APPENDIX

Board of Zoning Adjustment
District of Columbia
CASE NO. 19358
EXHIBIT NO. 21A

LEVEL OF SERVICE DEFINITIONS

All capacity analyses are based on the procedures specified by the Transportation Research Board, Special Report 209: *Highway Capacity Manual (HCM),* 1997. Levels of service (LOS) range from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below:

- **Signalized Intersections:** Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

  - Level of Service A describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.

  - Level of Service B describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

  - Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.

  - Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.

  - Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.

  - Level of Service F describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition

often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

- **Unsignalized Intersections:** At an unsignalized intersection, the major street through traffic and right turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn. The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.

The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicates worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- Level of Service A. Describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.

- Level of Service B. Describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.

- Level of Service C. Describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.

- Level of Service D. Describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.

- Level of Service E. Describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.

- Level of Service F. Describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.

- Development-Related Ridership Survey II; Washington Metropolitan Area Transit Authority; December, 1989 - Table 24, "Summary of Transit Mode Share - Retail", pp. 66

Table 23. Mode Share by Location of Last Stop

Retail Location	Mode	D.C.	Fairfax County	Arling. County	Alex.	Other Virginia	P.G. County	Mont. County	Other Maryland	Other	Totals
The	Auto	37.0%	45.5%	19.6%	62.5%	42.9%	57.1%	25.0%	58.8%	38.5%	33.7%
Under-	Transit	59.3	54.5	33.6	37.5	28.6	28.6	66.7	35.3	30.8	42.4
Ground	Other	3.7	0.0	46.7	0.0	28.6	14.3	8.3	5.9	30.8	23.9
	Total	21.2	8.6	42.0	6.3	2.7	2.7	4.7	6.7	5.1	100.0
Crystal	Auto	29.3	84.6	32.1	37.5	71.4	100.0	36.4	56.3	62.5	47.7
Plaza	Transit	65.9	15.4	32.1	50.0	14.3	0.0	63.6	43.8	33.3	42.5
Shops	Other	4.9	0.0	35.7	12.5	14.3	0.0	0.0	0.0	4.2	9.8
	Total	26.8	8.5	18.3	5.2	4.6	3.3	7.2	10.5	15.7	100.0
Ballston	Auto	32.1	68.8	57.6	68.8	56.8	75.0	66.7	53.3	71.4	53.3
Common	Transit	64.1	18.8	31.2	25.0	18.9	25.0	33.3	46.7	14.3	36.6
	Other	3.8	12.5	11.2	6.3	24.3	0.0	0.0	0.0	14.3	10.1
	Total	24.6	10.1	39.4	5.0	11.7	1.3	0.9	4.7	2.2	100.0
Bethesda	Auto	27.5	100.0	16.7	100.0	100.0	33.3	41.4	48.0	12.5	38.6
Metro	Transit	70.6	0.0	50.0	0.0	0.0	66.7	25.7	44.0	37.5	42.7
Center	Other	2.0	0.0	33.3	0.0	0.0	0.0	32.9	8.0	50.0	18.7
	Total	29.8	1.2	3.5	1.2	2.3	1.8	40.9	14.6	4.7	100.0
Mazza	Auto	31.9	100.0	25.0	100.0	100.0	100.0	44.4	34.5	56.3	39.6
Gallerie	Transit	61.1	0.0	75.0	0.0	0.0	0.0	55.6	37.9	12.5	48.7
	Other	6.9	0.0	0.0	0.0	0.0	0.0	0.0	27.6	31.3	11.7
	Total	46.8	1.3	2.6	0.6	1.3	0.6	17.5	18.8	10.4	100.0

Table 23. Mode Share by Location of Last Stop
(Continued)

Retail Location	Mode	D.C.	Fairfax County	Arling. County	Alex.	Other Virginia	P.G. County	Mont. County	Other Maryland	Other	Totals
Hecht's	Auto	12.2	0.0	0.0	33.3	100.0	100.0	0.0	37.5	0.0	13.3
Metro	Transit	45.9	100.0	100.0	66.7	0.0	0.0	100.0	62.5	66.7	49.5
Center	Other	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	37.1
	Total	86.2	1.0	1.9	1.4	0.5	0.5	1.9	3.8	2.9	100.0
Union	Auto	19.7	55.6	12.5	50.0	54.5	100.0	22.7	26.5	16.7	23.4
Station	Transit	48.6	44.4	50.0	25.0	45.5	0.0	68.2	58.8	73.3	53.5
	Other	31.7	0.0	37.5	25.0	0.0	0.0	9.1	14.7	10.0	23.0
	Total	52.8	3.3	5.9	1.5	4.1	0.4	8.2	12.6	11.2	100.0
The Shops	Auto	12.7	50.0	0.0	—	50.0	0.0	0.0	25.0	20.0	14.4
	Transit	45.3	0.0	87.5	—	50.0	100.0	100.0	75.0	70.0	50.3
	Other	42.0	50.0	12.5	—	0.0	0.0	0.0	0.0	10.0	35.3
	Total	80.2	1.1	4.3	0.0	4.3	0.5	2.1	2.1	5.3	100.0

Note: For each jurisdiction, the percentage of trips by mode share is indicated in the rows labeled "auto," "transit," and "other." These total verti to 100%. The overall mode for each retail location is shown in the columns labeled "total." For each retail location, the row labeled "total" indica the percentage of trips from each jurisdiction. This row totals horizontally.

