MIAMI-DADE COUNTY
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 Roof Panel System with EPS Core**

APPROVAL DOCUMENT: Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated June 05, 2023, signed and sealed by Juan Jose Santandreu, P.E., on June 05, 2023 bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration 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 **revises & renews NOA #21-0419.09** and consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.

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

MIAMI-DADE COUNTY APPROVED

Helmy A. Makar
08/03/2023

NOA No. 23-0606.03
Expiration Date: 08/09/2028
Approval Date: 08/03/2023

Structural Green, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 17-1026.03

A. DRAWINGS

1. *Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated July 17, 2018, signed and sealed by Juan Jose Santandreu, P.E., on July 31, 2018.*

B. TESTS

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test, and Uniform Static Air Pressure on Structural Green Composite Wall Panel System, prepared by FTL, Report #8265, dated 02/15/2017, signed and sealed by Idalmis Ortega, P.E.*

C. CALCULATIONS

1. *Calculations titled "Concrete Slender Roof", 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 25, 2017, signed and sealed by Juan Jose Santandreu, P.E*

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 21-0419.09

A. DRAWINGS

1. *Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated April 12, 2021, signed and sealed by Juan Jose Santandreu, P.E., on April 15, 2021.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

E. QUALITY ASSURANCE

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

F. STATEMENTS

1. *FBC, 2020 Edition Compliance Letter, dated October 25, 2017, issued, signed and sealed by Juan Jose Santandreu, P.E.*

Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 23-0606.03
Expiration Date: 08/09/2028
Approval Date: 08/03/2023

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated June 05, 2023, signed and sealed by Juan Jose Santandreu, P.E., on June 05, 2023.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

E. QUALITY ASSURANCE

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

F. STATEMENTS

1. *FBC, 2020 and 2023 Editions Compliance Letter, dated July 07, 2023, issued, signed and sealed by Juan Jose Santandreu, P.E.*

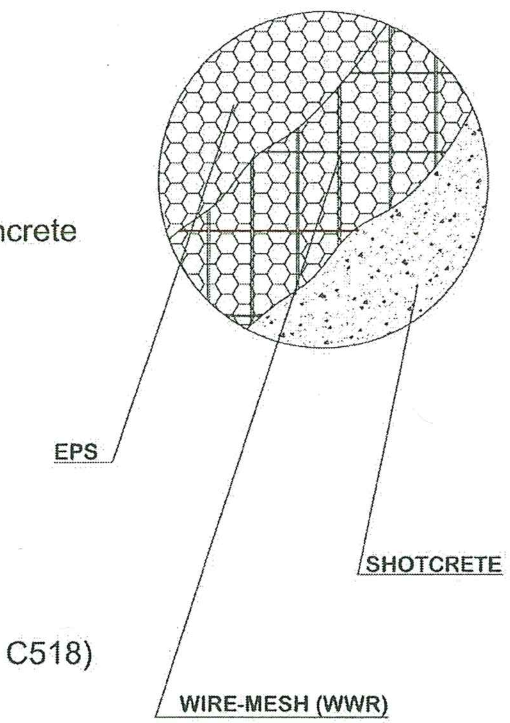
Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
NOA No. 23-0606.03
Expiration Date: 08/09/2028
Approval Date: 08/03/2023

STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE

Structural Green is an Ecological and Sustainable Building System which is consistent with the requirements of Florida Building Code 2020 & 2023 Editions High Velocity Hurricane Zone and its rated design pressures with the Maximum Design Pressure of -164.40 psf. The drawings are in compliance with FBC, both 2020 Edition and 2023 Edition.
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 Walls 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 in correspondence with the ACC-ES Schnell Report ESR-3429.
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 9" depending on architectural 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 roof and floor applications.

STANDARDS FOR DESIGN AND CODES

- 2020 Florida Building Code (FBC) [HVHZ] 7th Edition
  - Large Missile Impact Test, TAS 201-94
  - Static Air Pressure Test, TAS 202-94
  - Cyclic Wind Pressure Test, TAS 203-94
- ACI 506.2 Specifications for Shotcrete
- ACI 318 Building Code Requirements for Structural Concrete



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- 3.85 (ASTM C518)
Odor Emission- NO
Fungus Resistant- bacterial not grow

- GALVANIZED STEEL
The Galvanized steel welded wire-mesh must have a tensile 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 0.12" (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 shotconcrete by Spray Concrete Machine.
The required high-strength shotconcrete achieving 3,500 psi at 28 days is sprayed onto each side the panels at the jobsite to create monolithic wall with a maximum aggregate size of 3/16".

GENERAL NOTES

1- This Roof 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 is 9 psf. 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 requirements.
5- A minimum safety factor "SF" of 2 was considerate according to FBC, TAS 202. The result obtained gives us a maximum total system load of 79 psf as the recommended design value.
6- With the objective of guaranteeing absolute waterproofing of the slab any material with the corresponding product approval certification will be applied.
7- The R1 reinforcement connectors wall-roof have the function of the perimeter junction around the entire contact zone between both elements.
8- The Reinforcements and Joint connections are common elements for Wall and Roof Panels.
9- The Architect and/or Register Engineer could add any additional reinforcement according to their criteria not required by this NOA considering future structural needs.
10- The selection of the kind of Roof will be selected according the Building dimensions, slope and other elements into the project shall be designed by Architect or Registered Engineer and reviewed by the Plans Examiner of the corresponding Building Department.
11- 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.
12- The building's floors and mezzanine are not part of this NOA.
13- Dimensions and any other aspect of the project including but not limited to Electrical, Mechanical, Plumbing etc are no parts of this approval and it shall be prepared by Registered Engineer
14- The Panel Thickness tolerance is (+/-)1/4" considering the possible EPS fluctuations due to final drying after assembly process.
15- These roofs may be covered with any material according to state and / or local approvals regulations.

