32nd Annual State Construction Conference

March 28th, 2013

Problems in Design Review Submittals

Farouk Zaman, RA

Herbert Neily, PE

SCO Website – http://www.nc-sco.com

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TWO NEWS ITEMS OF INTERESTS

Roofing Criteria update

This is available on the SCO website for information.

Designer Responsibilities

Instructions to Bidders and General Conditions of the Contract

DESIGNER RESPONSIBILITIES

INSTRUCTIONS TO BIDDERS

AND

GENERAL CONDITIONS OF THE CONTRACT

STANDARD FORM FOR CONSTRUCTION PROJECTS

STATE CONSTRUCTION OFFICE

NORTH CAROLINA

DEPARTMENT OF ADMINISTRATION

Form OC-15

This document is intended for use on State capital construction projects and shall not be used on any project that is not reviewed and approved by the State Construction Office. Extensive modification to the General Conditions by means of "Supplementary General Conditions" is strongly discouraged. State agencies and institutions may include special requirements in "Division 1 – General Requirements" of the specifications, where they do not conflict with the General Conditions.

Twenty Fourth Edition January 2013

ARTICLE 1 - DEFINITIONS

u. **Provide** shall mean furnish and install complete in place, new, clean, operational, and ready for use.

v. **Indicated and shown** shall mean provide as detailed, or called for, and reasonably implied in the contract documents.

w. **Special inspector** is one who inspects materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with the approved construction documents and referenced standards.

x. **Commissioning** is a quality assurance process that verifies and documents that building components and systems operate in accordance to the owner's project requirements and the project design documents.

y. **Designer Final Inspection** is the inspection performed by the design team to determine the completeness of the project in accordance with approved plans and specifications. This inspection occurs prior to SCO final inspection.

z. **SCO Final Inspection** is the inspection performed by the State Construction Office to determine the completeness of the project in accordance with NC Building Codes and approved plans and specifications.

aa. **Beneficial Occupancy** is requested by the owner and is occupancy or partial occupancy of the building after all life safety items have been completed as determined by the State Construction Office. Life safety items include but not limited to fire alarm, sprinkler, egress and exit lighting, fire rated walls, egress paths and security.

bb. Final Acceptance is the date in which the State Construction Office accepts the construction as totally complete. This includes the SCO Final Inspection and certification by the designer that all punch lists are completed.

9. The seal of the bonding company shall be impressed on each signature page of the bonds.

10. The contractor's signature on the performance bond and the payment bond shall correspond with that on the contract. The date of performance and payment bond shall not be prior to the date of the contract.

ARTICLE 3 - CLARIFICATIONS AND DETAIL DRAWINGS

a. In such cases where the nature of the work requires clarification by the designer, such clarification shall be furnished by the designer with reasonable promptness by means of written instructions or detail drawings, or both. Clarifications and drawings shall be consistent with the intent of contract documents, and shall become a part thereof.

b. The contractor(s) and the designer shall prepare, if deemed necessary, a schedule fixing dates upon which foreseeable clarifications will be required. The schedule will be subject to addition or change in accordance with progress of the work. The designer shall furnish drawings or clarifications in accordance with that schedule. The contractor shall not proceed with the work without such detail drawings and/or written clarifications.

ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS

The designer or Owner shall furnish free of charge to the contractors electronic copies of plans and specifications. If requested by the contractor, paper copies of plans and specifications shall be furnished free of charge as follows:

a. General contractor - Up to twelve (12) sets of general contractor drawings and specifications, up to six (6) sets of which shall include drawings and specifications of all other contracts, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work-in-place that is at variance with the contract documents.

ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES

a. The contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.

b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.

c. Upon notice, the contractor shall furnish evidence as to quality of materials.

d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the designer for approval or disapproval; such approval or disapproval shall be made by the designer prior to the opening of bids. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the owner and the designer and owner approves.

e. The designer is the judge of equality for proposed substitution of products, materials or equipment.

ARTICLE 13 - INSPECTION OF THE WORK

a. It is a condition of this contract that the work shall be subject to inspection during normal working hours and during any time work is in preparation and progress by the designer, designated official representatives of the owner, State Construction Office and those persons required by state law to test special work for official approval. The contractor shall therefore provide safe access to the work at all times for such inspections.

b. All instructions to the contractor will be made only by or through the designer or his designated project representative. Observations made by official representatives of the owner shall be conveyed to the designer for review and coordination prior to issuance to the contractor.

c. All work shall be inspected by designer, special inspector and/or State Construction Office prior to being covered by the contractor. Contractor shall give a minimum two weeks notice unless otherwise agreed to by all parties. If inspection fails, after the first reinspection all costs associated with additional reinspections shall be borne by the contractor.

d. Where special inspection or testing is required by virtue of any state laws, instructions of the designer, specifications or codes, the contractor shall give adequate notice to the designer of the time set for such inspection or test, if the inspection or test will be conducted by a party other than the designer. Such special tests or inspections will be made in the presence of the designer, or his authorized representative, and it shall be the contractor's responsibility to serve ample notice of such tests.

e. All laboratory tests shall be paid by the owner unless provided otherwise in the contract documents except the general contractor shall pay for laboratory tests to establish design mix for concrete, and for additional tests to prove compliance with contract documents where materials have tested deficient except when the testing laboratory did not follow the appropriate ASTM testing procedures.

f. Should any work be covered up or concealed prior to inspection and approval by the designer, special inspector, and/or State Construction Office such work shall be uncovered or exposed for inspection, if so requested by the designer in writing. Inspection of the work will be made upon notice from the contractor. All cost involved in uncovering, repairing, replacing, recovering and restoring to design condition, the work that has been covered or concealed will be paid by the contractor involved.

ARTICLE 18 - DESIGNER'S STATUS

a. The designer shall provide general administration of the performance of construction contracts, including liaison and necessary inspection of the work to ensure compliance with plans and specifications. He is the agent of the owner only for the purpose of constructing this work and to the extent stipulated in the contract documents. He has authority to direct work to be performed, to stop work, to order work removed, or to order corrections of faulty work, where any such action by the designer may be necessary to assure successful completion of the work.

b. The designer is the impartial interpreter of the contract documents, and, as such, he shall exercise his powers under the contract to enforce faithful performance by both the owner and the contractor, taking sides with neither.

c. Should the designer cease to be employed on the work for any reason whatsoever, then the owner shall employ a competent replacement who shall assume the status of the former designer.

d. The designer and his consultants will make inspections of the project. He will inspect the progress, the quality and the quantity of the work.

e. The designer and the owner shall have access to the work whenever it is in preparation and progress during normal working hours. The contractor shall provide facilities for such access so the designer and owner may perform their functions under the contract documents.

f. Based on the designer's inspections and evaluations of the project, the designer shall issue interpretations, directives and decisions as may be necessary to administer the project. His decisions relating to artistic effect and technical matters shall be final, provided such decisions are within the limitations of the contract.

BUILDING CODE SUMMARY 2012 APPENDIX B

2012 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: _____

Address: _____ Zip Code _____

Proposed Use: _____

Owner/Authorized Agent: _____ Phone # (_____) _____ - _____ E-Mail _____

Owned By: ☐ City/County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☐ City_____ ☐ County_____ ☐ State

LEAD DESIGN PROFESSIONAL: _____

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				(___)_____	
Civil				(___)_____	
Electrical				(___)_____	
Fire Alarm				(___)_____	
Plumbing				(___)_____	
Mechanical				(___)_____	
Sprinkler-Standpipe				(___)_____	
Structural				(___)_____	
Retaining Walls >5' High				(___)_____	
Other				(___)_____	

2012 EDITION OF NC CODE FOR: ☐ New Construction ☐ Addition ☐ Upfit

EXISTING: ☐ Reconstruction ☐ Alteration ☐ Repair ☐ Renovation

CONSTRUCTED: (date) _____ **ORIGINAL USE(S) (Ch. 3):** _____

RENOVATED: (date) _____ **CURRENT USE(S) (Ch. 3):** _____

PROPOSED USE(S) (Ch. 3):

BASIC BUILDING DATA

Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B

Sprinklers: ☐ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ☐ No ☐ Yes (Primary) **Flood Hazard Area:** ☐ No ☐ Yes

Building Height: (feet) _____

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTERATION (SQ.FT)	SUB-TOTAL
6th Floor				
5th Floor				
4th Floor				
3rd Floor				
2nd Floor				
Mezzanine				
1st Floor				
Basement				
TOTAL				

2012 NC Administrative Code and Policies

BUILDING CODE SUMMARY
2012 APPENDIX B

BASIC BUILDING DATA

Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B

Sprinklers: ☐ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ☐ No ☐ Yes (Primary) **Flood Hazard Area:** ☐ No ☐ Yes

Building Height: (feet) _____

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTERATION (SQ.FT)	SUB-TOTAL
6th Floor				
5th Floor				
4th Floor				
3rd Floor	10,000		5,000	
2nd Floor	10,000		5,000	
Mezzanine				
1st Floor	20,000		10,000	
Basement				
TOTAL	40,000		20,000	

2012 NC Administrative Code and Policies

BUILDING CODE SUMMARY
2012 APPENDIX B

LIFE SAFETY PLAN REQUIREMENTS

- ☐ Existing structures within 30' of the proposed building
- ☐ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.1)
- ☐ Occupant loads for each area
- ☐ Exit access travel distances (1016)
- ☐ Common path of travel distances (1014.3 & 1028.8)
- ☐ Dead end lengths (1018.4)
- ☐ Clear exit widths for each exit door
- ☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.1)
- ☐ Actual occupant load for each exit door
- X A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition. (707.5.1 &709.4).
- ☐ Location of doors with panic hardware (1008.1.10)
- ☐ Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
- ☐ Location of doors with electromagnetic egress locks (1008.1.9.8)
- ☐ Location of doors equipped with hold-open devices
- ☐ Location of emergency escape windows (1029)
- ☐ The square footage of each fire area (902)
- ☐ The square footage of each smoke compartment (407.4)
- X Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

