Form # P 04

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING INSPECTION

Please Read Application And Notes, If Any, Attached

Permit Number: 061802

PERMIT

PERMIT ISSUED

MAR 8 2007

CITY OF PORTLAND

This is to certify that LANDMARCK HEALTHCARE FACILITIES/Ledgewood Construc

has permission to New 4 Story Medical Office Building V... see #07-00... for foundation only

AT 50 ST JOHN ST C... 073 A001001

provided that the person or persons ...rm or ...tion accepting this permit shall comply with all of the provisions of the Statutes of ...ine and of the C...inances of the City of Portland regulating the construction, maintenance and ...e of buildings and ...uctures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

N...ificatio...f inspe...on mus...e g...n and w...en perm...on proc...d b...ore this ...lding or ...rt there...s l...ed or ...orwi...osed-in ...4 H...UR NO... REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. _____

Health Dept. _____

Appeal Board _____

Other _____
Department Name

3/5/07
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

Scanned

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Issue Date:	CBL:
06-1802		073 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE F	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	2077671866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	**Zone:**
		Commercial	C-2C

Past Use:	Proposed Use:	Permit Fee:	Cost of Work:	CEO District:
Vacant Land	Medical Office Building - New 4 Story Medical Office Building Vanilla Box	$68,095.00	$6,800,000.00	3

FIRE DEPT: ☑ Approved ☐ Denied

Signature: Greg Cass

INSPECTION: Use Group: B Type: 2B

Signature: 3/5/07

Proposed Project Description:
New 4 Story Medical Office Building Vanilla Box -see #07-0072 for foundation only

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

Permit Taken By:	Date Applied For:
ldobson	12/19/2006

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland N/A	☐ Variance	☑ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone Panel 13 Zone C	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☒ Site Plan #2005-0192	☐ Approved	☐ Approved w/Conditions
Maj ☒ Minor ☐ MM ☐ OK with conditions	☐ Denied	☐ Denied
Date: 2/27/07	Date:	Date:

PERMIT ISSUED
MAR 8 2007
CITY OF PORTLAND

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT | ADDRESS | DATE | PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE | DATE | PHONE

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 or 874-8693 to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

A Pre-construction Meeting will take place upon receipt of your building permit.

✓	**Footing/Building Location Inspection:**	Prior to pouring concrete
✓	**Re-Bar Schedule Inspection:**	Prior to pouring concrete
✓	**Foundation Inspection:**	Prior to placing ANY backfill
✓	**Framing/Rough Plumbing/Electrical:**	Prior to any insulating or drywalling
✓	**Final/Certificate of Occupancy:**	Prior to any occupancy of the structure or use. NOTE: There is a $75.00 fee per inspection at this point.

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects **DO** require a final inspection

DRB **If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.**

DRB **CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED**

[signature] 03-12-07

Signature of Applicant/Designee — Date

Donna Martin Admin

Signature of Inspections Official — Date

CBL: 73 A 001 Building Permit #: 06-1802

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Date Applied For:	CBL:
06-1802	12/19/2006	073 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE FA	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	(207) 767-1866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Commercial	

Proposed Use:	Proposed Project Description:
Medical Office Building - New 4 Story Medical Office Building Vanilla Box	New 4 Story Medical Office Building Vanilla Box -see #07-0072 for foundation only

Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 02/27/2007

Note: has been on hold until 2/26/07 **Ok to Issue:** ☑

1) Separate permits shall be required for any new signage. All signage shall be reviewed by the Planning Authority.

2) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Dept: Building **Status:** Approved with Conditions **Reviewer:** Mike Nugent **Approval Date:** 03/05/2007

Note: **Ok to Issue:** ☑

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Cptn Greg Cass **Approval Date:** 03/01/2007

Note: **Ok to Issue:** ☐

1) Seperqate fire alarm plans shall be submitted.

2) Seperate sprinkler plans shall be submitted

3) Fire alarm system shall be connected by a master box connection.

Comments:

12/20/2006-ldobson: From Jean in Planning

Please continue to hold on this- there are legal isues but Penny was ill today so I could not establish where that has got to.

In addition, I need to check re the conditions and Performance Guarantee on this and have not been able to reach all the relevant parties. Revised site plans have not been submitted.

12/20/2006-ldobson: This is in Marge's area w/ note from Jean Fraser

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE FA	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	(207) 767-1866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Commercial	

2/27/2007-ldobson: I have completed the IBC compliance review and will need the following clarifications/or additonal information. I've discovered that the permit still needs final City Fire and Zoning sign-offs, so I'll be bringing it to City Hall first thing on Monday to get that taken care of. Hopefully , timing wise, they will be done with it quickly and the additional information that I request today will come back to me at the same time, allowing final clean sign off. My review is done so this is the final list:

(This info was not readily available in the plans or spec book)

1) Please confirm that the wall and ceiling finishes in the Atrium are Class Be or better (Section 404.7)

2) Please confirm that the ampacity and or voltage total in the electrical rooms is below that of which requires two means on egress in the National Electrical Code.

3) Please provide a code justification for the omission of the smoke/fire dampers in the ducts that penetrate the atrium enclosure.

4) Please confirm that all carpeting will comply with Section 804.3 and 804.4 of the 2003 IBC.

5) Please a\provide a compliance summary for section 1007.6; Area of Refuge.

6) Please confirm that the horizontal sliding doors will comply with all elements of Section 1008.1.3.3 of the 2003 IBC.

7) Please confirm that the Alternating Tread Device will comply with all elements of Section 1009.10 of the 2003 IBC. (HANDRAILS!!!!)

8)Please confirm that all Glass and Glazing will comply with all elements of Chapter 24 of the 2003 IBC.

9)Please confirm that the tunnel ventilation will comply with Section 3104.11 of the 2003 IBC.

10) Please confirm that all doors used to protect openings in required fire separation assemblies will comply with the applicable elements of Section 715 of the 2003 IBC.
(Elevator doors, vertical exit doors, corridor doors, tunnel doors ETC. , also need UL 1784 compliance with most of these.

General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: MERCY OF MAINE FORE RIVER CAMPUS

Total Square Footage of Proposed Structure	Square Footage of Lot
82,186	35 Ac±

Tax Assessor's Chart, Block & Lot Chart#	Block#	Lot#	Owner: (BUILDING)	Telephone:
73	A	1	FORE RIVER MEDICAL COMPLEX LLC	(414) 277-0500
74	A	1		
~~Lessee/Buyer's Name (If Applicable)~~			Applicant name, address & telephone:	Cost Of Work: $ 6,800,000
74	A	2	FORE RIVER MEDICAL COMPLEX LLC	
74	A	22	839 N. JEFFERSON ST. SUITE 200	
75	A	3	MILWAUKEE, WI 53202	Fee: $
75A	A	17	(414) 277-0500 (OFFICE)	
76	A	1	(414) 277-1055 (FAX)	C of O Fee: $
78	A	33		

CONSOLIDATED BY MERCY HOSPITAL

Current Specific use: NONE

Proposed Specific use: MEDICAL OFFICE BUILDING

Project description: NEW 4 STORY MEDICAL OFFICE BUILDING TO BE BUILT ON THE MERCY OF MAINE FORE RIVER CAMPUS. THIS SUBMISSION FOR BUILDING SHELL & CORE TO INCLUDE PRIMARY HVAC, ELECTRIC, PLUMBING & FIRE PROTECTION. FINISHED 2-STORY ENTRANCE LOBBY & PUBLIC CORRIDORS, ELEVATORS & EXIT STAIRS. CIVIL WORK FILED WITH HOSPITAL PERMIT APPLICATION.

Contractor's name, address & telephone: LEDGEWOOD CONSTRUCTION, 27 MAIN STREET, PORTLAND, MAINE 04106, (207) 767-1866

Who should we contact when the permit is ready: ANTHONY LAMPASS

Mailing address: Phone: (414) 429-1855

68020.75

68095.00

Please submit all of the information outlined in the Commercial Application Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information visit us on-line at www.portlandmaine.gov, stop by the Building Inspections office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: Date: 12/19/06

This is not a permit; you may not commence ANY work until the permit is issued.

PD1

From: Jean Fraser
To: Schmuckal, Marge
Date: 3/1/2007 3:41:44 PM
Subject: Re: Mercy

Marge,

I confirm that from the **Planning** viewpoint the Full Building Permits for the new Mercy Hospital and the MOB may be issued. You should have a stamped set of drawings associated with the Aug 8, 2006 approval as well as a Feb 2, 2007 approval letter and small plans relating to minor amendments to the hospital building.

Please note on the Permit file that a 30,000 gal above ground oil storage tank, the final details of the service area screening, and final lighting proposals in the vicinity of the railroad have not yet been submitted nor reviewed/approved and formal amendment applications for these are expected in the next couple of weeks (we have discussed them in principle).

Jean

>>> Marge Schmuckal 2/26/2007 3:56:07 PM >>>
Sorry,
My error - I do have stamped approved site plans that I received from planning.

I am just confirming that we can sign off and issue these permits (with the corrected applicant name for the MOB).

THanks,
Marge

CC: Barhydt, Barbara; Bourke, Jeanie; Littell , Penny

LANDMARK HEALTHCARE FACILITIES

Applicant: ~~Mercy Hospital~~ / Ledgewood Const. *Date:* 2/26/07

Address: 50 St. John St *C-B-L:* 073-A-001

CHECK-LIST AGAINST ZONING ORDINANCE

07-0072

Date -

Zone Location - Conditional/contract Zone - C-26

Interior or corner lot -

Proposed Use/Work - After the fact review for the 4 story MOB foundation ONLY - mike N. instructed the front STAFF to issue without full sign-offs

Sewage Disposal - City

Lot Street Frontage -

Front Yard - 20' min - 165' scaled

Rear Yard - 10' min - 316' scaled

Side Yard - 10' min - 180' scaled & well over 500' the other way

Projections - 2/27/07 # 06-1802

Width of Lot - N/A ← 52.25' shown to top of steel; 62.25' to top of screen wall

to check later OK *Height -* 90' MAX - foundation only - 2/27/07 - ~~Average grade~~ ~~the South~~ ~~East~~ & West less than

Lot Area -

Lot Coverage/ Impervious Surface - 80% - of the whole - much less now

Area per Family - N/A

Off-street Parking - Determined by PB - south side 325 shown; 458 - north side shown; 783 total

Loading Bays - N/A under contract

Site Plan - 2005-0192

Shoreland Zoning/ Stream Protection - N/A

Flood Plains - Panel 13b - Zone C

signs to be approved ~~per~~ planning

Pavement setback from boundaries - 15' - 20' at closest

Francis	Cauffman	Foley	Hoffmann

DEPT. OF BUILDING INSPECTION
CITY OF PORTLAND, ME
FEB 28 2007
RECEIVED

Francis Cauffman
Foley Hoffmann,
Architects Ltd.

2120 Arch Street
Philadelphia, PA 19103-1308
215 568-8250
215 568-2639 /fax
www.fcfh-did.com

MEMO

To: **Mike Nugent**
Plan Reviewer - City of Portland, Maine

From: William Gariano

Date: February 27, 2007

Subject: **Landmark – Fore River Medical Pavilion**
Portland, Maine
Response to Plan Review Email

The following is response to your February 24, 2007 email to Landmark:

1) Please confirm that the wall and ceiling finishes in the Atrium are Class B or better (Section 404.7)
Response: Wall and ceiling finishes meet a minimum of Class B – See Product Attachments.

2) Please confirm that the ampacity and or voltage total in the electrical rooms is below that of which requires two means on egress in the National Electrical Code.
Response: NEC Article 110.26(C)(2) requires an exit from each end of the working space in front of equipment rated 1200 amps or larger. However, only one exit is required if either:

110.26 (C)(2)(a) There is an unobstructed path of egress. Or

110.26(C)(2)(b) The depth of the working space is twice that required by code.

3) Please provide a code justification for the omission of the smoke/fire dampers in the ducts that penetrate the atrium enclosure.
Response: Fire dampers are not required under exemption 1 of section 716.5.4 of IBC 2003. The walls in question was interpreted to be a 1 hour fire rated corridor wall in a building that is NOT Group H and is fully sprinkled.

4) Please confirm that all carpeting will comply with Section 804.3 and 804.4 of the 2003 IBC.
Response: Carpet finishes meet a minimum of Class B – See Product Attachments

5) Please provide a compliance summary for section 1007.6; Area of Refuge.
Response: One wheel chair space (30" x 48") is located at the 2nd, 3rd & 4th Floor Landings in Stairs "A" & "B" that is clear of the exit egress path (arch) of the stairs. First Floor "Area of Refuge" will be handled within the one hour fire rated Atrium. See stair plan attachment.

6) Please confirm that the horizontal sliding doors will comply with all elements of Section 1008.1.3.3 of the 2003 IBC.
Response: Power Operated (Sliding Entrance) Doors have break away swing leafs and comply with Section 1008.1.3.2 Power Operated Doors & 1008.1.3.3 Horizontal sliding doors. See attachment – Basis of Design product Data.

7) Please confirm that the Alternating Tread Device will comply with all elements of Section 1009.10 of the 2003 IBC. (HANDRAILS!!!!)
Response: The Alternating Tread Device complies with Section 1009.10 & 1009.11 – Handrails. The project's Alternating Tread Devices has handrails on each side. See Basis of Design – Product Information.

8) Please confirm that all Glass and Glazing will comply with all elements of Chapter 24 of the 2003 IBC.
Response: Glass requirements, including wind, snow, seismic and dead load requirements shall comply with the "Performance Requirements" listed in Section 08600 - Aluminum Curtain Wall and Quality Assurances in Sections 08410 – Aluminum Entrances Storefront and Section 08520 – Aluminum Windows.

9) Please confirm that the tunnel ventilation will comply with Section 3104.11 of the 2003 IBC.
Response: IBC 2003 section 3104.11 Ventilation, calls for smoke and heat vents in tunnels as required for group F-1 occupancies in accordance to section 910. Section 910.2.1 states the vent requirement to apply for the building or portions thereof being considered Group F-1, to have an area greater than 50,000 square feet. The tunnel portion of the building to be considered Group F-1 occupancy is only 650 square feet.

10) Please confirm that all doors used to protect openings in required fire separation assemblies will comply with the applicable elements of Section 715 of the 2003 IBC.
(Elevator doors, vertical exit doors, corridor doors, tunnel doors ETC.) also need UL 1784 compliance with most of these.
Response: All Door Fire Ratings are noted on the Door Schedule and comply with Table 715.3 – Fire Door and Fire Shutter Fire Protection Ratings in a rated partition. Elevators Hoistway Doors will match the shaft enclosure fire rating, as noted on the drawings.

