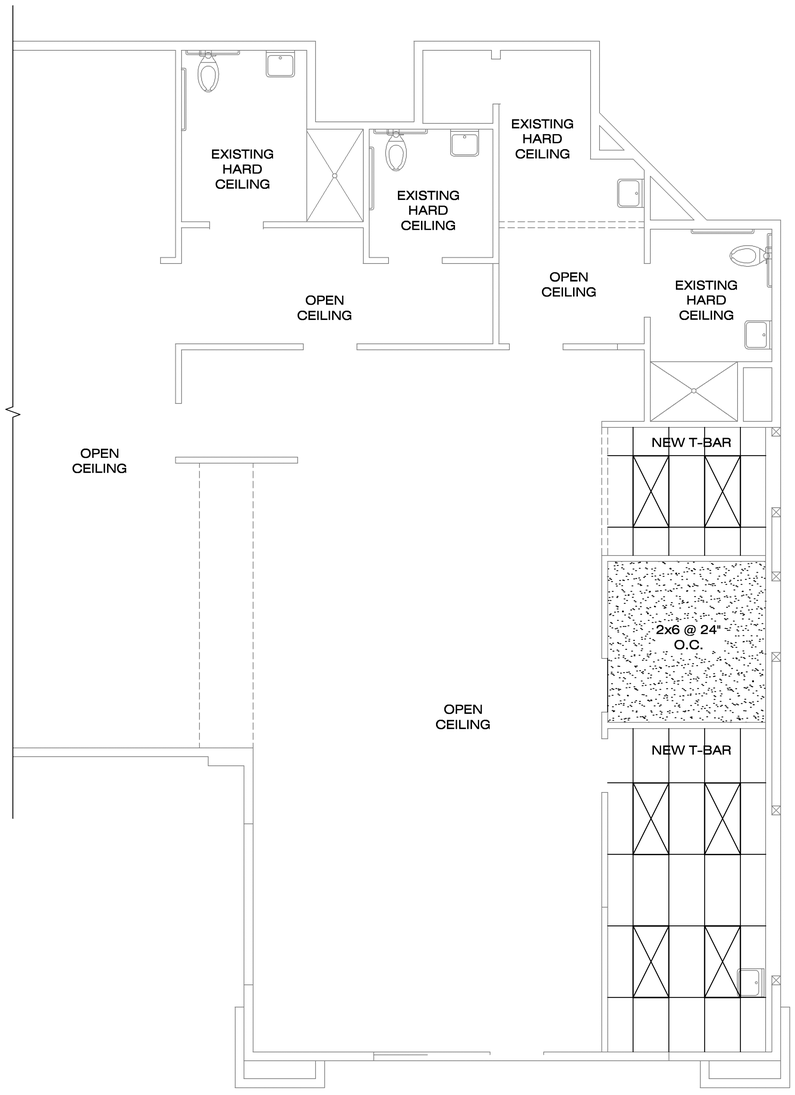



SEISMIC DESIGN CATEGORIES D,E, AND F

CATEGORY D,E AND F CEILINGS ARE TO BE DESIGNED AND INSTALLED ACCORDING TO CISCA 3-4, AND EIGHT ADDITIONAL REQUIREMENTS LISTED IN SECTION 13.5.6.2.2 IN ASCE 7-05

CEILING AREAS OF 144 SQUARE FEET OR LESS ARE EXEMPTED FROM LATERAL LOAD DESIGN REQUIREMENTS. [SOURCE CISCA 3-4, PAGE 1, SECTION 2, #2]

CEILINGS CONSTRUCTED OF LATH AND PLASTER OR SCREW-APPLIED GYPSUM BOARDS ARE EXEMPT FROM LATERAL LOAD DESIGN REQUIREMENTS. [SOURCE: CISCA 3-4, PAGE 1, SECTION 2, #2]
THIS PRACTICE CREATES A RESTRAINED CEILING.

THE FOLLOWING IS A COMBINATION OF THE REQUIREMENTS SPELLED OUT IN THE TWO REFERENCED DOCUMENTS.