Table 24. Summary of Transit Mode Share - Retail

	Number of Sites	Percent Transit Range	Percent Transit Average
CBD Locations	4	45.3% - 55.8%	49.5%
Suburban Locations Inside Beltway	4	34.4% - 40.7%	38.9%
Suburban Locations Outside Beltway	0	---	---
All Retail Locations	8	34.4% - 55.8%	44.2%

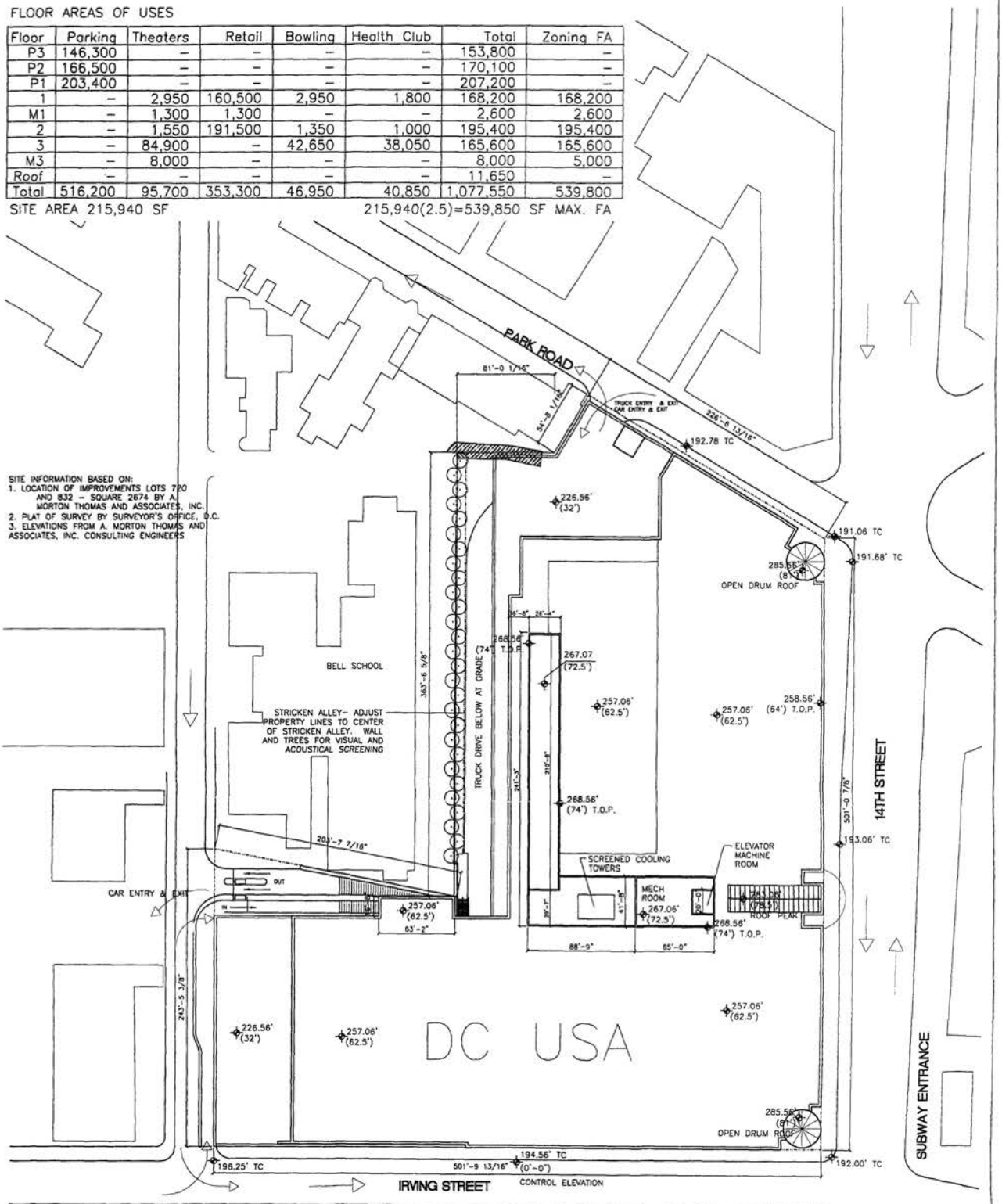
F

FLOOR AREAS OF USES

Floor	Parking	Theaters	Retail	Bowling	Health Club	Total	Zoning FA
P3	146,300	–	–	–	–	153,800	–
P2	166,500	–	–	–	–	170,100	–
P1	203,400	–	–	–	–	207,200	–
1	–	2,950	160,500	2,950	1,800	168,200	168,200
M1	–	1,300	1,300	–	–	2,600	2,600
2	–	1,550	191,500	1,350	1,000	195,400	195,400
3	–	84,900	–	42,650	38,050	165,600	165,600
M3	–	8,000	–	–	–	8,000	5,000
Roof	–	–	–	–	–	11,650	–
Total	516,200	95,700	353,300	46,950	40,850	1,077,550	539,800

SITE AREA 215,940 SF

215,940(2.5)=539,850 SF MAX. FA



1 / Z101 **SITE PLAN**
1" = 80'-0"