Product Specifications

WALL COVERING

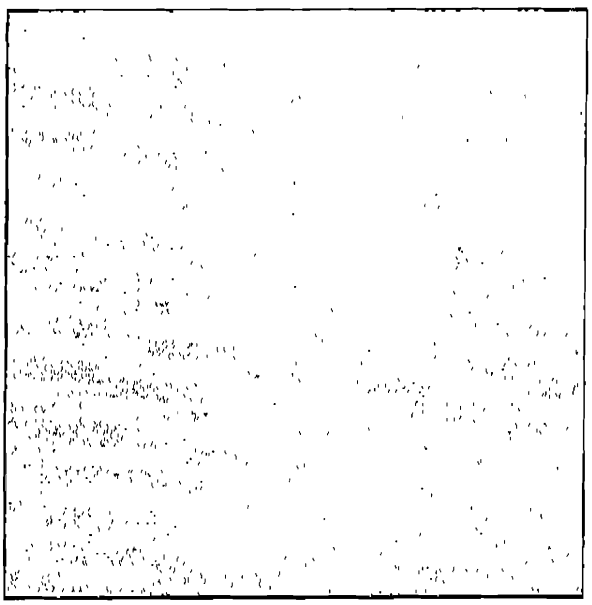


Image depicts 8 in x 8 in section

PRODUCT TYPE: Vinyl Wallcovering
COLLECTION: Summit III
STYLE NAME: Contour
STYLE #: N/A
COLORWAY NAME: Stone
COLORWAY #: CTR 7-282

COMPOSITION

EXACT CONTENT: Vinyl

CONSTRUCTION

BACKING: Osnaburg (Non Specific)

PRODUCT BACKGROUND

COUNTRY OF ORIGIN: USA

DESIGN CHARACTERISTICS

DOMINANT COLOR: Grey-Warm Light
PATTERN SCALE: Texture
PATTERN LAYOUT: Non-Directional

DIMENSIONAL ELEMENTS

EXACT WIDTH: 54 in (137.20 cm)
WEIGHT TYPE: Type II
TOTAL WEIGHT: 21 oz/linear yd
PATTERN REPEAT: No Repeat

ENVIRONMENTAL

MANUFACTURER'S

ENVIRONMENTAL STATEMENT: All inks & adhesives used are waterbased. No heavy metals used.

PERFORMANCE / TEST RESULTS

PHYSICAL PROPERTIES: NYC & NYS Toxicity tested. MEA # available upon request.

FLAMMABILITY: ASTM E84-91a Flame Spread Rate: 15

SMOKE DENSITY TEST: ASTM E84 Smoke Developed Factor: 20

MANUFACTURER'S NOTES

CUSTOM COLORS AVAILABLE: Y

PRODUCT ADVANTAGES: Exclusive Wolf-Gordon Design

INSTALLATION / MAINTENANCE

MATCH TYPE: Random

INSTALLATION GUIDELINES: Available upon request.

ORDERING / SHIPPING

MINIMUM ORDER: 750 yds

LEAD TIME: 4 Weeks

QUICK SHIP: Y

INTERNATIONAL SHIPPING: Y

PACKAGE SIZE: 30 yd bolt

IDENTIFYING INFORMATION

BRAND SKU #: N/A

TN SKU #: WOFCTR7-282

CATALOG ID: 142870

STATUS

STATUS: Available

STATUS DATE: 22-Jun-04

LAST UPDATE: 15-Nov-06

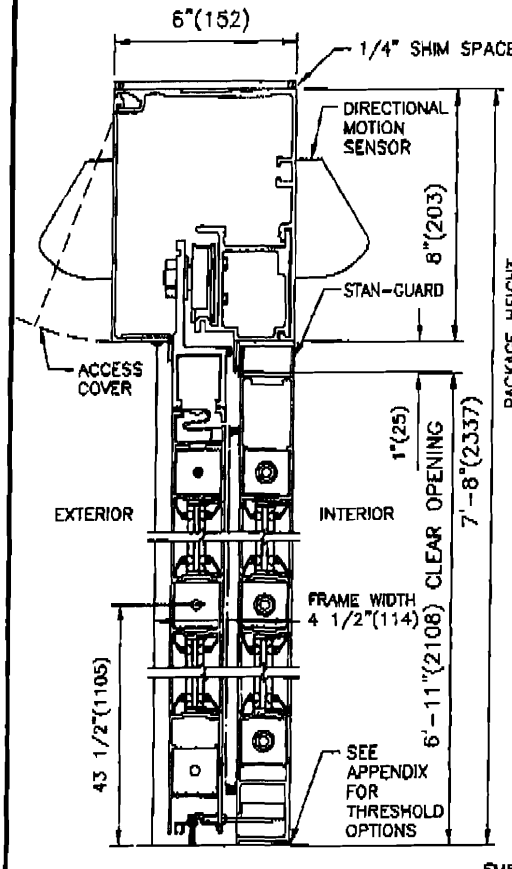
BASIS OF DESIGN - AUTO SLIDING ENTRANCE DOOR (SECTION 08460)

STANLEY

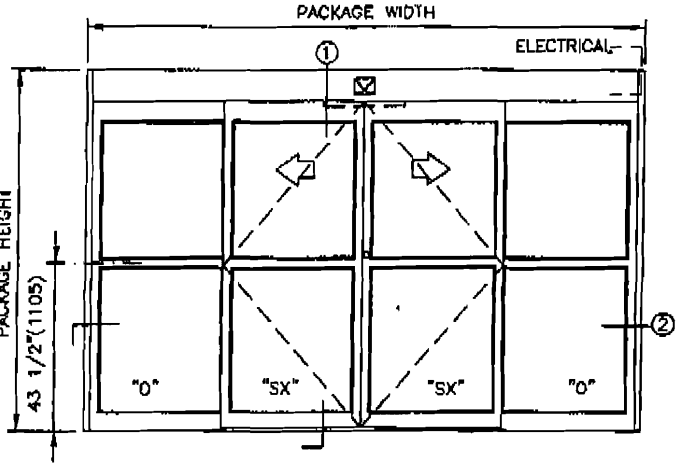
JOB NAME _____
LOCATION _____
DOOR NUMBER _____
SHEET _____ OF _____

DURA-GLIDE 2000
BI-PART
WITH "0" PANELS

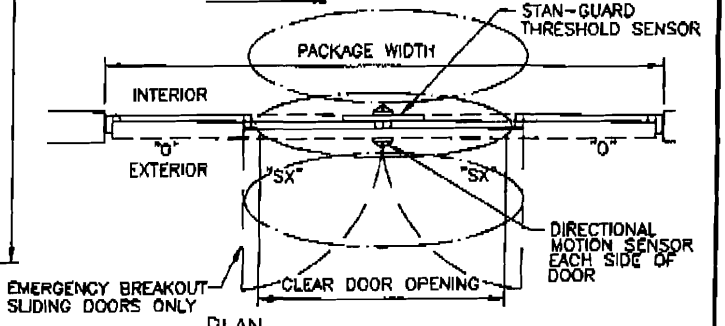
STANLEY DOOR PACKAGES ARE INDIVIDUALLY ENGINEERED TO FIT YOUR JOB REQUIREMENTS



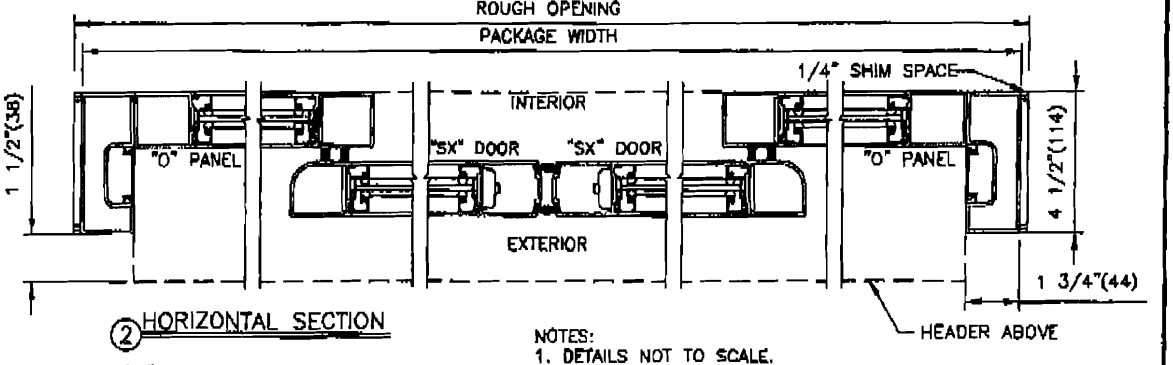
① VERTICAL SECTION



ELEVATION



PLAN



② HORIZONTAL SECTION

SAMPLE PACKAGE WIDTH INFORMATION

PKG. WIDTH	NOMINAL CLEAR DOOR OPENING	SLIDING DOOR / PANEL NOM. WIDTH	EMERGENCY BREAKOUT NOM. WIDTH
10'-0"	48"	30 1/2"	58"
12'-0"	60"	36 1/2"	68"
14'-0"	72"	42 1/2"	80"

NOTES:
1. DETAILS NOT TO SCALE.
2. ELECTRICAL REQUIREMENTS:
   120VAC, 5AMPS MIN. TO OPERATOR BY ELECTRICAL CONTRACTOR.
3. SEE APPENDIX FOR ADDITIONAL INFORMATION.

BI-PART FORMULAS
PACKAGE WIDTH = 2 X CLEAR DOOR OPENING + 23 3/8"
CLEAR DOOR OPENING =1/2 PACKAGE WIDTH - 11 11/16"
EMERGENCY BREAKOUT = CLEAR DOOR OPENING + 7 1/4"
DOOR PANEL WIDTH = 1/4 PACKAGE WIDTH + 3/8"

STANLEY
Access Technologies
Dura-Glide™ 2000

SECTION 08 42 29.23 [08460]
SLIDING AUTOMATIC ENTRANCES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following types of automatic entrance doors:
1. Exterior and interior, single slide and bi-parting, sliding automatic entrance doors.

B. Related Sections:
1. Division 7 Sections for caulking to the extent not specified in this section.
2. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrances furnished separately in Division 8 Section.
3. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
4. Division 8 Section Glazing for materials and installation requirements of glazing for automatic entrance doors.
5. Division 16 Sections for electrical connections including conduit and wiring for automatic entrance door operators.

1.03 REFERENCES

General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

A. Underwriters Laboratories (UL):
1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

B. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):
1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
2. ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products

C. American Society for Testing and Materials (ASTM):
1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

D. American Association of Automatic Door Manufacturers (AAADM):

E. National Fire Protection Association (NFPA):
1. NFPA 101 – Life Safety Code.
2. NFPA 70 – National Electric Code.

F. International Code Council (ICC):
1. IBC: International Building

G. Building Officials and Code Administrators International (BOCA), 1999:

H. International Conference of Building Officials (ICBO):
1. UBC 1997: Uniform Building Code

I. International Organization for Standardization (ISO):
1. ISO 9001 - Quality Management Systems

J. National Association of Architectural Metal Manufacturers (NAAMM):
1. Metal Finishes Manual for Architectural and Metal Products.

K. American Architectural Manufacturers Association (AAMA):
1. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
2. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum
3. AAMA 701 Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals

1.04 DEFINITIONS

A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.

B. Safety Device: Device that prevents a door from opening or closing, as appropriate.

1.05 PERFORMANCE REQUIREMENTS

A. Provide automatic entrance door assemblies capable of withstanding structural loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.

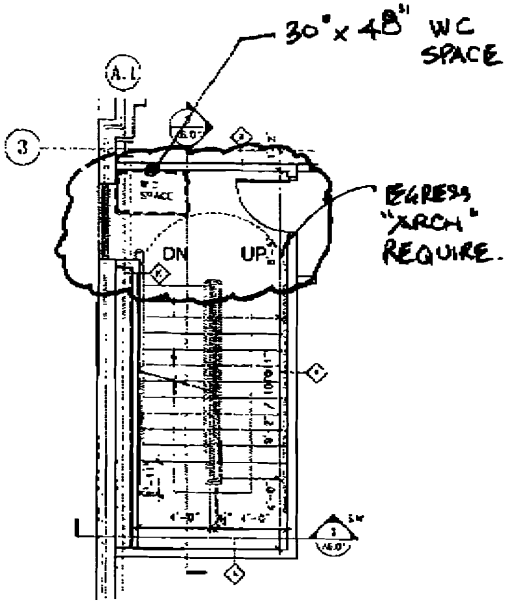
B. Thermal Movements: Provide automatic entrance doors that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

C. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).

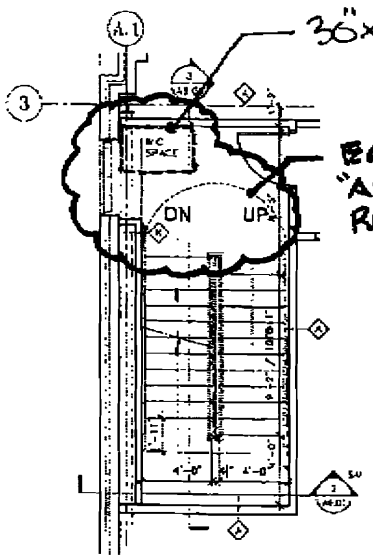
D. Opening-Force Requirements for Egress Doors: Not more than 50 lbf (222 N) required to manually set door in motion if power fails, and not more than 15 lbf (67 N) required to open door to minimum required width.