BUILDING CODE SUMMARY
2012 APPENDIX B

ENERGY SUMMARY

ENERGY REQUIREMENTS:

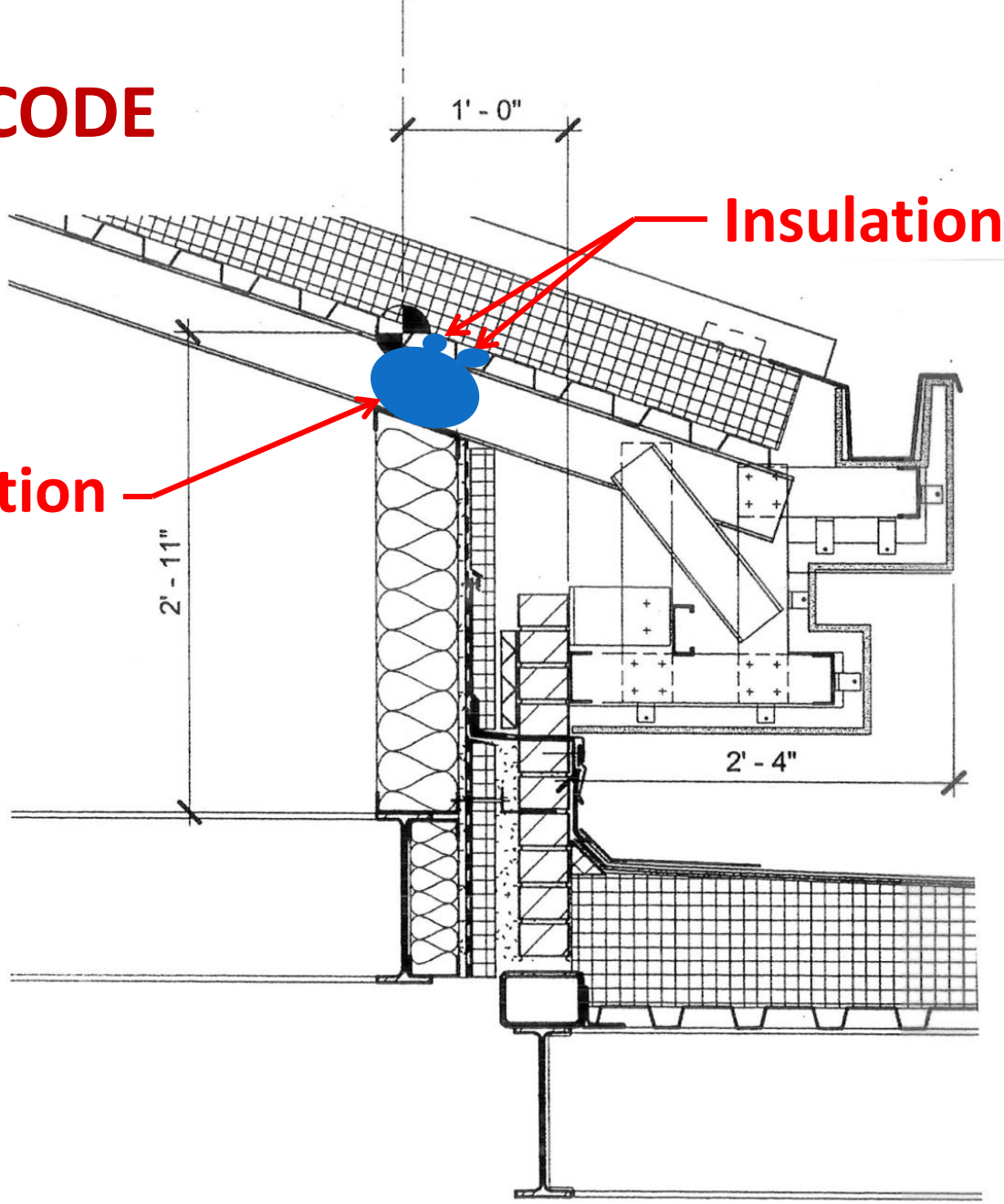
THERMAL ENVELOPE

Section 502.4.3 Sealing of Building Envelope [Indicate where details are in the set]

- ☐ Joint around fenestration and door frames
- ☐ Junction between walls and foundations, walls at building corners, walls and structural floors or roofs, walls and roof or wall panels.
- ☐ Openings at penetrations of utility services through roofs, walls, and floors including but not limited to electrical, plumbing, mechanical, security and communications.
- ☐ Site-built fenestration and doors.
- ☐ Joints, seams and penetrations of air barrier system.
- ☐ Other openings in the building envelope.

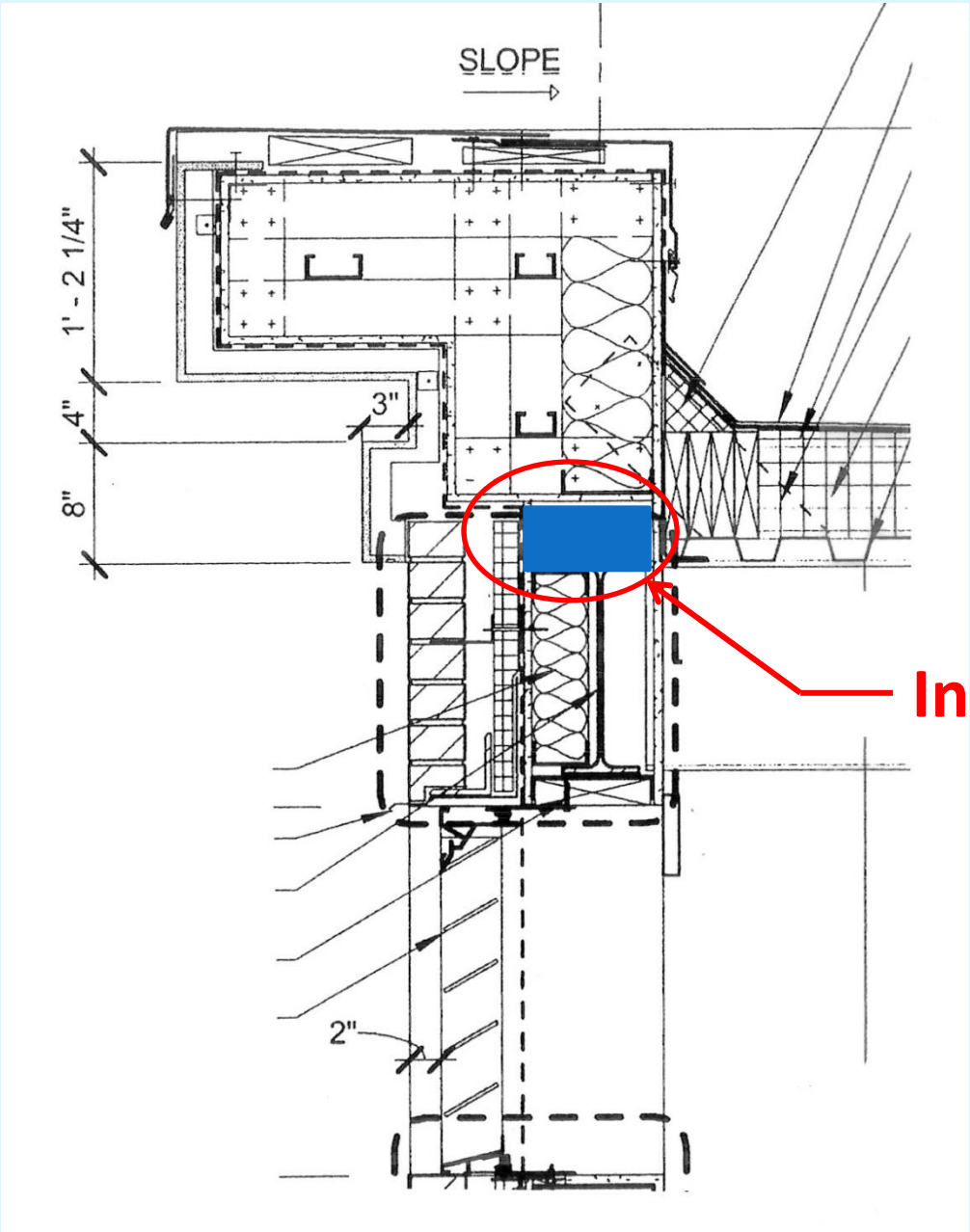
Samples of construction details are available in Appendix 2.1