BOWER LEWIS THROWER ARCHITECTS

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1216 ARCH STREET PHILADELPHIA, PA 19107
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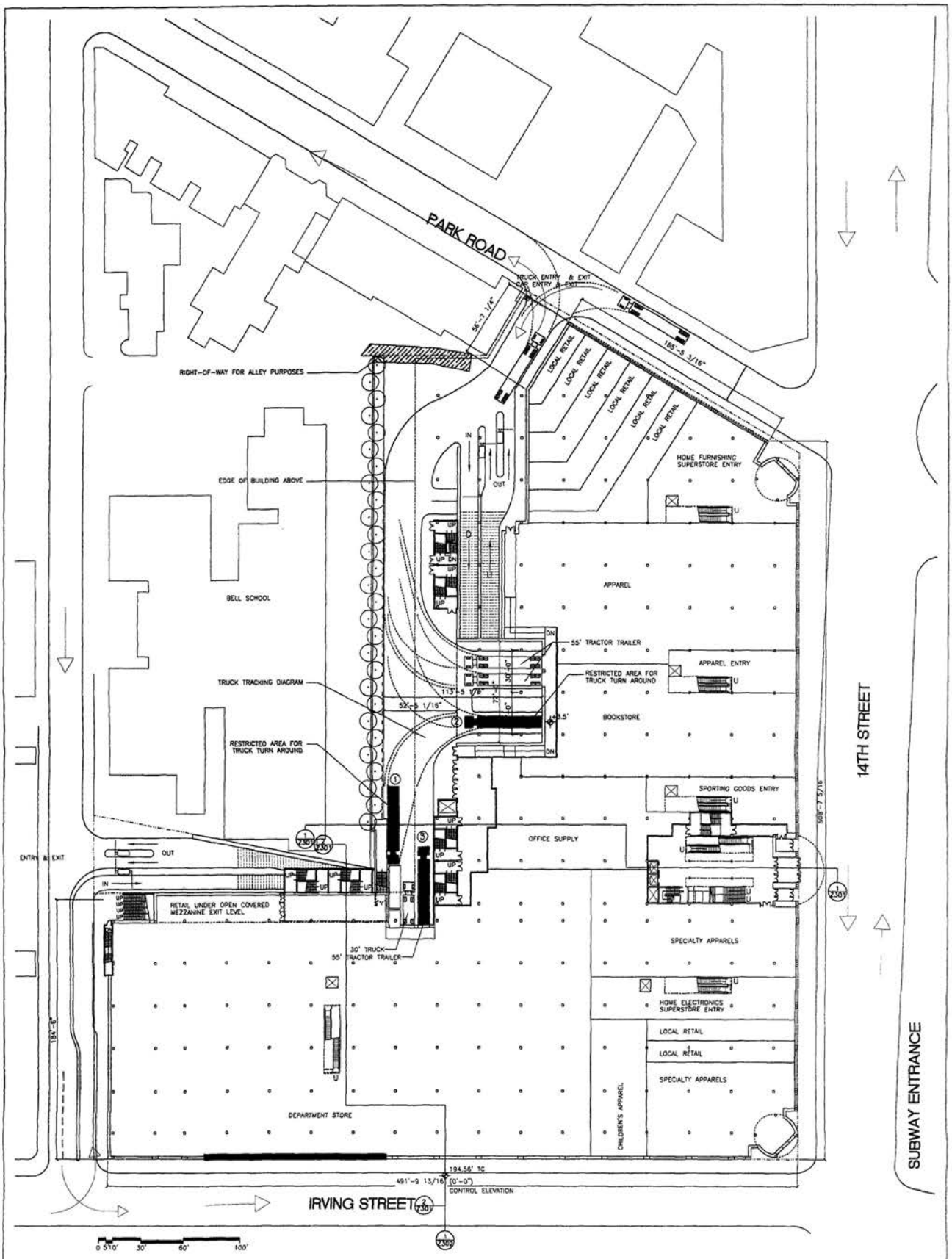
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1 / Z102 GROUND FLOOR PLAN

1" = 60'-0"

GROUND FLOOR 0'-0" ELEVATION = 194.56'

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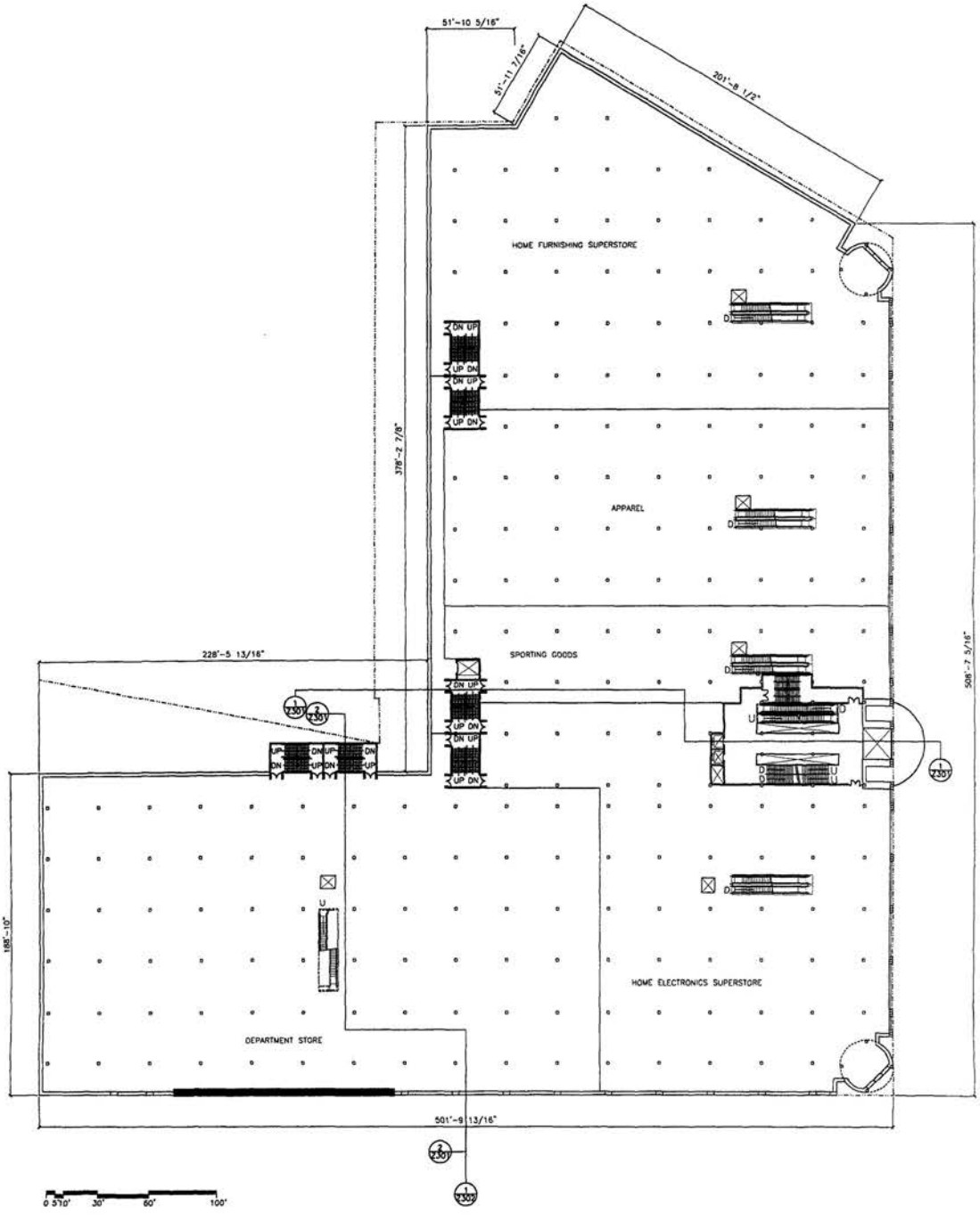
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DRAWING NO: Z102