WALL MOLDING [SOURCE: ASCE 7-05 13.5.6.2.2b]
MOLDINGS MUST HAVE A HORIZONTAL FLANGE OF AT LEAST 2"
THE CEILING GRID MUST BE ATTACHED TO THE MOLDING AT TWO ADJACENT WALLS.
UNATTACHED ENDS OF THE GRID SYSTEM MUST HAVE ¾" CLEARANCE FROM THE WALL, AND MUST REST UPON AND BE FREE TO SLIDE FROM THE MOLDING.

HANGERS [SOURCE: CISCA 3-4, PAGE 1, SECTION 4, #1]
SUSPENSION WIRES MUST BE A MINIMUM 12-GAUGE WHEN SPACED AT 4' CENTERS, OR 10-GAUGE AT 5'.
HANGER WIRE ATTACHMENT DEVICES MUST BE CAPABLE OF SUPPORTING 100 POUNDS.
CONNECTIONS AT MAIN BEAM AND AT STRUCTURE SHALL BE SECURED WITH A MINIMUM OF THREE COMPLETE TURNS.

PERIMITER SUPPORT [SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #2]
TERMINAL ENDS OF EACH MAIN BEAM AND CROSS TEE MUST BE SUPPORTED WITHIN 8" OF EACH WALL OR CEILING DISCONTINUITY, WITH 12-GAUGE WIRE OR APPROVED WALL SUPPORT. THESE WIRES MUST BE PLUMB TO WITHIN ONE IN SIX, AND MAY ATTACH TO THE ADJACENT WALL OR TO THE STRUCTURE ABOVE.

PERIMITER SPACERS [SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #4]
ENDS OF MAIN RUNNERS AND CROSS TEES SHALL BE TIED TOGETHER TO PREVENT THEIR SPREADING.

SUSPENSION SYSTEM
MAIN BEAMS MUST BE HEAVY DUTY. [SOURCE: ASCE 7-05 13.5.6.2.2a]
MAIN BEAM AND CROSS TEE INTERSECTIONS AND SPLICES MUST HAVE CONNECTION STRENGTHS OF AT LEAST 180 POUNDS IN COMPRESSION AND IN TENSION.
[SOURCE: CISCA 3-4, PAGE 1, SECTION 3, #2]
CROSS TEES SUPPORTING LIGHT FIXTURES MUST HAVE THE SAME LOAD-CARRYING CAPACITY AS THE MAIN BEAMS, OR BE FITTED WITH SUPPLEMENTAL HANGERS.
[SOURCE: CISCA 3-4, PAGE 2, SECTION 2]
CROSS TEES SUPPORTING MECHANICAL SERVICES MUST HAVE THE SAME LOAD-CARRYING CAPACITY AS THE MAIN BEAM. [SOURCE: CISCA 3-4, PAGE 2, SECTION 3]

CABLE TRAYS [SOURCE: ASCE 7-05 13.5.6.2.2g]
CABLE TRAYS AND ELECTRICAL CONDUITS SHALL BE INDEPENDENTLY SUPPORTED AND BRACED INDEPENDENTLY OF THE CEILING.

SPECIAL INSPECTION [SOURCE: ASCE 7-05 13.5.6.2.2h]
SUSPENDED CEILINGS ARE SUBJECT TO SPECIAL INSPECTION AS DESCRIBED IN SECTION 1704 OF THE 2000 CODE, SECTION A.9.3.3.9 IN ASCE 7-02, AND SECTION 11A.1.3.9 IN ASCE 7-05. THIS INSPECTION ENTAILS MANUFACTURER CERTIFICATION OF COMPONENT PERFORMANCE AND PERIODIC INSPECTION OF THE SUSPENDED CEILING ANCHORAGE SYSTEM.