E. Closing-Force Requirements: Not more than 30 lbf (133 N) required to prevent door from closing.

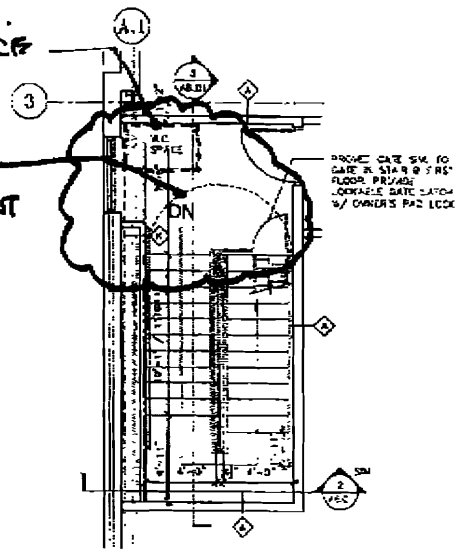
STAIR PLAN ATTACHMENT



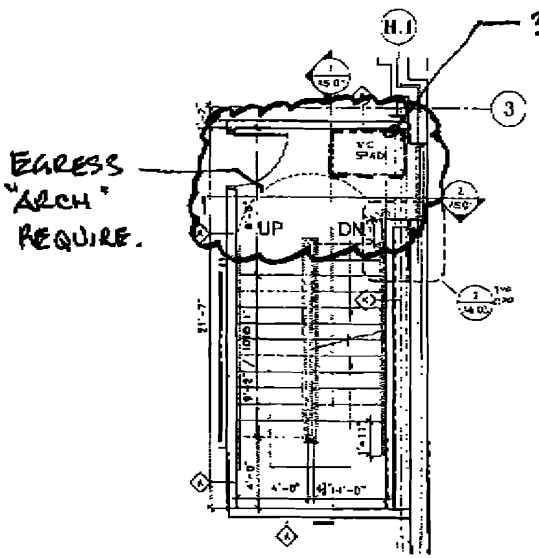
STAIR 'A' AT SECOND FLOOR



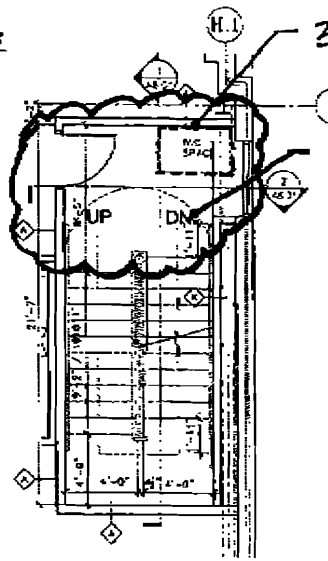
STAIR 'A' AT THIRD FLOOR



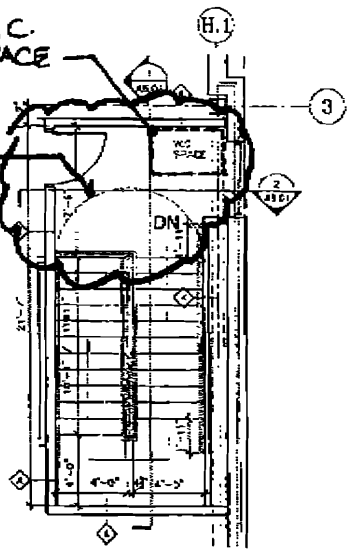
STAIR 'A' AT FOURTH FLOOR



STAIR 'B' AT SECOND FLOOR



STAIR 'B' AT THIRD FLOOR



STAIR 'B' AT FOURTH FLOOR

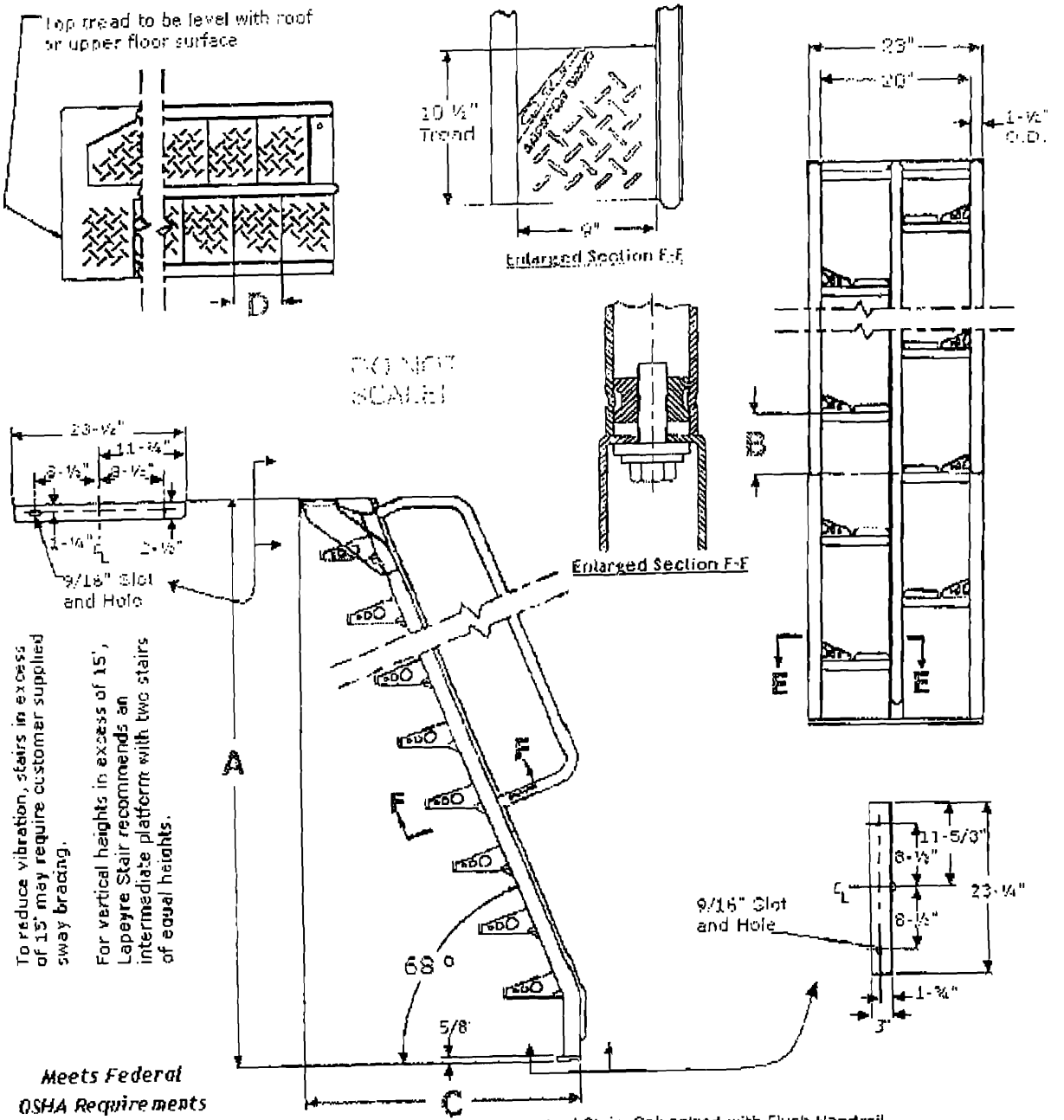
BASIS OF DESIGN - ALT. TREAD DEVICE

A Height	144.000 inches
B Riser Height	8.000 inches
C Horizontal Run	64.447 inches
D Projected Tread	6.464 inches
Number of Risers	18

Lapeyre Stair, Inc. 1-800-535-7631

Lapeyre Stair manufactures products under one or more U.S. and Foreign patents.

Unit Price (US Dollars): $2,105.02



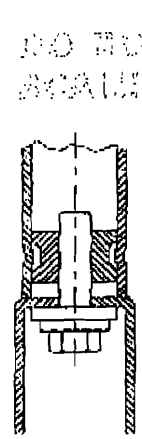
Meets Federal OSHA Requirements

Description: 144 Inch 68 Degree Carbon Steel Stair, Galvanized with Flush Handrail

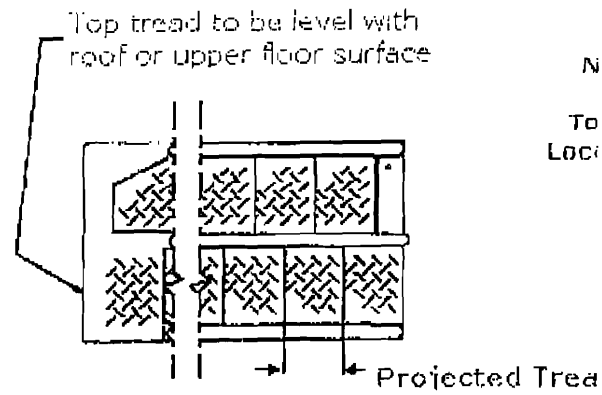
CAD Users: Create CAD Models

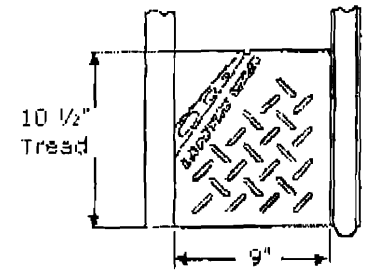
Alternating Tread Stair
Product Info
Technical
Pricing
Ordering
Building Code
Applications

*Note: Before printing, set all margins to ¼".

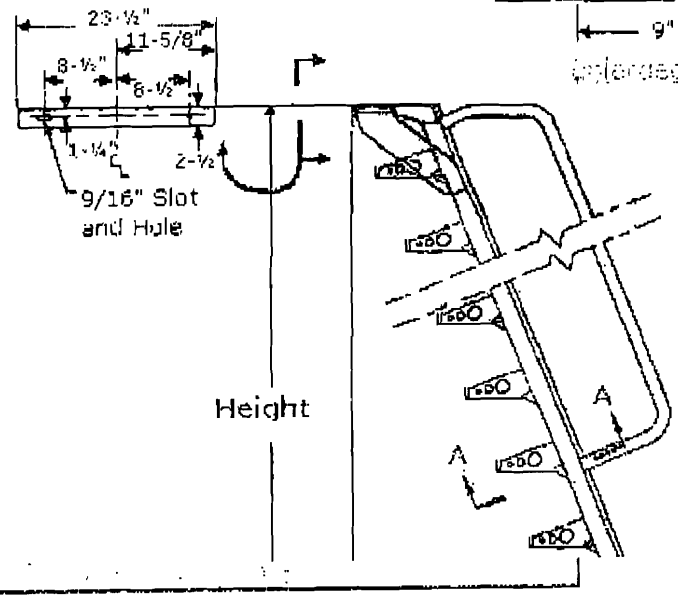


Enlarged Section A-A





Enlarged Section B-B



Home

Alternating Tread Stair Handrail Options

Traditionally, the handrail of Lapeyre's Alternating Tread Stair is a close-fitting handrail with a 17" inside dimension. The close fitting handrail is an added safety feature, enclosing the body to provide additional upper body support.

However, some customers have indicated a need for additional space between the handrails. In response, Lapeyre Stair is now offering a "Straight" handrail option. Instead of narrowing partway down the stair, the handrail remains straight, giving an additional 3" between the handrail.

We continue to recommend the "Narrow" (Original) handrail for the added safety it provides. But if you need additional space, you may request the "Straight" handrail option. The description and dimensions for each rail is outlined in the chart below. The pricing does not change with the handrail option. Please call your customer service representative if you have any questions about which handrail you should use.

	RAIL HEIGHT FROM TOP LANDING	INSIDE HANDRAIL DIMENSION	OUTSIDE HANDRAIL DIMENSION
* Standard Narrow Handrail (original rail)	42"	17"	23"
Standard Straight Handrail (NEW wider rail)	42"	20"	23"
Optional Narrow Handrail (original rail) *For Roof Hatches	• 5-3/4" Steel • 3-3/4" Aluminum	17"	23"
Optional Straight Handrail (NEW wider rail) *For Roof Hatches	• 5-3/4" Steel • 3-3/4" Aluminum	20"	23"
Flush Handrail *Not Available in Aluminum	0" - Terminates at Top Landing	20"	23"

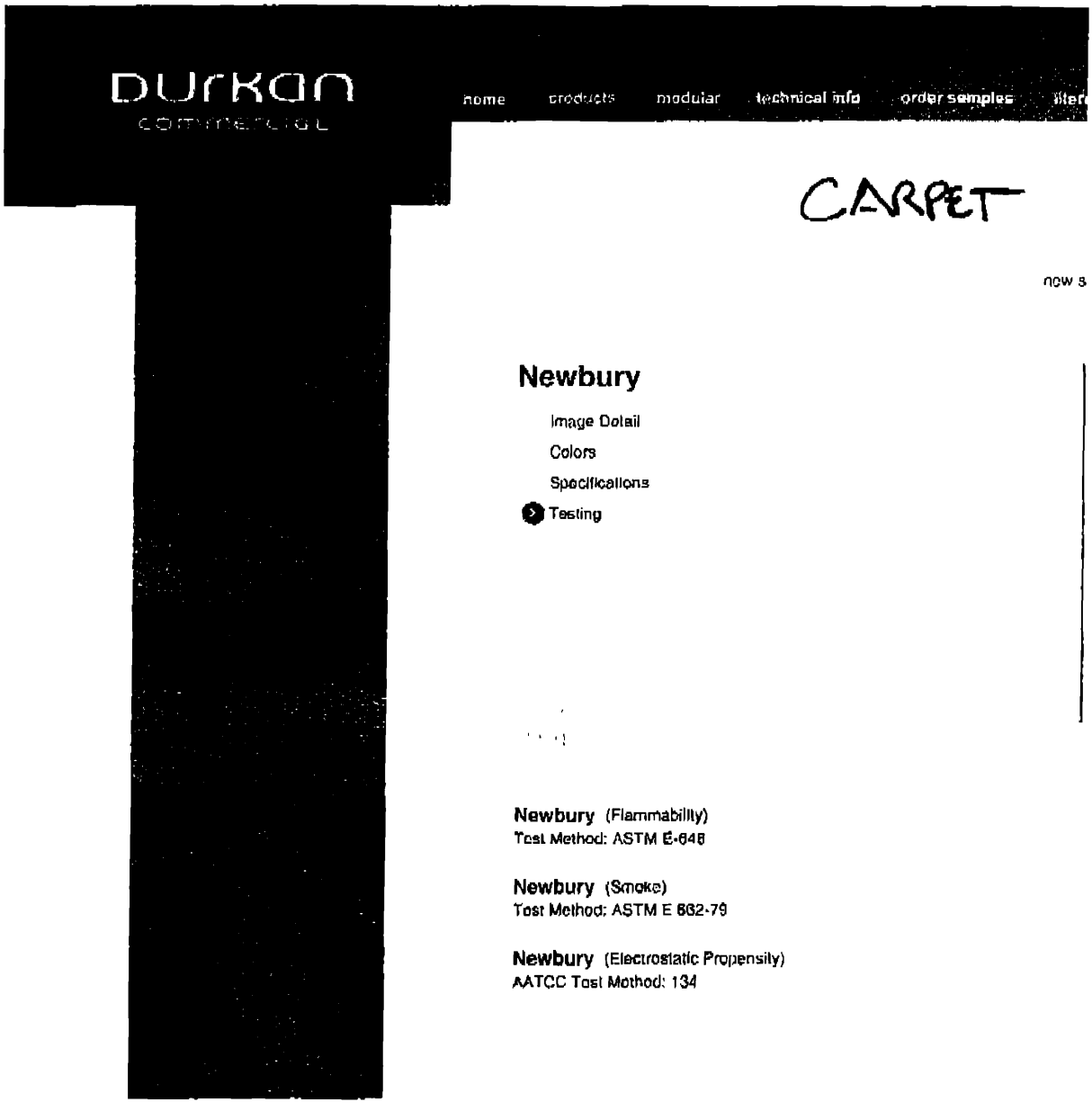
CAD users: Create CAD Models

Alternating Tread Stair
Product Info
Technical/Engine
Pricing
Ordering
Building Codes
Applications

The following **condensed** codes or proposals address the use of alternating tread stairs in certain applications. The codes themselves and/or local code officials should be consulted for specific requirements. To obtain a copy of any of the following call 1-800-535-7631 or go to **Request Additional Information** to have it faxed or mailed to you.

U.S. Federal OSHA	OSHA has issued a letter stating that alternating tread stairs are safe, meet the intent of the OSHA Act, and no citations will be issued. This letter can be found on OSHA's website of **"Standards Interpretation and Compliance Letters"**. In April 1982, OSHA issued a directive to field compliance officers concerning the use of alternating tread stairs. This directive can also be found on OSHA's website: **Instruction STD 1-1.11** OSHA's proposed revision of Industry standards for workplace walking and working surfaces (29 CFR part 1910) addresses alternating tread stairs. (Section 1910.25, of Federal Register / Vol. 55, No. 69 / April 10, 1990 / Proposed Rules). The proposed rule is still outstanding and was re-opened in May 2003. You may view the status of this rule and the full document on their website under **Walking and Working Surfaces; Personal Protective Equipment (Fall Protection Systems) - 68:23527-23568**
INTERNATIONAL BUILDING CODE 2003	Alternating tread stairs are permitted as a means of egress for the following: **1.** To mezzanines less than 250 sq ft in area and serving five occupants or less in building whose occupancy is F, H or S. (1009.10) **2.** To prison guard towers, control rooms or observation decks less than 250 sq ft in area (1009.10) **3.** To unoccupied roofs. (1009.12) **4.** As one of two means of egress to boiler rooms, incinerator rooms, furnance rooms or refrigeration machinery rooms. (1014.3,4) **5.** To stage catwalks, galleries and gridirons leading to a floor or roof (1014.6.1) Alternating tread stairs are also permitted for access to equipment platforms as a non means of egress (505)
SBCCI	The 1994 edition of the Standard Building Code permits

Home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Colors
Specifications
Testing
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Test Method: ASTM E-648
Newbury (Smoke)
Test Method: ASTM E 662-79
Newbury (Electrostatic Propensity)
AATCC Test Method: 134
MohawkNet.com · GSA · Mohawk Industries · Mohawk International · Legal No

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Colors
Specifications
Testing

STYLE NAME	Newbury
PRODUCT TYPE	Broadloom
CONSTRUCTION	Ultra Performance System
SURFACE APPEARANCE	Textured Patterned Loop
NYLON TYPE	Solutia Ultron® Nylon, Type 6,6
GAUGE	1/10 (62.99 rows per 10 cm)
PILE WEIGHT	32.0 oz. per sq. yd. (1085 g/m2)
PILE THICKNESS	.135" (3.43 mm)
STITCHES PER INCH	9.8 (38.58 per 10 cm)
DYE METHOD	Skein Dyed
PROTECTIVE TREATMENT	Sentry
DENSITY	6,533
WEIGHT DENSITY	273.056
PRIMARY BACKING	Not Applicable
BACKING FOUNDATION	Composite Foundation
SECONDARY BACKING	None
PATTERN REPEAT	.75" (W) x .88" (L)
WIDTH	12' (3.66 m)
FLAMMABILITY	ASTM E 648 Class 1 (Glue Down)
SMOKE DENSITY	ASTM E 662 Less than 450
STATIC PROPENSITY	AATCC-134 Under 3.5 KV
IAQ GREEN LABEL	40904952
WARRANTIES	Lifetime Ultra Performance System V

PRODUCT COLOR CHART	593 Blue Chip	851 Boardroc
	824 Bull Market	646 Capital G
	945 Dividend	727 Documer
	688 Monetary	825 Nest Egg

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Date Applied For:	CBL:
06-1802	12/19/2006	073 A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE FA	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	(207) 767-1866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Commercial	

Proposed Use:	Proposed Project Description:
Medical Office Building - New 4 Story Medical Office Building Vanilla Box	New 4 Story Medical Office Building Vanilla Box -see #07-0072 for foundation only

Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 02/27/2007

Note: has been on hold until 2/26/07 **Ok to Issue:** ☑

1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

2) Separate permits shall be required for any new signage. All signage shall be reviewed by the Planning Authority.