1 / Z103 **SECOND FLOOR PLAN**

1" = 60'-0"

GROUND FLOOR 16'-0" ELEVATION = 210.56'

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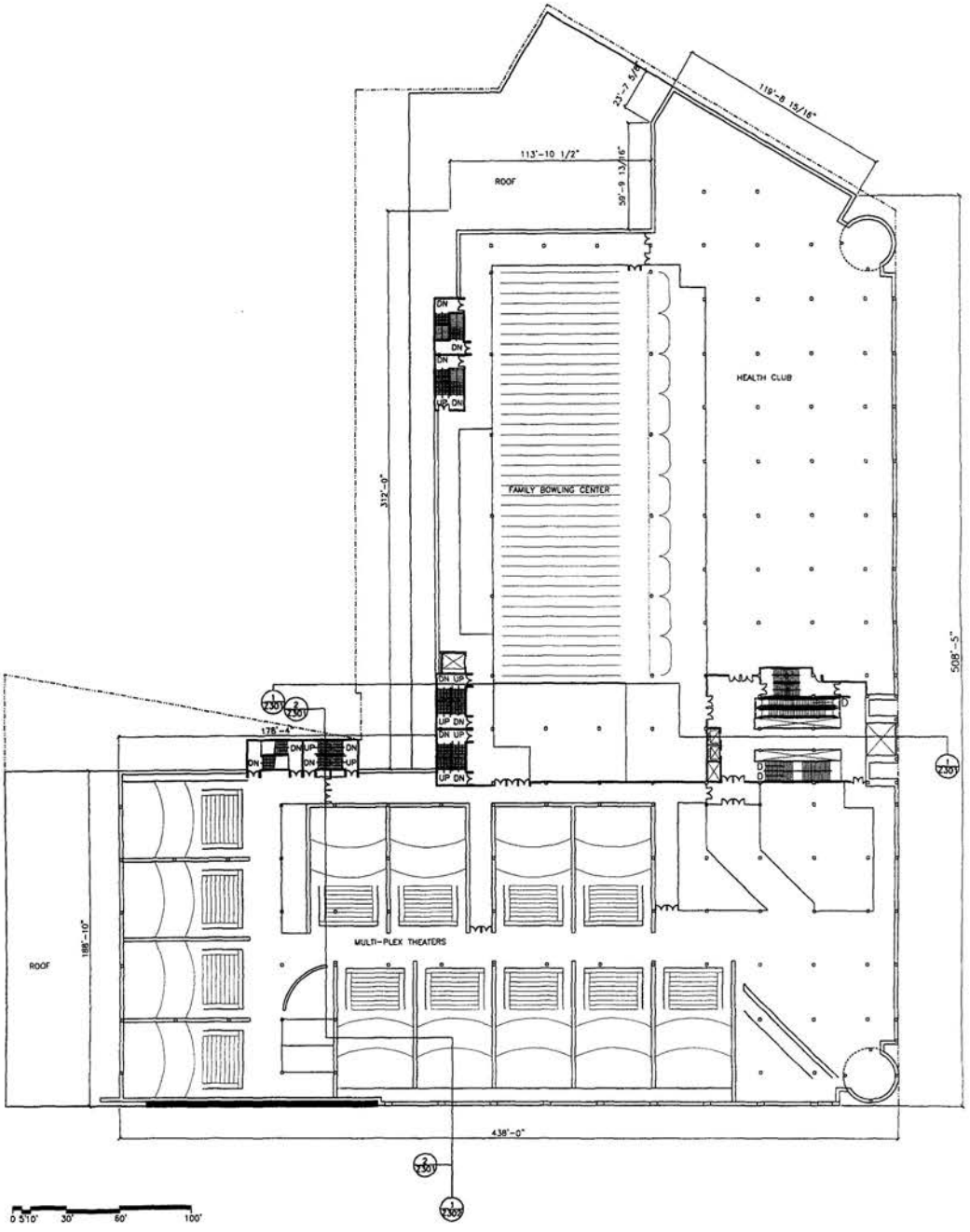
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SCALE: AS NOTED
ACAD FILE: 75612pln

DRAWING TITLE: ZONING SUBMITTAL

DRAWING NO: Z103



1 / Z104 **THIRD FLOOR PLAN**

1" = 60'-0"

GROUND FLOOR 32'-0" ELEVATION = 226.56'