LATERAL FORCE BRACING [SOURCE: CISCA 3-4 AND IBC 1621.2.5.2.2]
CEILING AREAS GREATER THAN 1000 SQUARE FEET MUST HAVE LATERAL FORCE BRACING.
[SOURCE: ASCE 7-05 13.5.6.2.2c]
RIGID BRACING MAY BE USED INSTEAD OF DIAGONAL SPLAY WIRES. BRACING MUST LIMIT CEILING MOVEMENT TO LESS THAN ¼" AT THE POINT OF ATTACHMENT.
[SOURCE: ASCE 7-05 13.5.6.2.2c]
SPLAY WIRE BRACING SHALL BE CLUSTERS OF FOUR 12-GAUGE WIRES ATTACHED TO THE MAIN BEAM WITHIN 2" OF THE CROSS TEE INTERSECTION. WIRES ARE ARRAYED 90°FROM EACH OTHER AT AN ANGLE NOT EXCEEDING 45°FROM THE PLANE OF THE CEILING. [SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #3]
A STRUT, WITH STIFFNESS ADEQUATE TO RESIST THE VERTICAL LOADS IMPOSED, SHALL BE ATTACHED TO THE SUSPENSION SYSTEM, AND TO THE STRUCTURE ABOVE AT EACH BRACING LOCATION.
[SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #3]
HORIZONTAL RESTRAINT POINTS SHALL BE NO MORE THAN 12' ON CENTER IN EACH DIRECTION, AND THE FIRST POINT SHALL BE WITHIN 6' OF EACH WALL. [SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #3]
ATTACHMENT OF THE BRACING WIRES TO THE MAIN BEAM AND TO THE STRUCTURE SHALL BE CAPABLE OF SUPPORTING THE GREATER OF 200 POUNDS OR THE ACTUAL DESIGN LOAD WITH A SAFETY FACTOR OF 2. [SOURCE: CISCA 3-4, PAGE 2, SECTION 1, #3]

LIGHT FIXTURES [SOURCE: CISCA 3-4, PAGE 2, SECTION 2]
ALL FIXTURES MUST BE POSITIVELY ATTACHED TO THE SUSPENSION SYSTEM. THE ATTACHMENT DEVICE MUST BE ABLE TO WITHSTAND 100% OF THE WEIGHT OF THE FIXTURE ACTING IN ANY DIRECTION.
FIXTURES WEIGHING 10 POUNDS OR LESS MUST HAVE ONE 12-GAUGE WIRE ATTACHED TO THE HOUSING.
FIXTURES WEIGHING MORE THAN 10 POUNDS TO 56 POUNDS MUST HAVE TWO 12-GAUGE WIRES ATTACHED TO DIAGONAL CORNERS, AND THESE WIRES MUST BE SLACK. FIXTURES WEIGHING IN EXCESS OF 56 POUNDS MUST BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE.
PENDANT-MOUNTED FIXTURES MUST BE SUPPORTED DIRECTLY FROM THE STRUCTURE, USING 9-GAUGE WIRE. THEY MAY NOT USE THE CEILING SUSPENSION SYSTEM FOR SUPPORT.

