Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Decision Rendered - Reconsideration of ID 18873

Appeal ID: 18968	**Project Address:** 2318 NW Vaughn St
Hearing Date: 2/6/19	**Appellant Name:** Samir Mokashi
Case No.: B-021	**Appellant Phone:** 5034885651
Appeal Type: Building	**Plans Examiner/Inspector:** Gail Knoll
Project Type: commercial	**Stories:** 1 **Occupancy:** F-1 **Construction Type:** III-B
Building/Business Name: Adidas Action Sports	**Fire Sprinklers:** No
Appeal Involves: Alteration of an existing structure,Reconsideration of appeal,occ Change from B/S1 to F1	**LUR or Permit Application No.:** 18-238187-CO
Plan Submitted Option: pdf [File 1] [File 2] [File 3]	**Proposed use:** Film Studio

APPEAL INFORMATION SHEET

Appeal item 1

Code Section 903.2.11.1, 903.2.11.1.1, and 903.2.11.1.2

Requires [F] 903.2.11.1 Stories without openings. An automatic sprinkler system shall be installed throughout all stories, including basements, of all buildings where the floor area exceeds 1,500 square feet (139.4 m2) and where there is not provided at least one of the following types of exterior wall openings:

Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).
Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m2) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.
[F] 903.2.11.1.1 Opening dimensions and access. Openings shall have a minimum dimension of not less than 30 inches (762 mm). Such openings shall be accessible to the fire department from the exterior and shall not be obstructed in a manner that firefighting or rescue cannot be accomplished from the exterior.

[F] 903.2.11.1.2 Openings on one side only. Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet (22 860 mm) from such openings, the

story shall be equipped throughout with an approved automatic sprinkler system, or openings as specified above shall be provided on at least two sides of the story.

Proposed Design

The facility is an existing single-story warehouse and office building that is being converted to a F-1 film studio. The facility will be used to film professional skaters testing new skateboards developed by Adidas Action Sports Group. The building is not currently sprinklered. The proposed use reduces the overall fuel load within the building. The building is classified as F-1 moderate hazard occupancy based on the proposed film studio use group, the actual fuel loading will be comparable to a low-hazard F-2 use.

The facility exceeds the prescriptive opening area requirements of §903.2.11.1 on the north side of the building facing NW Vaughn street. Since the building is more than 75 feet deep between north and south walls, it is required to have openings on adjacent wall. Openings are provided on the east side, which faces NW 23rd Avenue. The total area of the openings provided on this side also exceed the mandated area and the 50 ft spacing requirement. Two of the openings also satisfy the 44-inch max sill restriction, while four others are located higher, approximately 10’ -9” above adjacent grade and approximately 9’-6” above the interior floor level. Refer to the attached drawings for proposed openings – Floor plan A102, Exterior Wall Elevations A201 & A202.

Reason for alternative

The code intent, as clarified in the 2012 IBC commentary, in requiring openings as prescribed in lieu of sprinklers is two-fold:

To provide fire department access to the interior of the building from outside for fire-fighting, and
To provide for ability to vent heat and smoke, by products of combustion in a fire. These openings are intended to be opened (in case of doors) or broken (in case of glass windows) to enable venting.
On the north side the fire department has direct access from the Vaughn street, with plenty of storefront glass windows, including two man-doors and one glass paneled garage-door type. The total area of openings provided is 343 sf (excluding glass block at existing fire place), while the prescriptive requirement is 40 sf minimum. Therefore, the proposal exceeds the requirement by 303 sf.

The east side includes one 203 sf roll up door, one 24 sf man door, and one 102 sf storefront that are within the 44-inch sill requirement. The total area of openings provided along the 120 ft long east wall is 486-sf, which exceeds the 60-sf required by code. The three glazed openings that are above the 44” maximum mandated are each 40-sf and located at 9’-6” above floor level. These windows are easily accessed from outside and will allow the venting of combustion products well above the occupiable floor in this high bay space.

The two garage-doors on the north and east sides, by themselves, are well placed and sized to provide cross ventilation intended by the code. The combined opening area of these two openings of 293 sf exceeds the 100 sf minimum required by 903.2.11.1. There are two additional man doors on the north side besides these two large openings. On top of this, the glass windows and storefront accounts for additional 523.2 sf of openings between the north and east sides.

Attached code comparison table demonstrates that the overall area of openings provided are 8 times the minimum required by code. Table also shows that the proposed openings exceed many other code requirements as well. Therefore, we urge you to approve this appeal.

APPEAL DECISION

Omission of fire fighter access openings in existing building: Granted as proposed.

The Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

2318 NW Vaughn Street Appeal – Code Comparison Table

CODE CRITERIA	MINIMUM REQUIRED	PROVIDED IN BUILDING
§903.2.11.1 (2) Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m2) in each 50 linear feet	**Opening Area** North Wall = 40 sf East wall = 60 sf Combined = **100 sf**	**Opening Area** North Wall = 343 sf *(excludes glass block openings around fireplace)* East Wall = 489 sf *(includes 3'x8' single door in new entry vestibule)* Combined = **832 sf**
§903.2.11.1(2) Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m2) in each 50 linear feet	**Opening Spacing** Max spacing allowed is **47.5 feet**	**Opening Spacing** Maximum distance between adjacent openings is **14'-3 ½ "**
§903.2.11.1(2) The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.	**Maximum Sill Height** Not exceeding **44 inches** above the floor	**Maximum Sill Height** North wall complies East wall provides One 203 sf roll-up door, one 24 sf man door, and one 102 sf storefront all **at floor level**
§903.2.11.1.1 Openings shall have a minimum dimension of not less than 30 inches (762 mm).	**30"** minimum in any direction	**5 ft** minimum in height **6'-9"** minimum in width *(excludes glass block openings around fireplace)*
§903.2.11.1.1 shall not be obstructed in a manner that firefighting or rescue cannot be accomplished from the exterior.	Openings unobstructed from the exterior	Openings unobstructed from the exterior

PROPERTY :

ADDRESS	2318 NW VAUGHN STREET PORTLAND, OR 97210
PROP ID	R309823
TAX ROLL	WILSONS ADD, BLOCK 3 TL 6700
USE	WHSE SHOWROOM
LOT	3
BLOCK	3 TL 6700
COUNTY	MULTNOMAH
STATE ID	1N1E28CC 6700
MAP NUMBER	2827 OLD
LAND TYPE	COMMERCIAL LAND
LOT SIZE	0.30 ACRES (13,204 SF)
OWNER	SPEARS VAUGHN LLC
OWNER ADDRESS	4476 CALHOUN AVE. SHERMAN OAKS, CA 91423
ZONE	CM2 – COMMERCIAL / MIXED USE
OVERLAY	d – DESIGN ZONE
COMP PLAN	UC – URBAN COMMERCIAL
HISTORIC DISTRICT	N/A
CONSERVATION DISTRICT	N/A
PLAN DISTRICT	NP - NORTHWEST PLAN DISTRICT
NAT. RESC. MGMNT. DISTRICT	N/A
QUATER SECTION	2827
URBAN RENEWAL DISTRICT	N/A
HIST. RSC. CLASSIFICATION	N/A
WATER ZONE	CITY OF PORTLAND / WASHINGTON PARK 229
BUILDING CLASS	WHSE WHOLESALE / SHOWROOM
CONSTRUCTION TYPE	3B
YEAR BUILT	1956
FOUNDATION TYPE	CONCRETE / SLAB ON GRADE
ROOF STYLE / COVER	MEMBRANE
HEATING TYPE	INFRARED & FORCED AIR
PLUMBING	2 W.C. (TOILET & LAV. SINK)
CHIMNEY	GAS FIREPLACE W/ METAL DUCT
SEGMENTS (SQ. FT.) EXISTING	TOTAL BUILDING MAIN (10,190 SQ. FT.)

