

# Technical Specifications

Last Updated: May 2013

*The*  
**HANOVER THEATRE**  
*for the Performing Arts*

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Worcester Center for the Performing Arts, a registered not-for-profit 501(c)(3) organization, owns and operates The Hanover Theatre for the Performing Arts.

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# I. Lighting System & Inventory

The Hanover Theatre does not maintain a house lighting plot since the design needs change for each production. The lighting electricians that are listed on the line set schedule, consist of five permanently hung electric raceways. In addition, there are two floor positions on either sides of the stage, two boom positions on either side of the balcony, a balcony rail and a ceiling cove position in the house.

Stage Left Floor – has 6 dimmers #1-6

Stage Right Floor – has 6 dimmers #7-12 (dimmers 13 and 14 are in the orch pit)

HR boom – has 8 dimmers #15-22 and is 55' from DSC at the plaster line

HL boom – has 8 dimmers #23-30 and is 55' from DSC at the plaster line

House ceiling cove position – has 24 dimmers #31-54

Balcony rail – has 12 dimmers #55-66 and is 51' at center from DSC at the plaster line

#1 Electric lineset – has 24 dimmers #67-90

#2 Electric lineset – has 18 dimmers #91-108

#3 Electric lineset – has 18 dimmers #109-126

#4 Electric lineset – has 18 dimmers #127-144

#5 Electric line set – has 12 dimmers #145-156 and is hung with 8 cyc lights

Listed below is the inventory of instruments in-house and available for use by incoming productions on a rental basis. **In all cases where the in house lighting system is used, there will be a strip/restore charge added to the show cost and charged to the production, consisting of a minimum crew charge of \$500 (one electrician + 4 stage hands @ \$25/hr x 4 hrs.) for a strip and/or restore of the lighting system.**

## (1) ETC – Express 72144 Lighting Control Console

2 ETC 405-B

Source Four 5 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

25 ETC 410-B

Source Four 10 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

30 ETC 414-B

Source Four 14 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

53 ETC 419-B

Source Four 19 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

46 ETC 426-B

Source Four 26 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

70 ETC 436-B

Source Four 36 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

10 ETC 450-B

Source Four 50 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

# I. Lighting System & Inventory (continued)

10 ETC 450-B

Source Four 50 Deg. Fixture W/ C-Clamp, Color Frame, Stage Pin Connector Installed

60 ETC S4PAR-EA-B

Source Four Par Fixture W/ Color Frame, Four Lens Set, Stage Pin Connector Installed

60 ETC 400CC

C-Clamp for Source Four Par

340 ETC 400SC

32" Black Safety Cable for Source 4

30 ETC 410TH

Top Hat for 10 Degree Source Four

20 ETC 400PTH6

Top Hat for Source Four Par, ETC Confirms this fits on a 14 Degree lens tube.

20 ETC 400TH

6.25" TOP HAT FOR SOURCE FOUR

30 ETC 400CF

Color Frame, 6.25 Sq Inch for use with Source Four

20 ETC 407CF

Color Frame for use with Source 4 Par AND 14 degree fixtures

5 ETC 410CF

Color Frame 12"x12" for use with Source 4 10 degree fixture

## ***Follow spots:***

The Hanover Theatre owns (2) Lycian 1275 1.2k Super Star Follow spots. The Spot Decks are located in the Balcony - one on House Left and one on House Right. Occasionally a production will add a third follow spot. We kill house seats on the upper House Right Balcony, build a third platform and add a rental spot to match our 2. The cost for the spot rental is typically \$500 including delivery and return. They are located approximately 150 FT from DSC.

## ***Haze/Fog:***

The Hanover Theatre owns a Martin Compact Pro Hazer which is available to rent for \$75.00.

# I. Lighting System & Inventory (continued)

## *Lighting Positions –Front of House:*

Cove – It's a steep angle but works well. Typically we have (22) Source Four 14 Degree Units, (6) Source Four 10 Degree Units and (6) Source Four 19 Degree Units hung in the cove. There are 24 Circuits in this location.

Box Boom House Left and House Right – our typical house hang has a mix of 10s, 14s and 19s. There are 16 Fixtures per position, 8 pairs top to bottom. There are 8 circuits at each position. Box Booms are approximately 55 FT from DSC.

Balcony Rail – follows the curve of the balcony and has 12 circuits. We will typically have fixtures hung at this position – but it changes constantly. The balcony rail is 51' at center from DSC and 52' at extreme right and left from DSC. House balcony rail is 76' wide.

## *Lighting Positions – Onstage:*

Onstage, the lighting electrics that are listed on the line set schedule consist of five permanently hung electric raceways. In addition, there is a 6 Circuit Outlet Box DSL and DSR as well as a 6-Circuit Drop Box MSL and MSR. The Permanent Raceways are on line sets 4, 10, 21, 33 and 45. We permanently hang (8) 3 Cell Cyc Lights on Lineset 45 to Light our Cyc.

## *Show Power:*

SL on deck 2 x 400A 3 Phase/ 5-Wire Disconnect Switch ( (cam loc)

1 x 100A 3 Phase/ 5-Wire Disconnect Switch ( (cam loc)

SR Below the stage accessed through a hole DSR 100A 3 Phase/ 5-Wire Disconnect Switch (cam loc)

The Hanover Theatre has a 14 station Clear Com intercom system as well as a house paging system available to all onstage and backstage dressing room locations, all with separate volume controls.

# II. House Lineset Schedule

Lineset Number	Description	Notes	Trim / Width	Batten Type	Length	Single/Double Purchase
FC	<b>Braille Fire Curtain</b>	<b>Must be clear to come in</b>		N/A		N/A
1	<b>Main Border</b>	<b>Red velour, matches main curtain</b>		1 1/2" Sched. 80 Pipe	60'	Wire Guide
2	<b>Main Curtain</b>	manual pull, traveler or guillotine, two panels		1 1/2" Pipe Truss	60'	Wire Guide
3				1 1/2" Sched. 80 Pipe	60'	Double Purchase
4	<b>1st Electric</b>	<b>Raceway - permanent position</b>		1 1/2" Pipe Truss	63'	Double Purchase
5				1 1/2" Pipe Truss	60'	Double Purchase
6				1 1/2" Sched. 80 Pipe	60'	Double Purchase
7	<b>Number 1 Border</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
8	<b>Number 1 Legs</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
9				1 1/2" Sched. 80 Pipe	60'	Single Purchase
10	<b>Number 2 Electric</b>	<b>Raceway - permanent position</b>		1 1/2" Pipe Truss	63'	Single Purchase
11				1 1/2" Sched. 80 Pipe	60'	Single Purchase
12				1 1/2" Pipe Truss	60'	Single Purchase
13				1 1/2" Sched. 80 Pipe	60'	Single Purchase
14				1 1/2" Pipe Truss	60'	Single Purchase
15				1 1/2" Sched. 80 Pipe	60'	Single Purchase
16				1 1/2" Pipe Truss	60'	Single Purchase
17				1 1/2" Sched. 80 Pipe	60'	Single Purchase
18	<b>Number 2 Border</b>			1 1/2" Pipe Truss	60'	Single Purchase
19	<b>Number 2 Legs w/ Ext.</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
20				1 1/2" Pipe Truss	60'	Single Purchase
21	<b>Number 3 Electric</b>	<b>Raceway - permanent position</b>		1 1/2" Pipe Truss	63'	Single Purchase
22				1 1/2" Sched. 80 Pipe	60'	Single Purchase
23				1 1/2" Pipe Truss	60'	Single Purchase
24	<b>Number 3 Border</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
25	<b>Number 3 Legs</b>			1 1/2" Pipe Truss	60'	Single Purchase
26				1 1/2" Sched. 80 Pipe	60'	Single Purchase
27	<b>Number 2 Traveler</b>	Black Velour 24'h x 58'w, flat, track		1 1/2" Pipe Truss	60'	Single Purchase
28				1 1/2" Sched. 80 Pipe	60'	Single Purchase

