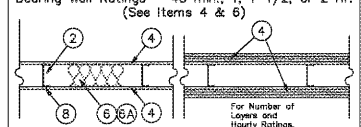
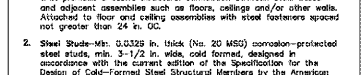


U. L. Design No. U428

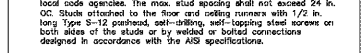
Bearing Wall Ratings - 45 min., 1-1/2, or 2 Hr.
(See Items 4 & 6)



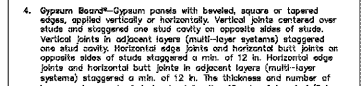
1. Floor and Ceiling Runners-(Not shown)-Channel or equivalent, fabricated from min. 0.0325 in. thick (No. 20 MS) corrosion-protected steel, shall provide a seated structural connection between steel studs and adjacent assemblies such as floors, ceilings and/or other walls. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC.



2. Steel Stud-Min. 0.0325 in. thick (No. 20 MS) corrosion-protected steel studs, min. 3-1/2 in. wide, cold formed, designed in accordance with the current edition of the Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute (AISI). All design details enhancing the structural integrity of steel wall assembly, including the rated design load of the studs, shall be as specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max. stud spacing shall not exceed 24 in. OC. Studs attached to the floor and ceiling runners with 1/2 in. long Type S-12 pan-head, self-drilling, self-tapping steel screws on both sides of the studs by means of ball connections designed in accordance with the AISI specifications.



3. Lateral Support Members-(Not shown)-Where required for lateral support of studs, support shall be provided by the means of steel struts, channels or other struts as specified in the design of a particular steel stud wall system.



4. Gypsum Board-Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multi-layer system) staggered one stud cavity. Horizontal edge joints in opposite side of studs staggered one stud cavity. Horizontal edge joints and horizontal butt joints in adjacent layers (multi-layer system) staggered a min. of 12 in. The thickness and number of layers and percent of joints in adjacent layers (multi-layer system) shall be as follows:

Rating	No. of Layers and Thickness of Panels	Percent of Joints Design Load
45 min.	1 layer, 1/2 in. thick	100
1 hr.	1 layer, 5/8 in. thick	100
1 1/2 hr.	2 layers, 1/2 in. thick	100
2 hr.	2 layers, 5/8 in. thick	100
2 hr.	3 layers, 1/2 in. thick	100
2 hr.	3 layers, 5/8 in. thick	100

Notes:
a. Rating applicable when Item 6) are used.
b. Designation Gypsum Company-1/2 in. thick Type IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, AR, C, WRX, or 5/8 in. thick Type FRX, SCX, SHX, WRX, IP-1, IC, IP-X1, SCX, SHX, WRX, AR, C, WRX, 3/4 in. thick Type AR, IP-AR, IP-X2, SCX, SHX, WRX, ULTRACODE SHX, or ULTRACODE WRX.

c. Unified Gypsum System Co.-1/2 in. thick Type AR, C, IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, or WRX; 5/8 in. thick Type AR, C, IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, FRX, or WRX; 3/4 in. thick Type AR, IP-AR, IP-X2, SCX, SHX, WRX, ULTRACODE SHX, or ULTRACODE WRX.

d. Type FRX/WRX/SHX/SCX are of 1/2 in. thick Type AR, C, IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, WRX, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IP-AR, SCX, SHX, WRX, or WRX; 3/4 in. thick Type AR, IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, or WRX; 3/4 in. thick Type AR, IP-AR, IP-X2, IP-AR, SCX, SHX, WRX, or WRX.

5. Fasteners-(Not shown)-Type S or S-12 self-drilling, self-tapping steel screws used to attach panels to runners (Item 1) and studs (Item 2) or furring channels (Item 7).

Single layer Systems: 1 in. long for 1/2 in. and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically.

Two layer Systems: First layer-1 in. long for 1/2 in. and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer-1-5/8 in. long for 1/2 in. and 5/8 in. thick panels, spaced 8 in. OC with screws offset 8 in. from first layer.

Three layer Systems: First layer-1 in. long for 1/2 in. thick panels spaced 24 in. OC. Second layer-1-5/8 in. long for 1/2 in. spaced 24 in. OC. Third layer-2-1/4 in. long for 1/2 in. panels spaced 12 in. OC. Screws offset min. 6 in. from layer below.

