4th Floor Fire Sprinkler Plan

1/8" = 1'-0"

Sprinkler Head Schedule

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

Reviewed for Code Compliance Fire Prevention Division Approved with Conditions

Project: Courtyard by Marriott
Address: 321 Commercial Street, Portland, ME
Contractor: Hampshire Fire Protection
Address: 8 N Wentworth Ave, Londonderry, NH 03053
Telephone: (603) 432-8221
Fax: (603) 434-3194
Date: 08/01/13

Brace Information

Length of brace: 34"
Diameter of brace: 1"
Type of brace: Schedule 40
Angle of brace: 45°
Least radius of gyration:* 0.421
l/r value:* 100
Maximum horizontal load: 4455

Seismic Brace Attachments

Structure attachment fitting or tension-only bracing system:
Make: Tolco Model: #980
Listed load rating: 2765 Adjusted load rating per 9.3.5.10.3: 1955
Sway brace (pipe attachment) fitting:
Make: Tolco Model: #1001
Listed load rating: 2015 Adjusted load rating per 9.3.5.10.3: 1425

Fastener Information

Orientation of connecting surface: B
Fastener:
Type: Tolco 828 Attachment
Diameter: 3/8"
Length (in wood): N/A
Maximum load: 1200

Seismic Brace Assembly Detail
(Provide detail on plans)

Brace identification no. (to be used on plans) #1
☒ Lateral brace ☐ Longitudinal brace

Sprinkler System Load Calculation [$F_{pw} = C_p W_p$ (default is 0.5)] Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
2½"	Sch 10	40.0'	40.0'	5.89 x 0.35 lb/ft	82.46 lb
2"	Sch 40	0'	0'	5.31 x 0.35 lb/ft	0 lb
1 1/2"	Sch 40	19.5'	19.5'	3.61 x 0.35 lb/ft	24.64 lb
1 1/4"	Sch 40	98.29'	98.29'	2.93 x 0.35 lb/ft	100.80 lb
1"	Sch 40	150.96'	150.96'	2.05 x 0.35 lb/ft	108.31 lb
				Total weight	316.21 lb
				W_p x 1.15	363.64 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations

Sheet 2 of 4

Project: Courtyard by Marriott
Address: 321 Commercial Street, Portland, ME
Contractor: Hampshire Fire Protection
Address: 8 N Wentworth Ave, Londonderry, NH 03053
Telephone: (603) 432-8221
Fax: (603) 434-3194

Brace Information

Length of brace: 34"
Diameter of brace: 1"
Type of brace: Schedule 40
Angle of brace: 45°
Least radius of gyration:* 0.421
l/r value:* 100
Maximum horizontal load: 4455

Seismic Brace Attachments

Structure attachment fitting or tension-only bracing system:
Make: Tolco Model: #980
Listed load rating: 2765 Adjusted load rating per 9.3.5.10.3: 1955
Sway brace (pipe attachment) fitting:
Make: Tolco Model: #4L
Listed load rating: 2015 Adjusted load rating per 9.3.5.10.3: 1425

Fastener Information

Orientation of connecting surface: B
Fastener:
Type: Tolco 828 Attachment
Diameter: 3/8"
Length (in wood): N/A
Maximum load: 1200

Seismic Brace Assembly Detail
(Provide detail on plans)

Brace identification no. (to be used on plans) #2
☐ Lateral brace ☒ Longitudinal brace

Sprinkler System Load Calculation [$F_{pw} = C_p W_p$ (default is 0.5)] Cp=0.35

Diameter	Type	Length (ft)	Total (ft)	Weight per ft	Total Weight
2½"	Sch 10	80.0'	80.0'	5.89 x 0.35 lb/ft	164.92 lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				Total weight	164.92 lb
				W_p x 1.15	189.66 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations

Sheet 3 of 4

Project: Courtyard by Marriott
Address: 321 Commercial Street, Portland, ME
Contractor: Hampshire Fire Protection
Address: 8 N Wentworth Ave, Londonderry, NH 03053
Telephone: (603) 432-8221
Fax: (603) 434-3194

Brace Information

Length of brace: 34"
Diameter of brace: 1"
Type of brace: Schedule 40
Angle of brace: 45°
Least radius of gyration:* 0.421
l/r value:* 100
Maximum horizontal load: 4455

Seismic Brace Attachments

Structure attachment fitting or tension-only bracing system:
Make: Tolco Model: #980
Listed load rating: 2765 Adjusted load rating per 9.3.5.10.3: 1955
Sway brace (pipe attachment) fitting:
Make: Tolco Model: #1001
Listed load rating: 2015 Adjusted load rating per 9.3.5.10.3: 1425

Fastener Information

Orientation of connecting surface: B
Fastener:
Type: Tolco 828 Attachment
Diameter: 3/8"
Length (in wood): N/A
Maximum load: 1200

Seismic Brace Assembly Detail
(Provide detail on plans)

Brace identification no. (to be used on plans) #3
☒ Lateral brace ☐ Longitudinal brace

Sprinkler System Load Calculation [$F_{pw} = C_p W_p$ (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 lb/ft	322.42 lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				Total weight	322.42 lb
				W_p x 1.15	370.78 lb

* Excludes tension-only bracing systems

Seismic Bracing Calculations

Sheet 4 of 4

Project: Courtyard by Marriott
Address: 321 Commercial Street, Portland, ME
Contractor: Hampshire Fire Protection
Address: 8 N Wentworth Ave, Londonderry, NH 03053
Telephone: (603) 432-8221
Fax: (603) 434-3194

Brace Information

Length of brace: 34"
Diameter of brace: 1"
Type of brace: Schedule 40
Angle of brace: 45°
Least radius of gyration:* 0.421
l/r value:* 100
Maximum horizontal load: 4455

Seismic Brace Attachments

Structure attachment fitting or tension-only bracing system:
Make: Tolco Model: #980
Listed load rating: 2765 Adjusted load rating per 9.3.5.10.3: 1955
Sway brace (pipe attachment) fitting:
Make: Tolco Model: #4L
Listed load rating: 2015 Adjusted load rating per 9.3.5.10.3: 1425

Fastener Information

Orientation of connecting surface: B
Fastener:
Type: Tolco 828 Attachment
Diameter: 3/8"
Length (in wood): N/A
Maximum load: 1200

Seismic Brace Assembly Detail
(Provide detail on plans)

Brace identification no. (to be used on plans) #4
☐ Lateral brace ☒ Longitudinal brace

Sprinkler System Load Calculation [$F_{pw} = C_p W_p$ (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 lb/ft	644.84 lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				lb/ft	lb
				Total weight	644.84 lb
				W_p x 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 MAINE LIC# 238
VERMONT CERTIFIED

WATER SUPPLY DATA

Static pressure	108	psi
Residual pressure	102	psi
Flow	1537	gpm
Location	Corner of Commercial & Maple	
Elevation	10'-0"	
Date	May 11 2013	Time 6:00 AM
Information	Portland Water	

SPRINKLERS

Total This Sheet | Total This Job

Symbol	Description

Drawing Title	4th Floor Fire Sprinkler Plan
Contract No.	4396CME
Drawn By	EVW
Scale	As Noted
Date	05-25-13
Approval By	Portland ME

Revisions:	Date:
1	
2	
3	
4	
5	
6	
7	

Project:
Marriott Courtyard Hotel
321 Commercial Street
Portland ME 04101

Contract with:
Opechee Construction
11 Corporate Drive
Belmont NH 03220

FIRE PROTECTION ENGINEER STAMP

FP5 OF 8