



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/economy

NOTICE OF ACCEPTANCE (NOA)

Structural Green, Inc.
271 W 59 Street
Hialeah, FL 33012

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER- Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Structural Green Composite Wall Panel System with EPS Core

APPROVAL DOCUMENT: Drawing No. SG.W, titled "Structural Green Composite Wall Panel System with EPS Core", sheets 1 through 8 of 8, prepared by Structural Green, Inc., dated May 30, 2018, signed and sealed by Juan Jose Santandreu, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and the approval date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each panel shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1, evidence submitted page E-1 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
06/07/2018

NOA No. 17-1023.01
Expiration Date: 06/07/2023
Approval Date: 06/07/2018
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. SG.W, titled "Structural Green Composite Wall Panel System with EPS Core", sheets 1 through 8 of 8, prepared by Structural Green, Inc., dated May 30, 2018, signed and sealed by Juan Jose Santandreu, P.E.

B. TESTS

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test, and Uniform Static Air Pressure Test on Structural Green Composite Wall Panel System, prepared by FTL, Report No. 8265, dated 02/15/2017, signed and sealed by Idalmis Ortega, P.E.*

C. CALCULATIONS

1. *Calculations titled "Concrete Slender Wall", pages 1 through 9 of 9, prepared by Juan Jose Santandreu, P.E., signed and sealed by Juan Jose Santandreu, P.E*

D. MATERIAL CERTIFICATIONS

1. *None.*

E. QUALITY ASSURANCE

1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

F. STATEMENTS

1. *FBC, 2017 Edition Compliance Letter, issued by Juan Jose Santandreu, P.E., dated October 20, 2017, signed and sealed by Juan Jose Santandreu, P.E*



Helmy A. Makar, P.E., M.S.

Product Control Section Supervisor

NOA No. 17-1023.01

Expiration Date: 06/07/2023

Approval Date: 06/07/2018

STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE

Structural Green is an Ecological and Sustainable Building System which is consistent with the requirements of Florida Building Code 2017 Edition High Velocity Hurricane Zone and its rated design pressures.

Structural Green Panels are designed to withstand the High Velocity Winds in Hurricanes Zone with the Maximum Design Pressure of (+/-)100.7 psf

Structural Green Panels is conceived as a continuous walls-roof system; nevertheless the wall and roof can be use in separated and independent ways.

Even though the roof are not part of this NOA, both use common connections to the wall and roof, so that they would be part of Integral Construction Monolithic System.

The System is a lightweight structural truss prefabricated panels comprised of expanded polystyrene (EPS) and welded wire reinforcement (WWR) to each side of galvanized steel. The panels were built with Schnell technology and with the technical assistance of this company.

EPS geometry and additional reinforcements will vary depending on the overall Design necessities.

The thickness of the Expanded Polystyrene (EPS) ranges from 3-1/8" up to 5" depending on architectural wall design requirements. The electro-welded wire reinforcement are 3" x 3" x 0.12" (3 mm)

The work is completed on site by applying a shotcrete finish through a mechanism of pneumatic discharge. Therefore once the shotcrete has been discharged there are no horizontally or vertically joints.

Structural Green Panel is designed to be installed for exterior and interior, bearing or non-bearing wall.

STANDARDS FOR DESIGN AND CODES

- 2017 Florida Building Code (FBC) [HVHZ]
 - Large Missile Impact Test, TAS 201-94
 - Static Air Pressure Test, TAS 202-94
 - Cyclic Wind Pressure Test, TAS 203-94
- ACI 506.2 Guide to Shotcrete
- ACI 318 Building or Structural Concrete
- ACC-ES Schnell Report ESR-3429 (Revision January 2017)

COMPONENTS SPECIFICATIONS

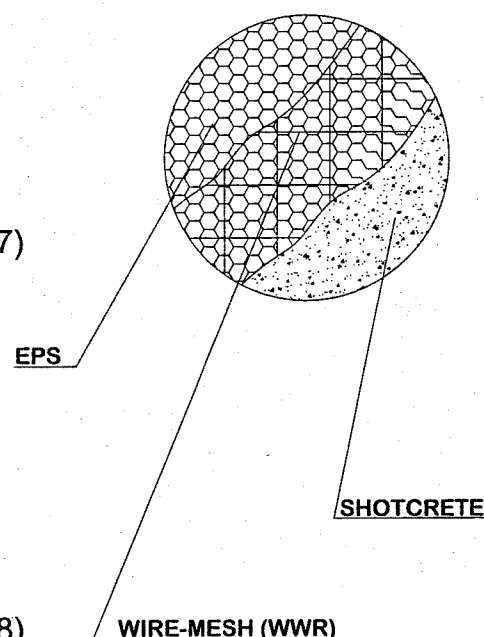
- EPS
 - Miami-Dade County Approved
 - Density (Min)- 0.9 pcf
 - Flame Spread- 5 (ASTM E-84)
 - Smoke Development- 400 (ASTM E-84)
 - Self-Ignition Temperature- 878 °F (ASTM 01929)
 - Average R-Value (1" Thick) Hr-ft² °F/Btu- 3.8 (ASTM C518)
 - Odor Emission- NO
 - Fungus Resistant- bacterial not grow

- GALVANIZED STEEL

The Galvanized steel welded wire-mesh must have a yield limit of 80,000 psi
 11 Gauge (0.12") longitudinal, transversal as well as connector (3mm)
 resulting a welded wire reinforcement of 3" x 3" x 3 mm in compliance with ASTM A 1064.
 Welding must comply with AWS D1.4.

- SHOTCRETE

The shotcrete as main element for Structural Green panels "SG" is completed by applying a layer on each face of projected structural shotcrete by Spray Concrete Machine.
 The required high-strength shotcrete achieving 3,500 psi at 28 days is sprayed onto each side of the panels at the jobsite to create monolithic wall with a maximum aggregate size of 1/4".
 (3/16" maximum aggregate size it's recommended).



GENERAL NOTES

- 1- This wall panel system has been designed in compliance with ACI 506.2 and ACI 318
- 2- The weight of the Composite Walls Panels is 35 psf.
- 3- The weight of Roof Panel System with EPS Core Dead Load 45 psf. The allowable Maximum Superimposed Dead Load is 25 psf. The Total Dead Load of the system is therefore 70 psf .
- 4- The concrete slab must be treated according to roofing regulations ASTM D 4 treatment and any local code.
- 5- For the calculations that appear in the tables it has been considered only 1" concrete at both side of the walls; and has been taken over the Wire Mesh Top. The additional concrete between the EPS and the external part of the Mesh, including the waves; It has not been considered in the calculation.
- 6- A minimum safety factor "SF" of 1.5 shall be considerate according to FBC, TAS 202
- 7- General dimensions and any other aspect of the project including but not limited to Electrical, Mechanical Plumbing, etc are not part of this approval and shall be prepared by Architect or Registered Professional.
- 8- This NOA is based on a structural study according to the FBC. The Building dimensions, foundations and other elements into the project shall be designed by an Architect or Registered Engineer and reviewed by the Plans Examiner of the corresponding Building Department.
- 9- Any atypical design solutions that differ from what is reflected of this NOA, are not part of this approval and shall be prepared by Architect or Registered Engineer and Reviewed by the Plans Examiner of the corresponding Building Department.
- 10- The minimum thickness of EPS will be of 3 1/8".
- 11- The Panel Thickness tolerance is (+/-) 1/4" considering the possible EPS fluctuations due to final drying after assembly process.
- 12- These walls may be coated or covered with any material according to state and / or local regulations.

Approved as complying with the
 Florida Building Code
 Date 06/07/2018
 NOA# 17-1023-01
 Miami Dade Product Control

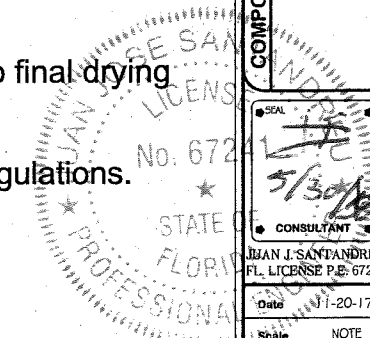
By *[Signature]*



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REVISIONS	BY
01-06-17	JS

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
 SUSTAINABLE BUILDINGS
 MONOLITHIC CONSTRUCTION SYSTEM
 HIGH VELOCITY HURRICANE ZONE



SEAL	DATE
CONSULTANT	5/30/18
JUAN J. SANTANDREU	
FL. LICENSE P.E. 67241	
Date	07-20-17
Scale	NOTE
Drawn	MM
Structural Green A new generation of sustainable constructions with reinforced concrete	

