August 12, 2024

Robert N. Nielsen, Jr.
Board President
Skysail Owners Association, Inc.
100 Sky Sail Blvd.
New Bern, NC 28560

The following statements are provided in response to a request for a formal interpretation of section 110.26(C)(2) of the 2020 State Electrical Code. The original request (Appendix A and B) is attached.

This interpretation uses terminology that has particular meaning in the National Electrical Code (NEC). References to the NEC are specific to the First Edition that is published by the National Fire Protection Association (NFPA) unless otherwise noted. The NEC is also known as NFPA-70. The North Carolina State Electrical Code (State Electrical Code) consists of the First Edition NEC for a certain publication year with State Amendments that have been adopted by the North Carolina State Building Code Council (Building Code Council).

All "Questions and Answers" of this interpretation are designed to be read together as part of a complete document.

Question 1:
Is the current State Electrical Code applicable to the alteration of egress doors to an existing electrical room?

Answer 1:
It has been the long standing position of the State Electrical Division that existing electrical equipment and it surrounding environment are allowed to preserve their original approval by compliance with a previous version of the NEC if such equipment and environment remain unaltered since the time of original installation. It is also the State's position that existing electrical equipment and its surrounding environment may be altered and be granted a new approval if the alteration does not create a code violation in accordance with the current Codes.

Because electrical equipment clearances and egress have been a requirement of the NEC since its inception, modification to egress doors of an existing electrical room must either be in a like for like replacement that preserves the room's original approval or comply with the current State Electrical Code and be granted a new approval.

Question 2:

If an existing electrical room with large equipment as described in section 110.26(C)(2) of the 2020 NEC has two egress doors, can one egress door be removed and granted approval under the 2020 State Electrical Code?

Answer 2:

Excerpt from 2020 State Electrical Code (2020 NEC with State Amendments):

> **110.26 Spaces About Electrical Equipment.**
>
> Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.
>
> . . .
>
> **(C) Entrance to and Egress from Working Space.**
>
> **(1) Minimum Required.** At least one entrance of sufficient area shall be provided to give access to and egress from working space about electrical equipment.
>
> **(2) Large Equipment.** For large equipment that contains overcurrent devices, switching devices, or control devices, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6½ ft) high at each end of the working space. This requirement shall apply to either of the following conditions:
>
> (1) For equipment rated 1200 amperes or more and over 1.8 m (6 ft) wide
> (2) For service disconnecting means installed in accordance with 230.71 where the combined ampere rating is 1200 amperes or more and over 1.8 m (6 ft) wide
>
> Open equipment doors shall not impede the entry to or egress from the working space.
>
> A single entrance to and egress from the required working space shall be permitted where either of the conditions in 110.26(C)(2)(a) or (C)(2)(b) is met.
>
> **(a)** Unobstructed Egress. Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.
>
> **(b)** Extra Working Space. Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.

The first paragraph of section 110.26(C)(2) generally requires two entrances to the working space of large equipment. In cases of electrical rooms enclosed by walls and doors, the first paragraph then generally requires two separate egress doors to and away from the equipment's working space.

The last paragraph of section 110.26(C)(2) allows for a single egress door of an electrical room if either a "continuous and unobstructed way of egress travel" or "the depth of the working space is twice that required by 110.26(A)(1)" as detailed in sections 110.26(C)(2)(a) and 110.26(C)(2)(b) respectively.

The language of the Code is such that only one of the subsections [110.26(C)(2)(a) or 110.26(C)(2)(b)] must be true to allow for a single entrance.

Therefore, one of two existing egress doors serving an existing electrical room with large equipment as described in section 110.26(C)(2) of the 2020 NEC may be removed and granted approval under the 2020 State Electrical Code if the electrical equipment and its environment can comply with either sections 110.26(C)(2)(a) or 110.26(C)(2)(b).

Question 3:
What is the intent behind "unobstructed egress" described in section 110.26(C)(2)(a)?

Answer 3:
The inclusion of the phrase "unobstructed egress" with respect to entrance and egress to and from large equipment originated in the 1984 NEC. Prior to that, the second entrance requirement was completely subjective to the local electrical inspector's opinion of the installation's practicality with respect to the equipment's environment.

Excerpt from 1981 National Electrical Code:

> **110-16 Working Space About Electric Equipment (600 Volts, Nominal, or Less).** Sufficient access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.
>
> . . .
>
> **(c) Access and Entrance to Working Space.** At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment. For switchboards and control panels rated 1200 amperes or more and over 6 feet (1.83 m) wide, there shall be one entrance not less than 24 inches (610 mm) wide at each end where reasonably practicable.

During the development of the 1984 NEC, the NFPA Code Making Panels (CMPs) documented various reasoning in the 1983 Technical Committee Reports (TCR) which includes a Report on Proposals (ROP) and a Report on Comments (ROC) that give insight to both purpose for modification of the existing 1981 NEC language and substantiations that describe the intent of the new 1984 NEC language. Pages from the 1983 ROP and ROC are attached; see Appendix C and Appendix D respectively.

Excerpt from the 1983 ROP NEC CMP1 (Page 19):

1- 111 - (110-16(c)): Accept in Principle

SUBMITTERS: Joseph Marcelino, NECA Codes and Standards (299)

Jack Smith, East Bay Uniform Electrical Code Committee (302)

RECOMMENDATION: In the second sentence, delete the last three words: "where reasonably practicable."

SUBSTANTIATION: The term "where reasonably practicable" makes the requirement vague and therefore difficult to enforce. The need for a workman to have two ways out from the working space in front of a wide assembly of switchgear is too important to be compromised by vague language in the Code.

PANEL ACTION: Accept in Principle.

. . .

The purpose to modify the existing language of section 110-16(c) in the 1981 NEC is expressed in the 1983 ROP by several proposals that were accepted in principle by CMP1. The above text is one such proposal that provides a substantiation in the plainest of terms. CMP1 accepted this proposal in principle along with other similar proposals on this matter in order to clarify that egress will be a mandatory consideration in the design of the environment around large electrical equipment in the new Code, rather than an encouraged practice described in the existing language.

Excerpt from the 1983 ROP NEC CMP1 (Page 18):

1- 109 - (110-16(c)): Accept in Principle

SUBMITTER: IAEI

RECOMMENDATION: 110-16(c). Revise to read:

At least one entrance 24 inches wide by 6 foot 6 inches high shall be provided to give access to the working space about electric equipment. For switchboards, panel boards, and control

panels are rated 1200 amperes or more and are over 6 feet wide, the working space required by Section 110-16(c) shall be doubled or access shall be provided so that egress from the working area can be made in two different directions.

SUBSTANTIATION: Present wording is based on "practicality," a vague term and often unenforceable. The intent of two means of egress for "people safety" is accomplished clearly by the revised wording and an alternate of two means of egress is provided.

PANEL ACTION: Accept in Principle.

Retain present wording of Section 110-16(c) in the Code but delete the words "where reasonably practicable" and add the following two Exceptions:

"Exception No. 1: Where the work space configuration permits an escape route.

Exception No. 2: Where the workspace required by Section 110-16(a) is doubled."

PANEL COMMENT: Exception No. 1 is to correct an oversight in the proposal wherein workspace configurations could permit a ready escape route without the necessity of providing two doors or doubling the workspace. "Sufficient area" was retained as there is no substantiation for changing to specific dimensions.

. . .

Excerpt from the 1983 ROP NEC CMP1 (Pages 18 & 19):

> 1- 110 - (110-16(c)): Accept in Principle
> SUBMITTER: W. Creighton Schwan, Hayward, CA
> RECOMENDATION: In line 5, place a period after "end" add delete "where reasonably practicable."
> SUBSTANTIATION: There are far too many cases of electricians being trapped in a dead-end corridor between rows of switchgear with the only escape route leading past arching, burning, or exploding equipment. The phrase "where reasonably practicable" renders the requirement for an alternate escape route unenforceable, and should be deleted.
> PANEL ACTION: Accept in Principle.
> PANEL COMMENT: See Panel Action and Comment on Proposal 1-109.
> . . .

The intent to modify the existing language of section 110-16(c) in the 1981 NEC is expressed in the 1983 ROP by several proposals that were accepted in principle by CMP1. The text above are two such proposals that provide substantiations in the plainest of terms. CMP1 accepted these proposals in principle along with other similar proposals on this matter.

The substantiation in the International Association of Electrical Inspectors' (IAEI) 1-109 proposal states "[t]he intent of two means of egress for "people safety" is accomplished clearly by the revised wording and an alternate of two means of egress is provided." Furthermore, the CMP revised the IAEI's proposal to include exceptions to the general two means of egress requirement in that "workspace configurations could permit a ready escape route without the necessity of providing two doors".

The substantiation in W. Creighton Schwan's 1-110 proposal states "[t]here are far too many cases of electricians being trapped in a dead-end corridor between rows of switchgear with the only escape route leading past arching, burning, or exploding equipment."

The State Electrical Division concludes from these proposals that were accepted in principle that the intent to modify the existing language of section 110-16(c) was to ensure that new designs of electrical rooms provide unconfinable egress to escape electrical equipment that is experiencing a catastrophic event.

Excerpt from the 1983 ROC NEC CMP1 (Page 25):

> 1- 188 - (110-16(c), Exception No. 1): Accept
> SUBMITTER: Wilford Summers, CMP 1 Clearances Subcommittee
> COMMENT ON PROPOSAL NO.: 1-109
> RECOMMENDATION: Revise as follows:
> Exception No. 1: Where the equipment location permits a continuous and unobstructed way of exit travel.
> SUBSTANTIATION: This proposal is intended to resolve the negative comments to Proposals 1-109, 1-112 and 1-121. The proposed revision to Exception No. 1 essentially is the same as the definition of "means of egress" taken from the Life Safety Code. This exception could be applied to electric equipment located in an open area where a person's departure from the working space about electric equipment would not be impeded.
> PANEL ACTION: Accept.
> PANEL COMMENT: See Panel Action on Comment 1-189 for complete text.
> VOTE ON PANEL ACTION: Unanimously Affirmative.

Excerpt from the 1983 ROC NEC CMP1 (Page 25):

> 1- 189 - (110-16(c)): Accept
> SUBMITTER: Wilford Summers, CMP 1 Clearances Subcommittee
> COMMENT ON PROPOSAL NO.: 1-109
> RECOMMENDATION: Revise the last sentence of Section 110-16(c) of the 1981 NEC by adding "and 6 1/2 feet (1.98m) high" after "24 inches (610 mm) wide."
> SUBSTANTIATION: This proposal is intended to achieve correlation with Proposal 1-121 for Section 110-33(a). There may be differences in the requirements between Sections 110-16, 110-32, 110-33, and 110-34, but these differences can be justified by the greater hazards of higher voltages. An example would be that Section 110-33(a) requires a means of egress entrance way of 24 inches by 6 1/2 feet for all electric equipment over 600 volts, but Section 110-16(c) only requires such a means of egress for control panels and switchboards rated 1200 amperes or more and over 6 feet wide. For instance, a furnace in a crawl space would not warrant the same degree of accessibility and workspace as high-voltage cutouts.
> PANEL ACTION: Accept the Comment.
> Section 110-16(c) would then read: "At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment. For switchboards and control panels rated 1200 amperes or more and over 6 feet (1.83 m) wide, there shall be one entrance not less than 24 inches (610 mm) wide and 6 1/2 feet (1.98 m) high at each end.
> Exception No. 1: Where the equipment location permits a continuous and unobstructed way of exit travel.
> Exception No. 2: Where the workspace required by Section 110-16(a) is doubled.".
> VOTE ON PANEL ACTION: Unanimously Affirmative.

The ROCs above provide insight from where the current language describing an unobstructed egress in the 2020 NEC ("[w]here the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.") was derived. It is common practice for the NFPA to use specific terms and phrases throughout its standards which may only be specifically defined in one NFPA standard. In this case, it appears from Wilford Summer's 1-188 proposal that the CMP adopted the phrase "continuous and unobstructed way of exit travel" because it "essentially is the same as the definition of "means of egress" taken from the Life Safety Code"; which is NFPA-101. The current version of the NFPA-101 Code (2021) also defines "means of egress" virtually the same.

The State Electrical Division concludes from these proposals that the reason the phrase "[w]here the equipment location permits a continuous and unobstructed way of exit travel" was chosen rather than the CMP's original version, "[w]here the work space configuration permits an escape route", was exclusively to eliminate arguments surrounding the new unvetted language by using existing terminology in the construction industry's circulation with similar meanings. It is the State's opinion that the intent behind the 1984 NEC aforementioned language is to mandate an escape route in a direction such that persons in the presence of large equipment cannot be confined on either end or side of such equipment by building components or events related to electrical flashover during cataclysmic failure of the electrical equipment located in front, adjacent, behind, or near such persons. There is no evidence to suggest that the intent in the 2020 State Electrical Code is different.

The 1983 TCR documents to develop the 1984 NEC can be read in their entirety at the following link: https://www.nfpa.org/codes-and-standards/nfpa-70-standard-development/70

Question 4:

In a corridor style electrical room containing large equipment as described in section 110.26(C)(2) of the 2020 NEC without equipment doors, can the egress to and from the equipment be considered unobstructed in accordance with section 110.26(C)(2)(a) if the working space in front of the equipment is less than twice required in section 110.26(A)(1)? (Example Photos Below)

Answer 4:

Excerpt from the NFPA Technical Staff response to OSFM email (Appendix E):

> The main objective involving "a continuous and unobstructed way of egress travel" is to allow access to electrical equipment, while providing egress from the required working space so that workers can quickly escape if there is an arc-flash incident.
>
> Unobstructed egress travel should be free and clear from blockage or structure that would cause an individual to deviate from a direct path to exiting the workspace. Additionally, when assessing whether a continuous and unobstructed way of exit travel is available, the electrical equipment has to be considered as a potential barrier to safe egress if the equipment is in a failure condition.

Technical staff for the NFPA states that the unobstructed egress is not from the electrical equipment itself, rather the egress should be from the working space of the equipment. The State Electrical Division interprets the "working space" in the NFPA's opinion as the same working space described in section 110.26(A) of the 2020 NEC. Additionally, the NFPA's opinion with respect working space in this matter is consistent with images and commentary detailed in the NEC Handbooks from 1984 to 2023 editions; images of the 2023 NEC Handbook are reprinted on page 11 of Appendix B in this document. Special attention is given to the last image that displays a similar environment to that of Question 4 except that the theme of the drawing is that providing double working space allows for one entrance. Conversely, the State interprets this image to also represent that if is double working space was not provided in the drawing, two entrances would then be required because the egress is obstructed from one equipment's workspace into the workspace of the other equipment.

