CODE DATA

I Use Group

A. I-2

II Building Renovation Information

A. Building construction type 1B

B. Area Limitations: Type of Construction 1B
(Table 503) No Limit

C. Automatic Sprinklers: NFPA 13 through out

INTERNATIONAL BUILDING CODE 2009

Table 601
Fire Resistance Rating for Structural Elements

Type 1B, Building Element	REQUIRED	PROVIDED
Primary Structural Frame:	2 hr. (a) bearing walls exterior bearing walls 2 hr interior bearing walls 2 hr *	2 hr. N/A N/A
Non-bearing walls and partitions exterior:	1 (d)	1
Non-bearing walls and partitions interior:	0	0
Floor construction and secondary members:	2 hr.	2
Roof construction and secondary members:	1 hr.	1-1/2 HR.

(a): Roof support: fire resistive rating for primary structural framing and bearing walls are permitted to be reduced by 1 hr. where supporting a roof only.

(d) An aproved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour-fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the codeor used for an allowable area increase in accordance with section 506.3 or an allowable height increase in accordance with section 504.2. the 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

Section 603 – Combustible Materials in Type 1 & Type 2 Construction

603.1 – Allowable Materials: Combustible materials shall be permitted in buildings of Type 1 or Type 2 Construction in the following applications and in accordance with this section:

1. Fire-treated wood shall be permitted.
2. Roof Construction, including girders, trusses, framing in deck. This is applicable only with the roof sheathing which shall have fire-treated plywood for nailing of shingles.

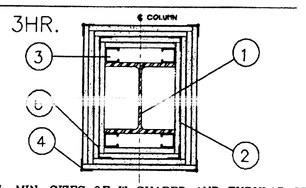
Fire Resistance Rating for Building Elements

Structural Elements	Table Req.	Provided
fire separation assemblies	2 hr.	existing 2
fire enclosure of exits:	2 hr.	existing 2
shafts	2 hr.	existing 2
elevators & hoistways	2 hr.	existing 2
exit access corridors	1 hr.	table 1018.1 1-2 sprinklered 0 fire rating limit the transfer of smoke
smoke barrier:	1 hr.	1 hr.

TYPICAL FLOOR/CEILING

UL X528

2HR. & 3HR.



1. STEEL COLUMN: MIN. SIZES OF W-SHAPED AND TUBULAR STEEL COLUMNS WHICH APPEAR IN THE AISC STEEL CONSTRUCTION MANUAL AS SHOWN UNDER ITEM #2

2. WALLBOARD, CYPSUM FOR 2 Hr AND 3 Hr RATINGS, ANY 5/8" OR 1/2" THICK GYPSUM WALLBOARD CLASSIFIED FOR USE IN OTHER 2 Hr, 3Hr OR 4 Hr COLUMN DESIGNS MIN. TOTAL THICKNESS OF LAYERS IN INCHES FOR THE VARIOUS RATINGS AND MIN. COLUMN SIZES ARE AS FOLLOWS:
W-SHAPED COLUMNS

MIN. COLUMN SIZE	RATING (HRS) 2	3	CORNER DET'LS FOR VARIOUS RATINGS 2 Hr	3 Hr
	TOTAL THICKNESS (in.)			
W6x15.5	1-1/2	2-1/4	C	D

3. STEEL STUD-- 1-5/8 in. WIDE W./ 1-5/16 AND 1-7/16 in. LEGS HAVING A 1/4-in. FOLDED FLANGE, FABRICATED FROM No.25 MSG GALV. STEEL LENGTH TO BE 1/2 in. LESS THAN THE ASSEMBLY HEIGHT

4. CORNER BEADS-- NO.28 MSG GALV. STEEL, 1-1/2 in. LEGS TO BE ATTACHED TO THE WALLBOARD W./ No.6 BY 1 in. SCREWS SPACED 12 in. OC. MAX.