APPLICABLE CODE :

CITY	33.130 COMMERCIAL ZONES
	33.266 PARKING & LOADING
	33.248 LANDSCAPING & SCREENING
	33.420 DESIGN OVERLAY ZONE
	33.562 NORTHWEST PLAN DISTRICT
	CHAPTER 24.85 SEISMIC DESIGN REQ. FOR EXISTING BUILDINGS
STATE	2014 OREGON STRUCTURAL SPECIALTY CODE
	2014 OREGON ENERGY EFFICIANCY SPECIALTY CODE
	2014 OREGON PLUMBING SPECIALTY CODE
	2014 OREGON MECHANICAL SPECIALTY CODE
	2014 OREGON ELECTRICAL SPECIALTY CODE
FEDERAL	2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

PROJECT :

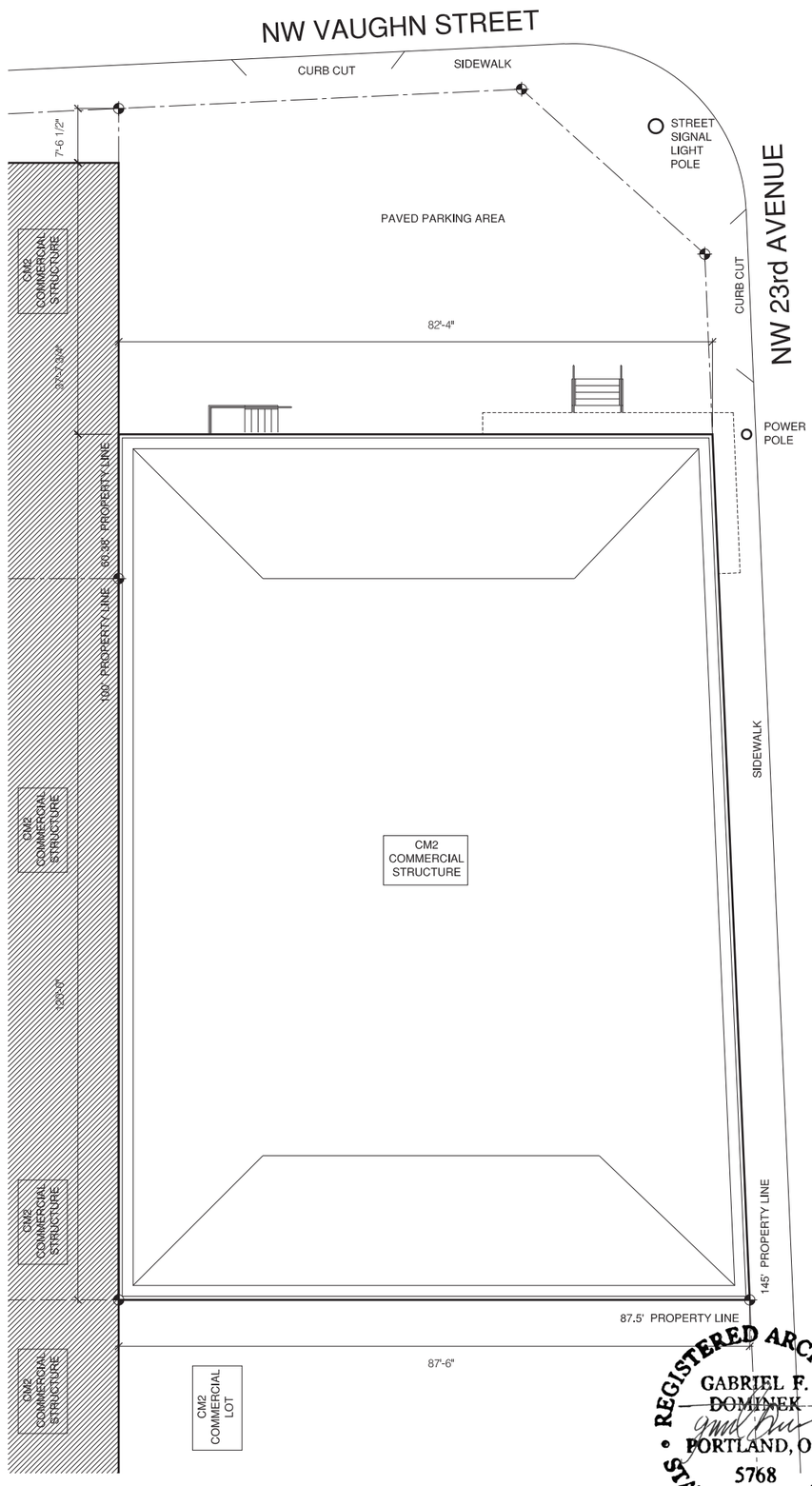
PROJECT TYPE	TENANT IMPROVEMENT
SCOPE OF WORK	- INTERIOR NON-STRUCTURAL REMODEL OF EXISTING BUILDING - FILM PRODUCTION AREA FOR ADIDAS ACTION SPORTS - OCCUPANCY CHANGE - DOOR TO ADA W.C. MOVED FROM EAST WALL TO WEST WALL - WALL & ROOF INSULATION @ EXISTING BATHROOMS - NEW SKATE PARK OBJECTS OUTLINED IN DRAWINGS ARE FOR REFERENCE ONLY AND TO BE UNDER SEPARATE PERMIT - M.E.P. WORK UNDER SEPARATE PERMIT
OCCUPANCY EXISTING	B (BUSINESS) S1 (WAREHOUSE)
OCCUPANCY CHANGE	F1 (MANUFACTURING)
EXISTING STRUCTURES	YES (1 STY W/ MECH. MEZZANINE)
NEW STRUCTURES	NO
PLUMBING FIXTURE EXISTING	(2) TOILET, (2) LAV. SINK, (1) HOSE BIB (1) HOT WATER HEATER
PLUMBING FIXTURES REMOVED	NO
PLUMBING FIXTURES TOTAL	(2) TOILET, (2) LAV. SINK, (1) HOSE BIB (1) HOT WATER HEATER
EXISTING SPRINKLER	NO
NEW SPRINKLER	NO

SEPARATE PERMIT :

1. SEPARATE PERMITS TO INCLUDE:
   - A. MECHANICAL SYSTEMS
   - B. ELECTRICAL SYSTEMS
   - C. PLUMBING SYSTEMS

2. CONTRACTOR LISTED ON PERMIT IS RESPONSIBLE FOR ALL PERMIT DOCUMENTS REQUIRED IN ACCORDANCE WITH APPLICABLE STATE UNIFORM BUILDING CODE , STATE ENERGY CODE, LATEST SAFETY RULES, REGULATIONS AND ANY LOCAL AUTHORITIES HAVING JURISDICTION OVER THIS WORK.

3. DESIGN, ENGINEERING AND SHOP DRAWINGS ARE TO BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH WORK. SHOP DRAWINGS AND SUBMITTALS ARE REQUIRED TO SHOW COMPLETE CRITERIA, DESIGN ASSUMPTIONS, DETAILS, CALCULATIONS, MATERIALS AND FINISHES, CONFIGURATIONS, LOCATIONS, ATTACHMENT, INSTALLATIONS AND ALL INTERFACE WITH OTHER TRADES.



1 SITE PLAN
1"=20'-0"

SHEET SET:

A001	SHEET SET / SITE PLAN
A002	CODE OBSERVATION / OCCUPANCY DIAGRAM
A101	FLOOR PLAN - EXISTING - MAIN & MEZZANINE LEVEL
A102	FLOOR PLAN - NEW - MAIN & MEZZANINE LEVEL
A201	ELEVATION / SECTION - EXISTING
A201	ELEVATION - EXISTING

SYMBOL LEGEND

100	ROOM NUMBER
1-A100	DETAIL MARKER
1-A100	SECTION MARKER
1-A100	ELEVATION MARKER
1A	WALL TYPE
1	DOOR TYPE
101	WINDOW TYPE
0'-0" T.O.	FLOOR LEVEL
8'-0" AFF	CEILING LEVEL ABOVE FINISH FLOOR
(E)	EXISTING
(N)	NEW
℄	CENTERLINE
O.C.	ON CENTER
T.O.	TOP OF
B.O.	BOTTOM OF
EQ.	EQUAL

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project: VAUGHN ST.

Title: SHEET LIST / PROPERTY / SITE PLAN

Scale: AS NOTED

Project: 1701

A001

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CODE OBSERVATION SUMMARY :

