



4th Floor Fire Sprinkler Plan
1/8" = 1'-0"

Symbol	Count	Thread	K-Factor	Description	Note
●	33	1/2"	5.6	RELIABLE F1FR-56, 155' WHITE RECESSED PENDENT	RA1414
○	34	3/4"	8.0	RELIABLE F1FR WHITE QR EXTENDED COVERAGE RECESSED PENDENT	R4842
◐	82	1/2"	4.2	RELIABLE F1FR WHITE QR RECESSED PENDENT	RA1413
○	1	1/2"	5.6	RELIABLE F1FR-56, 155' BRASS UPRIGHT	RA1425
◁	1	1/2"	5.6	RELIABLE G STD RESP HSW 212"	R1235

151 = Total Number of Heads this floor

Seismic Bracing Calculations Sheet 1 of 4

Project: Courtyard by Marriott
Address: 321 Commercial Street
Portland, ME

Contractor: Hampshire Fire Protection
Address: 8 N Ventworth Ave
Londonderry, NH 03053
Telephone: (603) 432-8821
Fax: (603) 434-3194

Brace Information		Seismic Brace Attachments	
Length of brace:	34'	Structure attachment fitting or tension-only bracing system:	Make: Tolco Model: #980
Diameter of brace:	1"	Listed load rating:	2765 Adjusted load rating per 9.3.5.10.3: 1955
Type of brace:	Schedule 40	Sway brace (pipe attachment fitting):	Make: Tolco Model: #1001
Angle of brace:	45°	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Least radius of gyration:	0.481	Fastener:	Make: Tolco Model: #1001
Ir value:	100	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Maximum horizontal load:	4455		

Fastener Information

Orientation of connecting surface: B

Fastener: Tolco B28 Attachment

Type: Tolco B28 Attachment

Diameter: 3/8"

Length (in wood): N/A

Maximum load: 1900

Brace identification no. (to be used on plans): #1

Lateral brace Longitudinal brace

Sprinkler System Load Calculation (F_{sw} = C_wW_s (default is 0.5)) Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
2 1/2"	Sch 10	40.0'	40.0'	5.85 x 0.25	62.46 lb
2"	Sch 40	0'	0'	5.31 x 0.35	0 lb
1 1/2"	Sch 40	19.5'	19.5'	3.61 x 0.35	24.64 lb
1 1/4"	Sch 40	98.29'	98.29'	2.93 x 0.35	108.80 lb
1"	Sch 40	156.96'	156.96'	2.05 x 0.35	108.31 lb
Total weight					316.21 lb
W _s = 1.15					362.64 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations Sheet 2 of 4

Project: Courtyard by Marriott
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Portland, ME

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Fax: (603) 434-3194

Brace Information		Seismic Brace Attachments	
Length of brace:	34'	Structure attachment fitting or tension-only bracing system:	Make: Tolco Model: #980
Diameter of brace:	1"	Listed load rating:	2765 Adjusted load rating per 9.3.5.10.3: 1955
Type of brace:	Schedule 40	Sway brace (pipe attachment fitting):	Make: Tolco Model: #1001
Angle of brace:	45°	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Least radius of gyration:	0.481	Fastener:	Make: Tolco Model: #1001
Ir value:	100	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Maximum horizontal load:	4455		

Fastener Information

Orientation of connecting surface: B

Fastener: Tolco B28 Attachment

Type: Tolco B28 Attachment

Diameter: 3/8"

Length (in wood): N/A

Maximum load: 1900

Brace identification no. (to be used on plans): #2

Lateral brace Longitudinal brace

Sprinkler System Load Calculation (F_{sw} = C_wW_s (default is 0.5)) Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
2 1/2"	Sch 10	80.0'	80.0'	5.85 x 0.25	124.92 lb
2"	Sch 40	0'	0'	5.31 x 0.35	0 lb
1 1/2"	Sch 40	19.5'	19.5'	3.61 x 0.35	24.64 lb
1 1/4"	Sch 40	98.29'	98.29'	2.93 x 0.35	108.80 lb
1"	Sch 40	156.96'	156.96'	2.05 x 0.35	108.31 lb
Total weight					366.67 lb
W _s = 1.15					421.67 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations Sheet 3 of 4

Project: Courtyard by Marriott
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Portland, ME

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Londonderry, NH 03053
Telephone: (603) 432-8821
Fax: (603) 434-3194

