KESTER - 77

CONSTRUCTION NOTES

1. The construction shall not restrict a five- foot clear and unobstructed access to any water or power distribution facilities (Power poles, pull-boxes, transformers, vaults, pumps, valves, meters, appurtenances, etc.) or to the location of the hook-up. The construction shall not be within ten feet of any power lines-whether or not the lines are located on the property. Failure to comply may cause construction delays and/or additional expenses.

2. An approved Seismic Gas Shutoff Valve will be installed on the fuel gas line on the downstream side of the utility meter and be rigidly connected to the exterior of the building or structure containing the fuel gas piping. (Includes Commercial additions and TI work over $10,000.) (Separate plumbing permit is required). *Ordinance 170,158*

3. Provide ultra-low flush water closets for all new construction. Existing shower heads and toilets must be adapted for low water consumption.

4. Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to height not less than 72 inches above the drain inlet (Section 1210.2.3). Use of water-resistant gypsum backing board shall be as stated in Section 2509.3

5. Water heater must be strapped to wall. *LAPC Sec. 507.3*

6. Unit Skylights shall be labeled by a LA City Approved Labeling Agency. Such label shall state the approved labeling agency name, product designation and performance grade rating. (Research Report not required). *2405.5*

7. A copy of the evaluation report and/or conditions of listing shall be made available at the job site

8. Fire partitions and Smoke barriers shall be continuous to the underside of the floor or roof sheathing and passing through any concealed spaces or attic areas. *708.4, 709.4*

9. A roof level shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by code for the story immediately below the roof. 503.1.4

10. Fire rated assemblies shall be per Table 721, generic assemblies of Gypsum Handbook, have LARR approval or ICC approval

11. Penetrations in a fire-rated wall shall be protected by an approved fire stop material in accordance with Section 714.4.
- *a. Steel, Copper or ferrous pipes or conduits may penetrate concrete or masonry walls where the penetrating item is a maximum 6- inch diameter and the area of the opening through the wall does not exceed 144 square inches*
- *b. Membrane penetrations of maximum 2- hr. fire- resistance rated wall and partitions by steel electrical outlet boxes not exceeding 16 square inches are permitted provided openings do not exceed 100 square inches for any 100 square feet of wall area. Outlet boxes on opposite sides of walls or partitions must be separated by a horizontal distance of 24 inches. (714.4.2)*
- *c. Where walls are penetrated by other materials or where larger openings are required than permitted in (b) above, they must be qualified by tests conducted in accordance with Section (714.4.3)*

12. Smoke and fire dampers must be installed in the following locations per Sections 717.5
- *a. Duct penetrations of fire walls in accordance to section 717.5.1*
- *b. Duct penetrations of fire barriers, except exit enclosures and exit passageways where they are not allowed to penetrate. 717.5.2*
- *c. Ducts penetrating shafts. 717.5.3*
- *d. Ducts penetrating fire partitions and fire-rated corridor walls. See exception for steel ducts with no openings into corridor 717.5.4*
- *e. Ducts penetrating smoke barriers 717.5.5*
- *f. Ducts penetrating exterior walls 717.5.6*
- *g. Ducts penetrating smoke partitions 717.5.7*
- *h. Ducts penetrating horizontal assemblies 717.6*
- *i. Access and identification of fire and smoke dampers shall comply with 717.4.1– 717.4.2.*

13. Show draft stop location on plans.
- *a. In buildings used for residential occupancies, draft stops must be installed in wood frame floor construction containing concealed space. Draft stopping shall be located above and in line with the dwelling unit and sleeping unit separation. 718.3*
- *B. In buildings used for residential occupancies, draft stops must be installed in the attic (mansards) (overhangs) (false fronts set out from walls) (similar concealed spaces) formed by combustible construction. Draft stopping shall be Installed above and in line with sleeping unit and dwelling unit separation walls that do not extend to the underside of the floor sheathing above. 718.4*
- *c. Draft-stopping materials must not be less than ½-inch gypsum board, 3/8-inch plywood, 3/8-inch Type 2-M particle board or other materials approved by the building department. Draft-stopping must be adequately supported. 718.3.1*

14. Draft stops shall be provided within attics, mansards, overhangs and similar concealed spaces formed of combustible construction, unless the building is sprinklered with NFPA13 sprinkler system (3000 sf between draft stops) 718.4.3

15. Draft stop shall be provided within a concealed floor-ceiling assembly formed of combustible construction, unless the building is sprinklered with NFPA 13 sprinkler system 718.3.1

16. Fire blocking must be provided in accordance with Section 718 at the following locations:
- *a. In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor levels. 718.2.2*
- *b. In concealed spaces of stud walls and partitions, including furred spaces, at 10-foot intervals along the length of the wall. 718.2.2*
- *C. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, cove ceilings and similar locations. 718.2.3*
- *d. In concealed spaces between stair stringers at the top and bottom of the run and between studs along and in line with the run of stairs if the wall under the stairs is unfinished. 718.2.4*
- *e. In openings around vents, pipes, ducts, chimneys, fireplaces and similar openings which afford a passage for fire at ceiling and floor levels, with noncombustible materials. 718.2.5*

17. This building is of Type III-A construction, provide / show:
- *a. Continuous drywall behind all tubs is required unless the walls are within the unit and non- bearing. Back to back tubs with a common plumbing wall are impractical in 1-hour buildings.*
- *b. All interior bearing walls shall be constructed of not less than 1-hour fire-resistive construction. T-601*
- *C. Attic access openings in 1-hour ceiling can be 2 layers of 3/4" plywood or one layer of 1-5/8" T&G material, self-closing.*
- *d. All openings in floors are required to be enclosed by a shaft having wall, floor, and ceiling of ( ) hour fire resistive construction. 713.1*
- *e. Recessed ceiling light fixtures must be boxed around with 5/8" Type "X" drywall" to maintain the 1-hour ceiling assembly.*
- *f. Continuous drywall is required behind all electrical service panels, fire hoses and medicine cabinets.*
- *g. Exhaust fans from the bathroom must enter through the wall. Dampers are required if the ceiling is penetrated 717.5*
- *h. Plumbing penetration through horizontal occupancy separations shall be boxed out and filled with approved safing material. Insulation is not approved.*
- *i. Penetration of the 1 hour ceiling by ducts from the FAU and the stove hood require dampers (use a ductless hood whenever possible). Attic units (including heat pumps) require dampers at all ceiling penetrations 711*
- *j. Steel beams and columns shall be protected as required for 1-hour protection. Where ceiling forms the protective membrane for fire-resistive assemblies (occupancy separations and rated roof/ceiling or floor/ceiling assemblies), the construction (floor joists) and their supporting horizontal structural members (beams) need not be individually fire protected except where such members support directly applied loads from more than one floor or roof. The required fire resistance shall not be less than that required for individual protection of members. 704.3*
- *k. All plumbing penetrations thru walls which require protected openings (Fire walls, Fire barriers, Fire partitions) are required to be galvanized or cast-iron piping.*

17. Indicate on plans that interior finish materials applied to wall and ceilings shall be tested as specified in Section 803. In addition, provide details showing application in accordance with Section 803, 804, and Table 803.13.

18. The flame-spread rating of paneling materials on the walls of the corridor, lobby and exit enclosure must be identified on plans. T-803.13

19. Interior wall and ceiling finish materials shall be classified in accordance with NFPA 286 and comply with Section 803.1.1.1 803.1.1

20. This building and garage must be equipped with an automatic fire extinguishing system, complying with (NFPA-13 / NFPA-13R); The Sprinkler System shall be approved by Plumbing Div. prior to installation." 903.2

21. Provide automatic sprinkler system at top of rubbish and linen chutes and in their terminal room 903.2.11.2

22. This building shall be provided with a manual alarm system with the capability to support visible alarm notification appliances in accordance with NFPA 72. 907.2.9, 907.5.2.3.3, 907.5.2.3.4

23. Buildings shall have approved radio coverage for emergency responders. See Los Angeles Fire Code Section 510 for more details." This note shall apply to all new buildings meeting any one of the following conditions:
- *a. There are more than 3 stories above grade plane*
- *b. The total building area is 50,000 s.f. or more*
- *c. The total basement or parking area is 10,000 s.f. or more*
- *d. Any basement or level that extends 2 or more stories below grade plane*
- *e. Any building that is 21,000 s.f. or greater and is equipped with a solar voltaic system*

BUILDING ANALYSIS

HEIGHT & AREA ANALYSIS PER TABLE 503
FIVE STORIES R-2 OCCUPANCY TYPE IIIA CONSTRUCTION (1ST THROUGH 5TH FLOOR).
FULLY SPRINKLERED, NFPA 13. PROVIDE FIRE ALARM AS REQUIRED BY 907. BOTH FIRE SPRINKLER SYSTEM AND FIRE ALARM ARE REQUIRED TO BE MONITORED BY A SUPERVISORY SERVICES PER 901.6.1 & 901.6.3

ALLOWABLE HEIGHT AND AREA PER TABLE 506.2:
FIRST THROUGH FIFTH FLOOR TYPE IIIA, GROUP R-2 OCCUPANCY

	ALLOWED	PROPOSED
AREA PER STORY:	**24,000**	**8,892 sf MAX**
AREA PER BLD'G:	**(2)24000= 48,000**	**45,021 (TOTAL)**
No. OF STORIES:	**5**	**5**
HEIGHT:	**85'-0" MAX**	**49'-3-1/2"**

