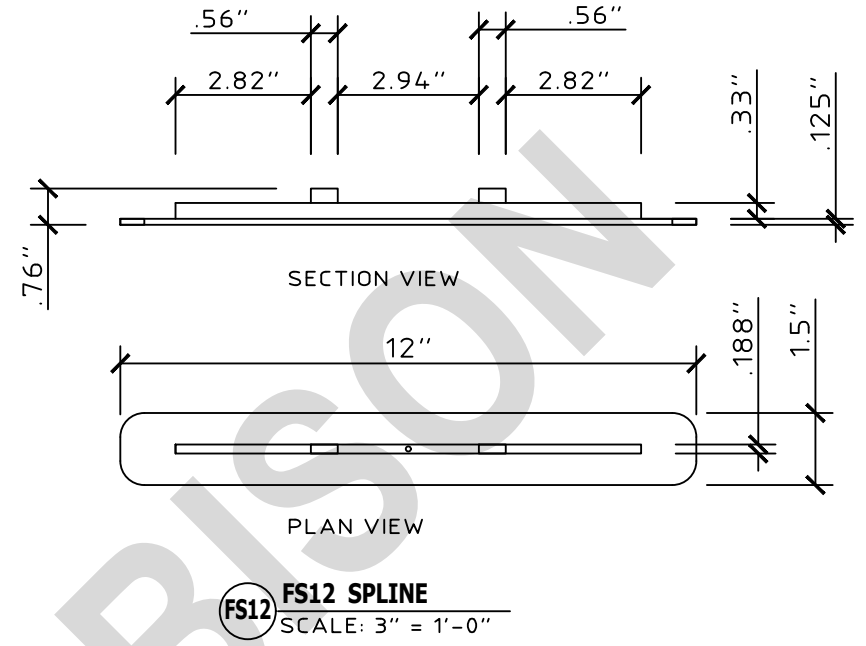
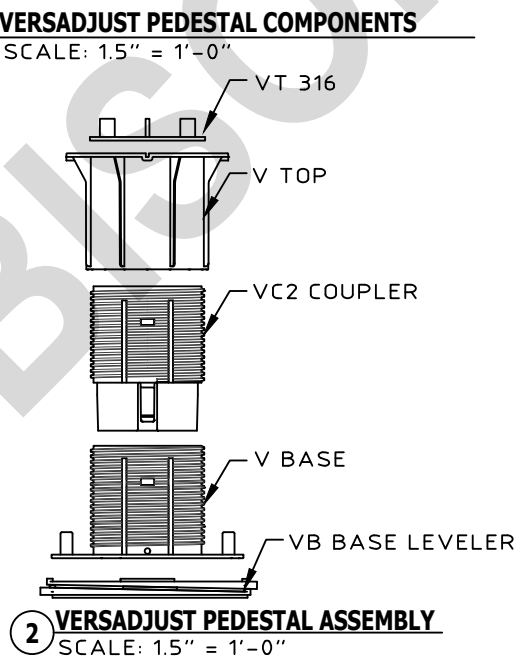
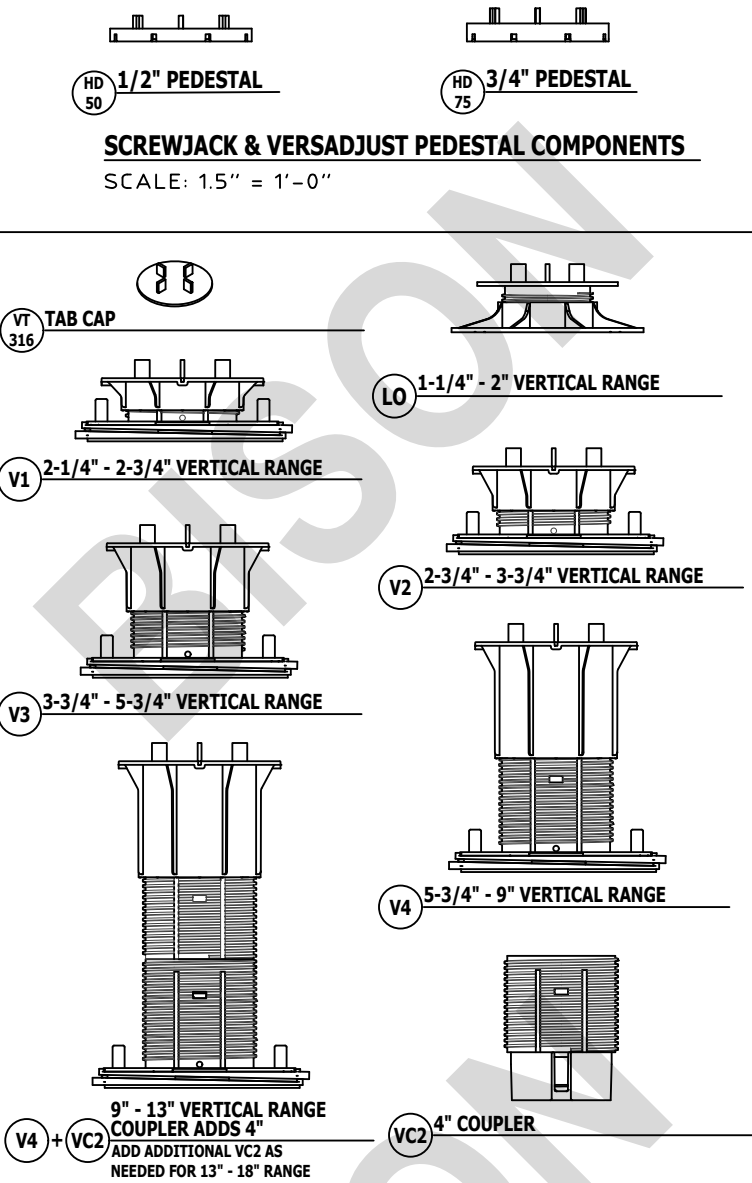