Combining the NFPA's opinion, the NEC Handbook's drawings and commentary, and the intent of "unobstructed egress" as interpreted in Answer 3 of this document, the State Electrical Division interprets workspace of additional equipment as an obstruction when determining unobstructed egress from the working space of a single piece of equipment. When determining egress from large equipment, each individual piece of equipment's working space must be evaluated to determine if the only escape route from such working space passes through another equipment's working space or any physical building component in order to be deemed unobstructed; otherwise, either the working space must be doubled, or an additional means of egress be provided.

Therefore, the egress in Question 4 is not considered "unobstructed".

Joseph Daniel Starling, PE
Division Chief of Engineering | Field Operations
Deputy State Fire Marshal

North Carolina
Office of State Fire Marshal
1202 Mail Service Center
Raleigh, NC 27699-1202
919.397.6159

100 Sky Sail Blvd., New Bern NC 28560 (252) 497-2979 www.SkySailBlvd.com

SkySail
RIVERFRONT LIVING

March 24, 2024

Via Priority Mail and Email (david.rittlinger@ncdoi.gov)

Hon. David B. Rittlinger, PE
Deputy Commissioner of Engineering
Office of State Fire Marshal
Department of Insurance
1202 Mail Service Center
Raleigh, NC 27699

Re: **Request for Informal Interpretation of NFPA §110.26(C)(2)**

Dear Commissioner Rittlinger:

We'd welcome your Informal Interpretation of an egress situation at one of our Electrical Rooms (hereafter "Room").

The New Bern Inspections Division (hereafter "Division") disagrees with the licensed Architect who designed the Room and with a licensed Professional Engineer who recently provided us with a Code Review Letter.

Appendix A

The licensed professionals believe that the Room should have two (2) exits; the Division believes that only one (1) exit is required.

The Room contains electrical equipment boxes rated over 1200 amperes that extend over six (6) feet. The boxes are located on two walls with approximately 46.75" of clearance.

The Room had two (2) exits from its initial construction on or about 2008 until recently when the new Owner of our Unit 104 adjacent to the Room covered the second exit with plaster board. So now the Room has one (1) exit.

To help with your Interpretation, we've enclosed several Attachments:

A. Code Summary and Electrical Details
B. Code Review Letter
C. Plans and Photos
D. NFPA Code Change Summary
E. NFPA Enhanced Content
F. Email from New Bern Inspections Division

We'd be pleased to provide additional information or host a visit by one of your consultants or staff members.

Our proposed question is "*Do the egress provisions of NFPA §110.26(C)(2) require a second exit from an Electrical Room with less*

Appendix A

than six feet of clearance between two walls holding equipment rated over 1200 amperes and extending over six feet?"

We're concerned about the safety of the employees of our Association and vendors who use the Room so we'd very much appreciate any answer that you can provide to us and to the City of New Bern.

With warm regards, I am

Sincerely yours,

ROBERT N. NIELSEN, JR.
Board President

cc: Mayor Jeffrey T. Odham (by email at odhamj@newbernnc.gov)
Aaron D. Arnette, Esq. (by email at aarnette@nclawyers.com)
Board VP Howard Follis (by email at howardskysail@gmail.com)

Encs.

Appendix A

SkySail
LUXURY CONDOS & MARINA

Attachment A

New Bern River
New Bern, North Carolina

Issued for Construction
December 20, 2006

Architecture
JDavis Architects, PLLC
Raleigh, North Carolina
(919) 835-1500

Civil
McKim & Creed, P.A.
Cary, North Carolina
(919) 223-8091

Structure
Fluhrer Reed, PA
Raleigh, North Carolina
(919) 821-7146
Foundation & Columns Only
P.T. Slab Designed by Others

Plumbing
Lighthouse Engineering
Raleigh, North Carolina
(919) 835-9781

Mechanical
Lighthouse Engineering
Raleigh, North Carolina
(919) 835-9781

Electrical
Lighthouse Engineering
Raleigh, North Carolina
(919) 835-9781

Fire Protection
F.P. Design by Others

Building Code Summary

APPENDIX B

Name of Project: **Sky Sail – Luxury Condos & Marina**
Address: **Middle Street, New Bern**
Proposed Use: **Residential occupancy – Condominiums**
Owner or Contact Person: **Nell Gray** Telephone: **(919) 835-1500**
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☒ City **New Bern** ☐ County –

LEAD DESIGN PROFESSIONAL: **Nell T. Gray**

	FIRM	NAME	LICENSE#	TELEPHONE#
Architectural	**JDavis Architects**	**Nell T. Gray**	**8338**	**(919) 835-1500**
Civil	**McKim & Creed**	**Grant M. Livengood**	**28419**	**(919) 233-8091**
Electrical	**Lighthouse Engineering**	**Paul S. Scott**	**26585**	**(919) 835-9781**
Fire Alarm	**Lighthouse Engineering**	**Paul S. Scott**	**26585**	**(919) 835-9781**
Plumbing	**Lighthouse Engineering**	**Scott A. Brown**	**28385**	**(919) 835-9781**
Mechanical	**Lighthouse Engineering**	**Scott A. Brown**	**28385**	**(919) 835-9781**
Sprinkler–Standpipe	**Performance**	**Clifford R. Whitfield**	**77007**	**(704) 663-1664**
Structural	**Fluher Reed**	**Banning J. Reed**	**24051**	**(919) 821-7146**
PreCast	–	–	–	–
Truss	–	–	–	–
Other	–	–	–	–

YEAR EDITION OF CODE: **2002**
☒ New Construction ☐ Renovation (Existing Bldg) ☐ Upfits ☐ Alteration

BUILDING DATA
Construction Type: ☐ I–A ☐ I–B ☒ II–A ☐ II–B ☐ III–A ☐ III–B
☐ IV ☐ V–A ☐ V–B
Mixed Construction: ☒ No ☐ Yes Types –
Sprinkler and System Type: **YES (NFPA–13)**
Standpipes: **YES**
Building Height: **55'** Feet **5** Number of Stories: ☐ Unlimited per –
Mezzanine: ☒ No ☐ Yes –
High Rise: ☒ No ☐ Yes Central Reference Sheet # (if provided) –
Gross Building Area:

FLOOR	EXISTING	NEW	SUB–TOTAL
Ground Floor	–	**59,740**	**59,740**
First Floor	–	**70,792**	**70,792**
Second Floor	–	**45,312**	**45,312**
Third Floor	–	**45,312**	**45,312**
Fourth Floor	–	**41,813**	**41,813**
–	–	–	–
–	–	–	–
TOTAL	–	**262,969**	**262,969**

Primary Occupancy ☐ A–1 ☐ A–2 ☐ A–3 ☐ A–4 ☐ A–5 ☐ Business ☐ Educational ☐ F–1 ☐ F–2 ☐ High–Hazard ☐ H–1 ☐ H–2 ☐ H–3 ☐ H–4 ☐ H–5 ☐ Institutional ☐ I–1 ☐ I–2 ☐ I–3 ☐ I–4 I–3 Use Condition ☐ Mercantile ☐ R–1 ☒ R–2 ☐ R–3 ☐ R–4 ☐ S–1 ☐ S–2 ☐ High–piled ☐ Utility & Miscellaneous Parking Garage ☐ Open ☐ Enclosed ☐ Repair
Secondary Occupancy **Parking S–2 (Located on Ground and First Floors)**
Special Occupancy ☐ 508.2 ☐ 508.3 ☐ 508.4 ☐ 508.5 ☐ 508.6 ☐ 508.7 ☐ 508.8
Incidental Use **Resident Storage Rooms, Trash Collection Room** Separation: **1** Hours
Accessory Use **Condo Offices**
Mixed Occupancy: ☐ No ☒ Yes Separation: **1** Hr. Exception: –
☐ Non–Separated Mixed Occupancy (302.3.2)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☒ Separated Mixed Occupancy (302.3.3)
For each story, the area of occupancy shall be such that the sum of ratios of the actual floor area of use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00$$

$$\left(\frac{\text{Parking Actual } 77{,}817\ \text{SF}}{\text{Allowable Parking } 386{,}100\ \text{SF}} = 0.20\right) + \left(\frac{\text{Residential Actual } 179{,}837\ \text{SF}}{\text{Allowable Residential } 237{,}600\ \text{SF}} = 0.76\right) = 0.96 \leq 1.00$$

ALLOWABLE AREA

STORY No.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE*	(D) AREA FOR SPRINKLER INCREASE†	(E) ALLOWABLE AREA OR UNLIMITED	(F) MAXIMUM BUILDING AREA*
Ground	**PARKING**	**59,740**	**39,000**	**11,700**	**78,000**	**128,700**	**386,100**
1st	**PARKING**	**18,077**	**39,000**	**11,700**	**78,000**	**128,700**	**386,100**
1st	**RESIDENTIAL**	**47,400**	**24,000**	**7,200**	**48,000**	**79,200**	**237,600**
2nd	**RESIDENTIAL**	**45,312**	**24,000**	**7,200**	**48,000**	**79,200**	**237,600**
3rd	**RESIDENTIAL**	**45,312**	**24,000**	**7,200**	**48,000**	**79,200**	**237,600**
4th	**RESIDENTIAL**	**41,813**	**24,000**	**7,200**	**48,000**	**79,200**	**237,600**

*Open space area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = **930** (F)
Note: Publication on this project is a "Public Street" and a "Public Way"
b. Total Building Perimeter = **1700** (P)
c. Ratio (F/P) = **0.55** (F/P)
d. W = Minimum width of public way = **30'**–(W)
e. Percent of frontage increase, I = 100[(F/P – 0.25)· W/30 = **30** (%)
†The sprinkler increase per Section 506.3 is as follows:
a. Multi–story buildings I = 200 percent
b. Single story buildings I = 300 percent
‡Unlimited area applicable under conditions of Sections Group B, F, M, S, A–4 (507.1, 507.2, 507.3, 507.5), Group A motion picture (507.8), Malls (402.6), and H–2 aircraft paint hangers (507.6).
*Maximum Building Area = total number of stories in the building x E but not greater than 3 x E.
*The max area of parking garages must comply with 406.3.5. The max area of air traffic control towers must comply with 412.1.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type **II–A**		Type **II–A**	–
Building Height in Feet	Feet = **B = 65'**	Feet = H+20 **85'**	Feet **55'**	–
Building Height in Stories	Stories **R–2 = 4**	Stories = 1 **5**	Stories **5**	–

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING W/ SPRINKLER REDUCTION	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY SEE #5	DESIGN # FOR RATED PENETRATIONS	DESIGN # FOR RATED JOINTS SEE #4
Structural frame, including columns, girders, trusses	**N/A**	**1**	**N/A**	**N/A**	**NCBC 720.2**	–	–
Exterior Bearing walls							
North	**NONE**	–	–	–	–	–	–
East	**NONE**	–	–	–	–	–	–
West	**NONE**	–	–	–	–	–	–
South	**NONE**	–	–	–	–	–	–
Exterior Non–bearing walls							
North	**>20**	**1**	**N/A**	**1/A8.01**	**U418**	**W–2014**	**HW–D–0224**
East	**≥30**	**0**	**N/A**	–	–	–	–
West	**≥30**	**0**	**N/A**	–	–	–	–
South	**≥30**	**0**	**N/A**	–	–	–	–
Interior walls and partitions							
Bearing	**NONE**	–	–	–	–	–	–
Non–bearing	**N/A**	**0**	**0**	–	–	–	–
Corridor Separations	**N/A**	**1**	**1**	**2/A9.08**	**U419**	**W–2014**	**HW–D–0224**
*Elevator Lobbies	**None**	–	–	–	–	–	–
Occupancy Separation	**N/A**	**2**	**1**	**2/A9.08**	**U419**	**W–2014**	**HW–D–0224**
Party/Fire Wall Separation	**NONE**	–	–	–	–	–	–
Smoke Barrier Separation	**NONE**	–	–	–	–	–	–
Tenant Separation	**NONE**	–	–	–	–	–	–
*Dwelling Unit Separation	**N/A**	**1**	**1**	**1/A8.08**	**U419**	**W–2014**	**HW–D–0224**
Incidental Use Areas	**N/A**	**1**	**1**	**1/A8.08**	**U905**	**W–2014**	**HW–D–0224**
Floor Construction Including supporting beams and joists	**>30**	**1**	**N/A**	**N/A**	**NCBC 720.2**	–	–
Roof Construction Including supporting beams and joists	**>30**	**1**	**N/A**	**N/A**	**NCBC 720.2**	–	–
Horizontal Fire Ratings Dampers, combustibles, Tenants, Radiation	**N/A**	**0**	**0**	–	–	–	–
Shafts– Exits	**N/A**	**2**	**2**	**4/A8.08**	**NCBC 720.2**	**W–2014**	**HW–D–0224**
Shafts– Others	**N/A**	**2**	**2**	**4/A8.08**	**U438**	**W–2014**	**HW–D–0224**

*Additional elevator barrier provided, per Exception No.2 of 707.14.1. Barrier is a "Smoke Guard" Automatic smoke barrier.
†One–Hour Fire–Resistance Rating is required for separation of dwelling units – Exceptions in Section 708.3 (2) do not apply.