REQUIRED OCCUPANCY SEPARATION PER TABLE 508.4

OCCUPANCY TYPE: SEPARATION REQUIRED:	
S-2 FROM R-2	1-HOUR
R-2 FROM B	1-HOUR

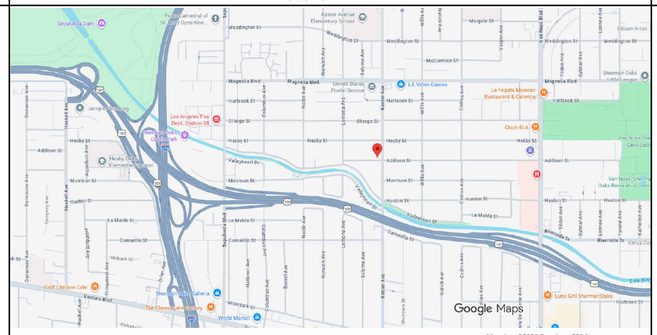
FIRE RESISTIVE RATINGS FOR BUILDING ELEMENTS PER TABLE 601

BUILDING ELEMENT:	TYPE IIIA CONSTRUCTION:
EXTERIOR BEARING WALLS	2-HOUR (FIRE RETARDANT TREATED) (WOOD PER SECTION 602.3)
INTERIOR BEARING WALLS	1-HOUR
INTERIOR NON-BEARING WALLS	0
FLOOR CONSTRUCTION	1-HOUR
ROOF CONSTRUCTION	1-HOUR

FIRE RESISTIVE RATINGS FOR WALLS BASED ON FIRE SEPARATION DISTANCE PER TABLE 602

DISTANCE:	S-2 AND R-2 OCCUPANCY:
LESS THAN 5 FEET	1-HOUR
5 - 10 FEET	1-HOUR

VICINITY MAP



LAHD Unit Matrix

ACCESSIBLE UNIT MATRIX

LAHD REQUIRES 11% MIN. OF UNITS TO HAVE MOBILITY FEATURES
AMD 4% TO HAVE COMMUNICATION FEATURES. CTCAC REQUIRES
15% & 10%. EQUITABLE DISTRIBUTION MUST INCLUDE UNIT SIZE,
NUMBER OF BEDROOMS, NUMBER OF BATHROOMS, REVERSE FLOOR
PLANS, FLOOR PLANS WITH BALCONIES, LOCATION ON SITE, OR IN THE
BUILDING.
77 TOTAL UNITS IN PROJECT 11% X 77 = 9 UNITS TO HAVE MOBILITY (9 UNITS)
15% X 77 = 12 UNITS FOR CTCAC
4% X 77 = 4 UNITS FOR COMMUNICATION FEATURES (4 UNITS)
10% X 77 = 8 UNITS FOR CTCAC
TOTAL # OF 1 BEDROOM/ 1 BATH UNITS = 77 UNITS
* NO BALCONIES ON ALL UNITS
PROPOSED DISTRIBUTION (***SEE LAHD UNIT MATRIX***)

ACCESSIBLE UNIT LEGEND

DENOTES UNITS THAT INCLUDE MOBILITY FEATURES -
SEE SHEETS A200 THRU A204

DENOTES UNITS THAT INCLUDE COMMUNICATION FEATURES -
SEE SHEETS A200 THRU A204

PROJECT DATA

Legal Description:
Address 5003 N KESTER AVE
Address 14913 W ADDISON ST
Address 14911 W ADDISON ST
Address 14907 W ADDISON ST
Address 14913 1/2 W ADDISON ST
Address 5009 N KESTER AVE
Address 5009 1/2 N KESTER AVE
Address 5007 1/2 N KESTER AVE
PIN Number 171A149 306 & 304
Lot/Parcel Area (Calculated) 12,531.7 (sq ft)
Thomas Brothers Grid PAGE 561 - GRID J3
Assessor Parcel No. (APN) 2263012038; 037
Tract TR 7307
Map Reference M B 85-1/5
Block 17
Lot FR 15 & 14
Arb (Lot Cut Reference) None
Map Sheet 171A149
Zoning (Q)R3-1-RIO

Scope of Work:
Proposed 100% Affordable (AHIP)
5-Story 77-Unit Apartment
Type IIIA R-2 Occupancy w/ (2)ELI
Sch 6, (1)VLI Sch 6, (4)Low Sch 6,
(10)Moderate Sch 6, (63) Low Sch 9, &
(1) Manager's Unit
Total Building Height= 55'-3-1/2" max

Codes Referenced
2025 California Residential Code
2025 California Building Code
2025 California Mechanical Code
2025 California Electrical Code
2025 California Plumbing Code
2025 California Energy Code
**All City of Los Angeles Amendments including 2026 LABC/ 2026 LAGBCS

Density Tabulation:
Lot Area= 12531.7 SF
Zone= R3-1
Allowable Density= 1/1200 SF
By-Right Density= 10-Units (Rounds-down)
Base Density= 11-Units (Rounds-up)
100% Affordable
No Density Limitation= 77-Units (600%)
Buildable Area= 8,413 SF
F.A.R. Allowed= 3 : 1
F.A.R. Proposed= 4.95 : 1 (41,684/8413)

Incentives Requested
Base
1) Density (No Limits)
2) Parking (None req'd)
3) Height (+20'-3-1/2" or 55'-3-1/2" in lieu of 35'-0" max per Q-Condition)

Off-Menu
1) FAR increase to 4.95:1 in lieu of 3:1 (+65%)
2) Reduced Side Yard North 5'-0" in lieu of 8'
3) Reduced Front Yard 6'-0" in lieu of 20-ft Building Line
4) Open Space (-50%) Reduction
5) Long Term Bike Parking Reduction (40 in lieu of 60 stalls) -33.33%

Waiver
Reduced Side Yard South 0'-0" in lieu of 8'

Setback Matrix		
Yard	Required	Proposed
Front	20'-0" B.L.	6'-0"
Rear	15'-0"	15'-0"
Side (S)	8'-0"	ZERO
Side (N)	8'-0"	5'-0"

This is a Public Housing Facility

Funding sources:
•CDLAC

Applicable standards:
Fair Housing Amendments Act of 1988 - The requirements in 24 CFR Part 100.205, including ANSI A117.1-1986; the Fair Housing Accessibility Guidelines, including the Supplement to Notice of FHA Guidelines - Questions and Answers about the Guidelines, June 28, 1994
2025 CBC January 1, 2026 Triennial Cycle
2010 ADAS Title II
Section 504 HUD Deeming Notice
LA City CSA AND VCA

"This is a publicly funded housing project and must comply with federal accessibility standards, California Building Code Chapter 11B, and local accessibility requirements by funding source."

Open Space Tabulation:
Required Open Space:
100 s.f. / <3 Habitable Rooms
125 s.f. / 3 Habitable Rooms
175 s.f. / > 3 Habitable Rooms

(77) units @ 100 s.f.= 7700 s.f.
Total Required= 7,700 s.f.
50% reduction= (7700/2) 3,850 s.f.

Landscaping required= 3850 x 0.25= 963 sf
Trees Required= 77-units/4= 20 trees req'd
Trees Provided= 20 trees

Open Space Provided		
Level	Name	Area
1st Story	Bike	331 SF
1st Story	Rear Yard	1,089 SF
Roof Deck	Roof Deck	2,798 SF
Grand total		4,218 SF

Automobile Parking Tabulation:
Required:
None per AB2334 100% Affordable

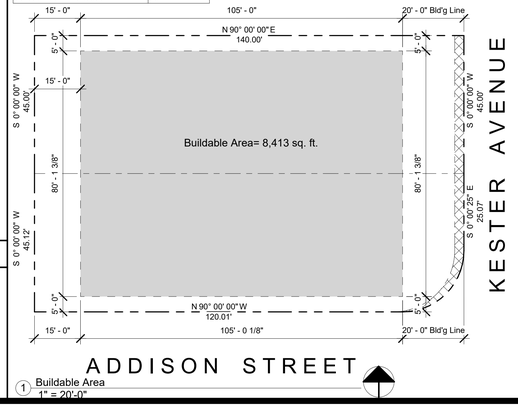
Bicycle Parking Requirements :
Long Term:
(1) Bike Stall per Dwelling Unit (1-25 Units) = 25 Stalls
(1) Bike Stall per 1.5 DU (26-100)= 34.66 Stalls
Total Long Term Required= 60 stalls
Short Term:
(1) Bike Stall per (10) Dwelling Units (1-25 units)= 2.5 Stalls
(1) Bike Stall per (15) Dwelling Units (26-100 units) = 3.5 Stalls
Total Short Term Required= 6 stalls
Total Bike Parking Required = 60 L.T. Stalls/ 6 S.T. Stalls
Incentive for Long Term Bike Parking Reduction (-33.33%)= 40 stalls

Bike Parking Provided	
Description	Count
Long Term Bike Locker	12
Long Term Bike Stall	28
Short Term Bike Stall	6