ENERGY CODE



ROOF

ENERGY CODE



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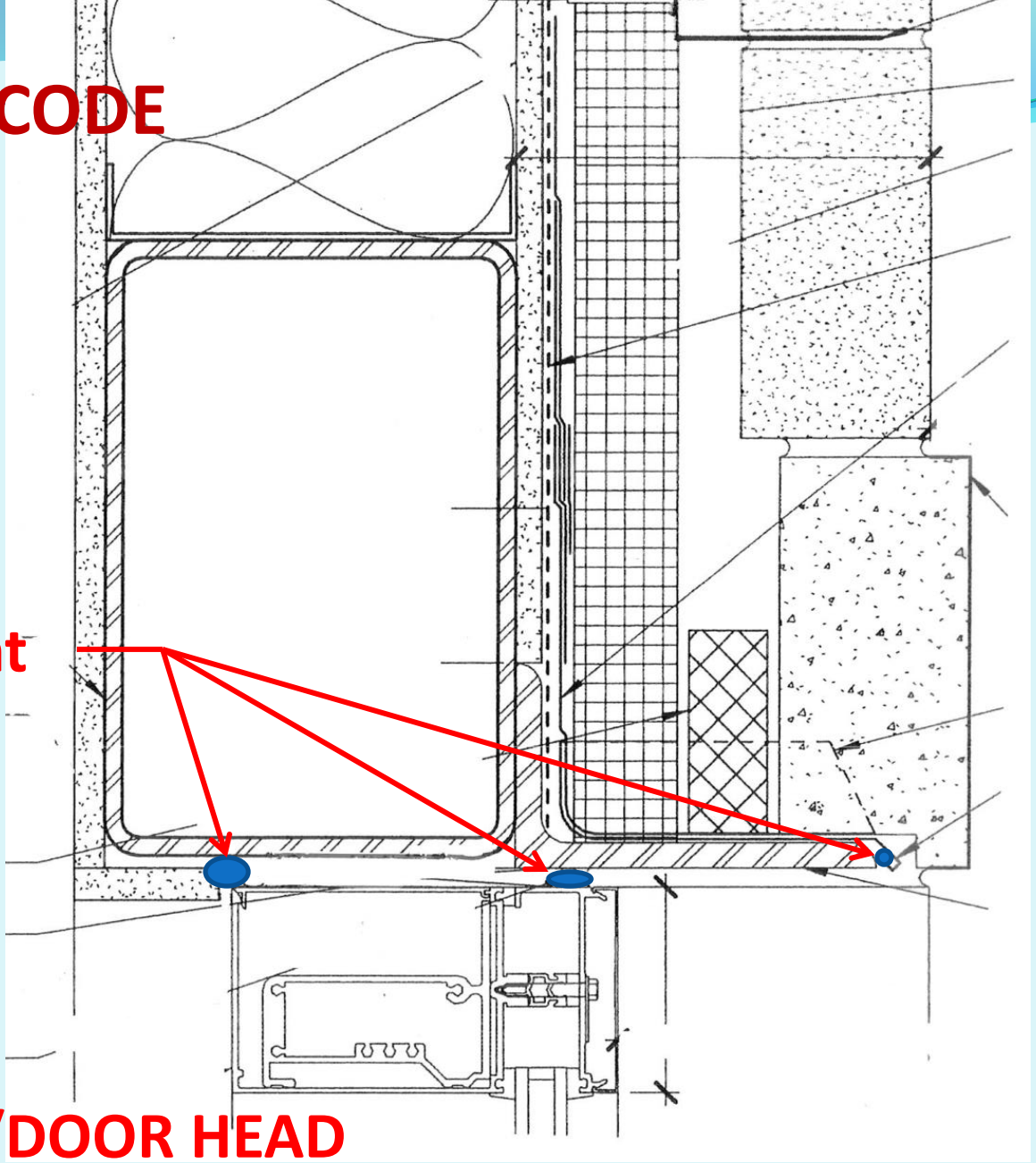
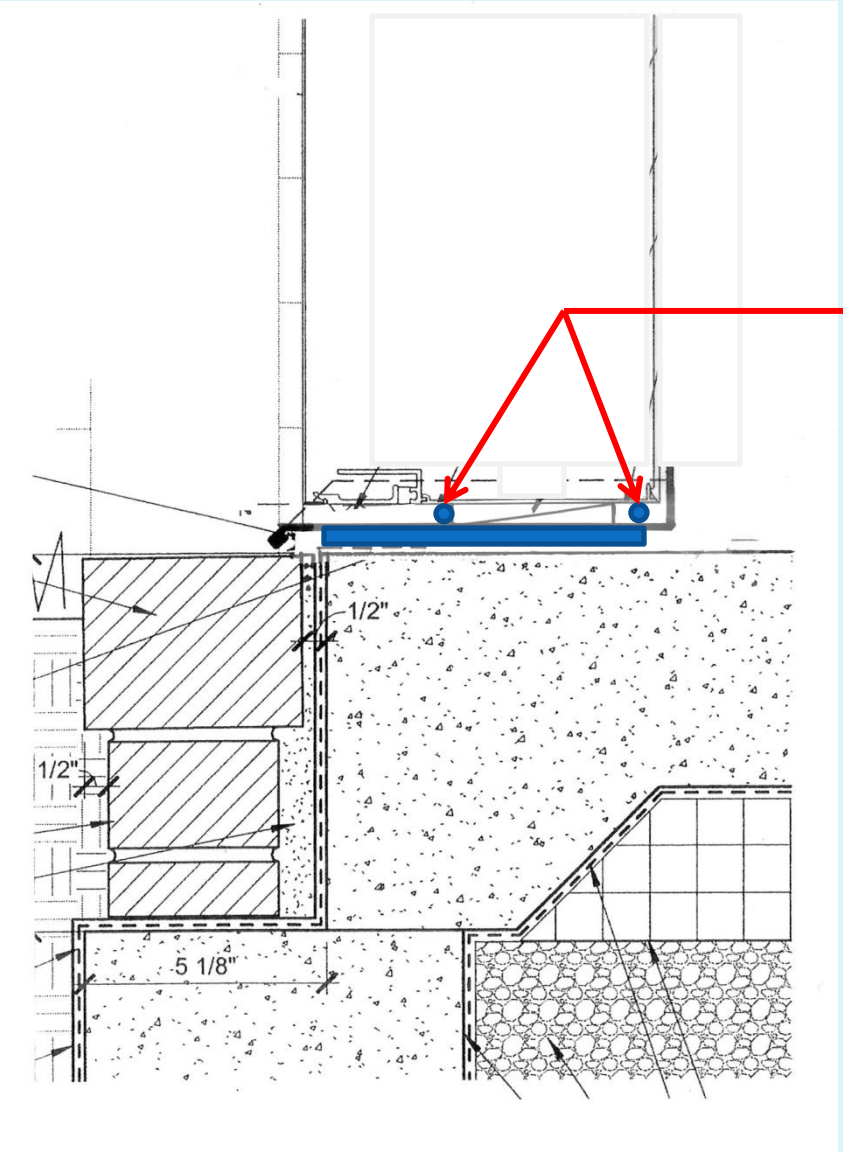


WINDOW/DOOR HEAD

ENERGY CODE



WINDOWSILL

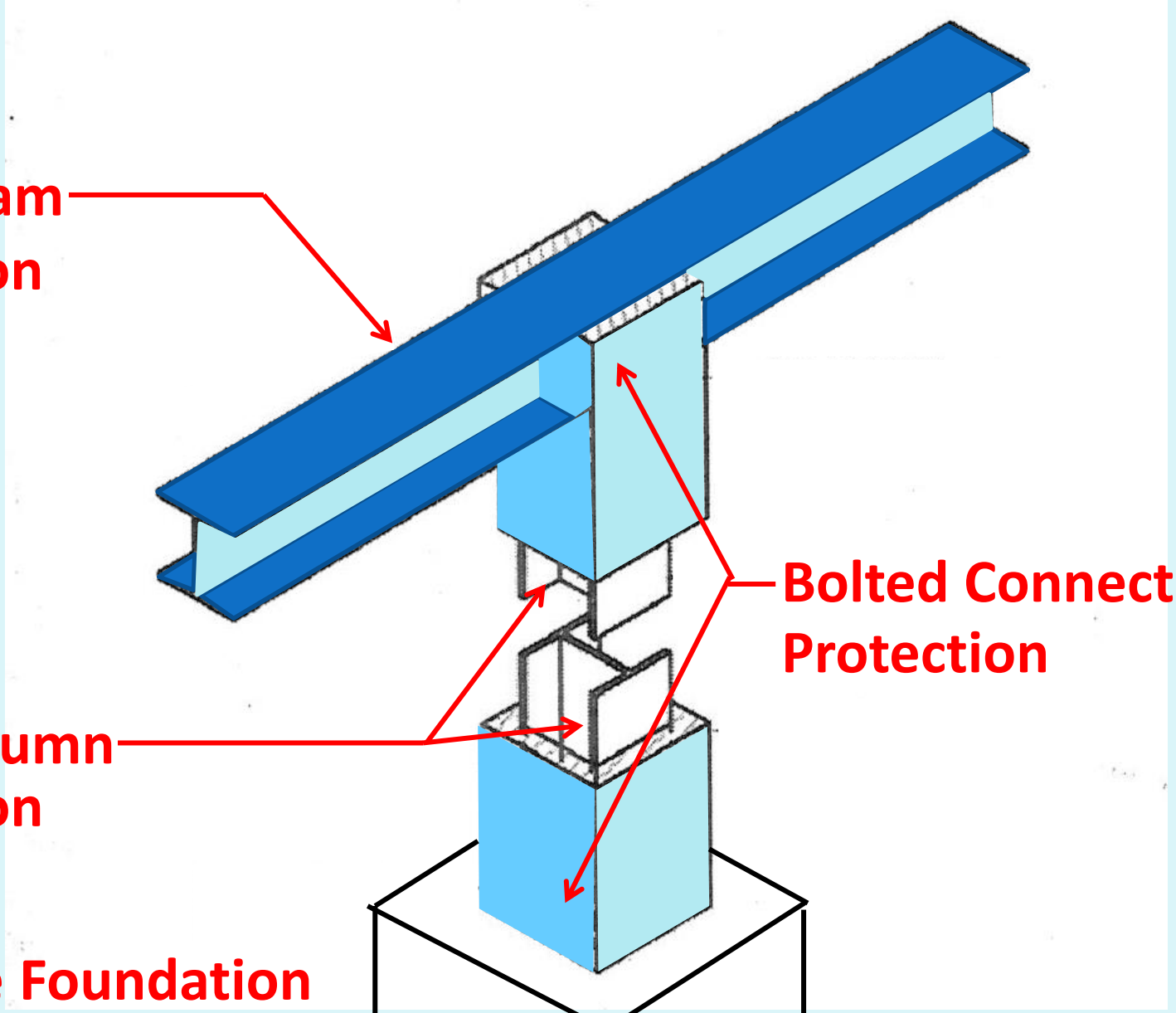
SUPPORTING FIRE-RESISTANCE CONSTRUCTION

Section 707.5.1 Supporting Construction. [Fire Barrier]
The supporting construction for a *fire barrier* shall be protected to afford the required *fire-resistance rating* of the *fire barrier* supported.