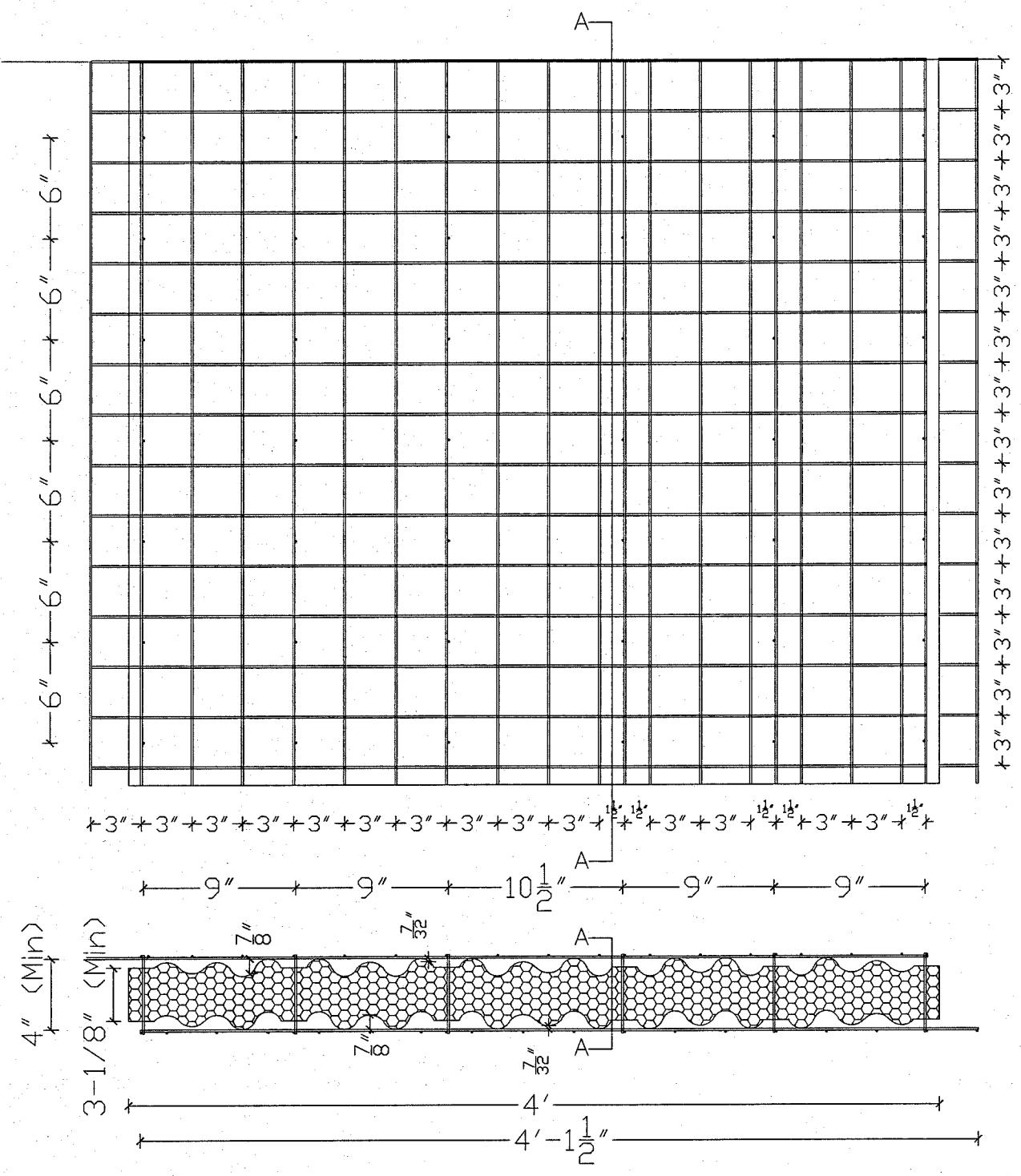
STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE



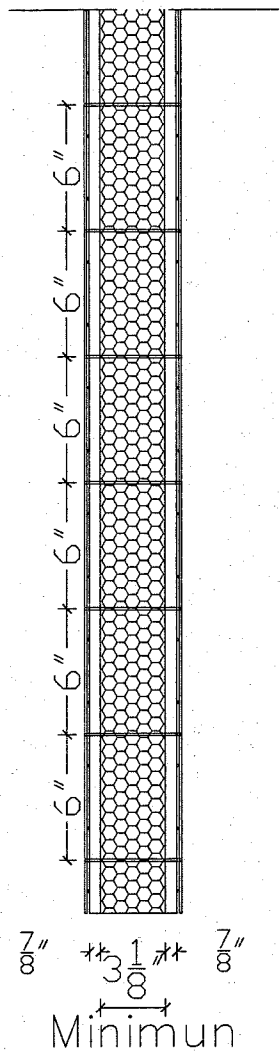
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01-06-17	J5

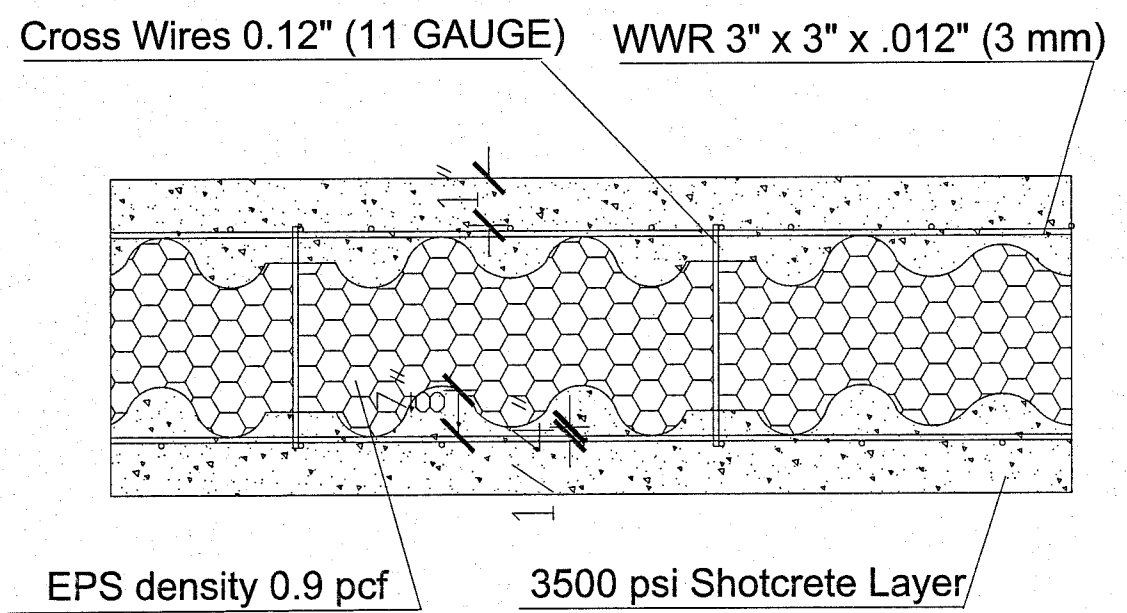
COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
 (HIGH VELOCITY HURRICANE ZONE)



TYPICAL PANEL SECTION



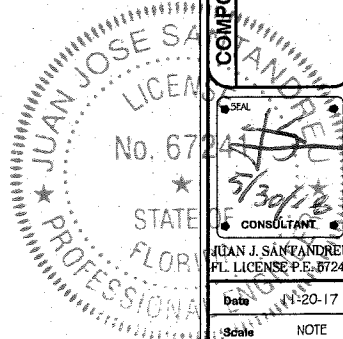
TYPICAL WALL CROSS SECTION



SG INSULATION WALLS	EPS Thickness	Rvalue hr ft ² °F/Btu
I/W/R-3	3-1/8"	13.7
I/W/R-4	4"	16.7
I/W/R-5	5"	19.1