Dept: Building **Status:** Approved with Conditions **Reviewer:** Mike Nugent **Approval Date:** 03/05/2007

Note: **Ok to Issue:** ☑

1) Shell Only, individual tenant fit up permits are required for each floor

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Cptn Greg Cass **Approval Date:** 03/01/2007

Note: **Ok to Issue:** ☐

1) Fire alarm system shall be connected by a master box connection.

2) Seperate sprinkler plans shall be submitted

3) Seperqate fire alarm plans shall be submitted.

Comments:

12/20/2006-ldobson: From Jean in Planning

Please continue to hold on this- there are legal isues but Penny was ill today so I could not establish where that has got to.

In addition, I need to check re the conditions and Performance Guarantee on this and have not been able to reach all the relevant parties. Revised site plans have not been submitted.

12/20/2006-ldobson: This is in Marge's area w/ note from Jean Fraser

"F" Fissured ACT CEILINGS

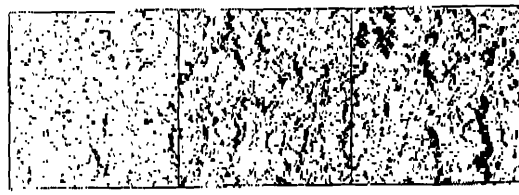
Acoustical Ceilings

Technical Service 800 USG.4YOU
Web Site www.usg.com
Samples/Literature 888 874.2450
Samples/Literature Fax 888 874.2348
Customer Service 800 950.3839
Literature Number SC1816

UL Classified

	Edge	Panel Size	Class	Item No.	NRC	CAC Min.	LR[1]	Color	Grid Options	VOC Class.[2]	Recycled Content[3]	Panel Cost
"F" Fissured Panels	(SQ)	2'x2'x3/4"	Class A	131	.70	35	.79	White	A, B, C	Free	72%	$$
		2'x4'x3/4"	Class A	135	.70	35	.79	White	A, B	Free	72%	$$
*	(SL)	2'x2'x3/4"	Class A	132	.70	35	.79	White	D	Free	72%	$$
		2'x4'x3/4"	Class A	136	.70	35	.79	White	D	Free	72%	$$
	(FL)	2'x2'x3/4"	Class A	139	.70	35	.79	White	E, F, G	Free	72%	$$
"F" Fissured Tile[3,4]	(BESK)	12"x12"x3/4"	Class A	102	.70	25	.79	White	H	Free	72%	$$$$
	(SESK)	12"x12"x3/4"	Class A	101	.70	25	.79	White	I	Free	72%	$$$$

	A	B	C	D	E	F	G	H	I
Grid Profile Options	Donn® DX™/DXL™	Donn® DXW™	Centricitee™	Donn DX/DXL	Centricitee	Fineline™ 1/6	Fineline®	Donn® DX®/DXL™ Concealed	Donn DX/DXL Concealed



Composite of "F" Fissured ceiling products shows range to be expected in a production lot, and possibly in the same panel or tile. Ranges are random and cannot be specified. Texture appearance will vary based on ceiling height, installation methods, and natural variations of the product.

ASTM E1264 classification
Type III, Form 4, Pattern D
ASTM E84 surface burning characteristics
Class A
Flame spread: 25
Smoke developed: 15

Weight
1.5-5 lb./sq. ft.
Thermal resistance
R-1.7
Maximum backloading
See Warranty for details
Maintenance
Can be cleaned easily with a soft brush or vacuum.

Texture
The manufacturing process for cast ceiling panels creates natural, subtle texture variations, which is a distinguishing feature of these products. Because of potential variances between production dates, we recommend ordering and installing cast products by production date code.

Footnotes
1. LR values are shown as averages.
2. Formaldehyde VOC Classification. Classified as formaldehyde-free according to standards established by the Collaborative for High-Performance Schools (CHPS), the State of Washington, the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the American National Standards Institute (ANSI).
3. For details, see the Sustainability section.
4. Contact USG for adhesive recommendations for 12"x12" glue-up applications.
5. Not UL Classified for acoustics.

Safety First!
Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

USG

Manufactured by
USG Interiors, Inc.
125 South Franklin Street
Chicago, IL 60606

ADDITIONAL INFORMATION

Chair pads are recommended under office chairs with roller casters to enhance premature or accelerated wear and act as a deterrent to delamination.

Walk-off mats are recommended at building entryways to reduce soiling.

To ensure a proper installation, a seam sealer must be used on all products wi Reference to C.R.I. Manual #104-1994 is recommended for complete commerc

Backings or other materials may be changed without prior notice when shorlag advancements become available which provide for improvement of the product

This carpet is manufactured and recommended for indoor floor covering use or liability; real or implied when carpet is applied otherwise.

Product specifications are derived from averages, resulting from normal manuf temperature, humidity and color and may vary within normal industry tolerance change. Performance is not affected by such variances.

WALL (ACRYLIC) COATING

DUROPLEX®

High Performance Seamless Interior Coating

WHAT IS DUROPLEX®?
- An interior, high solids, one part water based acrylic coating.
- Designed to deliver high performance results at a moderate price.
- Applies directly to most common substrates. Class "A" non-combustible, non-toxic, very low VOC.
- Exceptional performance against mold and mildew growth.
- Use in lieu of vinyl wallcovering.

DUROPLEX® ADVANTAGES
- Very durable.
- 80% as hard as mild steel.
- Improves the strength of drywall.
- Significantly longer life cycle than vinyl wall covering.

10-YEAR PERFORMANCE WARRANTY
- Against peeling, delaminating, cracking, and chalking.

10-YEAR MOLD/MILDEW WARRANTY
- High perm rate to achieve breathability.
- Engineered formulation which virtually eliminates food sources for organisms combined with Biophase®, a long term mildewcide that provides unequaled performance (over three million square feet installed in tropical regions for ten [10] years without any trace of mildew).

SCRUBBABLE
- Not damaged by water.
- Most marks and scuffs removed after 7 – 10 days of curing, using a stiff scrub brush with liquid soap and water.

DESIGN OPTIONS
- Over twenty-five (25) textural effect/patterns and almost unlimited integral colors, both monochromatic and multi-color finishes.
- Call TRIARCH for samples or a design binder.

DELIVERY TIME
- Quick ship. Most small shipments leave the centrally located factory within 48 hours of an order.

FACTORY TRAINED APPLICATORS
- Over 600 factory trained applicators available nationally and internationally.
- We offer training programs to help insure quality control and minimize installation time.

COST
- Most projects install between $1.00 - $2.00 per square foot.
- Actual job conditions, volume, wall elevations, and local labor may affect installed prices.

PRODUCT DATA
SPECIFICATIONS
- Water based acrylic
- Integral & Colorfast Pigments
- Barcol Hardness of 38
- ASTM E-84, Flame spread = 15
- Smoke contribution = 5
- FAR 25.853(b), FAA Vertical Burn
- After Flame Time <0.1 seconds
- ASTM E-96, English Wet Perms = 28
- Final dry film thickness of 20 mils

SHIPPING AND STORAGE
- Shipped in 5 gallon plastic pails
- Protect from freezing
- Protect from heat over 100°F.
- Stack to maximum of three (3) bails high
- One (1) year shelf life

APPLICATION
- Roller or spray applied depending upon selected finish. Applied by factory trained applicators (i.e., Qualified Duroplex® Applicators). Applicator's field manual is available from the factory.

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE FA	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	(207) 767-1866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Commercial	

2/27/2007-ldobson: I have completed the IBC compliance review and will need the following clarifications/or additonal information. I've discovered that the permit still needs final City Fire and Zoning sign-offs, so I'll be bringing it to City Hall first thing on Monday to get that taken care of. Hopefully , timing wise, they will be done with it quickly and the additional information that I request today will come back to me at the same time, allowing final clean sign off. My review is done so this is the final list:

(This info was not readily available in the plans or spec book)

1) Please confirm that the wall and ceiling finishes in the Atrium are Class Be or better (Section 404.7)

2) Please confirm that the ampacity and or voltage total in the electrical rooms is below that of which requires two means on egress in the National Electrical Code.

3) Please provide a code justification for the omission of the smoke/fire dampers in the ducts that penetrate the atrium enclosure.

4) Please confirm that all carpeting will comply with Section 804.3 and 804.4 of the 2003 IBC.

5) Please a\provide a compliance summary for section 1007.6; Area of Refuge.

6) Please confirm that the horizontal sliding doors will comply with all elements of Section 1008.1.3.3 of the 2003 IBC.

7) Please confirm that the Alternating Tread Device will comply with all elements of Section 1009.10 of the 2003 IBC. (HANDRAILS!!!!)

8)Please confirm that all Glass and Glazing will comply with all elements of Chapter 24 of the 2003 IBC.

9)Please confirm that the tunnel ventilation will comply with Section 3104.11 of the 2003 IBC.

10) Please confirm that all doors used to protect openings in required fire separation assemblies will comply with the applicable elements of Section 715 of the 2003 IBC.
(Elevator doors, vertical exit doors, corridor doors, tunnel doors ETC. , also need UL 1784 compliance with most of these.

In addition, [illegible]
parties. Revised site plans have not been submitted.

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 ST JOHN ST	LANDMARCK HEALTHCARE FA	839 N. JEFFERSON ST SUITE 200	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Ledgewood Construction	27 Maine St. So. Portland	(207) 767-1866
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Commercial	

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Mercy Hospital Bldg

10/6/06 #06-1474 - Phase I foundation ONLY
ok (issued open)

12/15/06 #06-1801 Short Stay Surgical unit
ok (pending - Notes that Lannie has I have -

1/12/07 #07-0044 - Short Stay Surgical unit steel only - connected with #06-1801
ok (issued) open Notes on file

Medical Office Bldg (MOB - 4 Story)

12/19/06 #06-1802 - New 4 Story Medical Office Bldg
I have (Hold) Notes on file
mike signed off

1/23/07 #07-0072 Medical Office Bldg foundation ONL connected with #06-1802
(Pending) 2/13/

This WAS issued 2/13/07 & Never reviewed for Zoning or Fire — it WAS Never Signed off in The System properly either

Special Inspections Program
(2003 International Building Code)

In accordance with the provisions of Chapter 17 of the 2003 International Building Code, this form is to list the special inspections as required for the proposed construction located at:

PROPERTY ADDRESS (print): **Fore River Medical Pavilion, Portland, Maine**

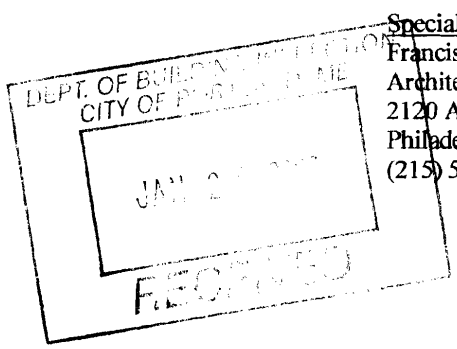
OWNER'S NAME (print): **Landmark Healthcare Facilities, LLC**

The design professional(s) of record shall indicate by a checkmark which of the special inspections listed below are required for the above mentioned construction site:

VERIFICATION & INSPECTION ITEM	REQUIRED
Fabrication of structural load-bearing members and assemblies (1704.2) (Refer to Table 1704.3)	☐
Steel: (1704.3) (Refer to Table 1704.3)	☑
Concrete: (1704.4) (Refer to Table 1704.4)	☑
Masonry: (1704.5) (Refer to Table 1704.5.1 & 1704.5.3)	☐
Fabrication process of prefabricated wood structural elements and assemblies (1704.6)	☐
Existing site soil conditions, Fill placement, load bearing requirements (1704.7)	☑
Pile/ Caisson/ Pier Foundations (1704.8 & 1704.9)	☑
Wall panels and Veneers (*Seismic design category "E" or "F" buildings only)* (1704.10)	☐
Sprayed Fire-Resistant Materials (1704.11)	☐
Exterior Insulation and Finish Systems (EIFS) (1704.12)	☐
Special Cases (Attach separate sheet, if necessary) (1704.13)	☐
Smoke control systems (1704.14)	☐
Seismic resistance (1707)	☐

As Structural Engineer of Record, we are identifying structural items to be inspected and to be administered by the Architect, Design Professional, Francis Cauffman Foley Hoffmann (Responsible for maintaining records of all inspections; furnishing reports to the Building Inspector; and verifying that the special inspector for each required item above is qualified to perform that inspection).