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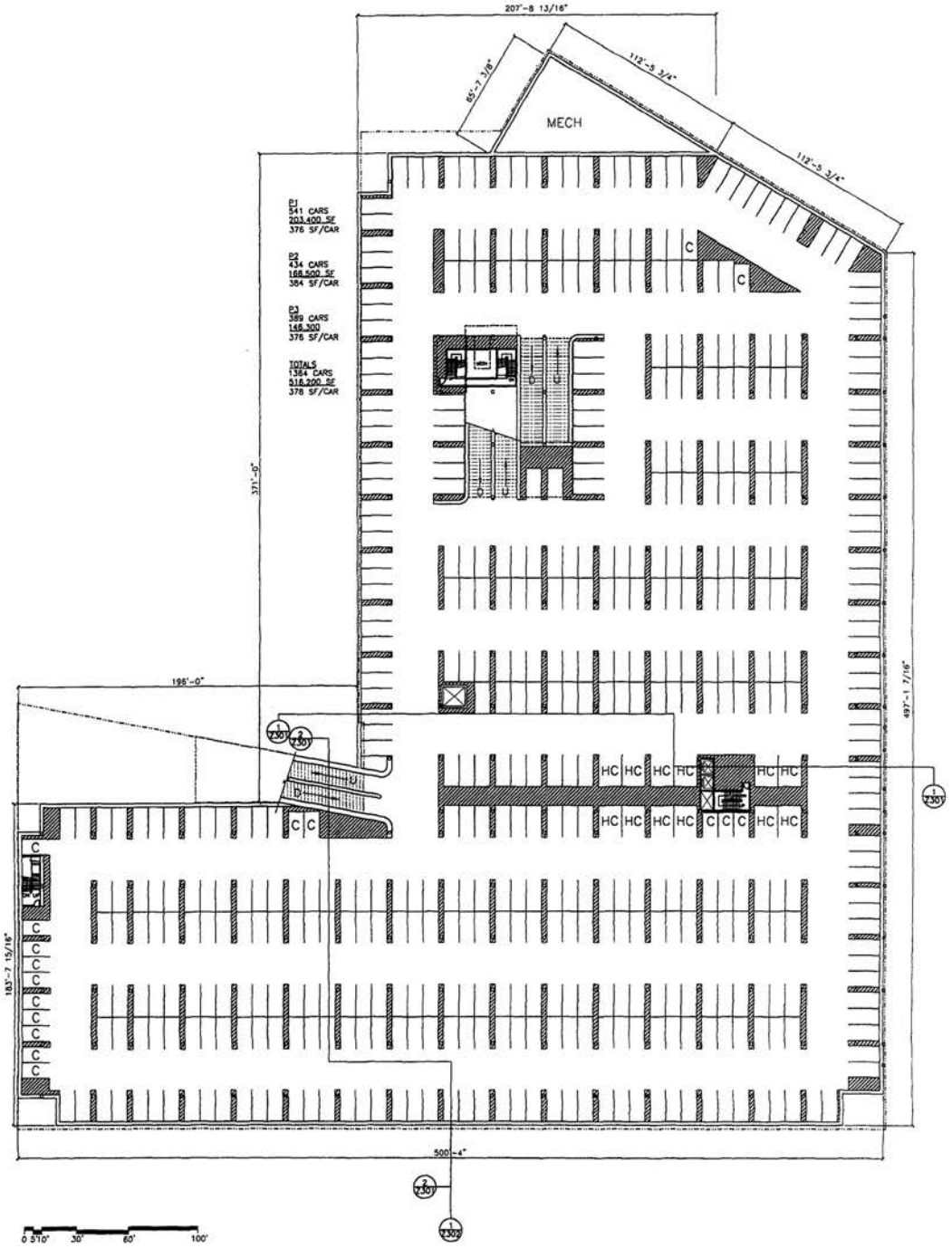
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DRAWING NO: Z104



1 / Z105 **PARKING LEVEL P1**

1" = 60'-0"

PARKING LEVEL P1 -13'-0" ELEVATION = 181.56'

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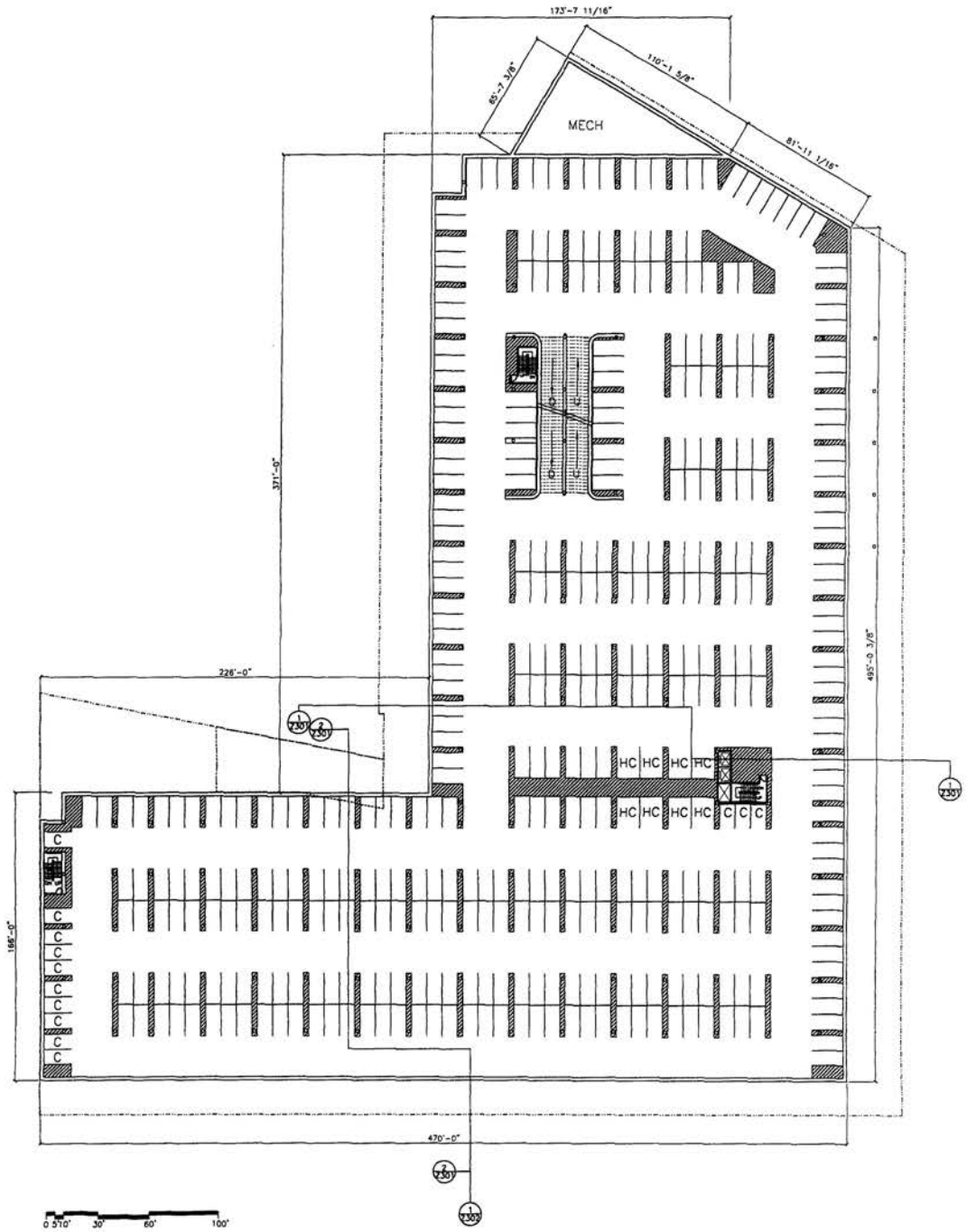
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DRAWING NO: Z105