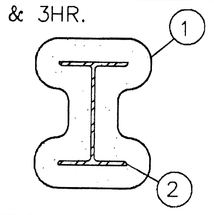
5. TIE WIRE--No. 18 SWG STEEL WIRE SPACED 24in. OC USED W./ SECOND LAYER OF WALLBOARD

6. SCREWS-- FOR ATTACHING FIRST LAYER OF WALLBOARD TO STEEL STUDS AND THIRD LAYER OF WALLBOARD TO 2 in. BY 2 in. STEEL ANGLE (25 Ga) TO BE No. 6 BY 1 in. PHILLIPS HEAD SELF-DRILLING, SELF TAPPING DOUBLE LEAD SCREWS SPACED 24" OC. FOR ATTACHING SECOND LAYER OF WALLBOARD TO STEEL STUDS AND FOURTH LAYER OF WALLBOARD TO 2 in. BY 2 in. STEEL ANGLE (25 Ga) TO BE No. 6 BY 1-3/4 in. STEEL SCREWS OF THE SAME TYPE SPACED 12 in. OC. FOR ATTACHING THIRD LAYER OF WALLBOARD TO STEEL STUDS TO BE No. 8 BY 2-1/4 in. SCREWS OF THE SAME TYPE SPACED 12 in. OC.

7. FINISHING SYSTEM--JOINT COMPOUND APPLIED OVER CORNER BEADS TO A THICKNESS OF 1/16 in.

UL X813 ALTERNATE

2HR. & 3HR.



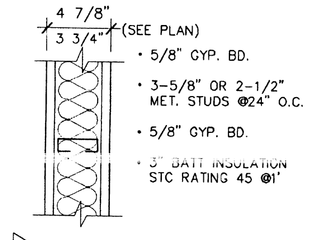
1. FIBER SPRAYED* -- APPLIED BY SPRAYING WITH WATER IN ONE OR MORE UNTAMPED COATS (SEE TABLE BELOW FOR FINAL THICKNESS).

RATING HR.	MIN. FINAL THICKNESS-IN
3	1-7/8
2	1-7/16

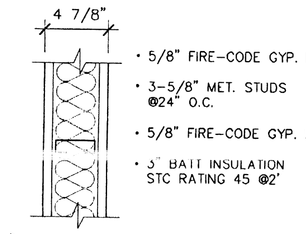
2. STEEL COLUMN--MINIMUM SIZE OF COLUMNS, W8x28

*BEARING U.L.I. CLASSIFICATION MARKING

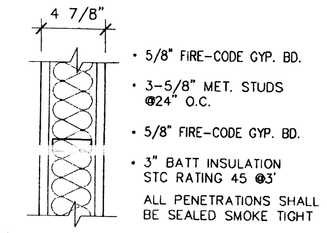
PARTITION TYPES



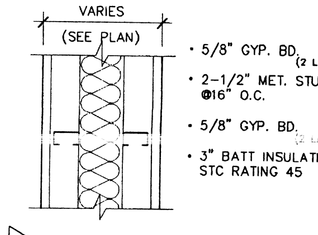
1 NON-FIRE RATED



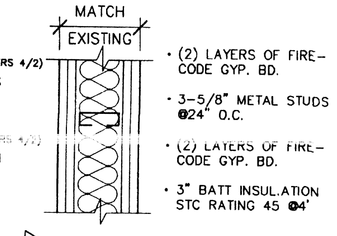
2 1 HOUR FIRE RATED
UL DESIGN: U465



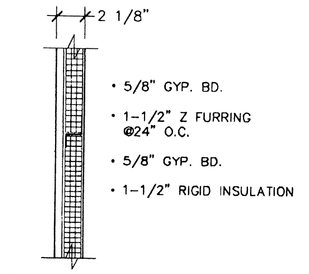
3 1 HR. F.R. SMOKE WALL
UL DESIGN: U465



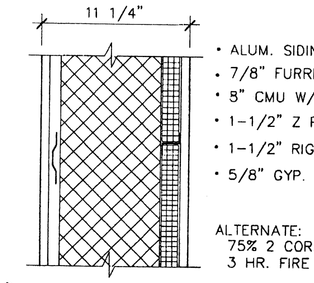
4 NON-F.R. CHASE WALL
42 2 HR FIRE RATED CHASE



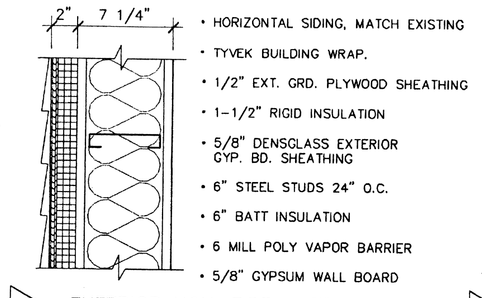
5 2 HOUR FIRE RATED
UL DESIGN: U411
5a VINYL SIDING