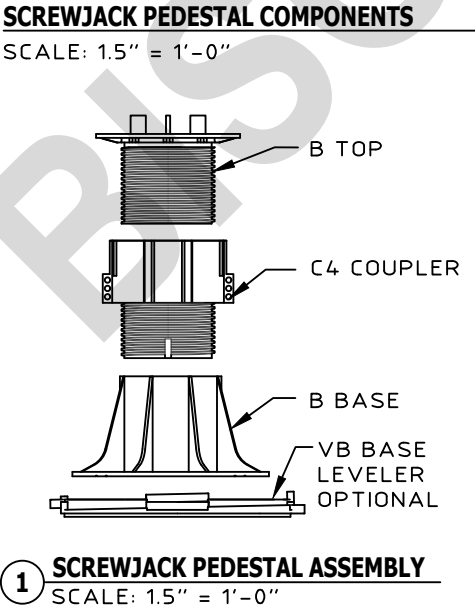
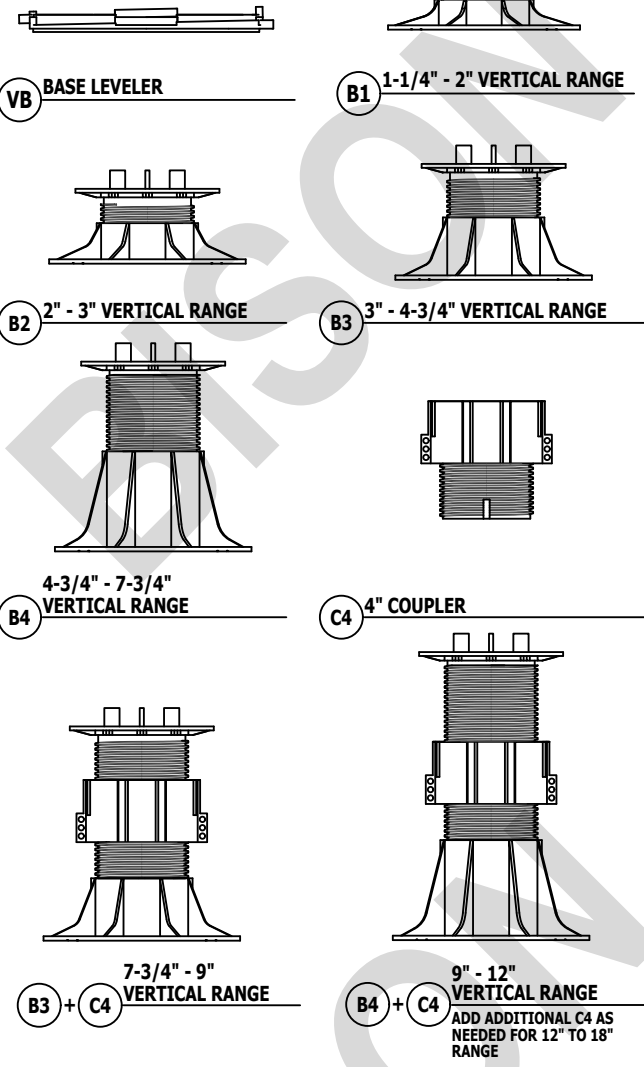
Drawing No.