Grade Plane/ Building Height Analysis

667.19' + 666.59' + 666.33' + 667.07' = 666.79' Grade Plane
4

Lowest Adjacent Grade (LAG)=	666.33'
Grade Plane=	666.79'
Top of Parapet=	721.62'
Top of Roof Deck=	715.62'
LAMC Height=	55'-3-1/2"
LABC Height=	49'-3-1/2"



1 Buildable Area
1" = 20'-0"

Unit Mix	
Bed/Bath	Count
1-Bedroom/ 1-Bath	77
Grand total	77

Unit Tabulation		
Plan Type	Bed/Bath	Count
Plan A	1-Bedroom/ 1-Bath	40
Plan A Alt	1-Bedroom/ 1-Bath	20
Plan A Alt End	1-Bedroom/ 1-Bath	4
Plan A End	1-Bedroom/ 1-Bath	5
Plan B	1-Bedroom/ 1-Bath	4
Plan C	1-Bedroom/ 1-Bath	4
Grand total		77

Plan Type Areas		
Plan Type	Bed/Bath	Area
Plan A	1-Bedroom/ 1-Bath	470 SF
Plan A Alt	1-Bedroom/ 1-Bath	470 SF
Plan A Alt End	1-Bedroom/ 1-Bath	460 SF
Plan A End	1-Bedroom/ 1-Bath	454 SF
Plan B	1-Bedroom/ 1-Bath	521 SF
Plan C	1-Bedroom/ 1-Bath	553 SF

Area Tabulation (Totals)	
Level	Area
Not Placed	0 SF
1st Story	9,270 SF
2nd Story	9,118 SF
3rd Story	9,118 SF
4th Story	9,118 SF
5th Story	9,118 SF
Roof Deck	464 SF
Grand total	46,205 SF

Area Tabulation LABC		
Level	Occupancy Group	Area
1st Story	A-3	553 SF
A-3		553 SF
1st Story	R-2	8,524 SF
2nd Story	R-2	8,892 SF
3rd Story	R-2	8,892 SF
4th Story	R-2	8,892 SF
5th Story	R-2	8,892 SF
Roof Deck	R-2	382 SF
R-2		44,475 SF
Grand total		45,029 SF

Area Tabulation LAMC	
Level	Area
1st Story	484 SF
1st Story	7,493 SF
2nd Story	8,409 SF
3rd Story	8,409 SF
4th Story	8,409 SF
5th Story	8,409 SF
Grand total	41,613 SF

Area Tabulation School Fee	
Level	Area
Not Placed	0 SF
1st Story	8,869 SF
2nd Story	9,118 SF
3rd Story	9,118 SF
4th Story	9,118 SF
5th Story	9,118 SF
Roof Deck	464 SF
Grand total	45,805 SF

FIRE NOTES : (See **N-100** For Fire Requirements)
1) Building shall be fully sprinklered per NFPA13
2) Emergency Responder Radio coverage is required per CFC 510
3) Two-way communication required at elevator lobbies per Section 1009.8

Deferred Submittals:
1) Retaining Walls
2) Grading Work
3) Block Fence Walls
4) Fire Sprinkler systems
5) Electrical, Mechanical, Plumbing
6) Shorning
7) Demolition
8) Emergency Responder Radio Coverage Systems
9) Elevator Systems
10) Fire Alarm

LADWP Area Summary	
Comments	Area
	401 SF
Conditioned Non-Residential	593 SF
Conditioned Residential	37,410 SF
Non-Conditioned Residential	7,801 SF
Grand total	46,205 SF

ZONING

LADBS

SHEET INDEX

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A102b	Site - Demolition 5007 Kester
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A104	HCA Area Exhibit
A105	LABC Area Exhibit
A106	School Fee Area Exhibit
A107	Open Space Exhibit
A108	Building Height/ Grade Plane Exhibit
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A111	Code Analysis
A112	Code Analysis
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A114	Accessible Means of Egress for the project per CBC 1009
A115	Accessible Means of Egress for the project per CBC 1009
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A205	5th Story Floor Plan
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A402	Building Sections
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A502	Enlarged Plans
A600	Enlarged Stair Plans - Stair #1
A601	Enlarged Stair Plans - Stair #2
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D-2	Details
D-3	Details
D-4	Details
D-5	Details
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GN-3	Green Sheet / Spec. Sheet
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HC-2.1	Accessibility Details
HC-2.2	Accessibility Details
HC-2.3	Accessibility Details
N100	Fire Requirement Notes
N101	Fire Stop/ Wall Penetrations
N102	Fire Stop/ Wall Penetrations
N103	Fire Stop/ Wall Penetrations
N104	Fire Stop/ Wall Penetrations
N105	LAFD Requirement#7
N106	LAFD Requirement#7
N107	Evaluation Reports
N108	Evaluation Reports
N109	Evaluation Reports
N110	Evaluation Reports
SC-1	Door/Window Schedule

Stockton Architects Inc.
www.STOCKTONARCHITECTS.com

CLIENT

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(949)315-9416

PROJECT

Kester 77

5003-5007 Kester Ave
Sherman Oaks, 91403

CONSULTANTS

ARCHITECT
Stockton Architects, Inc
Richard Stockton
16461 Sherman Way #100
Van Nuys, CA 91406
(818)-888-9443

DATE	DESCRIPTION	ISSUED TO

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LICENSED REPRESENTATIVE

Plan Check Set

Cover Sheet

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

A000

SCALE As indicated

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City of Los Angeles
Department of City Planning

6/16/2026
PARCEL PROFILE REPORT

PROPERTY ADDRESSES
5003 N KESTER AVE
14913 W ADDISON ST
14911 W ADDISON ST
14907 W ADDISON ST
14913 1/2 W ADDISON ST

ZIP CODES
91403

RECENT ACTIVITY
None

CASE NUMBERS
CPC-2008-3125-CA
CPC-2007-3036-RIO
CPC-2006-48-ICO
CPC-1986-784-GPC
ORD-184381
ORD-183145
ORD-183144
ORD-167939-AREA8-SA7
ORD-101016
ENV-2016-1787-ND
ENV-2008-3103-CE
ENV-2007-3037-ND
ENV-2006-49-CE
ND-83-189-ZC-HD

