



# City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandoregon.gov/bds



## Deferred Submittal Requirements and Application

### Applicants will provide:

- A copy of this application
- Three (3) sets of plans
- One (1) set of calculations
- Two (2) sets of product information
- Drawings and calculations must be stamped and signed by an Engineer registered in Oregon and approved by the Architect/Engineer of record for the building.
- Permit fee (paid at time of submittal)
- If the DFS includes exterior elements, plan views and elevations identifying the location(s) as approved by the Architect and Engineer of Record must be submitted.
- One (1) copy of your main building permit approved plans (NOTE: Approved plans do not need to be submitted if your project has a development liaison assigned)

### Contractor submittal information:

Contact name R&H Construction - Nathan Davidson DFS-02

Address 1530 SW Taylor St.

City Portland State Oregon Zip Code 97205

Phone (503) 857 - 9594 E-mail ndavidson@rhconst.com

Value of deferred submittal \_\_\_\_\_ Issued main building permit # 12-199915-C0

Description/Scope of work Acoustical Ceiling 09 5100 - Tectum Panels and Armstrong ceiling tile & grid

### Fees

Deferred submittal (DFS) fees are collected in addition to the standard building review fee paid on the main building permit. DFS fees cover the cost of the additional processing and review time associated with the design build element.

The DFS fee for processing and reviewing deferred plan submittals is 10 percent of the building permit fee calculated using the value of the particular deferred portion of the project.,

Minimum fee: Residential, one and two family dwelling ...\$123 for DFS with valuation of less than or equal to \$222,000

Commercial and all other projects .....\$307 for DFS with valuation of less than or equal to \$680,000

The Bureau of Development Services (BDS) fee schedule is also available on the BDS web site at [www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds) | select the Fees tab.

### Helpful Information

Bureau of Development Services  
1900 SW 4th Avenue, Portland, OR 97201

**Submit your plans to:**  
Development Services Center (DSC), First Floor,  
Tuesday - Friday:  
8:00 am - 12:00 pm  
Closed Mondays

### Important Telephone Numbers

BDS main number ..... 503-823-7300  
 DSC automated information line ..... 503-823-7310  
 Building code information ..... 503-823-1456  
 BDS 24 hour inspection request line ..... 503-823-7000  
 Residential information for  
 one and two family dwellings..... 503-823-7388  
 City of Portland TTY ..... 503-823-6868

### DEFERRED SUBMITTAL REQUIREMENTS AND APPLICATION









May 21, 2013 – revised 7/25/13

LRS Architects  
720 NW Davis, Suite 300  
Portland, OR 97209

Attn: Calista Fitzgerald

RE: **NSM Williams TI**  
**103 N Ivy – Portland, Oregon**  
**Permit # 13-199915-DFS-02-CO**  
**Structural Plan Check Response**

WDY, Inc. has completed the response to the structural comments of the plan review for the above mentioned project, issued by the City of Portland BDS. For the purpose of clarity, the original plan review items are repeated in italics with the individual response following.

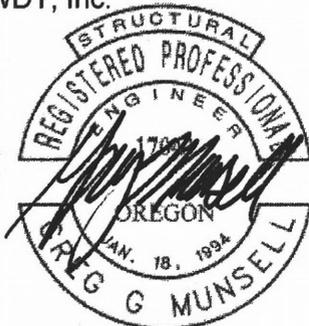
**ITEM 1 – *Special inspection.***

**Response:** Ceiling area, occupancy type and connections do not require special inspection.

**ITEM 2 – *Attachment to structure.***

**Response:** Refer to attached calculations C-1 and C-2. As installed condition is structurally acceptable. *A callout of the connector has been added to referenced details. These items were reviewed on site during our structural observation of May 9, 2013.*

If you have any questions about the above information, please contact this office.  
WDY, Inc.



RENEWS: 12-31-2014

Greg G. Munsell, P.E., S.E.



### STRUCTURAL CHECKSHEET

Application # : **12-199915-DFS-02-CO**  
Review Date : **May 15, 2013**

#### Commercial Building Permit

To:	APPLICANT	CALISTA FITZGERALD LRS ARCHITECTS 720 NW DAVIS STE 300 PORTLAND, OR 97209	Work:	503 221-1121
			Phone:	503 265-1535
			e-Mail:	cfitzgerald@lrsarchitects.com
From:	Structural Engineer	Miklos Ugrai	Phone:	503-823-7320
			Fax:	503 823-7692
cc:	OWNER	IVY STREET PARTNERS LLC 19900 144TH AVE NE WOODINVILLE, WA 98072	Work	(425) 487-5200
			Fax	(425) 487-5290

#### PROJECT INFORMATION

Street Address: 3445 N WILLIAMS AVE

Description of Work: DFS - ACOUSTICAL CEILING

Based on the plans and specifications submitted, the following items appear to be missing or not in conformance with the Oregon Structural Specialty Code and / or other city, state, or federal requirements.