KC20-0528

10/16/2020

sheet 1 of 5

ALLOWABLE PEDESTAL MODELS FOR USE WITH THIS SYSTEM



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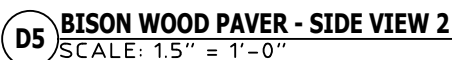
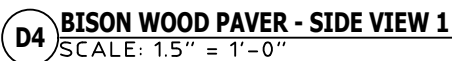
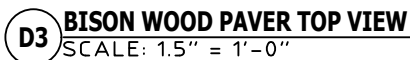
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Drawing No. **KC20-0528**

10/16/2020 sheet 2 of 5



The image contains two technical drawings illustrating the assembly of Bison Wood Pavers. The left drawing shows the 'SMOOTH PROFILE OPTION' and the right drawing shows the 'RIBBED PROFILE OPTION'. Both drawings include dimensions and labels for various components and tolerances.

Left Drawing: BISON WOOD PAVER SMOOTH PROFILE OPTION

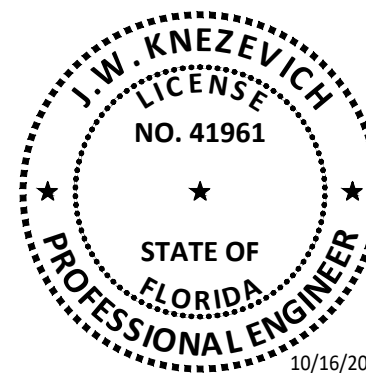
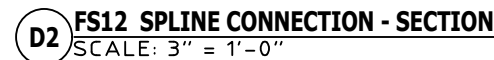
- Top Member:** Labeled "BISON WOOD PAVER TOP MEMBER MAY BE SMOOTH OR RIBBED." with a thickness dimension of $.69''$.
- Bottom Member:** Labeled "BOTTOM MEMBER MIN 2.75\" X .75\"".
- Kerf:** Labeled ".75\" TO .875\" KERF, CUT FROM BOTTOM MEMBER OR PROVIDE SHIM OF SAME MATERIAL." with a height dimension of $.75''$ MIN.
- Assembly Height:** Indicated as $.16''$ MAX.

Right Drawing: BISON WOOD PAVER RIBBED PROFILE OPTION

- Top Member:** Labeled "BISON WOOD PAVER RIBBED PROFILE OPTION". Dimensions for the top member are $2.82''$ FOR 8 SLATS PAVERS and $3.85''$ FOR 6 SLATS PAVERS.
- Seal:** Labeled "SEAL ENDS WITH SEALER" pointing to the end of the top member.
- Radius:** A fillet radius of $R.12''$ is indicated at the bottom corner of the top member.
- Kerf:** Labeled "KERF" pointing to the joint between the top and bottom members.
- Bottom Member:** Labeled "BOTTOM MEMBER BEYOND" pointing to the lower portion of the assembly.
- Assembly Height:** Indicated as $.16''$ MAX.