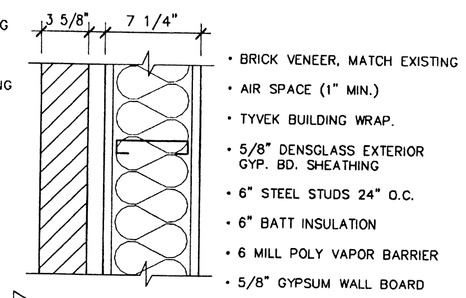
6 NON-FIRE RATED



7 EXTERIOR 3 HOUR FIRE RATED
UL DESIGN: U904



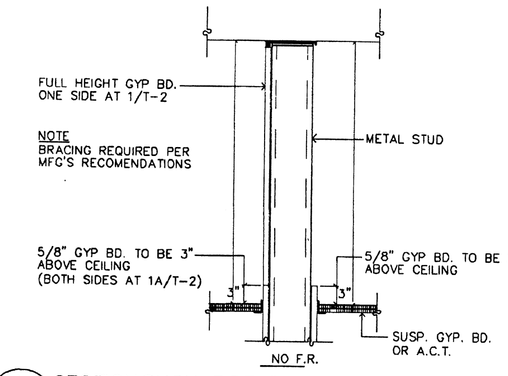
8 EXTERIOR NON-FIRE RATED
8A 1 HR. FIRE RATED UL-465



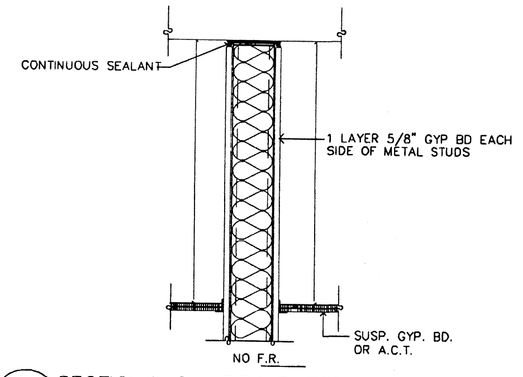
9 EXTERIOR WALL
9A 1 HR FIRE RATED WALL

NOTE: UNLESS OTHERWISE INDICATED, PARTITIONS SHALL BE CONSTRUCTED FROM FINISH FLOOR TO THE UNDERSIDE OF DECK ABOVE & ALL VOIDS TO BE FIRE CUALKED.

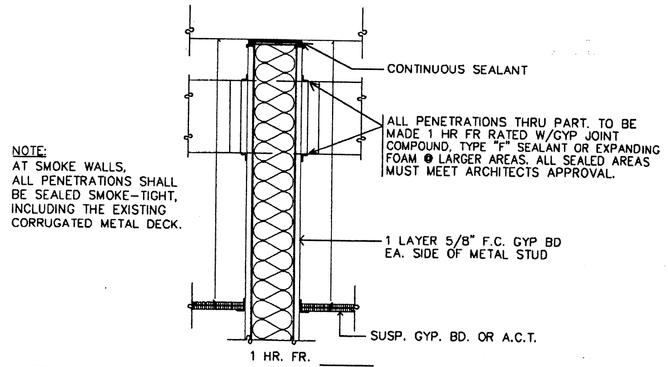
TYPICAL PARTITION DETAILS



1 & 1A / T-2 SECTION@NON FIRE RATED PARTITION
SCALE: 1 1/2" = 1'-0"



2 / T-2 SECTION@NON-FIRE RATED PARTITION
SCALE: 1 1/2" = 1'-0"

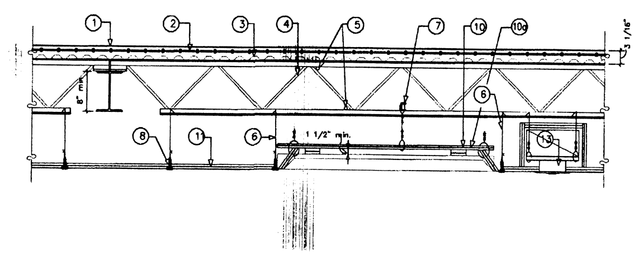


3 / T-2 SECTION@1 HR. F.R.&1 HR. F.R. SMOKE PARTITION
SCALE: 1 1/2" = 1'-0"