6. Beils and Blankets-(Required as indicated under Item 4) Nom. 2 in. thick mineral wool batts, friction-fitted between studs and runners.

See Beils and Blankets (BK/RY or BK/ZZ) Categories for names of classified companies.

Beils and Blankets-(Optional, not shown)-Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Retardancy.

See Beils and Blankets (BK/RY or BK/ZZ) Categories for names of classified companies.

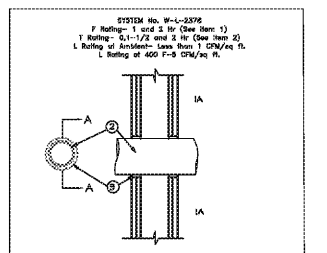
7. Furring Channels (Optional on both sides, not shown, for single or double layer systems) Resilient furring channels fabricated from min. 20 MS corrosion-protected steel, spaced vertically a max. 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long, Type S-12 pan-head steel screws.

8. Joint Tape and Compound-1/4 in. or 5/8 in. wide, dry or precast joint compound, applied in two coats to joints and screw heads of joint layers. Paper tape, nom. 2 in. wide, embedded in first layer of compound over all joints of outer layer.

9. Sliding Brick or Slucco-(Optional, not shown)-Aluminum, vinyl or steel sliding brick veneer or slucco, meeting the requirements of local code agencies. Brick veneer attached to studs with corrosion metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.

10. Caulking and Sealant-(Optional, not shown)-A bead of acoustical sealant applied around the partition perimeter for sound control. United States Gypsum Co., -Type AS.

* Bearing the UL Classification Marking.



1. Wall Assembly - The fire rated gypsum board/steel wall assembly shall be constructed of the materials and in the manner specified in the individual US90 or US100 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs- Wall framing may consist of other wood studs or steel channel studs. Steel studs to consist of min 2 by 4 in. Lumber spaced 16 in. OC. Steel studs to be min. 2-1/2 in. wide and spaced max 24 in. OC.

B. Gypsum Board- Thickness, type, number of layer and fasteners as specified in the Individual Wall and Partition Design. Max. stud spacing to be 1-1/2 in. OC.

C. Through Penetrations- Multiple penetrations shall be in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

D. Polymeric Chloride (PVC) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 solid pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

E. Charulated Polyethylene Glycol (CPG) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 SDR17 CPG pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

F. Polyethylene/Aluminum/Polyethylene Composite Pressure Pipe (PE-AL-PE) - Nom. 3/4 in. diam (or smaller) PE-AL-PE pipe.

G. Cross-linked Polyethylene/Aluminum/Unreinforced Polyethylene Composite Pressure Pipe (PE-AL-PE) - 3/4 in. diam (or smaller) PE-AL-PE pipe.

H. Cross-linked Polyethylene (PE) Pipes- Nom. 2 in. diam (or smaller) SDR 7.3 PE pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

I. Acrylonitrile Butadiene Styrene (ABS) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 solid pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

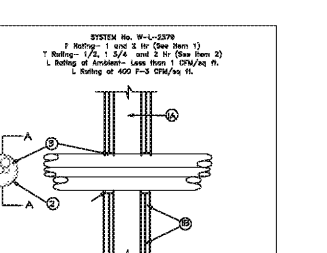
J. Fib. Vile or Corby Material-Steel, Min 9/16 in. or 1-1/4 in. thickness of second applied within annulus, than min. both surface of wall assembly for 1 hr. and 2 hr. rated wall assemblies, respectively.

SIRROL-UL90 CC- White Lighting Flame Resistant High Intensity Fluorescent Sillings.

* Bearing the UL Classification Marking.

* Bearing the UL Listing score.

2 UL DETAILS
SCALE: 1/8" = 1'-0"



1. Wall Assembly - The fire rated gypsum board/steel wall assembly shall be constructed of the materials and in the manner specified in the individual US90 or US100 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs- Wall framing may consist of other wood studs or steel channel studs. Steel studs to consist of min 2 by 4 in. Lumber spaced 16 in. OC. Steel studs to be min. 2-1/2 in. wide and spaced max 24 in. OC.

B. Gypsum Board- Thickness, type, number of layer and fasteners as specified in the Individual Wall and Partition Design. Max. stud spacing to be 1-1/2 in. OC.