D6 BISON WOOD PAVER - EDGE 1
SCALE: 6" = 1'-0"

D7 BISON WOOD PAVER - EDGE 2
SCALE: 6" = 1'-0"



Bison Wood Paver FS12-HW System

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Drawn by: JWK

Date: 10/15/2020

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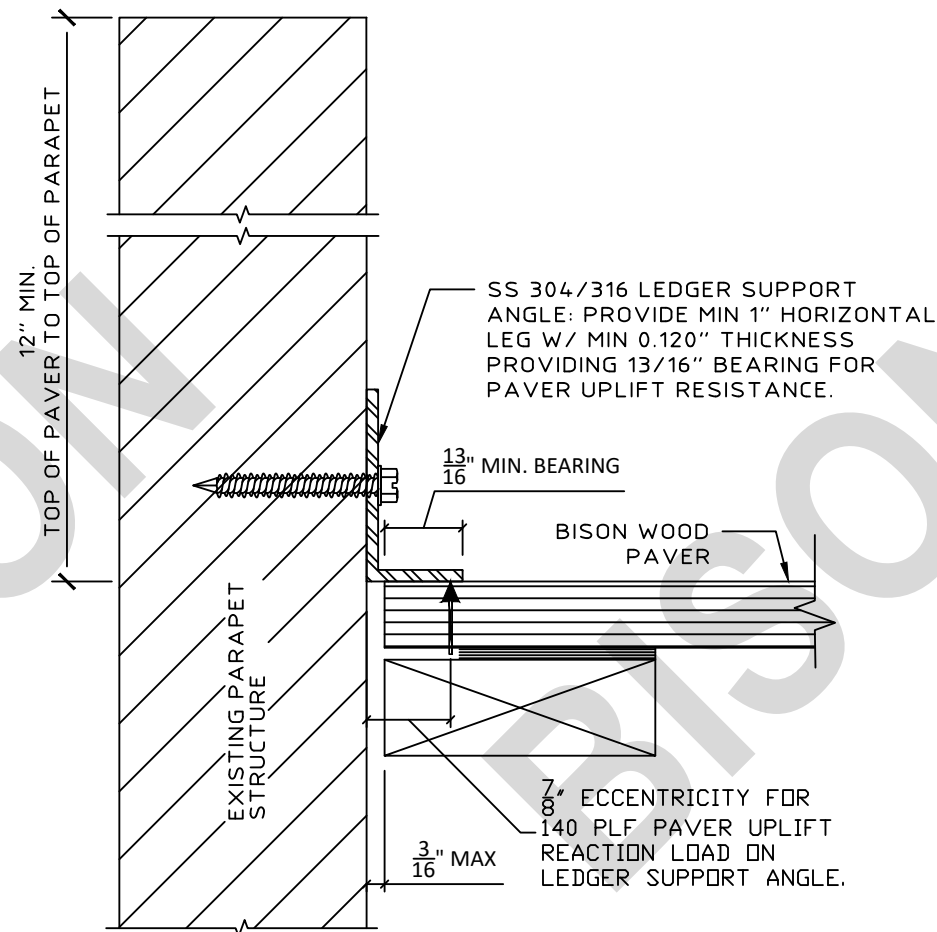
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KC20-0528
sheet 3 of 5

Bison Wood Pavers FS12-HW			
Basic Wind Speed 'V' (mph)	Maximum Height 'h' (feet)		
	Exp B	Exp C	Exp D
≤ 135	Note 2	Note 2	500
≤ 138	Note 2	500	416
≤ 140	Note 2	453	353
≤ 144	500	346	255
≤ 145	480	324	235
≤ 150	379	235	159
≤ 155	301	172	109
≤ 160	241	127	76
≤ 165	194	95	53
≤ 170	157	71	37
≤ 175	128	54	27
≤ 180	105	41	19