Item #	Location on plans	Code Section	Clarification / Correction Required
1.		OSSC 110.3.9	Please specify if any special inspection on the project.
2	Dtl12 , 13		Note on details: " Provide support from the structure." Please provide support from the structure. Provide calcs for the support as necessary.
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			



Structural • Civil Engineers

May 21, 2013

LRS Architects  
720 NW Davis, Suite 300  
Portland, OR 97209

Attn: Calista Fitzgerald

RE: **NSM Williams TI**  
**103 N Ivy – Portland, Oregon**  
**Permit # 13-199915-DFS-02-CO**  
**Structural Plan Check Response**

WDY, Inc. has completed the response to the structural comments of the plan review for the above mentioned project, issued by the City of Portland BDS. For the purpose of clarity, the original plan review items are repeated in italics with the individual response following.

**ITEM 1 – *Special inspection.***

**Response:** Ceiling area, occupancy type and connections do not require special inspection.

**ITEM 2 – *Attachment to structure.***

**Response:** Refer to attached calculations C-1 and C-2. As installed condition is structurally acceptable.

If you have any questions about the above information, please contact this office.  
WDY, Inc.



RENEWS: 12-31-2014

Greg G. Munsell, P.E., S.E.

Job Name: NSM Bakery Blocks TI

Job No: 12002

Sheet No: C-1

Client: LRS Architects

Date: May 2013

By: BA

CHECK CEILING ANCHORAGE CONNECTION

VERTICAL CONNECTION: 12 ga WIRES, 4'-0" OC

CODE MIN CEILING LOAD 4.0 psf > ACT'L 2.1 psf

$$4 \text{ psf} \times (4' \times 4') = 64 \#$$

$$\text{SEISMIC} = 0.2 S_{DS} = 0.2 (0.722) (4 \text{ psf}) (16 \text{ sqft}) = 9 \# \text{ VERT}$$

12 ga WIRE,  $F_T = 70 \text{ ksi}$   
 $F_y = 30 \text{ ksi}$

$$A = 0.0088 \text{ in}^2$$

$$\text{ALLOWABLE } T = (0.0088) (0.6) (30 \text{ ksi}) = 158 \# > 73 \#$$

#8 SCREW w/ 1" THREAD PENETRATION

$$\text{ALLOWABLE} = 117 \# > 73 \#$$

USE 12 ga WIRES  
 AT 4'-0" OC  
 w/ #8 SCREW +  
 MULTI LL CEILING CLIP  
 OR 1/4"  $\phi$  SCREW EYE  
 w/ 1 1/4" PENETRATION