DESIGN PRESSURE

MAXIMUM DESIGN LOAD RATING = -164.4 PSF

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 23-0606.03
Expiration Date 08/09/2028
By [signature]
Miami Dade Product Control

JUAN JOSE SANTANDREU
LICENSE No. 67241
STATE OF FLORIDA
PROFESSIONAL ENGINEER

STRUCTURAL GREEN
STRUCTURAL GREEN
271 W 59 St. Hialeah, FL. 33012
Ph: (305)972-2371
structuralgreen1@gmail.com

REVISIONS	BY
05-20-23	JS

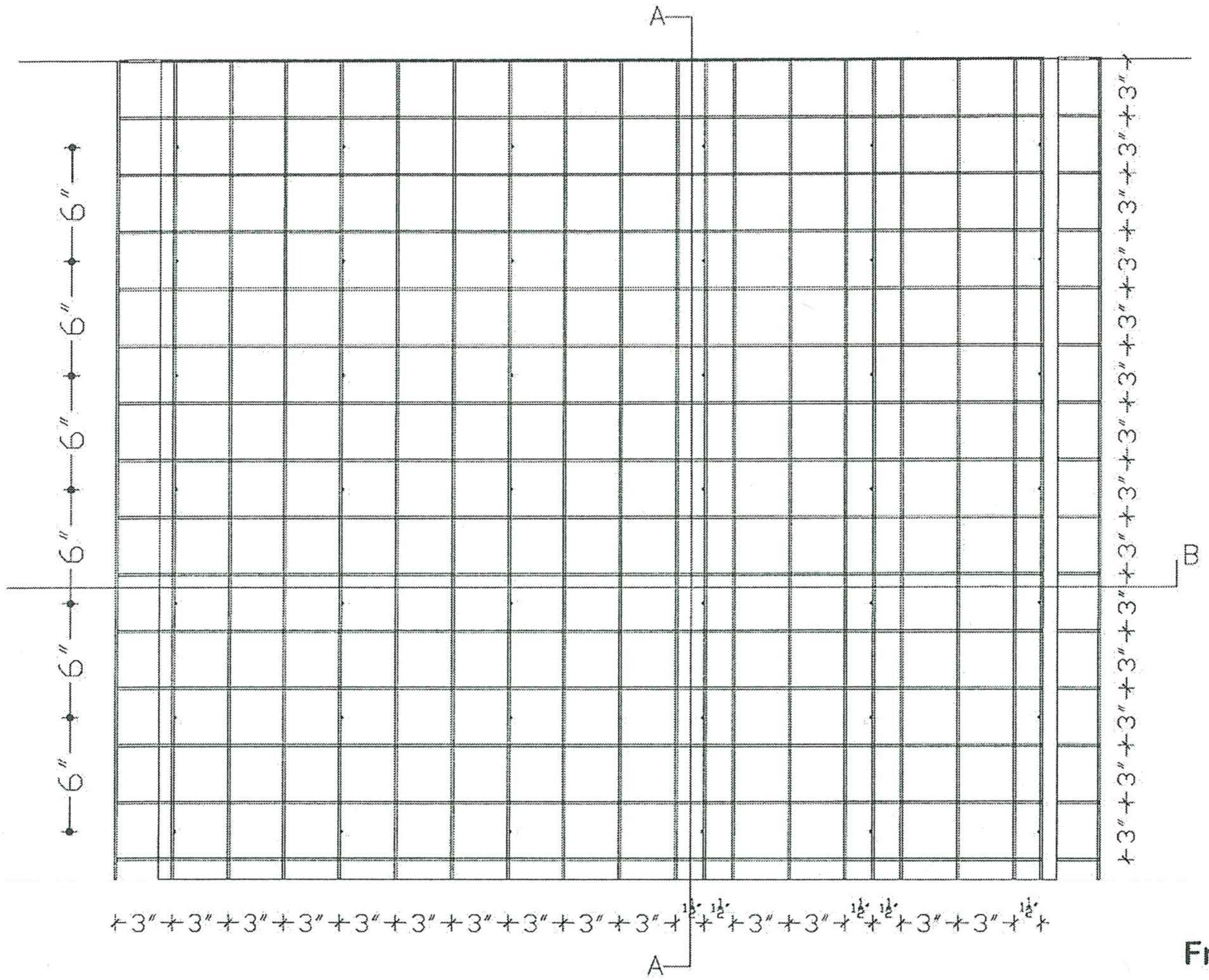
COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
HIGHT VELOCITY HURRACANE ZONE

