



1 SITE LAYOUT SKETCH  
 G-101 NOT TO SCALE

**GENERAL NOTE:**

- FIRE PROTECTION FEATURES OF THE BUILDING SHOWN IN SITE LAYOUT SKETCH ARE SHOWN FOR GENERAL INFORMATION ONLY. REFER TO APPLICABLE CIVIL, FIRE ALARM AND SPRINKLER SHEETS FOR DESIGN INFORMATION.

**KEYNOTES: (THIS SHEET ONLY)**

- ▲ FIRE DEPARTMENT ACCESS
- ▲ FIRE DEPARTMENT CONNECTION
- ▲ EXISTING FIRE HYDRANT
- ▲ FIRE ALARM CONTROL PANEL
- ▲ FIRE SYSTEM ANNUNCIATOR

GENERAL CODE INFORMATION	
APPLICABLE LIFE SAFETY/BUILDING CODES: Maine Uniform Building and Energy Code (MUREC) which is based on the 2009 International Building Code (IBC) and the 2009 International Existing Building Code (IEBC) 2009 National Fire Protection Association (NFPA) 101, adopted by the State Fire Marshal's Office AUTOMATIC SUPPRESSION SYSTEM: Fully Sprinklered in accordance with NFPA 13. FIRE ALARM SYSTEM: Addressable, voice evacuation system in accordance with NFPA 72.	
BUILDING CODE SUMMARY (IBC)	
<b>CLASSIFICATION OF WORK:</b> IEBC: Alteration-Level 3 and Addition. The City of Portland Code Official has also determined this is to be classified as a Change of Occupancy (IEBC, Sections 202, 405.1, and 912.1)	<b>INTERIOR FIRE RESISTANCE RATINGS:</b> Stair Enclosures: 1 hour required (IBC, Sections 707.3.2 and 1022.1) Exit Passageway: 1 hour required (IBC, Section 1023.1) Elevator Shafts: 1 hour required (IBC, Sections 708.4 and 708.14) Elevator Machine Room: 1 hour required (IBC, Section 3006.4) Ductwork Shafts: NA, fire dampers provided at floor (IBC, Sections 708.2 exception 4 and 716.5.4) Areas with Increased Hazard: smoke partitions required (IBC, Table 508.2.5) Corridors: no rating required (IBC, Table 1018.1) IBC Occupancy Separation between B & A-2/A-3/B: 1 hour fire barrier required (IBC, Table 508.4) IBC Occupancy Separation between S-1 & A-2/A-3/B: 1 hour fire barrier required, 2 hour will be used (IBC, Table 508.4) Vertical Opening Protection: see schedule on G-103
<b>OCCUPANCY CLASSIFICATION:</b> IBC: Mixed Use, Separated and Non-Separated Occupancies (IBC, Sections 508 and 508.3) Classifications of A-2/A-3/B/S-1 (IBC, Sections 303.1, 304.1, and 311.2) Majority of Building is classified as mixed, non-separated A-2/A-3/B. There are also separated B areas and separated S-1 areas. Refer to G-102 and G-103 for designations.	<b>STRUCTURAL ELEMENTS - FIRE RESISTANCE RATINGS REQUIRED FOR THE TYPE OF CONSTRUCTION (IBC, Table 601):</b> Exterior load bearing walls: 2 hour, non-combustible Exterior non-load bearing walls: 0 hour Non-load bearing partitions: 0 hour Interior load bearing walls: 0 hour Structural Frame: 0 hour Floor Construction: 0 hour Roof Construction: 0 hour