Address/Legal Information	
PIN Number	171A149 304
Lot/Parcel Area (Calculated)	6,231.8 (sq ft)
Thomas Brothers Grid	PAGE 561 - GRID J3
Assessor Parcel No. (APN)	2263012038
Tract	TR 7307
Map Reference	M B 85-1/5
Block	17
Lot	FR 15
Arb (Lot Cut Reference)	None
Map Sheet	171A149
Jurisdictional Information	
Community Plan Area	Van Nuys - North Sherman Oaks
Area Planning Commission	South Valley APC
Neighborhood Council	SHERMAN OAKS NC
Council District	CD 4 - Nithya Raman
Census Tract #	1289.10000000
LADBS District Office	Van Nuys
Permitting and Zoning Compliance Information	
Administrative Review	None
Planning and Zoning Information	
Special Notes	None
Zoning	[Q]R3-1-RIO
Zoning Information (ZI)	ZI-2358 River Implementation Overlay District (RIO)
	ZI-2512 Housing Element Sites
	ZI-2427 Freeway Adjacent Advisory Notice for Sensitive Uses
General Plan Land Use	Medium Residential
General Plan Note(s)	Yes
Minimum Density Requirement	Yes (Rezoning Site)
Hillside Area (Zoning Code)	No
Specific Plan Area	None
Subarea	None
Special Land Use / Zoning	None
Historic Preservation Review	No
HistoricPlacesLA	No
Historic Preservation Overlay Zone	None
Other Historic Designations	None
Mills Act Contract	None
CDO: Community Design Overlay	None
CPIO: Community Plan Imp. Overlay	None
Subarea	None
CPIO Historic Preservation Review	No
CUGU: Clean Up-Green Up	None
HCR: Hillside Construction Regulation	No
NSO: Neighborhood Stabilization Overlay	No
POD: Pedestrian Oriented Districts	None
RBP: Restaurant Beverage Program Eligible Area	None
ASP: Alcohol Sales Program	No
RFA: Residential Floor Area District	None
RIO: River Implementation Overlay	Yes
SN: Sign District	No
AB 2334: Very Low Vehicle Travel Area	Yes
AB 2097: Within a half mile of a Major Transit Stop	No
Streetscape	No
Adaptive Reuse Subareas	No
Adaptive Reuse Program	Citywide Adaptive Reuse Program
Affordable Housing Linkage Fee	
Neighborhood	Sherman Oaks
Residential Market Area	Low
Commercial Market Area	Medium
Inclusionary Housing	No
Local Affordable Housing Incentive	No
Targeted Planting	No
Special Lot Line	No
Transit Oriented Communities (TOC)	Not Eligible
Mixed Income Incentive Programs	
Transit Oriented Incentive Area (TOIA)	Not Eligible
Opportunity Corridors Incentive Area	OC-2
Corridor Transition Incentive Area	Not Eligible
TCAC Opportunity Area	Highest
High Quality Transit Corridor (within 1/2 mile)	Yes
ED 1 Eligibility	Review Eligibility
RPA: Redevelopment Project Area	None
Central City Parking	No
Downtown Parking	No
Building Line	20
500 Ft School Zone	None
500 Ft Park Zone	None
Zanja System 1 Mile Buffer	No
Assessor Information	
Assessor Parcel No. (APN)	2263012038
APN Area (Co. Public Works)*	0.143 (ac)
Use Code	0200 - Residential - Double, Duplex, or Two Units - 4 Stories or Less
Assessed Land Val.	$29,788
Assessed Improvement Val.	$45,472
Last Owner Change	10/18/2004
Last Sale Amount	$28,000
Tax Rate Area	13
Deed Ref No. (City Clerk)	8-300
	3592517
	3592516
	283379
	2673549
	2673548
Building 1	
Year Built	1948
Building Class	D5A
Number of Units	1
Number of Bedrooms	1
Number of Bathrooms	1
Building Square Footage	440.0 (sq ft)
Building 2	
Year Built	1947
Building Class	D5SB
Number of Units	1
Number of Bedrooms	3
Number of Bathrooms	1
Building Square Footage	1,184.0 (sq ft)
Building 3	No data for building 3
Building 4	No data for building 4
Building 5	No data for building 5
Rent Stabilization Ordinance (RSO)	Yes [APN: 2263012038]
Additional Information	
Airport Hazard	457' Height Limit Above Elevation 790
Coastal Zone	None
Coastal Bluff Potential	No
Canyon Bluff Potential	No
Farmland	Area Not Mapped
Urban Agriculture Incentive Zone	YES
Very High Fire Hazard Severity Zone	No
Fire District No. 1	No
Flood Zone	Outside Flood Zone
Watercourse	No
Streams	No
Methane Hazard Site	None
High Wind Velocity Areas	No
Special Grading Area (BOE Basic Grid Map A-13372)	No
Wells	None
Sea Level Rise Area	No
Oil Well Adjacency	No
Universal Planning Review Service Applicability	Needs Review
Environmental	
Santa Monica Mountains Zone	No
Biological Resource Potential	None
Mountain Lion Potential	None
Monarch Butterfly Potential	No
300-Foot Habitat Buffer	No
County-Designated SEAs and CRAs	No
USFWS-designated CHAs	No
Criterion 1 Protected Areas for Wildlife (PAWs)	No
Seismic Hazards	
Active Fault Near-Source Zone	
Nearest Fault (Distance in km)	6.2791848
Nearest Fault (Name)	Hollywood Fault
Region	Transverse Ranges and Los Angeles Basin
Fault Type	B
Slip Rate (mm/year)	1.00000000
Slip Geometry	Left Lateral - Reverse - Oblique
Slip Type	Poorly Constrained
Down Dip Width (km)	14.00000000
Rupture Top	0.00000000
Rupture Bottom	13.00000000
Dip Angle (degrees)	70.00000000
Maximum Magnitude	6.40000000
Alquist-Priolo Fault Zone	No
Landslide	No
Liquefaction	Yes
Preliminary Fault Rupture Study Area	None
Tsunami Hazard Area	No
Economic Development Areas	
Business Improvement District	None
Hubzone	None
Jobs and Economic Development Incentive Zone (JEDI)	None
Opportunity Zone	No
Promise Zone	None
State Enterprise Zone	None
Housing	
Rent Stabilization Ordinance (RSO)	Yes [APN: 2263012038]
Ellis Act Property	No
Just Cause For Eviction Ordinance (JCO)	No
Housing Crisis Act and Resident Protections Ordinance Replacement Review	Yes
Housing Element Sites	
HE Replacement Required	Yes
SB 166 Units	Appendix 4.1 0.33
	Rezoning Sites 2
Housing Use within Prior 5 Years	Yes
Public Safety	
Police Information	
Bureau	Valley
Division / Station	Van Nuys
Reporting District	963
Fire Information	
Bureau	Valley
Battalion	10
District / Fire Station	88
Red Flag Restricted Parking	No

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(*) - APN Area is provided "as is" from the Los Angeles County's Public Works, Flood Control, Benefit Assessment.

City of Los Angeles
Department of City Planning

6/16/2026
PARCEL PROFILE REPORT

PROPERTY ADDRESSES
5009 N KESTER AVE
5007 N KESTER AVE
5009 1/2 N KESTER AVE
5007 1/2 N KESTER AVE

ZIP CODES
91403

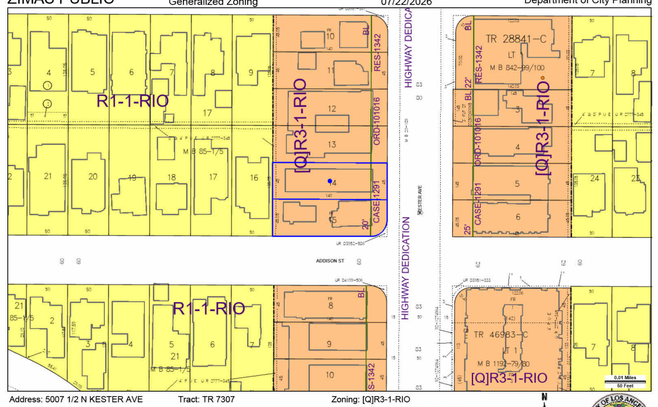
RECENT ACTIVITY
None

CASE NUMBERS
CPC-2008-3125-CA
CPC-2007-3036-RIO
CPC-2006-48-ICO
CPC-1986-784-GPC
ORD-184381
ORD-183145
ORD-183144
ORD-167939-AREA8-SA7
ORD-101016
ENV-2016-1787-ND
ENV-2008-3103-CE
ENV-2007-3037-ND
ENV-2006-49-CE
ND-83-189-ZC-HD

Address/Legal Information	
PIN Number	171A149 304
Lot/Parcel Area (Calculated)	6,299.9 (sq ft)
Thomas Brothers Grid	PAGE 561 - GRID J3
Assessor Parcel No. (APN)	2263012037
Tract	TR 7307
Map Reference	M B 85-1/5
Block	17
Lot	14
Arb (Lot Cut Reference)	None
Map Sheet	171A149
Jurisdictional Information	
Community Plan Area	Van Nuys - North Sherman Oaks
Area Planning Commission	South Valley APC
Neighborhood Council	SHERMAN OAKS NC
Council District	CD 4 - Nithya Raman
Census Tract #	1289.10000000
LADBS District Office	Van Nuys
Permitting and Zoning Compliance Information	
Administrative Review	None
Planning and Zoning Information	
Special Notes	None
Zoning	[Q]R3-1-RIO
Zoning Information (ZI)	ZI-2358 River Implementation Overlay District (RIO)
	ZI-2512 Housing Element Sites
	ZI-2427 Freeway Adjacent Advisory Notice for Sensitive Uses
	ZI-2534 Lower Income Rezoning Housing Element Sites - Ministerial Approval, and Minimum Density
General Plan Land Use	Medium Residential
General Plan Note(s)	Yes
Minimum Density Requirement	Yes (Rezoning Site)
Hillside Area (Zoning Code)	No
Specific Plan Area	None
Subarea	None
Special Land Use / Zoning	None
Historic Preservation Review	No
HistoricPlacesLA	No
Historic Preservation Overlay Zone	None
Other Historic Designations	None
Mills Act Contract	None
CDO: Community Design Overlay	None
CPIO: Community Plan Imp. Overlay	None
Subarea	None
CPIO Historic Preservation Review	No
CUGU: Clean Up-Green Up	None
HCR: Hillside Construction Regulation	No
NSO: Neighborhood Stabilization Overlay	No
POD: Pedestrian Oriented Districts	None
RBP: Restaurant Beverage Program Eligible Area	None
ASP: Alcohol Sales Program	No
RFA: Residential Floor Area District	None
RIO: River Implementation Overlay	Yes
SN: Sign District	No
AB 2334: Very Low Vehicle Travel Area	Yes
AB 2097: Within a half mile of a Major Transit Stop	No
Streetscape	No
Adaptive Reuse Subareas	No
Adaptive Reuse Program	Citywide Adaptive Reuse Program
Affordable Housing Linkage Fee	
Neighborhood	Sherman Oaks
Residential Market Area	Low
Commercial Market Area	Medium
Inclusionary Housing	No
Local Affordable Housing Incentive	No
Targeted Planting	No
Special Lot Line	No
Transit Oriented Communities (TOC)	Not Eligible
Mixed Income Incentive Programs	
Transit Oriented Incentive Area (TOIA)	Not Eligible
Opportunity Corridors Incentive Area	OC-2
Corridor Transition Incentive Area	Not Eligible
TCAC Opportunity Area	Highest
High Quality Transit Corridor (within 1/2 mile)	Yes
ED 1 Eligibility	Review Eligibility
RPA: Redevelopment Project Area	None
Central City Parking	No
Downtown Parking	No
Building Line	20
500 Ft School Zone	None
500 Ft Park Zone	None
Zanja System 1 Mile Buffer	No
Assessor Information	
Assessor Parcel No. (APN)	2263012037
APN Area (Co. Public Works)*	0.145 (ac)
Use Code	0400 - Residential - Four Units (Any Combination) - 4 Stories or Less
Assessed Land Val.	$301,360
Assessed Improvement Val.	$325,000
Last Owner Change	04/07/2025
Last Sale Amount	
Tax Rate Area	13
Deed Ref No. (City Clerk)	DUMMY
	854841
	1312343-6
	1125251
	1126792
	1083850
	0220417
Building 1	
Year Built	1952
Building Class	D5S
Number of Units	4
Number of Bedrooms	4
Number of Bathrooms	4
Building Square Footage	2,125.0 (sq ft)
Building 2	No data for building 2
Building 3	No data for building 3
Building 4	No data for building 4
Building 5	No data for building 5
Rent Stabilization Ordinance (RSO)	Yes [APN: 2263012037]
Additional Information	
Airport Hazard	457' Height Limit Above Elevation 790
Coastal Zone	None
Coastal Bluff Potential	No
Canyon Bluff Potential	No
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Fire District No. 1	No
Flood Zone	Outside Flood Zone
Watercourse	No
Streams	No
Methane Hazard Site	None
High Wind Velocity Areas	No
Special Grading Area (BOE Basic Grid Map A-13372)	No
Wells	None
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Nearest Fault (Name)	Hollywood Fault
Region	Transverse Ranges and Los Angeles Basin
Fault Type	B
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Slip Geometry	Left Lateral - Reverse - Oblique
Slip Type	Poorly Constrained
Down Dip Width (km)	14.00000000
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Rupture Bottom	13.00000000
Dip Angle (degrees)	70.00000000
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Alquist-Priolo Fault Zone	No
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Business Improvement District	None
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Jobs and Economic Development Incentive Zone (JEDI)	None
Opportunity Zone	No
Promise Zone	None
State Enterprise Zone	None
Housing	
Rent Stabilization Ordinance (RSO)	Yes [APN: 2263012037]
Ellis Act Property	No
Just Cause For Eviction Ordinance (JCO)	No
Housing Crisis Act and Resident Protections Ordinance Replacement Review	Yes
Housing Element Sites	
HE Replacement Required	Yes
SB 166 Units	Appendix 4.1 0.24
	Rezoning Sites 2
Housing Use within Prior 5 Years	Yes
Public Safety	
Police Information	
Bureau	Valley
Division / Station	Van Nuys
Reporting District	963
Fire Information	
Bureau	Valley
Battalion	10
District / Fire Station	88
Red Flag Restricted Parking	No