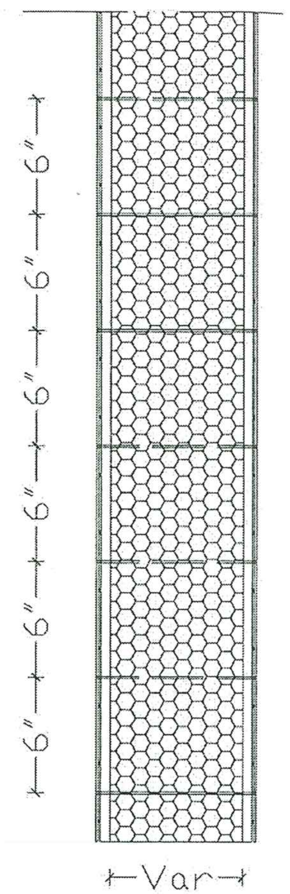
CONSULTANT
JUAN J. SANTANDREU
LICENSE P.E. 67241
Date 05-05-23
Scale NOTE
Drawn MM

Structural Green
New Generation of Sustainable Constructions

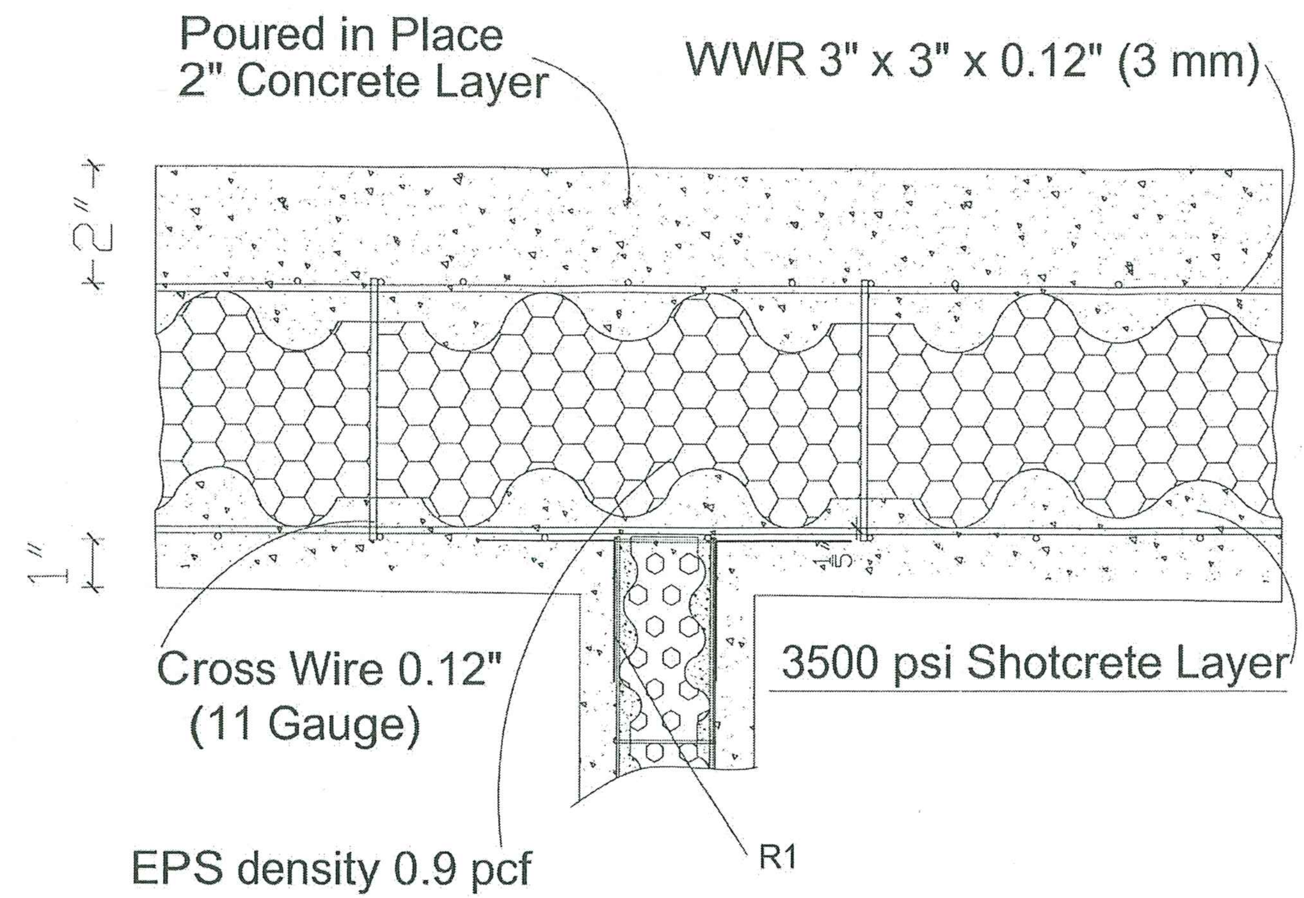
Sheet no. 1 of 5
SG.R-1

STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE

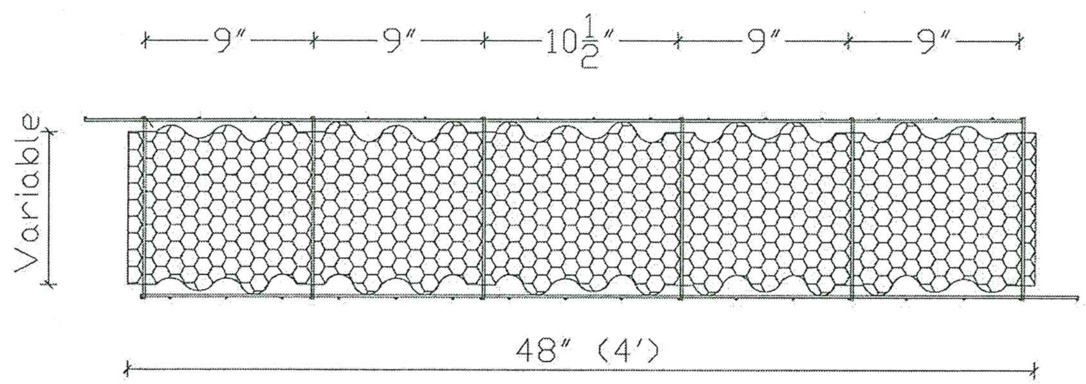




From 3-1/8" (Min)



TYPICAL ROOF CROSS SECTION



I/S/R-4 I/S/R-5 I/S/R-8 I/S/R-9

TYPICAL PANEL SECTION

SG STANDARD SLAB PANEL			
LABEL	EPS CORE THICKNESS	WEIGHT lb/ft^2	Rvalue hr ft^2 °F/Btu
I/S/R-4	4"	43.5	18.3