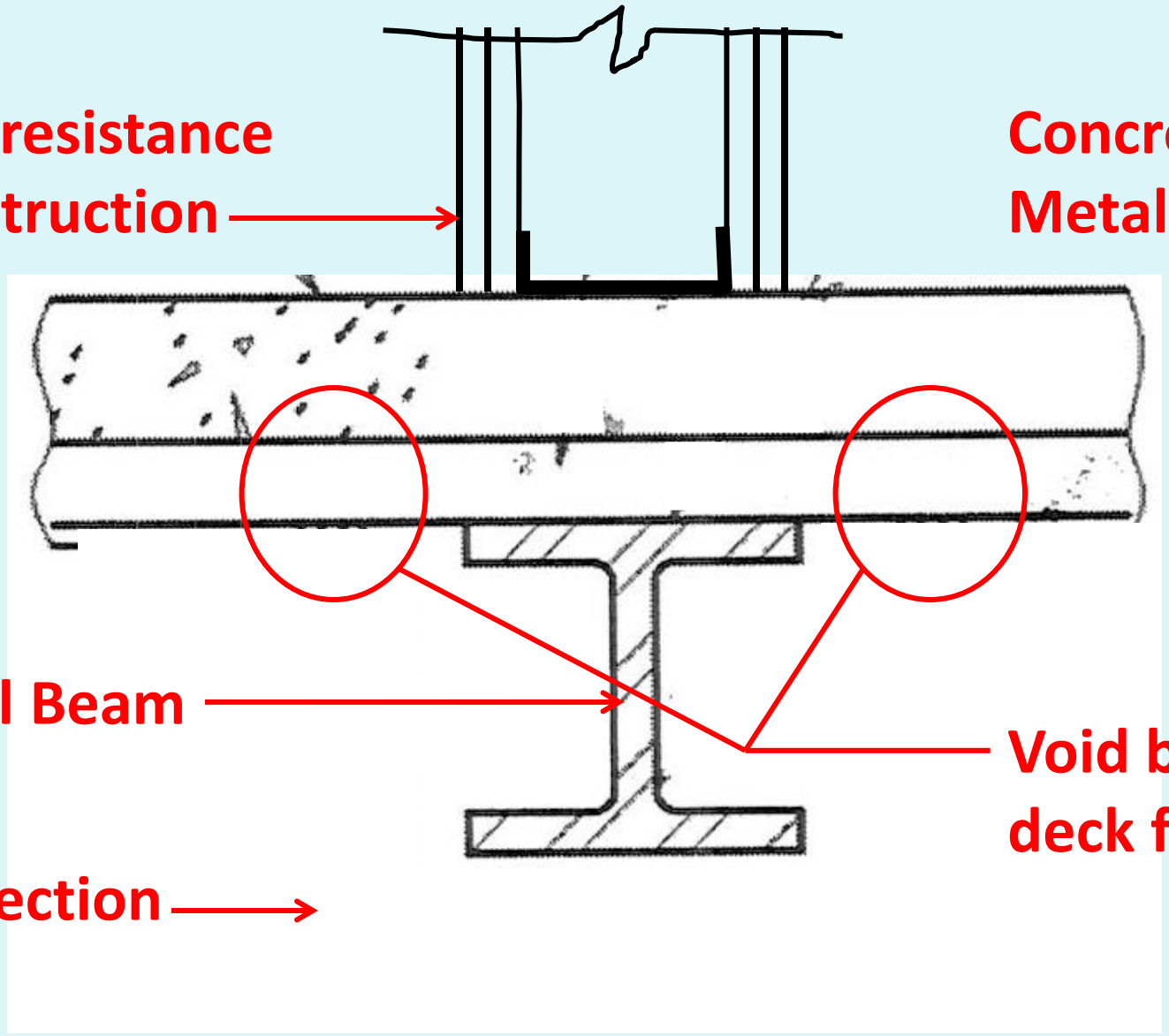
Section 709.4 Continuity [Fire Partition]
The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported.

Section 710.4 Continuity [Smoke Barrier]
The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall or floor supported.

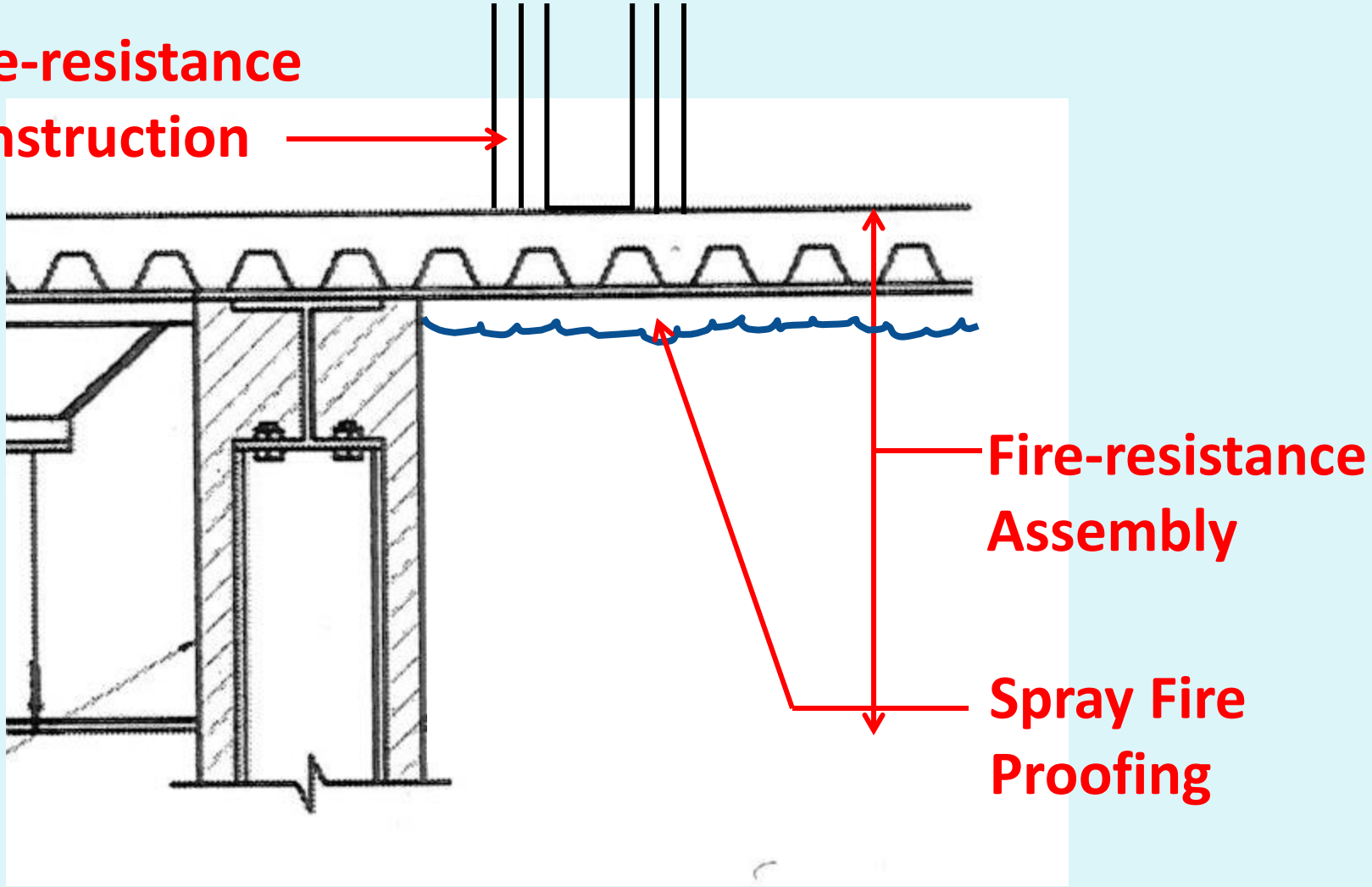
SUPPORTING FIRE-RESISTANCE CONSTRUCTION



SUPPORTING FIRE-RESISTANCE CONSTRUCTION



SUPPORTING FIRE-RESISTANCE CONSTRUCTION



SUPPORTING FIRE-RESISTANCE CONSTRUCTION

A reduced scale plan as part of the Life Safety drawings to include the following:

- Fire-resistance wall locations
- Idenfity all beams requiring protection
- Locations of column requiring protection
- Floor ceiling fire resistance assembly where occur
- Label the above with the appropriate UL Design number or other tests as performed by other nationally recognized testing agencies

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

ADDITIONS

Section 3403

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

ADDITIONS
Section 3403

- Additions to any building or structure shall comply with the requirements of this code for new construction.

- The completed building, existing portion and addition shall comply with Table 503 for areas and height.

ADDITIONS, ALTERATIONS, REPAIRS CHANGE OF OCCUPANCY, and MOVED STRUCTURES

ALTERATIONS

Section 3404

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

ALTERATIONS

Section 3404

- **Alterations includes renovation, implies something is changed in the structure.**
- **Alterations to any building or structure shall comply with the requirements of this code for new construction.**
- **Unaltered portions of the building are not required to comply but Section 3411 Accessibility for Existing building may force the compliant of accessible exit route.**

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

REPAIRS

Section 3405

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

REPAIRS

Section 3405

- Buildings and parts thereof shall be repaired in compliance with this section and 3401.2 Maintenance.

- Work on non-damaged components necessary for the required repair of damaged components shall be considered part of the repair.

ADDITIONS, ALTERATIONS, REPAIRS, CHANGE OF OCCUPANCY, and MOVED STRUCTURES

CHANGE OF OCCUPANCY

SECTION 3408

Change of use from Group A-1 Occupancy to Group M Occupancy

ADDITIONS, ALTERATIONS, REPAIRS CHANGE OF OCCUPANCY, and MOVED STRUCTURES

CHANGE OF OCCUPANCY
SECTION 3408

- The section applies the provisions of the code for new construction to an existing structure with new occupancy.

- This is done so that applicable building code requirements adequately address the specific hazards of new occupancy.

ADDITIONS, ALTERATIONS, REPAIRS CHANGE OF OCCUPANCY, and MOVED STRUCTURES

MOVED STRUCTURES

SECTION 3410

Are we there ??