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ZIMAS PUBLIC — Generalized Zoning — 07/22/2026 — City of Los Angeles Department of City Planning



Address: 5007 1/2 N KESTER AVE
APN: 2263012037
PIN #: 171A149 304

Tract: TR 7307
Block: 17
Lot: 14
Arb: None

Zoning: [Q]R3-1-RIO
General Plan: Medium Residential

ZONING

LADBS

Stockton Architects Inc.
www.STOCKTONARCHITECTS.com

CLIENT

5003 Kester LLC
300 Spectrum Ctr Dr #1100
Irvine CA 92618
(949)315-9416

PROJECT

Kester 77

5003-5007 Kester Ave
Sherman Oaks, 91403

CONSULTANTS

ARCHITECT
Stockton Architects, Inc
Richard Stockton
16461 Sherman Way #100
Van Nuys, CA 91406
(818)-888-9443

DATE	DESCRIPTION	ISSUED TO

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Plan Check Set

ZIMAS Report

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

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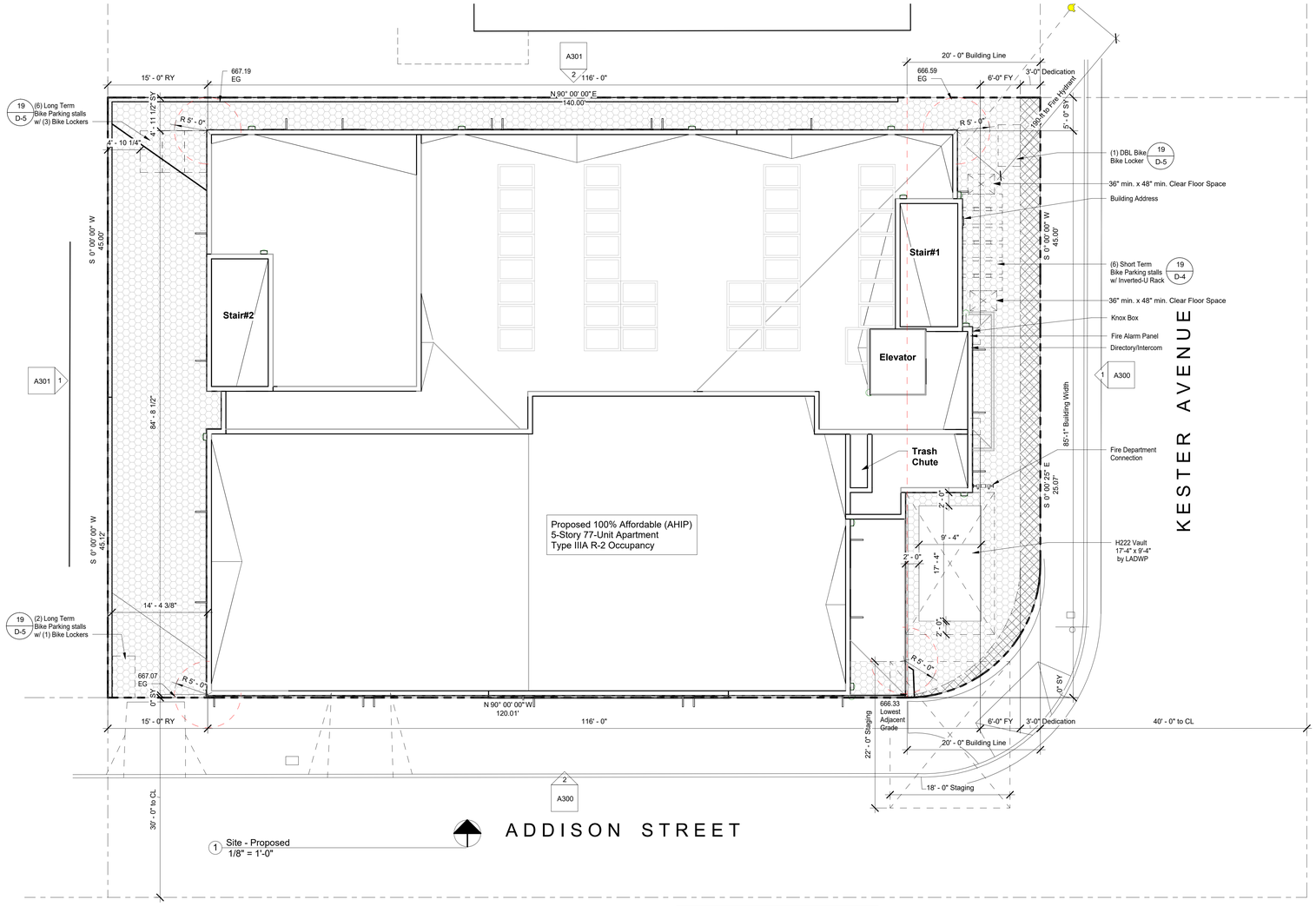
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Area Tabulation (Totals)	
Level	Area
Not Placed	0 SF
1st Story	9,270 SF
2nd Story	9,118 SF
3rd Story	9,118 SF
4th Story	9,118 SF
5th Story	9,118 SF
Roof Deck	464 SF
Grand total	46,205 SF

Area Tabulation LABC		
Level	Occupancy Group	Area
1st Story	A-3	553 SF
A-3		553 SF
1st Story	R-2	8,524 SF
2nd Story	R-2	8,892 SF
3rd Story	R-2	8,892 SF
4th Story	R-2	8,892 SF
5th Story	R-2	8,892 SF
Roof Deck	R-2	382 SF
R-2		44,475 SF
Grand total		45,029 SF

Area Tabulation LAMC	
Level	Area
1st Story	484 SF
1st Story	7,493 SF
2nd Story	8,409 SF
3rd Story	8,409 SF
4th Story	8,409 SF
5th Story	8,409 SF
Grand total	41,613 SF

Area Tabulation School Fee	
Level	Area
Not Placed	0 SF
1st Story	8,869 SF
2nd Story	9,118 SF
3rd Story	9,118 SF
4th Story	9,118 SF
5th Story	9,118 SF
Roof Deck	464 SF
Grand total	45,805 SF



1 Site - Proposed
1/8" = 1'-0"

Legal Description:
Address 5003 N KESTER AVE
Address 14913 W ADDISON ST
Address 14911 W ADDISON ST
Address 14907 W ADDISON ST
Address 14913 1/2 W ADDISON ST
Address 5009 N KESTER AVE
Address 5007 N KESTER AVE
Address 5009 1/2 N KESTER AVE
Address 5007 1/2 N KESTER AVE
PIN Number 171A149 306 & 304
Lot/Parcel Area (Calculated) 12,531.7 (sq ft)
Thomas Brothers Grid PAGE 561 - GRID J3
Assessor Parcel No. (APN) 2263012038; 037
Tract TR 7307
Map Reference M B 85-1/5
Block 17
Lot FR 15 & 14
Arb (Lot Cut Reference) None
Map Sheet 171A149
Zoning (Q)R3-1-RIO