I/S/R-5	5"		21.6
I/S/R-8	8"		31.5
I/S/R-9	9"		34.7

Notes: Rvalues are for information only and they are not part of this Product Approval

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 23-0606.03
Expiration Date 08/09/2028
By [signature]
Miami Dade Product Control

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REVISIONS	BY
05-20-23	JS

COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
HIGHT VELOCITY HURRACANE ZONE

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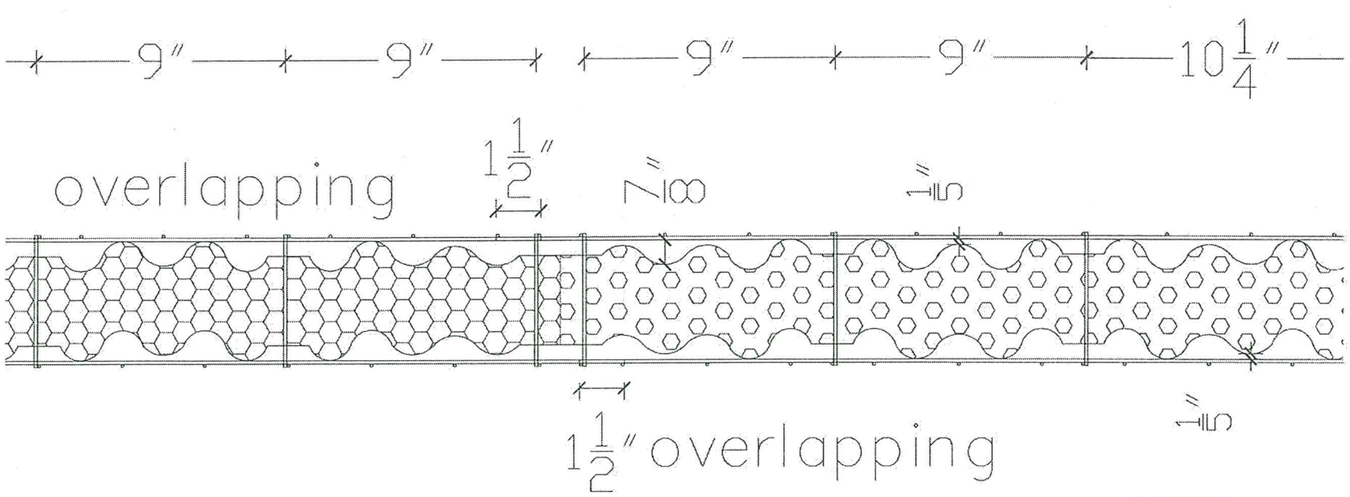
PROFESSIONAL ENGINEER