## II. House Lineset Schedule (continued)

29				1 1/2" Pipe Truss	60'	Single Purchase
30	<b>Number 4 Border</b>			1 1/2" Pipe Truss	60'	Single Purchase
31	<b>Number 4 Legs</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
32				1 1/2" Sched. 80 Pipe	60'	Single Purchase
33	<b>Number 4 Electric</b>	<b>Raceway - permanent position</b>		1 1/2" Pipe Truss	63'	Single Purchase
34				1 1/2" Sched. 80 Pipe	60'	Single Purchase
35				1 1/2" Pipe Truss	60'	Single Purchase
36				1 1/2" Sched. 80 Pipe	60'	Single Purchase
37				1 1/2" Pipe Truss	60'	Single Purchase
38				1 1/2" Sched. 80 Pipe	60'	Single Purchase
39				1 1/2" Pipe Truss	60'	Single Purchase
40	<b>Number 5 Border</b>			1 1/2" Pipe Truss	60'	Single Purchase
41	<b>Number 5 Legs</b>			1 1/2" Pipe Truss	60'	Single Purchase
42	<b>Number 3 Traveler</b>	Black velor, 24'h x 58'w flat track		1 1/2" Sched. 80 Pipe	60'	Single Purchase
43				1 1/2" Sched. 80 Pipe	60'	Single Purchase
44	<b>Jon's Screen Frame</b>			1 1/2" Pipe Truss	60'	Single Purchase
45	<b>Number 5 Electric</b>	<b>Raceway - permanent position</b>		1 1/2" Pipe Truss	63'	Single Purchase
46				1 1/2" Sched. 80 Pipe	60'	Single Purchase
47				1 1/2" Pipe Truss	60'	Single Purchase
48				1 1/2" Pipe Truss	60'	Single Purchase
49				1 1/2" Sched. 80 Pipe	60'	Single Purchase
50	<b>Number 6 Legs</b>	Short Legs (24 Feet)		1 1/2" Pipe Truss	60'	Single Purchase
51				1 1/2" Sched. 80 Pipe	60'	Single Purchase
52	<b>Cyclorama</b>	Natural FR muslin, 26'h x 48'w, 1/2" pipe pocket		1 1/2" Sched. 80 Pipe	60'	Single Purchase
53	<b>House Black Out Drop</b>			1 1/2" Sched. 80 Pipe	60'	Single Purchase
54	<b>Christmas Carol Drop</b>	<b>CANNOT BE MOVED</b>		1 1/2" Pipe Truss	60'	Single Purchase

# III. Stage Dimensions

Proscenium opening is 32' x 47'10"

Main curtain valance hangs another 4 feet below that height.

**Note: Fire curtain pocket is 8" deep – Stage floor extends another 4' DS of fire curtain pocket. Fire curtain cannot be obstructed.**

US side of **Fire Curtain Pocket** to back wall of stage is 38'

DS edge of stage to back wall of stage is 42'8"

CL to SL wall is 44'

CL to SR wall is 42'

Stage floor to grid is 60'6"

## **Stage Traps:**

**There are no removable traps in the stage floor**

## **Front of House Mixing Positions:**

FOH mixing position is located house center, 90' from DSC and is 16'w x 6'2"d. The cable run from SR to FOH position is through the basement/plenum and requires at least 150' of cabling.

The in house mixing position is permanently located in the balcony, 64' from DSC

# IV. Sound System

The Hanover Theater has an in-house sound system. This system is designed for theatrical presentations, and small musical ensembles. If it is to be used for a large pop or rock band, it requires the additional rental of a monitor system and sub-bass speakers from an outside vendor, which will be charged to the presenter as an additional fee. The amount of this charge will depend on how elaborate the additional sound requirements are.

Details of the system's capabilities should be discussed with our Production Manager – Jon Rosbrook 617.797.7178 [zemapro@aol.com](mailto:zemapro@aol.com) – well in advance of your event date when planning your production.

**The rental charges for the theater include the use of this sound system, but DO NOT include the hourly fee for the Hanover Audio Engineer who must be on site whenever this system is in use.** You may provide an outside engineer if you wish to mix your performance, but you must still pay the hourly fee for the house engineer who will be there to mix the sound or assist your engineer, and to oversee the performance and operation of the house system. The house engineer has a six hour minimum call for any day that he is brought in to work, paid at approx.. \$35/hr for the first 8 hours and time and one half after 8 hours. This fee will appear on the stage crew bill and will be in addition to the theater rental fee

## **In-House Sound System:**

The in-house sound system was designed by Cavanaugh Tocci Associates Inc. of Sudbury, MA and installed by ADTECH Systems Inc, also of Sudbury, MA.

Operation of this system must be under the supervision of the Hanover Theatre Sound Technician. House stage crew will be required to assist in the set up and tear down of this equipment if necessary.

The speaker system is permanently hung in the theatre and consists of a large center cluster of speakers (High/mid/low EAW MQ 1366e/1364e/1312) which are flown house center in front of the proscenium arch of the stage. In addition there are another 28 EAW speakers positioned throughout the theatre to provide even coverage in all areas including front fills, lodge box fills, side fills, two rows of under balcony fills in the orchestra as well as balcony fills. These speakers are also EAW, models UB52, MK8126 and UB12se.

Touring shows that are caring their own sound systems are welcome to tie into the existing house system, when possible, to enhance the effectiveness of their own system.