ADDITIONS, ALTERATIONS, REPAIRS CHANGE OF OCCUPANCY, and MOVED STRUCTURES

MOVED STRUCTURES

SECTION 3410

- Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

- The fire separation distance of the moved structure shall comply with requirements of new structures. Table 602.

ADDITIONS, ALTERATIONS, REPAIRS CHANGE OF OCCUPANCY, and MOVED STRUCTURES

SUMMARY

ADDITION	No change to other parts of the building
Section 3403	Increase area/height
	Current code applies to addition *
	Building Code Summary (BCS) - Full or Alteration Floor+Exit Floor
ALTERATIONS	Something is changed in the structure
Section 3404	Current code applies to altered areas *
	Unaltered portion not required to conform to current code.
	Building Code Summary (BCS) - Full or Alteration Floor+Exit Floor
REPAIRS	Repair current structure and building systems to increase safety
Section 3405	Building Code Summary (BCS) - Not required
CHANGE OF OCCUPANCY	Current code applies to whole structure
Section 3408	Building Code Summary (BCS) - Full
MOVED STRUCTURE	Current code applices to whole structure
Section 3410	Building Code Summary (BCS) - Full
	* AHJ may determine if other life safety improvements are needed.

EXIT ENCLOSURE PENETRATION

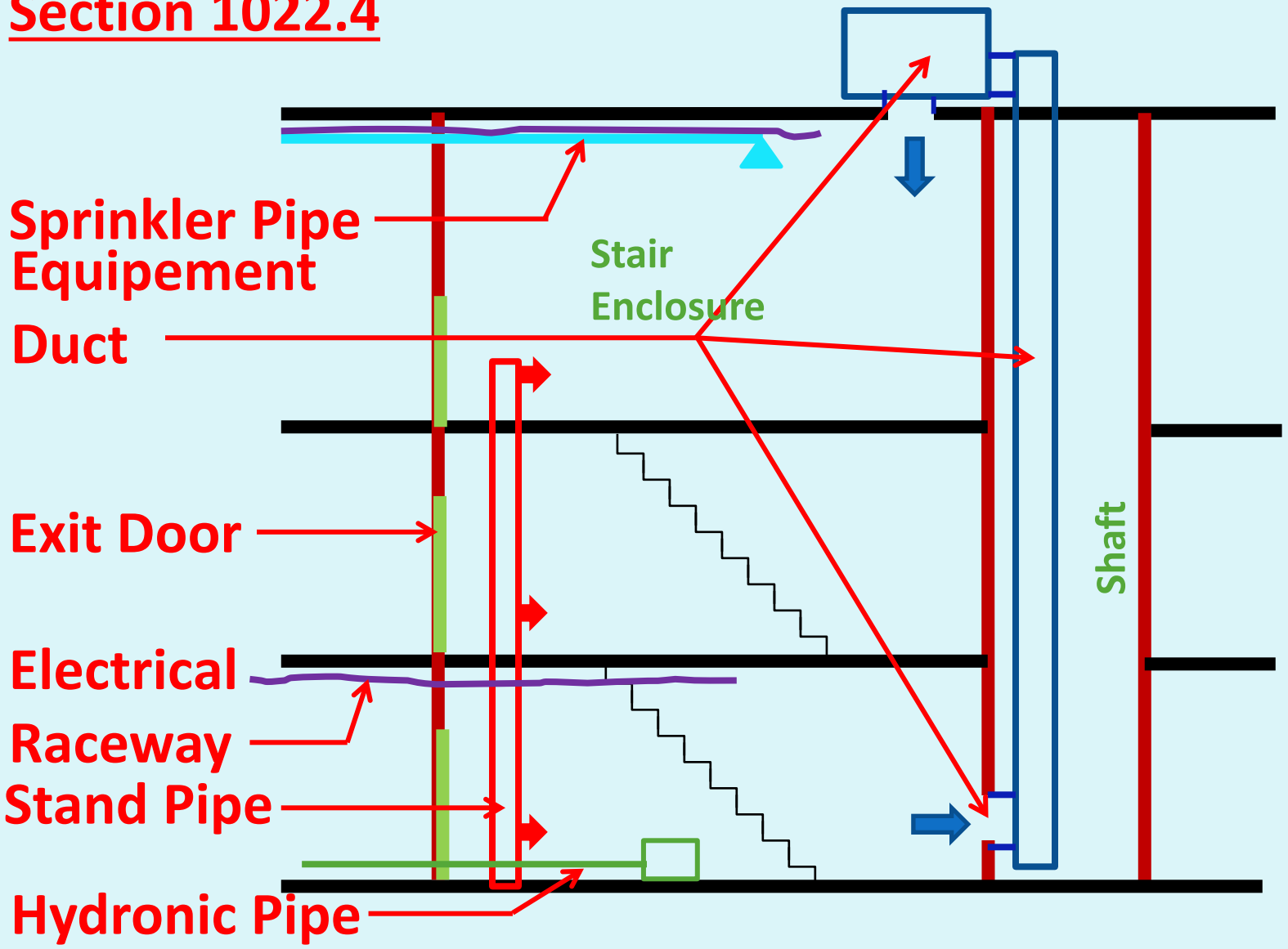
Section 1022.4 Penetrations

Penetrations into and openings through an exit enclosure are prohibited except for:

- **Exit Door**
- **Equipment & Ductwork** necessary for independently ventilation and pressurization
- **Sprinkler Pipe**
- **Standpipes**
- **Electrical raceway for Fire Dept Communication**
- **Electrical raceway serving the exit enclosure**

EXIT ENCLOSURE PENETRATION

Section 1022.4



G.S.143-138(i) – EXISTING HIGH RISE

(i) Section 1008 of Chapter X of Volume 1 of the North Carolina State Building Code, Title "Special Safety to Life Requirements Applicable to Existing High-Rise Buildings" as adopted by the North Carolina State Building Code Council on March 9, 1976, as ratified and adopted as follows

G.S.143-138(i) – EXISTING HIGH RISE

TABLE 1008.1
SCOPE

CLASS	OCCUPANCY GROUP (3)(4)	OCCUPIED FLOOR ABOVE AVERAGE GRADE EXCEEDING HEIGHT (2)
CLASS I	Group R-Residential Group B-Business Group E-Educational	60' but less than 120' above average grade or 6 but less than12 stories above average grade.
	Group A-Assembly Group H-Hazardous Group I-Institutional-Restrained	
	Group I-Institutional-Unrestrained	36' but less than 60' above average grade or 3 but less than 6 stories above average grade.
CLASS II	Group R-Residential	120' but less than 250' above
	Group B-Business Group E-Educational	average grade or 12 but less than 25 stories above average grade.
	Group A-Assembly Group H-Hazardous Group I-Institutional-Restrained	
	Group I-Institutional-Unrestrained	60' but less than 250' above average grade or 6 but less than 25 stories above average grade.
CLASS III	Group R-Residential	250' or 25 stories above average grade.
	Group B-Business Group E-Educational Group I-Institutional Group A-Assembly Group H-Hazardous	

G.S.143-138(i) – EXISTING HIGH RISE

CLASS I

60-120 feet
Or 11 stories
above average
grade

G.S.143-138(i) – EXISTING HIGH RISE

SUGGESTED TIME PERIOD FOR COMPLIANCE				
ITEM	CLASS I (SECTION)	CLASS II (SECTION)	CLASS III (SECTION)	TIME FOR COMPLETION
Signs in Elevator Lobbies and Elevator Cabs	1008.2(h)	1008.3(h)	1008.4(h)	180 days
Emergency Evacuation Plan	1008(b)	NOTE:		180 days
Corridor Smoke Detectors (Includes alternative door closers)	1008.2(c)	1008.3(c)	1008.4(c)	1 year
Manual Fire Alarm	1008.2(a)	1008.3(a)	1008.4(a)	1 year
Voice Communication System Required	1008.2(b)	1008.3(b)	1008.4(b)	2 years
Smoke Detectors Required	1008.2(c)	1008.3(c)	1008.4(c)	1 year
Protection and Fire Stopping for Vertical Shafts	1008.2(f)	1008.3(f)	1008.4(f)	3 years
Special Exit Requirements- Number, Location and Illumination to be in accordance with Section 1007	1008.2(e)	1008.3(e)	1008.4(e)	3 years
Emergency Electrical Power Supply	1008.2(d)	1008.3(d)	1008.4(d)	4 years
Special Exit Facilities Required	1008.2(e)	1008.3(e)	1008.4(e)	5 years
Compartmentation for Institutional Buildings	1008.2(f)	1008.3(f)	1008.4(f)	5 years
Emergency Elevator Requirements	1008.2(h)	1008.3(h)	1008.4(h)	5 years
Central Alarm Facility Required		1008.3(i)	1008.4(i)	5 years
Areas of Refuge Required on Every Eighth Floor			1008.4(j)	5 years
Smoke Venting			1008.4(k)	5 years
Fire Protection of Electrical Conductors			1008.4(l)	5 years

G.S.143-138(i) – EXISTING HIGH RISE

Steps necessary for high riser improvements.