Job Name: NSM Bakery Blocks TI

Job No: 12002

Sheet No: C-2

Client: LRS Architects

Date: May 2013

By: BA

SEISMIC

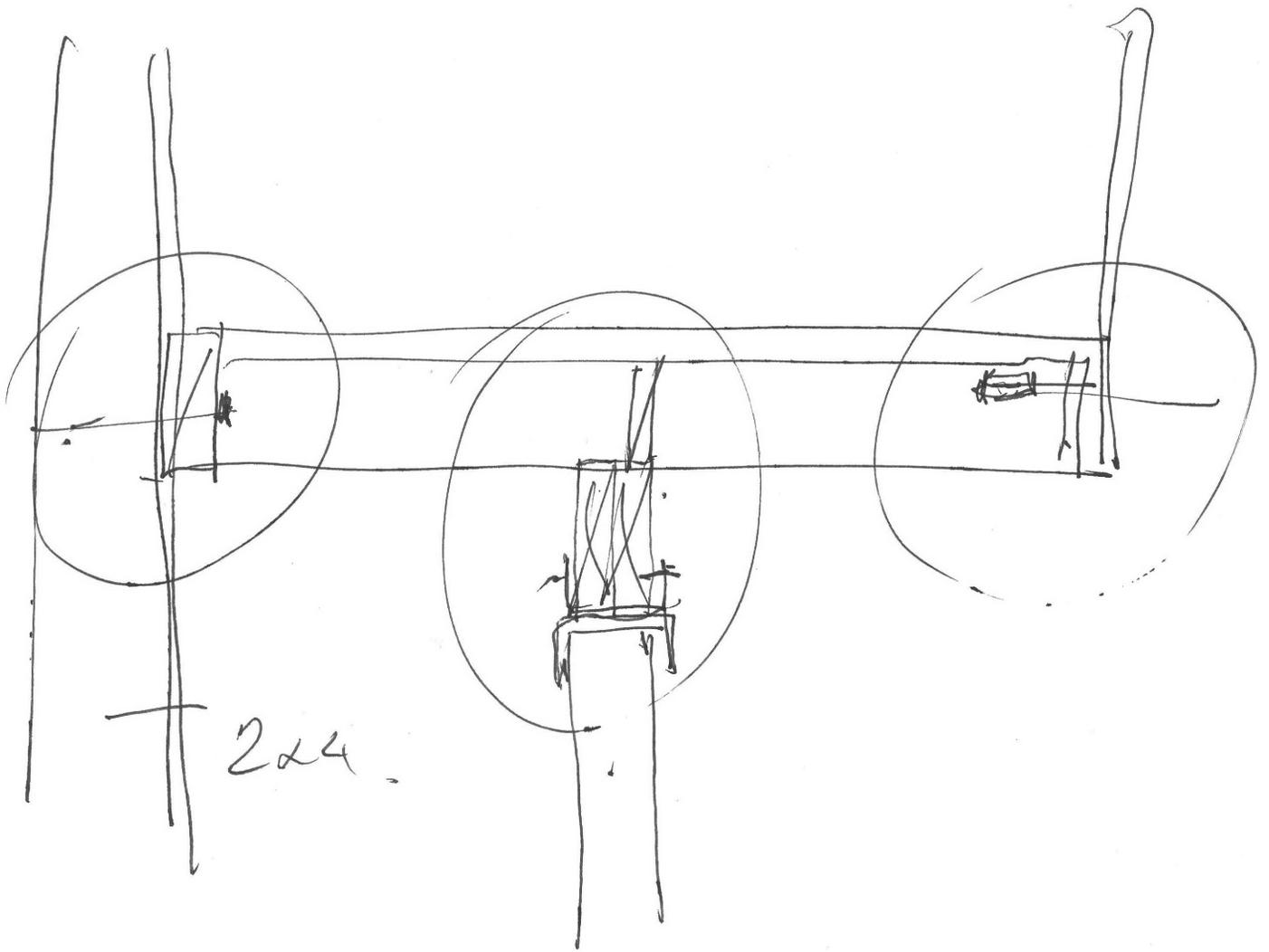
$$F_p = 0.28 W_p = 0.28 \times 4 \text{ xst} \times 144 \text{ ft}^2 = 161 \text{ \#}$$

$$T_{max} = (161 \text{ \#} \times 1.41) / 2 \text{ WIRES} = 114 \text{ \#}$$

$$12 \text{ g9 ALLOW (SNT C-1)} = 158 \text{ \#} > 114 \text{ \#} \quad \underline{OK}$$

$$\text{CONNECTION ALLOW (SNT C-1)} = 117 \text{ \#} > 114 \text{ \#} \quad \underline{OK}$$

(A) #12 SPLAY WIRES  
AT 45° FROM GRID  
ON 12x12 SPACING,  
SAME CONNECTORS  
AS VERTICAL WIRES



**SUSPENDED CEILINGS GENERAL NOTES**

**PART I. SUSPENDED CEILINGS FOR NEW CONSTRUCTION**

Referenced sources No. 1-5 below are intended to comply with the provisions of the IBC.  
 Special inspections may be required by the jurisdiction or municipality. Contact local building department.