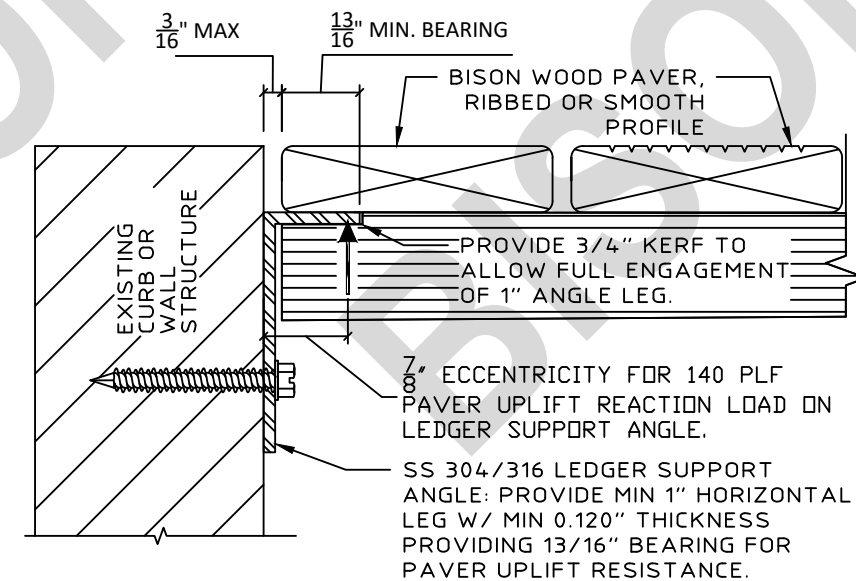
1. The paver system may be utilized and comply with the uplift requirements of the referenced code provided for a given Exposure and Basic Wind Speed 'V', the noted Maximum Height 'h' is not exceeded.
2. For $h > 500$ feet or $V > 180$ mph, the adequacy of the paver system shall be evaluated based on wind tunnel testing of the host building. See General Note 6.D.

1. Pavers shall be supported at all discontinuous edges with a ledger as shown.
2. Ledger support element may be upturned or downturned at all locations.
3. Connections to parapets are outside the scope of these Product Evaluation Documents as parapet conditions vary considerably. Design Professional of Record shall design the connections to parapet and verify the parapet is designed to resist a superimposed load as designated on the ledger support details with consideration for the moment induced by the eccentricity of the superimposed load.
4. Ledger anchorage shall be designed by the Design Professional of Record to support the USD superimposed load shown accounting for tension to resist rotation due to the eccentricity shown.
5. Alternative support details are acceptable provided the minimum engagement of the paver in bearing is provided.
6. Uplift on the top surface of the parapet is in addition to the applied uplift load.

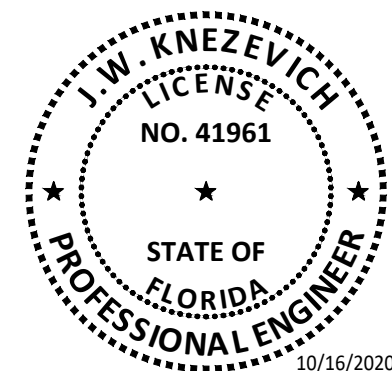
8. Fasten angle directly to structure, not through finishes except for maximum 1/8" thick flashing materials. Where fasteners penetrate waterproofing, architect shall provide for waterproofing of penetrations.
9. Splice ledger support as needed. Butt ends at splice and provide minimum 2 fasteners per piece. Provide first and last fastener a maximum of 3" horizontally from end of angle.
10. A minimum 12" high parapet is required at the perimeter of paver area unless the perimeter is more than 15 feet from a building edge.
11. Threshold conditions are acceptable at interior discontinuous edges provided the discontinuous edge is more than 15 feet from a building edge.
12. Threshold conditions at doors are acceptable at all interior areas.