LIFE SAFETY REQUIREMENTS

Emergency Lighting:	☐ No	☒ Yes
Exit Signs:	☐ No	☒ Yes
Fire Alarm:	☐ No	☒ Yes
Smoke Detection Systems:	☐ No	☒ Yes
Panic Hardware:	☒ No	☐ Yes

EXIT REQUIREMENTS
NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT OF MEANS OF EGRESS	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE DISTANCE	ACTUAL DISTANCE	REQUIRED DISTANCE	ACTUAL DISTANCE
PARKING (Ground FL)	**2**	**4**	**300**	**150**	**170**	**380**
RESIDENTIAL (1st FL)	**2**	**4**	**250**	**135**	**170**	**380**
RESIDENTIAL (2nd FL)	**2**	**2**	**250**	**135**	**120**	**269**
RESIDENTIAL (3rd FL)	**2**	**2**	**250**	**135**	**120**	**269**
RESIDENTIAL (4th FL)	**2**	**2**	**250**	**135**	**120**	**269**

EXIT WIDTH

USE GROUP OR SPACE DESIGNATION	(A) AREA	(B) AREA PER OCCUPANT	(C) EGRESS PER OCCUPANT		EXIT WIDTH REQUIRED		ACTUAL	
			STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
PARKING (Ground FL)	**59,740**	**200 GROSS**	**0.2**	**0.15**	**60**	**45**	**N/A**	**60**
PARKING (1st FL)	**18,077**	**200 GROSS**	**0.2**	**0.15**	**18**	**14**	**44**	**100**
RESIDENTIAL (1st FL)	**47,400**	**200 GROSS**	**0.2**	**0.15**	**48**	**36**	**88**	**80**
RESIDENTIAL (2nd FL)	**45,312**	**200 GROSS**	**0.2**	**0.15**	**46**	**34**	**88**	**N/A**
RESIDENTIAL (3rd FL)	**45,312**	**200 GROSS**	**0.2**	**0.15**	**46**	**34**	**88**	**N/A**
RESIDENTIAL (4th FL)	**41,813**	**200 GROSS**	**0.2**	**0.15**	**42**	**32**	**88**	**N/A**

PLUMBING FIXTURE REQUIREMENTS

TOTAL SQUARE FEET (GROSS PER FLOOR)	MULTIPLIED BY ALLOWED DIVERSITY	EQUAL ADJ. SQ. FT.	DIVIDED BY AREA PER PERSON	EQUALS TOTAL OCCUPANTS	RATIO MALE & FEMALE	TOTAL MALE	TOTAL FEMALE
00 (1st Fl Business)	**70%**	**20,775**	**100 sf**	**208**	**40/60**	**83**	**125**
00 (1st Fl Fitness)							
Residential Units	**1 per Units**	–	–	–	–	–	–

OCCUPANCY	WATER CLOSETS		URINALS	LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS	
	MALE	FEMALE		MALE	FEMALE		REGULAR	ACCESS.
BUSINESS (1st FL)	**4**	**5**	**2/3**	**3**	**3**	**0**	**0**	**2**
Residential Units	**N/A**	**N/A**	–	–	–	–	–	–

DESIGN LOADS

SEE STRUCTURAL DRAWING S0.1 FOR APPENDIX B "BUILDING DESIGN LOADS"

ENERGY REQUIREMENTS:
THERMAL ENVELOPE METHOD OF COMPLIANCE:
Perscriptive ☒ Performance ☐ Energy Cost Budge ☐

Roof/Ceiling Assembly (each assembly)
Description of Assembly **CONCRETE, RIGID INSULATION AND MEMBRANE**
U–Value of Total Assembly **U–0.03**
R–Value of Insulation **R–30**
Skylight in Each Assembly **NONE**
U–Value of Skylight **N/A**
Total square footage of skylight in each assembly **N/A**

Exterior Walls (each assembly)
Description of Assembly **METAL STUDS, BATT INSULATION AND BRICK VENEER**
U–Value of Total Assembly **U–0.05**
R–Value of Insulation **R–19**
Openings (windows or doors with glazing)
U–Value of Assembly **U–0.48**
Shading Coefficient **U–0.48**
Projection Factor **0.48**
Low–e required, if applicable **Low–E**
Door R–Values **R–2.86**

Walls adjacent to unconditioned space (each assembly)
Description of Assembly **CMU, METAL CHANNELS AND RIGID INSULATION**
U–Value of Total Assembly **U–0.12**
R–Value of Insulation **R–5**
Openings (windows or doors with glazing) **NONE**
U–Value of Assembly **N/A**
Low–e required, if applicable **N/A**
Door R–Values **R–2.86**

Walls below grade (each assembly)
Description of Assembly **CMU, METAL CHANNELS AND RIGID INSULATION**
U–Value of Total Assembly **U–0.12**
R–Value of Insulation **R–5**

Floors over unconditioned space (each assembly)
Description of Assembly **CONCRETE SLAB AND SPRAY–ON INSULATION**
U–Value of Total Assembly **U–0.08**
R–Value of Insulation **R–11**

Floors slab on grade
Description of Assembly **CONCRETE SLAB AND RIGID PERIMETER INSULATION**
U–Value of Total Assembly **U–0.37**
R–Value of Insulation **R–7**
Horizontal/vertical requirements **24" HORIZONTAL/12" VERTICAL**
Slab Heated **NO**

ELECTRICAL SUMMARY:

SEE ELECTRICAL DRAWING – FOR APPENDIX B "BUILDING DESIGN LOADS"

MECHANICAL SUMMARY:

SEE MECHANICAL DRAWING – FOR APPENDIX B "BUILDING DESIGN LOADS"

Drawing Index

Appendix B

JDAVISARCHITECTS
510 Glenwood Ave. Suite 201 | Raleigh, NC 27603 | tel 919.835.1500 | fax 919.835.1510

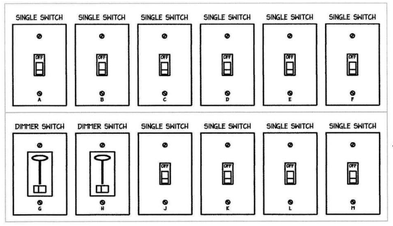
SkySail
LUXURY CONDOS & MARINA
New Bern River
Front Development, LLC
New Bern, North Carolina

TIMOTHY GRAY REGISTERED ARCHITECT NORTH CAROLINA CERT. NO. 15208 RALEIGH

J. DAVIS ARCHITECTS, PLLC REGISTERED ENGINEERING FIRM CERT. NO. 51208 RALEIGH, N.C.

	DATE
PROJECT: WHI-03077	05-02-04
ISSUE: Issued for Construction	12-20-06
REVISIONS:	
DRAWN BY: REN, AHO	
CHECKED BY:	
CONTENT: COVER	

CS.01



CIRCUIT	SWITCH BANK KEY:	SWITCH DESIGNATION:
HP2A-9	A - LOBBY	a
HP2A-9	B - LOBBY	b
HP2A-11	C - LOBBY	c
HP2A-11	D - LOBBY	d
HP2A-13	E - LOBBY	e
HP2A-13	F - LOBBY	f
HP2A-15	G - SCONCE	g
HP2A-17	H - PENDANT	h
HP2A-19	J - LOBBY	j
HP2A-19	K - LOBBY	k
HP2A-21	L - LOBBY	l
HP2A-21	M - LOBBY	m

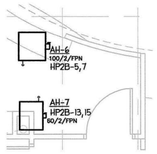
FIXTURE TYPE
SWITCH DESIGNATION — CIRCUIT

NOTE:
IN CASES WHERE THERE ARE TWO SWITCH DESIGNATIONS LISTED, THE FIXTURES HAVE TWO BALLASTS, SWITCHED INDIVIDUALLY.

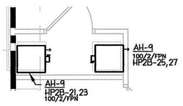
2 SWITCH BANK DETAIL
NO SCALE

NOTE:

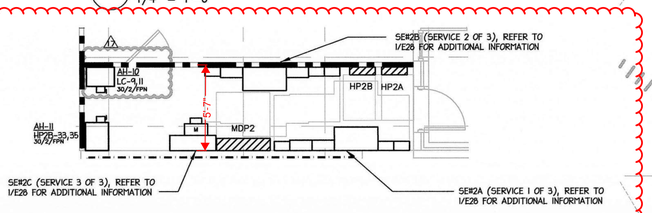
VERIFY LOCATION, ARRANGEMENT AND TYPES OF SWITCHES WITH TENANT PRIOR TO BEGINNING WORK. PROVIDE ADRQUATE VENTILAITON PER MANUFACTURER'S RECOMMENDATIONS.



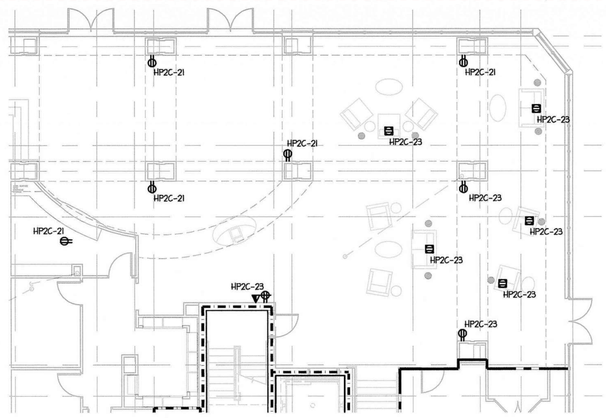
3 ENLARGED STORAGE RM 110D
1/4" = 1'-0"



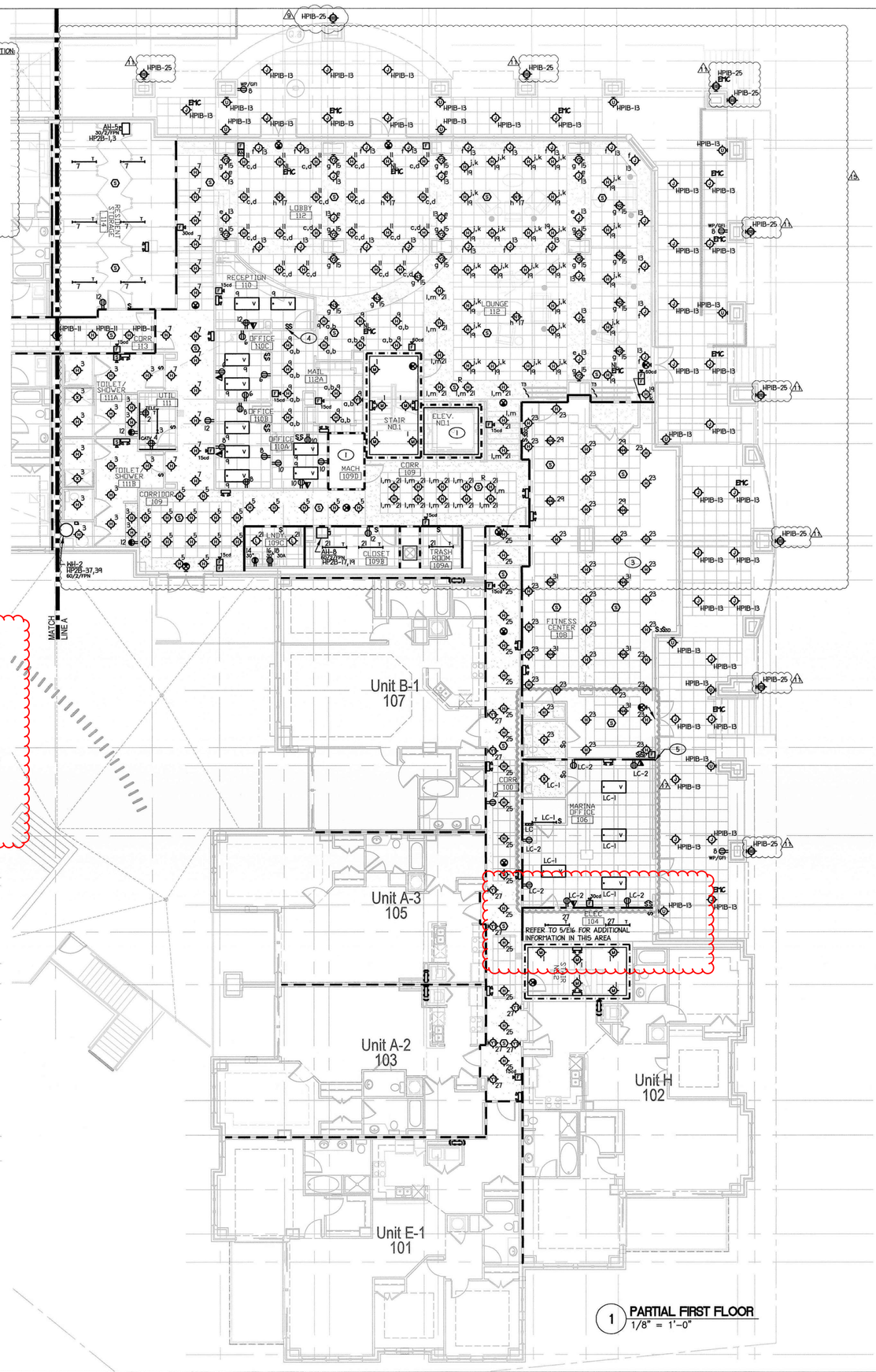
4 ENLARGED FITNESS STORAGE RM 108
1/4" = 1'-0"



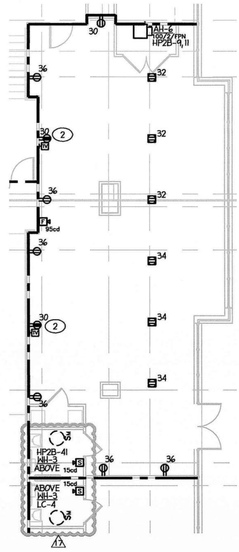
5 ENLARGED ELECTRICAL RM 104
1/4" = 1'-0"



5 LOBBY/RECEPTION AREA POWER
1/8" = 1'-0"



1 PARTIAL FIRST FLOOR
1/8" = 1'-0"



6 FITNESS CENTER POWER
1/8" = 1'-0"

WALL LEGEND:
- 1-HR FIRE BARRIER
- 1-HR FIRE PARTITION
- 2-HR FIRE BARRIER

GENERAL NOTES:

1. ALL CIRCUITS SHOWN SHALL BE CIRCUITED TO PANEL HP2A UNLESS OTHERWISE NOTED.

TAGGED NOTES:

1. REFER TO SHEET E11 FOR ADDITIONAL INFORMATION IN THIS AREA. EQUIPMENT SHALL BE CONNECTED TO PANEL HP2A.
2. E.C. SHALL COORDINATE THE EXACT MOUNTING HEIGHT AND LOCATION OF RECEPTACLE AND TV OUTLET.
3. E.C. SHALL COORDINATE EXACT FITNESS ROOM RECEPTACLE LAYOUT WITH OWNER PRIOR TO ROUGH-IN.
4. SWITCH BANK FOR LOBBY AREA FIXTURES. REFER TO 2/E16 FOR ADDITIONAL INFORMATION.
5. E.C. SHALL COORDINATE MOUNTING OF PULL STATION WITH STOREFRONT.

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MECHANICAL ELECTRICAL PLUMBING

New Bern River
Front Development, LLC
New Bern, North Carolina

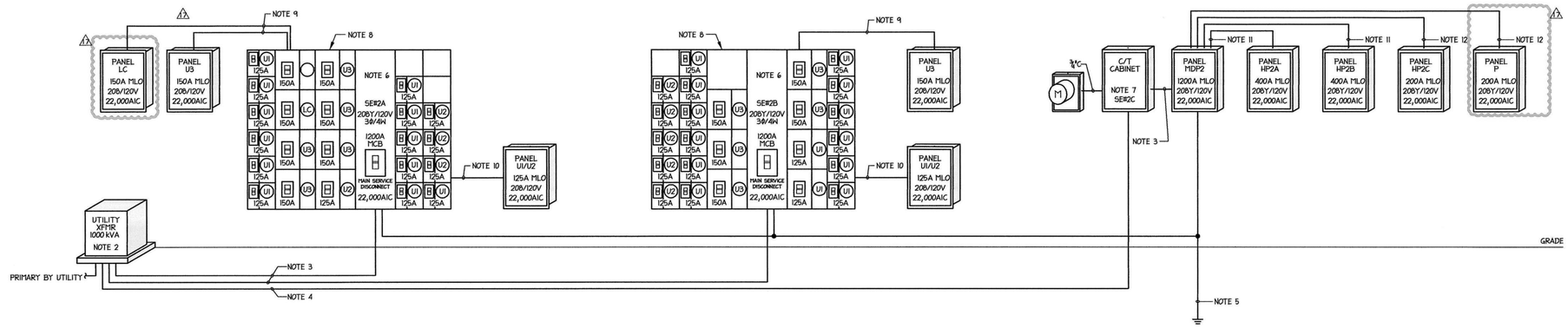
SkySail
LUXURY CONDOS & MARINA

NORTH CAROLINA PROFESSIONAL SEAL 26555 ENGINEER PAUL S. SCOTT
Jul 29, 2008

		DATE
PROJECT:	WHI-03077	12-20-06
REVISIONS:	CONSTRUCTION SET	12-20-06
0	RAMP LIGHTING	10-29-07
1	LIGHTING CHANGES	11-27-07
2	RFI #089	03-07-08
3	SPA ADDITION	07-29-08
DRAWN BY:	LNW	
CHECKED BY:	PSS	
CONTENT:	ELECTRICAL PLAN	

E17

Appendix B



MAXIMUM AVAILABLE FAULT CURRENT IS BASED ON A 1000kVA UTILITY TRANSFORMER WITH 5.9%Z. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ACTUAL TRANSFORMER CHARACTERISTICS INDICATE A HIGHER FAULT CURRENT IS POSSIBLE.