**Referenced Sources Per Hierarchy**  
 1. 2009 IBC, w/ Washington Amendments (International Building Code)  
 2. American Society of Testing Materials (ASTM C 635, ASTM C 638)  
 3. American Society of Civil Engineers (ASCE 7-05)  
 4. Ceilings and Interior Systems Construction Association (CISCA)  
 5. Northwest Wall and Ceiling Bureau, Suspension Systems for Acoustical Lay in Ceilings - Technical Bulletin 401- Revised 4/07. (NWCB TB401)

**A. General Compliance with the IBC**  
 1. Code and Standards Options:  
 a. Ceiling systems designed for appropriate forces, or  
 b. Prescriptive construction for suspended ceiling systems is only allowed in buildings with a seismic importance factor of 1.0, in occupancy categories I and II, per Chapter 16 of the IBC, and as provided below:  
 1) In Seismic Design Category C, construction in accordance with CISCA standard for seismic zones 0-2.  
 2) In Seismic Design Categories D through F, construction in accordance with CISCA standard for seismic zones 3 and 4 with modifications as noted in ASCE 7-05 standard. The following shall be applicable in addition to the requirements contained in CISCA standards:  
 a) Ceilings with interstitial spaces less than 12 inches to framing are not required to have lateral force bracing, and  
 b) "Shot-in-anchors" when used as part of the prescriptive path in Seismic Design Categories D, E, & F shall have an ICC-ES approval for seismic applications and overhead installations and shall require "special inspection" irrespective of the type of "occupancy category" the structure is in.

2. Northwest Wall & Ceiling Bureau - Technical Bulletin 401 (NWCB TB 401). (SEE PART II).

In structures classified as occupancy category I or II, suspended ceilings installed in accordance with the prescriptive provisions of NWCB TB 401 are interpreted to comply with the IBC requirements. Part II of this document represents the majority of the NWCB TB 401. NWCB TB 401 contains information compiled together from different applicable documents such as ASCE Standard 7-05, IBC 2006, ASTM Standard C635 and CISCA. It is available at the following internet address:  
<http://www.nwcb.org/>

**E. Hanger (Suspension) wires (See details 1, 5 and 12 on this sheet)**  
 1. Hanger and perimeter wires must be plumb within 1 in 5 unless (see detail 5 on this sheet) counter sloping wires are provided. (See detail 1 on this sheet) (Source: ASTM C 638 section 2.1.4)  
 2. Hanger wires shall be 12 gage and spaced 4 feet on center or 10 gage spaced 5 feet on center. (Source: ASTM C 638)  
 3. Any connection detail at the supporting construction shall be capable of carrying not less than 100 pounds. (Source: CISCA zones 3-4)  
 4. Powder driven shot-in-anchors are an approved method of attachment for hanger wires.  
 5. Terminal ends of each main beam and cross tee must be supported within 8 inches of each wall with a perimeter wire (see details 1, 2 and 6 on this sheet). (Source: CISCA zones 3-4)  
 6. Wires shall not attach to or bend around interfering material or equipment. A trapeze or equivalent device shall be used where obstructions preclude direct suspension. Trapeze suspensions shall be a minimum of back-to-back 1 1/4 inch cold-rolled channels for spans exceeding 48 inches. (Source: CISCA zones 3-4)

**F. Electrical Fixtures (See details 10 and 14 on this sheet)**  
 1. Light fixtures weighing less than 10 pounds shall have one 12 gage hanger wire connected from the fixture to the structure above. This wire may be slack. (Source: CISCA seismic zones 3-4)  
 2. Light fixtures weighing more than 10 pounds and less than 56 lbs. shall have two 12 gage wires attached at opposing corners of the light fixture to the structure above. These wires may be slack. (Source: CISCA seismic zones 3-4)  
 3. Light fixtures weighing more than 56 lbs. shall be supported directly from the structure above. These wires must be taut. (Source: CISCA seismic zones 3-4)  
 4. Pendant mounted fixtures shall be directly supported from the structure above using a 5 gage wire or an approved alternate support without using the ceiling suspension system for direct support. (Source: CISCA seismic zones 3-4)  
 5. Tandem fixtures may utilize common wires.

**G. Mechanical Services**  
 1. Terminals or services weighing 20 lbs. but not more than 56 lbs. must have two 12 gage wires connecting them to the ceiling system hangers or the structure above. These wires may be slack. (Source: CISCA seismic zones 3-4)  
 2. Terminals or services weighing more than 56 lbs. must be independently supported directly from the structure above. These wires must be taut. (Source: CISCA seismic zones 3-4)