STATE	2014 OREGON STRUCTURAL SPECIALTY CODE	
1	306.2	FACTORY GROUP F-1 MODERATE HAZARD MOTION PICTURE & TELEVISION FILMING WITHOUT SPECTATORS
1	TABLE 601	EXISTING CONCRETE WALLS COMPLY WITH 2 HR WALL RATING REQUIREMENT AT EXTERIOR LOT LINE WALLS
2	705.11	EXISTING BUILDING COMPLIES WITH REQUIRED 18 IN. PARAPET
3	902.2.1.3	FLOOR AREA (X<12K SQ.FT.) & OCCUPANT LOAD NUMBERS (X<99) DO NOT REQUIRE AUTOMATIC SPRINKLERS
4	903.2.11.1- 2 FIRE PROTECTION	OPENINGS TO BE A MINIMUM 20 SQ. FT. WITH A MINIMUM 30 IN. WIDTH, NOT GREATER THAN 44 IN. FROM FLOOR AND A MAXIMUM OF 50 LINEAL FT. BETWEEN ADJACENT OPENINGS. EXISTING OPENINGS ON TWO SIDES COMPLY WITH INTENT OF CODE. EXISTING DISTANCE BETWEEN WEST WALL OPENINGS EXCEEDS 50 LINEAL FT. LOW OCCUPANT LOAD, REVISED OCCUPANCY USE, LACK OF COMBUSTIBLE MATERIALS IN 1 STORY BUILDING COUPLED WITH EXISTING CLERESTORY WINDOWS RESOLVING PROBLEMS ASSOCIATED WITH VENTING OF THE PRODUCTS OF COMBUSTION DURING FIRE RESCUE AND SUPPRESSION SATISFY THE INTENT OF CODE FOR LIFE SAFETY.
5	TABLE 1014.3	ACCESSIBLE MEANS OF EGRESS EXISTING.
6	1015.1	2 EXITS ARE REQUIRED FOR OCCUPANCY GREATER THAN 49. EXISTING EXITS COMPLY WITH REQUIRED SEPARATION & COMMON PATH OF TRAVEL DISTANCE.
7	1204.1	SPACE HEATING EQUIPMENT NOT REQUIRED FOR INTERIOR SPACE WHERE PRIMARY PURPOSE OF SPACE IS NOT ASSOCIATED WITH HUMAN COMFORT
8	TABLE 2902.1	EXISTING WATER CLOSET & LAV. COMPLY WITH HIGHEST REQUIRED QUANTITY AND 1991 ADA STANDARDS WHEN BATHROOMS WERE CONSTRUCTED.
STATE	2014 OREGON ENERGY EFFICIENCY SPECIALTY CODE	
9	101.4.2	NEW CONSTRUCTION TO COMPLY WITH 2014 OEESC. UNALTERED PORTION(S) OF EXISTING BUILDING OR BUILDING SYSTEM NOT REQUIRED TO COMPLY WITH 2014 OEESC.
10	0101.5.2	SEMI-CONDITIONED FREEZE PROTECTION. WALLS BETWEEN SEMI-CONDITIONED & EXTERIOR REQUIRED TO PROVIDE CAVITY INSULATION R VALUE LISTED ONLY.
11	TABLE 502.1.1	EXISTING BATHROOMS TO BE CONDITIONED SPACE NOW SURROUNDED BY UNCONDITIONED (EXTERIOR) SPACE R13 EXTERIOR WALLS R38 ROOF NA UNHEATED SLAB
CITY	COMMERCIAL ZONE	
12	33.130.100 B 3 & 5	CHANGE OCCUPANCY TO F1 ALLOWED INDUSTRIAL SERVICES ARE A CONDITIONAL USE. ALL OTHER INDUSTRIAL USES ALLOWED IF NET BUILDING AREA DOES NOT EXCEED 15K SQ. FT. AND EXTERIOR DISPLAY OF STORAGE EQUIPMENT IS PROHIBITED.
CITY	PARKING	
13	TABLE 266-1	NO MINIMUM AUTO PARKING FOR CM ZONE
14	TABLE 266-6	BICYCLE PARKING IS REQUIRED (2 LONG TERM) WITH CHANGE OF OCCUPANCY
15	TABLE 266-7	1 LOADING DOCK REQUIRED. EXISTING NE LOADING DOCK USED BUT IS WITHIN REQUIRED SETBACK. ANY EXTERIOR WORK WILL REQUIRE LANDSCAPE SCREENING. CHANGE OF OCCUPANCY MAY REQUIRE SITE IMPROVEMENTS.
CITY	LANDSCAPING	
16		CHANGE OF OCCUPANCY MAY REQUIRE SCREENING AT LOADING DOCK UP TO L2 STANDARD.
CITY	DESIGN OVERLAY REVIEW	
17		NOT APPLICABLE TO PROJECT SCOPE ANY EXTERIOR WORK WILL REQ. DESIGN OVERLAY REVIEW ON ALTERATIONS TO EXISTING EXTERIOR ELEMENTS BUT THERE ARE EXEMPTIONS. - ADA IMPROVEMENTS ARE EXEMPT AND PUBLIC ART OR SMALL SIGNAGE IS EXEMPT. - BUILDING COLOR MAY BE EXEMPT UNLESS THE EXISTING COLOR WAS MANDATED BY CITY. - FURTHER REVIEW NEEDED TO DETERMINE IF DESIGN OVERLAY REVIEW WILL BE REQUIRED BASED ON PROJECT SCOPE.
CITY	NW PLAN DISTRICT	
18		NOT APPLICABLE TO PROJECT SCOPE PROPERTY IS ON MAIN STREET PER PLAN DISTRICT MAP WHICH REQUIRES WINDOWS AND ACCESS.
CITY	CHAPTER 24.85	
19		NOT APPLICABLE TO PROJECT SCOPE INCREASE IN HAZARD CLASSIFICATION, OCCUPANT LOAD > 150 OR COST OVER $40 SQ.FT. WILL TRIGGER STRUCTURAL IMPROVEMENT REQUIREMENTS.

OCCUPANCY CALCULATION : EXISTING

B	BUSINESS 100 GROSS SQ. FT. PER OCCUPANT	2,183.9 + 576.3 = 2,760.2 2760.2 / 100 = 27.6 (28) OCCUP.	28 + 14 = 42 42 OCCUPANTS TOTAL
S1	WAREHOUSE 500 GROSS SQ. FT. PER OCCUPANT	5,258.7 + 1,309.3 = 6,568 6,568 / 500 = 13.1 (14) OCCUP.	

EGRESS CALCULATION : EXISTING

PATH A

12'-11" (75' MAX.)
COMMON PATH TO CHOICE
OF TWO EXITS

12'-11"+64'-00"+55'-08"+23'-02"
=
155-10" (200' MAX.)
TOTAL EXIT TRAVEL

116'-01" (74'-03" MIN.)
DISTANCE BETWEEN EXITS

PATH B

66'-03" (75' MAX.)
COMMON PATH TO CHOICE
OF TWO EXITS

66'-03"+55'-08"+45'-05"
=
167'-04" (200' MAX.)
TOTAL EXIT TRAVEL

95'-07" (74'-03" MIN.)
DISTANCE BETWEEN EXITS

OCCUPANCY CALCULATION : NEW

F1	INDUSTRIAL AREA 100 GROSS SQ. FT. PER OCCUPANT	6,998.3 + 2,288.8 = 9,287.1 9,287.1 / 100 = 92.9 (93) OCCUPANTS	93 OCCUPANTS TOTAL

EGRESS CALCULATION : NEW

PATH A

12'-11" (75' MAX.)
COMMON PATH TO CHOICE
OF TWO EXITS

12'-11"+29'-04"+81'-01"+29'-09"
=
153'-01" (200' MAX.)
TOTAL EXIT TRAVEL

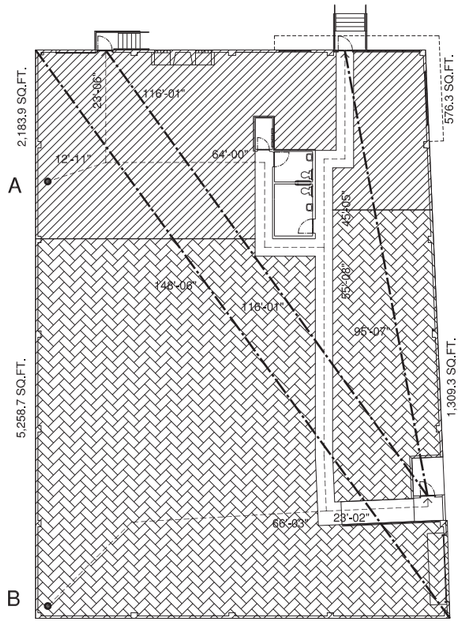
116'-01" (74'-03" MIN.)
DISTANCE BETWEEN EXITS

PATH B

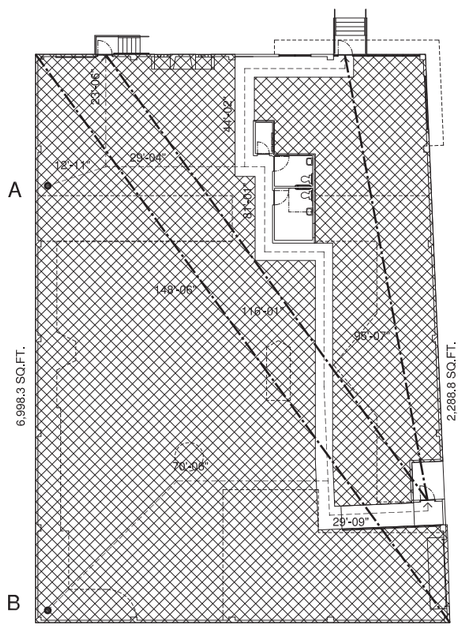
70'-06" (75' MAX.)
COMMON PATH TO CHOICE
OF TWO EXITS

66'-03"+81'-01"+44'-02"
=
191'-06" (200' MAX.)
TOTAL EXIT TRAVEL

95'-07" (74'-03" MIN.)
DISTANCE BETWEEN EXITS



1 OCCUPANCY & EGRESS DIAGRAM - EXISTING
SCALE AS NOTED



2 OCCUPANCY & EGRESS DIAGRAM - NEW
SCALE AS NOTED

SYMBOL LEGEND

100	ROOM NUMBER
1-A100	DETAIL MARKER
1-A100	SECTION MARKER
1-A100	ELEVATION MARKER
1A	WALL TYPE
1	DOOR TYPE
101	WINDOW TYPE
0'-0" T.O.	FLOOR LEVEL
8'-0" AFF	CEILING LEVEL ABOVE FINISH FLOOR
(E)	EXISTING
(N)	NEW
℄	CENTERLINE
O.C.	ON CENTER
T.O.	TOP OF
B.O.	BOTTOM OF
EQ.	EQUAL

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project
VAUGHN ST.