Scope of Work:
Proposed 100% Affordable (AHIP)
5-Story 77-Unit Apartment
Type IIIA R-2 Occupancy w/ (2)ELI
Sch 6, (1)VLI Sch 6, (4)Low Sch 6,
(10)Moderate Sch 6, (63) Low Sch 9, &
(1) Manager's Unit
Total Building Height= 55'-3-1/2" max

Codes Referenced
2025 California Residential Code
2025 California Building Code
2025 California Mechanical Code
2025 California Electrical Code
2025 California Plumbing Code
2025 California Energy Code
**All City of Los Angeles Amendments
including 2026 LABC/ 2026 LAGBCS

Density Tabulation:
Lot Area= 12531.7 SF
Zone= R3-1
Allowable Density= 1/1200 SF
By-Right Density= 10-Units
(Rounds-down)
Base Density= 11-Units
(Rounds-up)
100% Affordable
No Density Limitation= 77-Units
(600%)
Buildable Area= 8,413 SF
F.A.R. Allowed= 3 : 1
F.A.R. Proposed= 4.95 : 1
(41,684/8413)

Incentives Requested
Base
1) Density (No Limits)
2) Parking (None req'd)
3) Height (+20'-3-1/2" or 55'-3-1/2"
in lieu of 35'-0" max per Q-Condition)

Off-Menu
1) FAR increase to 4.95:1 in lieu of 3:1 (+65%)
2) Reduced Side Yard North 5'-0" in lieu of 8'
3) Reduced Front Yard 6'-0" in lieu of 20-ft
Building Line
4) Open Space (-50%) Reduction
5) Long Term Bike Parking Reduction
(40 in lieu of 60 stalls) -33.33%
Waiver
Reduced Side Yard South 0'-0" in lieu of 8'

Setback Matrix		
Yard	Required	Proposed
Front	20'-0" B.L.	6'-0"
Rear	15'-0"	15'-0"
Side (S)	8'-0"	ZERO
Side (N)	8'-0"	5'-0"

Grade Plane/ Building Height Analysis

667.19' + 666.59' + 666.33' + 667.07' / 4 = 666.79' Grade Plane

Lowest Adjacent Grade (LAG)=	666.33'
Grade Plane=	666.79'
Top of Parapet=	721.62'
Top of Roof Deck=	715.62'
LAMC Height=	55'-3-1/2"
LABC Height=	49'-3-1/2"

HEAT ISLAND CALCULATION:
TOTAL HARDSCAPE (NON-ROOF) - 3,177 SQ. FT.
100% OF ALL NON-ROOF HARDSCAPE SHALL BE PERMEABLE
PAVING PER SPEC'S ON SHEET GN-2
3,177 SQ. FT. PERMEABLE PAVING
TOTAL PROVIDED = 3,177 SQ. FT. (100%)
(LOCATION_SHOWN HATCHED)

Open Space Tabulation:
Required Open Space:
100 s.f. / <3 Habitable Rooms
125 s.f. / 3 Habitable Rooms
175 s.f. / > 3 Habitable Rooms

(77) units @ 100 s.f.= 7700 s.f.
Total Required= 7,700 s.f.
50% reduction= (7700/2) 3,850 s.f.

Landscaping required= 3850 x 0.25= 963 sf
Trees Required= 77-units/4= 20 trees req'd
Trees Provided= 20 trees

Open Space Provided		
Level	Name	Area
1st Story	Bike	331 SF
1st Story	Rear Yard	1,089 SF
Roof Deck	Roof Deck	2,798 SF
Grand total		4,218 SF

Automobile Parking Tabulation:
Required:
None per AB2097

Bicycle Parking Requirements :
Long Term:
(1) Bike Stall per Dwelling Unit (1-25 Units) = 25 Stalls
(1) Bike Stall per 1.5 DU (26-100)= 34.66 Stalls
Total Long Term Required= 60 stalls
Short Term:
(1) Bike Stall per (10) Dwelling Units (1-25 units)= 2.5 Stalls
(1) Bike Stall per (15) Dwelling Units (26-100 units) = 3.5 Stalls
Total Short Term Required= 6 stalls
Total Bike Parking Required = 60 L.T. Stalls/ 6 S.T. Stalls
Incentive for Long Term Bike Parking Reduction
(-33.33%)= 40 stalls

Bike Parking Provided	
Description	Count
Long Term Bike Locker	12
Long Term Bike Stall	28
Short Term Bike Stall	6

ZONING

LADBS

Stockton Architects Inc.
www.STOCKTONARCHITECTS.com

CLIENT

5003 Kester LLC
300 Spectrum Ctr Dr #1100
Irvine CA 92618
(949)315-9416

PROJECT

Kester 77

5003-5007 Kester Ave
Sherman Oaks, 91403

CONSULTANTS

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16461 Sherman Way #100
Van Nuys, CA 91406
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LICENSED REPRESENTATIVE

Plan Check Set

Proposed Site Plan

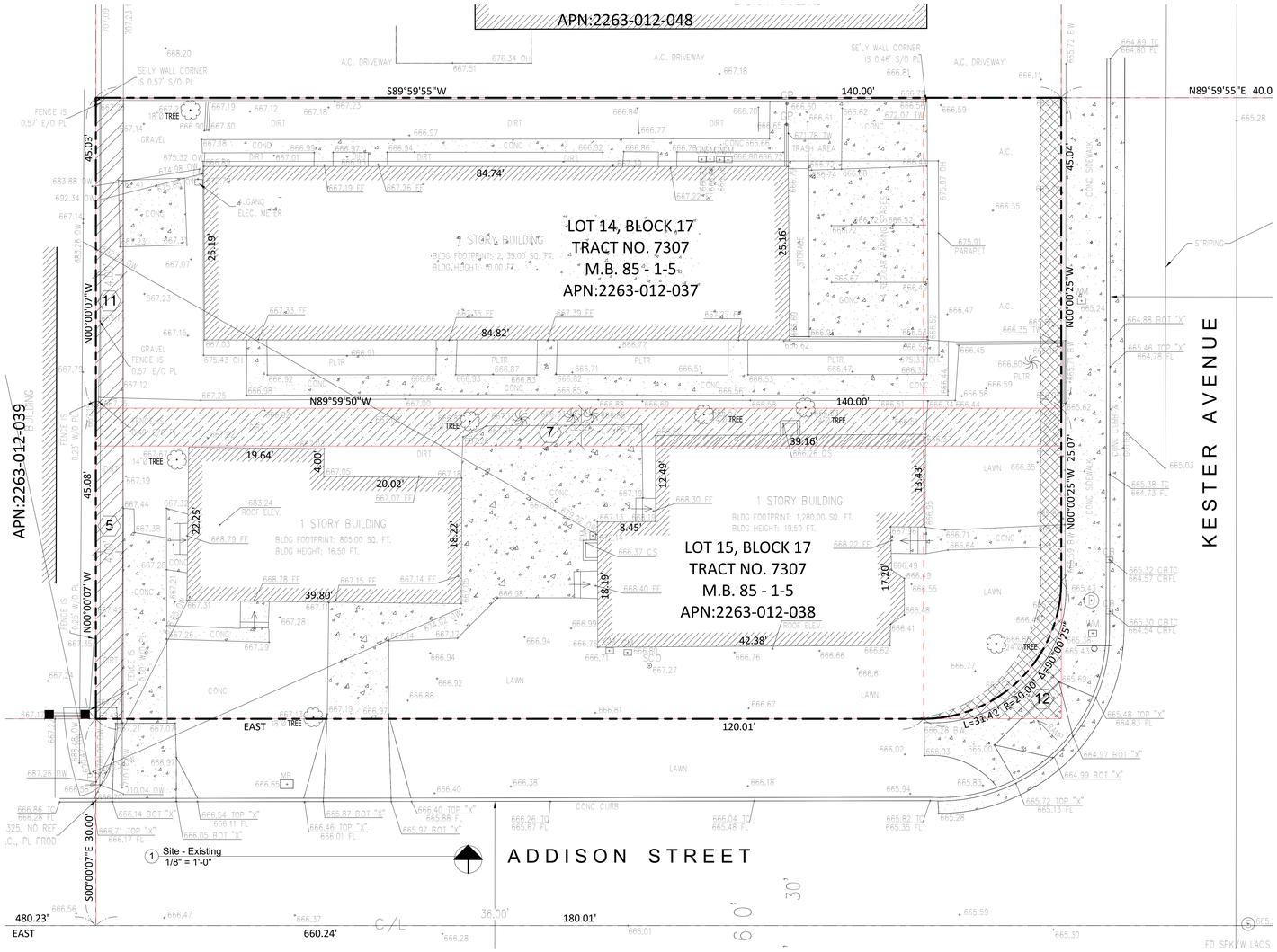
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CHECKED BY	Checker

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Legal Description:

Address 5003 N KESTER AVE
Address 14913 W ADDISON ST
Address 14911 W ADDISON ST
Address 14907 W ADDISON ST
Address 14913 1/2 W ADDISON ST
Address 5009 N KESTER AVE
Address 5007 N KESTER AVE
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Address 5007 1/2 N KESTER AVE
PIN Number 171A149 306 & 304
Lot/Parcel Area (Calculated) 12,531.7 (sq ft)
Thomas Brothers Grid PAGE 561 - GRID J3
Assessor Parcel No. (APN) 2263012038; 037
Tract TR 7307
Map Reference M B 85-1/5
Block 17
Lot FR 15 & 14
Arb (Lot Cut Reference) None
Map Sheet 171A149
Zoning (Q)R3-1-RIO