C. Through Penetrations- Multiple penetrations shall be in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

D. Polymeric Chloride (PVC) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 solid pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

E. Charulated Polyethylene Glycol (CPG) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 SDR17 CPG pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

F. Polyethylene/Aluminum/Polyethylene Composite Pressure Pipe (PE-AL-PE) - Nom. 3/4 in. diam (or smaller) PE-AL-PE pipe.

G. Cross-linked Polyethylene/Aluminum/Unreinforced Polyethylene Composite Pressure Pipe (PE-AL-PE) - 3/4 in. diam (or smaller) PE-AL-PE pipe.

H. Cross-linked Polyethylene (PE) Pipes- Nom. 2 in. diam (or smaller) SDR 7.3 PE pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

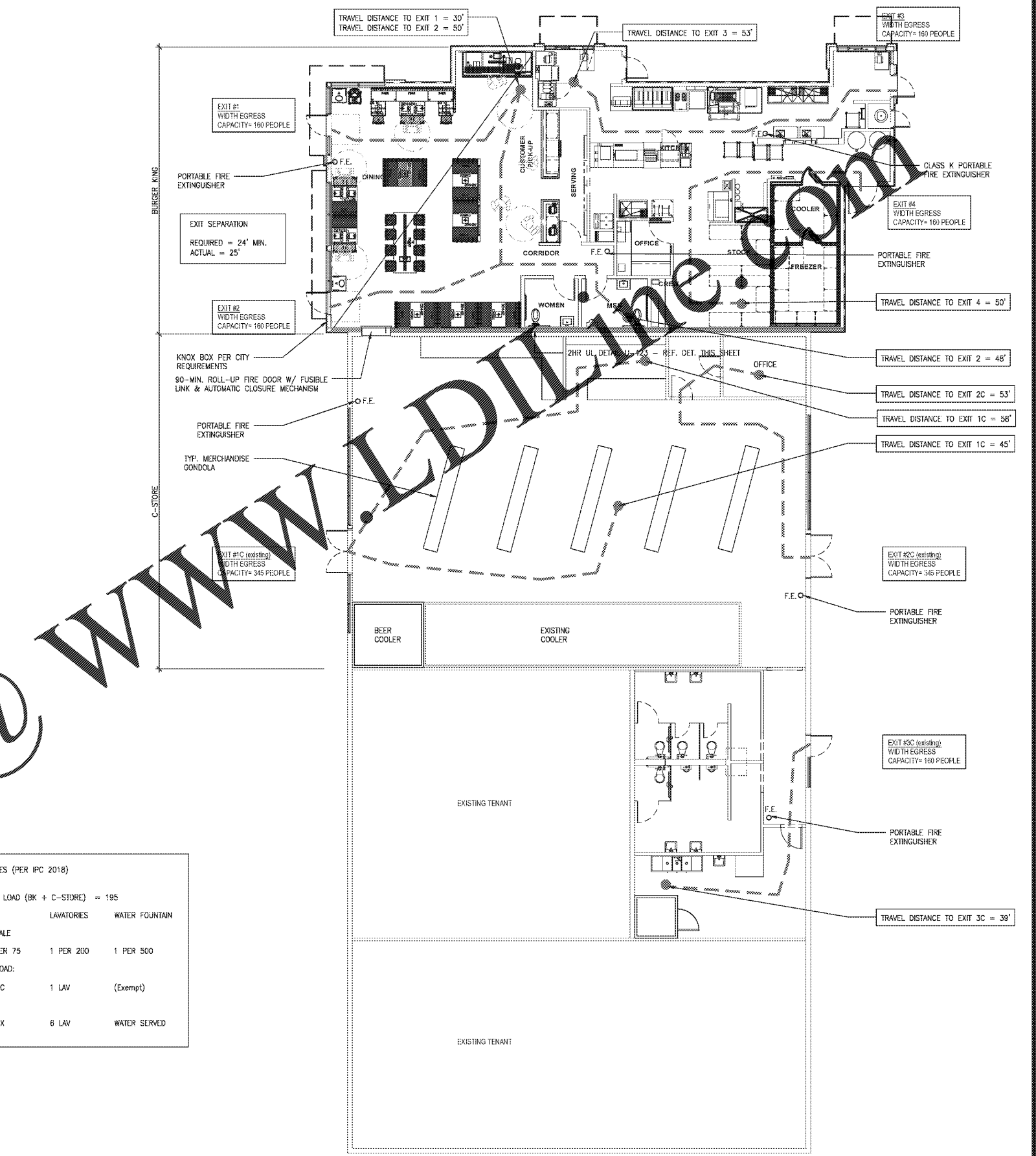
I. Acrylonitrile Butadiene Styrene (ABS) Pipes- Nom. 2 in. diam (or smaller) Schedule 40 solid pipe for use in closed (grooves or supply) or vented (vents, wales or walls) plating systems.