Structural Engineer of Record:
Robert E. Chester Associates
Consulting Engineers
119 Coulter Avenue, Suite 175
Ardmore, PA 19003
(610) 645-9570



Special Inspections Administrator:
Francis Cauffman Foley Hoffmann
Architects, Ltd.
2120 Arch Street
Philadelphia, PA 19103
(215) 568-8250

Table 1704.4
Required Verification and Inspection of Concrete Construction

Yes	No	Verification & Inspection	Continuous	Periodic
☑	☐	1. Inspection of reinforcing steel, including prestressing tendons, and placement	☐	☑
☐	☑	2. Inspection of reinforcing steel, welding in accordance with Table 1704.3, Item 5B	☐	☐
☑	☐	3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased	☑	☐
☑	☐	4. Verifying use of required design mix	☐	☑
☑	☐	5. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	☑	☐
☐	☑	6. Inspection of concrete and shotcrete placement for proper application techniques	☑	☐
☑	☐	7. Inspection for maintenance of specified curing temperature and techniques	☐	☑
☐	☑	8. Inspection of prestressed concrete:		
☐	☐	a. Application of prestressing forces	☑	☐
☐	☐	b. Grouting of bonded prestressing tendons in the seismic-force-resisting system	☑	☐
☐	☑	9. Erection of precast concrete members	☐	☑
☐	☑	10. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs	☐	☑

STRUCTURAL DESIGN CRITERIA (IBC 2003, ASCE 7-02)

GENERAL

- BUILDING CLASSIFICATION CATEGORY II
- BUILDING LOCATION: PORTLAND, MAINE

LIVE LOADS - ROOF

- GROUND SNOW LOAD (Pg): 50 PSF
- SNOW LOAD IMPORTANCE FACTOR = 1.0
- EXPOSURE FACTOR (Ce) = 1.0 (CATEGORY "C" – PARTIALLY EXPOSED)
- THERMAL FACTOR (Ct) = 1.0
- ROOF SNOW LOAD (Pf): 35 PSF
- APPLICABLE DRIFT LOADS AND CONCENTRATED LOADS FROM ROOFTOP EQUIPMENT INCLUDED

LIVE LOADS – FLOOR

- TENANT SPACE: 50 PSF PLUS 20 PSF PARTITIONS
- FIRST FLOOR CORRIDORS, ALL LOBBIES AND STAIRS: 100 PSF
- CORRIDORS ABOVE FIRST FLOOR: 80 PSF
- MECH./ ELEC. ROOMS (LOWER LEVEL): 150 PSF

WIND DESIGN CRITERIA

- BASIC WIND SPEED (V) = 100 MPH
- WIND EXPOSURE CATEGORY "C"
- WIND IMPORTANCE FACTOR = 1.00
- ENCLOSURE CLASSIFICATION: ENCLOSED
- INTERNAL PRESSURE COEFFICIENT (Gcpi) = (+/-) 0.18
- MEAN ROOF HEIGHT = 53 FT., ROOF ANGLE = 0 TO 5 DEGREES (FLAT)
- WIND PRESSURES: REFER TO IBC TABLE 1609.6.2.1 (SIMPLIFIED DESIGN WIND PRESSURES – MAIN WIND-FORCE REINFORCING SYSTEM), ADJUSTMENT FACTOR = 1.57

SEISMIC DESIGN CRITERIA

- SEISMIC USE GROUP I
- SITE CLASS "E"
- SEISMIC IMPORTANCE FACTOR = 1.00
- SPECTRAL RESPONSE ACCELERATIONS: SHORT PERIOD (S_{DS}) = .473
  1-SECOND PERIOD (S_{D1}) = .198
- SEISMIC DESIGN CATEGORY "C" (SHORT AND 1 SECOND PERIODS)
- BASIC SEISMIC REINFORCING SYSTEM: STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DESIGNED FOR SEISMIC RESISTANCE
- RESPONSE MODIFICATION FACTOR (R) = 3
- SEISMIC RESPONSE COEFFICIENT (CS) = .112
- DESIGN BASE SHEAR (V) = 717 k
- ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE

SOIL AND FOUNDATIONS

- PILE FOUNDATIONS: ALLOWABLE AXIAL COMPRESSIVE PILE CAPACITY (PER PILE) = 150 KIPS (HP 10 x 57)
- SLAB ON GRADE (NON-SUPPORTED), BASEMENT LEVEL SLAB AND TUNNEL: ALLOWABLE SOIL BEARING PRESSURE = 1000 PSF
- REFER TO S.W. COLE ENGINEERING'S GEOTECHNICAL REPORT NO. 06-0588, REV. 1, SEPTEMBER 7, 2006

Snow Loads

Flat Roof $(p_f) = 0.7\ C_e\ C_t\ I\ p_g$

Exposure "C"

C_e (Exposure Factor) = 1.0 (Table 7-2) Partially Exposed Cat. "C"

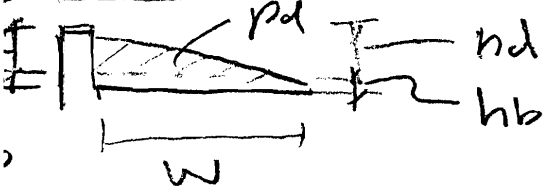
C_t (Thermal Factor) = 1.0

I (Importance Factor) = 1.0 (Table 7-3)
(Category II, Table 7-4)

p_g (Ground Snow Load) = 50 psf

$p_f = 0.7\ (1.0)\ 1.0\ (1.0)\ 50 = 35$ psf Flat Roof Snow

Drift (Windward) at Parapet



$h_b = p_f / \gamma$ (Sect. 7-7)

$\gamma = 0.13\ p_g + 1t$

$= 0.13\ (50) + 1t = 20.5$ (< 30)

$h_b = 35 / 20.5 = 1.7'$

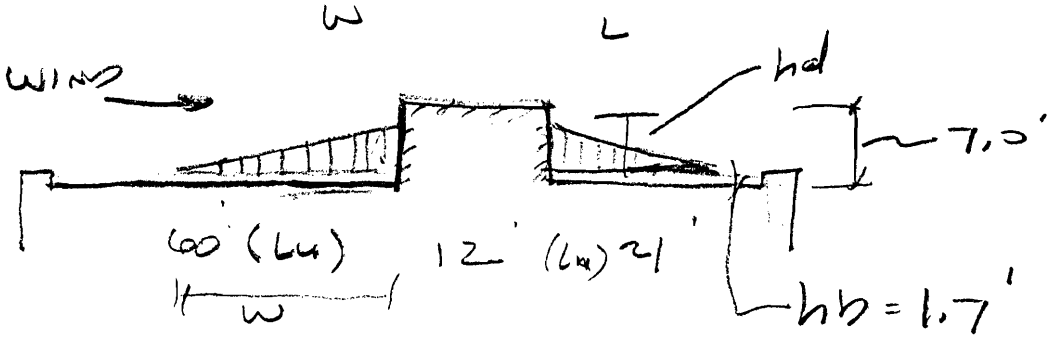
Total parapet ht. max = 1.7'

$h_c = 1.7 - 1.7 = 0'$

$h_c / h_b = 0 / 1.7 = 0 < .2$

Drift load not applied

DRIFT LOAD @ MECH. UNITS



$h_c = 7.0' - 1.7 = 5.3'$

$h_c / h_b = 5.3 / 1.7 = 3.12 > .2$ DRIFT LOAD CONSIDERED

LEEWARD · $h_d = 1.8'$ (FIG. 7-9)

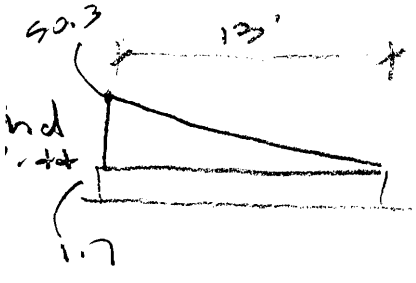
WINDWARD h_d · from FIG. 7-9 → 3.25

$3.25 (.75) = 2.44'$ ← USE

$h_c \geq h_d \rightarrow W = 4 h_d$

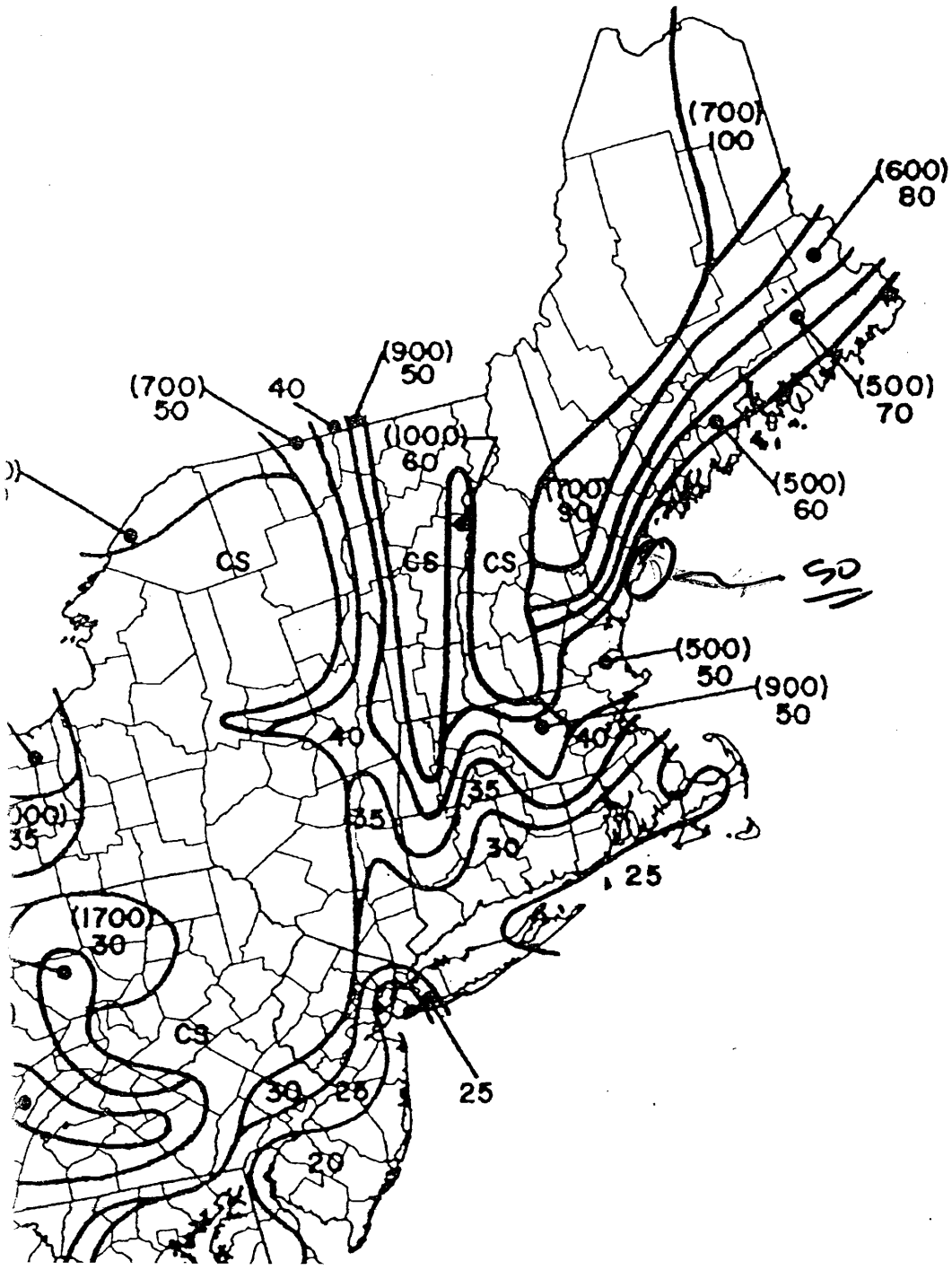
& DRIFT LG. = h_d

$W = 4 (3.25) = 13'$



35 psf / 1.7 = 20.6 pcf housing

20.6 × 2.44 = 50.3 #/ft @ HP OF DRIFT LOAD


(700)
100
(600)
80
(900)
50
(700)
50
40
(1000)
60
(500)
70
(500)
60
CS
CS
CS
(500)
50
(900)
50
40
40
35
35
30
25
(1700)
30
CS
30
25
25
20

SNOW

WIND DESIGN CRITERIA

V (WIND SPEED) = 100 mph

LOW RISE BLDG. (ROOF HGT. ≤ 60')

IMPORTANCE FACTOR (6-1, pg.73) = 1.0

(ENCLOSURE CLASSIFICATION CAT. II)

MEAN ROOF HGT. = 53', EXPOSURE "C" (ADJUST. FACTOR λ = 1.57)

ROOF ANGLE 0° TO 5° (FLAT)

LOW RISE BLDG.: VELOCITY PRESSURE q_h

BLDG. SURFACES

1	= .40	(GCpf - Fig 6-10 pg. 56)
1E	= .61	
2	= -.69	
2E	-1.07	

INTERNAL PRESSURE COEFFICIENT (GC_{pi})

= +/- .18 (Fig 6-5 pg. 49)

MAIN WIND FORCE RESISTING SYSTEM

HOR/VERT. PRESSURES: (Fig. 6-2 pg. 42)

Hor. A = 15.9
Vert. E = 19.1
} PS30

$PS = \lambda I_{PS30}$ = 1.57 (1.0) 15.9 = 24.96 (USE 25 psf)

1.57 (1.0) -19.1 = -29.98 (USE 30 psf)

COMPONENTS/CLADDING

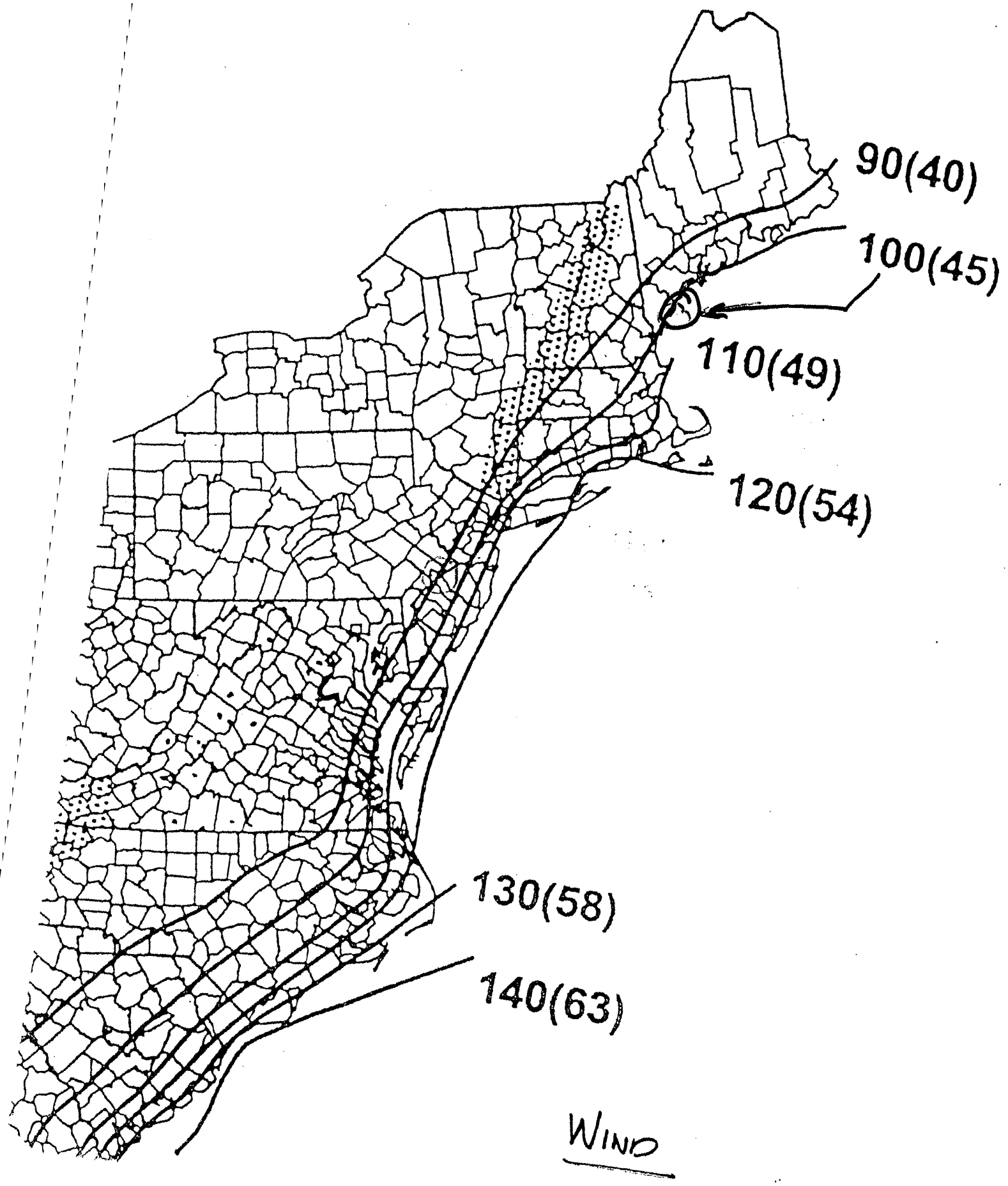
$p_{net} = \lambda I p_{net30}$

1.57 (1.0) 7.3 = 11.46 psf (USE 12) POSITIVE PRESSURES

1.57 (1.0) (-16.5) = -25.9 psf (USE 26)

1.57 (1.0) (19.5) = -30.62 psf (USE 31) NEGATIVE PRESSURES

ZONE	p_{net30}
1	7.3 (-16.5)
2	7.3 (-19.5)
3	7.3 (-19.5)
4	15.7 (-16.8)
5	15.7 (-18.7)