**H. Seismic Separation Joints (See detail 4 on this sheet)**  
 1. For ceiling areas exceeding 2,500 square feet, a seismic separation joint or full height wall partition that breaks the ceiling shall be provided unless analyses are performed of the ceiling bracing system, closure angles and penetrations to provide sufficient clearance. (Source: ASCE 7-05 Item 13.5.6.2.2.g)  
 2. The layout and location of the seismic separation joint shall be per the designer of record and noted on the plans. If a seismic separation joint is required by the designer, the designer may use the generic joint detailed in this document or a proprietary joint. The amount of free movement (gap design) shall be a minimum of 3/4 inch.  
 3. In lieu of seismic separation joints, the ceiling may be divided into areas less than 2,500 square feet by the use of partitions or soffits as described below:  
 a. Partitions  
 Where used, partitions shall extend a minimum of 6 inches above the level of the plane of the grid and shall be independently braced to the structure above.  
 b. Soffits  
 Soffits shall extend to a point at least level with the bottom plane of the grid and shall be independently supported and laterally braced to the structure above. (Detail 11 on this sheet)  
 4. Other than partitions and soffits, seismic joints may not be used as part of a fire rated ceiling assembly unless substantiating documentation is provided.

**I. Sprinklers**  
 1. For ceilings without rigid bracing, sprinkler head penetrations shall have a 2 inch oversize ring, sleeve or adapter through the ceiling tie to allow free movement of at least 1 inch in all horizontal directions. Flexible head design that can accommodate 1 inch free movement shall be permitted as an alternate. (Source: ASCE 7-05 13.5.6.2.2 Item 4)

The following shall be applicable in addition to the requirements contained in NWCB TB401:  
 a. Lateral force bracing is required for ceilings over 144 square feet.  
 b. "Shot-in-anchors" when used as part of the prescriptive path in Seismic Design Categories D, E, & F shall have an ICC-ES approval for seismic applications and overhead installations and shall require "special inspection" irrespective of the type of "occupancy category" the structure is in.

3. **Shake Table Testing and Qualification by Experience Under the Adoption of the 2006 IBC.**  
 a. Effective under the adoption of the 2006 IBC, the following two additional options will be available based upon ASCE 7-05 Sections 13.2.5 and 13.2.6:  
 1) Shake table testing of components and their supports, to determine their seismic capacities, in accordance with ICC Acceptance criteria 156. (Section 13.2.5 of the ASCE 7-05), or  
 2) Seismic qualification by experience data based on nationally recognized procedure. (Section 13.2.6 of the ASCE 7-05).

4. **Suspended ceiling systems in structures classified as Occupancy Category III and IV, shall be required to be "Engineered Design"** as designed and certified by an Architect or Engineer in the state where the project occurs, and shall be required to have periodic special inspection of the anchorage to the structure in Seismic Design Categories D, E, and F, in accordance with the provisions of the current effective edition of the IBC adopted by the AHJ.

5. See PART III for optional equivalency for upgrading existing suspended ceiling systems. Part III may be allowed with the approval of the Authority Having Jurisdiction.

**PART II. NWCB 401**

The NWCB 401 provides the IBC referenced standards for the installation of suspension systems for acoustical lay-in ceilings. Incorporation of this document will provide a more uniform standard for installation and inspection. NWCB 401 is designed to accomplish the intent of the International Building Code (IBC) with regard to the requirements for seismic design category D, E and F for suspended ceilings and related items. Unless supported by engineering, the suspension system shall be installed per the requirements for Seismic Design Category (SDC) D, E and F per the IBC. Manufacturers' recommendations should be followed.

**A. General Recommendations**  
 1. **Partitions**  
 Partitions that are tied to the ceiling and all partitions greater than 8 feet in height shall be laterally braced to the structure. Partitions shall be independent of the ceiling spray bracing system. For further information on bracing of non-load bearing partitions, refer to NWCB technical document #201. (ASCE 7-05 Item 13.5.6.1.1)  
 2. **Main Beams**  
 All main beams are to be Heavy Duty (HD). (ASCE 7-05 Item 13.5.6.2.a)  
 3. **Deflection Limits**  
 All cross tees shall be capable of carrying the design load without exceeding deflection equal to 1/360 of its span. (CISCA zones 3-4)  
 4. **Weight Limitations**  
 These recommendations are intended for suspended ceilings including grid, panel or tile, light fixtures and air terminals weighing no more than 4 lbs. per square foot. (ASCE 7-05 Item 13.5.6.1.f)  
 5. **Wire Ties**  
 All wire ties are to be three light turns around itself within three inches. Twelve gage hanger wire spaced 4 feet on center (see detail 1 on this sheet). (ASTM C 638 Item 2.3.4)  
 6. **Ceiling Plane Changes**  
 Changes in ceiling planes require positive bracing. (ASCE 7-05 section 13.5.6.2.2 Item f)