- Review all approvals from DOI with dates
- Survey your buildings for life safety system in place per Table 1008.1
- Contact SCO to review all your approvals and deficiency

SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Section 1109

5 methods of pool entry/exit:

1. Pool Lift. Section 1109.2
2. Sloped Entries. Section 1109.3
3. Transfer Wall. Section 1109.4
4. Transfer Space. Section 1109.5
5. Pool Stairs. Section 1109.6

SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Section 1109.1

- >300 linear feet of swimming pool wall 2 accessible means of egress
- One (1) shall comply with Section 1109.2 Pool Lifts or Section 1109.3 Sloped Entries
- <300 linear feet of swimming pool wall, 1 accessible means of egress
- Shall comply with either Section 1109.2 Pool Lifts or Section 1109.3 Sloped Entries

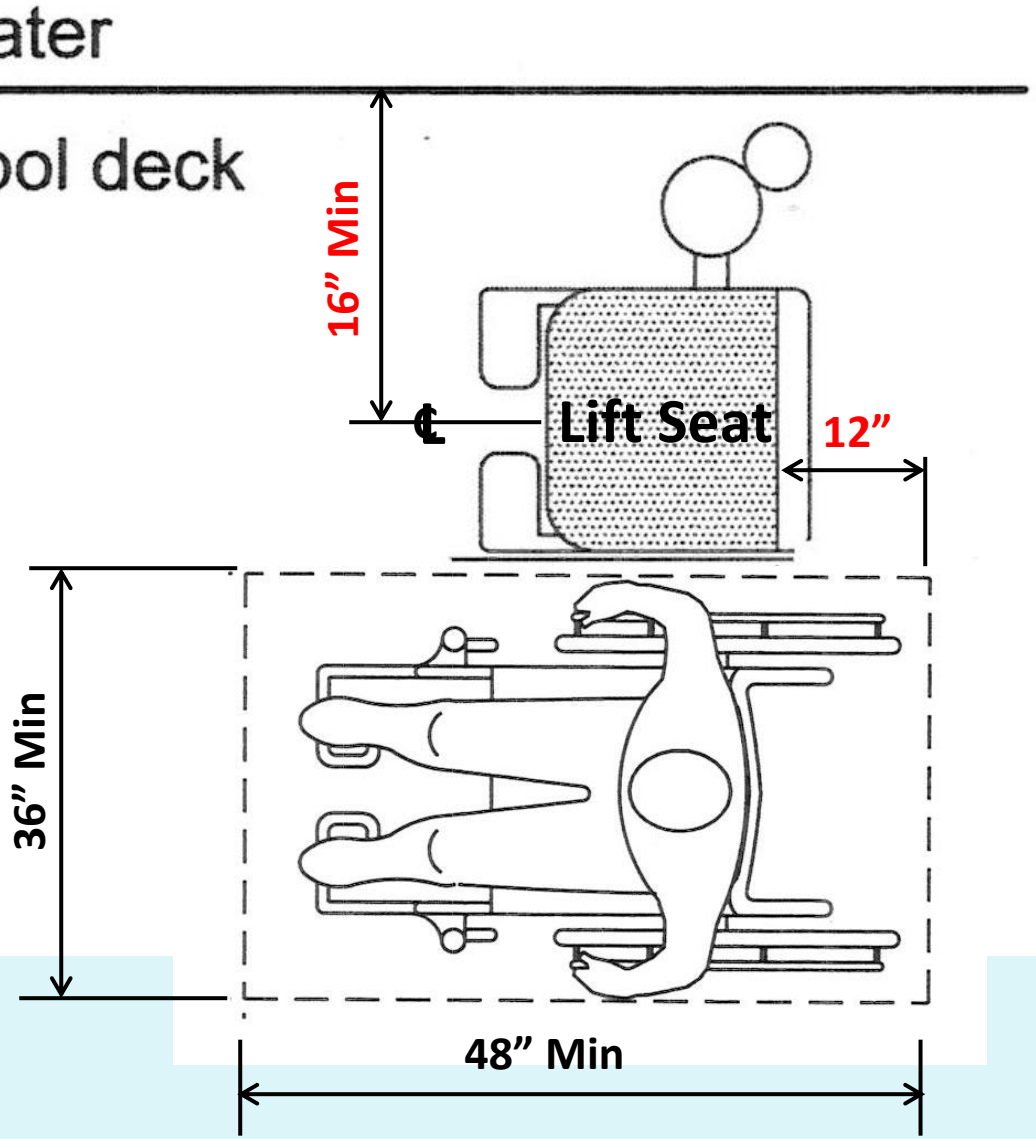
SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Pool Lifts Section 1109.2

The inspection of pool lift operation is the responsibility of SCO.

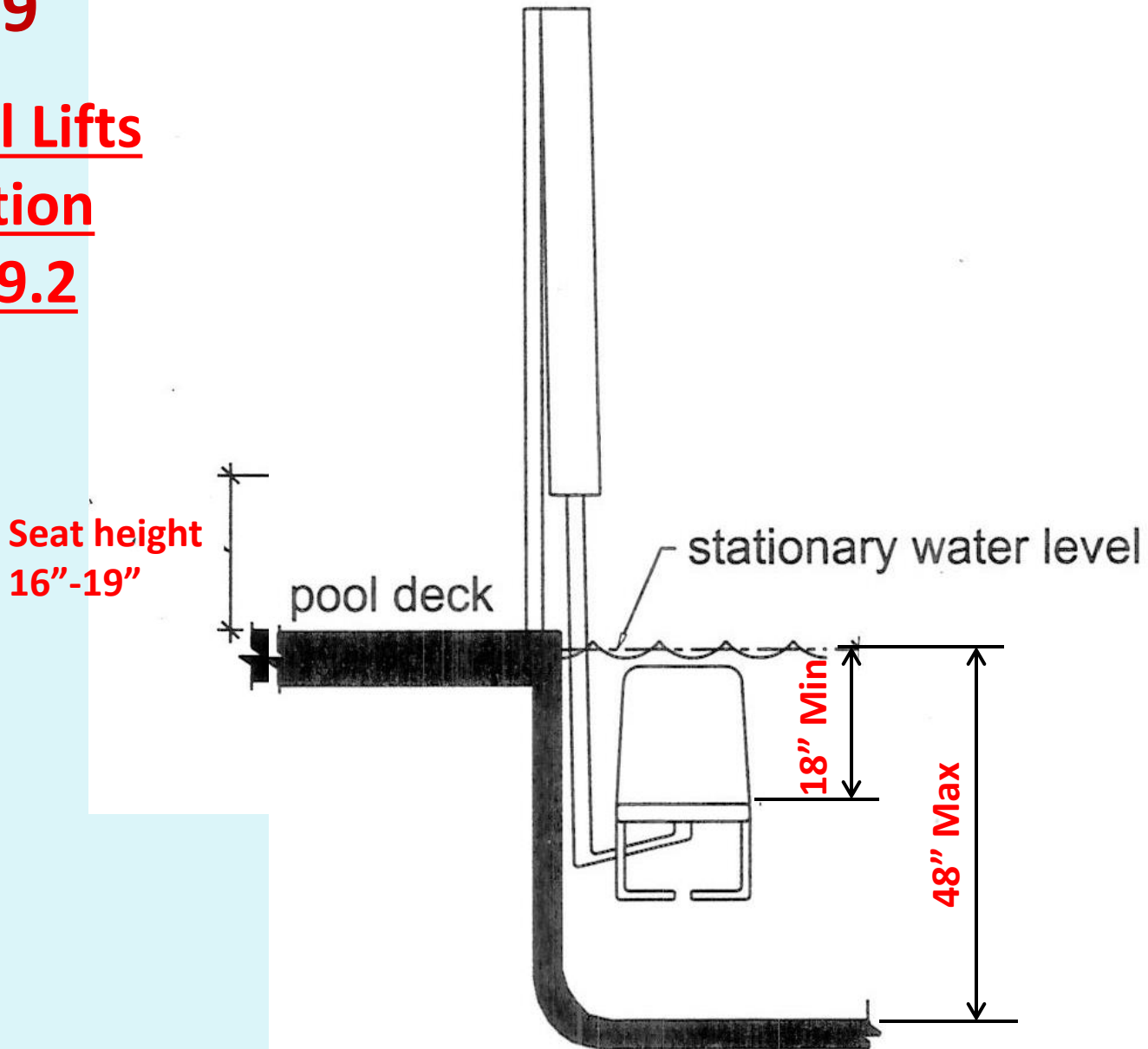
SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Pool Lifts Section 1109.2



SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Pool Lifts Section 1109.2



SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Sloped Entries Section 1109.3

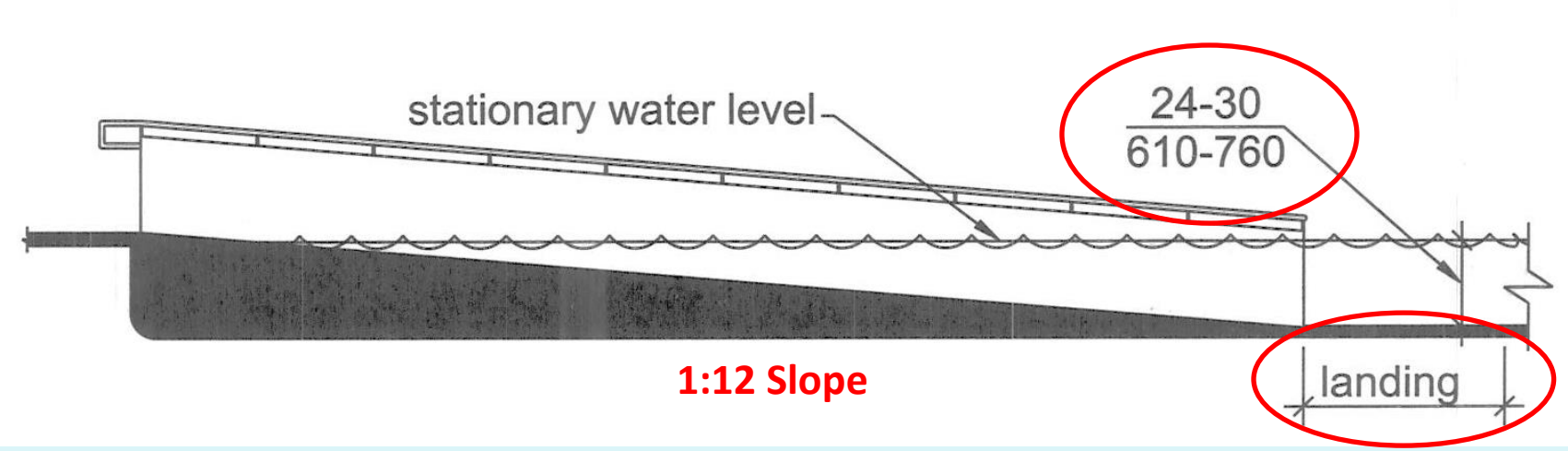
1109.3.1: Comply with Chapter 4 ICC/A117.1-2009 except as modified by Sections 1109.3.1 through 1109.3.3

- **Section 1109.3.1 Exception. Sloped surface is not required to be slip resistance.**
- **Section 1109.3.2 Bottom landing shall be at a minimum 24” and maximum 36” below the stationary water level.**
- **Section 1109.3 Exception 1. Handrail extensions not required at the bottom landing.**

SWIMMING POOLS – Section 1109 ICC/A117.1-2009

Sloped Entries Section 1109.3

1109.3.2: Submerged depth 24”-30”. Landing at bottom.