Drawn MM

Structural Green
New Generation of Sustainable Constructions

Sheet no. 2 of 5
SG.R-2

STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



TYPICAL WWR OVERLAPPING DETAIL

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as complying with the Florida
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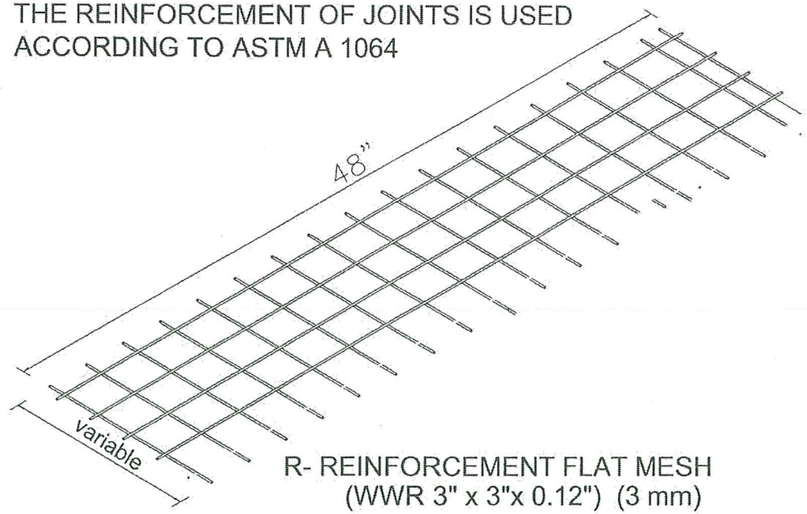
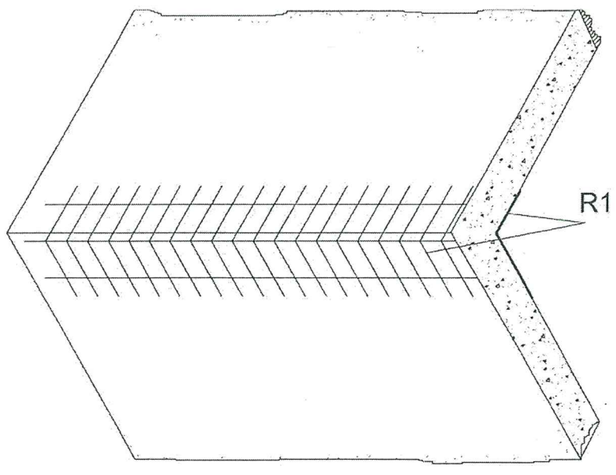
Expiration Date 05/09/2028
By
Miami Dade Product Control

THE REINFORCEMENT OF JOINTS IS USED
ACCORDING TO ASTM A 1064

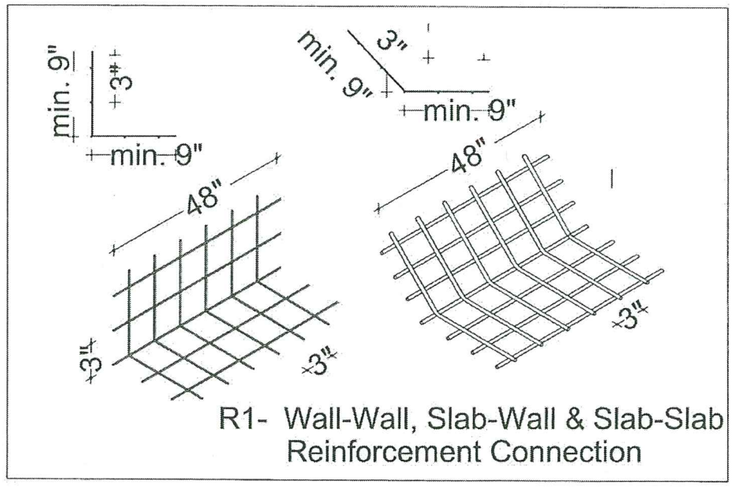


R- REINFORCEMENT FLAT MESH
(WWR 3" x 3"x 0.12") (3 mm)