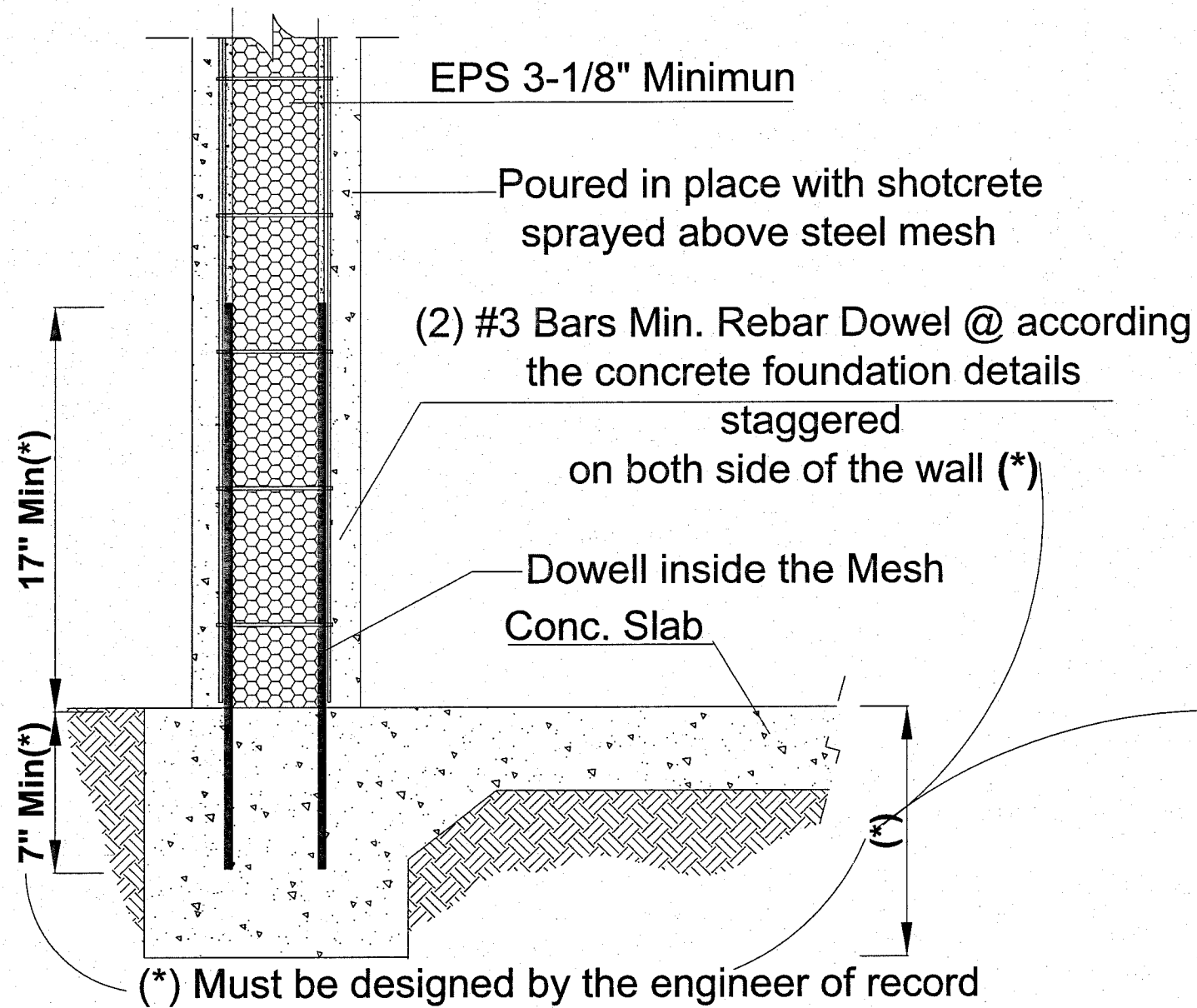
Note: Rvalues are for information.
 They are not part of this Product Approval.

Approved as complying with the
 Florida Building Code
 Date 06/07/2018
 NOA# 17-1023-01
 Miami Dade Product Control
 By *Helga Miller*



JUAN J. SAN ANDREU
 CONSULTANT
 FL. LICENSE P.E. 67241
 Date 11-20-17
 Scale NOTE
 Drawn MM
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STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE

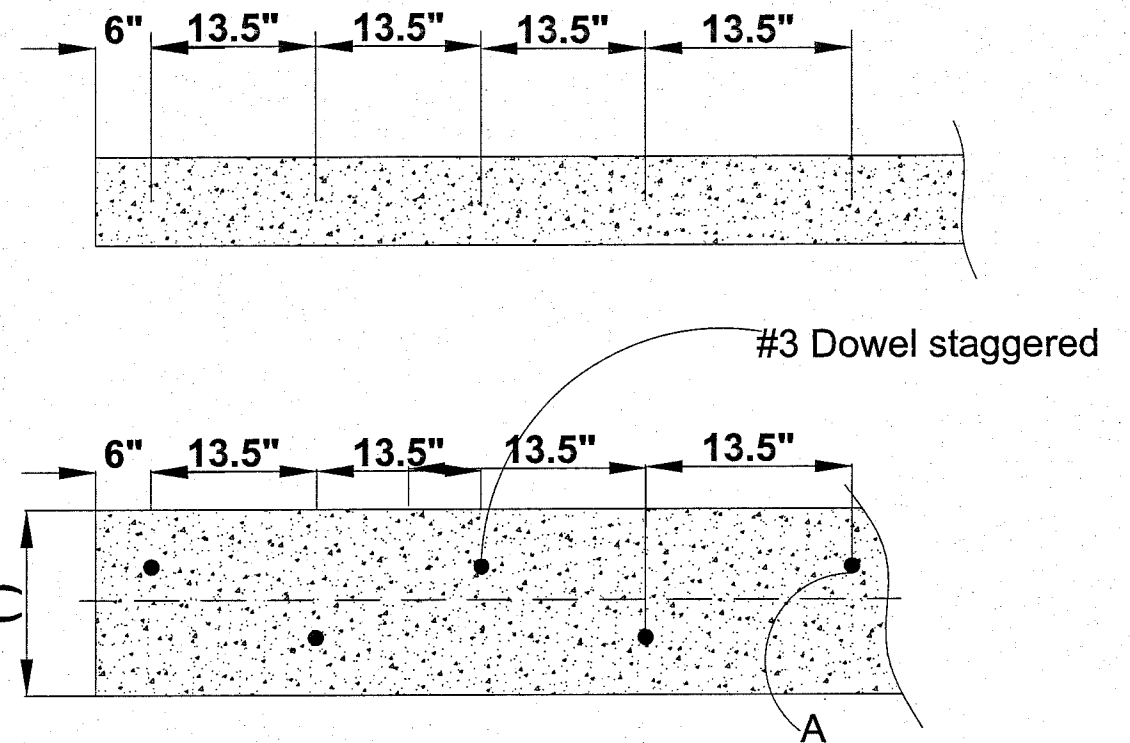


NOTE:

The corrugated steel bars dowels to concrete-base could be fixed through two (2) alternatives:

- a) Drilling the concrete and using epoxy resin for to fix the steel bars
- b) Introduction of steel bars into the fresh concrete

TYPICAL CONCRETE FOUNDATION WITH ANCHOR DOWELS LAYOUT



The #3 Dowel staggered distribution will be applied from the any corner building or any door opening in both directions Starting at point "A" the distribution of the #3 Dowel staggered can be distributed each 13.5"

CONCRETE FOUNDATION TOP VIEW WITH ANCHOR DOWEL DISTRIBUTION

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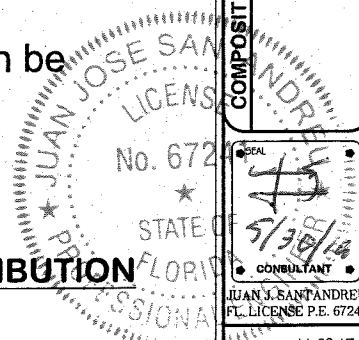
By *[Signature]*



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REVISIONS	BY
01-06-17	J5

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
 SUSTAINABLE BUILDINGS
 MONOLITHIC CONSTRUCTION SYSTEM
 (HIGH VELOCITY HURRICANE ZONE)



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STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE

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SUSTAINABLE BUILDINGS
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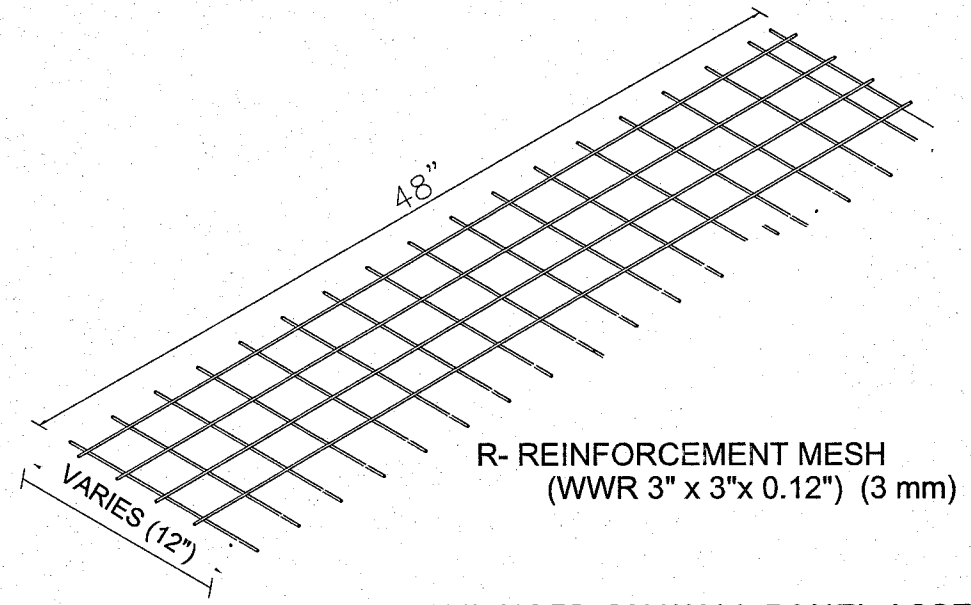
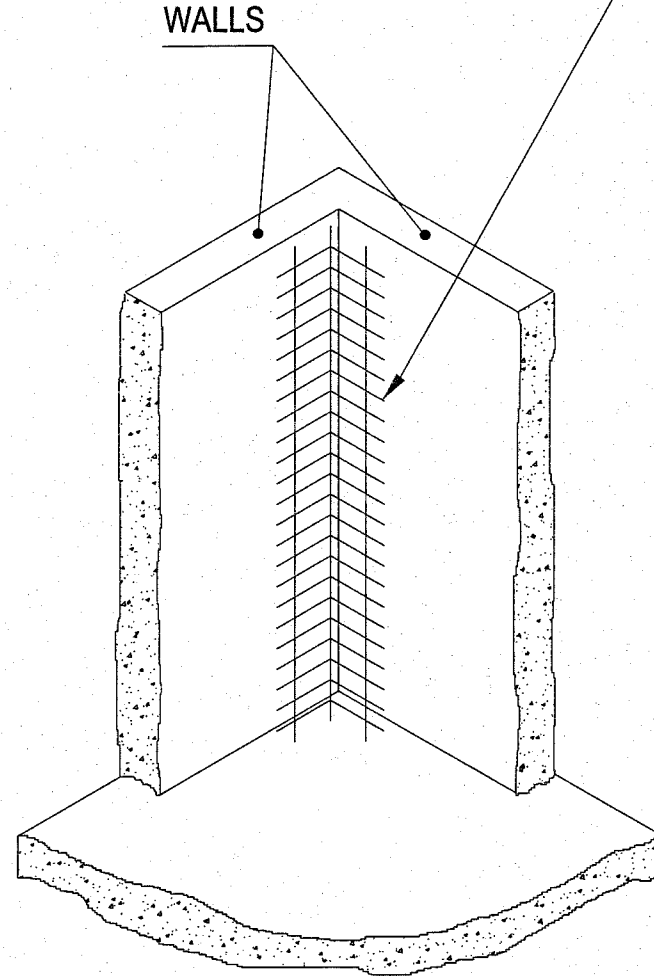
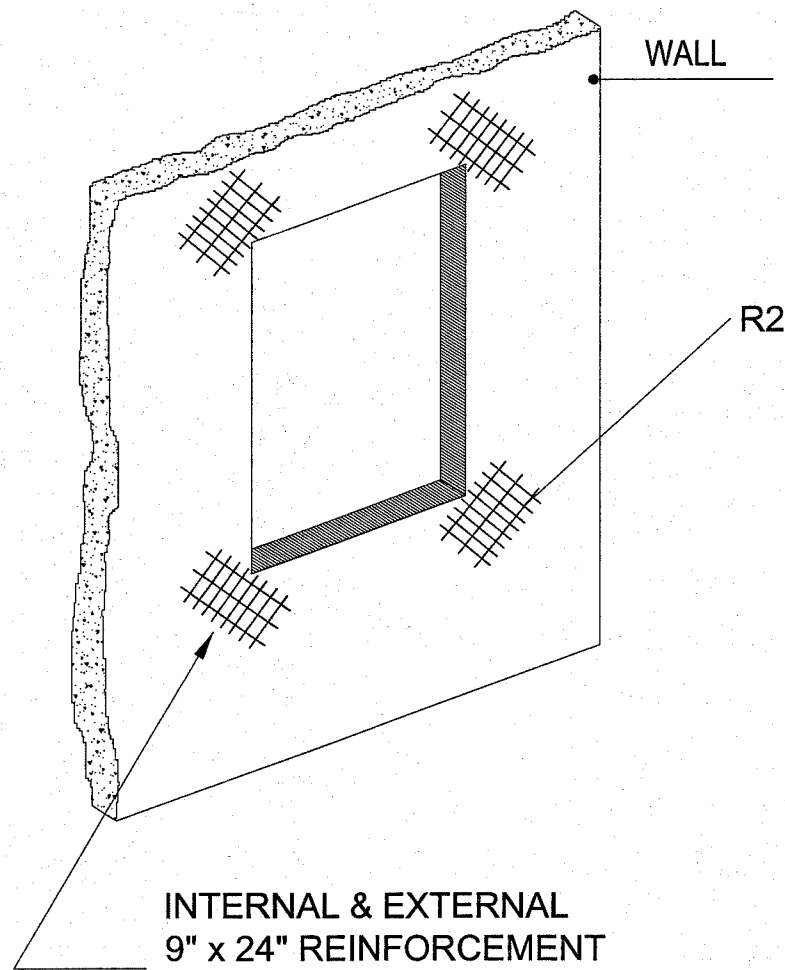
Approved as complying with the Florida Building Code
 Date 06/07/2018
 NOA# 17-1023-01
 Miami Dade Product Control
 By *Heidi R. Rabin*

JUAN J. SANTANDREU
 FL. LICENSE P.E. #7241
 No. 67241
 5/5/18
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

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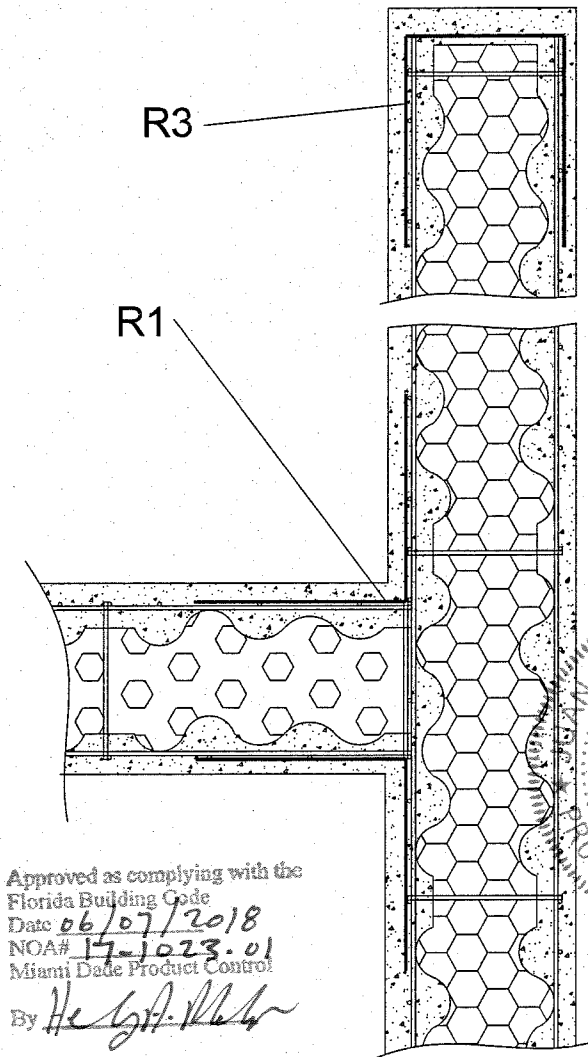
Sheet 4 of 8
SG.W-4

WALL CORNER INTERNAL & EXTERNAL REINFORCEMENT R1



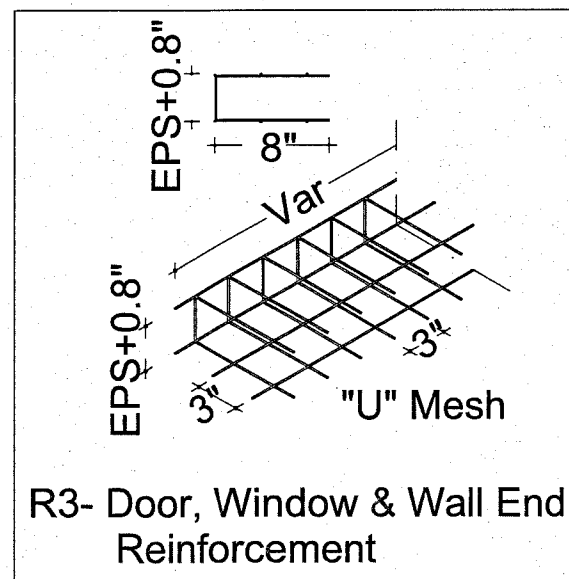
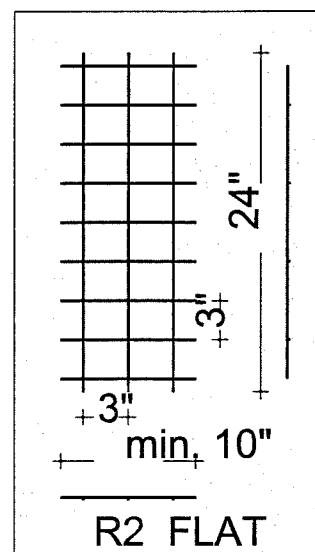
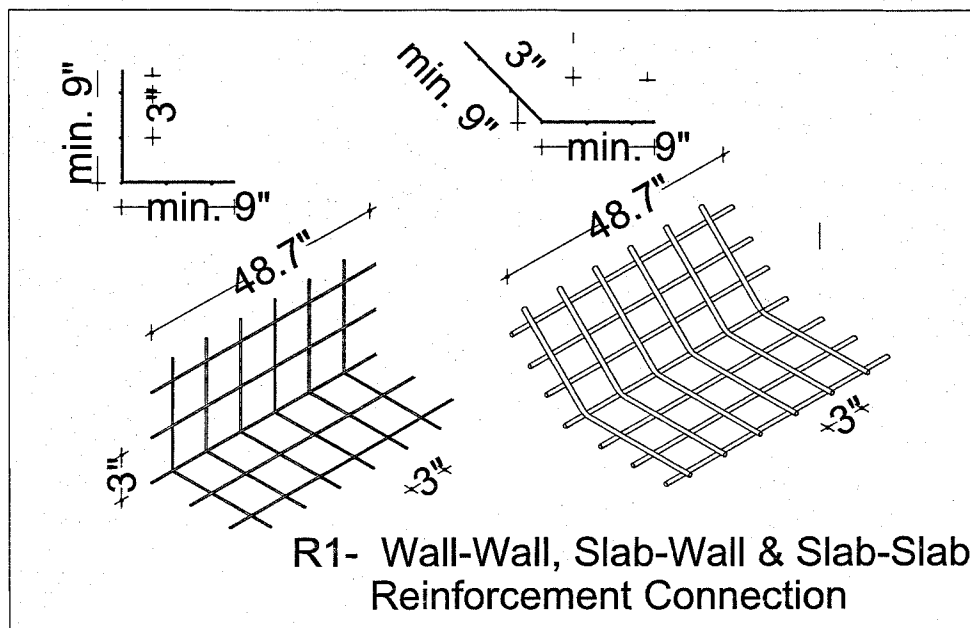
TYPICAL REINFORCEMENT DETAIL USED ON WALL PANEL ASSEMBLIES