SE#2A LOAD SUMMARY

PANEL TYPE	KVA CONN PER PANEL	# OF PANELS	TOTAL KVA PER PANEL TYPE
U1	36.1	12	433.2
U2	37.4	5	187.0
U3	40.4	6	242.4
TOTAL RESIDENTIAL CONNECTED KVA			862.6
DEMAND FACTOR PER NEC 220-84			0.36
TOTAL RESIDENTIAL DEMAND KVA			310.5
TOTAL DEMAND ON PANEL LC			9.0
TOTAL DEMAND KVA			319.5
AMPS AT 208/3PH.			888

SE#2B LOAD SUMMARY

PANEL TYPE	KVA CONN PER PANEL	# OF PANELS	TOTAL KVA PER PANEL TYPE
U1	36.1	14	505.4
U2	37.4	5	187.0
U3	40.4	5	202.0
TOTAL RESIDENTIAL CONNECTED KVA			894.4
DEMAND FACTOR PER NEC 220-84			0.35
TOTAL RESIDENTIAL DEMAND KVA			313.0
AMPS AT 208/3PH.			869

PANEL "LC" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 150AMP BREAKER				
LIGHTS		0.4	1.25	0.5
HVAC	LARGEST MOTOR	4.1	1.25	5.1
	REMAINDER	1.9	0.5	1.0
RECEPTACLES		1.1	1.0	1.1
WATER HEATER		1.5	1.25	1.9
TOTALS		9.0		9.6
TOTAL AMPS @ 208V 1Φ	46			

VOLTAGE: 208/120V
AMPS: 225 - MLO

NEW
PANEL: LC

1 PHASE 3 WIRE
SURFACE MOUNTED
NEMA 1

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
LTS- MARINA OFFICE	1	12	20	1	0.4 / U			2	20	12	1	REC- MARINA OFFICE
SPARE	1	-	20	3		-/1.8		4	20	12	1	WH-3
SPARE	1	-	20	5	-/-			6	20	-	1	SPARE
SPACE	1	-	-	7		-/-		8	-	-	1	SPACE
AH-10	2	10	25	9	2.0/1.0			10	20	12	2	HP-10
				11		2.1/0.8	12					
					4.5	4.5						
TOTAL CONNECTED KVA					9.0			DEMAND KVA: 9.6				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 46				

1. PANEL SHALL BE EQUAL TO SQUARE D QO.
2. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
3. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.

1 SERVICE 2 RISER DIAGRAM
DIAGRAMMATIC ONLY

RISER DIAGRAM NOTES:

E.C. SHALL PROVIDE A MAP INDICATING ALL SERVICE LOCATIONS.

1. E.C. SHALL COORDINATE WITH UTILITY FOR PRIMARY FEED REQUIREMENTS. BID SHALL BE BASED UPON PROVIDING TWO 4" CONDUITS RUN FROM MIDDLE STREET TO PROPOSED TRANSFORMER LOCATION. CONDUITS SHALL BE ENCASED IN 3" OF CONCRETE WHERE RUN ABOVE GRADE. CONDUCTORS SHALL BE INSTALLED BY THE UTILITY.
2. UTILITY TRANSFORMER PROVIDED BY OWNER COMPANY. E.C. SHALL COORDINATE REQUIREMENTS WITH POWER COMPANY FOR ANY TRENCHING REQUIRED.
3. SERVICE ENTRANCE CONDUCTORS PROVIDED AND INSTALLED BY E.C., FOUR SETS OF 4#350KCMIL IN FOUR 3½"C.
4. SERVICE ENTRANCE CONDUCTORS PROVIDED AND INSTALLED BY E.C., THREE SETS OF 4#500KCMIL IN THREE 3"C.
5. #3/0 GND CU TO METAL WATER MAIN AND DRIVEN GROUND ROD PER NEC 250-92. BOND ALL GROUNDS TOGETHER WITH #3/0 TO FORM ONE BUILDING GROUND SYSTEM. REFER TO 9/E2.
6. METER CENTER PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. METER CENTERS SHALL BE EQUAL TO SQUARE D EZ SERIES WITH 800A MINIMUM CROSS BUSSING FOR 125A FRAME SECTIONS, 1200A MINIMUM CROSS BUSSING FOR 200A FRAME SECTIONS AND 100% RATED MAIN CIRCUIT BREAKERS. METERS PROVIDED AND INSTALLED BY POWER CO. COORDINATE REQUIREMENTS WITH POWER CO.
7. C/T CABINET AND METER BASE PROVIDED AND INSTALLED BY E.C. METER PROVIDED AND INSTALLED BY UTILITY.
8. PROVIDE TWO POLE CIRCUIT BREAKER IN WEATHERPROOF ENCLOSURE, UL LISTED FOR SERVICE ENTRANCE EQUIPMENT, TYPICAL FOR ALL UNIT PANELS. AIC RATING OF CIRCUIT BREAKERS SHALL MATCH METER CENTER MAIN.
9. 3Ø1/0 AL, #4 AL GND TYPE 'SE' SERVICE ENTRANCE CABLE (TYPICAL FOR 125A PANELS). PROVIDE CONDUIT PROTECTION FOR ABOVE GROUND PORTION OF CABLE PER NEC 300.5.
10. 3Ø2/0 AL, #4 AL GND TYPE 'SE' SERVICE ENTRANCE CABLE (TYPICAL FOR 150A PANELS WITH MAXIMUM 135A ON PANEL). PROVIDE CONDUIT PROTECTION FOR ABOVE GROUND PORTION OF CABLE PER NEC 300.5.
11. 4#500KCM, #2 GND., IN 3"C.
12. 4#3/0, #6 GND., IN 2"C.

PANEL "MDP2" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 1200AMP PANEL				
LIGHTS		30.0	1.25	37.5
RECEPTACLES	1ST 10kVA	10.0	1.0	10.0
	REMAINDER	2.2	0.5	1.1
HVAC	LARGEST MOTOR	15.0	1.25	18.8
	REMAINDER	173.8	1.0	173.8
WATER HEATERS		7.5	1.25	9.4
LAUNDRY EQUIPMENT		6.5	1.0	6.5
EQUIPMENT		22.2	1.0	21.7
PUMPS	LARGEST MOTOR	3.6	1.25	4.5
	REMAINDER	1.2	1.0	1.2
ELEVATOR		54.0	1.25	67.5
TOTALS		326.0		352.0
TOTAL AMPS @ 1000V 3Φ	978			

VOLTAGE: 208Y/120V
AMPS: 1200 - MLO

NEW
PANEL: MDP

3 PHASE 4 WIRE
SURFACE MOUNTED
NEMA 1

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
PANEL HP2A	3	500	400	1	20.2 / 40.7			2				
				3		21.1 / 43.6		4	400	500	3	PANEL HP2B
				5			20.3 / 43.2	6				
PANEL HP2C	3	3/0	200	7	20.7 / 18.0			8				
				9		19.9 / 18.0		10	300	350	3	ELEVATOR 2½"C
				11			21.2 / 16.0	12				
PANEL P	3	3/0	200	13	7.5 / -			14				
				15		7.4 / -		16	-	-	3	SPACE
				17			8.3 / -	18				
					107.1	107.9	111.0					
TOTAL CONNECTED KVA					326.0			DEMAND KVA: 352.0				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 978				

1. PANEL SHALL BE SERVICE ENTRANCE RATED, EQUAL TO SQUARE D NQOD.
2. PANEL SHALL BE LIMITED TO SIX MAIN DEVICES.
3. L - INDICATES LOCK-ON ATTACHMENT REQUIRED.
4. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
5. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT. GFCI RECEPTACLES MAY BE USED IN LIEU OF GFCI BREAKERS SO LONG AS THE DEVICE(S) CONFORM TO NEC CODE REQUIREMENTS FOR GFCI PROTECTION.

PANEL "HP2A" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 400AMP MLO				
LIGHTS		19.9	1.25	24.9
RECEPTACLES	1ST 10kVA	6.0	1.0	6.0
	REMAINDER	0.0	0.5	0.0
HVAC	LARGEST MOTOR	3.4	1.25	4.3
	REMAINDER	2.4	1.0	2.4
LAUNDRY EQUIPMENT		6.5	1.0	6.5
EQUIPMENT		20.9	1.0	20.9
TOTALS		59.1		65.0
TOTAL AMPS @ 208V 3Φ	181			

VOLTAGE: 208Y/120V
AMPS: 400 - MLO

PANEL: HP2A

3 PHASE 4 WIRE
SURFACE MOUNTED
NEMA 3R

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
LTS - STAIR5	1	12	20	1	1.9 / 0.4			2	20	12	1	TELEPHONE BOARD
LTS - 1ST FLOOR	1	12	20	3		0.9 / 0.4		4	20	12	1	CATV BOARD
LTS - 1ST FLOOR	1	12	20	5			1.0 / 0.7	6	20	12	1	REC - OFFICE
LTS - 1ST FLOOR	1	12	20	7	1.2 / 0.7			8	20	12	1	REC - OFFICE
LTS - OFFICE	1	12	20	9		1.3 / 0.7		10	20	12	1	REC - OFFICE
LTS - LOBBY	1	12	20	11			1.2 / 0.9	12	20	12	1	REC - CONVENIENCE
LTS - LOBBY	1	12	20	13	1.0 / 1.5			14	20	12	1	WASHER
LTS - LOBBY	1	12	20	15		1.3 / 2.5		16	30	10	2	DRYER
LTS - LOBBY	1	12	20	17			1.2 / 2.5	18				
LTS - LOBBY	1	12	20	19	1.5 / 1.7			20	20	12	2	HP-13
LTS - 1ST FLOOR	1	12	20	21		1.5 / 1.7		22				
LTS - FITNESS CENTER	1	12	20	23			1.9 / 1.2	24	15	12	2	AH-13
LTS - 1ST FLOOR	1	12	20	25	1.0 / 1.2			26				
LTS - 1ST FLOOR	1	12	20	27		0.6 / -		28	-	-	1	SPACE
LTS - FITNESS CENTER	1	12	20	29			0.9 / 0.5	30	20	12	1	REC - FITNESS CENTER
LTS - FITNESS CENTER	1	12	20	31	1.1 / 0.5			32	20	12	1	REC - FITNESS CENTER
PC/TC GFI LTS - DECK AREA	1	12	20	33		0.5 / 0.5		34	20	12	1	REC - FITNESS CENTER
SPARE	1	-	20	35			- / 1.1	36	20	12	1	REC - FITNESS CENTER
LTS & REC - ELEV. RM	1	12	20	37	0.2 / 4.7			38				
LTS & REC - ELEV. PIT	1	12	20	39		0.5 / 4.7		40	100	2	3	TRASH COMPACTOR 1½"C
CAB LTS	1	12	20	41			0.5 / 4.7	42				
					20.2	19.1	20.3					
					-	-	-					
TOTAL CONNECTED KVA					59.6			DEMAND KVA: 65.6				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 182				

1. PANEL SHALL BE SERVICE ENTRANCE RATED, EQUAL TO SQUARE D NQOD.
2. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT.
3. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
4. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
5. PC/TC - CIRCUIT THROUGH 120V 2000W PHOTO-CELL AND 7-DAY TIMECLOCK FOR PHOTOCELL ON, TIMECLOCK OFF CONTROL. LOCATE TIMECLOCK ADJACENT TO PANEL AND LOCATE PHOTOCELL ON NORTH SIDE OF BUILDING.

PANEL "HP2B" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 400AMP MLO				
HVAC	LARGEST MOTOR	12.6	1.25	15.8
	REMAINDER	107.3	1.0	107.3
WATER HEATERS		7.5	1.0	7.5
TOTALS		127.4		130.6
TOTAL AMPS @ 208V 3Φ	363			

VOLTAGE: 208Y/120V
AMPS: 400 - MLO

NEW
PANEL: HP2B

3 PHASE 4 WIRE
SURFACE MOUNTED
NEMA 1

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
AH-5	2	10	25	1	2.0/1.0			2	20	12	2	HP-5
				3		2.1/0.9		4				
AH-6	2	3	80	5			4.3/3.1	6	60	4	2	HP-6
				7	4.3/3.1			8				
AH-6	2	3	80	9		4.3/3.1		10	60	4	2	HP-6
				11			4.3/3.1	12				
AH-7	2	8	40	13	3.3/1.6			14	30	10	2	HP-7
				15		3.3/1.6		16				
AH-8	2	6	50	17			4.2/1.8	18	35	8	2	HP-8
				19	4.2/1.9			20				
AH-9	2	3	80	21		4.3/3.1		22	60	4	2	HP-9
				23			4.3/3.1	24				
AH-9	2	3	80	25	4.3/3.1			26	60	4	2	HP-9
				27		4.3/3.1		28				
AH-10	2	10	25	29			2.0/1.0	30	20	12	2	HP-10
				31	2.1/0.9			32				
AH-11	2	8	40	33		3.0/1.2		34	25	10	2	HP-11
				35			3.2/1.3	36				
WH-2	2	8	40	37	3.0/1.9			38	20	12	1	WH-14
				39		3.0/0.1		40	15	12	1	AH-14
WH-3	1	12	20	41			1.9/-	42	-	-	1	SPACE
					40.7	43.5	43.2					
TOTAL CONNECTED KVA					127.4			DEMAND KVA: 130.6				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 363				

1. PANEL SHALL BE EQUAL TO SQUARE D NQOD.
2. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT.
3. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.