TYPICAL FLOOR/CEILING

floor and ceiling assembly u.l. g204

restrained assembly rating 2 hr
unrestrained assembly rating 2 hr



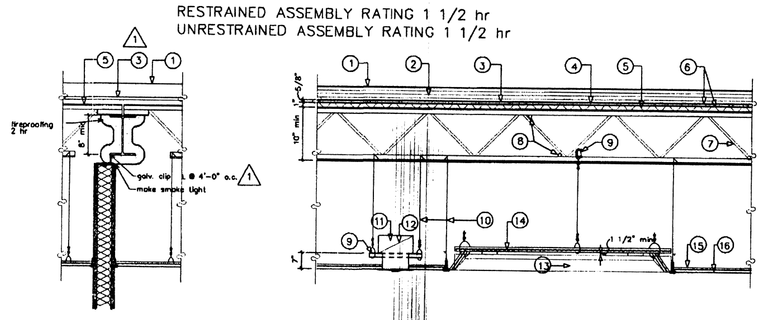
floor and ceiling assembly notes

1. sand-gravel concrete – 150 pcf unit weight, 3000 psi compressive strength.
2. welded wire fabric – 6x6, 10/10 ewg.
3. metal deck – the form material for the concrete-compacted steel deck 9/16 in. deep (14mm) galvanized (zinc coated) steel sheet, 0.0747 in. (2mm) in weight, the concrete thickness shall be measured to the top plane of the steel deck.
4. steel joist – type 10J3 min. size, spaced 30 in. o.c., welded to end supports.
5. bridging – steel bars, 1/2 in. diam., welded to top and bottom chords of each joist.
6. hanger wire – galv. steel – 12 swg min. diam., tied to chords of joist and to cold-rolled channels (done center of light fixtures, spaced 50 in. o.c. along main runners additional wires to occur at all four corners and midspans of light fixtures, and at midspans of all cross tees.
7. cold-rolled channels – no. 16 mag cold-rolled steel, 1-1/2 in. deep, secured to chords of joists with 12 swg galv. wire, one channel to occur at center of the large dimension of each light fixture.
8. steel framing members – main runners 12 ft. long, spaced 48 in OC in. o.c. with nominal 4- or 5-ft. cross tees, respectively. cross tees installed perpendicular to main runners 30 in. o.c.
9. fixtures, recessed light – fluorescent lamp type, steel housing, 2 by 4 ft. size, surface mounted lighting fixture may be used with this assembly.
10. fixture protection – acoustical material, 1/2 or 5/8 in. thick, cut into pieces to form a five sided enclosure, trapezoidal in one section, approx. 1/2 in. longer and wider than the fixture with sufficient depth to provide at least 1-1/4 in. clearance between the fixture and the enclosure.
10a. fixture protection – batts and blankets – 1-1/4 in. thick, cut into pieces to form a five-sided enclosure, trapezoidal in one section, approx. 1/2 in. longer and wider than the fixture with sufficient depth to provide at least 2-1/2 in. clearance between the fixture and the enclosure.
11. acoustical material – nominal 24 by 48 in. lay-in panels
12. air duct – no. 24 mag galv. sheet steel with total area of air outlets not to exceed 576 sq. in. per each 100 sq. ft. of ceiling area.
13. damper – ceiling dampers on a duct outlet protection. In lieu of the dampers described above duct outlet protection system is as described in the design information system, may be used with steel ducts. beam -- a steel beam, 5 in. minimum within the assembly has a minimum fire resistance rating of 2 hours