## IV. Sound System (continued)

The permanent FOH mix position is located above the cross aisle of the balcony, slightly house left of center approx. 64' from DSC. (The FOH mixing position for *touring shows* is located at the rear of the orchestra, house center 90' from the DSC). The main mixing console is a Yamaha LS9-32 Digital Mixing Console. The system is powered by QSC amplifiers and a full array of outboard signal processing equipment. The available microphone compliment consists of Shure 58/57/MX418/S as well as wireless handheld and Lavalier mics. This system has all necessary cabling, snakes, multi-channel boxes and microphone stands necessary for the operation of this equipment.

**The in-house sound system does not include on stage monitors. If needed these would be rented from a local sound company as per the show's requirements.**

The Hanover Theatre has a full house paging system available in all backstage areas and dressing rooms with individual volume controls as well as a stage managers paging rack and mix position on stage right

# V. Orchestra Pit

The orchestra pit is 38'10" wide, 11'5" deep at CL, 6' deep at extreme SL/SR, with a 3'2" overhang of the DSE of the stage.

At orchestra play level the pit is 8' below stage height.

The normal position of the orchestra pit is at audience level (3'7" lower than the stage). **If a show requires the pit to be lowered to the orchestra play position. The center of the pit contains a 10' x 10' scissor lift, which can be raised to stage level. THE PIT AREA TO THE RIGHT AND LEFT OF THE CENTER LIFT IS HAND CONSTRUCTED WITH WENGER DECKING. A charge of 2 x \$600.00 = \$1200.00 (lower and restore) will be billed to the show.**

# VI. Cast Drop Off Location

The drop off point for cast buses that are not staying at the venue, is on Federal St. which is off of Main St. Go down Federal St. to the automatic entrance gated to the parking lot on your right and pull over. Do not attempt to enter the parking lot through these gates with the bus. There is a pedestrian walkway into the parking lot – the Stage Door is about 100' across the parking lot.

**For GPS units enter:  
40 degrees 15' 38" N / 71 degrees 48'7" W  
which will bring you to the gate into the lot.**

# VII. Loading Information & Driving Directions

There is one loading door available to access the stage. It is located in the USL corner of the stage and is at ground level outside and stage level inside. The roll up door is 12'h x 10'4"w. No front of house loading is permitted, other than merchandise stock.

## **EPA regulations require that truck engines be shut down during loading.**

Due to fire lane restrictions, trucks are not allowed to remain at the loading door when the theatre is open to the public. Equipment trucks will be moved to a remote fenced-in parking lot  $\frac{3}{4}$  mile from the theater after they are unloaded at a **total show cost of \$100.00/day**. There is parking available for two tour buses behind the theatre near the stage door. No shore power is available.

### **Driving Directions:**

**From the Massachusetts Turnpike (I-90) take the exit for I-290 and after the toll booths, keep to the left and get on I-290 N towards Worcester.**

**Take exit #16 DCU Center. At the bottom of the ramp turn left onto Martin Luther King Blvd. Continue straight for five blocks to Main St. Turn left on Main St. and continue 8 blocks to Myrtle St. (you will see the theatre on your left). Turn left on Myrtle St. and go thru the next stop light and you will see a fenced in parking lot on your left which has a double wide gate through which you will BACK into a parking lot and through to the stage door of the theatre, which is a straight shot from Myrtle St.**

**Gates will remain locked until one hour before scheduled load-in, so if you arrive earlier park along the curb on either side of the gate on Myrtle St.**

**There is no loading dock, the stage is on ground level and equipment is ramped or forked off the truck. If a fork lift(s) is required it will be rented as a show cost.**

# VIII. Dressing Rooms & Production Offices

All Dressing and production rooms are located on the stage right side of the stage.

All levels are serviced by an elevator – doors 4'w x 7'h - interior 7'6"h x 8'd x 5'w

All backstage and dressing room areas are equipped with the house paging system/show feed with separate volume controls.

## Basement Level:

**Laundry Room:** 2 washers and 2 dryers, Steamer, Iron & Board

**Visiting Production (Hair/Makeup) #001:** 15' x 15' with 12 makeup stations, three sinks and a ½ bath.

**This room is most often used by visiting productions as the hair/wig room as it has no enclosing doors and is next to the laundry.**

**Crew / Musicians room #002:** 25' x 62' also used for crew catering. Has a kitchenette along one wall. Phone lines are available. This room is normally used by Broadway tours as the wardrobe gondola location

**Dressing Room #003:** 6'6" x 14'6" - 4 makeup stations, one sink and a separate room with a toilet and shower.

**Principal Dressing Room #004:** 6'6" x 8'6" – 1 makeup station, one sink and a separate HC full bath with shower.

## 1st Floor / Stage level:

**Green Room #101:** 12w x 21d contains a door leading to the house left of the center orchestra

**House Production Manager Office - Room 102:** 7'6" x 8'

**Dressing Room #103:** 6'6" x 14'6" – 1 makeup station w/sink, a couch, and a separate room with a toilet and shower. Used as "Star" dressing room

**Visiting Production Office #104:** 6'6" x 8'6" contains land line, fax line and Internet hard line

**2nd Floor:** Elevator opens directly into this dressing room – pipe and drape available in-house for privacy at elevator door

# VIII. Dressing Rooms & Production Offices (continued)

**Large Chorus Room #201:** 26'6" x 14' – 10 makeup stations, two sinks, plus a separate bathroom with two sinks, two showers and two toilet stalls.

**Room 201 flows into Room 202 without a wall or other separating partition.**

**Large Chorus Room #202:** 19'6" x 22'6" – 17 makeup stations and 3 sinks **PLUS** – 9'6" x 12' – 4 make up stations and one sink.

**3rd Floor: Elevator opens directly into this dressing room**

**Large Chorus Room #301:** 11'6" x 26'6" – 8 makeup stations and two sinks

Plus a separate bathroom with two sinks, two showers and two toilet stalls.

**Room 301 flows into Room 302 without a wall or other separating partition**

**Large Chorus Room #302:** 10' x 36' – 12 makeup stations and two sinks PLUS - a 6' x 9' alcove - 2 makeup stations and one sink

# IX. Stage Rigging Information

The Hanover Theatre stage rigging system is a manually operated single purchase system. Line sets 3-6 *only*, are double purchase.

There are 54 line sets of which 52 are available for use. The first available line set is 1'11" US of the plaster line and the last line set is at 38'1". **See line set schedule for the location of house soft goods and house lighting instrument locations.**

Each line set has five lifting lines spaced 13' apart with loft blocks being under hung from the roof, **above the grid.**

**Each line set has *either* a 1.5" schedule 80 pipe batten or a 2-pipe ladder truss constructed from two 1.5" schedule 40 pipes with flat bar spacers on 4' centers.**

**(See line set diagram). Each line set has a 60' batten or ladder truss.**

Each line set has a 1200# capacity. There is 40,000lbs of weight available in the house.

The stage grid is 60'6" from the stage floor from which rigging points can be attached for motors at 1000lbs per point.