PANEL "HP2C" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 200AMP MLO				
LIGHTS		9.3	1.25	11.6
RECEPTACLES	1ST 10kVA	5.4	1.0	5.4
	REMAINDER	0.0	0.5	0.0
HVAC	LARGEST MOTOR	8.4	1.25	10.5
	REMAINDER	37.9	1.0	37.9
EQUIPMENT		0.8	1.0	0.8
TOTALS		61.8		66.2
TOTAL AMPS @ 208V 3Φ	184			

VOLTAGE: 208Y/120V
AMPS: 200 - MLO

PANEL: HP2C

3 PHASE 4 WIRE
SURFACE MOUNTED
NEMA 3R

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
LTS - 2ND FL	1	12	20	1	1.1 / 0.4			2	20	12	1	REC - 2ND FLOOR
LTS - 2ND FL	1	12	20	3		1.1 / 0.4		4	20	12	1	REC - 3RD FLOOR
LTS - 2ND FL	1	12	20	5			0.7 / 0.4	6	20	12	1	REC - 4TH FLOOR
LTS - 3RD FLOOR	1	12	20	7	1.1 / 0.4			8	20	12	1	TELEPHONE BOARD
LTS - 3RD FLOOR	1	12	20	9		0.7 / 0.4		10	20	12	1	CATV BOARD
LTS - 3RD FLOOR	1	12	20	11			1.1 / 0.3	12	20	12	1	LTS & REC - ROOF
LTS - 4TH FLOOR	1	12	20	13	0.7 / 4.2			14	50	6	2	AH-12
LTS - 4TH FLOOR	1	12	20	15		1.1 / 4.2		16				
LTS - 4TH FLOOR	1	12	20	17			1.1 / 4.2	18	50	6	2	AH-12
REC - 1ST FL OFFICE	1	12	20	19	1.1 / 4.2			20				
REC - 1ST FL	1	12	20	21		0.9 / 4.2		22	50	6	2	AH-12
REC - 1ST FL	1	12	20	23			0.9 / 4.2	24				
REC - ROOF	1	12	20	25	1.1 / 1.8			26	35	8	2	HP-12
EF-5	1	12	20	27		0.5 / 1.8		28				
PC/TC LTS - ROOF	1	12	20	29			0.5 / 1.8	30	35	8	2	HP-12
SPARE	1	-	20	31	- / 1.8			32				
SPARE	1	-	20	33		- / 1.8		34	35	8	2	HP-12
EF-4	1	12	20	35			1.4 / 1.8	36				
EF-4	1	12	20	37	1.4 / 1.4			38	20	12	1	EF-4
EF-4	1	12	20	39		1.4 / 1.4		40	20	12	1	EF-4
EF-4	1	12	20	41			1.4 / 1.4	42	20	12	1	EF-4
					20.7	19.9	21.2					
TOTAL CONNECTED KVA					61.8			DEMAND KVA: 66.2				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 184				

1. PANEL SHALL BE SERVICE ENTRANCE RATED, EQUAL TO SQUARE D NQOD.
2. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT.
3. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
4. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
5. PC/TC - CIRCUIT THROUGH 120V 2000W PHOTO-CELL AND 7-DAY TIMECLOCK FOR PHOTOCELL ON, TIMECLOCK OFF CONTROL. LOCATE TIMECLOCK ADJACENT TO PANEL AND LOCATE PHOTOCELL ON NORTH SIDE OF BUILDING.

PANEL "P" LOAD SUMMARY

LOAD TYPE		KVA CONN	DEM FACT	KVA DEM
LOADS ON 200AMP BREAKER				
LIGHTS		0.3	1.25	0.4
RECEPTACLES	1ST 10kVA	0.8	1.0	0.8
	REMAINDER	0.0	0.5	0.0
HVAC	LARGEST MOTOR	15.0	1.25	18.8
	REMAINDER	1.8	1.0	1.8
PUMPS	LARGEST MOTOR	3.6	1.25	4.5
	REMAINDER	1.2	1.0	1.2
MISCELLANEOUS		0.5	1.0	0.5
TOTALS		23.2		28.0
TOTAL AMPS @ 208V 3Φ	78			

VOLTAGE: 208Y/120V
AMPS: 225 - MLO

NEW
PANEL: P

3 PHASE 4 WIRE
SURFACE MOUNTED
NEMA 1

LOAD PER PHASE

- DESCRIPTION -	POLE	WIRE SIZE	BRK SIZE	CCT #	A	B	C	CCT #	BRK SIZE	WIRE SIZE	POLE	- DESCRIPTION -
LTS- POOL, SPA CONTROL RM	1	12	20	1	0.3 / 0.4			2	20	12	1	REC- POOL, SPA, STORAGE
SPACE	1	-	-	3		-/0.5		4	20	12	1	SPA CONTROLLER
SPACE	1	-	-	5			-/0.2	6	20	12	1	REC- SPA CONTROLLER
SPACE	1	-	-	7	-/0.2			8	20	12	1	REC- FILTER CONTROLLER
SPACE	1	-	-	9		-/0.3		10	20	12	1	EF-9, EF-10, EF-11
SPACE	1	-	-	11			-/1.3	12	20	12	1	UH-2, UH-2
SPACE	1	-	-	13	-/1.2			14				
SPACE	1	-	-	15		-/1.2		16	20	12	3	HYDRO PUMP, 3 HP
SPACE	1	-	-	17			-/1.2	18				
SPACE	1	-	-	19	-/-			20	-	-	1	SHUNT TRIP SPACE
SPACE	1	-	-	21		-/-		22	-	-	1	SPACE
SPACE	1	-	-	23			-/-	24	-	-	1	SPACE
SPACE	1	-	-	25	-/0.4			26				
SPACE	1	-	-	27		-/0.4		28	20	12	3	FILTER PUMP, ¾ HP
SPACE	1	-	-	29			-/0.4	30				
SPACE	1	-	-	31	-/-			32	-	-	1	SHUNT TRIP SPACE
SPACE	1	-	-	33		-/-		34	-	-	1	SPACE
SPACE	1	-	-	35			-/-	36	-	-	1	SPACE
SPACE	1	-	-	37	-/5.0			38				
SPACE	1	-	-	39		-/5.0		40	60	4	3	ELECTRIC HEATER
SPACE	1	-	-	41			-/5.0	42				
					7.5	7.4	8.3					
TOTAL CONNECTED KVA					23.2			DEMAND KVA: 28.0				
PANEL RMS SYM. AMPS: SEE RISER								DEMAND AMPS: 78				

1. PANEL SHALL BE EQUAL TO SQUARE D NQOD.
2. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
3. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
4. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT. GFCI RECEPTACLES MAY BE USED IN LIEU OF GFCI BREAKERS SO LONG AS THE DEVICE(S) CONFORM TO NEC CODE REQUIREMENTS FOR GFCI PROTECTION.

JDAVIS ARCHITECTS
510 Glenwood, Suite 201 | Raleigh, North Carolina 27603 | tel 919.835.1500 | fax 919.835.1510

LIGHTHOUSE ENGINEERING
400 W. Morgan Street, Suite 100
Raleigh, North Carolina, 27603
tel 919.835.9781
fax 919.835.9784
MECHANICAL ELECTRICAL PLUMBING

New Bern River
Front Development, LLC
New Bern, North Carolina

Sky Sail
LUXURY CONDOS & MARINA

NORTH CAROLINA PROFESSIONAL SEAL 28585 ENGINEER PAUL S. SCOTT
Jul 29, 2008

		DATE
PROJECT:	WHI-03077	12-20-06
REVISIONS:	CONSTRUCTION SET	12-20-06
1	LIGHTING CHANGES	11-27-07
2	SPA ADDITION	07-29-08
DRAWN BY:	PSS	
CHECKED BY:	PSS	
CONTENT:	LIGHT FIXTURE SCHEDULE AND SERVICE CALCULATIONS	

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Appendix B

BURGESS & NIPLE

440 Monticello Avenue | Suite 1240 | Norfolk, VA 23510 | 757.490.3566

Skysail Owners Association, Inc.
Attn: Tina Lopez
1612 Military Cutoff Rd Ste 108
Wilmington, NC 28403

RE: Code Review Entrance and Egress to the Electrical Room adjacent to recorded Unit 104 (hereafter "Electrical Room") at Sky Sail Condos,
100 Sky Sail Blvd, New Bern, NC 28560

Attachment B: Code Review Letter

7 March 2024

Ms. Lopez,

Burgess & Niple (B&N) is pleased to provide this North Carolina State Building Code Review and Report for the entrance / exits from the Electrical Room at the SkySail Condominiums.

Issue to Review:
Review the current North Carolina State Building Code for compliance of existing the Electrical Room with regard to *Entrance To and Egress From Working Space.*

A second means of egress was removed in the Electrical Room, and there is a concern that removing the second egress is a non-compliant code issue. It is requested to review this issue if the second door removal is code compliant.

Information Provided:
B&N has evaluated photographs with dimensions, configuration and equipment for the Electrical Room as well as the original construction drawings. A site visit was not conducted as part of this evaluation.

Background Information:
Based on the information received, the design construction documents were developed in 2006, and the construction approximately in 2007 or later. The original design development was based on the 2002 North Carolina State Building Code.

The original design indicated two (2) egress doors were incorporated into the Electrical Room. From permitted documents and photographs given, one (1) of the egress doors for the Electrical Room has been removed recently and a wall permanently built, eliminating the second egress door in the Electrical Room.

Code Review:
The current 2018 North Carolina State Building Code (NCSBC) was reviewed regarding the issue. The current NCSBC incorporates the 2020 National Electric Code (NEC). The 2020 National Electric Code paragraph 110.26(C)(2) requires two (2) egress doors; there shall be one entrance to and egress from the required working space not less than 24 inches wide and 6 – 1/2 feet high at each end of the working space (room).

The electrical equipment located in the Electrical Room consists of multiple service equipment which are large equipment rated

1200 amperes or more and over 6 feet wide containing overcurrent devices, switching devices, or control devices.

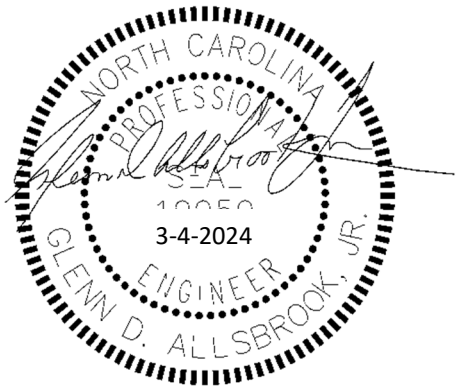
Code Review Opinion and Finding:
Based upon the data received and reviewed, and the NCSBC and NEC review, the Electrical Room does not appear to be code compliant with respect to egress from the electric room 104, NEC 110.26(C)(2), due to the removal of the required second egress from the room and working space.

Recommendations:
Recommend that the door that was removed be replaced with a proper fire rated code compliant door.

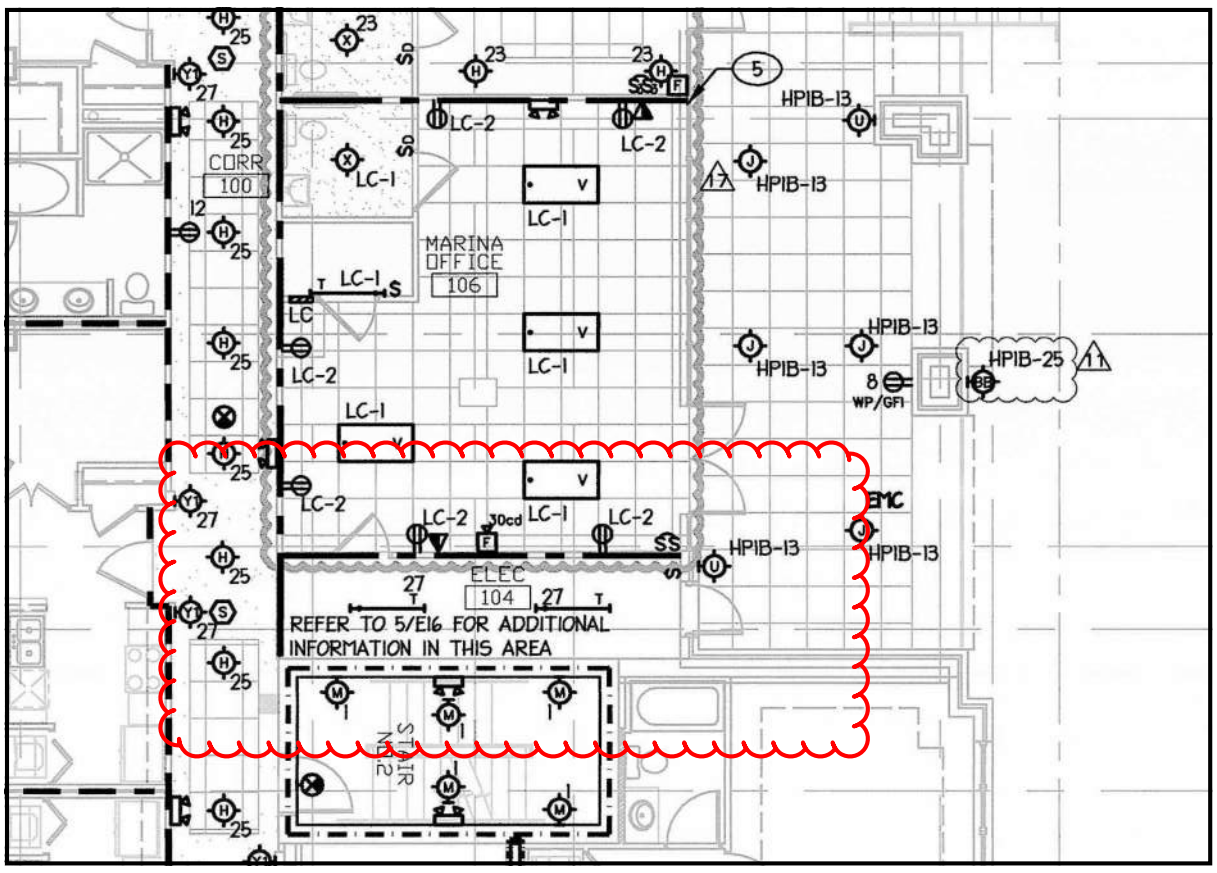
Please let me know if there are any questions.