90(40)
100(45)
110(49)
120(54)
130(58)
140(63)
WIND

Main Wind Force Resisting System – Method 1		h ≤ 60 ft.
Figure 6-2 (cont'd)	Design Wind Pressures	**Walls & Roofs**
Enclosed Buildings		

Simplified Design Wind Pressure , p_{S30} (psf) *(Exposure B at h = 30 ft. with I = 1.0)*

Basic Wind Speed (mph)	Roof Angle (degrees)	Load Case	Zones									
			Horizontal Pressures				Vertical Pressures				Overhangs	
			A	B	C	D	E	F	G	H	EOH	GOH
85	0 to 5°	1	11.5	-5.9	7.6	-3.5	-13.8	-7.8	-9.6	-6.1	-19.3	-15.1
	10°	1	12.9	-5.4	8.6	-3.1	-13.8	-8.4	-9.6	-6.5	-19.3	-15.1
	15°	1	14.4	-4.8	9.6	-2.7	-13.8	-9.0	-9.6	-6.9	-19.3	-15.1
	20°	1	15.9	-4.2	10.6	-2.3	-13.8	-9.6	-9.6	-7.3	-19.3	-15.1
	25°	1	14.4	2.3	10.4	2.4	-6.4	-8.7	-4.6	-7.0	-11.9	-10.1
		2	-----	-----	-----	-----	-2.4	-4.7	-0.7	-3.0	-----	-----
	30 to 45	1	12.9	8.8	10.2	7.0	1.0	-7.8	0.3	-6.7	-4.5	-5.2
		2	12.9	8.8	10.2	7.0	5.0	-3.9	4.3	-2.8	-4.5	-5.2
90	0 to 5°	1	12.8	-6.7	8.5	-4.0	-15.4	-8.8	-10.7	-6.8	-21.6	-16.9
	10°	1	14.5	-6.0	9.6	-3.5	-15.4	-9.4	-10.7	-7.2	-21.6	-16.9
	15°	1	16.1	-5.4	10.7	-3.0	-15.4	-10.1	-10.7	-7.7	-21.6	-16.9
	20°	1	17.8	-4.7	11.9	-2.6	-15.4	-10.7	-10.7	-8.1	-21.6	-16.9
	25°	1	16.1	2.6	11.7	2.7	-7.2	-9.8	-5.2	-7.8	-13.3	-11.4
		2	-----	-----	-----	-----	-2.7	-5.3	-0.7	-3.4	-----	-----
	30 to 45	1	14.4	9.9	11.5	7.9	1.1	-8.8	0.4	-7.5	-5.1	-5.8
		2	14.4	9.9	11.5	7.9	5.6	-4.3	4.8	-3.1	-5.1	-5.8
100	0 to 5°	1	15.9	-8.2	10.5	-4.9	-19.1	-10.8	-13.3	-8.4	-26.7	-20.9
	10°	1	17.9	-7.4	11.9	-4.3	-19.1	-11.6	-13.3	-8.9	-26.7	-20.9
	15°	1	19.9	-6.6	13.3	-3.8	-19.1	-12.4	-13.3	-9.5	-26.7	-20.9
	20°	1	22.0	-5.8	14.6	-3.2	-19.1	-13.3	-13.3	-10.1	-26.7	-20.9
	25°	1	19.9	3.2	14.4	3.3	-8.8	-12.0	-6.4	-9.7	-16.5	-14.0
		2	-----	-----	-----	-----	-3.4	-6.6	-0.9	-4.2	-----	-----
	30 to 45	1	17.8	12.2	14.2	9.8	1.4	-10.8	0.5	-9.3	-6.3	-7.2
		2	17.8	12.2	14.2	9.8	6.9	-5.3	5.9	-3.8	-6.3	-7.2
110	0 to 5°	1	19.2	-10.0	12.7	-5.9	-23.1	-13.1	-16.0	-10.1	-32.3	-25.3
	10°	1	21.6	-9.0	14.4	-5.2	-23.1	-14.1	-16.0	-10.8	-32.3	-25.3
	15°	1	24.1	-8.0	16.0	-4.6	-23.1	-15.1	-16.0	-11.5	-32.3	-25.3
	20°	1	26.6	-7.0	17.7	-3.9	-23.1	-16.0	-16.0	-12.2	-32.3	-25.3
	25°	1	24.1	3.9	17.4	4.0	-10.7	-14.6	-7.7	-11.7	-19.9	-17.0
		2	-----	-----	-----	-----	-4.1	-7.9	-1.1	-5.1	-----	-----
	30 to 45	1	21.6	14.8	17.2	11.8	1.7	-13.1	0.6	-11.3	-7.6	-8.7
		2	21.6	14.8	17.2	11.8	8.3	-6.5	7.2	-4.6	-7.6	-8.7
120	0 to 5°	1	22.8	-11.9	15.1	-7.0	-27.4	-15.6	-19.1	-12.1	-38.4	-30.1
	10°	1	25.8	-10.7	17.1	-6.2	-27.4	-16.8	-19.1	-12.9	-38.4	-30.1
	15°	1	28.7	-9.5	19.1	-5.4	-27.4	-17.9	-19.1	-13.7	-38.4	-30.1
	20°	1	31.6	-8.3	21.1	-4.6	-27.4	-19.1	-19.1	-14.5	-38.4	-30.1
	25°	1	28.6	4.6	20.7	4.7	-12.7	-17.3	-9.2	-13.9	-23.7	-20.2
		2	-----	-----	-----	-----	-4.8	-9.4	-1.3	-6.0	-----	-----
	30 to 45	1	25.7	17.6	20.4	14.0	2.0	-15.6	0.7	-13.4	-9.0	-10.3
		2	25.7	17.6	20.4	14.0	9.9	-7.7	8.6	-5.5	-9.0	-10.3
130	0 to 5°	1	26.8	-13.9	17.8	-8.2	-32.2	-18.3	-22.4	-14.2	-45.1	-35.3
	10°	1	30.2	-12.5	20.1	-7.3	-32.2	-19.7	-22.4	-15.1	-45.1	-35.3
	15°	1	33.7	-11.2	22.4	-6.4	-32.2	-21.0	-22.4	-16.1	-45.1	-35.3
	20°	1	37.1	-9.8	24.7	-5.4	-32.2	-22.4	-22.4	-17.0	-45.1	-35.3
	25°	1	33.6	5.4	24.3	5.5	-14.9	-20.4	-10.8	-16.4	-27.8	-23.7
		2	-----	-----	-----	-----	-5.7	-11.1	-1.5	-7.1	-----	-----
	30 to 45	1	30.1	20.6	24.0	16.5	2.3	-18.3	0.8	-15.7	-10.6	-12.1
		2	30.1	20.6	24.0	16.5	11.6	-9.0	10.0	-6.4	-10.6	-12.1

Unit Conversions – 1.0 ft = 0.3048 m; 1.0 psf = 0.0479 kN/m^2

Main Wind Force Resisting System – Method 1		h ≤ 60 ft.
Figure 6-2 (cont'd)	Design Wind Pressures	Walls & Roofs
Enclosed Buildings		

Simplified Design Wind Pressure , p_{S30} (psf) *(Exposure B at h = 30 ft. with I = 1.0)*

Basic Wind Speed (mph)	Roof Angle (degrees)	Load Case	Zones									
			Horizontal Pressures				Vertical Pressures				Overhangs	
			A	B	C	D	E	F	G	H	EOH	GOH
140	0 to 5°	1	31.1	-16.1	20.6	-9.6	-37.3	-21.2	-26.0	-16.4	-52.3	-40.9
	10°	1	35.1	-14.5	23.3	-8.5	-37.3	-22.8	-26.0	-17.5	-52.3	-40.9
	15°	1	39.0	-12.9	26.0	-7.4	-37.3	-24.4	-26.0	-18.6	-52.3	-40.9
	20°	1	43.0	-11.4	28.7	-6.3	-37.3	-26.0	-26.0	-19.7	-52.3	-40.9
	25°	1	39.0	6.3	28.2	6.4	-17.3	-23.6	-12.5	-19.0	-32.3	-27.5
		2	------	------	------	------	-6.6	-12.8	-1.8	-8.2	------	------
	30 to 45	1	35.0	23.9	27.8	19.1	2.7	-21.2	0.9	-18.2	-12.3	-14.0
		2	35.0	23.9	27.8	19.1	13.4	-10.5	11.7	-7.5	-12.3	-14.0
150	0 to 5°	1	35.7	-18.5	23.7	-11.0	-42.9	-24.4	-29.8	-18.9	-60.0	-47.0
	10°	1	40.2	-16.7	26.8	-9.7	-42.9	-26.2	-29.8	-20.1	-60.0	-47.0
	15°	1	44.8	-14.9	29.8	-8.5	-42.9	-28.0	-29.8	-21.4	-60.0	-47.0
	20°	1	49.4	-13.0	32.9	-7.2	-42.9	-29.8	-29.8	-22.6	-60.0	-47.0
	25°	1	44.8	7.2	32.4	7.4	-19.9	-27.1	-14.4	-21.8	-37.0	-31.6
		2	------	------	------	------	-7.5	-14.7	-2.1	-9.4	------	------
	30 to 45	1	40.1	27.4	31.9	22.0	3.1	-24.4	1.0	-20.9	-14.1	-16.1
		2	40.1	27.4	31.9	22.0	15.4	-12.0	13.4	-8.6	-14.1	-16.1
170	0 to 5°	1	45.8	-23.8	30.4	-14.1	-55.1	-31.3	-38.3	-24.2	-77.1	-60.4
	10°	1	51.7	-21.4	34.4	-12.5	-55.1	-33.6	-38.3	-25.8	-77.1	-60.4
	15°	1	57.6	-19.1	38.3	-10.9	-55.1	-36.0	-38.3	-27.5	-77.1	-60.4
	20°	1	63.4	-16.7	42.3	-9.3	-55.1	-38.3	-38.3	-29.1	-77.1	-60.4
	25°	1	57.5	9.3	41.6	9.5	-25.6	-34.8	-18.5	-28.0	-47.6	-40.5
		2	------	------	------	------	-9.7	-18.9	-2.6	-12.1	------	------
	30 to 45	1	51.5	35.2	41.0	28.2	4.0	-31.3	1.3	-26.9	-18.1	-20.7
		2	51.5	35.2	41.0	28.2	19.8	-15.4	17.2	-11.0	-18.1	-20.7

Adjustment Factor for Building Height and Exposure, λ

Mean roof height (ft)	Exposure B	Exposure C	Exposure D
15	1.00	1.21	1.47
20	1.00	1.29	1.55
25	1.00	1.35	1.61
30	1.00	1.40	1.66
35	1.05	1.45	1.70
40	1.09	1.49	1.74
45	1.12	1.53	1.78
50	1.16	1.56	1.81
55	1.19	1.59	1.84
60	1.22	1.62	1.87

53' →

Unit Conversions – 1.0 ft = 0.3048 m; 1.0 psf = 0.0479 kN/m^2

Components and Cladding – Method 1		h ≤ 60 ft.
Figure 6-3 (cont'd)	Design Wind Pressures	Walls & Roofs
Enclosed Buildings		

Net Design Wind Pressure , p_{net30} (psf) *(Exposure B at h = 30 ft. with I = 1.0)*