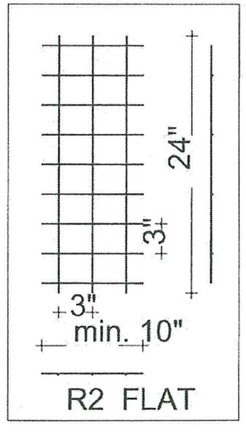
TYPICAL EXAMPLE WITH A FLAT ROOF SOLUTION



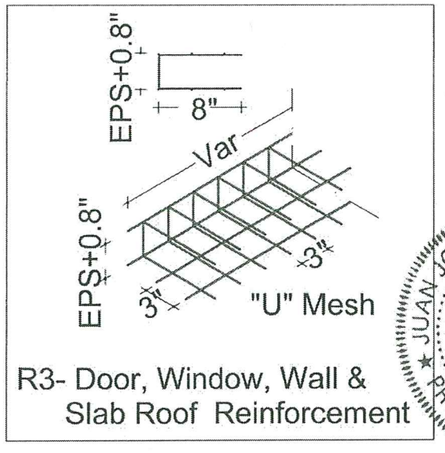
TIPYCAL REINFORCING AND CONNECTIONS DETAIL USED DURING THE ASSEMBLIES



R1- Wall-Wall, Slab-Wall & Slab-Slab
Reinforcement Connection



R2 FLAT



R3- Door, Window, Wall &
Slab Roof Reinforcement

THE REINFORCEMENT OF JOINTS IS USED ACCORDING TO ASTM A 1064

TYPICAL ADDITIONAL REINFORCING BAR SOLUTION ACCORDING TO THE CRITERION OF REGISTERED ENGINEER

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REVISIONS	BY
05-20-23	JS

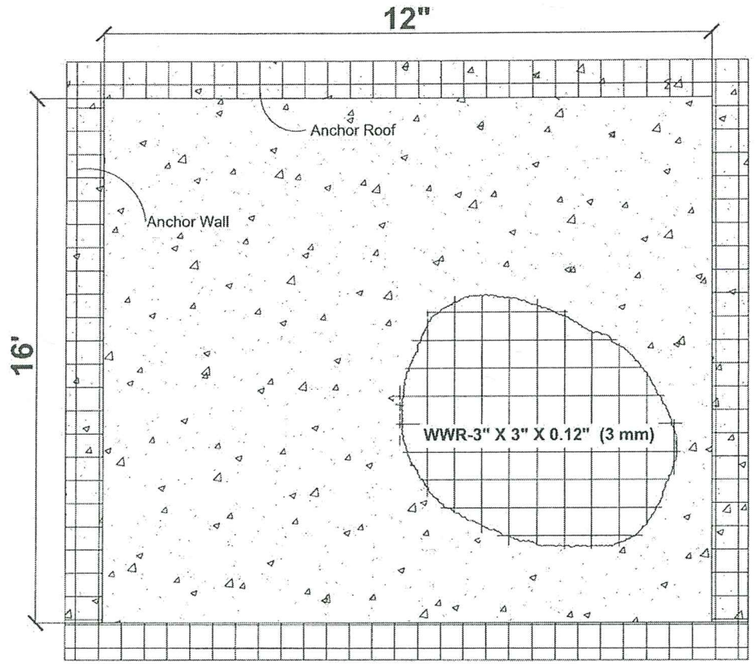
STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL WITH EPS CORE
SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
HIGHT VELOCITY HURRACANE ZONE

JUAN J. SANTANDREU LICENSE No. 67241 STATE OF FLORIDA PROFESSIONAL ENGINEER
CONSULTANT, S.E.
JUAN J. SANTANDREU
FL LICENSE P.E. 67241
Date 05-20-23
Scale NOTE
Drawn MM

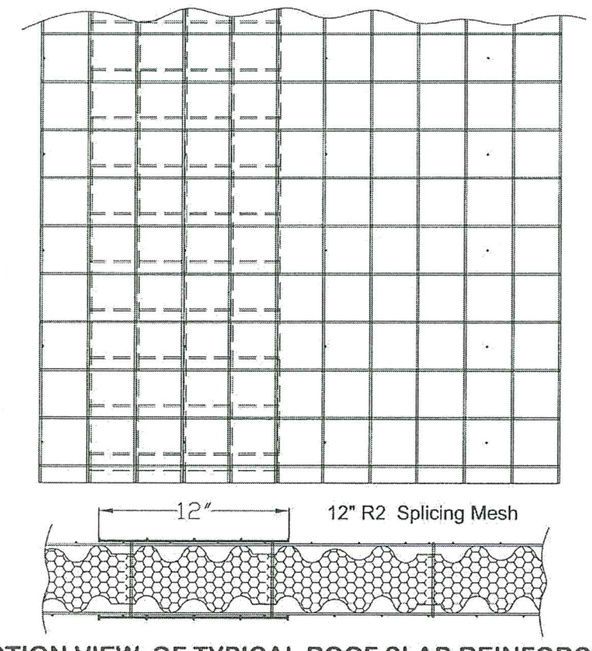
Structural Green
New Generation
of Sustainable
Constructions

Sheet no. 3 of 5
SG.R-3

STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE

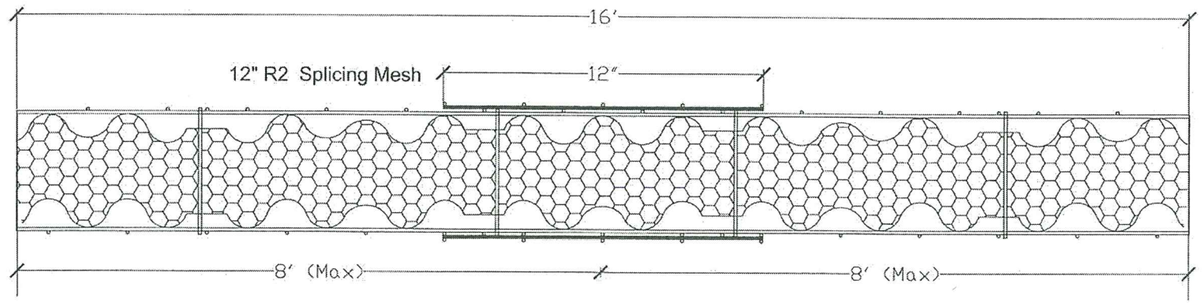


MAXIMUM STANDARD SLAB ROOF PANEL DIMENSIONS IS 16'-0' x 12'-0" WITH FOUR SIDES SUPPORTED BY SG WALLS AND MAXIMUM ROOF PANEL DESIGN PRESSURE -164.40 PSF (UP LIFT)