The SR operating pinrail/fly gallery is 30' from the stage floor and 36' from the CL.

The SR loading gallery is 57' from the stage floor.

The SL pinrail gallery is 32' from the stage floor and 44' from the CL.

Arbor weight loading requires 2 hands

## **Front of House Rigging Points:**

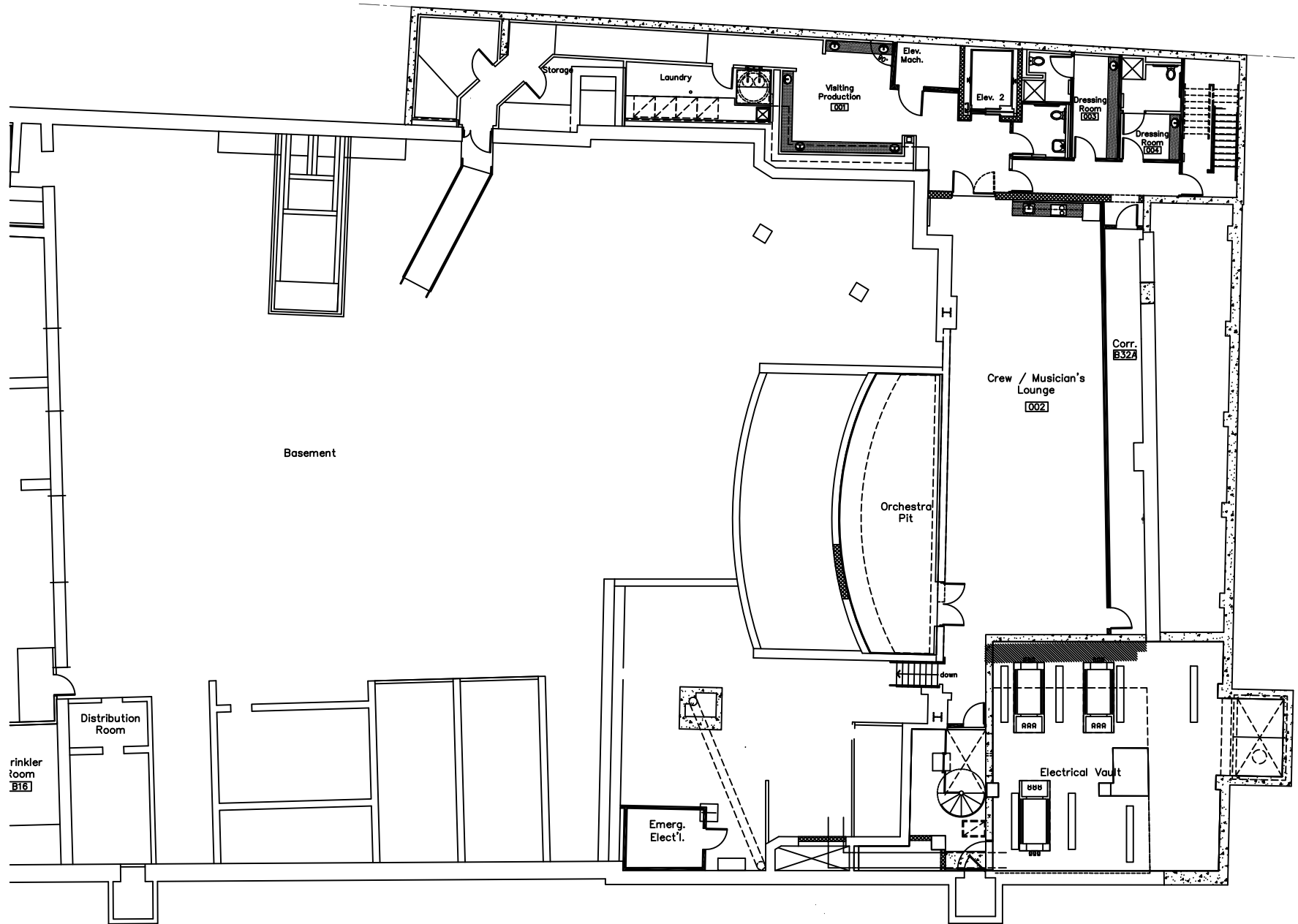
There are off stage rigging points available downstage of the proscenium arch. In most instances these points re used to fly touring sound arrays.

On either side there are rigging points located at 1'10" and 5'6" off the plaster line of the stage.

INDIVIDUALLY OR COMBINED each side is rated at 1500# maximum load these rigging points are approximately 45' apart.