Title: SHEET LIST / PROPERTY / SITE PLAN
Scale: AS NOTED
Project: 1701
A002

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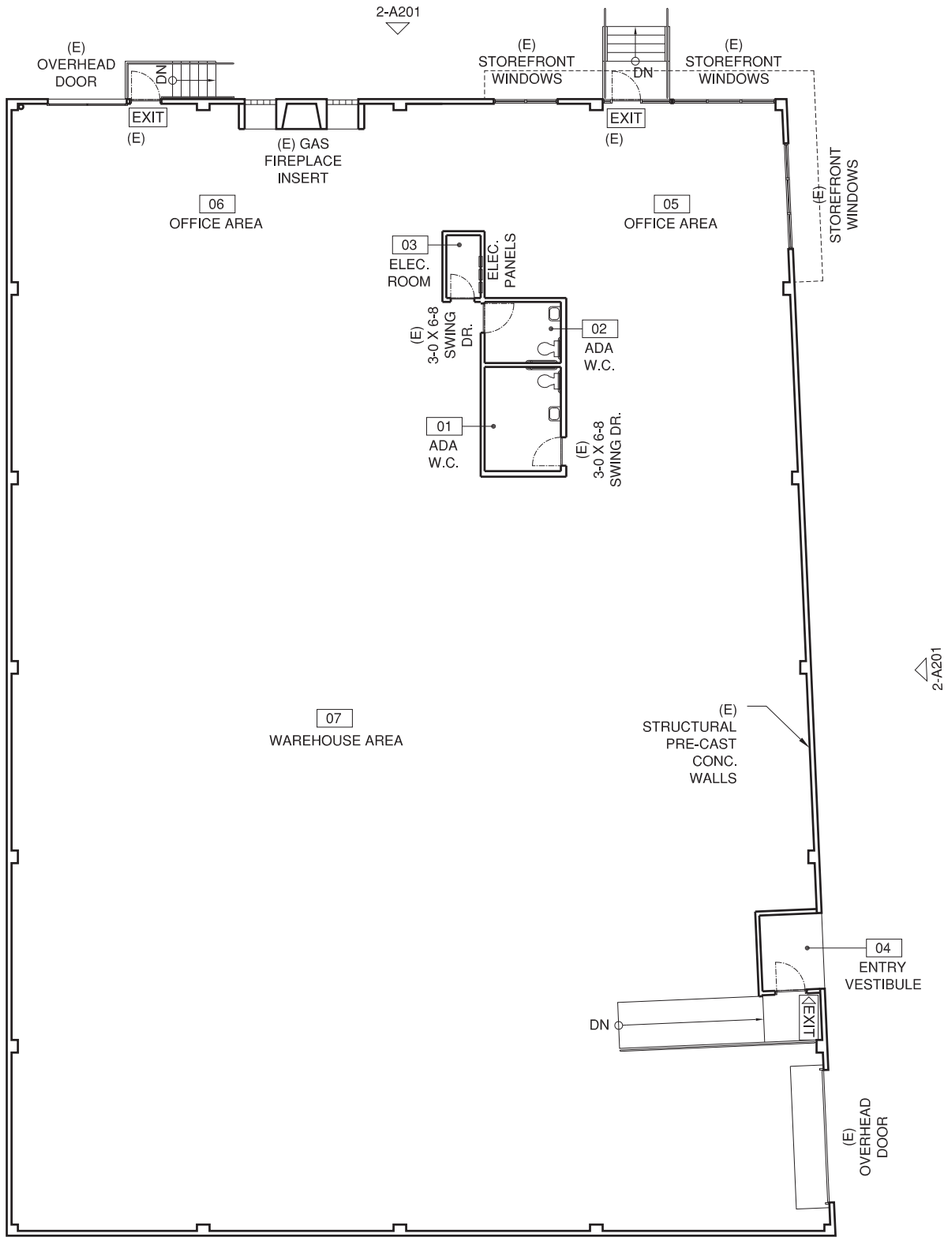
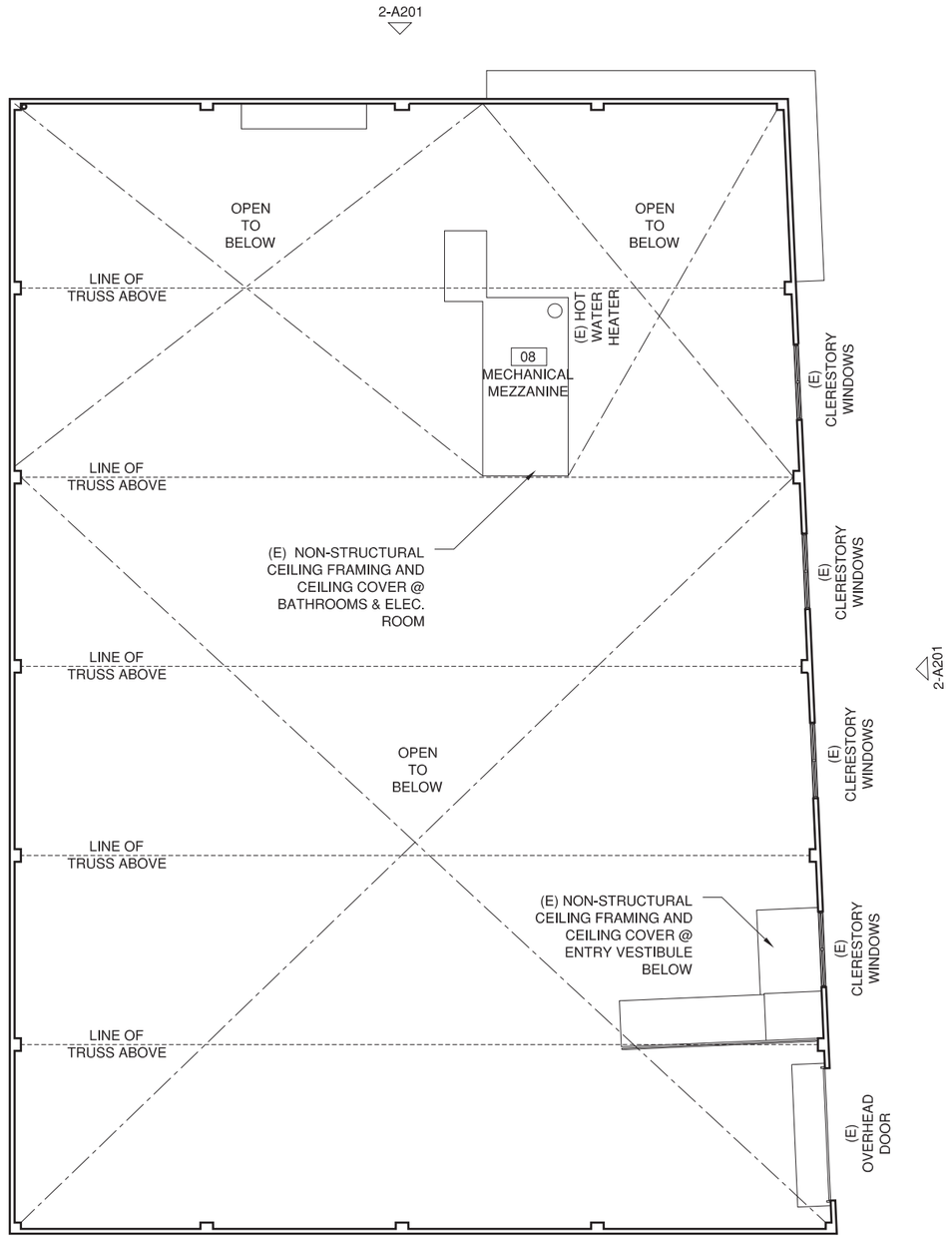


1 FLOOR PLAN - MAIN LEVEL EXISTING

1/16"=1'-0"



2 FLOOR PLAN - MEZZANINE LEVEL EXISTING

1/16"=1'-0"

SYMBOL LEGEND

100	ROOM NUMBER
1-A100	DETAIL MARKER
1-A100	SECTION MARKER
1-A100	ELEVATION MARKER
1A	WALL TYPE
1	DOOR TYPE
101	WINDOW TYPE
0'-0" T.O.	FLOOR LEVEL
8'-0" AFF	CEILING LEVEL ABOVE FINISH FLOOR
(E)	EXISTING
(N)	NEW
℄	CENTERLINE
O.C.	ON CENTER
T.O.	TOP OF
B.O.	BOTTOM OF
EQ.	EQUAL

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project

VAUGHN ST.