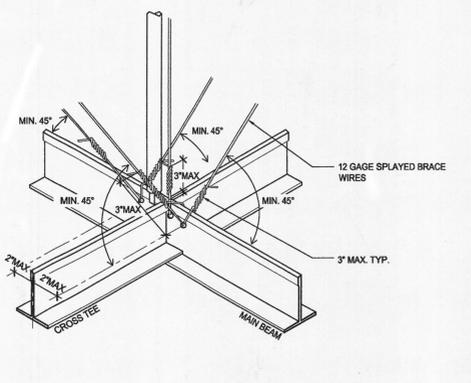
**B. Lateral Force Bracing (See detail 1 on this sheet and maximum recommended lengths for vertical struts table)**  
 1. Ceilings constructed of lath and plaster or gypsum board, screw or nail attached to suspended members that support a ceiling on one level extending from wall to wall shall be exempt from the lateral force bracing requirements. (Source: CISCA zones 3-4)  
 2. Lateral force bracing is the use of vertical struts (compression posts) and splay wires. (See detail 1 on this sheet)  
 3. Lateral force bracing is required for ceilings over 144 square feet and not required for ceilings less than 144 square feet and braced to structure.  
 4. Lateral force bracing shall be 12 feet on center (maximum) and begin no farther than 6 feet from walls. (Source: CISCA seismic zones 3-4)  
 5. Seismic splay wires are to be four 12 gage wires attached to the main beam. Wires are arrayed 90° from each other and at an angle not exceeding 45° from the plane of the ceiling. (Source: CISCA seismic zones 3-4)  
 6. Seismic splay wires shall be attached to the grid and to the structure in such a manner that they can support a design load of not less than 200 pounds at the actual design load, with a safety factor of 2, whichever is greater (see detail 13 on this sheet). (Source: CISCA zones 3-4)  
 7. "Powder driven shot-in-anchors" when used for seismic application as part of the prescriptive path in Seismic Design Categories D, E and F shall have an ICC-ES approval for seismic applications and shall require "special inspection" irrespective of the type of occupancy category the structure is in. Anchors for kicker wires (splayed wires installed for purposes other than seismic restraint) are exempt from this requirement.  
 8. Splay wires are to be within 2 inches of the connection of the vertical strut to suspended ceiling. (Source: CISCA seismic zones 3-4)  
 9. Rigid bracing may be used in lieu of splay wires. (Source: ASCE 7-05 section 13.5.6.2.2)  
 10. Ceilings with plenums less than 12 inches to structure are not required to have lateral force bracing.  
 11. Vertical struts must be positively attached to the suspension systems and the structure above. (Source: CISCA 3-4)  
 12. The vertical strut may be EMT conduit, metal studs or a proprietary compression post. (See table below)

Maximum recommended lengths for vertical strut:	
EMT conduit	Max. Length
1/2" EMT conduit	5'-0"
3/4" EMT conduit	7'-8"
1" EMT conduit	9'-0"
Metal studs	Max. Length
Single 1 5/8" metal stud (20 gage)	12'-0"
Back-to-back 1 5/8" metal stud (20 gage)	15'-0"
Single 2 1/2" metal stud (20 gage)	13'-0"
Back-to-back 2 1/2" metal stud (25 gage)	15'-0"

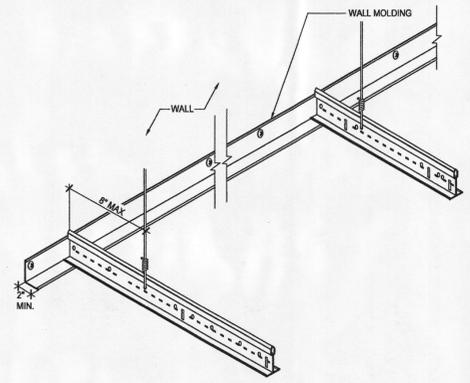
Note: plenum areas greater than 15'-0" require engineering calculations.