# XI.Theatre Plans

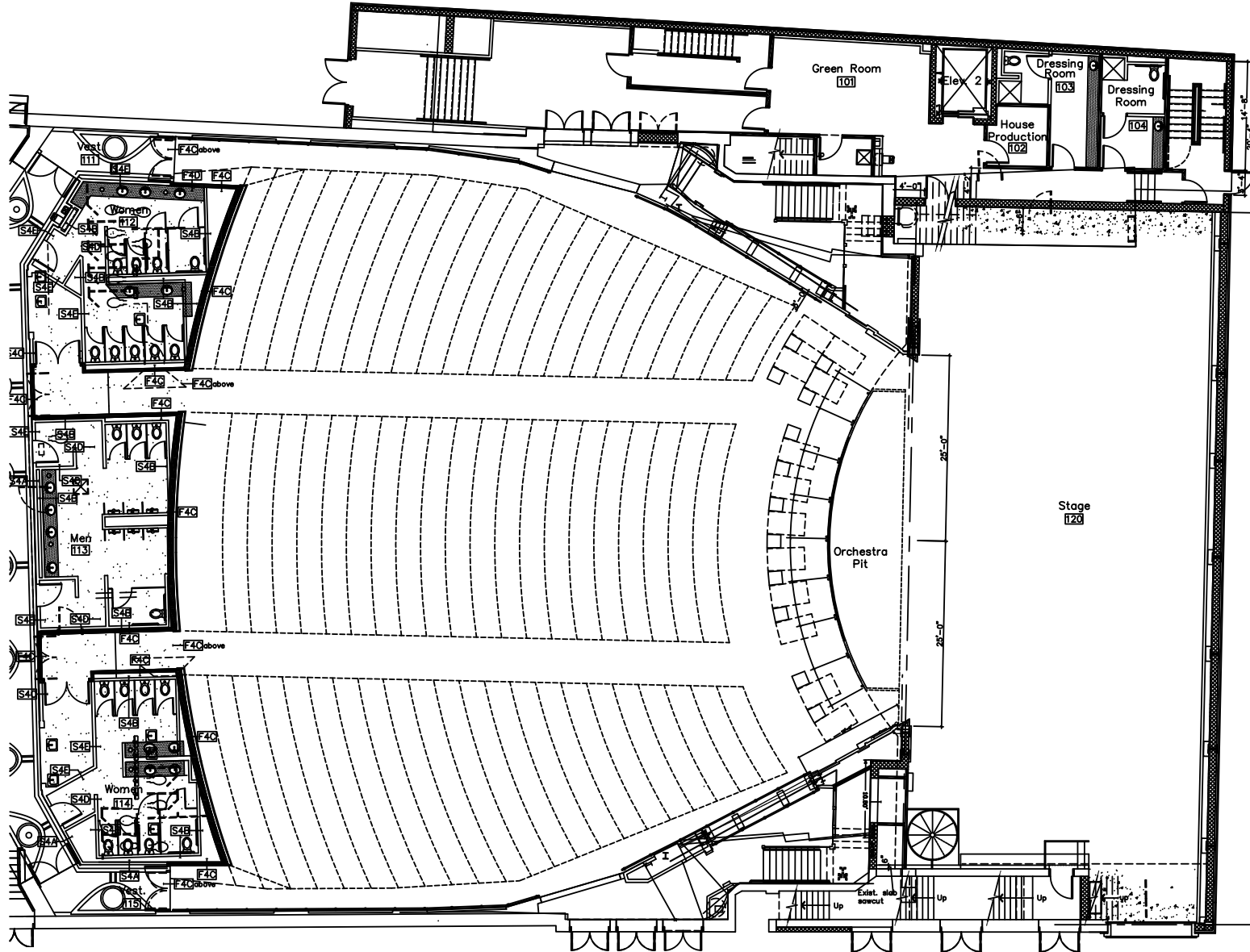


Basement Floor Plan

SCALE: 1' = 20'

1  
A3.0

# XI. Theatre Plans (continued)

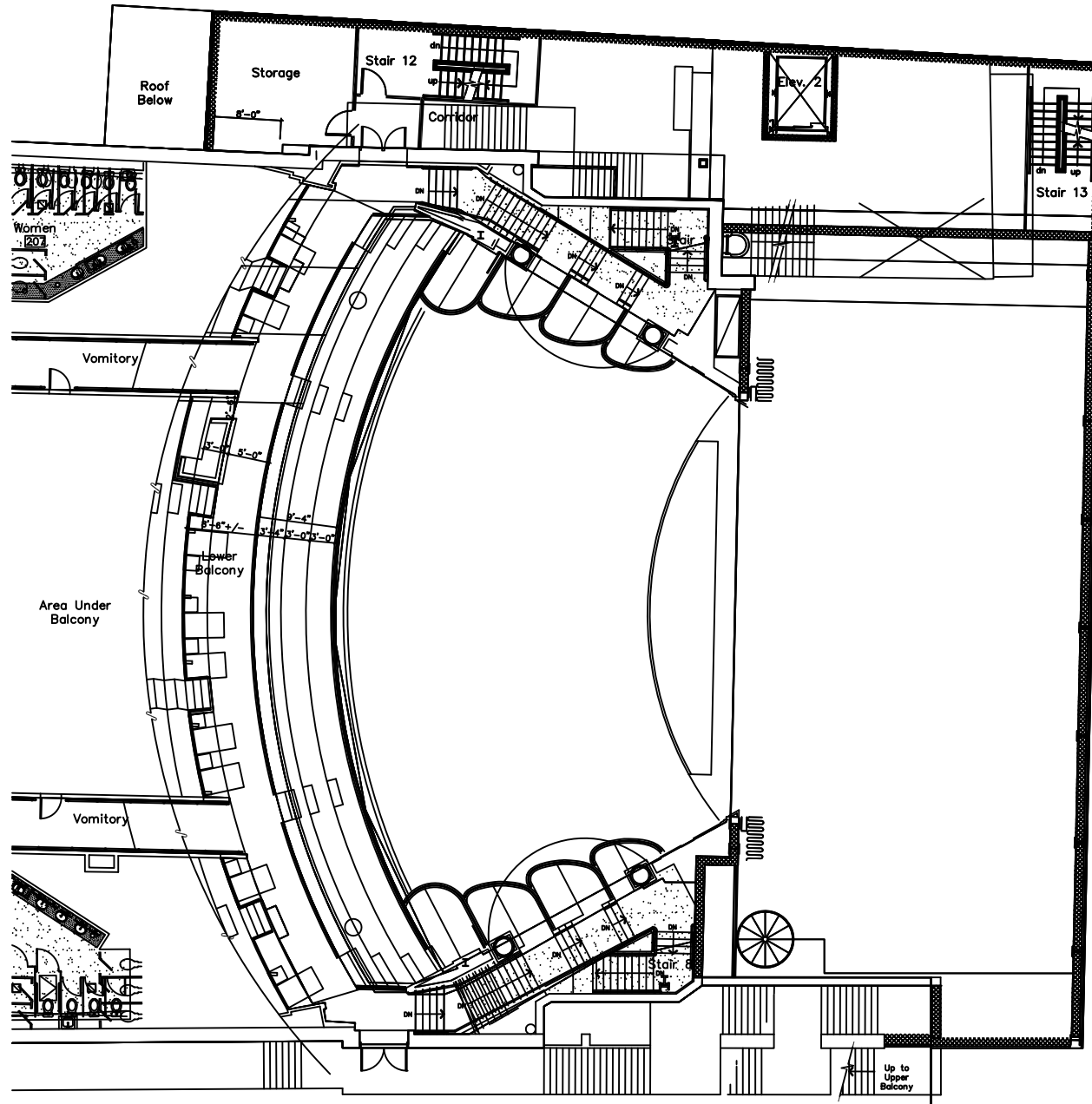


First Floor / Orchestra Level Plan

SCALE: 1' = 20'



# XI. Theatre Plans (continued)

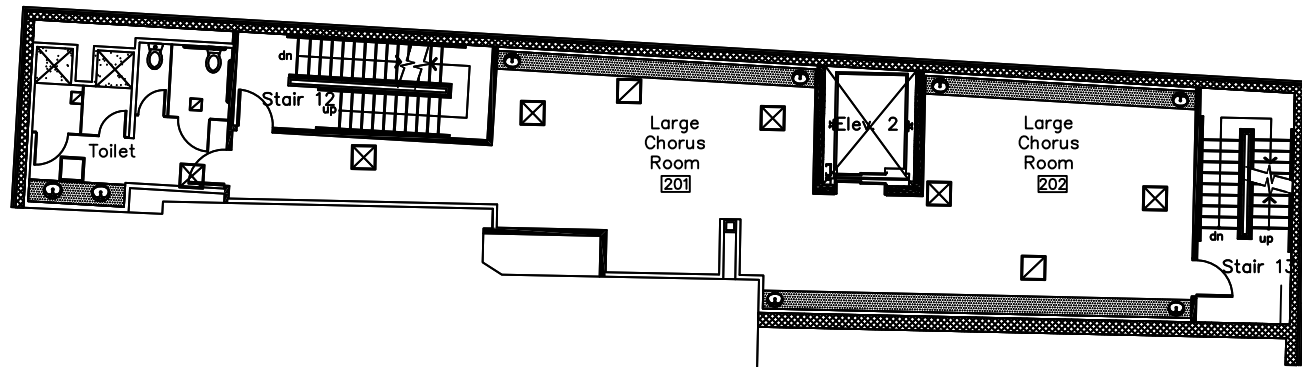


Second level Floor Plan (Promenade)