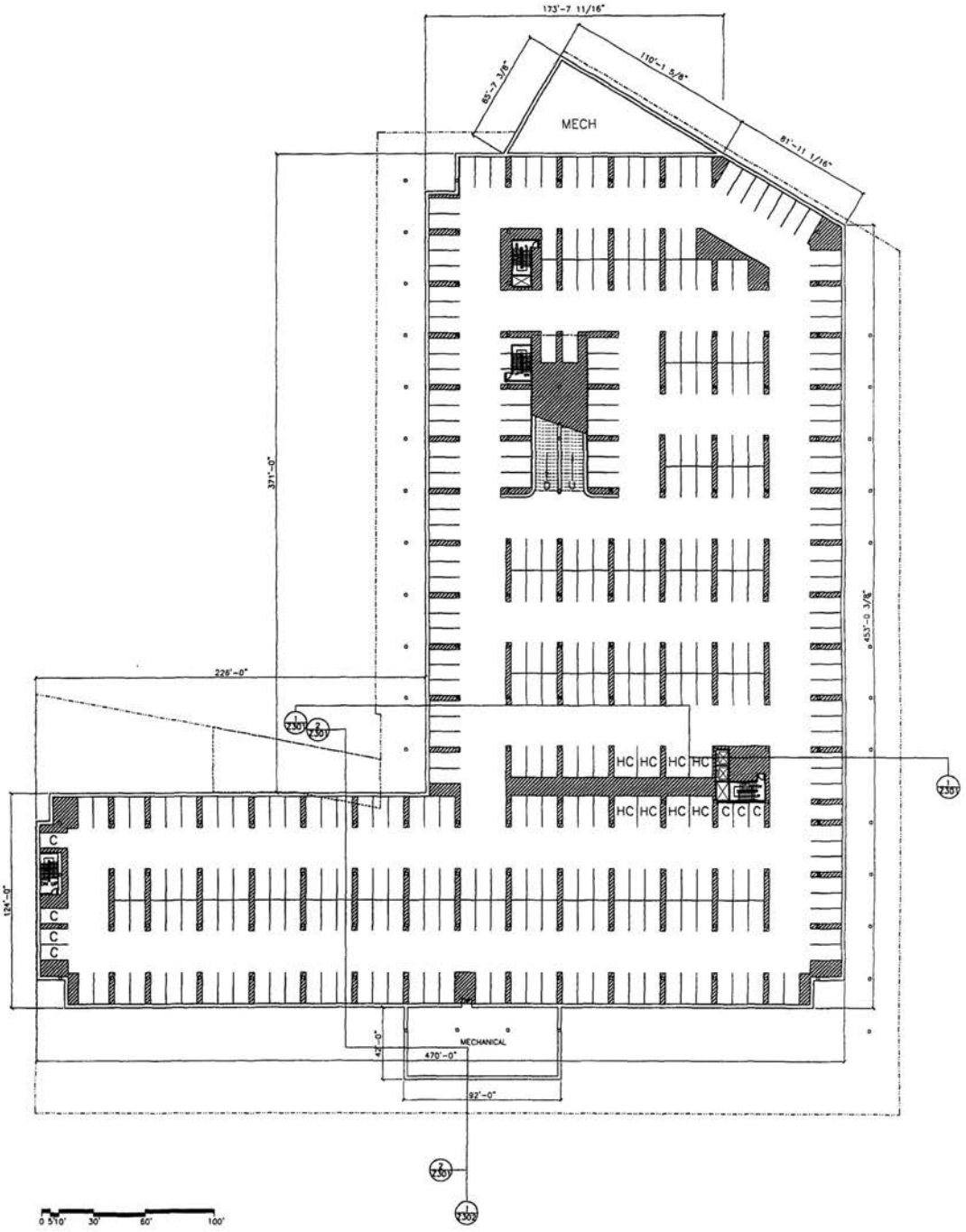


1 / Z106 **PARKING LEVEL P2**

1" = 60'-0"

PARKING LEVEL P2 -25'-0" ELEVATION = 169.56'

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1 / Z107 **PARKING LEVEL P3**

1" = 60'-0"

PARKING LEVEL P3 −37'−0" ELEVATION = 157.56'

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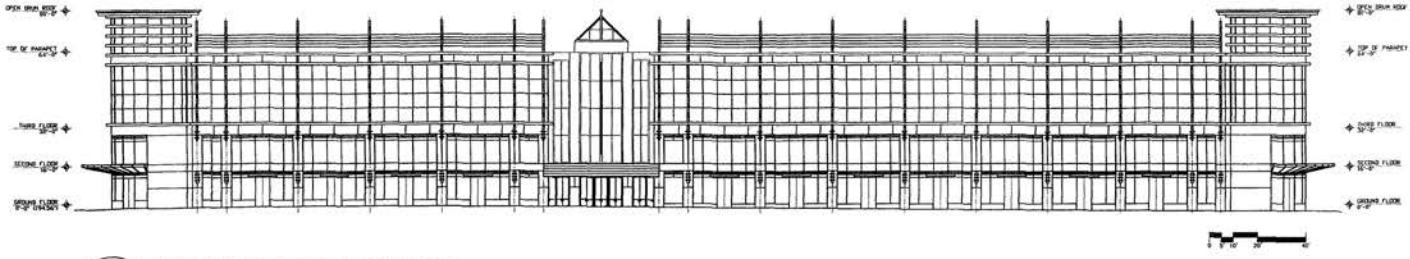
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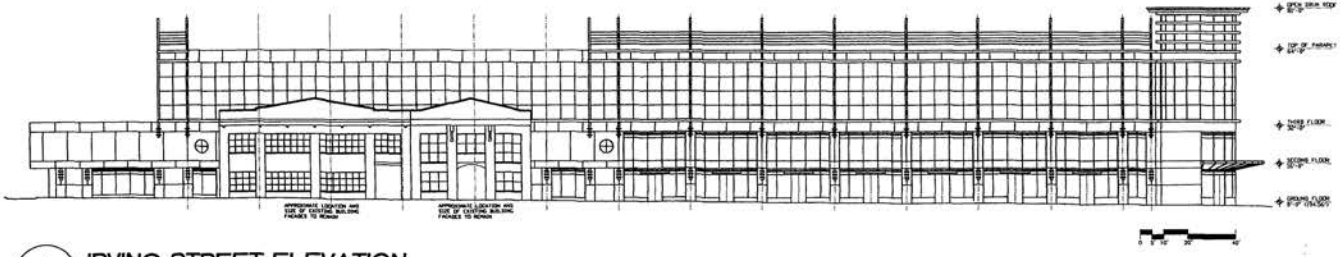
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2 / Z201 **14TH STREET ELEVATION**