**C. Wall Moldings (See details 2, 6 and 9 on this sheet)**  
 1. Wall moldings (perimeter closure angles) are required to have a horizontal flange 2 inches wide. One end of the ceiling grid shall be attached to the wall molding, the other end shall have a 3/4 inch clearance from the wall and free to slide. (Source: ASCE 7-05 section 13.5.6.2.2 Item b)  
 2. Where substantiating documentation has been provided to the local jurisdiction, perimeter clips may be used to satisfy the requirements for the 2-inch closure angle. (see details 3 and 8 on this sheet)  
 3. The grid shall be attached at two adjacent walls (pop rivets or approved method). Soffits extending to a point at least level with the bottom plane of the grid and independently supported and laterally braced to the structure above are deemed to be equivalent to walls.  
 4. There shall be a minimum 3/4 inch clearance from the end of the grid system at unattached walls. (Source: ASCE 7-05 section 13.5.6.2.2 Item b)

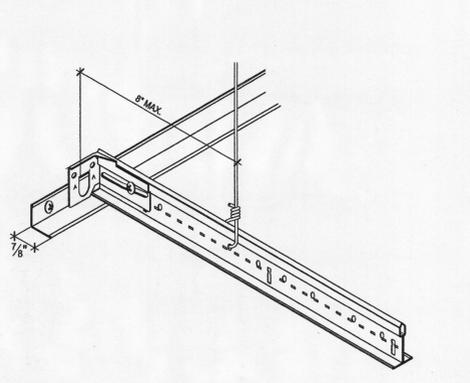
**D. Spreader Bars (See detail 6 on this sheet)**  
 1. Spreader (spacer) bars shall be used to prevent the ends of the main beams and cross tees at perimeter walls from spreading open during a seismic event. Perimeter wires shall not be in lieu of spreader bars. (Source: CISCA seismic zones 3-4)  
 2. Spreader bars are not required at perimeters where runners are attached directly to closure angles.  
 3. Wire tying is an acceptable alternative to spreader bars.  
 4. Spreader bars are not required if a 90 degree intersecting cross or main is within 8 inches of the perimeter wall.  
 5. Where substantiating documentation has been provided to the local jurisdiction, perimeter clips may be used to satisfy the requirements for spreader bars.



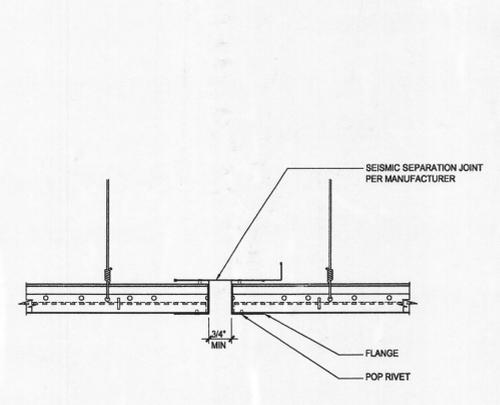
**1. LATERAL FORCE BRACING**  
 SCALE: NTS



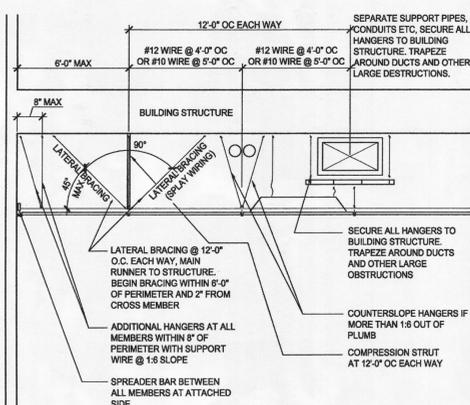
**2. ATTACHED END OF GRID WALL MOLDING**  
 SCALE: 3/4"=1'-0"



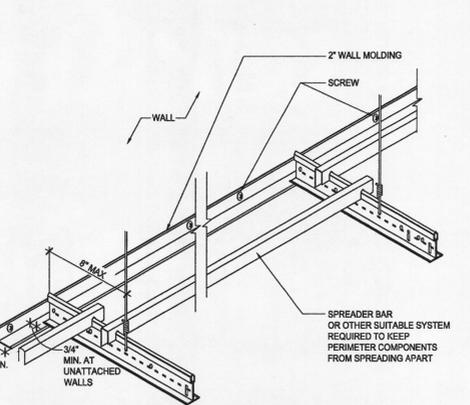
**3. ATTACHED WALL MOLDING ALTERNATE**  
 SCALE: 3/4"=1'-0"



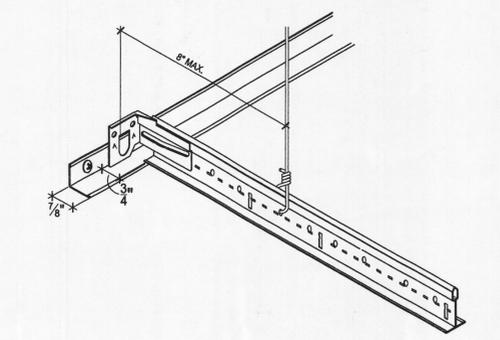
**4. SEISMIC SEPARATION JOINT SECTION**  
 SCALE: 3/4"=1'-0"