SCALE: 1" = 20'

1  
A3.2

# XI. Theatre Plans (continued)

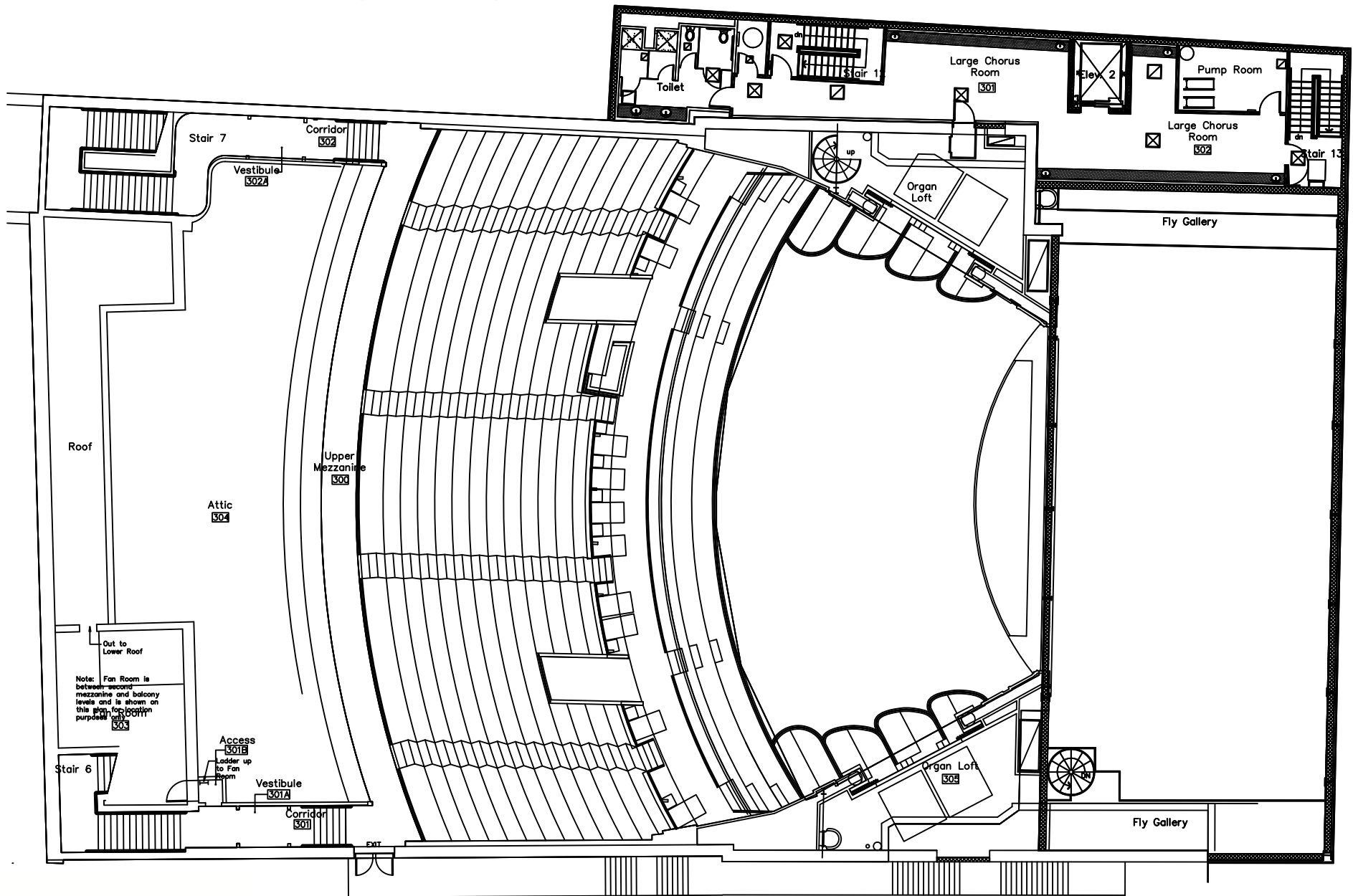


Second Level Dressing Room Floor Plan

SCALE: 1/16" = 1'

2  
A3.2

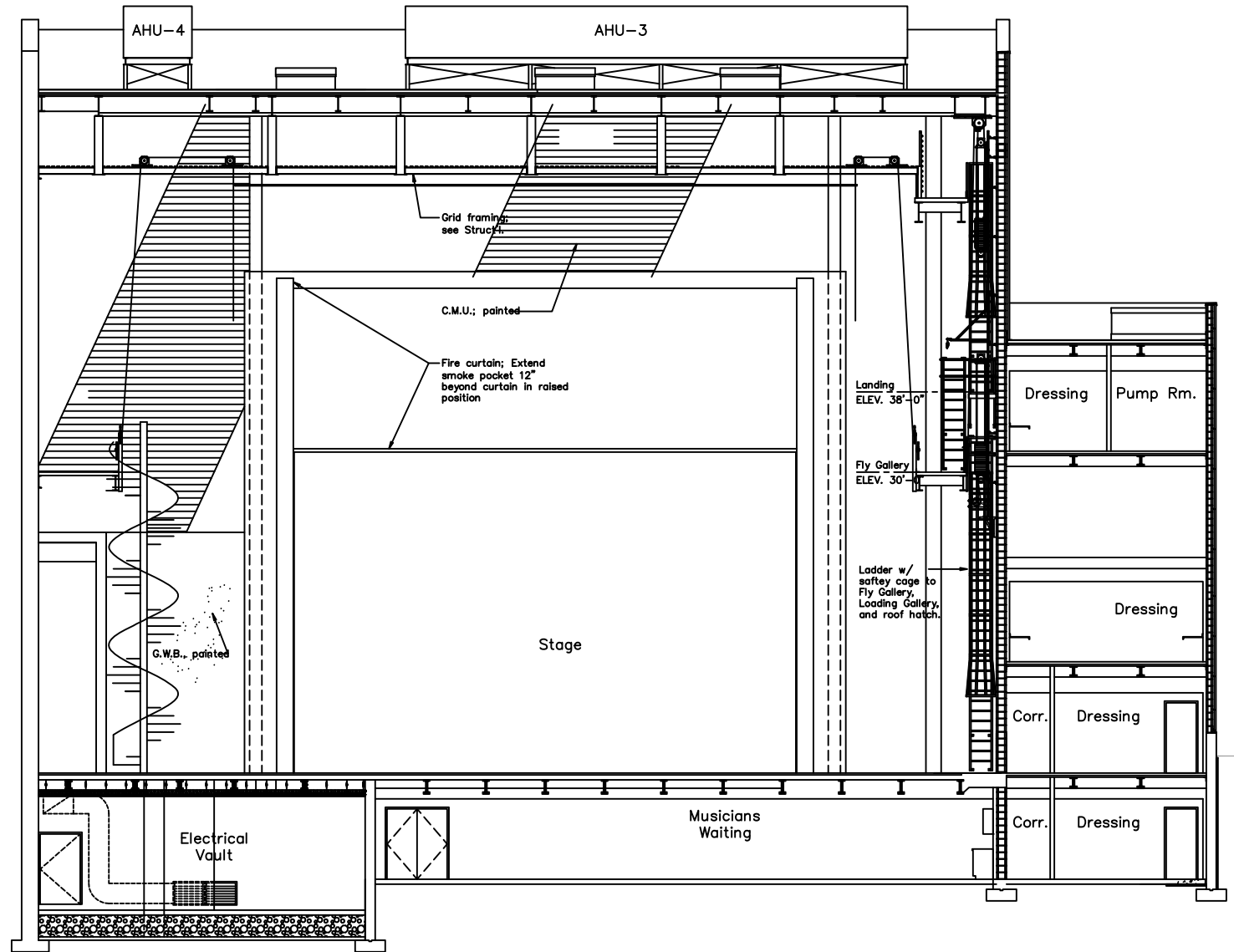
# XI. Theatre Plans (continued)