<b>TYPE OF CONSTRUCTION:</b> Existing Construction is IBC Type III-B, Non-Rated Construction, Combustible and Non-Combustible (IBC, Section 602.3 and Table 601)	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>HEIGHT AND AREA LIMITATIONS (based on IBC Type III-B classification):</b> Height: 55 Allowable/30' Actual (IBC, Table 503) Stories: 2 stories Allowable/2 stories Actual (IBC, Table 503) <b>Base Areas (IBC, Table 503):</b> A-2/A-3/B = 9,500 SF B = 19,000 SF S-1 = 17,500 SF <b>Frontage &amp; Automatic Sprinkler System Increases:</b> If = $[1,170' / 1,170' - 0.25] \times 30' / 30' = 0.75$ (IBC, Equation 5-2) Is = 2.0 (IBC, Section 506.3) <b>Area Modifications with Increases (IBC, Equation 5-1):</b> A-2/A-3/B = $9,500 \times 0.75 + 9,500 \times 2.0 = 35,625$ SF B = $19,000 \times 0.75 + 19,000 \times 2.0 = 71,250$ SF S-1 = $17,500 \times 0.75 + 17,500 \times 2.0 = 65,625$ SF	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>HEIGHT AND AREA LIMITATIONS (based on IBC Type III-B classification):</b> Height: 55 Allowable/30' Actual (IBC, Table 503) Stories: 2 stories Allowable/2 stories Actual (IBC, Table 503) <b>Base Areas (IBC, Table 503):</b> A-2/A-3/B = 9,500 SF B = 19,000 SF S-1 = 17,500 SF <b>Frontage &amp; Automatic Sprinkler System Increases:</b> If = $[1,170' / 1,170' - 0.25] \times 30' / 30' = 0.75$ (IBC, Equation 5-2) Is = 2.0 (IBC, Section 506.3) <b>Area Modifications with Increases (IBC, Equation 5-1):</b> A-2/A-3/B = $9,500 \times 0.75 + 9,500 \times 2.0 = 35,625$ SF B = $19,000 \times 0.75 + 19,000 \times 2.0 = 71,250$ SF S-1 = $17,500 \times 0.75 + 17,500 \times 2.0 = 65,625$ SF	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>First Floor Existing Building, Actual Areas with deductions for vent and plumbing chases (IBC, Section 502.1):</b> A-2/A-3/B = 23,845 SF B = 816 SF + 11,473 SF = 12,289 SF S-1 = 11,832 SF <b>Ratio of Actual Areas to Allowable Areas:</b> $23,845 / 35,625 + 12,289 / 71,250 + 11,832 / 65,625 = 1.023$ (Existing Condition)	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>First Floor Existing Building plus Stair Tower Addition, Actual Areas with deductions for vent and plumbing chases (IBC, Section 502.1):</b> A-2/A-3/B = 24,313 SF B = 816 SF + 11,473 SF = 12,289 SF S-1 = 11,832 SF <b>Ratio of Actual Areas to Allowable Areas:</b> $24,313 / 35,625 + 12,289 / 71,250 + 11,832 / 65,625 = 1.039$ This represents a 0.013 increase over the existing condition due to the stair tower addition.	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>Second Floor Existing Building plus Floor Infill Additions, Actual Areas with deductions for vent and plumbing chases (IBC, Section 502.1):</b> A-2/A-3/B = 11,131 SF B = 12,845 SF S-1 = 585 SF <b>Ratio of Actual Areas to Allowable Areas:</b> $11,131 / 35,625 + 12,845 / 71,250 + 585 / 65,625 = 0.51$	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 707.5.1):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 300 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.
<b>EXTERIOR FIRE RESISTANCE RATINGS:</b> Exposure to Other Buildings: No rating required (Addition Fire Separation Distance > 30') (IBC, Table 602) Stair Enclosures with Exterior Walls with Exposure at < 180': 1 hour required for 10' (IBC, Section 1022.6) Roof Rating: Min. Class C roof covering required (IBC, Table 1505.1)	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (IBC, Section 7.2.5):</b> 1-hour required <b>OCCUPANCY LOAD FACTORS (NFPA 101, Table 7.3.1.2):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 500 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.