TYPICAL ROOF

ROOF AND CEILING ASSEMBLY U.L. P225

RESTRAINED ASSEMBLY RATING 1 1/2 hr
UNRESTRAINED ASSEMBLY RATING 1 1/2 hr



ROOF AND CEILING ASSEMBLY NOTES

1. ROOF COVERING-CLASS A – consisting only of felt and asphalt (or coal tar pitch) in alternate layers. see building materials directory.
2. MINNERAL AND FIBER BOARDS – 24 by 48 in., to be applied in one or more layers with adhesive layers, and with adhesive to vapor barrier. boards to be installed perpendicular to gypsum wallboard direction with end joints staggered 2 ft. in adjacent rows. When applied in more than one layer, each layer of board to be offset in both directions from layer below a min. of 12 in. in order to lap all joints. (Not required for 1 hr. fire rated assemblies without insulation).
3. SHEATHING MATERIAL – vinyl- film vapor barrier, applied with adhesive to gypsum wallboard. adjacent sheets overlapped 2 in.
4. GYPSUM WALLBOARD – (smooth or unimpaired) – supplied in sheets nominal 2 by 4 ft. to 4 by 12 ft. by nominal 5/8 in. thick. Sheets to be applied with their long dimension at right angles to steel roof deck direction with adhesive. End joints to bear over cross of steel roof deck with end joints staggered 2 ft. in adjacent rows.
5. STEEL ROOF DECK – min. 1 in. deep, 25 in. wide, fluted galv. steel deck, min. 24 MSG. flutes approx. 6 in O.C. widths 12 in. O.C. Side lap joints of adjacent units welded or secured together with 12 mag. galv. wire, button punching, self-tapping steel screws midway between end joints.
6. ADHESIVE – applied between crests of steel roof deck and gypsum wallboard in 1/2 in. O.C., at 0.4 gal. per 100 sq. ft., between gypsum wallboard and vapor barrier. between vapor barrier and mineral and mineral and fiber boards, and between layers of mineral and fiber boards.
7. STEEL JOISTS – Type 10J4, min. size, spaced 48 in. O.C. and welded to end supports.
8. BRIDGING – steel bars, 1/2 in. diam. welded to top and bottom chords of each joist.
9. COLD-ROLLED CHANNELS – No. 16 MSG Cold-Rolled steel channels, 1-1/2 in. deep with 9/16 in. flanges placed on lower chord of joists and secured with #8 S.M.S. galv. steel wire. Installed perpendicular to joists, secured as required to provide hanger wire attachment points.
10. HANGER WIRE – No. 12 swG Galv. steel wire, 1x1x1 -- tied to lower chord of joists or cold-rolled channels. Located 48 in. O.C. along main runners; additional hanger wires to occur at all four corners of light fixtures, at midpoint of cross tees adjacent to light fixtures and duct outlets, and adjacent to main runner splices.
11. AIR DUCT – No. 22 Mag mnr. galv. steel. Total area of duct openings not to exceed 230 sq. in. per each 100 sq. ft. of ceiling area. Area of duct opening not to exceed 255 sq. in. Max. depth of opening 18 in. Inside and outside faces of duct lined protected with 1/16 in. thick asbestos paper laminated t the metal.
12. DAMPER – No. 18 Mag min. galv. steel, sized to overlap duct opening 2 in. min. protected on both sides with 1/16 in. thick asbestos paper laminated to metal and held open with a fusible link (bearing the UL listing mark)
13. FIXTURES, RECESSED LIGHT – (bearing the ul listing mark). fluorescent lamp type, steel housing, 2 by 4 ft. size. Fixture spaced so that the area does not exceed 24 sq. ft. per 100 sq. ft. of ceiling area. Wiring to be installed in the national electrical code.
14. FIXTURE PROTECTION-- – ACOUSTICAL MATERIAL – 5/8 in. thick, cut to form a five-sided enclosure, trapezoidal in cross-section, approx. 1/2 in. longer and wider and 5/8 in. higher than the fixture. Sides to be 3 in. long, top panel, dimensions shall be 17-3/4 in. by 37-3/4 in. top panel, two 3-1/8 by 41-3/4 in. side panels, and two 4-1/2 by 23-1/4 in. end pieces. The top edge of each fixture protection side panel may be provided with a 1 in. deep by 10 in. long notch near its midpoint. the side and top pieces are tied in place and perforations.
15. STEEL FRAMING MEMBERS – main runners nominally 12 ft. long spaced 4 ft. o.c. cross tees nominally 4 ft. long installed perpendicular to main runners and spaced 2 ft. o.c. cross tees nominally 2 ft. long installed perpendicular to 4 ft. cross tees and spaced 4 ft. o.c.
16. ACOUSTICAL MATERIAL – nominal 24 by 24 or 48 in. lay-in panels. border panels supported at walls by 26 mag painted-steel angle with 7/8 in. legs. (x) = surface perforations. nrc. panel size: 24 x 48 restrained assem. rating: 1-1/2 hr. unrestrainedassem. rating: 1-1/2 hr. acoust. mat. type p.
17. HOLD-DOWN CLIPS – no. 24 mag spring steel, placed over cross tees 2ft. oc.

DPH SUBMISSION 8/5/11

REGISTERED ARCHITECT DAVID H. DUNLAP No. 3829 HINGHAM MASS. COMMONWEALTH OF MASSACHUSETTS

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BID DATE : 8/23/11

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EAST LONG MEADOW, MA

EAST LONGMEADOW SKILLED NURSING CENTER

BUILDING SYSTEMS, CODE DATA AND DETAILS

SCALE:

DATE: 06/30/11

DR. BY: A.H.B.

T-2

PLANNING * DESIGN * CONSTRUCTION MANAGEMENT * FINANCIAL ANALYSIS * FACILITIES ASSESSMENT * POST SITE REPORTS