Third Level Floor Plan (Upper Mezzanine)  
SCALE: 1" = 20'

1  
A3.3

# XI. Theatre Plans (continued)

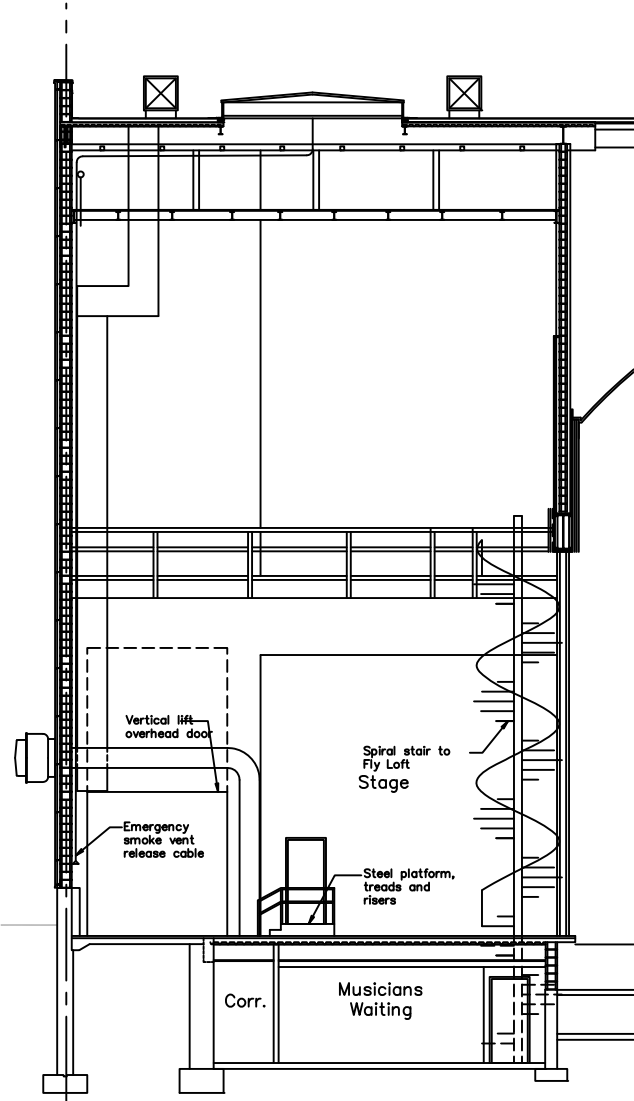


Building Section thru Stage / Green Room Addition

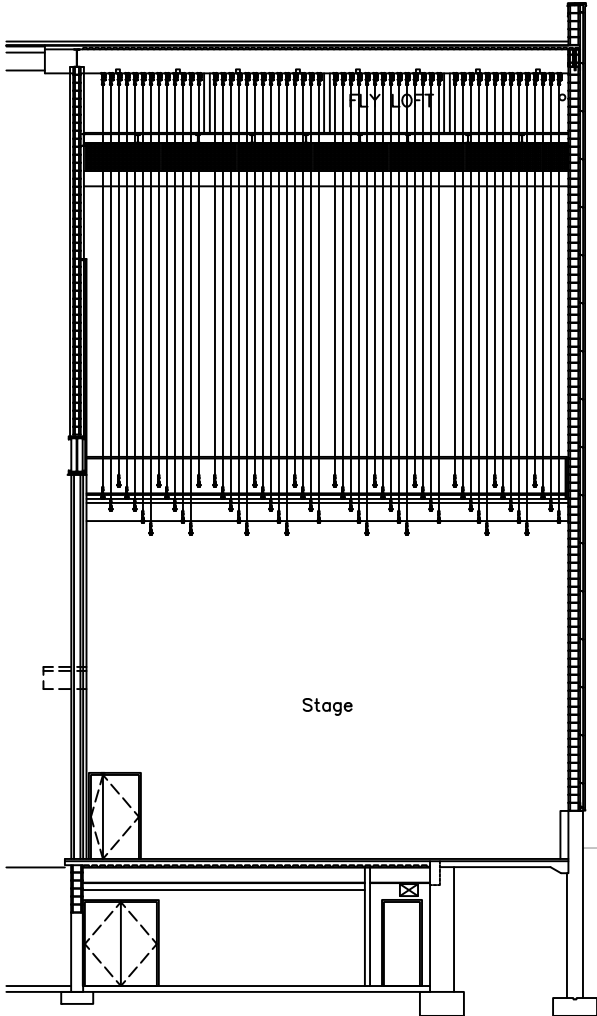
SCALE: 1/16" = 1'