ZONING

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LICENSED REPRESENTATIVE

Plan Check Set

Site - Existing

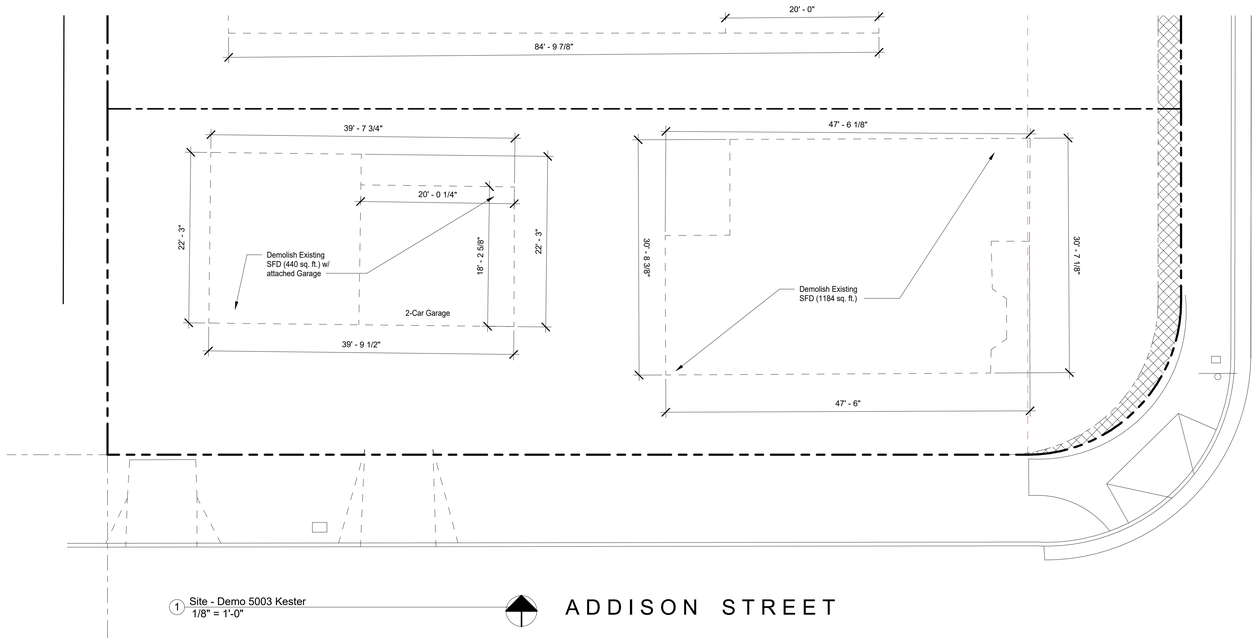
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DRAWN BY	Author
CHECKED BY	Checker

A101

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1 Site - Demo 5003 Kester
1/8" = 1'-0"

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Address	5003 N KESTER AVE
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Block 17
Lot FR 15 & 14
Arb (Lot Cut Reference) None
Map Sheet 171A149
Zoning (Q)R3-1-RIO

DEMOLITION NOTES

1. Method of Demolition:
   a) *Handwrecking* - Use of small wheel-mounted pneumatic tools will be permitted if first approved by the building inspector.

2. Comply with the following notes:
   a) All Debris shall be wet at time of handling to prevent dust.
   b) No structural member in any story shall be demolished until the story above is completely removed.
   c) There will be no free fall dumping over exterior walls for a height of more than 25 feet.
   d) Call for inspection at least 24 hours before starting work.
   e) Approval of protection fences and canopies is required prior to demolition.
   f) All basement fills shall be clean and uniform.
   g) Storage of materials on floor shall not exceed _____ psf.

3. An 8' high chain link fence must be provided to prevent unauthorized entry to the vacant lot after demolition.

STORM WATER POLLUTION CONTROL

(2020 Los Angeles Green Building Code)

1. Eroded sediments and pollutants shall be retained on site and shall not be transported from the site via sheet flow, swales, area drains, natural drainage or wind.
2. Stockpiles of earth and other construction-related materials shall be covered and/or protected from being transported from the site by wind or water.
3. Fuels, oils, solvents and other toxic materials must be stored in accordance with their listing and shall not contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of properly and shall not be washed into the drainage system.
4. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained on the project site.
5. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete waste on-site until it can be appropriately disposed of or recycled.
6. Trash and construction –related solid wastes must be deposited into a covered receptacle to prevent contamination of storm water and dispersal by wind.
7. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the street/public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.
8. Retention basins of sufficient size shall be provided to retain storm water runoff on-site and shall be properly located to collect all tributary site runoff.
9. Where retention of storm water runoff on-site is not feasible due to site constraints, runoff may be conveyed to the street and the storm drain system provided that an approved filtering system is installed and maintained on-site during the construction duration.

ZONING

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PROJECT

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Sherman Oaks, 91403

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Richard Stockton
16461 Sherman Way #100
Van Nuys, CA 91406
(818)-888-9443

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LICENSED REPRESENTATIVE

Plan Check Set

Site - Demolition
5003 Kester

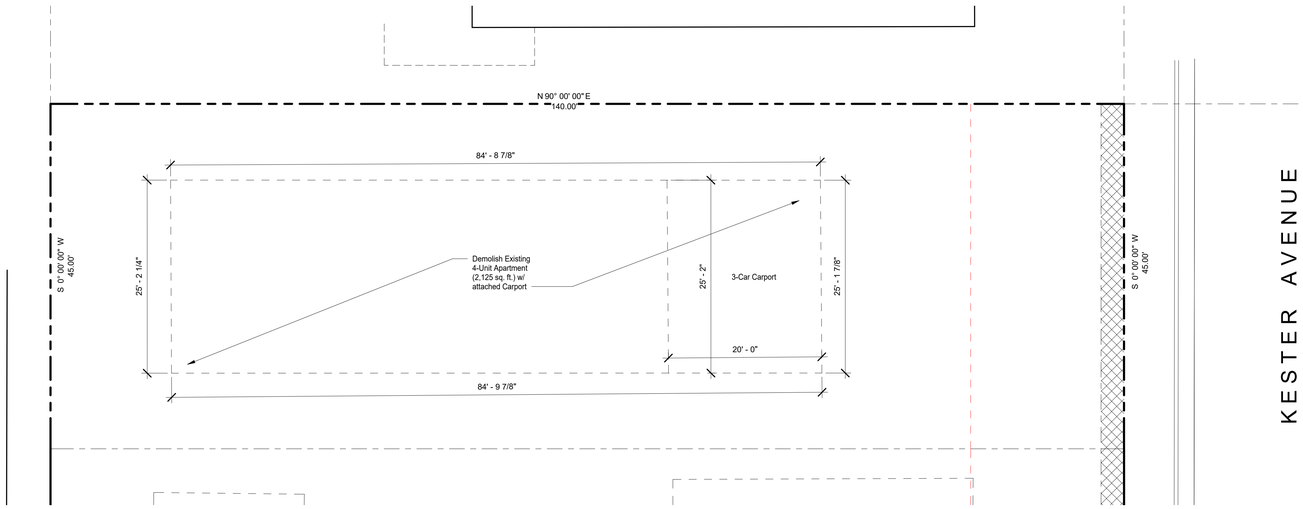
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1 Site - Demo 5007 Kester
1/8" = 1'-0"

Legal Description:
Address 5003 N KESTER AVE
Address 14913 W ADDISON ST
Address 14911 W ADDISON ST
Address 14907 W ADDISON ST
Address 14913 1/2 W ADDISON ST
Address 5009 N KESTER AVE
Address 5007 N KESTER AVE
Address 5009 1/2 N KESTER AVE
Address 5007 1/2 N KESTER AVE
PIN Number 171A149 306 & 304
Lot/Parcel Area (Calculated) 12,531.7 (sq ft)
Thomas Brothers Grid PAGE 561 - GRID J3
Assessor Parcel No. (APN) 2263012038; 037
Tract TR 7307
Map Reference M B 85-1/5
Block 17
Lot FR 15 & 14
Arb (Lot Cut Reference) None
Map Sheet 171A149
Zoning (Q)R3-1-RIO

LA DBS DEPARTMENT OF BUILDING AND SAFETY

DEMOLITION NOTES

1. Method of Demolition:
   a) *Handwrecking* - Use of small wheel-mounted pneumatic tools will be permitted if first approved by the building inspector.

2. Comply with the following notes:
   a) All Debris shall be wet at time of handling to prevent dust.
   b) No structural member in any story shall be demolished until the story above is completely removed.
   c) There will be no free fall dumping over exterior walls for a height of more than 25 feet.
   d) Call for inspection at least 24 hours before starting work.
   e) Approval of protection fences and canopies is required prior to demolition.
   f) All basement fills shall be clean and uniform.
   g) Storage of materials on floor shall not exceed _____ psf.