Respectfully,

Glenn D. Allsbrook Jr., PE
Professional Engineer



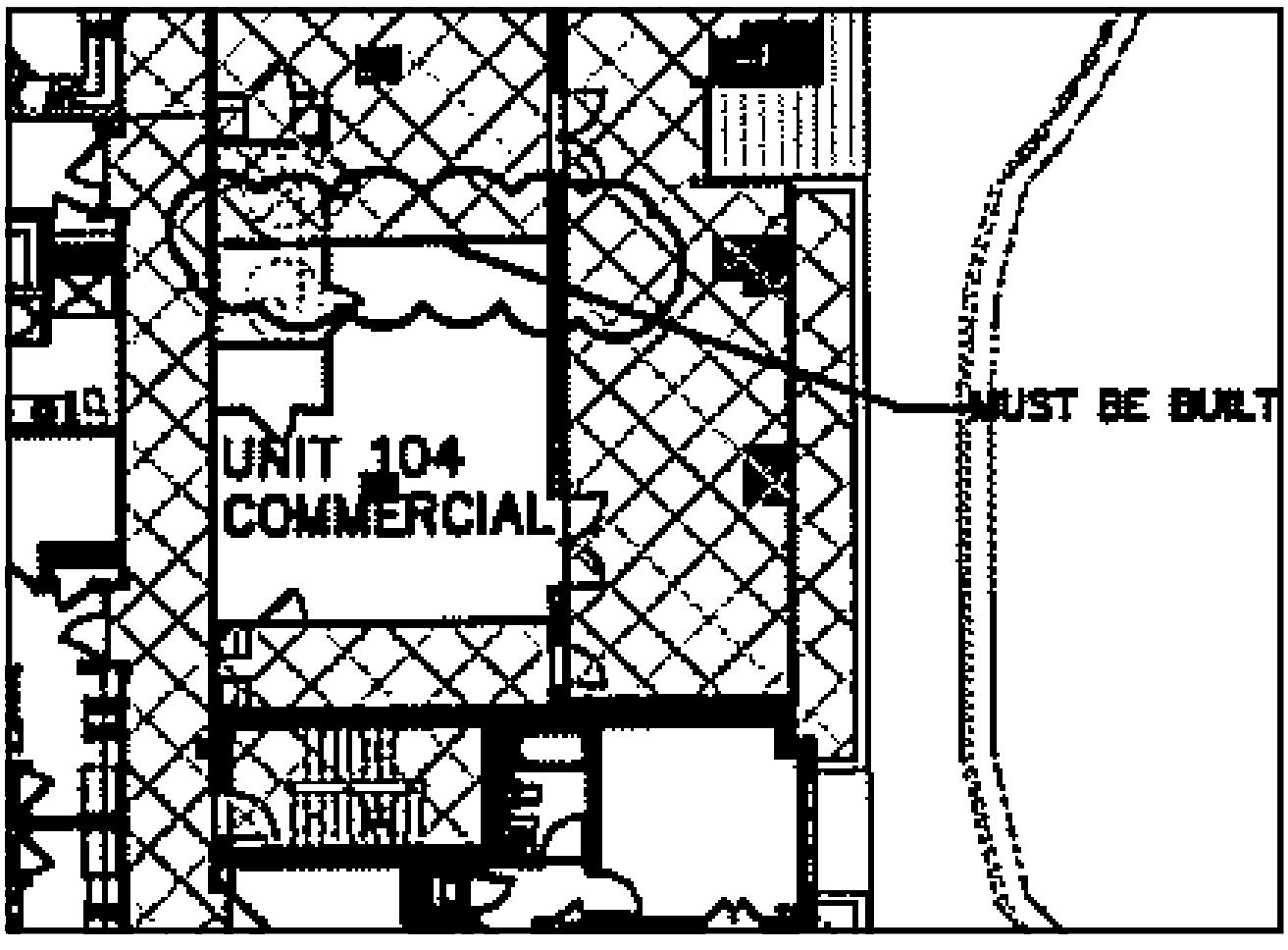
BELOW ARE FROM STAMPED ELECTRICAL PLANS



5 **ENLARGED ELECTRICAL RM 104**
1/4" = 1'-0"

Attachment C: Plans and Photos

BELOW IS FROM RECORDED CONDO DOCUMENTS



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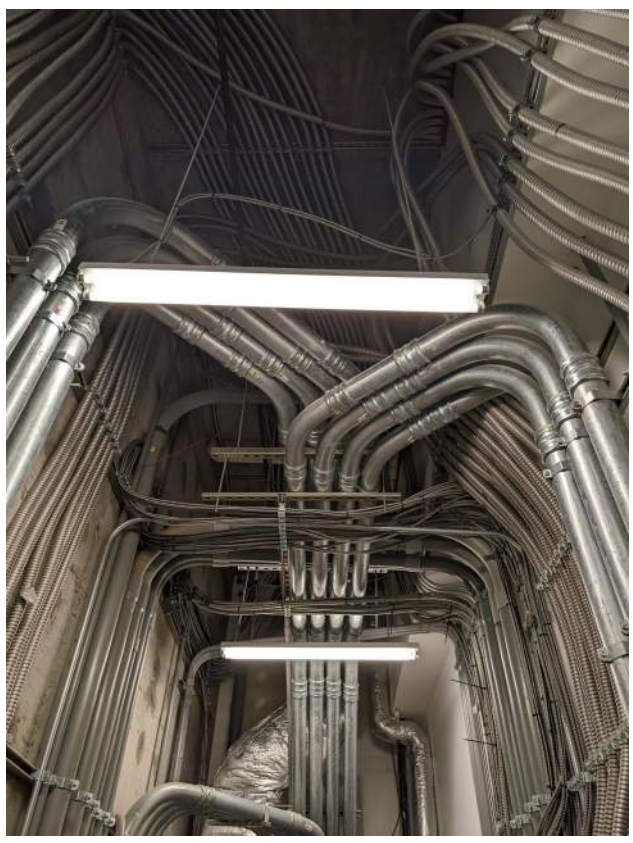
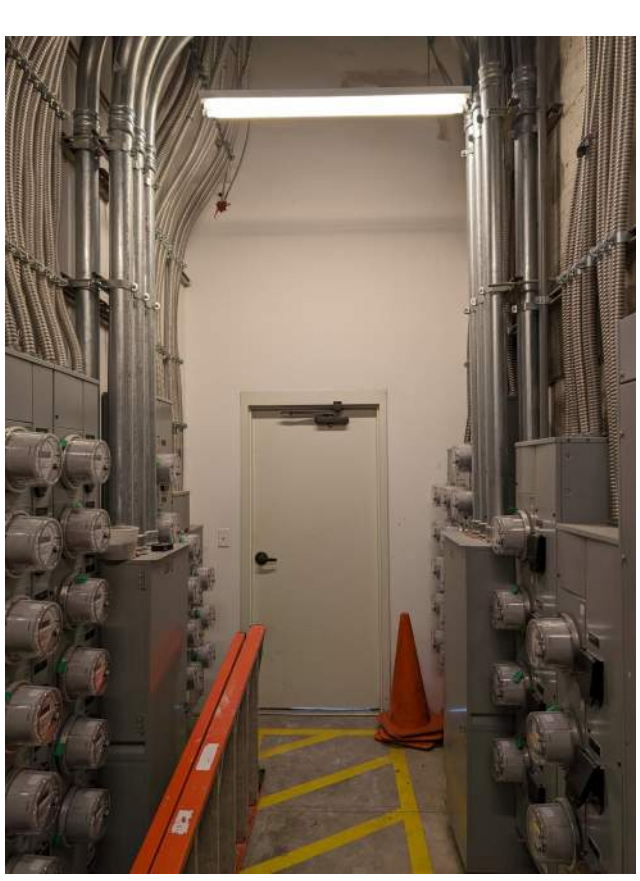
ROOM 104 EXISTING CONDITION PHOTOS





Appendix B

CLICK HERE FOR CE Power - Electrical Safety: Slow Motion 480 Volt Arc Flash Video

110.26(C)(2) Large Equipment.

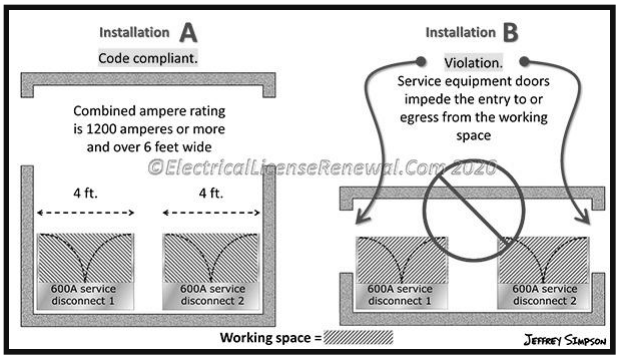
Code Change Summary: Code language was revised regarding the entry to and egress from the working space of large electrical equipment.

In the 2017 NEC®, the basic rule in Section 110.26(C)(2) required an entry/exit at each end of t e working space for large equipment w en **both** of t e following two circumstances were present:

- Electrical equipment was rated 1200 amps or more and contained overcurrent devices, switching devices, or control devices **and**
- The electrical equipment was **more** than 6 feet wide. (Note: Exactly 6 feet wide is not **more** than 6 feet wide).

The above rules are usually applied only to a single large piece of electrical equipment.

In the 2020 NEC®, a proposal was accepted to apply the entry/exit rules to t e working space of multiple **service disconnecting means** when the combined ampere rating is 1200 amperes or more and the sum of the equipment's measurements are over 6 feet wide.



Attachment D:
NFPA
Code Change
Summary

lick to Enlarg
Electrical equipment doors, in the open position, shall not impede the entry to or egress from the working space.

NEC 230.71 allows up to six switches or circuit breakers to disconnect an electrical service. The switches or circuit breakers can be mounted in a single enclosure, in a group of separate enclosures, or in a switchboard or switc gear. No matter w at, there shall be not more than six sets of disconnects per service grouped in any one location.

With the revised 2020 code language, the entry/exit rules for the working space will apply to six 200 ampere rated service disconnects (6 X 200A = 1200A) that have a combined measurement of more than 6 feet wide. In addition, equipment doors in the open position shall not impede the entry to or egress from the working space (see image).

Below is a preview of the NEC®. See the actual NEC® text at NFPA.ORG for the complete code section. Once there, click on their link to free access to the 2020 NEC® edition of NFPA 70.

2017 Code Language:

110.26(C)(2) Large Equipment. *For equipment rated 1200 amper s or more and over 1.8 m (6 ft) wide that contains overcurrent devices, switching devices, or control devices, there shall be one e trance to and egress from the required workin space not less th n 610 mm (24 in.) wide and 2.0 m (6 ½ ft) high at each end of the working space.*

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single en nce to an eg ess fr m the required wo king space shall be permitted where either of the conditions in 110.26(C)(2)(a) or (C)(2)(b) is met.

(a) Unobstructed Egress. *Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.*

(b) Extra Working Space. *Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.*

2020 Code Language:

110.26(C)(2) Large Equipment. *For large equipment that contains overcurrent devices, switching devices, or control devices, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6 ½ ft) high at each end of the working space. This requirement shall apply to either of the following conditions:*

(1) For equipment rated 1200 amperes or more and over 1.8 m (6 ft) wide

(2) For service disconnecting means installed in accordance with 230.71 where the combined ampere rating is 1200 amperes or more and over 1.8 m (6 ft) wide

Open equipment doors shall not impede the entry to or egress from the working space.

A single entrance to and egress from the required working space shall be permitted where either of the conditions in 110.26(C)(2)(a) or (C)(2)(b) is met.

(a) Unobstructed Egress. *Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.*

(b) Extra Working Space*. Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the*

Appendix B

inimum cle distance s ecifie in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.

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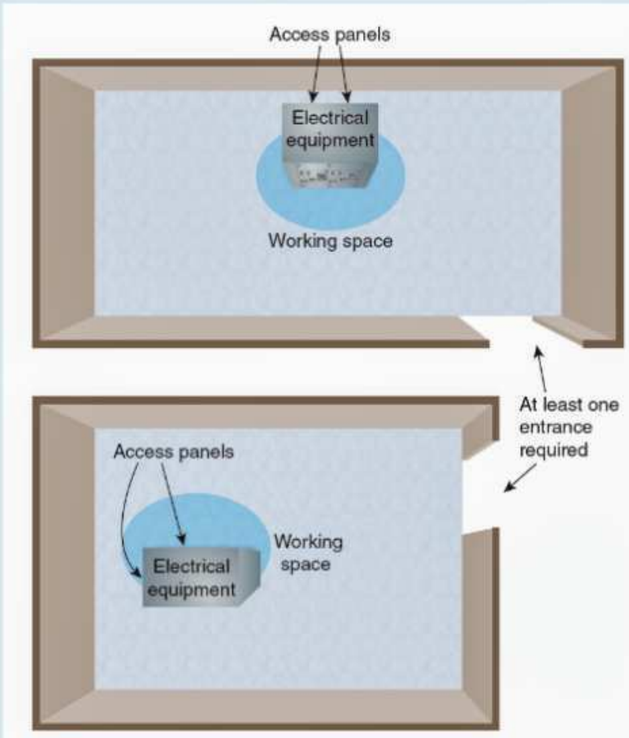
that voltage and in that condition.

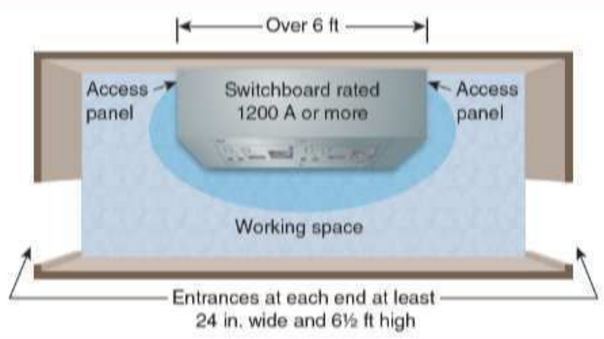
ENHANCED CONTENT Collapse

Open equipment doors must not impede access to or egress from the work space. This requirement is intended to prevent workers from being entrapped between equipment doors and walls or other equipment facing the installation. The following exhibits illustrate access and entrance requirements for working spaces.

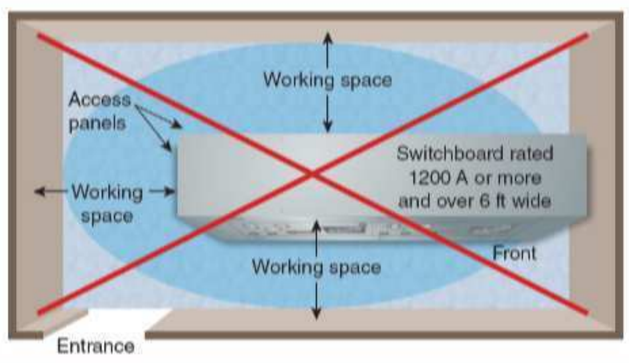


Attachment E: NFPA Enhanced Content

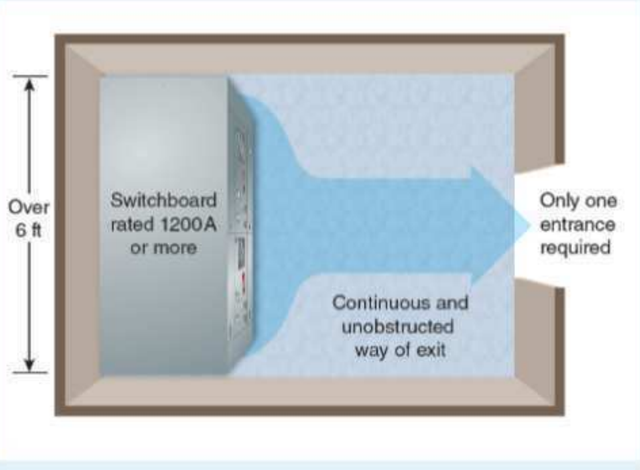
For large equipment, one entrance not less than 24 inches wide and 6½ feet high is required at each end, as shown in the example below.