4  
A6.4

# XI.Theatre Plans (continued)

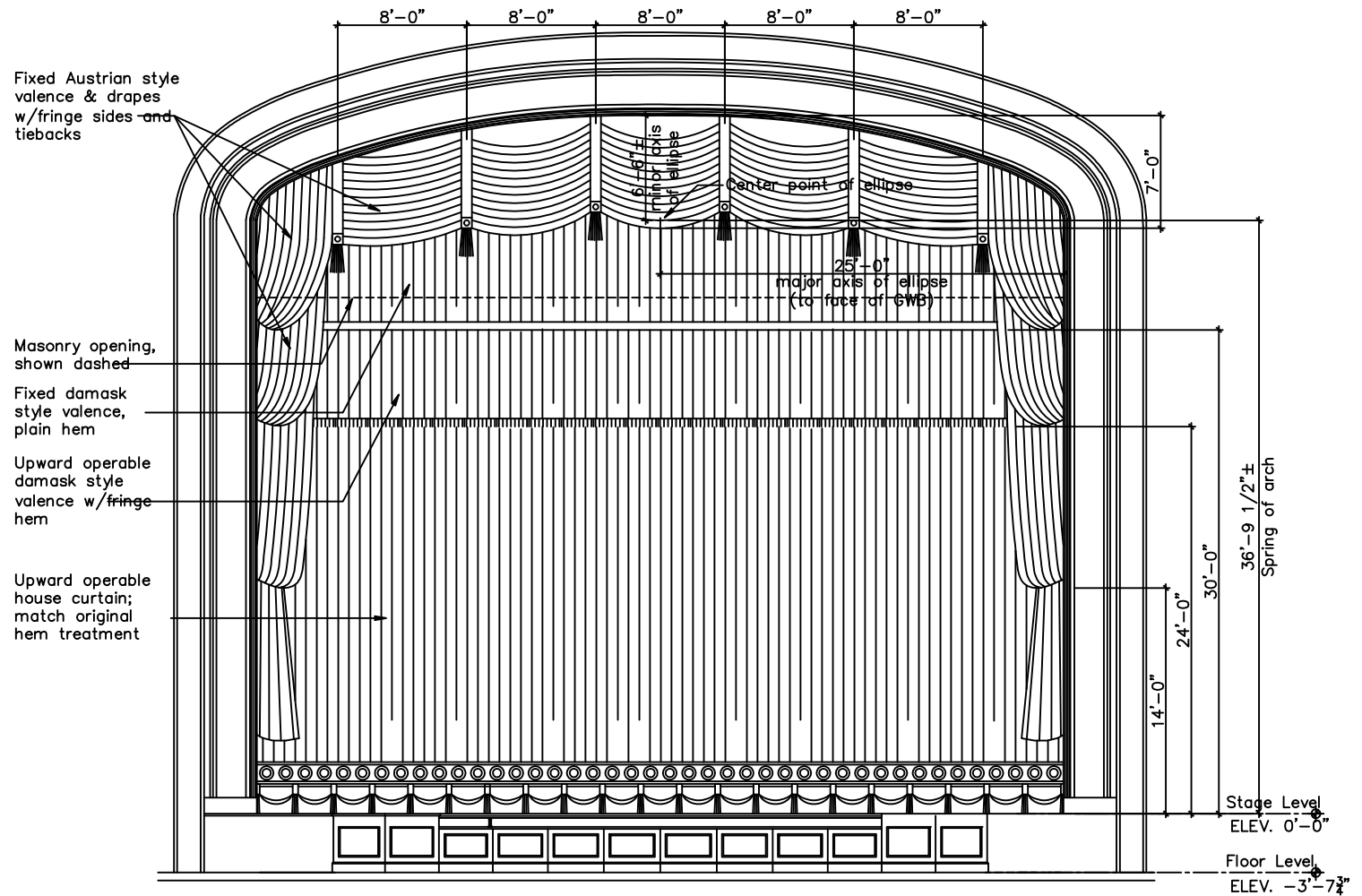


Building Section thru Stage 3  
A6.4  
SCALE: 1/16" = 1'



Building Section thru Stage 5  
A6.4  
SCALE: 1/16" = 1'

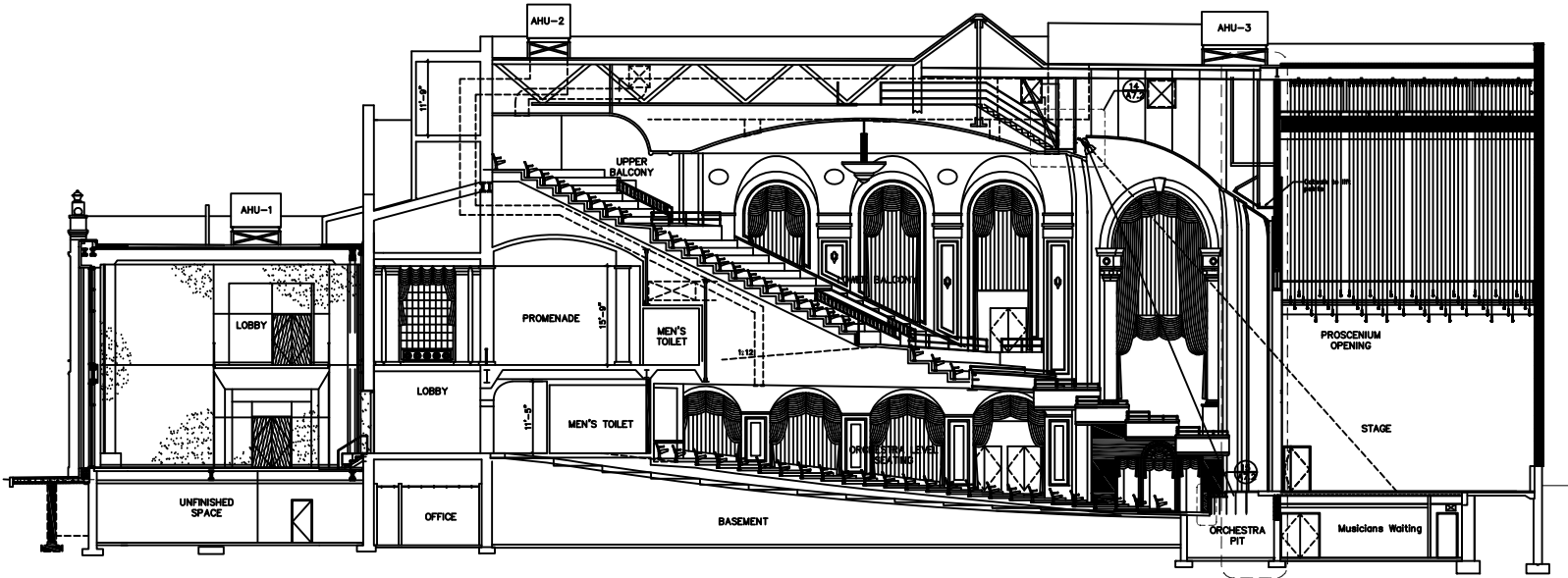
# XI. Theatre Plans (continued)



Stage Curtain & Orchestra Pit Wall Elevation

SCALE: 3/32" = 1'-0"

# XI. Theatre Plans (continued)



Building Section - A6.2  
SCALE: 1" = 30'