THE REINFORCEMENT OF JOINTS IS USED ACCORDING TO ASTM A 1064



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 By *Heidi R. Rabin*

TYPICAL WALL CORNER CROSS SECTION



TYPICAL REINFORCEMENTS

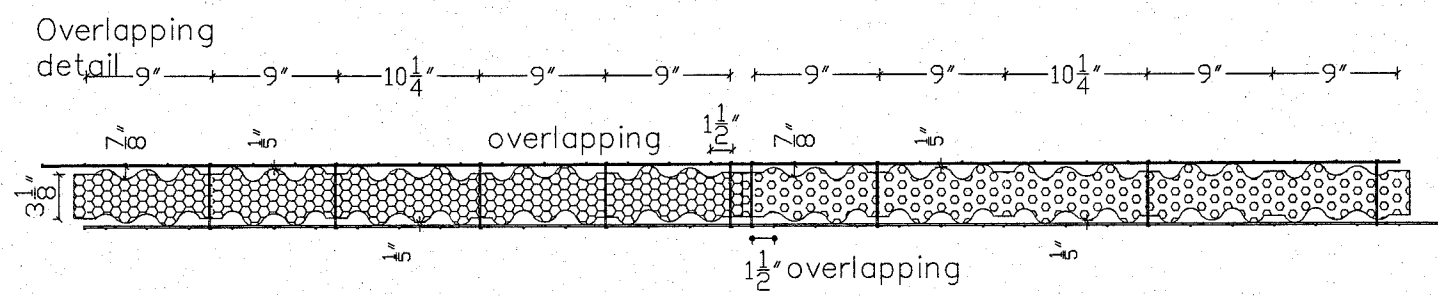
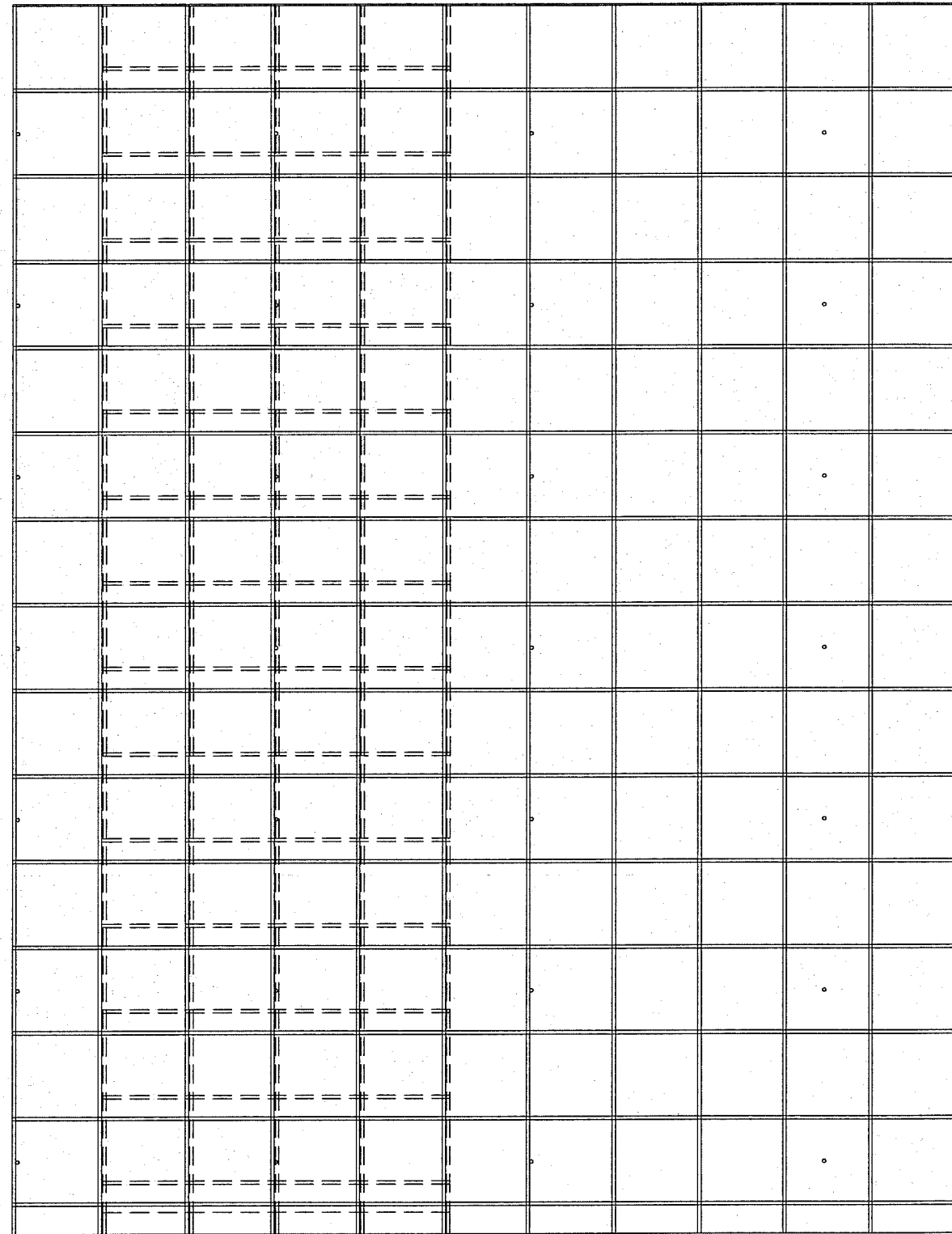
STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE



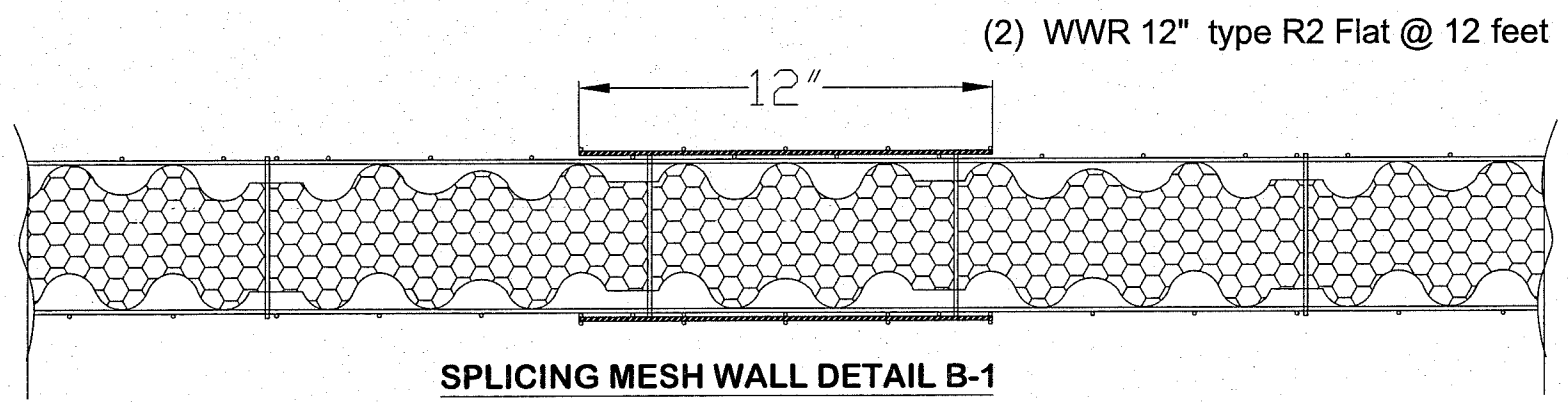
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01-06-17	J5