	Zone	Effective wind area (sf)	Basic Wind Speed V (mph)																	
			85		90		100		110		120		130		140		150		170	
Roof 0 to 7 degrees	1	10	5.3	-13.0	5.9	-14.6	7.3	-18.0	8.9	-21.8	10.5	-25.9	12.4	-30.4	14.3	-35.3	16.5	-40.5	21.1	-52.0
	1	20	5.0	-12.7	5.6	-14.2	6.9	-17.5	8.3	-21.2	9.9	-25.2	11.6	-29.6	13.4	-34.4	15.4	-39.4	19.8	-50.7
	1	50	4.5	-12.2	5.1	-13.7	6.3	-16.9	7.6	-20.5	9.0	-24.4	10.6	-28.6	12.3	-33.2	14.1	-38.1	18.1	-48.9
	1	100	4.2	-11.9	4.7	-13.3	5.8	-16.5	7.0	-19.9	8.3	-23.7	9.8	-27.8	11.4	-32.3	13.0	-37.0	16.7	-47.6
	2	10	5.3	-21.8	5.9	-24.4	7.3	-30.2	8.9	-36.5	10.5	-43.5	12.4	-51.0	14.3	-59.2	16.5	-67.9	21.1	-87.2
	2	20	5.0	-19.5	5.6	-21.8	6.9	-27.0	8.3	-32.6	9.9	-38.8	11.6	-45.6	13.4	-52.9	15.4	-60.7	19.8	-78.0
	2	50	4.5	-16.4	5.1	-18.4	6.3	-22.7	7.6	-27.5	9.0	-32.7	10.6	-38.4	12.3	-44.5	14.1	-51.1	18.1	-65.7
	2	100	4.2	-14.1	4.7	-15.8	5.8	-19.5	7.0	-23.6	8.3	-28.1	9.8	-33.0	11.4	-38.2	13.0	-43.9	16.7	-56.4
	3	10	5.3	-32.8	5.9	-36.8	7.3	-45.4	8.9	-55.0	10.5	-65.4	12.4	-76.8	14.3	-89.0	16.5	-102.2	21.1	-131.3
	3	20	5.0	-27.2	5.6	-30.5	6.9	-37.6	8.3	-45.5	9.9	-54.2	11.6	-63.6	13.4	-73.8	15.4	-84.7	19.8	-108.7
	3	50	4.5	-19.7	5.1	-22.1	6.3	-27.3	7.6	-33.1	9.0	-39.3	10.6	-46.2	12.3	-53.5	14.1	-61.5	18.1	-78.9
	3	100	4.2	-14.1	4.7	-15.8	5.8	-19.5	7.0	-23.6	8.3	-28.1	9.8	-33.0	11.4	-38.2	13.0	-43.9	16.7	-56.4
Roof > 7 to 27 degrees	1	10	7.5	-11.9	8.4	-13.3	10.4	-16.5	12.5	-19.9	14.9	-23.7	17.5	-27.8	20.3	-32.3	23.3	-37.0	30.0	-47.6
	1	20	6.8	-11.6	7.7	-13.0	9.4	-16.0	11.4	-19.4	13.6	-23.0	16.0	-27.0	18.5	-31.4	21.3	-36.0	27.3	-46.3
	1	50	6.0	-11.1	6.7	-12.5	8.2	-15.4	10.0	-18.6	11.9	-22.2	13.9	-26.0	16.1	-30.2	18.5	-34.6	23.8	-44.5
	1	100	5.3	-10.8	5.9	-12.1	7.3	-14.9	8.9	-18.1	10.5	-21.5	12.4	-25.2	14.3	-29.3	16.5	-33.6	21.1	-43.2
	2	10	7.5	-20.7	8.4	-23.2	10.4	-28.7	12.5	-34.7	14.9	-41.3	17.5	-48.4	20.3	-56.2	23.3	-64.5	30.0	-82.8
	2	20	6.8	-19.0	7.7	-21.4	9.4	-26.4	11.4	-31.9	13.6	-38.0	16.0	-44.6	18.5	-51.7	21.3	-59.3	27.3	-76.2
	2	50	6.0	-16.9	6.7	-18.9	8.2	-23.3	10.0	-28.2	11.9	-33.6	13.9	-39.4	16.1	-45.7	18.5	-52.5	23.8	-67.4
	2	100	5.3	-15.2	5.9	-17.0	7.3	-21.0	8.9	-25.5	10.5	-30.3	12.4	-35.6	14.3	-41.2	16.5	-47.3	21.1	-60.8
	3	10	7.5	-30.6	8.4	-34.3	10.4	-42.4	12.5	-51.3	14.9	-61.0	17.5	-71.6	20.3	-83.1	23.3	-95.4	30.0	-122.5
	3	20	6.8	-28.6	7.7	-32.1	9.4	-39.6	11.4	-47.9	13.6	-57.1	16.0	-67.0	18.5	-77.7	21.3	-89.2	27.3	-114.5
	3	50	6.0	-26.0	6.7	-29.1	8.2	-36.0	10.0	-43.5	11.9	-51.8	13.9	-60.8	16.1	-70.5	18.5	-81.0	23.8	-104.0
	3	100	5.3	-24.0	5.9	-26.9	7.3	-33.2	8.9	-40.2	10.5	-47.9	12.4	-56.2	14.3	-65.1	16.5	-74.8	21.1	-96.0
Roof > 27 to 45 degrees	1	10	11.9	-13.0	13.3	-14.6	16.5	-18.0	19.9	-21.8	23.7	-25.9	27.8	-30.4	32.3	-35.3	37.0	-40.5	47.6	-52.0
	1	20	11.6	-12.3	13.0	-13.8	16.0	-17.1	19.4	-20.7	23.0	-24.6	27.0	-28.9	31.4	-33.5	36.0	-38.4	46.3	-49.3
	1	50	11.1	-11.5	12.5	-12.8	15.4	-15.9	18.6	-19.2	22.2	-22.8	26.0	-26.8	30.2	-31.1	34.6	-35.7	44.5	-45.8
	1	100	10.8	-10.8	12.1	-12.1	14.9	-14.9	18.1	-18.1	21.5	-21.5	25.2	-25.2	29.3	-29.3	33.6	-33.6	43.2	-43.2
	2	10	11.9	-15.2	13.3	-17.0	16.5	-21.0	19.9	-25.5	23.7	-30.3	27.8	-35.6	32.3	-41.2	37.0	-47.3	47.6	-60.8
	2	20	11.6	-14.5	13.0	-16.3	16.0	-20.1	19.4	-24.3	23.0	-29.0	27.0	-34.0	31.4	-39.4	36.0	-45.3	46.3	-58.1
	2	50	11.1	-13.7	12.5	-15.3	15.4	-18.9	18.6	-22.9	22.2	-27.2	26.0	-32.0	30.2	-37.1	34.6	-42.5	44.5	-54.6
	2	100	10.8	-13.0	12.1	-14.6	14.9	-18.0	18.1	-21.8	21.5	-25.9	25.2	-30.4	29.3	-35.3	33.6	-40.5	43.2	-52.0
	3	10	11.9	-15.2	13.3	-17.0	16.5	-21.0	19.9	-25.5	23.7	-30.3	27.8	-35.6	32.3	-41.2	37.0	-47.3	47.6	-60.8
	3	20	11.6	-14.5	13.0	-16.3	16.0	-20.1	19.4	-24.3	23.0	-29.0	27.0	-34.0	31.4	-39.4	36.0	-45.3	46.3	-58.1
	3	50	11.1	-13.7	12.5	-15.3	15.4	-18.9	18.6	-22.9	22.2	-27.2	26.0	-32.0	30.2	-37.1	34.6	-42.5	44.5	-54.6
	3	100	10.8	-13.0	12.1	-14.6	14.9	-18.0	18.1	-21.8	21.5	-25.9	25.2	-30.4	29.3	-35.3	33.6	-40.5	43.2	-52.0
Wall	4	10	13.0	-14.1	14.6	-15.8	18.0	-19.5	21.8	-23.6	25.9	-28.1	30.4	-33.0	35.3	-38.2	40.5	-43.9	52.0	-56.4
	4	20	12.4	-13.5	13.9	-15.1	17.2	-18.7	20.8	-22.6	24.7	-26.9	29.0	-31.6	33.7	-36.7	38.7	-42.1	49.6	-54.1
	4	50	11.6	-12.7	13.0	-14.3	16.1	-17.6	19.5	-21.3	23.2	-25.4	27.2	-29.8	31.6	-34.6	36.2	-39.7	46.6	-51.0
	4	100	11.1	-12.2	12.4	-13.6	15.3	-16.8	18.5	-20.4	22.0	-24.2	25.9	-28.4	30.0	-33.0	34.4	-37.8	44.2	-48.6
	4	500	9.7	-10.8	10.9	-12.1	13.4	-14.9	16.2	-18.1	19.3	-21.5	22.7	-25.2	26.3	-29.3	30.2	-33.6	38.8	-43.2
	5	10	13.0	-17.4	14.6	-19.5	18.0	-24.1	21.8	-29.1	25.9	-34.7	30.4	-40.7	35.3	-47.2	40.5	-54.2	52.0	-69.6
	5	20	12.4	-16.2	13.9	-18.2	17.2	-22.5	20.8	-27.2	24.7	-32.4	29.0	-38.0	33.7	-44.0	38.7	-50.5	49.6	-64.9
	5	50	11.6	-14.7	13.0	-16.5	16.1	-20.3	19.5	-24.6	23.2	-29.3	27.2	-34.3	31.6	-39.8	36.2	-45.7	46.6	-58.7
	5	100	11.1	-13.5	12.4	-15.1	15.3	-18.7	18.5	-22.6	22.0	-26.9	25.9	-31.6	30.0	-36.7	34.4	-42.1	44.2	-54.1
	5	500	9.7	-10.8	10.9	-12.1	13.4	-14.9	16.2	-18.1	19.3	-21.5	22.7	-25.2	26.3	-29.3	30.2	-33.6	38.8	-43.2

Unit Conversions – 1.0 ft = 0.3048 m; 1.0 sf = 0.0929 m^2; 1.0 psf = 0.0479 kN/m^2

MAIN FORCE WIND PRESSURES, P_{S30} (PSF) *

BASIC WIND SPEED (mph)	ROOF ANGLE (DEGREES)	HORIZONTAL				VERTICAL				WINDWARD OVERHANGS	
		END ZONE		INTERIOR ZONE		END ZONE		INTERIOR ZONE		END ZONE	INTERIOR ZONE
		WALL	ROOF	WALL	ROOF	WINDWARD ROOF	LEEWARD ROOF	WINDWARD ROOF	LEEWARD ROOF		
100	0 TO 5°	15.9	-8.2	10.5	-4.9	-19.1	-10.8	-13.3	-8.4	-26.7	-20.9

COMPONENT AND CLADDING PRESSURES, P_{NET30} (PSF) *

BASIC WIND SPEED (mph)	EFFECTIVE WIND AREA (SF)	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5	
		POS.	NEG.	POS.	NEG.	POS.	NEG.	POS.	NEG.	POS.	NEG.
100	10	7.3	-18.0	7.3	-30.2	7.3	-45.4	18.0	-19.5	18.0	-24.1
	20	6.9	-17.5	6.9	-27.0	6.9	-37.6	17.2	-18.7	17.2	-22.5
	50	6.3	-16.9	6.3	-22.7	6.3	-27.3	16.1	-17.6	16.1	-20.3
	100	5.8	-16.5	5.8	-19.5	5.8	-19.5	15.3	-16.8	15.3	-18.7
	500	—	—	—	—	—	—	13.4	-14.9	13.4	-14.9

REFERTO IBC FIG. 1609.6.2.2 FOR EXPLANATION OF ZONES

* VALUES IN THIS TABLE MUST BE MULTIPLIED BY APPROPRIATE FACTORS AND COEFFICIENTS FROM IBC 2003.

Seismic Design Criteria

- Seismic Use Group (Based upon occupancy classification II) = I
- Importance Factor (I) = 1.0
- Site Class (Soils Report) "E"

$S_S = .375$ $S_1 = .085$

$F_a = 1.9$ $F_v = 3.5$

$S_{MS} = .375(1.9) = .712 \times 2/3 = .473$ (S_{DS})

$S_{M1} = .085(3.5) = .298 \times 2/3 = .198$ (S_{D1})

Seismic Design Category "C"

R = 3 (Steel Structural System not specifically designed for seismic)

Base Shear $V = C_s W$

$C_s = \frac{S_{DS}}{R/I} = \frac{.473}{(3/1)} = .1576$

Not less than: $.044(S_{DS})I = .044(.473)1 = .02$

Not more than: $\frac{S_{D1}}{T(R/I)}$

$T = C_u(T_a)$ $C_u = 1.5$ (Sect. 9.5.5.3.1)

$T_a = C_t h_n^x$

$h_n = 53'$ $C_t = .02$ (Sect. 9.5.5.3.2)

$T_a = .02(53)^{.75} = .393$

$T = 1.5(.393) = .5895 > .5$ (Sect. 9.5.5.2.1)

$C_s = \frac{.198}{.5895(3/1)} = .112$

CALCULATE 'W' FOR SEISMIC BASE SHEAR

ROOF

DL 95' x 210' x .04 = 798 k

2% FLAT ROOF 95' x 210 x .007 140 k
SNOW LOAD (7 PSF)

ADD DL @ MECH.
UNIT SLABS (2) (36 x 12) x .075 65 k

ROOFTOP EQUIP - MAIN UNITS (2 x 16.8 k) 34 k

MISC. ROOF TOP EQUIP. (EST.) 6 k

SCREEN WALL (370 LF) 27 k

COLUMNS 22 k

EXTERIOR WALLS 8' x .01 = .08
8 x .04 = .32
.40 (612 LF) 245 k

1337 k → 1337

7TH FLOOR

DL 95' x 210' x .06 = 1197 k

PART. (USE 10 PSF) 95 x 210 = 19950
- STAIR, ELEV., MECH SHAFT AREAS - 670
NET SF 19,280 (.01) 193 k

COLUMNS 20 k

EXTERIOR WALLS 12.33 x 612 = 7546
(612 LF) - WINDOW ... = 1971
5575 (.04) = 223

12.33
MAX. + 1.33
13.66 (612) .01 = 84 k

307 → 1717

"W" CONT.

3RD FLOOR

DL 94'x208'x.06 — 1173k

PART. 18,880 lb x .01 — 189k
(NET SF)

COLUMNS — 35k

EXTERIOR WALLS

12.33 (612) = 7546 SF
WINDOWS − 2210
5336 (.04) = 214k

12.33 (612) .01 — 76
→ 290k

1687k → 1687

2ND FLOOR

DL 94 x 208 — 19552
TRUSS 34 x 24 — 816
18736 (.06) = 1124k

PART. 18736 − 600 = 18136 (.01) = 182k
NET SF

COLUMNS — 42k

EXTERIOR WALLS

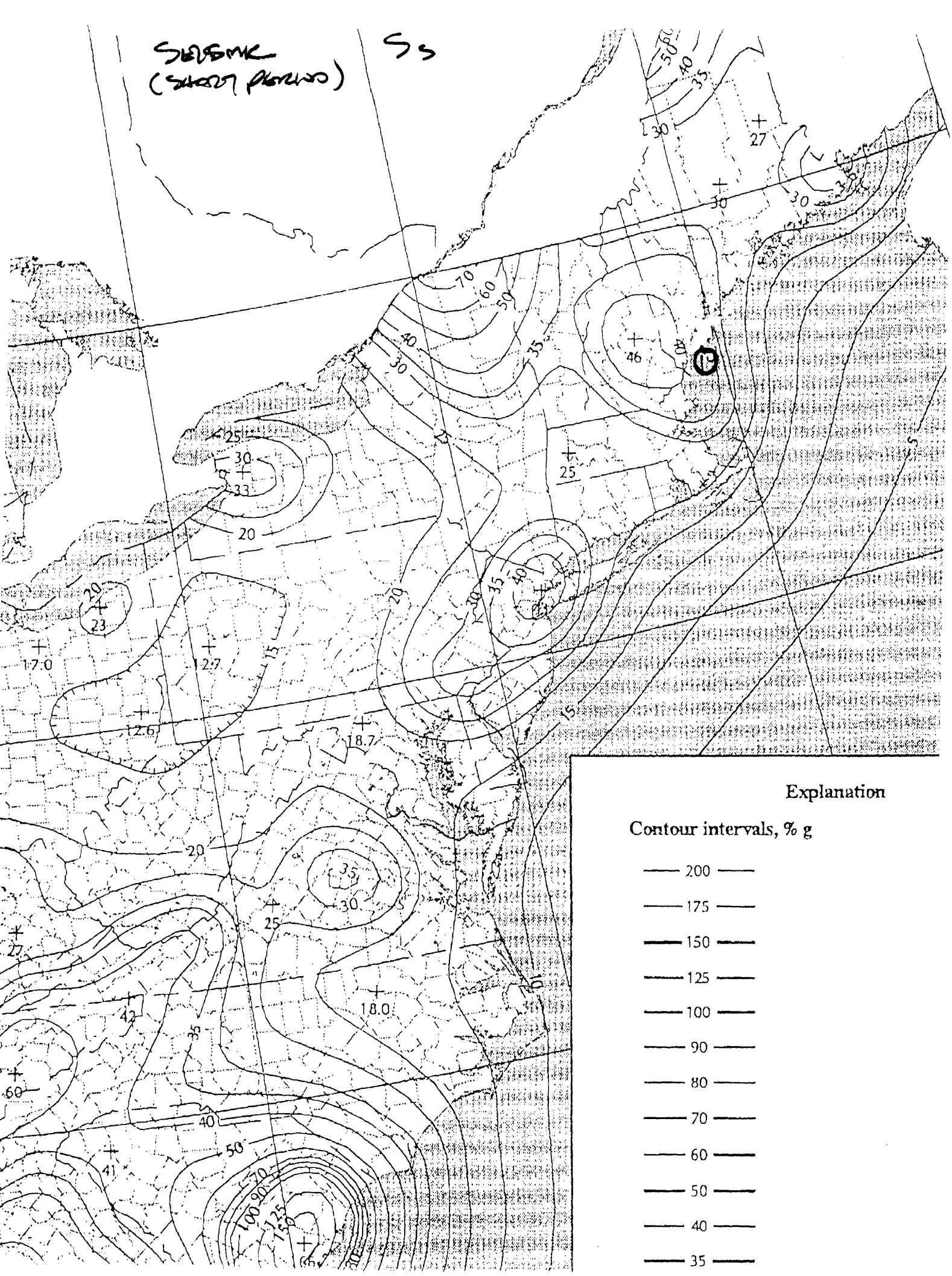
13.16 (612) = 8054 SF
− WINDOWS − 2250
5804 SF (.04) = 233k

13.16 (612) .01 → 81
→ 314k

1662k → 1662

"W" TOTAL → 6403k

BASE SHEAR "V" = Cs W
= (.112) 6403 = 717k


SEISMIC
(SHORT PERIOD)
Ss
Explanation
Contour intervals, % g
200
175
150
125
100
90
80
70
60
50
40
35

LANDMARK P060106

TRANE

Dimensional Data

(90 - 130 Tons)