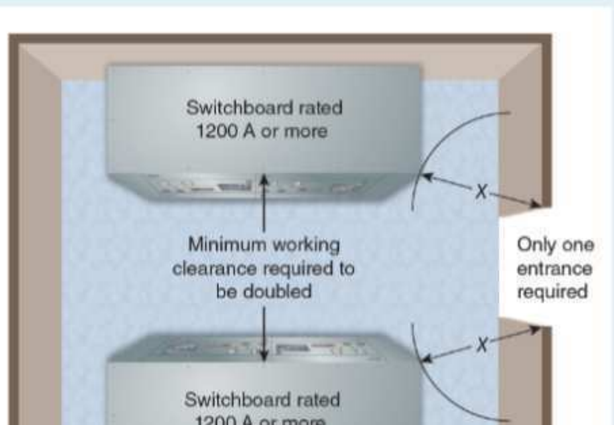
The next exhibit shows an unacceptable and hazardous work space arrangement.



The following two exhibits provide representations of the single egress requirements for large equipment. Below is an example of an equipment location that allows a continuous and unobstructed way of exit travel.



Next is a working space with one entrance, which is permitted if the working space required by **110.26(A)** is doubled [see Table 110.26(A)(1) for permitted dimensions of X].



Appendix B

Attachment F: Email from New Bern Inspections Division

---------- Forwarded message ---------
From: **Aaron Arnette** <AArnette@nclawyers.com>
Date: Thu, Mar 14, 2024, 10:56 AM
Subject: RE: Skysail Mechanical Room Issue
To: Matthew Boswell <boswellm@newbernnc.gov>
Cc: Jeff Holzbach <holzbachj@newbernnc.gov>

Mr. Boswell,

Thank you very much for getting back to me with your thoughts. I will relay this information to the Skysail Board of Directors.

Regards,

Aaron

A close up of a logo Description automatically generated

Aaron D. Arnette, JD | MBA

T: (252) 633-3131 **|** F: (252) 635-4934

416 Pollock Street **|** P.O. Drawer 889

New Bern, North Carolina

aarnette@nclawyers.com

From: Matthew Boswell <boswellm@newbernnc.gov>
Sent: Thursday, March 14, 2024 9:56 AM
To: Aaron Arnette <AArnette@nclawyers.com>
Cc: Jeff Holzbach <holzbachj@newbernnc.gov>
Subject: RE: Skysail Mechanical Room Issue

Good morning Aaron,

We respectfully disagree with the code review that was provided. Section 110.26(C)(2)(a) of the 2020 NEC states “where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be provided.”

The current electrical room layout provides this unobstructed path of egress.

Thanks,

Appendix B

Matt Boswell

Chief Building Inspector, City of New Bern
303 First Street, New Bern, NC 28562
P: (252) 639-2945
http://www.newbernnc.gov/

From: Jeff Holzbach <holzbachj@newbernnc.gov>
Sent: Monday, March 11, 2024 7:15 AM
To: Matthew Boswell <boswellm@newbernnc.gov>
Subject: FW: Skysail Mechanical Room Issue

From: Aaron Arnette <AArnette@nclawyers.com>
Sent: Friday, March 8, 2024 5:25 PM
To: Jeff Holzbach <holzbachj@newbernnc.gov>
Subject: RE: Skysail Mechanical Room Issue

Jeff,

I hope you are well.

I wanted to follow up on the conversation we had about the electrical room and the removal of 1 of 2 ingress/egress doors to that room at Skysail.

Skysail has obtained a code review opinion letter (see attached). Would you mind reviewing this and providing your thoughts/comments as to the propriety of New

Bern issuing the building permit for this project?

Thanks,
Aaron


A close up of a logo Description automatically generated

Aaron D. Arnette, JD | MBA

T: (252) 633-3131 | F: (252) 635-4934

416 Pollock Street | P.O. Drawer 889

New Bern, North Carolina

aarnette@nclawyers.com

From: Aaron Arnette
Sent: Thursday, February 15, 2024 12:00 PM
To: holzbachj@newbernnc.gov
Subject: Skysail Mechanical Room Issue

Jeff,

I hope you are well. I appreciate you looking into this matter for me. This concerns the only commercial unit 104 in Sky Sail Building 1 (Parcel ID 8-001-G-104) owned by Bern Bear, LLC located at 100 Sky Sail Blvd. in New Bern.

A building permit has already been issued (Permit number BCOM-34267) by New Bern on 12/15/23.

Appendix B

My concern is that there is a mechanical room serving the entire building located adjacent to Unit 104. This mechanical room has always had two access points (one from the outside and one leading into Unit 104. The restrictive covenants for the Condominium Association clearly provide that the ownership of Unit 104 is subject to an easement for the door that leads from Unit 104 into the mechanical room. The covenants were very intentional about including a paragraph about this access easement into the mechanical room, which is very narrow and long. The Condo Association Board feels that 2 access points into the mechanical room are necessary for safety.

In connection with the building permit issued by New Bern, the owners of Unit 104 have removed the door leading from unit 104 into the mechanical room, and they have sealed the doorway with drywall. I was wondering if the building code would also require (as do the restrictive covenants) 2 access points for this mechanical room.

I know this is all a bit hard to visualize without viewing the property or photos. I'm happy to share photos or walk the property with you.

Thanks again for looking into this for me.

Regards,
Aaron

Aaron D. Arnette, JD | MBA

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Appendix B

"In addition to the dimensions shown in Table 110-16(a), the standing work space shall not be less than 30 inches (762 mm) wide in front of the electric equipment."

Table 110-16(a). "Standing" Working Clearances

1. "Exposed live parts on one side and no live or grounded parts on the other side of the "standing" working space, or exposed live parts..."

3. Exposed live parts on both sides of the "standing" work space (not guarded as provided in Condition 1) with the operator between.

SUBSTANTIATION: Many people are installing disconnecting means (for example) over air conditioners, pool pumps and equipment and since there is sufficient working space in front of the equipment, with nothing blocking him, he feels he is working in compliance with this Code section. However, the intent of this section is to insure 30 inches of clear working space, where one can stand up, and not have to reach over equipment to install the disconnecting means.

PANEL ACTION: Reject.

PANEL COMMENT: Such a change could be interpreted to permit other obstructions in the workspace provided standing space was available. It is intended that the entire working space be clear.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1735

1- 104 - (110-16): Reject

SUBMITTER: Charles "Mike" Holt, Concepts in Electricity Inc.

RECOMMENDATION: 110-16. Working Space About Electric Equipment (600 volts, nominal, or less). Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment. "This working space shall be a minimum of 6 1/4 feet from the floor."

SUBSTANTIATION: Clarifying the working space to be from the floor to a minimum of 6 1/4 feet would eliminate the possibility of workmen sitting on a compressor or other equipment to perform their service.

PANEL ACTION: Reject.

PANEL COMMENT: The proposal adds nothing to the understanding of the Code and may even add confusion. See Panel Action and Comment on Proposal 1-103.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 105

1- 105 - (110-16(a) and Exception): Reject

SUBMITTER: Dan Leaf, Westlake Village, CA

RECOMMENDATION: Add the following to paragraph (a): For service equipment, panelboards, switchboards, and control centers the working space shall extend from the floor or standing surface to the top of such equipment, and to a minimum of 6-1/4 feet above such surfaces.

Exception: See Section 110-16(f) Exception.

SUBSTANTIATION: Work space not clearly defined. Present wording does not clearly indicate that space below equipment that is elevated above floor or ground level is included in the required clearances. Such equipment installed above piping, motors, benches, or counters, etc. can present a hazard because of grounded surfaces or the necessity to lean over to reach the equipment. Section 550-4(a) contains a similar requirement for panelboards in mobile homes, and it seems reasonable to clearly provide the same safety requirement in other occupancies.

PANEL ACTION: Reject.

PANEL COMMENT: Already covered by Section 110-16(a). See Panel Action and Comment on Proposal 1-103.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 57

1- 106 - (110-16(a)): Reject

SUBMITTER: Dan Leaf, Westlake Village, CA

RECOMMENDATION: Delete the first word "exposed" in conditions 1, 2, and 3.

SUBSTANTIATION: Present wording is confusing and contradictory. The first paragraph of (a) clearly states that distances shall be measured from live parts if exposed OR the enclosures therefor. The word "exposed" in conditions 1, 2, and 3 confuse the conditions to be applied, as the definition of exposed means capable of being inadvertently touched, while the definition of enclosure is a case or housing to prevent contact with energized (live) parts. Conditions 1, 2, and 3 do not appear to apply to live parts which are enclosed (not exposed).

PANEL ACTION: Reject.

PANEL COMMENT: The proposal is already covered in the second sentence of Section 110-16(a) and the deletion of the words "exposed" would change the meaning of the requirements of that sentence.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1275

1- 107 - (110-16(a)): Accept in Principle

SUBMITTER: IAEI

RECOMMENDATION: Delete words "while alive."

Replace with "while normally energized."

SUBSTANTIATION: Use of the words "while alive" is unenforceable as all electrical equipment has some disconnecting means - somewhere.

PANEL ACTION: Accept in Principle.

Delete the word "normally" from the proposal.

PANEL COMMENT: The intent of the rule is to provide an electrically safe working environment during the period of time the equipment is being serviced.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1059

1- 108 - (110-16(a), Exception No. 1): Reject

SUBMITTER: Heydon Z. Lewis, Thermo-Scan Engineering, Inc.

RECOMMENDATION: Delete or reword Exception No. 1 to paragraph (a).

Add a paragraph (g) as follows:

(g) Access for inspection under load. All equipment of 30 ampere or greater capacity single-phase and all 3-phase equipment shall be installed to permit inspection in operating configuration under load. This shall include bypassable door interlocks and access to all splices, terminations, finger joints, etc. which may occur in the rear of cabinets.

SUBSTANTIATION: A major advantage of thermal imaging inspection is the ability to perform nondestructive, non-contact inspection under full-load, normal operating conditions. Doors which cannot be opened without deactivating a circuit defeats the purpose. The bus bar-finger contact point on plug-in control centers is a common problem area, particularly in corrosive environments. Installation of cabinets with no rear access prevents inspection of these points.

PANEL ACTION: Reject.

PANEL COMMENT: The proposal would result in costly redesign which could be detrimental to safety by encouraging access by unauthorized persons.

VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1236

1- 109 - (110-16(c)): Accept in Principle

SUBMITTER: IAEI

RECOMMENDATION: 110-16(c). Revise to read:

At least one entrance 24 inches wide by 6 foot 6 inches high shall be provided to give access to the working space about electric equipment. For switchboards, panelboards, and control panels are rated 1200 amperes or more and are over 6 feet wide, the working space required by Section 110-16(c) shall be doubled or access shall be provided so that egress from the working area can be made in two different directions.

SUBSTANTIATION: Present wording is based on "practicality," a vague term and often unenforceable. The intent of two means of egress for "people safety" is accomplished clearly by the revised wording and an alternate of two means of egress is provided.

PANEL ACTION: Accept in Principle.

Retain present wording of Section 110-16(c) in the Code but delete the words "where reasonably practicable" and add the following two Exceptions:

"Exception No. 1: Where the work space configuration permits an escape route.

Exception No. 2: Where the workspace required by Section 110-16(a) is doubled."

PANEL COMMENT: Exception No. 1 is to correct an oversight in the proposal wherein workspace configurations could permit a ready escape route without the necessity of providing two doors or doubling the workspace. "Sufficient area" was retained as there is no substantiation for changing to specific dimensions.

VOTE ON PANEL ACTION:

AFFIRMATIVE: 8

NEGATIVE: Palko.

EXPLANATION OF VOTE:

PALKO: Exception No. 1 is meaningless, in that it is as much subject to differing interpretations as the present wording "where reasonably practicable."

Where there is a means of ingress, there is always a means of egress. Whether such egress constitutes an "escape route" must still be resolved on a case-by-case basis.

A person in an equipment room having a maximum dimension of 12 feet is no further from an exit than a person in a room 100 feet long with an exit at each end. Exemption No. 1 should be amplified to cite a maximum distance to an exit that shall, in all cases, be considered to constitute an escape route.

Log # 275

1- 110 - (110-16(c)): Accept in Principle

SUBMITTER: W. Creighton Schwan, Hayward, CA

RECOMMENDATION: In line 5, place a period after "end" and delete "where reasonably practicable."

Appendix C

SUBSTANTIATION: There are far too many cases of electricians being trapped in a dead-end corridor between rows of switchgear with the only escape route leading past arching, burning, or exploding equipment. The phrase "where reasonably practicable" renders the requirement for an alternate escape route unenforceable, and should be deleted.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action and Comment on Proposal 1-109.
VOTE ON PANEL ACTION:
AFFIRMATIVE: 8
NEGATIVE: Palko.
EXPLANATION OF VOTE:
PALKO: I vote negative for the same reason given for Proposal 1-109. I also feel that the substantiation is deficient. The substantiation states as fact that there are far too many cases of electricians being trapped...but cites no cases where injuries have occurred that could have been prevented by redundant exits.

Log # 299, 302

1- 111 - (110-16(c)): Accept in Principle
SUBMITTERS: Joseph Marcelino, NECA Codes and Standards (299)
Jack Smith, East Bay Uniform Electrical Code Committee (302)
RECOMMENDATION: In the second sentence, delete the last three words: "where reasonably practicable."
SUBSTANTIATION: The term "where reasonably practicable" makes the requirement vague and therefore difficult to enforce. The need for a workman to have two ways out from the working space in front of a wide assembly of switchgear is too important to be compromised by vague language in the Code.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action and Comment on Proposal 1-109.
VOTE ON PANEL ACTION:
AFFIRMATIVE: 8
NEGATIVE: Palko.
EXPLANATION OF VOTE:
PALKO: I vote negative for the same reason given for Proposal 1-109.

Log # 420, 501

1- 112 - (110-16(c)): Accept in Principle
SUBMITTER: Southwestern Section IAEI (420)
Ernest E. Cannon, Tempe, AZ (501)
RECOMMENDATION: 110-16(c) Revise to read: "At least one entrance 24-inches wide by 6-foot high shall be provided to give access to the working space about electrical equipment. For switchboards, panelboards, and control panels are rated 1200 amperes or more and are over 6-feet wide, the working space required by Section 110-16(c) shall be doubled or access shall be provided so that egress from the working area can be made in two different directions."
SUBSTANTIATION: Recent wording is based on "practicality"; a vague term and often unenforcible. The intent of two means of egress for "people safety" is accomplished clearly by the revised wording and an alternate to two means of egress is provided.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action and Comment on Proposal 1-109.
VOTE ON PANEL ACTION:
AFFIRMATIVE: 8
NEGATIVE: Palko.
EXPLANATION OF VOTE:
PALKO: I vote negative for the same reason given for Proposal 1-109.