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
 (HIGH VELOCITY HURRICANE ZONE)

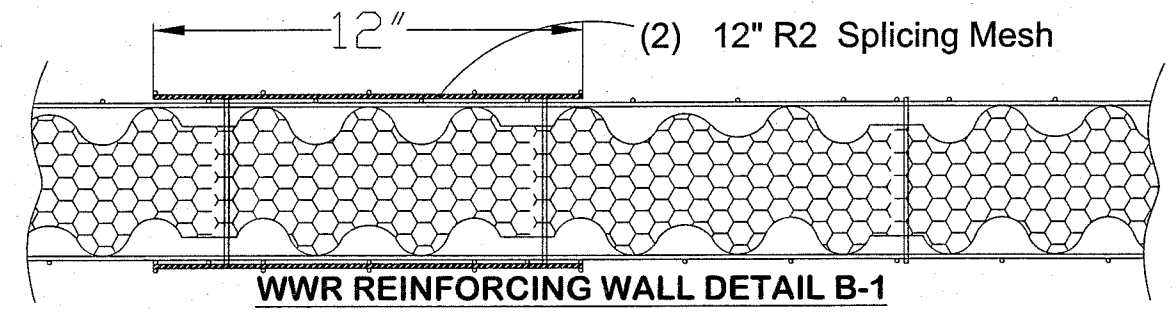


TYPICAL WWR OVERLAPPING DETAIL

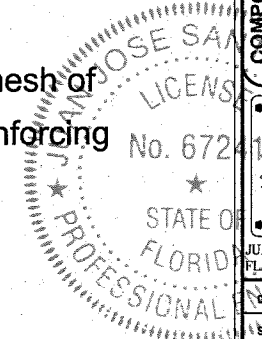


SPLICING MESH WALL DETAIL B-1

NOTE: When the wall length exceed 16' of length, WWR type R2 Flat reinforcements mesh of 12 inches wide will be installed on both sides of the wall panel according to Reinforcing Wall Details "B1"
 When there is cross wall at 16', then R2 Reinforcement Mesh is not required.



WWR REINFORCING WALL DETAIL B-1



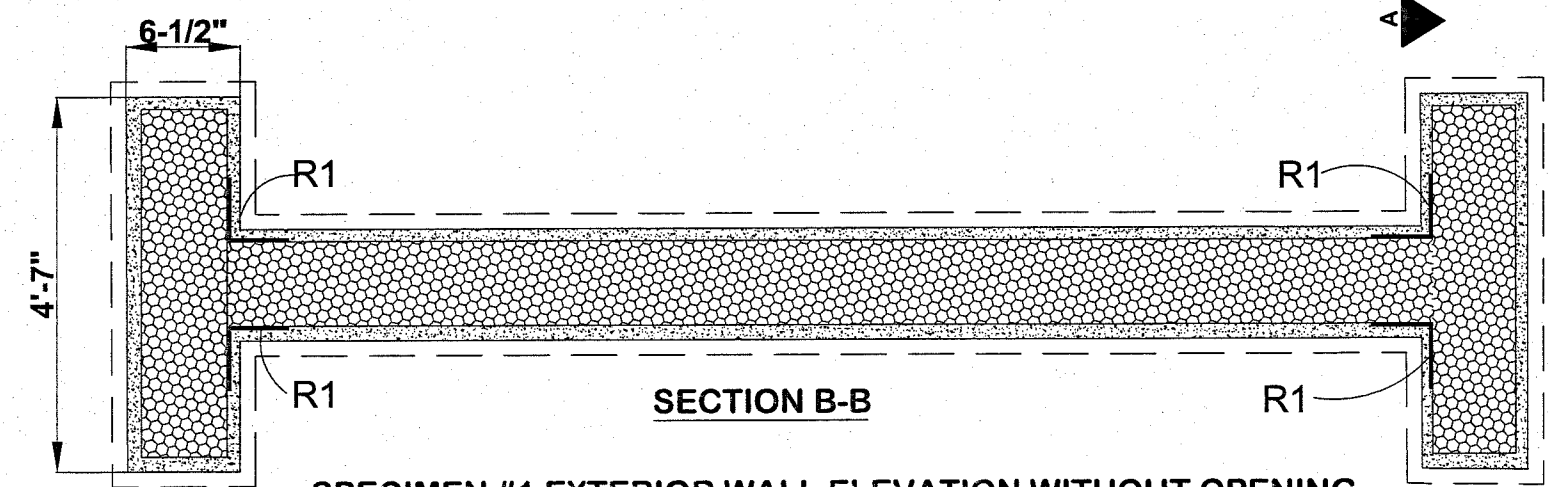
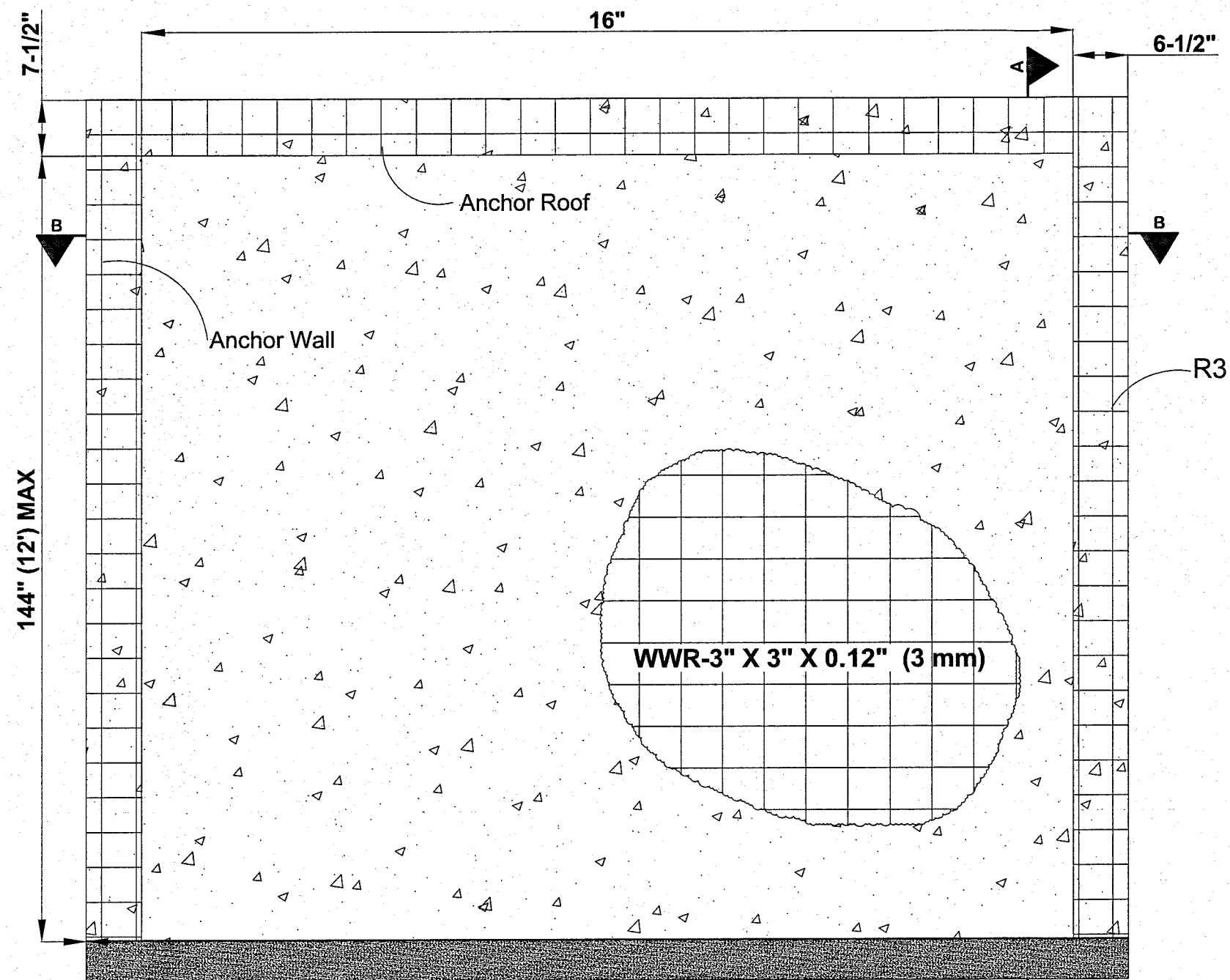
Approved as complying with the Florida Building Code
 Date 06/07/2018
 NOA# 17-1023.01
 Miami Dade Product Control
 By *[Signature]*