**LIFE SAFETY CODE SUMMARY (NFPA 101)**

<b>CLASSIFICATION OF WORK:</b> NFPA 101: Reconstruction and Addition (NFPA 101, Section 43.2.2)	<b>EXTERIOR FIRE RESISTANCE RATINGS:</b> Stair Enclosures with Exterior Walls with Exposure at < 180': 1 hour required for 10' (NFPA 101, Section 7.2.2.5.2.1)	<b>STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (2009 NFPA 221, Section 7.2.5):</b> 1-hour required	<b>COMMON PATH, DEAD-END, AND TRAVEL DISTANCE LIMITS (NFPA 101, Table A.7.6):</b> Travel Distance: 250' Allowable/188' Actual Common Path of Travel from Assembly Occupancies with more than 50 occupants: 20' Allowable/NA Actual Common Path of Travel elsewhere: 75' Allowable/56' Actual Dead End Lengths for Assembly Occupancies: 20' Allowable/16' Actual Dead End Lengths for Business Occupancies: 50' Allowable/36' Actual
<b>OCCUPANCY CLASSIFICATION:</b> NFPA 101: Multiple, Mixed Occupancy (NFPA 101, Sections 6.1.14 and 6.1.14.3) Classifications of Assembly/Business/Low Hazard Industrial/Storage (NFPA 101, Sections 6.1.2, 6.1.11, 6.1.13, and 2008 NFPA 30A, Section 7.3.1)	<b>INTERIOR FIRE RESISTANCE RATINGS:</b> Stair Enclosures: 1 hour required (NFPA 101, Section 7.1.3.2.1) Exit Passageway: 1 hour required (NFPA 101, Sections 7.2.6.2 and 7.1.3.2) Elevator Shafts: 1 hour required (NFPA 101, Section 8.6.4) Ductwork Shafts: NA, fire dampers provided at floor (NFPA 101, Section 9.2.1 and 2009 NFPA 90A, Section 5.3.4.3.1) Areas with Increased Hazard: smoke partitions required (NFPA 101, Sections 8.7, 12.3.2.1.2, and 38.3.2.1) Corridors: no rating required (Sections 12.3.6 and 38.3.6.1) Vertical Opening Protection: see schedule on G-103	<b>OCCUPANCY LOAD FACTORS (NFPA 101, Table 7.3.1.2):</b> Classrooms: 20 net SF per occupant Assembly Unconcentrated (tables and chairs): 15 net SF per occupant Assembly Concentrated (chairs - not fixed): 7 net SF per occupant Business/Clinic/Office: 100 gross SF per occupant Mechanical Spaces: 300 gross SF per occupant Storage Rooms: 500 gross SF per occupant <b>TOTAL CALCULATED BUILDING OCCUPANT LOAD: 2,958</b> First Floor Occupant Load: 2,394 Second Floor Occupant Load: 564 Note: these values do not include the out of scope, existing Armory, portion of the building. This space has independent egress.	<b>INTERIOR FINISH REQUIREMENTS FOR WALLS AND CEILINGS (NFPA 101, Table A.10.2.2):</b> Exit Enclosures (Stairs and Exit Passageway): Minimum of Class B Corridors: Minimum of Class B Individual Rooms: Minimum of Class C Textile Finishes: Class A (NFPA 101, Section 10.2.4.1)
<b>TYPE OF CONSTRUCTION AND ASSEMBLY OCCUPANT LOAD LIMITATIONS:</b> Existing Construction is NFPA Type III(200), Non-Rated Construction, Combustible and Non-Combustible (2006 NFPA 220, Section 4.4.1 and Table 4.1.1). This is permitted to remain for the classification of work under NFPA 101, Sections 43.1.2.1(1) and 43.8.1.1(2) because the assembly occupant load is not limited at the first floor and the assembly occupant load at the second floor is 300 people (NFPA 101, Table 13.1.6). New Construction elements are NFPA Type II(000), Non-Rated Construction, Non-Combustible (2006 NFPA 220, Section 4.3.1 and Table 4.1.1). This is required for new construction elements under NFPA 101 Sections 43.6.1.1(2) and 43.5.1.3 for the reconstruction, and 43.8.1.1(1) for the addition, because the assembly occupant load at the first floor exceeds 1,000 people and the assembly occupant load at the second floor is 300 people (NFPA 101, Table 12.1.6).	<b>NEW STRUCTURAL ELEMENTS - FIRE RESISTANCE RATINGS REQUIRED FOR THE TYPE OF CONSTRUCTION (2009 NFPA 220, Table 4.1.1):</b> (The new structural elements are required to meet Type II(000) construction.) Exterior load bearing walls: 0 hour, non-combustible Exterior non-load bearing walls: 0 hour, non-combustible Non-load bearing partitions: 0 hour, non-combustible Interior load bearing walls: 0 hour, non-combustible Structural Frame: 0 hour, non-combustible Floor Construction: 0 hour, non-combustible Roof Construction: 0 hour, non-combustible	<b>CAPACITY OF EGRESS COMPONENTS (NFPA 101, Table 7.3.3.1.7):</b> Clear Width per person: 0.2" per person for doors, corridors, and ramps 0.3" per person for stairs	<b>EXIT DISCHARGE (NFPA 101, Section 7.7.1):</b> Exits discharge is directly to the exterior or through an exit passageway.