Title: FLOOR PLAN - EXISTING

Scale: AS NOTED

Project: 1801

A101

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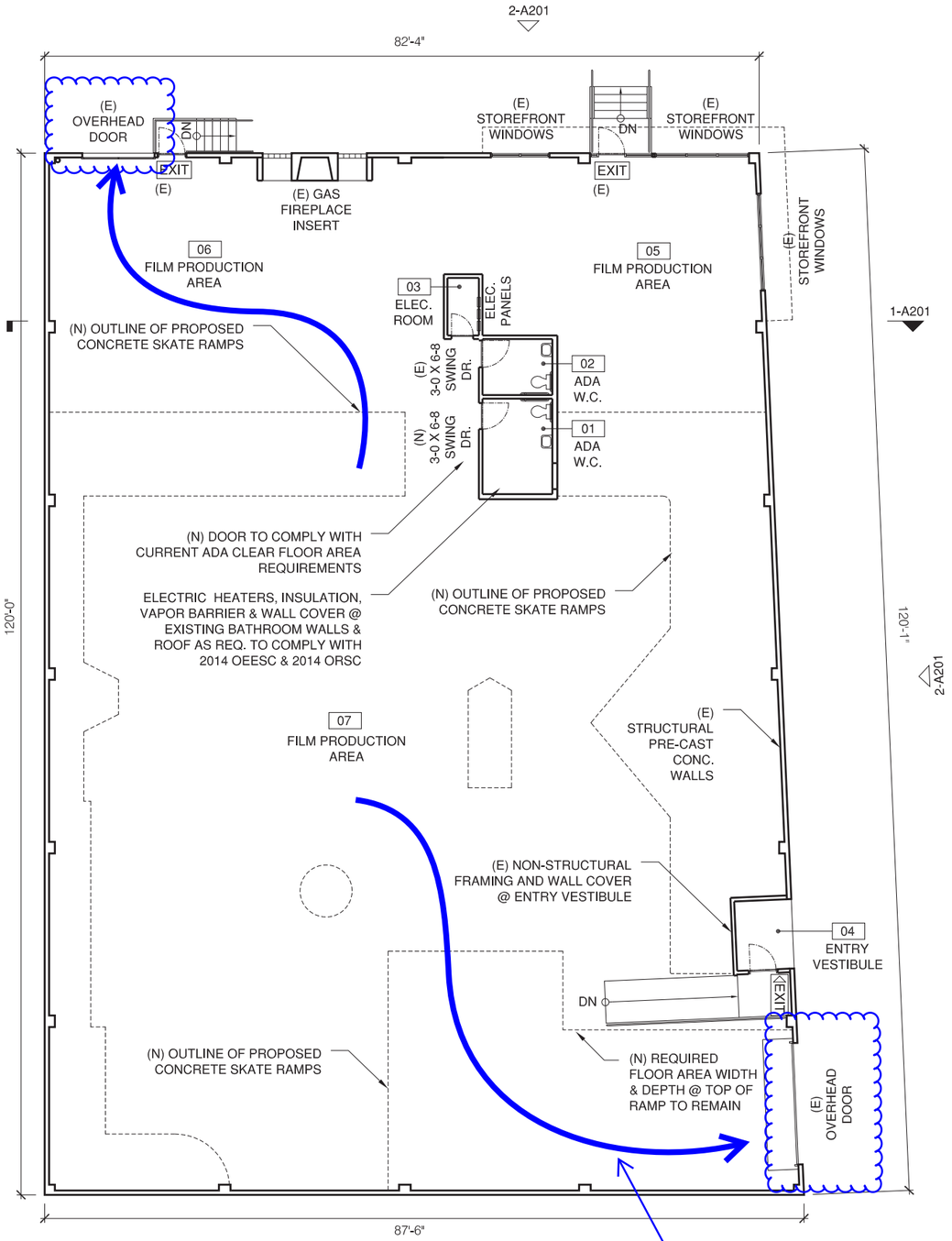
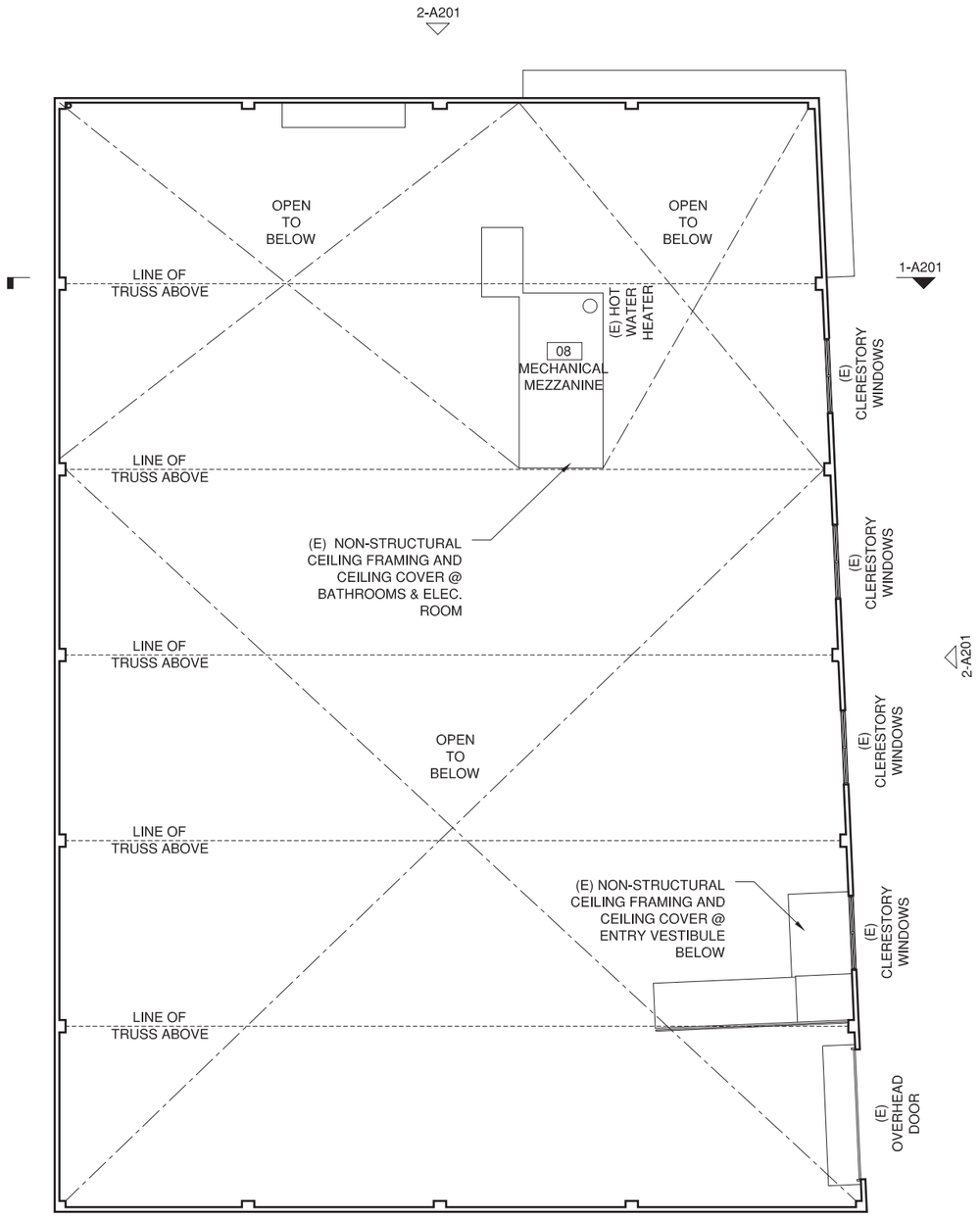


1 FLOOR PLAN - MAIN LEVEL NEW
1/16"=1'-0"

Products of combustion vent through overhead doors



2 FLOOR PLAN - MEZZANINE LEVEL NEW
1/16"=1'-0"

SYMBOL LEGEND

100	ROOM NUMBER
1-A100	DETAIL MARKER
1-A100	SECTION MARKER
1-A100	ELEVATION MARKER
1A	WALL TYPE
1	DOOR TYPE
101	WINDOW TYPE
0'-0" T.O.	FLOOR LEVEL
8'-0" AFF	CEILING LEVEL ABOVE FINISH FLOOR
(E)	EXISTING
(N)	NEW
℄	CENTERLINE
O.C.	ON CENTER
T.O.	TOP OF
B.O.	BOTTOM OF
EQ.	EQUAL

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project
VAUGHN ST.