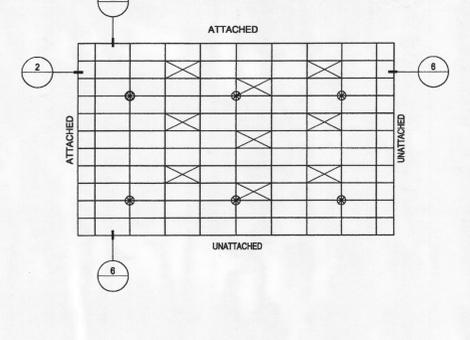
**5. SEISMIC CEILING ASSEMBLY SECTION**  
 SCALE: NTS



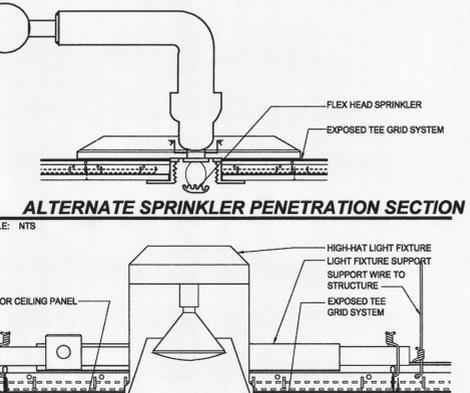
**6. UNATTACHED WALL MOLDING**  
 SCALE: 3/4"=1'-0"



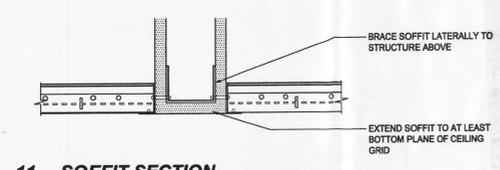
**8. UNATTACHED WALL MOLDING ALTERNATE**  
 SCALE: 3/4"=1'-0"



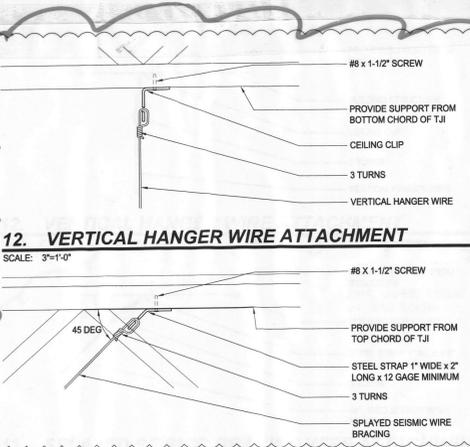
**9. TYPICAL CEILING GRID LAYOUT PLAN**  
 SCALE: NTS



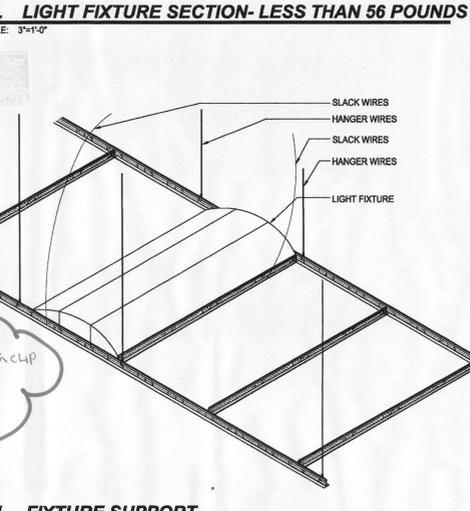
**7. ALTERNATE SPRINKLER PENETRATION SECTION**  
 SCALE: NTS



**11. SOFFIT SECTION**  
 SCALE: 3/4"=1'-0"



**12. VERTICAL HANGER WIRE ATTACHMENT**  
 SCALE: 3/4"=1'-0"



**14. FIXTURE SUPPORT**  
 SCALE: 3/4"=1'-0"



**13. SPAYED SEISMIC BRACING WIRE ATTACHMENT**  
 SCALE: 3/4"=1'-0"

12/26/12 10:15 AM: New: Season Market - Williams Store - Bldg: 000 - Document: 000 - Working: CAD Project: 188 - Bldg: 000 - Bldg: 000 - Bldg: 000

DFS 2 PLAN CHECK 07.29.2013