Log # 422

1- 113 - (110-16(c)): Accept in Principle
SUBMITTER: Southwestern Section IAEI
RECOMMENDATION: Revise Section 110-16(c). Access and Entrance to Working Space. Access and entrances to working spaces shall be at least 24-inches wide by 6-feet 6-inches high. At least one entrance to the equipment room shall be provided to give access to the working space about electric equipment. For switchboards and control panels rated 1200 amperes or more and over 6-feet wide, the working space shall be twice that required by Section 110-16(a) or a second equipment room entrance shall be provided so that egress from the working space can be in different directions with no common path of travel.
SUBSTANTIATION: 1. Complete rewrite. Use local Code wording.
2. Where reasonably practicable, is too vague. Phrases such as "except by special permission" do not contribute to uniformity in Code compliance. Section 90-4 is available for any unusual conditions if the authority enforcing the Code chooses to waive specific requirements.
The design of the building sometimes makes a second door requirement a major problem. Above proposal permits an alternative and yet provides the workman with a greater degree of safety of movement in emergency conditions.
Security of tenant spaces has been one of the reasons mentioned by builders for not wanting a second door. First door opens to a corridor, end walls of the room are suite division walls and outside wall is not adaptable for a door due to terrain.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action and Comment on Proposal 1-109.
VOTE ON PANEL ACTION:
AFFIRMATIVE: 8
NEGATIVE: Palko.
EXPLANATION OF VOTE:
PALKO: I vote negative for the same reason given for Proposal 1-109.

Log # 421

1- 114 - (110-16(c)): Reject
SUBMITTER: Southwestern Section IAEI
RECOMMENDATION: Add, 2nd paragraph -
Permanent ladders on stairways shall be provided to give safe access to the working space around electric equipment installed on platforms, balconies, mezzanine floors, or in attic or roof rooms or spaces.
SUBSTANTIATION: Access to electrical equipment under 600 volts is just as important as the access in Section 110-33(b) for over 600 volts.
PANEL ACTION: Reject.
PANEL COMMENT: The sweeping nature of this proposal could provide ready access for unauthorized persons to spaces that require security. The substantiation does not justify such a change for equipment under 600 volts.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 123

1- 115 - (110-17(a)): Reject
SUBMITTER: Joseph L. Yosafat, General Electric Co.
Sectetary's Note: This comment (No. 70-49, CMP 1) on Proposal 106 was for the 1981 Code and was held for further study. See NEC-TCD-1980 Annual Meeting.
RECOMMENDATION: Change 50 volts to read 42.4 volts.
SUBSTANTIATION: For conformance with UL 478 and the standards of the IEC. Voluntary conformance and standardization must be practiced diligently if the voluntary standards and codes industry of this country is to survive the attempted efforts of federal mandatory requirements of the FTC.
PANEL ACTION: Reject.
PANEL COMMENT: CMP 1 has no information to confirm the substantiation of the proposal. Referred to CMP 16 for information.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 393, 1894

1- 116 - (110-17(a), FPN-(New)): Reject
SUBMITTER: Kenneth L. Gebert, City of Minneapolis, MN (393)
B. Auger/H. B. Love, Michigan Chapter IAEI (1894)
RECOMMENDATION: Add a Fine Print Note to Section 110-17(a) as follows:
As used herein, approved enclosures shall mean, for other than dead front devices, the box cover and switch operating means shall be mechanically interlocked so that the main cover of the cabinet (1) is normally prevented from being opened when the switch contacts are in a closed position and (2) the switch contacts are normally prevented from being closed when the cover of the switch cabinet is open.
SUBSTANTIATION: Mechanical interlocking systems have been in use for many years on all types of disconnect switches. Even the 115 volt, two-fuse service disconnect switch associated with the turn of the century knob and tube systems had an interlock which precluded opening the fuse plug access door while the current was on.
A present day manufacturer insists that interlocking is not required even though the equipment is subject to ready access by the public and of a moderate ampacity (600 amperes) and fault current potential (15000+ amperes).
PANEL ACTION: Reject.
PANEL COMMENT: The proposal is too all-encompassing which makes its application impracticable and, furthermore, mandatory requirements cannot be put in a fine print note.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1065, 1386

1- 117 - (110-17(c)): Reject
SUBMITTER: Frank K. Kitzantides, NEMA (1065)
W. N. Hale, Baltimore, MD (1386)
RECOMMENDATION: In second line, replace "warning" with "precautionary."
Add Fine Print Note:
FPN: See Section 110-23.
SUBSTANTIATION: See Section 110-23-(New).
PANEL ACTION: Reject.
PANEL COMMENT: "Precautionary" is not strong enough language where safety is concerned. See Panel Action and Comment on Proposal 1-120.

1- 185 - (110-16(c)): Accept in Principle
SUBMITTER: E. Palko, Member of CMP 1
COMMENT ON PROPOSAL NO.: 1-109
RECOMMENDATION: Reject the proposal.
SUBSTANTIATION: Exception No. 1 is meaningless, in that it is as much subject to differing interpretations as the present wording "where reasonably practicable."

Where there is a means of ingress, there is always a means of egress. Whether such egress constitutes an "escape route" must still be resolved on a case-by-case basis.

A person in an equipment room having a maximum dimension of 12 feet is no further from an exit than a person in a room 100 feet long with an exit at each end. Exception No. 1 should be amplified to cite a maximum distance to an exit that shall, in all cases, be considered to constitute an escape route.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1728

1- 186 - (110-16(c)): Accept in Principle
SUBMITTER: James F. Moore, State of Wyoming - Electrical Safety
COMMENT ON PROPOSAL NO.: 1-109
RECOMMENDATION: Exception No. 2 should be accepted.

Exception No. 1 should be rejected.
SUBSTANTIATION: The term "workspace configuration" is ambiguous. Exception No. 1 creates more problems than it solves. It makes little sense to replace one ambiguity with another.

Exception No. 2 gives a definite amount of area required. The term "sufficient area" is ambiguous. The exception is consistent with the accepted Proposal 1-121 which the Panel accepted.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 2313

1- 187 - (110-16(c)): Reject
SUBMITTER: Warren Cook, IEEE
COMMENT ON PROPOSAL NO.: 1-109
RECOMMENDATION: In the first sentence, insert "not less than" after the words "at least one entrance....".
SUBSTANTIATION: Permit doorways larger than those prescribed.
PANEL ACTION: Reject.
PANEL COMMENT: CMP 1 did not accept the proposed text of proposal 1-109. The present text of Section 110-16(c) contains the proposed text.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 470

1- 188 - (110-16(c), Exception No. 1): Accept
SUBMITTER: Wilford Summers, CMP 1 Clearances Subcommittee
COMMENT ON PROPOSAL NO.: 1-109
RECOMMENDATION: Revise as follows:

Exception No. 1: Where the equipment location permits a continuous and unobstructed way of exit travel.
SUBSTANTIATION: This proposal is intended to resolve the negative comments to Proposals 1-109, 1-112 and 1-121. The proposed revision to Exception No. 1 essentially is the same as the definition of "means of egress" taken from the Life Safety Code. This exception could be applied to electric equipment located in an open area where a person's departure from the working space about electric equipment would not be impeded.
PANEL ACTION: Accept.
PANEL COMMENT: See Panel Action on Comment 1-189 for complete text.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 471

1- 189 - (110-16(c)): Accept
SUBMITTER: Wilford Summers, CMP 1 Clearances Subcommittee
COMMENT ON PROPOSAL NO.: 1-109
RECOMMENDATION: Revise the last sentence of Section 110-16(c) of the 1981 NEC by adding "and 6 1/2 feet (1.98m) high" after "24 inches (610 mm) wide."
SUBSTANTIATION: This proposal is intended to achieve correlation with Proposal 1-121 for Section 110-33(a). There may be differences in the requirements between Sections 110-16, 110-32, 110-33, and 110-34, but these differences can be justified by the greater hazards of higher voltages. An example would be that Section 110-33(a) requires a means of egress entrance way of 24 inches by 6 1/2 feet for all electric equipment over 600 volts, but Section 110-16(c) only requires such a means of egress for control panels and switchboards rated 1200 amperes or more and over 6 feet wide. For instance, a furnace in a crawl space would not warrant the same degree of accessibility and workspace as high-voltage cutouts.
PANEL ACTION: Accept the Comment.
Section 110-16(c) would then read: "At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment. For switchboards and control panels rated 1200 amperes or more and over 6 feet (1.83 m) wide, there shall be one entrance not less than 24 inches (610 mm) wide and 6 1/2 feet (1.98 m) high at each end.

Exception No. 1: Where the equipment location permits a continuous and unobstructed way of exit travel.

Exception No. 2: Where the workspace required by Section 110-16(a) is doubled.".
VOTE ON PANEL ACTION: Unanimously Affirmative.

1- 190 - (110-16(c)): Accept in Principle
SUBMITTER: E. Palko, Member of CMP 1
COMMENT ON PROPOSAL NO.: 1-110
RECOMMENDATION: Reject the proposal.
SUBSTANTIATION: I vote negative for the same reason given for Proposal 1-109. I also feel that the substantiation is deficient. The substantiation states as fact that there are far too many cases of electricians being trapped...but cites no cases where injuries have occurred that could have been prevented by redundant exits.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

1- 191 - (110-16(c)): Accept in Principle
SUBMITTER: E. Palko
COMMENT ON PROPOSAL NO.: 1-111
RECOMMENDATION: Reject the proposal.
SUBSTANTIATION: I vote negative for the same reason given for Proposal 1-109.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

1- 192 - (110-16(c)): Accept in Principle
SUBMITTER: E. Palko, Member of CMP 1
COMMENT ON PROPOSAL NO.: 1-112
RECOMMENDATION: Reject the proposal.
SUBSTANTIATION: I vote negative for the same reason given for Proposal 1-109.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

1- 193 - (110-16(c)): Accept in Principle
SUBMITTER: E. Palko, Member of CMP 1
COMMENT ON PROPOSAL NO.: 1-113
RECOMMENDATION: Reject the proposal.
SUBSTANTIATION: I vote negative for the same reason given for Proposal 1-109.
PANEL ACTION: Accept in Principle.
PANEL COMMENT: See Panel Action on Comment 1-188.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Log # 1527

1- 194 - (110-16(c)): Reject
SUBMITTER: James E. Goodnough, Antioch, CA
COMMENT ON PROPOSAL NO.: 1-114
RECOMMENDATION: Add, second paragraph:

Permanent ladders or stairways shall be provided to give safe access to the working space around electric equipment installed on platforms, balconies, mezzanine floors, or in attic or roof rooms or spaces.
SUBSTANTIATION: Your comment refers to unauthorized persons to spaces that require security. If security is the problem, what about equipment on main floors?

The problem is ready access as required in Section 240-24 for instance. The definition of readily accessible in Article 100 in part, "or to resort to portable ladders," so permanent ladders or stairways would be required, right?

Nothing in the proposal infers the permanent ladder, stairway, or the room or space for that matter, could not be secured against unauthorized entry.

We feel you should not have to go from section to section to get compliance when we have a place to spell it out.
PANEL ACTION: Reject.
PANEL COMMENT: The submitter overlooks the fact that Sections 240-24(a) and 240-24(b) have exceptions that would clearly be in conflict with this comment if it were accepted. In addition, the original proposal would apply to outdoor locations as well as indoor locations in which case the permanent ladders on stairways would be an open invitation to break-in and vandalism.
VOTE ON PANEL ACTION: Unanimously Affirmative.

Appendix D

From: NFPA Electrical
To: Starling, Joseph
Subject: [External] NFPA Technical Question Response ref# [ref:!00D50077Vx.!500Uc0EjZ4r:ref]
Date: Tuesday, August 13, 2024 1:14:10 PM

Thank you for your inquiry on the 2020 NEC®

There is no Section 110.16(C) in the 2020 NEC® as described in your inquiry.

The requirement in 110.26(C)(2)(a) involving large Equipment permits a single entrance to and egress from the required working space where the location permits a continuous and unobstructed way of egress travel.

As noted in 2020 NEC® Section 110.26(C)(2), open equipment doors cannot impede access to and egress from the working space. Access or egress is impeded if one or more simultaneously opened equipment doors restrict working space access to be less than 610 mm (24 in.) wide and 2.0 m (6-1⁄2 ft) high.

The main objective involving “a continuous and unobstructed way of egress travel” is to allow access to electrical equipment, while providing egress from the required working space so that workers can quickly escape if there is an arc-flash incident.

Unobstructed egress travel should be free and clear from blockage or structure that would cause an individual to deviate from a direct path to exiting the workspace. Additionally, when assessing whether a continuous and unobstructed way of exit travel is available, the electrical equipment has to be considered as a potential barrier to safe egress if the equipment is in a failure condition.

Section 110.26(C)(2)(b) provides the requirements permitting the use of a single entrance to the working space for large equipment as described in 110.26(C)(2)(1) & (2).

It is important to understand that this requirement applies to entering or

exiting the required workspace for large equipment and provides an alternative to having two entrances/exits for the required workspace.

Therefore, the clearance requirement from electrical equipment to the entrance/exit specified in 110.26(C)(2)(b) applies only to “large equipment” and is not applicable to items of electrical equipment that do not fall under the “large equipment” description.

In the context of 110.26(C)(2) and (C)(2)(a) and (b), clarifying those requirements are about entering/exiting the working space and not the room is key to proper application.

The AHJ makes the final determination of compliance.

Mike McCabe
NFPA Staff

Contact: Joseph Starling
Create Date: 8/13/2024

Document Number: 70
Edition: 2020
Section:
Subject: NFPA Website Submission
Question for NFPA: I need some insight into 110.16(C)’s use of the phrase “unobstructed egress” described in section 110.26(C)(2)(a)?

Appendix E

We have the following situation in NC where an existing electrical room that resembles a corridor with equipment on both sides was originally designed with exit doors on each end of the equipment.

The local jurisdiction has issued a permit and approved removal of one of the doors because they are stating the room has no obstructions between the equipment and the door that was left in place; therefore, the local is citing 110.26(C)(2)(a) as the reason for approval.

NC's Chief Electrical Code Consultant and some of his teaching acquaintances are claiming that the NFPA has express to educational instructors in the past that the clearances of the required working space must be considered as an obstruction when applying 110.26(C)(2)(a). Additionally, I was told the photos in the handbook describe an intent by the authors was to push the idea that if the electrician had to go right or left rather than 180 degrees to reach the exit, then two means of egress were required as the motion not directly out of the working space would be considered an obstruction.

NFPA staff has the original email with photos of this room.

ref:!00D50077Vx.!500Uc0EjZ4r:ref

Appendix E