Title: FLOOR PLAN - NEW

Scale: AS NOTED

Project: 1801

A102

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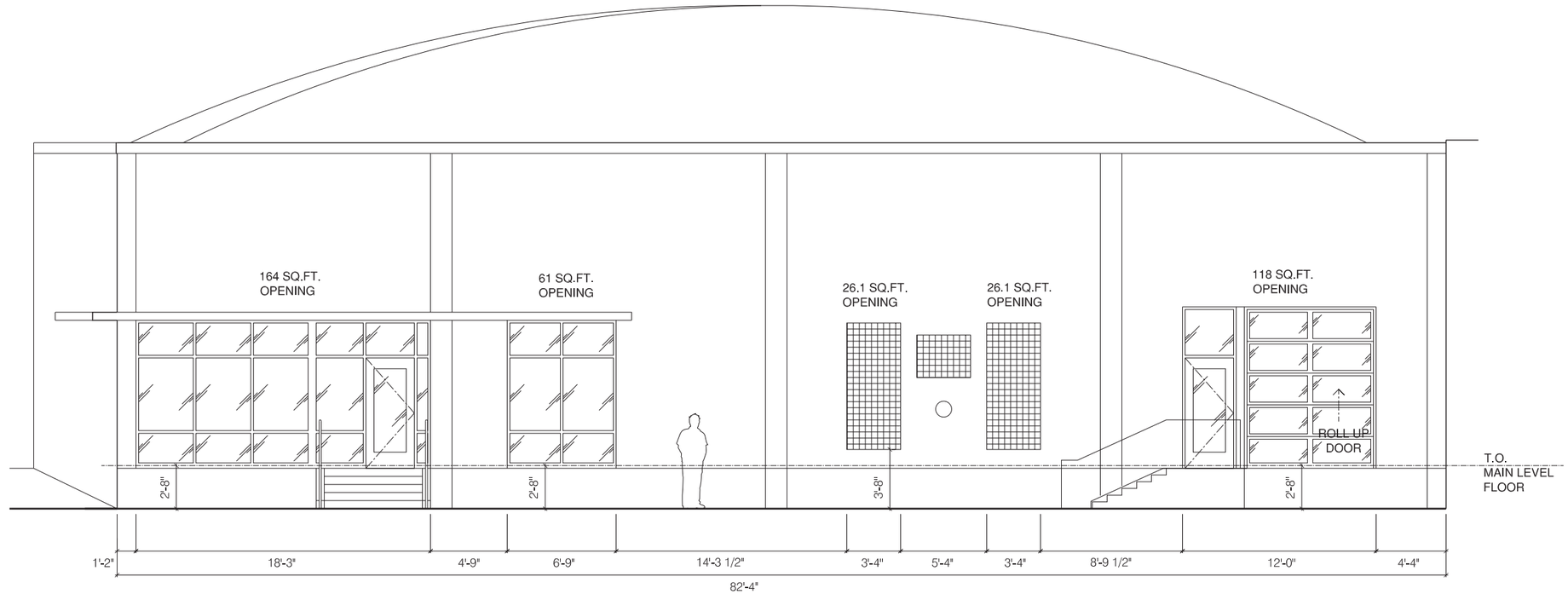
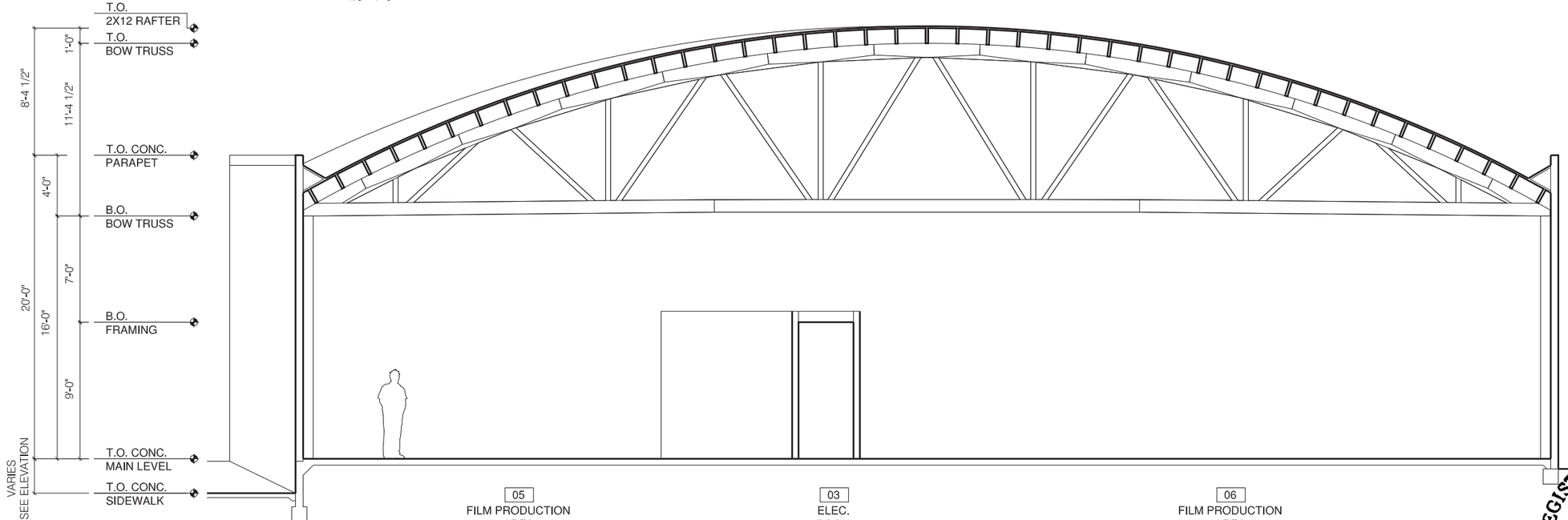


2 ELEVATION - NORTH EXISTING

1/8"=1'-0"



1 SECTION - WEST / EAST NEW

1/8"=1'-0"

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project

VAUGHN ST.

Title: ELEVATION SECTION - EXISTING

Scale: AS NOTED

Project: 1801

A201

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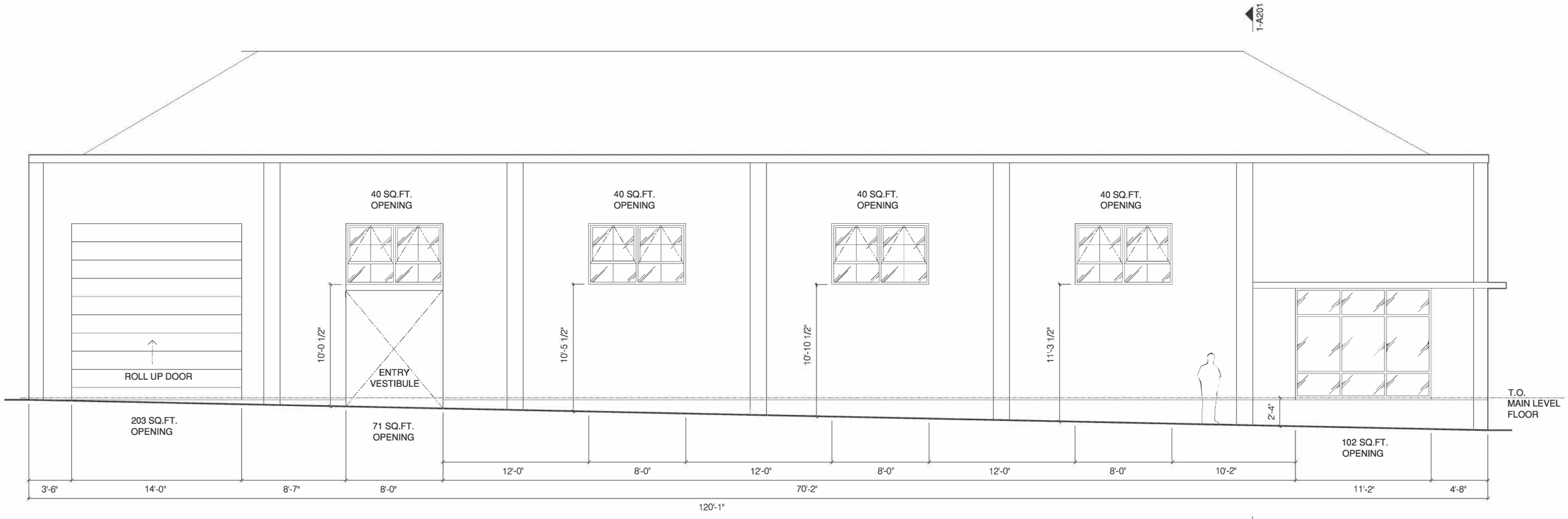

1 ELEVATION - EAST EXISTING

1/8"=1'-0"

No.	Revision	Date
1	APPEAL - FIRE PROTECTION	19-0111

Project

VAUGHN ST.