JUAN J. SANTANDREU
 FL. LICENSE NO. 67241
 CONSULTANT

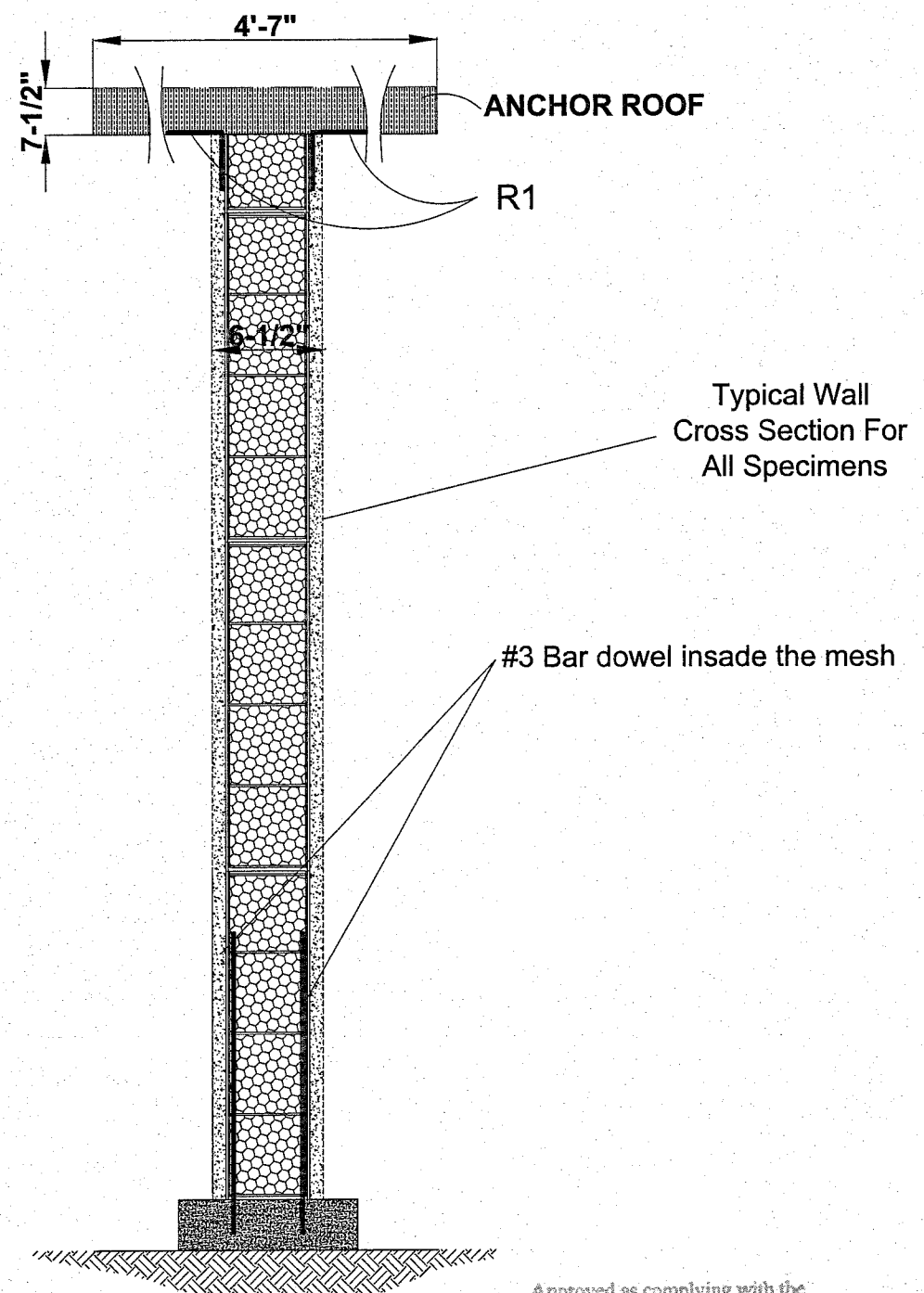
Date 11-03-17
 Scale NOTE

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STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE



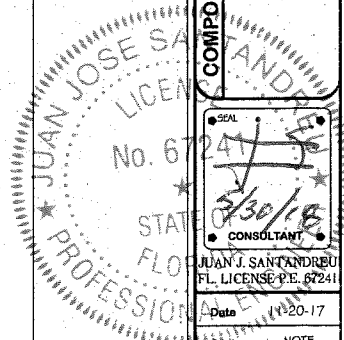
SPECIMEN #1 EXTERIOR WALL ELEVATION WITHOUT OPENING




SECTION A-A

16' WIDE X 12'-0" HIGH MAXIMUM WALL DIMENSIONS WITH FOUR SIDES SUPPORTED BY THE ROOF ON TOP AND SG WALLS ON THE SIDES AND FOUNDATION ON BOTTOM.

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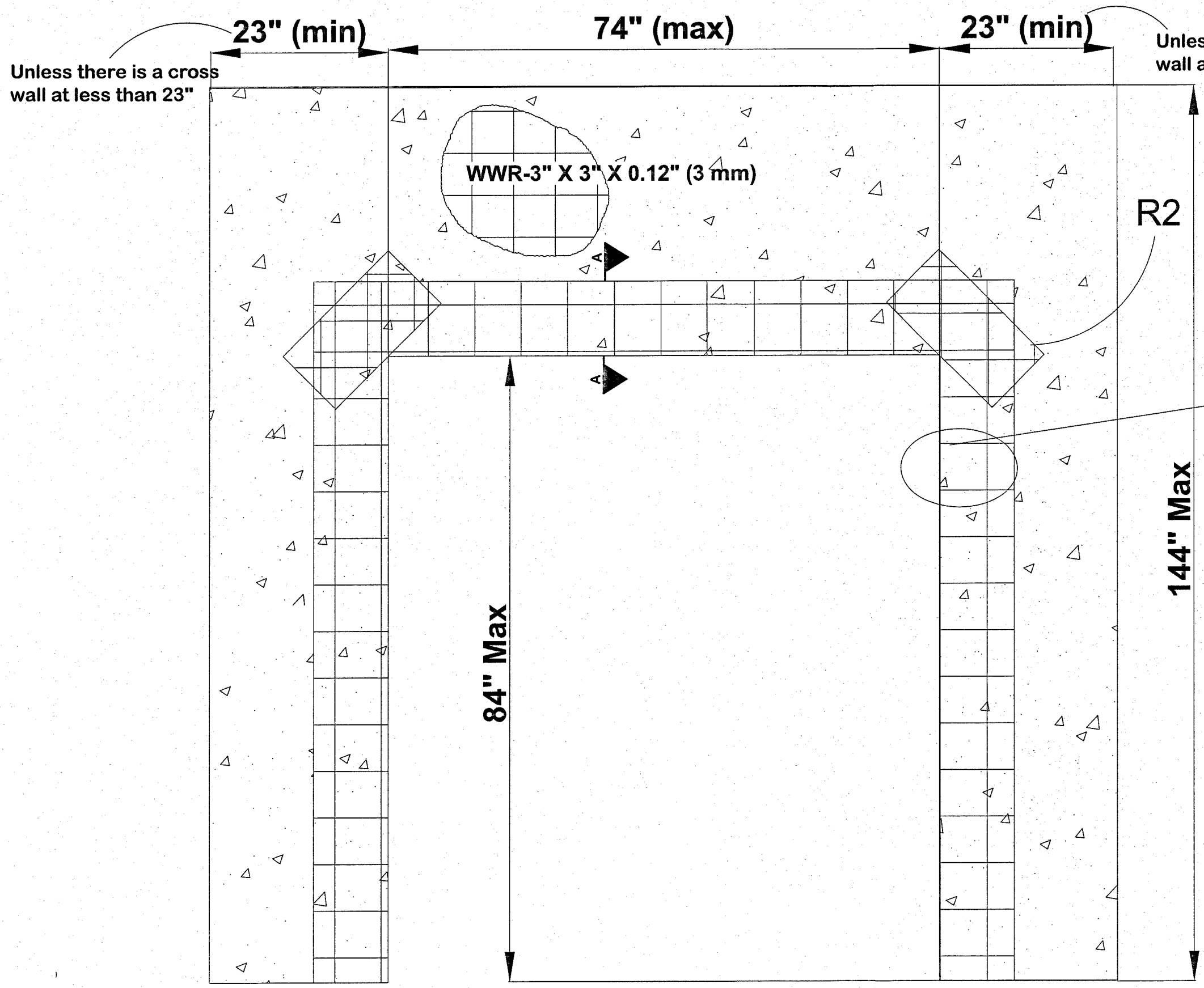
REVISIONS	BY
01-06-17	JS

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
 MONOLITHIC CONSTRUCTION SYSTEM
(HIGH VELOCITY HURRICANE ZONE)

Date: 11-20-17
 Scale: NOTE
 Drawn: MM
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Sheet 6 of 8
SG.W-6

STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE



Unless there is a cross wall at less than 23"