Brace Information		Seismic Brace Attachments	
Length of brace:	34'	Structure attachment fitting or tension-only bracing system:	Make: Tolco Model: #980
Diameter of brace:	1"	Listed load rating:	2765 Adjusted load rating per 9.3.5.10.3: 1955
Type of brace:	Schedule 40	Sway brace (pipe attachment fitting):	Make: Tolco Model: #1001
Angle of brace:	45°	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Least radius of gyration:	0.481	Fastener:	Make: Tolco Model: #1001
Ir value:	100	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Maximum horizontal load:	4455		

Fastener Information

Orientation of connecting surface: B

Fastener: Tolco B28 Attachment

Type: Tolco B28 Attachment

Diameter: 3/8"

Length (in wood): N/A

Maximum load: 1900

Brace identification no. (to be used on plans): #3

Lateral brace Longitudinal brace

Sprinkler System Load Calculation (F_{sw} = C_wW_s (default is 0.5)) Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
6"	Sch 10	40.0'	40.0'	23.03 x 0.35	306.42 lb
4"	Sch 10	0'	0'	13.03 x 0.35	0 lb
3"	Sch 10	0'	0'	10.03 x 0.35	0 lb
2 1/2"	Sch 10	0'	0'	8.03 x 0.35	0 lb
2"	Sch 10	0'	0'	6.03 x 0.35	0 lb
1 1/2"	Sch 10	0'	0'	4.03 x 0.35	0 lb
1 1/4"	Sch 10	0'	0'	3.03 x 0.35	0 lb
1"	Sch 10	0'	0'	2.03 x 0.35	0 lb
Total weight					306.42 lb
W _s = 1.15					352.38 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations Sheet 4 of 4

Project: Courtyard by Marriott
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Portland, ME

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Address: 8 N Ventworth Ave
Londonderry, NH 03053
Telephone: (603) 432-8821
Fax: (603) 434-3194

Brace Information		Seismic Brace Attachments	
Length of brace:	34'	Structure attachment fitting or tension-only bracing system:	Make: Tolco Model: #980
Diameter of brace:	1"	Listed load rating:	2765 Adjusted load rating per 9.3.5.10.3: 1955
Type of brace:	Schedule 40	Sway brace (pipe attachment fitting):	Make: Tolco Model: #1001
Angle of brace:	45°	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Least radius of gyration:	0.481	Fastener:	Make: Tolco Model: #1001
Ir value:	100	Listed load rating:	2915 Adjusted load rating per 9.3.5.10.3: 1435
Maximum horizontal load:	4455		

Fastener Information

Orientation of connecting surface: B

Fastener: Tolco B28 Attachment

Type: Tolco B28 Attachment

Diameter: 3/8"

Length (in wood): N/A

Maximum load: 1900

Brace identification no. (to be used on plans): #4

Lateral brace Longitudinal brace

Sprinkler System Load Calculation (F_{sw} = C_wW_s (default is 0.5)) Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
6"	Sch 10	80.0'	80.0'	23.03 x 0.35	644.04 lb
4"	Sch 10	0'	0'	13.03 x 0.35	0 lb
3"	Sch 10	0'	0'	10.03 x 0.35	0 lb
2 1/2"	Sch 10	0'	0'	8.03 x 0.35	0 lb
2"	Sch 10	0'	0'	6.03 x 0.35	0 lb
1 1/2"	Sch 10	0'	0'	4.03 x 0.35	0 lb
1 1/4"	Sch 10	0'	0'	3.03 x 0.35	0 lb
1"	Sch 10	0'	0'	2.03 x 0.35	0 lb
Total weight					644.04 lb
W _s = 1.15					741.57 lb

* Excludes tension-only bracing systems

Hampshire FIRE PROTECTION
8 NORTH WENTWORTH AVENUE LONDONDERRY, NH 03053
PH: (603) 432-8221 FAX: (603) 434-3194
WEBSITE: HAMPSHIREFIRE.COM
MASS LIC# 003841 MAINS LIC# 238 VERMONT CERTIFIED

WATER SUPPLY DATA

Static pressure 108 psi
Residual pressure 102 psi
Flow 1537 gpm
Location Corner of Commercial & Maple
Elevation 0'-0"
Date May 11 2013 Time 8:00 AM
Information Dyerland Water

SPRINKLERS

Symbol	Description

Drawing 4th Floor Fire Sprinkler Plan

Contract No	Revisions:	Date:
No4398CMB	1	
	2	
	3	
	4	
	5	
	6	
	7	

Drawn By: EWV
Scale: As Noted
Date: 05-25-13
Approval By: Portland ME

Project: Marriott Courtyard Hotel
321 Commercial Street
Portland ME 04101

Contract with:
Opechee Construction
11 Corporate Drive
Belmont NH 03220

FIRE PROTECTION ENGINEER STAMP

PPS OF 8