SECTION VIEW OF TYPICAL ROOF SLAB REINFORCING JOINT

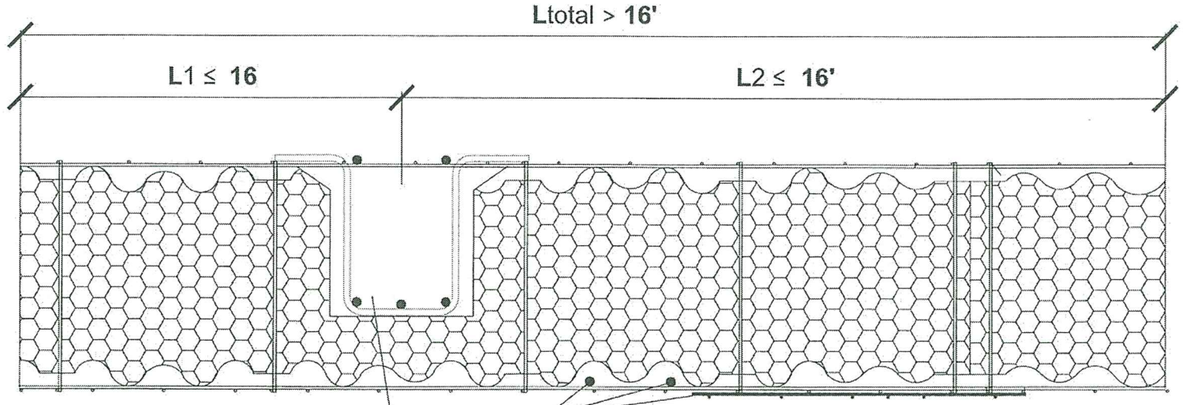
SECTION VIEW OF TYPICAL SLAB ROOF REINFORCING JOINT DETAILS "C1".



Note: When the wall length exceed 12' of length, WWR type R2 Flat reinforcements mesh of 12 inches wide will be installed on both sides of the panels in the Roof each 8' up to a maximum of 16' according to Reinforcing Roof Details "C1".

Resulting 16 'x 16'

SECTION VIEW OF TYPICAL SLAB ROOF REINFORCING JOINT DETAILS "C2".



Adjoining slabs may be supported on beams that in turn are sustained on walls or columns.

The beam **or other Reinforcing solutions** is not part of this NOA and is the responsibility of the Records Engineer.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 23-0606.03
Expiration Date 08/09/2028
By
Miami Dade Product Control

STRUCTURAL GREEN
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REVISIONS	BY
05-20-23	JS

SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
HIGHT VELOCITY HURRACANE ZONE
COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE

JUAN JOSE SANTANDREU
LICENSE
No. 59241
STATE OF FLORIDA
PROFESSIONAL ENGINEER
CONSULTANT
JUAN JOSE SANTANDREU
FL LICENSE No. 59241