Figure DD-4 — 90, 105, 115, 130Ton Heating/Cooling and Cooling Only Rooftops

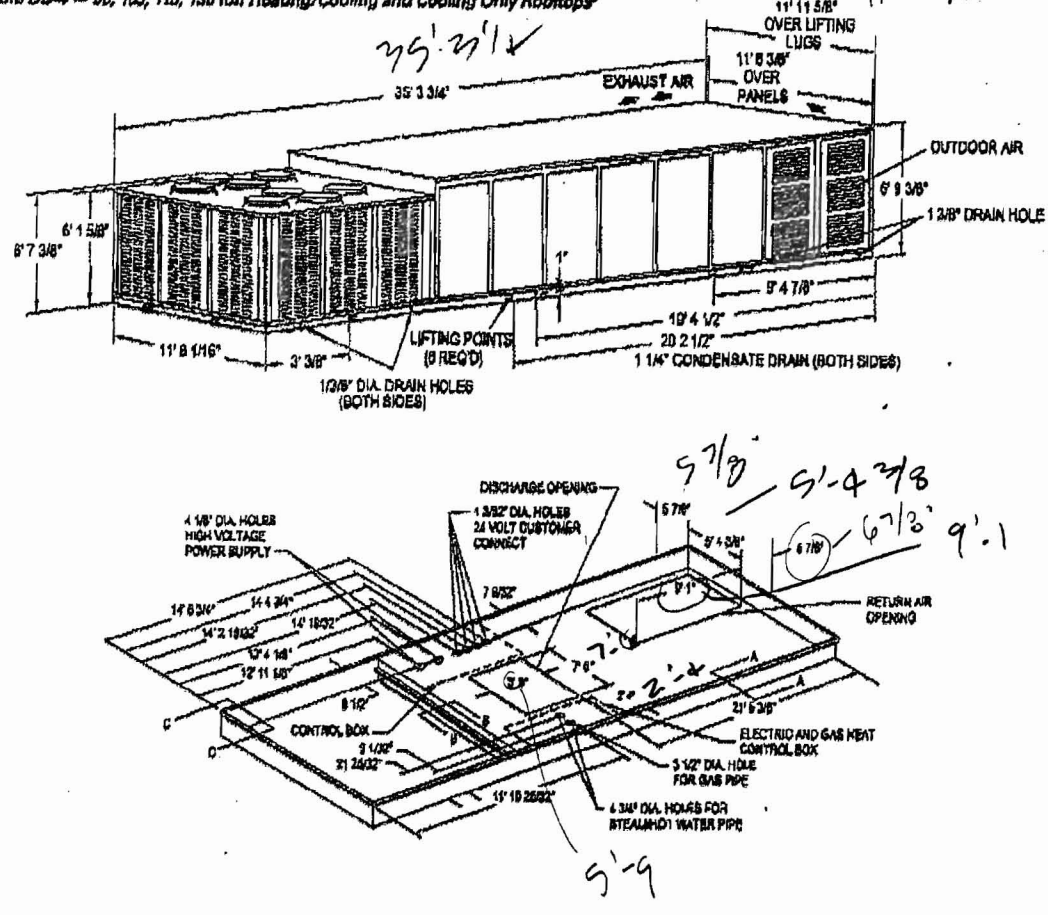
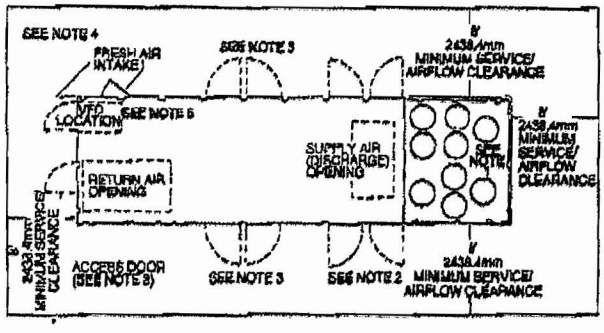


Figure DD-5 — 90 - 130 Tons — Service Clearance



Notes:
1. Provide unrestricted clearance over the condenser fans.
2. A minimum clearance of 2' 4-1/2" is required to open the hinged control panel doors. Both doors swing outward in a 180-degree arc.
3. A minimum clearance of 2' 10-9/16" is required to open the access doors on the unit's supply fan, evaporator, filter and exhaust fan sections. All hinged doors swing outward in a 180-degree arc.
4. 90-130 ton models have two outdoor air intakes located at the back of the unit and one small outdoor air intake located at the end of the unit.
5. A minimum clearance of 3' 7" is required to open the hinged access panel door to the VFD enclosure.
6. Unit drawing is representative only and may not accurately depict all models.

TRANE

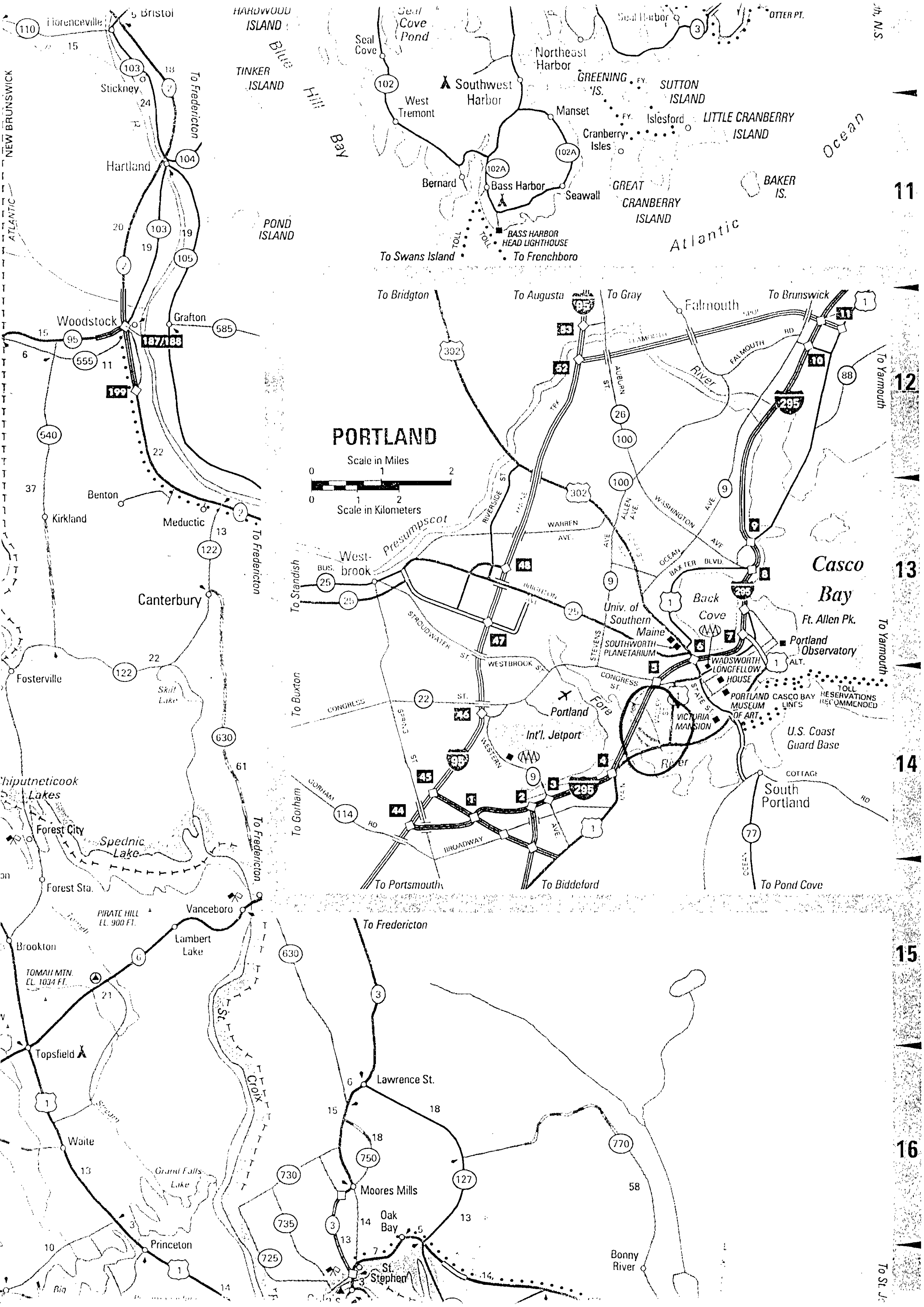
LANDMARK
P060106
ROOF TOP UNITS (182)

Weights

Table W-1 — Approximate Operating Weights (Lbs./Kg)

Nominal Tons		Rooftops Without Exhaust Fans					Rooftops With Exhaust Fans					Roof Curb	
		SA	SX	SE	SF	SL/SS	SA	SX	SE	SF	SL/SS	SA	All Heating Units & SXHP/G
20	Lb.	4000	4220	4330	4620	4330	4380	4590	4690	4870	4690	480	510
	Kg	1814	1914	1964	2096	1964	1978	2077	2127	2254	2127	222	231
25	Lb.	4160	4370	4500	4770	4500	4520	4750	4860	5130	4860	480	510
	Kg	1887	1982	2041	2164	2041	2050	2155	2204	2327	2204	222	231
30	Lb.	4800	5040	5160	5430	5160	5220	5460	5590	5840	5590	480	510
	Kg	2177	2286	2341	2463	2341	2368	2477	2536	2649	2536	222	231
40	Lb.	6270	6650	6810	7290	6810	6890	7240	7400	7880	7400	515	550
	Kg	2844	3016	3089	3307	3089	3125	3284	3357	3574	3357	234	249
50	Lb.	7250	7630	7800	8260	7800	7880	8290	8450	8900	8450	515	550
	Kg	3289	3461	3538	3747	3538	3573	3760	3833	4037	3833	234	249
55	Lb.	7500	7890	8050	8530	8050	8140	8540	8690	9170	8690	515	550
	Kg	3402	3579	3651	3869	3651	3692	3874	3942	4159	3942	234	249
60	Lb.	8450	8610	8770	9230	8770	9320	9480	9650	10120	9650	610	640
	Kg	3833	3905	3978	4187	3978	4227	4300	4377	4590	4377	277	290
70/75	Lb.	8970	9150	9300	9780	9300	9660	10040	10160	10640	10160	610	640
	Kg	4068	4150	4218	4436	4218	4472	4554	4608	4826	4608	277	290
90	Lb.	N/A	13240	13390	14030	13390	N/A	14680	14730	15400	14730	N/A	770
	Kg	N/A	6006	6074	6364	6074	N/A	6613	6681	6985	6681	N/A	349
105	Lb.	N/A	13810	13950	14600	13950	N/A	15160	15310	15940	15310	N/A	770
	Kg	N/A	6264	6328	6622	6328	N/A	6876	6944	7230	6944	N/A	349
115	Lb.	N/A	14200	14380	15020	14380	N/A	15560	15730	16370	15730	N/A	770
	Kg	N/A	6441	6523	6813	6523	N/A	7058	7135	7425	7135	N/A	349
130	Lb.	N/A	14560	14740	15300	14740	N/A	15930	16080	16710	16080	N/A	770
	Kg	N/A	6613	6686	6975	6686	N/A	7226	7294	7580	7294	N/A	349

Notes:
1. Weights shown include the following features: standard coils, 100% economizer, throwaway filters, maximum motor sizes (high efficiency), inlet guide vanes, 460V XL, High Heat.
2. Weights shown represent approximate operating weights and have a ±5% accuracy. ACTUAL WEIGHTS ARE STAMPED ON THE UNIT NAMEPLATE.
3. If unit is not as specified in note 1, you must reference RT-SB-103 for more details, as well as for point loading and center of gravity.


PORTLAND
Scale in Miles
0 1 2
0 1 2
Scale in Kilometers
Casco Bay
Back Cove
Presumpscot River
Fore River
Westbrook
South Portland
Falmouth
Univ. of Southern Maine
SOUTHWORTH PLANETARIUM
WADSWORTH LONGFELLOW HOUSE
PORTLAND MUSEUM OF ART
VICTORIA MANSION
Portland Observatory
Ft. Allen Pk.
U.S. Coast Guard Base
Portland Int'l. Jetport
CASCO BAY LINES
TOLL RESERVATIONS RECOMMENDED
To Bridgton
To Augusta
To Gray
To Brunswick
To Yarmouth
To Standish
To Buxton
To Gorham
To Portsmouth
To Biddeford
To Pond Cove
Seal Cove
Seal Cove Pond
Northeast Harbor
Southwest Harbor
West Tremont
Manset
Cranberry Isles
Islesford
Bernard
Bass Harbor
Seawall
BASS HARBOR HEAD LIGHTHOUSE
To Swans Island
To Frenchboro
GREENING IS.
SUTTON ISLAND
LITTLE CRANBERRY ISLAND
GREAT CRANBERRY ISLAND
BAKER IS.
Seal Harbor
OTTER PT.
Atlantic Ocean
Blue Hill Bay
HARDWOOD ISLAND
TINKER ISLAND
POND ISLAND
NEW BRUNSWICK
Florenceville
Bristol
Stickney
Hartland
To Fredericton
Woodstock
Grafton
Benton
Meductic
Kirkland
Canterbury
Fosterville
Skiff Lake
Chiputneticook Lakes
Forest City
Spednic Lake
Forest Sta.
Vanceboro
PIRATE HILL EL. 900 FT.
Brookton
Lambert Lake
TOMAH MTN. EL. 1034 FT.
Topsfield
Waite
Grand Falls Lake
Princeton
St. Croix
Lawrence St.
Moores Mills
Oak Bay
St. Stephen
Bonny River
To St. J.
11
12
13
14
15
16

IND

MAI

Dead Loads - Roof

- Ballasted Single Ply Roof 17.0 psf
- Rigid Insulation 5.0
- Painted Metal Deck 3.0
- Framing 5.0
- Ceiling / Sound System 5.0
- Misc. M/E 5.0

DL → 40.0 psf

Live / Snow 35.0
(6" water 31.2#/□) 75.0 TL

Line Loads - Screen Wall 100#/ft

DL 115 psf

5 1/2" 2" deck

Dead Loads (Floor) - Revisions for L.W. ~~5/2" deck~~

(5 1/2) 4" N.W. Conc. w/ 1 1/2", 20 Ga. Composite
L.W. Floor Deck (2") 44.0 ~~50.0~~ 39.0 psf

Framing 6.0
Ceiling 5.0
Misc. / M/E 5.0

60.0 ~~66.0~~ 55.0

Live Load 50.0
Partitions 20.0

130.0 ~~120~~ 125.0 TL

Corridors 100.0

160.0 ~~166~~ 155.0 TL

Rev

DL	CDL	LL	CL
.06	.05	.07	.02
.45	.375	.525	.15
1.06	1.55	.10	.42
		175	

slab/part/fram.

R.17.35 W16x26 [15] 26.72%

W21x62 [36]

R.60.95 W21x57 [~~44~~ 38] 76.93%

.056

Roof - Schematic Design

Typ. Joists 5' o.c. (30' Bay max.)

RJ-2 Span 1 - L = 30' w_{TL} = 5'(75) = 375
5 (35) = 175

18K9 (10.2#/ft.)
20K7 (9.3#/ft.)

Span 2. L = 32'
18K10 (11.7#/ft.)
RJ-1 20K9 (10.8)

L = 28'. 18K7 (9.0#/ft.)

Spandrel Beam

W roof = 16 (.075) = 1.2 k/ft.
wall .34 k/ft
1.54 ~ 1.6 k/ft.

RB-2 L = 28' M = 156.8 S_{20} = 62.7 → RB-2 R = 22.4
RB-3 30' 180.0 72.0 → RB-3 R = 24

28' Δ 734.4 / I (TL) 286.1 / I (LL (.4k)) 286.1 / .56 = 510.9 (L/400)

→ W18 x 40 (64.7) I = 612

30' 947.6 / I (TL) 377.1 / I 377.1 / .6 = 628.5

→ W18 x 46 (78.8) I = 712

USE W18 x 50

* CD Phase Design

Roof / cont.

INTERIOR BEAM

W - 31' x .075 = 2.32 k

SCREEN WALL .05 k/ft

2.38 ~ 2.4 k/ft.

L = 28' M = 235 'k S_{30} = 94.1 → W21x55, W18x55

30' 270 108.0 → W24x55, W18x60

31.16'

NOTE: SIMPLE BEAMS - COULD USE PLASTIC DESIGN (CANTILEVER SYSTEM)

DECK - 1½", 22 GA. WIDE RIB (TYPE B)

PAINTED DECK

PRELIM - COLUMN LOADS -

30' x 30' x .075 = 67.5

SCREEN 1.5

INTERIOR → 69.0 k

SPANDREL → 1.6 k/ft x 29' = 46.4 k ROOF