1109.3.3: 2 handrails 33 – 38” apart. Handrail extension not required at bottom landing.

AM&M WHEN/HOW TO USE IT.

What is AM&M?

Section 105.1 of the North Carolina State Building Code: Administrative Code & Polices

SECTION 105
ALTERNATE MATERIAL, DESIGN OR METHODS

105.1 Approval. The provisions of this code are intended to allow the use of any alternate material, design or method of construction, provided that the alternate has been approved by the code enforcement official. An alternative material, design or method of construction shall be approved where the code enforcement official finds that the proposed alternative material, design or method of construction complies with the intent and provisions of the technical codes.

AM&M WHEN/HOW TO USE IT.

Commentary: The technical codes are not intended to inhibit innovative ideas or technological advances. A comprehensive regulatory document, such as the North Carolina Building Codes, cannot envision and then address all future innovations in the industry. As a result, a performance code must be applicable to and provide a basis for the approval of an increasing number of newly developed, innovative materials, systems and methods for which no code text or referenced standards yet exist. The fact that a material, product or method of construction is not addressed in the technical codes is not an indication that such material, product or method is intended to be prohibited. The code enforcement official is expected to

AM&M WHEN/HOW TO USE IT.

prohibited. The code enforcement official is expected to apply sound technical judgment in accepting materials, systems or methods that, while not anticipated by the drafters of the current code text, can be demonstrated to offer equivalent performance. By virtue of its text, the code regulates new and innovative construction practices while addressing the relative safety of building occupants. The code enforcement official is responsible for determining if a requested alternative provides the equivalent level of protection of public health, safety and welfare as required by the code.

AM&M WHEN/HOW TO USE IT.

105.2 Tests or analysis. Whenever there is insufficient evidence of compliance with the provisions of the technical codes, or evidence that a material, design or method does not conform to the requirements of the technical codes, or in order to substantiate claims for an alternative material, design or method, the code enforcement official shall have the authority to require tests as evidence of compliance to be made at no expense to the authority having jurisdiction. Test methods shall be as specified in the technical codes or by other recognized test standards. In the absence of recognized and accepted test methods, the code enforcement official shall approve the testing procedures.

AM&M WHEN/HOW TO USE IT.

- AM&M is not a means of circumventing the code
- The use of AM&M should be avoided in new construction
- Visit the DOI website to download the instructions and procedure on AM&M
- Submit the AM&M with appropriate drawings and testing information/results to SCO
- Approval of the proposed AM&M is NOT guarantee
- An Approved AM&M is one time project specific
- It is NOT a change in the code and applicable to other projects

32nd Annual State Construction Conference

March 28th, 2013

RESTRAINED/UNRESTRAINED STEEL FRAMING

Herbert Neily, PE

SCO Website – http://www.nc-sco.com

RESTRAINED/UNRESTRAINED STEEL FRAMING

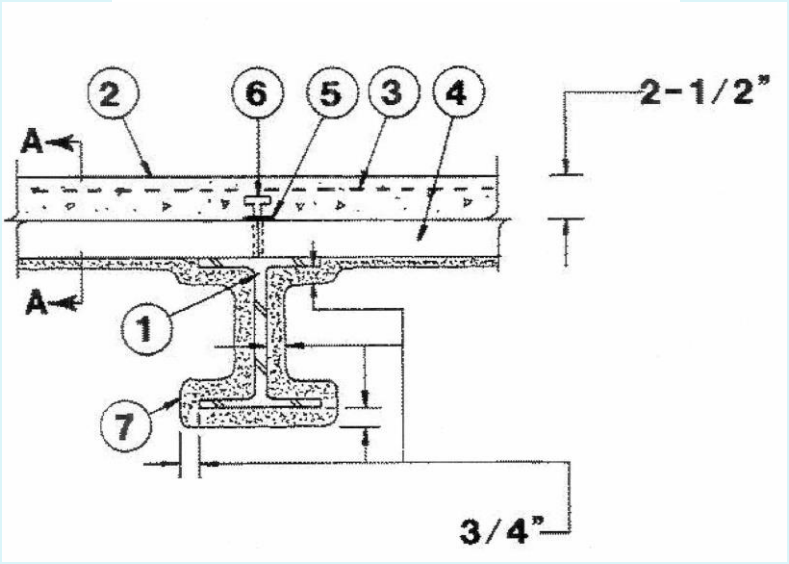
Design No. D710

February 12, 2013

Restrained Assembly Rating — 2 Hr.

Unrestrained Assembly Rating — 1 Hr.

Unrestrained Beam Rating — 1 Hr.



Restrained Assembly Rating – 2 Hr.

Unrestrained Assembly Rating – 1 Hr.

"Restrained" against thermal expansion as tested in accordance with ASTM E 119 or UL 263.

Generally, a Restrained assembly has a greater hourly rating than an Unrestrained assembly (up to 2X).

Selection of the Assembly Rating is:

- A *design* decision.
- A decision that must be clearly *conveyed*.

RESTRAINED/UNRESTRAINED STEEL FRAMING

- **2012 NC Building Code:**
- **703.2.3 Restrained classification.** Fire-resistance-rated assemblies tested under ASTM E 119 or UL 263 shall not be considered to be restrained unless evidence satisfactory to the *building official* is furnished by the *registered design professional* showing that the construction qualifies for a restrained classification in accordance with ASTM E 119 or UL 263. Restrained construction shall be identified on the plans.

As in 2002 NC / 2000 IBC Code.

And very similarly in 1996 NC / 1994 SBC Code.

RESTRAINED/UNRESTRAINED STEEL FRAMING

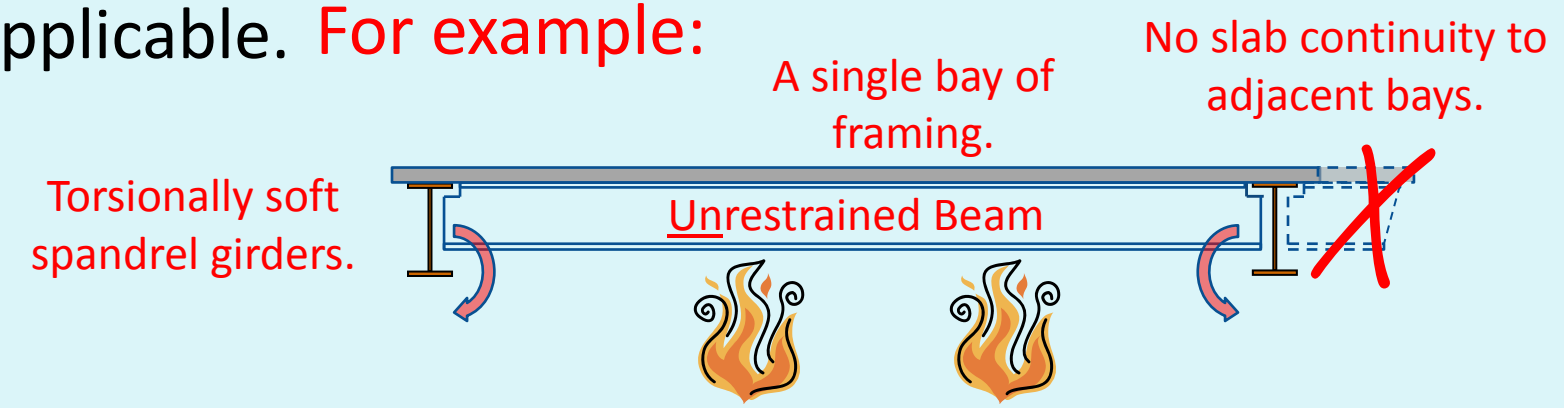
- **2012 NC Building Code:**
- **703.2.3 Restrained classification.** Fire-resistance-rated assemblies tested under ASTM E 119 or UL 263 shall not be considered to be restrained unless evidence satisfactory to the *building official* is furnished by the *registered design professional* showing that the construction qualifies for a restrained classification in accordance with ASTM E 119 or UL 263. Restrained construction shall be identified on the plans.

SCO will accept ASTM E 119 Appendix X3 and AISC research finding steel framing to be restrained for *most* applications.

RESTRAINED/UNRESTRAINED STEEL FRAMING

SCO will accept ASTM E 119 Appendix X3 and AISC research finding steel framing to be restrained for *most* applications.

- SCO will not *require* the use of restrained ratings.
- Designer must watch for conditions where restrained ratings are not applicable. For example:



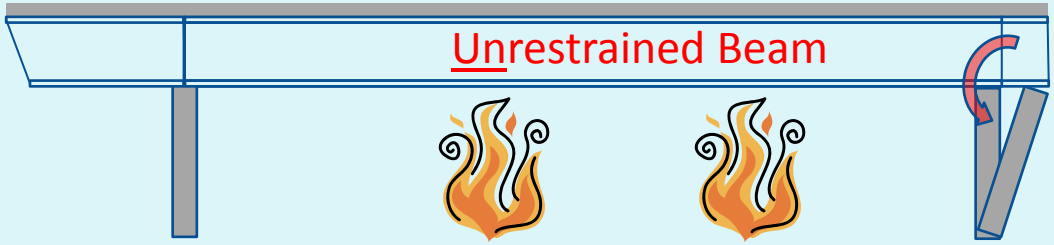
RESTRAINED/UNRESTRAINED STEEL FRAMING

SCO will accept ASTM E 119 Appendix X3 and AISC research finding steel framing to be restrained for *most* applications.