1" = 40'-0"

PROJECT 0'-0" ELEVATION = 194.56'



1 / A201 **IRVING STREET ELEVATION**

1" = 40'-0"

PROJECT 0'-0" ELEVATION = 194.56'

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599 LEXINGTON AVENUE NEW YORK, NY 10022 212-935-0740

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PROJECT NO: 756106

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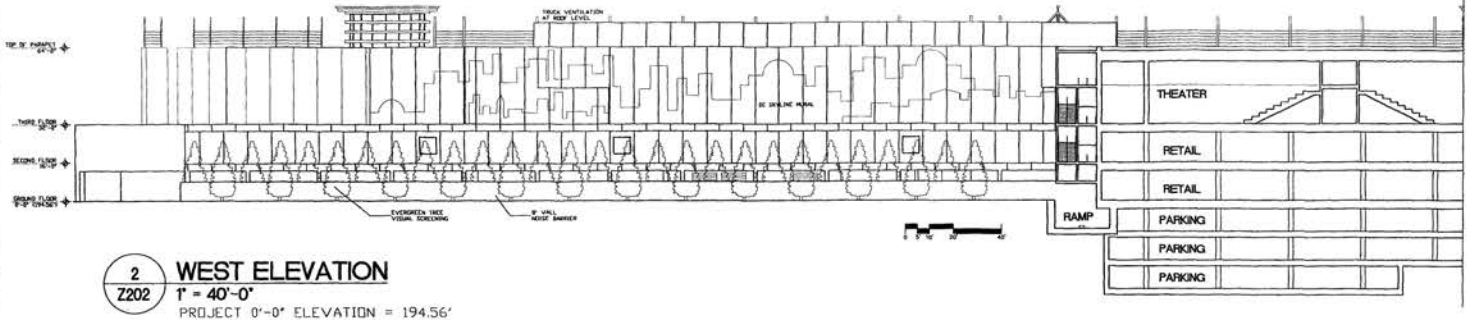
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Z201



2 / Z202 **WEST ELEVATION**

1" = 40'-0"

PROJECT 0'-0" ELEVATION = 194.56'



1 / Z202 **PARK ROAD ELEVATION**

1" = 40'-0"

PROJECT 0'-0" ELEVATION = 194.56'

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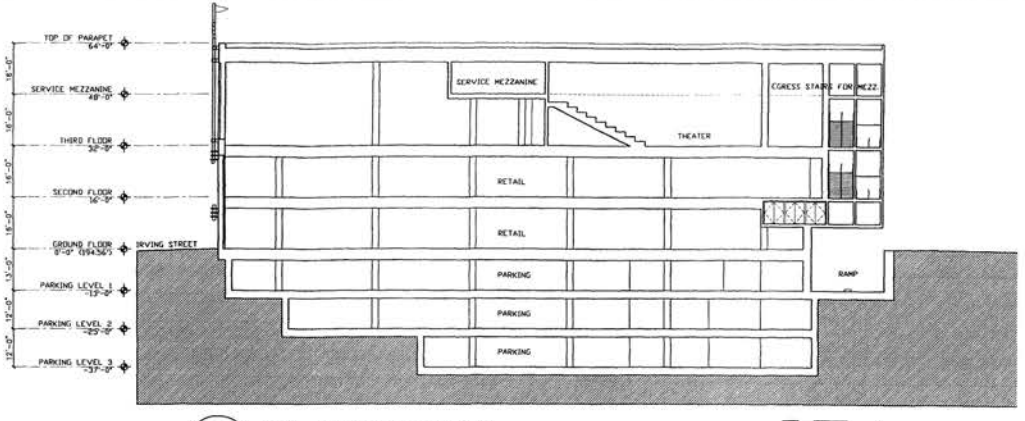
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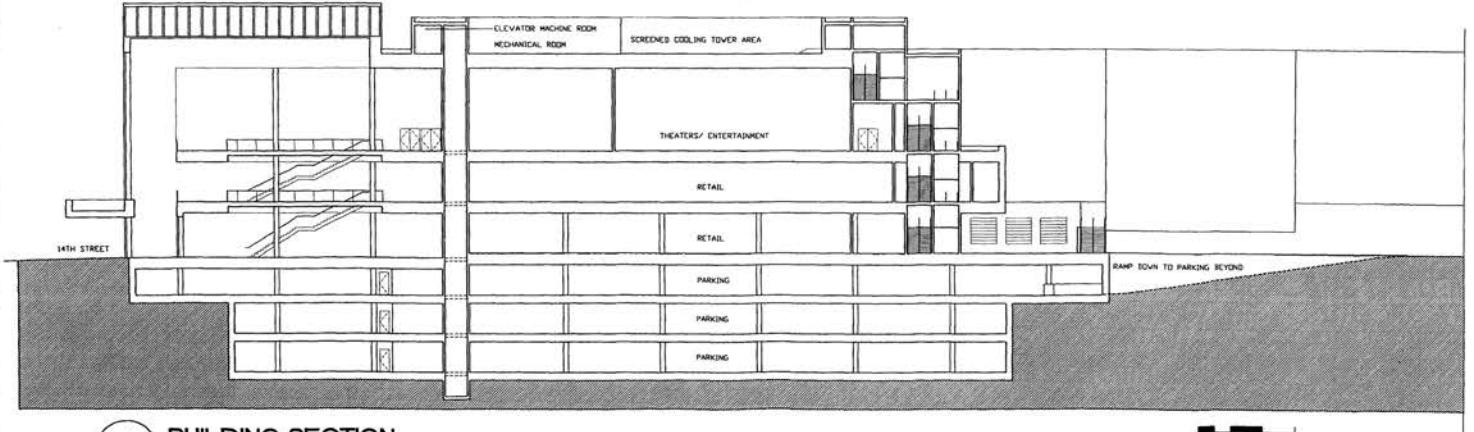
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Z202