J. Fib. Vile or Corby Material-Steel, Min 9/16 in. or 1-1/4 in. thickness of second applied within annulus, than min. both surface of wall assembly for 1 hr. and 2 hr. rated wall assemblies, respectively.

SIRROL-UL90 CC- White Lighting Flame Resistant High Intensity Fluorescent Sillings.

* Bearing the UL Classification Marking.

* Bearing the UL Listing score.



PROJECT DATA

PROJECT DESCRIPTION:	NEW BURGER KING RESTAURANT
NEW BK BUILDING AREA:	2,818 S.F.
+ EXISTING BLDG AREA:	10,298 S.F. TOTAL
ZONING DISTRICT:	C-3
CONSTRUCTION TYPE:	V-B UNSPRINKLERED
USE GROUP CLASSIFICATION:	ASSEMBLY (A-2) EXISTING MIXED USE OCCUPANCY BUILDING SEPARATED OCCUPANCIES
MAX. BLDG. HEIGHT:	40' (MAX.) ACTUAL: 24'
MAX. # OF STORIES:	1
MAX. BLDG. AREA:	10,500 SF. (A-2)(1)(% PRORATA INCREASE)
MAX. TRAVEL DISTANCE:	200'
COMMON PATH OF TRAVEL:	20'
DEAD END CORRIDOR:	20'
BK OCCUPANT LOAD:	
SEATING:	48 (FIXED SITTING PER DECOR)
KITCHEN:	985 SF / 100 = 10
OFFICE:	58 SF / 100 = 1
STORAGE:	411 SF / 300 = 2
TOTAL:	61
EGRESS CAPACITY	
REQUIRED NUMBER OF EXITS:	2
PROVIDED NUMBER OF EXITS:	4
REQUIRED EGRESS CAPACITY WIDTH:	61 x 0.2 = 13"
PROVIDED EGRESS CAPACITY WIDTH:	(32"x3) + (46") = 142"

PROJECT DESCRIPTION:	EXISTING RESTROOM MODERNIZATION
CONSTRUCTION TYPE:	V-B UNSPRINKLERED
USE GROUP CLASSIFICATION:	MERCANDILE (M) EXISTING MIXED USE OCCUPANCY BUILDING SEPARATED OCCUPANCIES
MAX. TRAVEL DISTANCE:	150'
COMMON PATH OF TRAVEL:	75'
DEAD END CORRIDOR:	20'
STORY OCCUPANT LOAD:	
MERCANDILE (1 OCCUPANT PER 30 SF.)	
AREA = 4,010 SF. / 30 = 134 OCCUPANTS	
EGRESS CAPACITY	
REQUIRED NUMBER OF EXITS:	2
PROVIDED NUMBER OF EXITS:	3
REQUIRED EGRESS CAPACITY WIDTH:	134 x 0.2 = 27"
PROVIDED EGRESS CAPACITY WIDTH:	(70"x2) + (32") = 172"

REQUIRED PLUMBING FIXTURES (PER IPC 2018)			
TOTAL COMBINED OCCUPANT LOAD (BK + C-STORE) = 195			
WATER CLOSETS	LAVATORIES	WATER FOUNTAIN	
MALE	FEMALE		
1 PER 75	1 PER 75	1 PER 200	1 PER 500
REQUIRED PER OCCUPANT LOAD:			
2 WC	2 WC	1 LAV	(Exempt)
PROVIDED:			
2 WC + 2 URINALS	4 WX	6 LAV	WATER SERVED

1 LIFE SAFETY
A0.3 SCALE: 1/8" = 1'-0"

NOTE:
ENTIRE SHEET HAS BEEN REVISED