- SCO will not *require* the use of restrained ratings.
- Designer must watch for conditions where restrained ratings are not applicable. For example:

Steel framing on masonry bearing walls.

Consider an end bay.



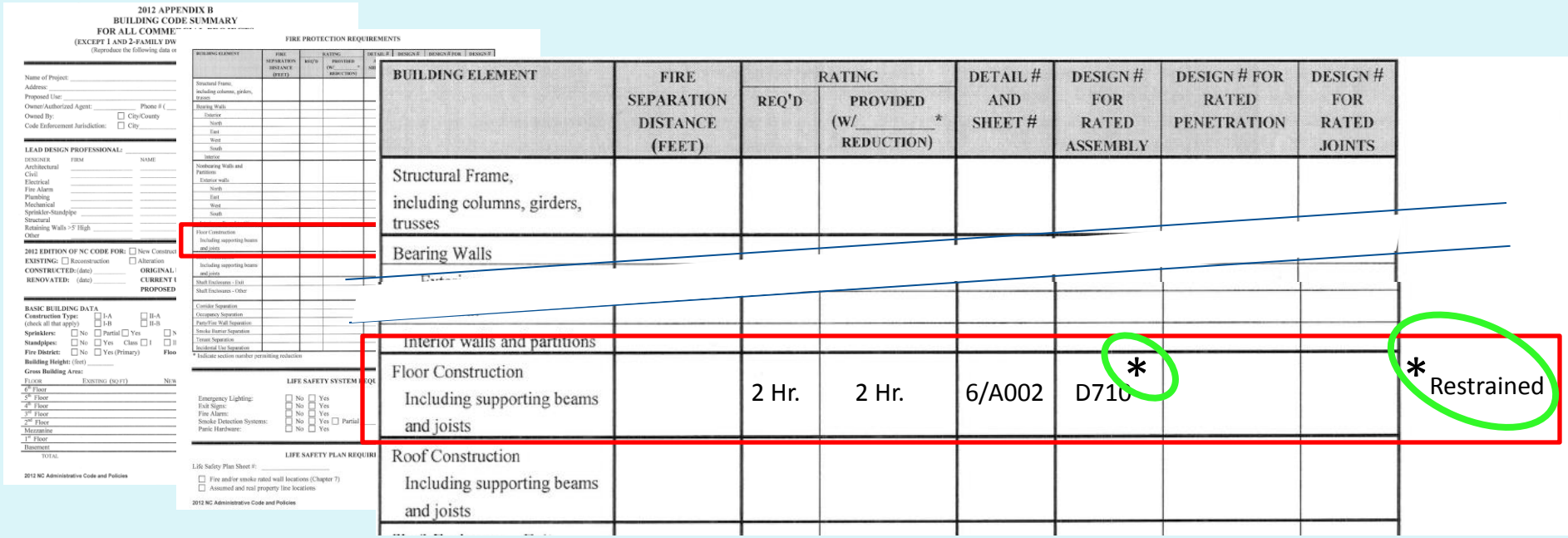
RESTRAINED/UNRESTRAINED STEEL FRAMING

- **2012 NC Building Code:**
- **703.2.3 Restrained classification.** Fire-resistance-rated assemblies tested under ASTM E 119 or UL 263 shall not be considered to be restrained unless evidence satisfactory to the *building official* is furnished by the *registered design professional* showing that the construction qualifies for a restrained classification in accordance with ASTM E 119 or UL 263. Restrained construction shall be identified on the plans.

RESTRAINED/UNRESTRAINED STEEL FRAMING

Restrained construction shall be identified on the plans.

- Indicate within the Building Code Summary at the Fire Protection Requirements Table.



2012 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMME
(EXCEPT 1 AND 2-FAMILY DW
(Reproduce the following data o

Name of Project:
Address:
Proposed Use:
Owner/Authorized Agent: Phone # (
Owned By: City/County
Code Enforcement Jurisdiction: City

LEAD DESIGN PROFESSIONAL:
DESIGNER FIRM NAME
Architectural
Civil
Electrical
Fire Alarm
Plumbing
Mechanical
Sprinkler-Standpipe
Structural
Retaining Walls >5' High
Other

2012 EDITION OF NC CODE FOR: New Construct
EXISTING: Reconstruction Alteration
CONSTRUCTED: (date) ORIGINAL
RENOVATED: (date) CURRENT
PROPOSED

BASIC BUILDING DATA
Construction Type: I-A II-A
(check all that apply) I-B II-B
Sprinklers: No Partial Yes
Standpipes: No Yes Class I
Fire District: No Yes (Primary)
Building Height: (feet)
Gross Building Area:
FLOOR EXISTING (SQ FT) NEW
6th Floor
5th Floor
4th Floor
3rd Floor
2nd Floor
Mezzanine
1st Floor
Basement
TOTAL

2012 NC Administrative Code and Policies

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Interior walls and partitions							
Floor Construction Including supporting beams and joists		2 Hr.	2 Hr.	6/A002	D710 *		* Restrained
Roof Construction Including supporting beams and joists							

LIFE SAFETY SYSTEM REQU
Emergency Lighting: No Yes
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial
Panic Hardware: No Yes

LIFE SAFETY PLAN REQUIRE
Life Safety Plan Sheet #:
Fire and/or smoke rated wall locations (Chapter 7)
Assumed and real property line locations

2012 NC Administrative Code and Policies

RESTRAINED/UNRESTRAINED STEEL FRAMING

Restrained construction shall be identified on the plans.

- Indicate within the Building Code Summary at the Fire Protection Requirements Table.
- SCO recommends reiteration at each UL Design detail.

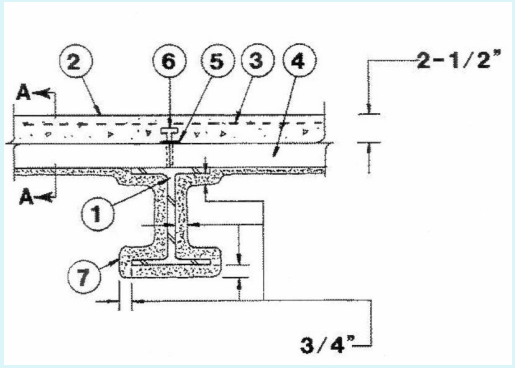
Design No. D710

February 12, 2013

Restrained Assembly Rating — 2 Hr.

~~**Unrestrained Assembly Rating — 1 Hr.**~~

Unrestrained Beam Rating — 1 Hr.



RESTRAINED/UNRESTRAINED STEEL FRAMING

Restrained construction shall be identified on the plans.

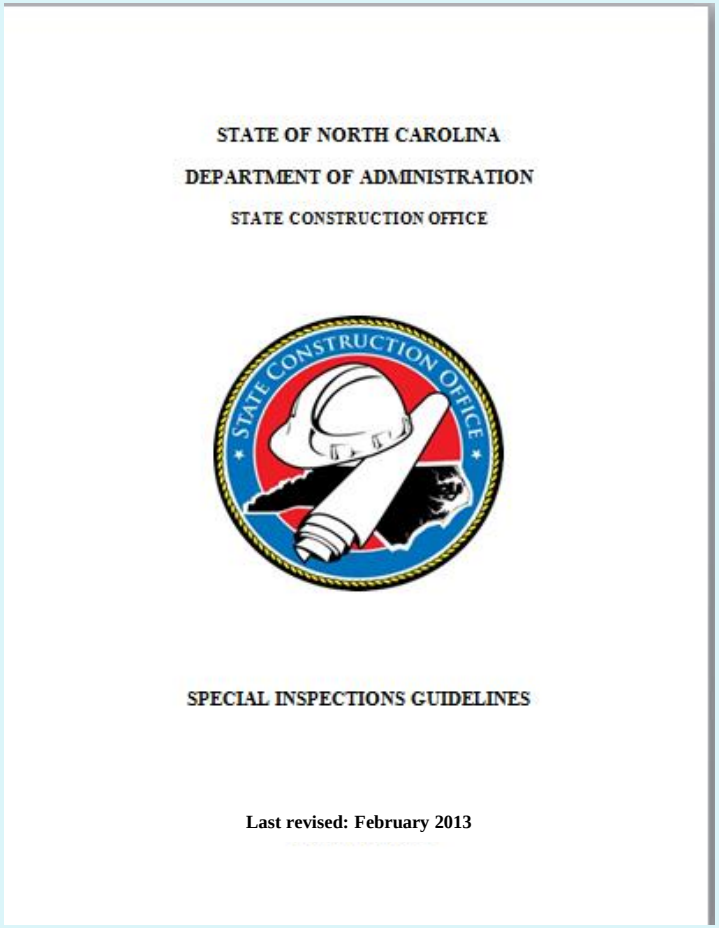
- Indicate within the Building Code Summary at the Fire Protection Requirements Table.
- SCO recommends reiteration at each UL Design detail.
- Document the intentional use of *unrestrained* assemblies similarly.

RESTRAINED/UNRESTRAINED STEEL FRAMING

In summary:

- "Restrained" and "Unrestrained" ratings apply only to *horizontal* assemblies.
- The Designer must select horizontal rated assemblies that meet project-specific requirements.
- The Construction Documents must clearly convey the intent with respect to Restrained or Unrestrained details.
- The SCO will accept Restrained steel assembly ratings in most applications, but exceptions apply.
- This is not a new code requirement.

2013 SPECIAL INSPECTIONS GUIDELINES


STATE OF NORTH CAROLINA

DEPARTMENT OF ADMINISTRATION

STATE CONSTRUCTION OFFICE

SPECIAL INSPECTIONS GUIDELINES

Last revised: February 2013

- Updated for 2012 NC Building Code.
- No major policy changes.
- New “Statement of Special Inspections” form.
- Available on the SCO website: http://www.nc-sco.com under “Forms and Documents / Design Review”.

Thank you!

? Questions ?

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