2 / Z301 **BUILDING SECTION**

1" = 30'-0"

PROJECT 0'-0" ELEVATION = 194.56'



1 / Z301 **BUILDING SECTION**

1" = 30'-0"

PROJECT 0'-0" ELEVATION = 194.56'

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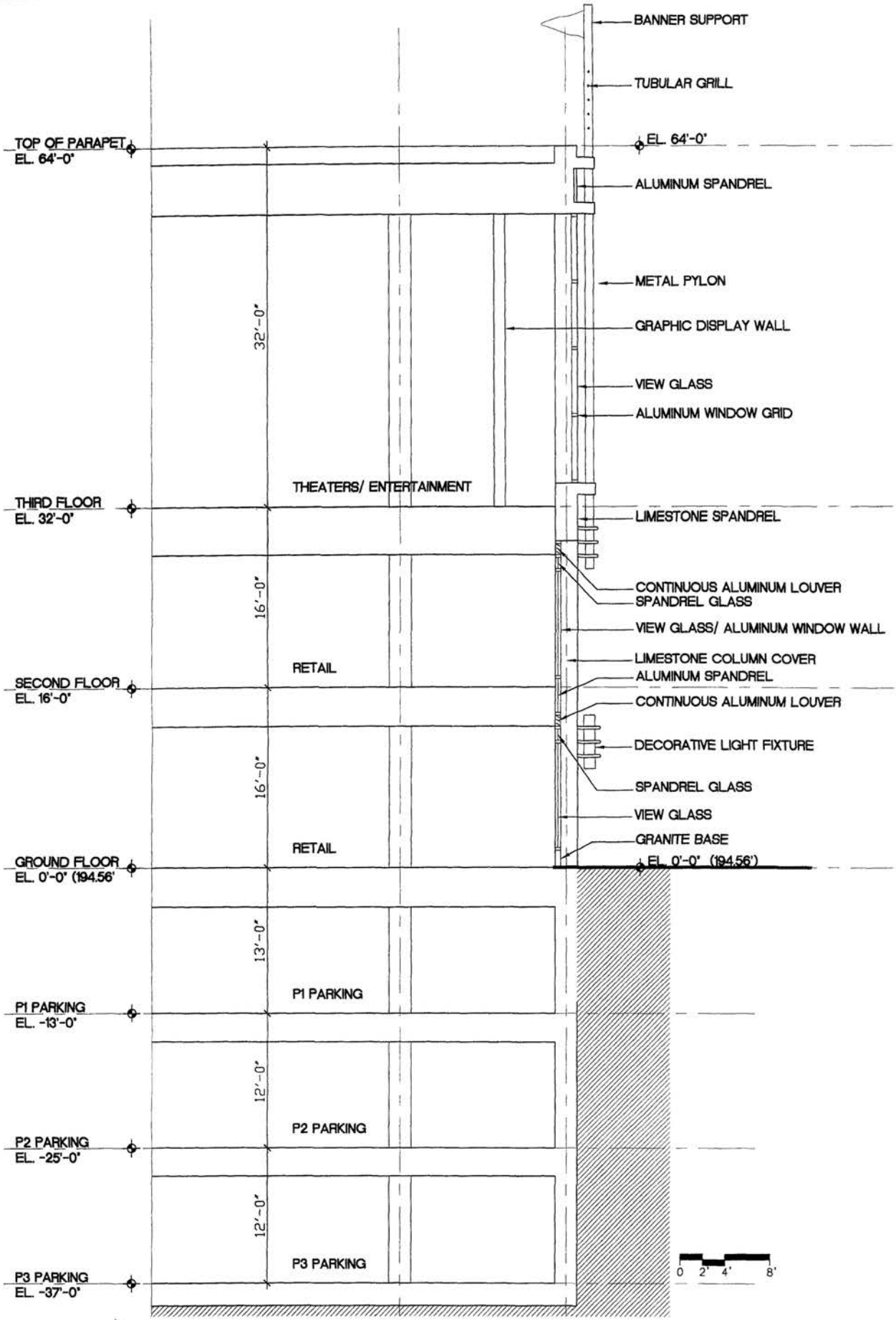
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SCALE: AS NOTED
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ZONING SUBMITTAL

DRAWING NO:
Z301



1 / Z302 **WALL SECTION @ CONTROL POINT**

1/8" = 1'-0"

PROJECT 0'-0" ELEVATION = 194.56'

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REVISIONS:

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PROJECT NO: 756100
DATE: 01-30-03
DRAWN BY: DMS
CHECKED BY: JAB
SCALE: AS NOTED
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DRAWING NO: Z302

G

OUTLINE OF TESTIMONY OF REPRESENTATIVE OF THE APPLICANT

I. Introduction and General Description of DC USA Operating Co., LLC

II. Description of DC USA project

III. Brief Overview of Development Plan for the Site

IV. Brief Overview of Request for Parking Reduction

V. Conclusion

WAS1 #1075152 v1

H

OUTLINE OF TESTIMONY OF REPRESENTATIVE OF BOWER LEWIS THROWER ARCHITECTS

I. Introduction

II. Site Description

III. Description of Proposed Development and Layout of Parking Facility

IV. Conclusion

WAS1 #1075154 v1

1

OUTLINE OF TESTIMONY OF
LOU SLADE, GOROVE/SLADE ASSOCIATES, INC.

I. Introduction

II. Site Location

III. Description of Traffic Generation Methodology

IV. Analysis of Parking Demand Generated by Proposed Uses

V. Description of Surrounding Traffic Network

VII. Analysis of Impact of Development on Surrounding Streets

VIII. Conclusions

WAS1 #1075159 v1

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OUTLINE OF TESTIMONY OF
STEVEN E. SHER (LAND PLANNER)

I. Introduction

II. Site Location

III. Site Description

IV. Zoning

V. Description of Special Exception Request

VI. Compliance with Special Exception Standard

VII. Conclusion

WAS1 #1075156 v1