Unless there is a cross wall at less than 23"

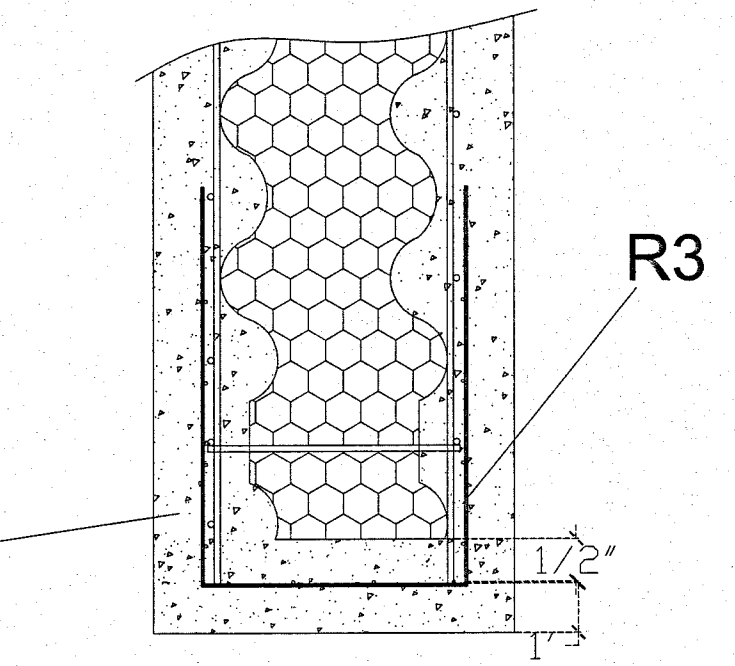
WWR-3" X 3" X 0.12" (3 mm)

R2

R3

144" Max

84" Max

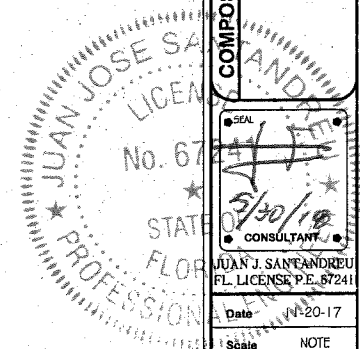



SECTION A-A
TYPICAL REINFORCEMENT PLACED
AROUND WALL OPENING WALL ENDS

SPECIMEN #2 WALL EXTERIOR ELEVATION WITH DOOR OPENING

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Florida Building Code
Date 06/07/2018
NOA# 17-1023-01
Miami Dade Product Control

By *H. G. A. M. W.*





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01-06-17	J5

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
[HIGH VELOCITY HURRICANE ZONE]

Date	06-20-17
Scale	NOTE
Drawn	MM

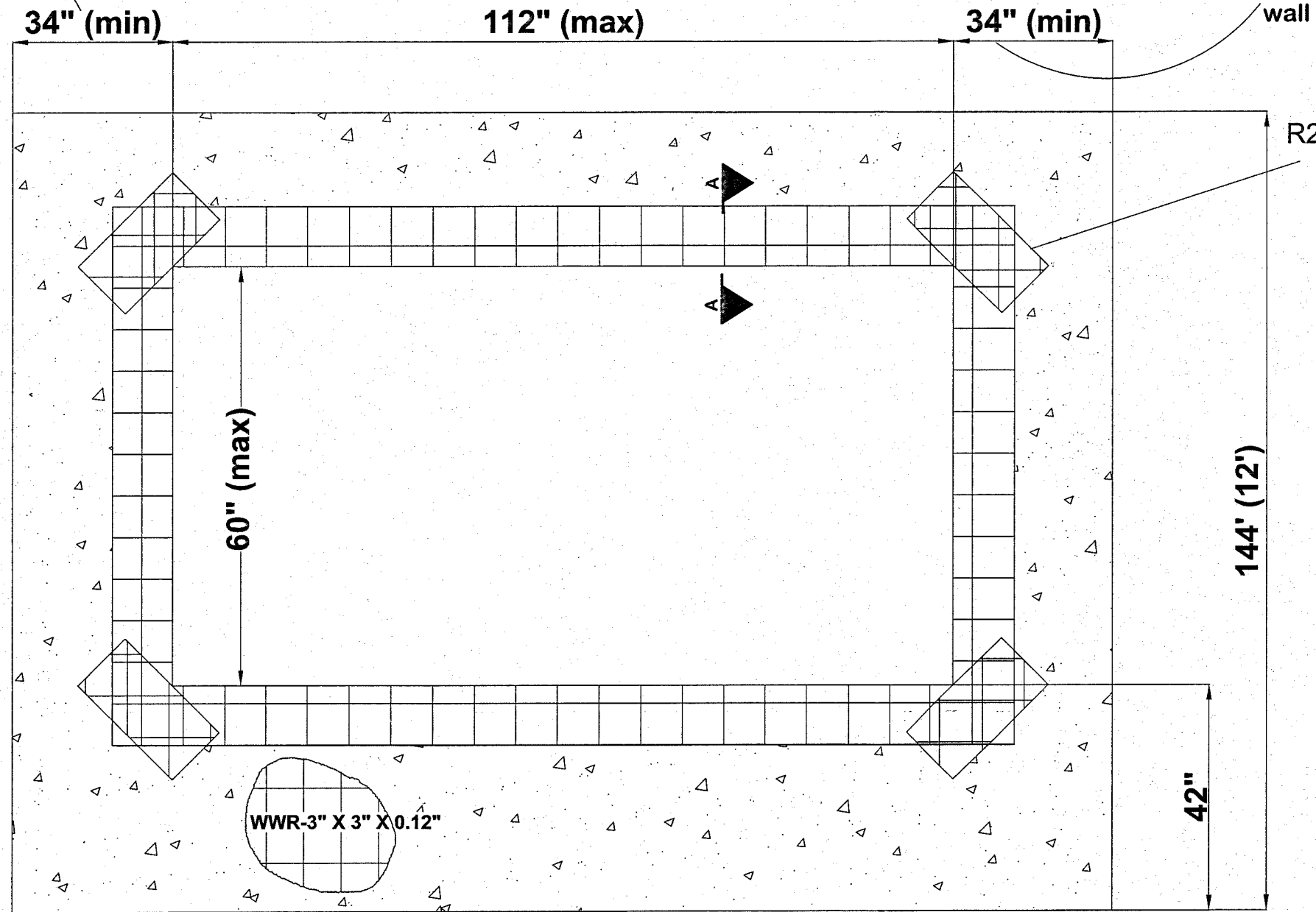
Structural Green
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constructions with
reinforced concrete

Sheet 7 of 8
SG.W-7

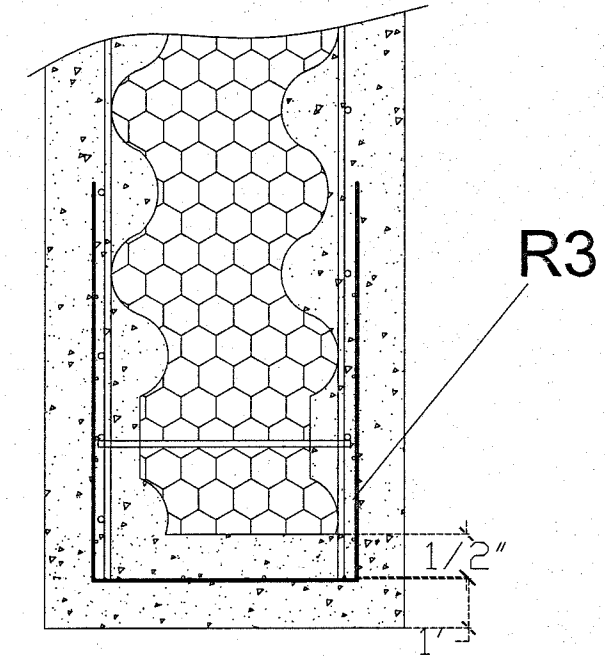
STRUCTURAL GREEN COMPOSITE BEARING WALL PANEL SYSTEM WITH EPS CORE

Unless there is a cross wall at less than 34"

Unless there is a cross wall at less than 34"



SPECIMEN #3 WALL EXTERIOR ELEVATION WITH WINDOW OPENING



SECTION A-A

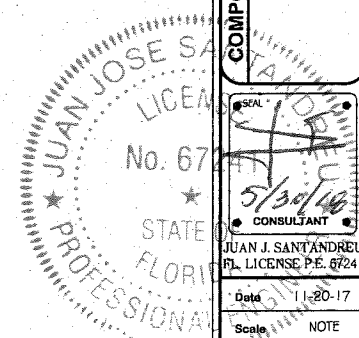
TYPICAL REINFORCEMENT PLACED AROUND WALL OPENING AND AROUND WALL ENDS



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REVISIONS	BY
01-06-17	J5

COMPOSITE STEEL-CONCRETE BEARING WALL PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
(HIGH VELOCITY HURRICANE ZONE)



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