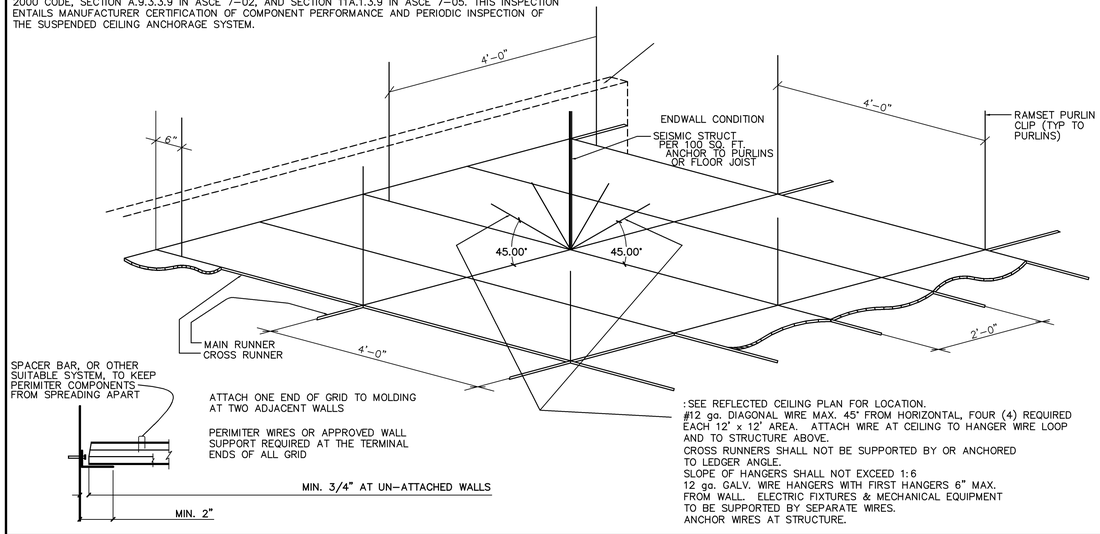
MECHANICAL SERVICES [SOURCE: ASCE 7-05 13.5.6.1]
MUST BE POSITIVELY ATTACHED TO THE SUSPENSION SYSTEM SYSTEM MAIN BEAMS, OR TO CROSS TEES WITH THE SAME LOAD CARRYING CAPACITY.
TERMINALS OR SERVICES WEIGHING 20 POUNDS TO 56 POUNDS MUST HAVE TWO 12-GAUGE WIRES CONNECTING THEM TO THE CEILING SYSTEM HANGERS, OR TO THE STRUCTURE ABOVE.
TERMINALS OR SERVICES WEIGHING MORE THAN 56 POUNDS MUST BE INDEPENDENTLY SUPPORTED.

PARTITION ATTACHMENT [SOURCE: ASCE 7-05, 5.6.2.2e]
PARTITIONS ATTACHED TO THE CEILING SUSPENSION SYSTEM SHALL BE LATERALLY BRACED TO THE BUILDING STRUCTURE. THIS BRACING IS TO BE INDEPENDENT OF ANY CEILINGS SPLAY WIRE BRACING.
EXCEPTION: PARTITIONS NOT TALLER THAN 9' AS LONG AS THE HORIZONTAL SEISMIC LOAD DOES NOT EXCEED 5 PSF.

PENETRATIONS [SOURCE: ASCE 7-05 13.5.6.2.2e]
EXCEPT WHEN RIGID BRACING IS USED, SPRINKLER HEADS AND OTHER PENETRATIONS MUST HAVE 2" OVERSIZED TRIM TO ALLOW 1" HORIZONTAL MOVEMENT IN ALL HORIZONTAL DIRECTIONS.

SEISMIC SEPARATION JOINTS [SOURCE: ASCE 7-05 13.5.6.2.2d]
CEILING AREAS GREATER THAN 2500 SQUARE FEET MUST HAVE SEISMIC SEPARATION JOINTS OR FULL HEIGHT PARTITIONS UNLESS ANALYSES ARE PERFORMED TO DEMONSTRATE THAT THE CLOSURE TRIMS AND ANGLES PROVIDE ENOUGH CLEARANCE TO ACCOMODATE THE ADDITIONAL CEILING MOVEMENT.

HEIGHT TRANSITIONS [SOURCE: ASCE 7-05 13.5.6.2.2f]
CHANGES IN CEILING PLANE ELEVATION MUST HAVE POSITIVE BRACING.




## 1 SUSPENDED "T" GRID CEILING SYSTEM N.T.S.

P.E.
INCORPORATED
PASQUINI ENGINEERING
903 H Street Suite 300
Bakersfield, Ca. 93304
Telephone: (661)-328-9600
Fax: (661)-328-9030

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# PANAMA PHARMACY
BUILDING
4004 PANAMA LANE
BAKERSFIELD, CA.

THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS A "WET STAMP & SIGNATURE" FROM BOTH THE ENGINEER OF RECORD AND A APPROVAL STAMP WITH A "WET STAMP & SIGNATURE" FROM THE LOCAL GOVERNING AGENCY ARE PRESENT.

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| DWG. BY | L.H. |
| CHK'D BY | |
| DATE | 9-20-10 |
| JOB NO. | 6222 |
| FILE NO. | 622222 |

EXP. 12/31/10

SHEET 3 OF SHEET

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