Title ELEVATION - EXISTING

Scale AS NOTED

Project 1801

A202

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mercial buses or trucks that exceeds 5,000 square feet (464 m^2) would require sprinklers. This is the same criteria as Group S-1 occupancies and Group S-2 enclosed parking garages storing commercial buses and trucks. Repair garages may contain significant quantities of flammable liquids and other combustible materials. These occupancies are typically considered Ordinary Hazard Group 2 occupancies as defined in NFPA 13. Portions of repair garages used for parts cleaning using flammable or combustible liquids may require automatic sprinkler protection. If quantities of hazardous materials exceed the limitations in Section 307 for maximum allowable quantities per control area, the repair garage would be reclassified as a Group H occupancy.

[F] 903.2.9.2 Bulk storage of tires. Buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m^3) shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

❖ This section specifies when an automatic sprinkler system is required for the bulk storage of tires based on the volume of the storage area as opposed to a specific number of tires. Even in fully sprinklered buildings, tire fires pose significant problems to fire departments. Tire fires produce thick smoke and are difficult to extinguish by sprinklers alone. NFPA 13 contains specific fire protection requirements for the storage of rubber tires.

Whether the volume of tires is divided into different fire areas or not is irrelevant to the application of this section. If the total for all areas where tires are stored is great enough that the resultant storage volume exceeds 20,000 cubic feet (566 m^3), the building must be sprinklered throughout. See the commentary to Section 202 definition of "Tires, bulk storage of" for further information.

[F] 903.2.10 Group S-2 enclosed parking garages. An *automatic sprinkler system* shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.4 as follows:

1. Where the *fire area* of the enclosed parking garage exceeds 12,000 square feet (1115 m^2); or
2. Where the enclosed parking garage is located beneath other groups.

   Exception: Enclosed parking garages located beneath Group R-3 occupancies.

❖ Fire records have shown that fires in parking structures typically fully involve only a single automobile with minor damage to adjacent vehicles. An enclosed parking garage, however, does not allow the dissipation of smoke and hot gases as readily as an open parking structure, which is also considered a Group S-2 occupancy. If the enclosed parking garage has a fire area greater than 12,000 square feet (1115 m^2) or is located beneath another occupancy group, the enclosed parking garage must be protected with an automatic sprinkler system. This requirement that the enclosed parking garage located beneath other occupancy groups is required to be sprinklered is based on the potential for a fire to develop undetected, which would endanger the occupants of the other occupancy. The 12,000-square-foot (1115 m^2) threshold is similar to other occupancies such as Groups M and S-1.

It should be noted that while open parking garages are considered a Group S-2 occupancy, they are not required by the provisions of this section to be equipped with an automatic sprinkler system.

The exception exempts enclosed garages in buildings where the garages are located below a Group R-3 occupancy. The exception is essentially moot since the code requires all buildings with a Group R occupancy to be sprinklered throughout. Because the entire building with the residential occupancy is required to be sprinklered according to Section 903.2.8, the garage would be sprinklered as well. It should be noted that if the Group R-3 occupancy was protected with an NFPA 13D system, the enclosed parking garage would not require sprinklers.

[F] 903.2.10.1 Commercial parking garages. An *automatic sprinkler system* shall be provided throughout buildings used for storage of commercial trucks or buses where the *fire area* exceeds 5,000 square feet (464 m^2).

❖ Because of the larger-sized vehicles involved in commercial parking structures, such as trucks or buses, a more stringent sprinkler threshold is required. Bus garages may also be located adjacent to passenger terminals (Group A-3) that have a substantial occupant load. Commercial parking requires only a single vehicle in order to be classified as commercial parking.

The criterion for sprinkler protection is based on the size of the fire area and not the size of the commercial parking. If the commercial parking involves only 1,000 square feet (93 m^2) but the fire area exceeds 5,000 square feet (464 m^2), sprinkler protection is required.

[F] 903.2.11 Specific building areas and hazards. In all occupancies other than Group U, an *automatic sprinkler system* shall be installed for building design or hazards in the locations set forth in Sections 903.2.11.1 through 903.2.11.6.

❖ Sections 903.2.11.1 through 903.2.11.2 specify certain conditions under which an automatic sprinkler system is required, even in otherwise nonsprinklered buildings. As indicated, the listed conditions in the noted sections are applicable to all occupancies except Group U. Most structures that qualify as Group U do not typically have the type of conditions stipulated in Sections 903.2.11.1 through 903.2.11.1.3.

[F] 903.2.11.1 Stories without openings. An *automatic sprinkler system* shall be installed throughout all *stories*,

including basements, of all buildings where the floor area exceeds 1,500 square feet (139.4 m^2) and where there is not provided at least one of the following types of *exterior wall* openings:

1. Openings below grade that lead directly to ground level by an exterior *stairway* complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of *exterior wall* in the *story* on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).
2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m^2) in each 50 linear feet (15 240 mm), or fraction thereof, of *exterior wall* in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.

❖ Because of both the lack of openings in exterior walls for access by the fire department for fire fighting and rescue and the problems associated with venting the products of combustion during fire suppression operations, all stories, including any basements of buildings that do not have adequate openings as defined in this section, must be equipped with an automatic sprinkler system. This section applies to stories without sufficient exterior openings where the floor area exceeds 1,500 square feet (139 m^2) and where the building is not otherwise required to be fully sprinklered. The requirement for an automatic sprinkler system in this section applies only to the affected area and does not mandate sprinkler protection throughout the entire building.

Stories without openings, as defined in this section, are stories that do not have at least 20 square feet (1.9 m^2) of opening leading directly to ground level in each 50 lineal feet (15 240 mm) or fraction thereof on at least one side. Since exterior doors will provide openings of 20 square feet (1.9 m^2), or slightly less in some occupancies, exterior stairways and ramps in each 50 lineal feet (15 240 mm) are considered acceptable.

This section specifically states that the required openings be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). If the openings in the exterior wall are located without regard to the location of the adjacent openings, it is possible that segments of the exterior wall will not have the required access to the interior of the building for fire-fighting purposes. Any arrangement of required stairways, ramps or openings that results in a portion of the wall 50 feet (15 240 mm) or more in length with no openings to the exterior does not meet the intent of the code that access be provided in each 50 lineal feet (15 240 mm) (see Figure 903.2.11.1).

There is a further restriction on openings that are entirely above grade. More specifically, to support fire-fighting operations the openings need to be accessible and usable. Therefore, Item 2 specifies that the maximum sill height be 44 inches (1118 mm) above the floor. This height is consistent with the height provided for emergency escape and rescue windows in Section 1029.3.

One application of this section has been addressed in the 2009 edition of the *International Code Interpretations* book and deals with automotive service shops that have below-grade service areas where employees perform oil changes and other minor maintenance services. The below-grade areas are typically open to the grade-level service bays via openings providing access to the underside of the vehicles without requiring the vehicle to be lifted into the air. Inasmuch as the below-grade space has no openings directly to the exterior, the question was asked if it would be regulated as a windowless story and thus be required to be equipped with an automatic fire suppression system in accordance with Section 903.2.11.1.

The answer to that question is no. Due to the openness between the adjacent service levels, the below-grade area would be more appropriately regulated similar to a mezzanine rather than a story. A mezzanine is not regulated as a separate story but rather as part of the same story that it serves. Therefore, if the below-grade service level is in compliance with the applicable provisions of Section 505, the windowless story provisions of Section 903.2.11.1 would be evaluated based on the exterior wall openings of the main level and not the service mezzanine below. The direct interconnections between the two adjacent floor levels by multiple service openings provide access to the lower service area for fire-fighting and rescue operations. As such, it would not be regulated as a windowless story.

The requirement to sprinkler the basement is independent of mixed-use conditions. Whether the basement is separated or nonseparated is irrelevant to the need for sprinkler protection, nor does the requirement to provide sprinklers in the basement imply that sprinklers must be provided elsewhere. This requirement is applicable to the basement or any story without openings irrespective of other code provisions.