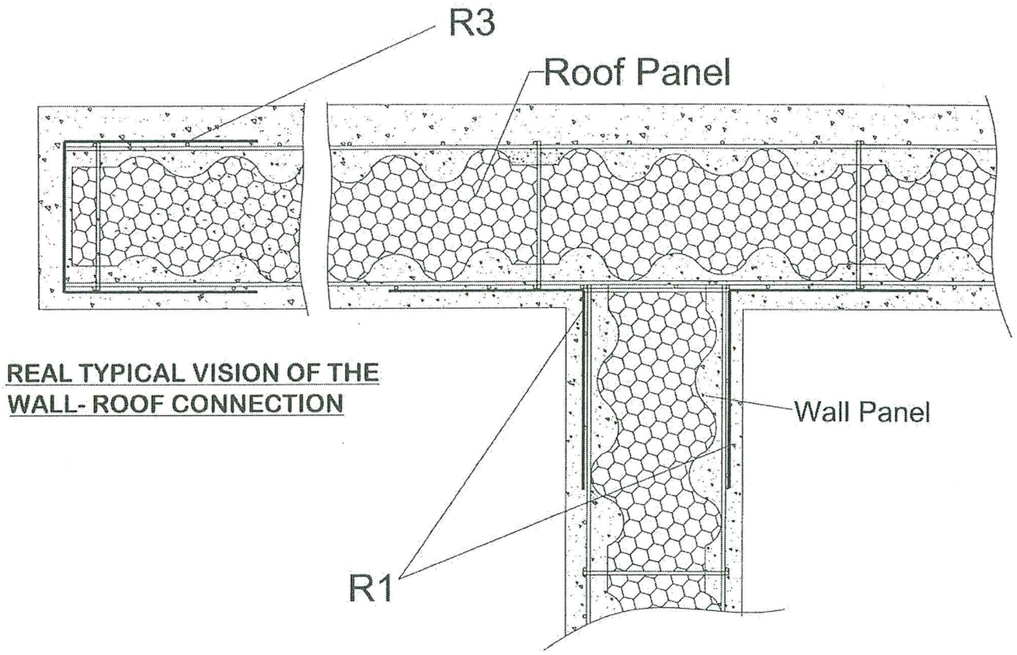
Date	05-05-23
Scale	NOTE
Drawn	MM

Structural Green
New Generation of Sustainable Constructions

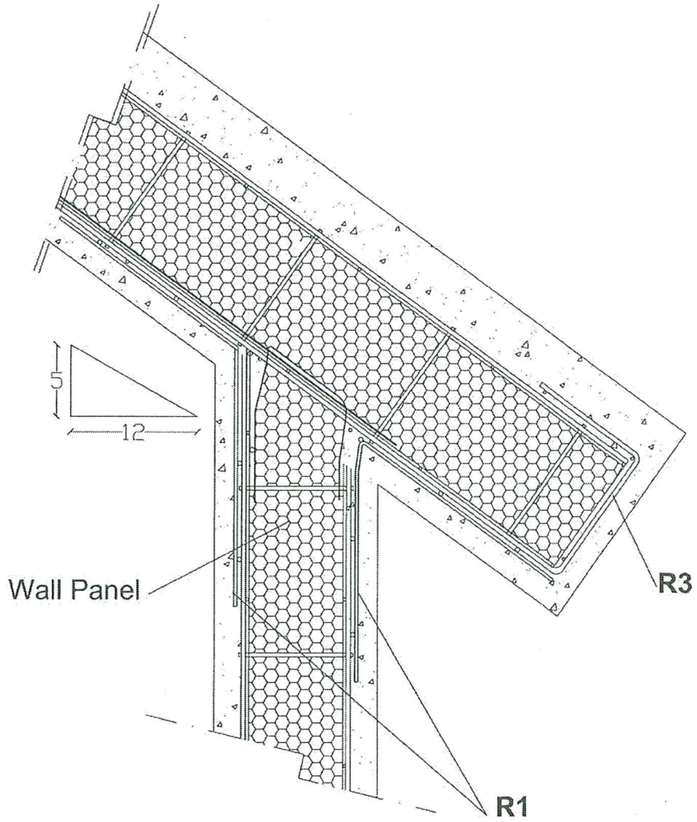
Sheet no. 4 of 5

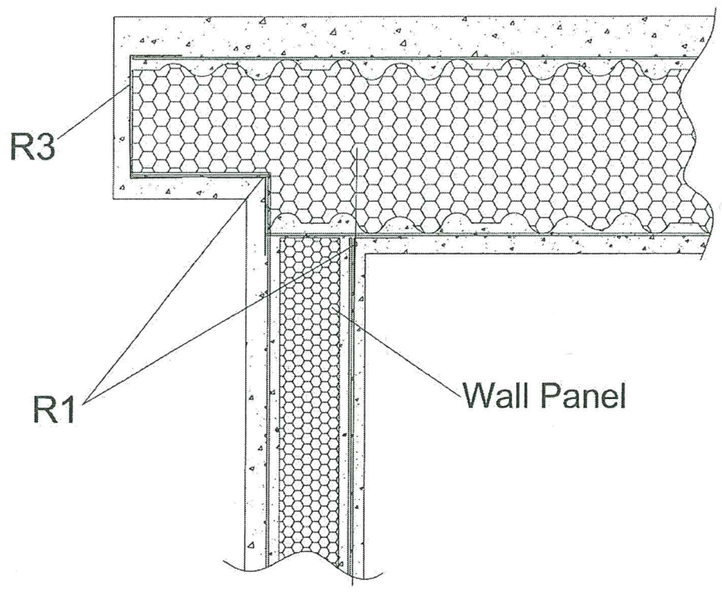
SG.R-4

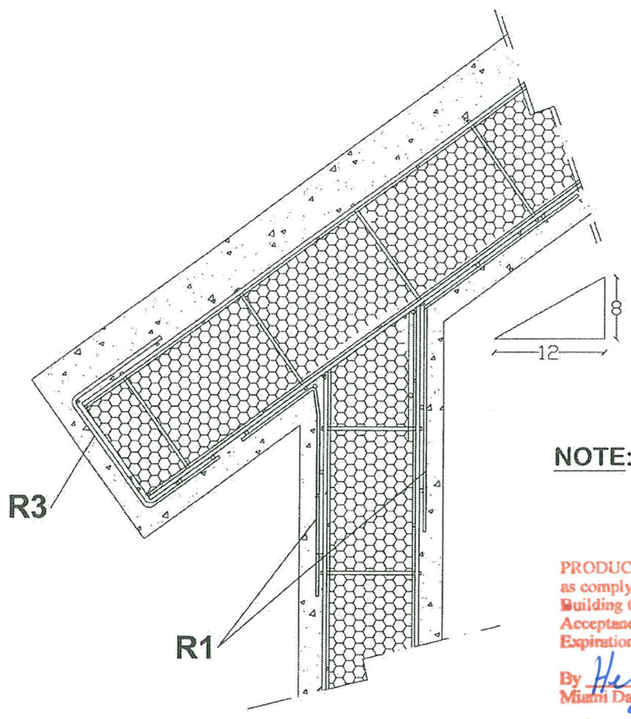
STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



REAL TYPICAL VISION OF THE WALL- ROOF CONNECTION







NOTE: THE OVERHANG PANELS SHALL BE CHECKED TO RESIST THE OVERHANG PRESSURE (MAXIMUM DESIGN OF -164.40 PSF) FOR EACH JOB BY THE CORRESPONDING BUILDING DEPARTMENT.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No. 23-0606.03
Expiration Date 05/09/2028
By
Miami Dade Product Control

TYPICAL SECTIONS

TYPICAL WALL-ROOF CROSS SECTION FOR ALL SPECIMENS

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REVISIONS	BY
05-20-23	JS

SUSTAINABLE BUILDINGS
MONOLITHIC CONSTRUCTION SYSTEM
HIGHT VELOCITY HURRACANE ZONE
COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE

JUAN JOSE SANTANDREU
LICENSE
No. 67241
STATE OF FLORIDA
PROFESSIONAL ENGINEER
CONSULTANT
JUAN J. SANTANDREU
LICENSE FOR 67241

Date 05-20-23
Scale NOTE
Drawn MM

Structural Green
New Generation
of Sustainable
Constructions

Sheet no. 5 of 5
SG.R-5