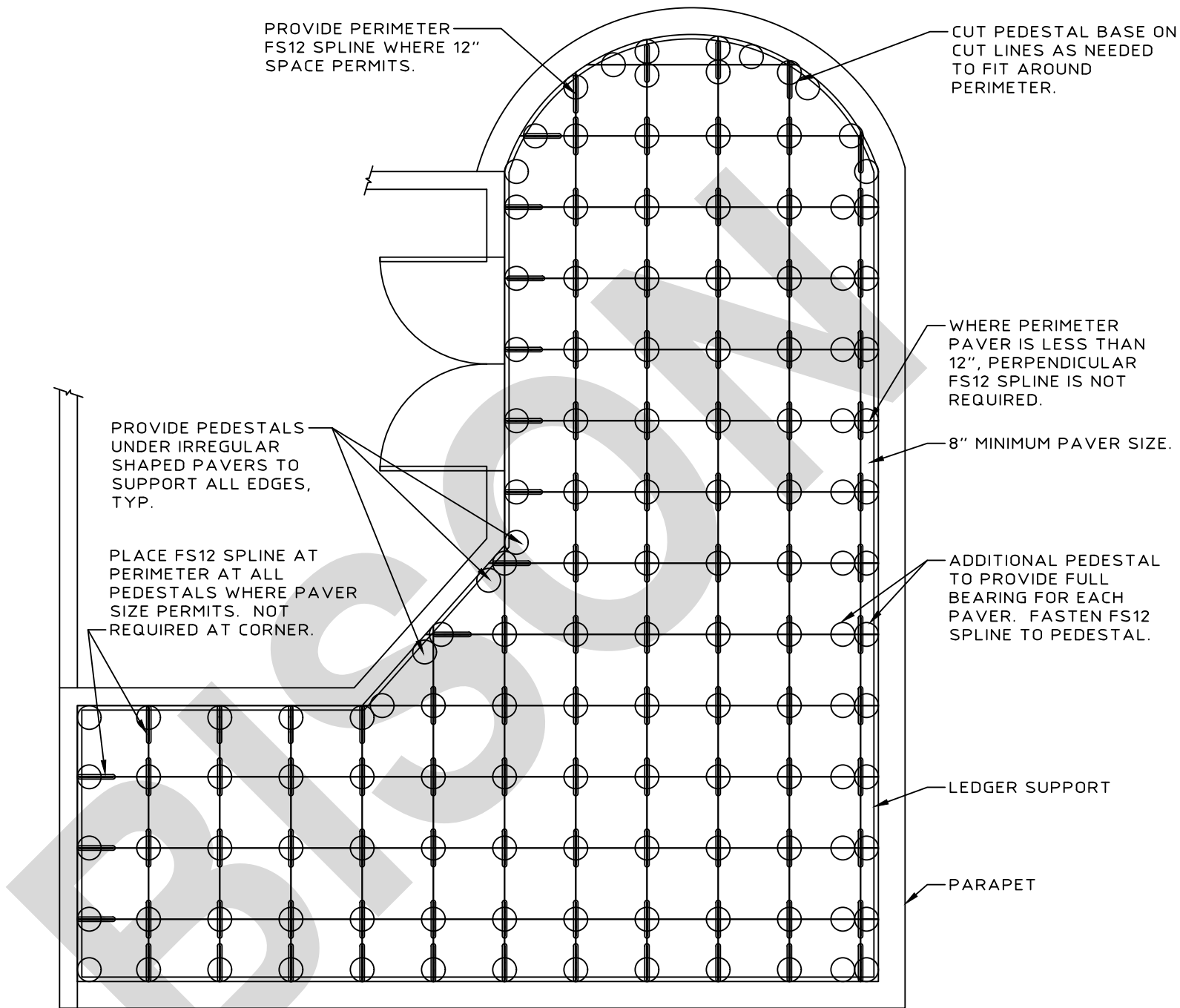


D8 UPTURNED LEDGER SUPPORT @ PARAPET
SCALE: 6" = 1'-0"

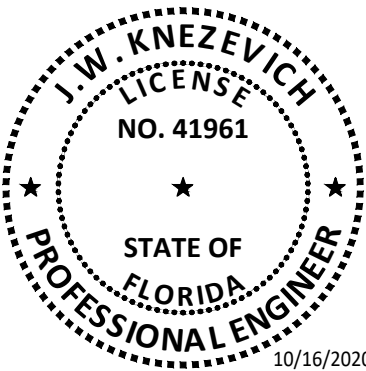


D9 DOWNTURNED LEDGER SUPPORT @ THRESHOLD
SCALE: 6" = 1'-0"





D10 BISON WOOD PAVER SYSTEM LAYOUT DIAGRAM
SCALE: 1/4" = 1'-0"



Revisions		Description	
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