These provisions are also not based upon the size of a fire area but rather upon the size of the basement. Thus, subdividing the basement into multiple fire areas would have no effect on the requirement. However, one benefit of the multiple fire areas could be that each fire area could have a separate limited area sprinkler system with less than 20 sprinklers.

[F] 903.2.11.1.1 Opening dimensions and access. Openings shall have a minimum dimension of not less than 30 inches (762 mm). Such openings shall be accessible to the fire department from the exterior and shall not be obstructed in a

manner that fire fighting or rescue cannot be accomplished from the exterior.

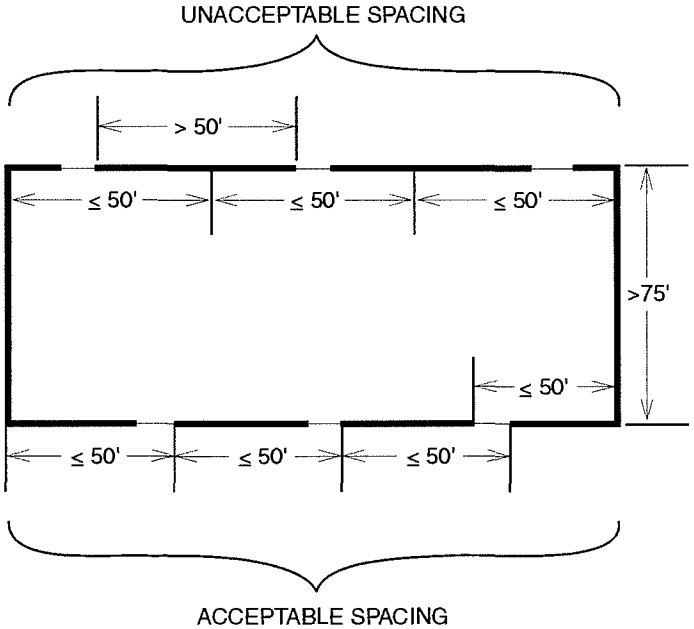
❖ To qualify, an opening must not be less than 30 inches (762 mm) in least dimension and must be accessible to the fire department from the exterior. The minimum opening dimension gives fire department personnel access to the interior of the story or basement for fire-fighting and rescue operations and provides openings that are large enough to vent the products of combustion.

[F] 903.2.11.1.2 Openings on one side only. Where openings in a *story* are provided on only one side and the opposite wall of such *story* is more than 75 feet (22 860 mm) from such openings, the *story* shall be equipped throughout with an *approved automatic sprinkler system*, or openings as specified above shall be provided on at least two sides of the *story*.

❖ If openings are provided on only one side, an automatic sprinkler system would still be required if the opposite wall of the story is more than 75 feet (22 860 mm) from existing openings. An alternative to providing the automatic sprinkler system would be to design openings on at least two sides of the exterior of the building. As long as the story being considered is not a basement, the openings on two sides can be greater than 75 feet (22 860 mm) from any portion of the floor. In basements, if any portion is more than 75 feet (22 860 mm) from the openings, the entire basement must be equipped with an automatic sprinkler system, as indicated in Section 903.2.11.1.3. Providing openings on more than one wall allows cross ventilation to vent the products of combustion [see Figures 903.2.11.1(1-4)].

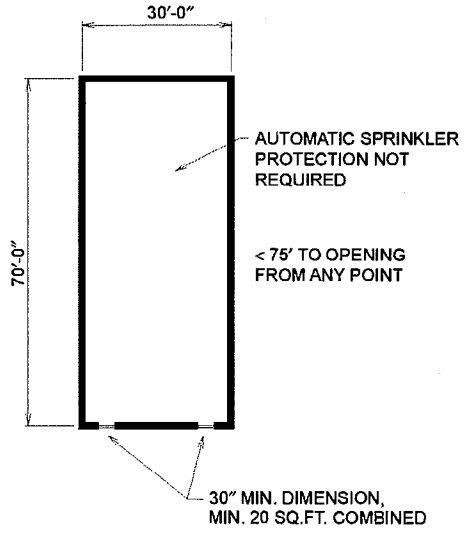
[F] 903.2.11.1.3 Basements. Where any portion of a *basement* is located more than 75 feet (22 860 mm) from openings required by Section 903.2.11.1, or where walls, partitions or other obstructions are installed that restrict the application of water from hose streams, the *basement* shall be equipped throughout with an *approved automatic sprinkler system*.

❖ The 75-foot (22 860 mm) distance is intended to be measured in the line of travel—not in a straight line perpendicular to the wall. Where obstructions, such as walls or other partitions, are present in a basement, the walls and partitions enclosing any room or space must have openings that provide an equivalent degree of fire department access to that provided by the openings prescribed in Section 903.2.11.1 for exterior walls. When obstructions such as walls or partitions are installed in the basement, the ability to apply hose streams through these openings and reach the basement area is reduced or eliminated. The configuration and clear-opening requirements become useless when an interior wall or other obstruction is placed inside the basement. In that case, it is reasonable to require automatic fire sprinklers to provide adequate protection in the basement. If an equivalent degree of fire department access to all portions of the floor area is not provided, the basement would require an automatic sprinkler system.



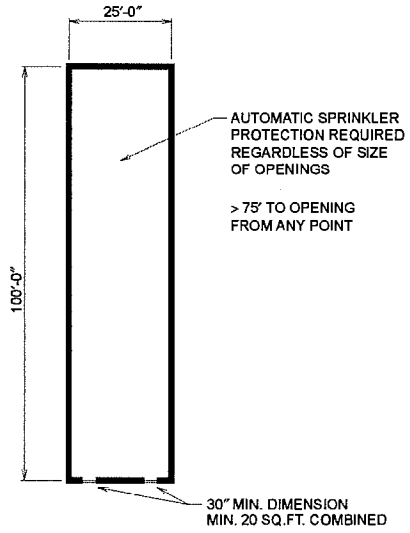
For SI: 1 foot = 304.8 mm.

Figure 903.2.11.1
SPACING OF OPENINGS IN STORIES OR BASEMENTS



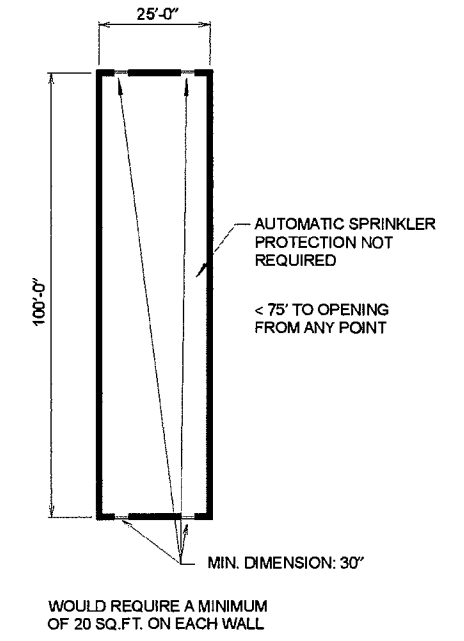
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

Figure 903.2.11.1(1)
OPENINGS IN STORIES OR BASEMENTS—LESS THAN 75 FEET FROM ANY POINT TO AN OPENING



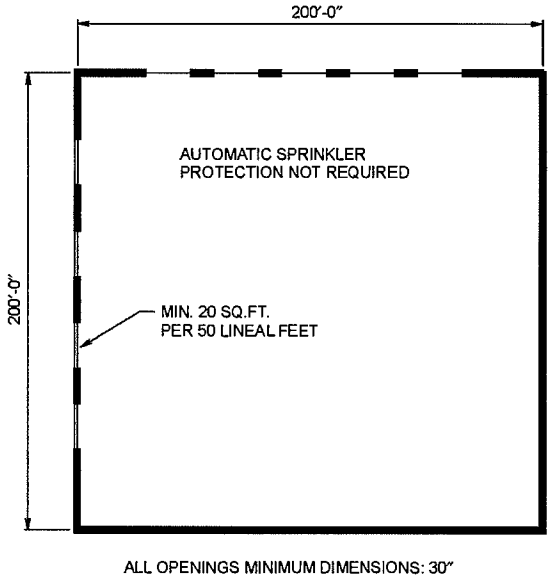
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

Figure 903.2.11.1(2)
OPENINGS IN STORIES OR BASEMENTS—MORE THAN 75 FEET FROM ANY POINT TO AN OPENING



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

Figure 903.2.11.1(3)
OPENINGS IN STORIES OR BASEMENTS—LESS THAN 75 FEET FROM ANY POINT TO AN OPENING



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

Figure 903.2.11.1(4)
OPENINGS IN STORIES OR BASEMENTS