3. An 8' high chain link fence must be provided to prevent unauthorized entry to the vacant lot after demolition.

STORM WATER POLLUTION CONTROL

(2020 Los Angeles Green Building Code)

1. Eroded sediments and pollutants shall be retained on site and shall not be transported from the site via sheet flow, swales, area drains, natural drainage or wind.
2. Stockpiles of earth and other construction-related materials shall be covered and/or protected from being transported from the site by wind or water.
3. Fuels, oils, solvents and other toxic materials must be stored in accordance with their listing and shall not contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of properly and shall not be washed into the drainage system.
4. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained on the project site.
5. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete waste on-site until it can be appropriately disposed of or recycled.
6. Trash and construction –related solid wastes must be deposited into a covered receptacle to prevent contamination of storm water and dispersal by wind.
7. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the street/public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.
8. Retention basins of sufficient size shall be provided to retain storm water runoff on-site and shall be properly located to collect all tributary site runoff.
9. Where retention of storm water runoff on-site is not feasible due to site constraints, runoff may be conveyed to the street and the storm drain system provided that an approved filtering system is installed and maintained on-site during the construction duration.

ZONING

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Stockton Architects Inc.
www.STOCKTONARCHITECTS.com

CLIENT

5003 Kester LLC
300 Spectrum Ctr Dr #1100
Irvine CA 92618
(949)315-9416

PROJECT

Kester 77

5003-5007 Kester Ave
Sherman Oaks, 91403

CONSULTANTS

ARCHITECT
Stockton Architects, Inc
Richard Stockton
16461 Sherman Way #100
Van Nuys, CA 91406
(818)-888-9443

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Plan Check Set

Site - Demolition
5007 Kester

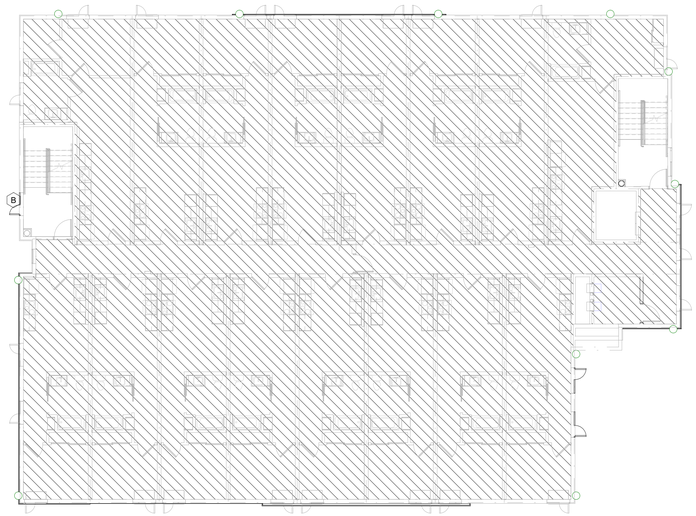
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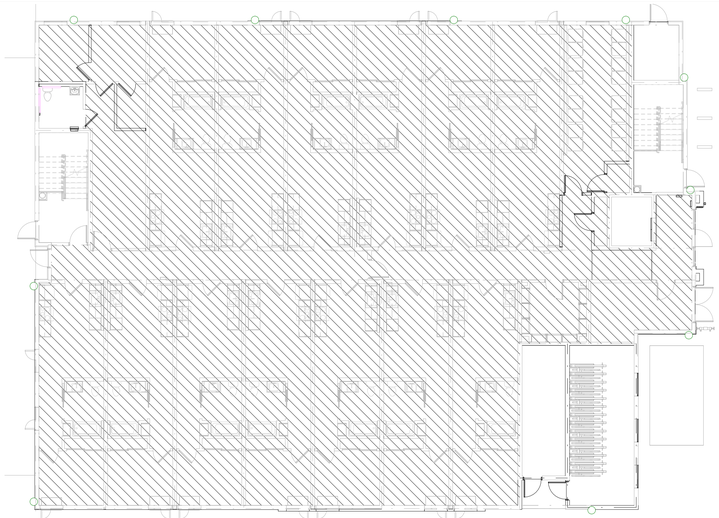
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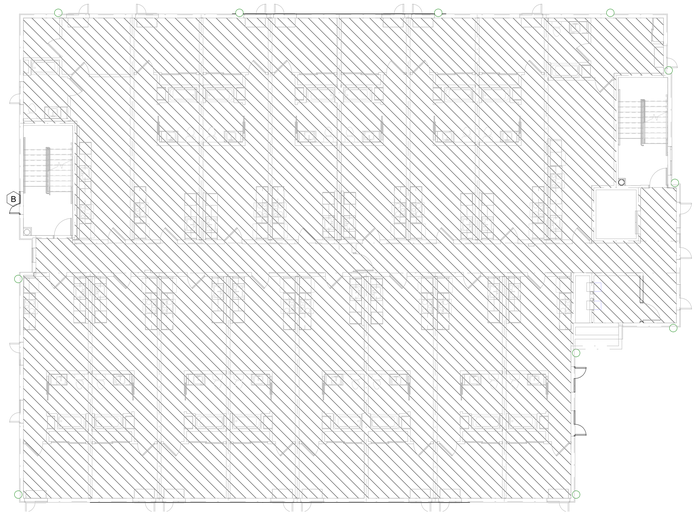
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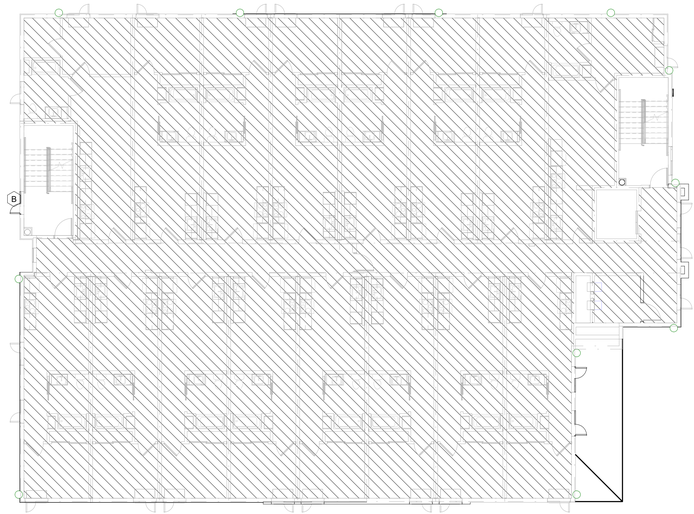
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3/32" = 1'-0"



1 1st Story - FAR
3/32" = 1'-0"

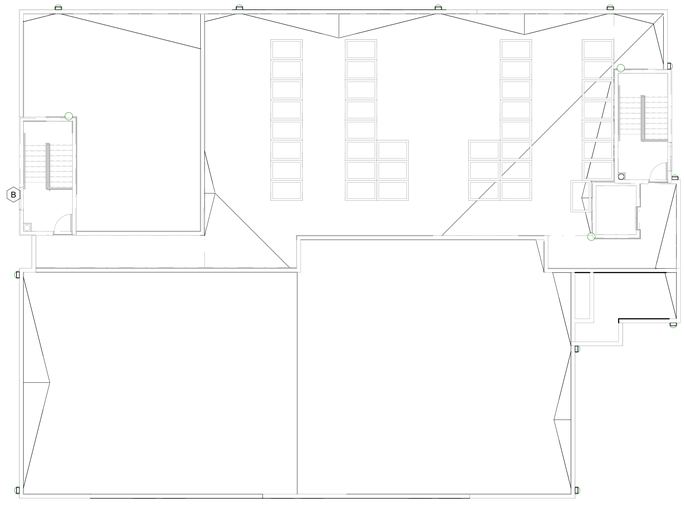


5 5th Story - FAR
3/32" = 1'-0"

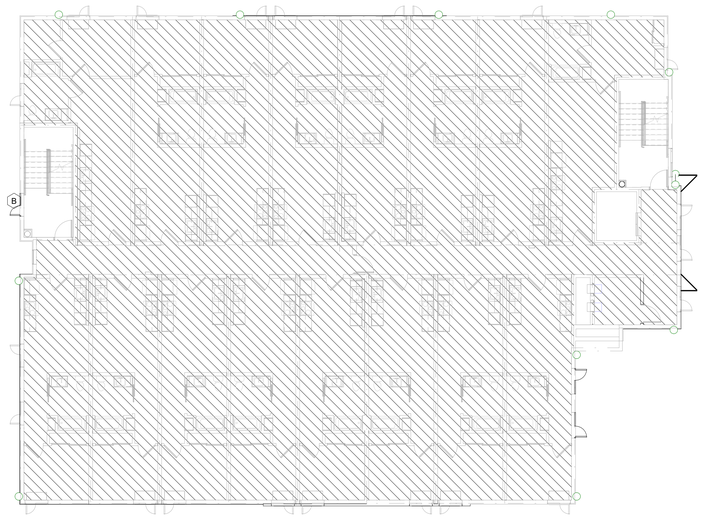


2 2nd Story - FAR
3/32" = 1'-0"

Area Tabulation LAMC	
Level	Area
1st Story	484 SF
1st Story	7,493 SF
2nd Story	8,409 SF
3rd Story	8,409 SF
4th Story	8,409 SF
5th Story	8,409 SF
Grand total	41,613 SF



6 Roof Deck - FAR
3/32" = 1'-0"



3 3rd Story - FAR
3/32" = 1'-0"

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FAR Exhibit

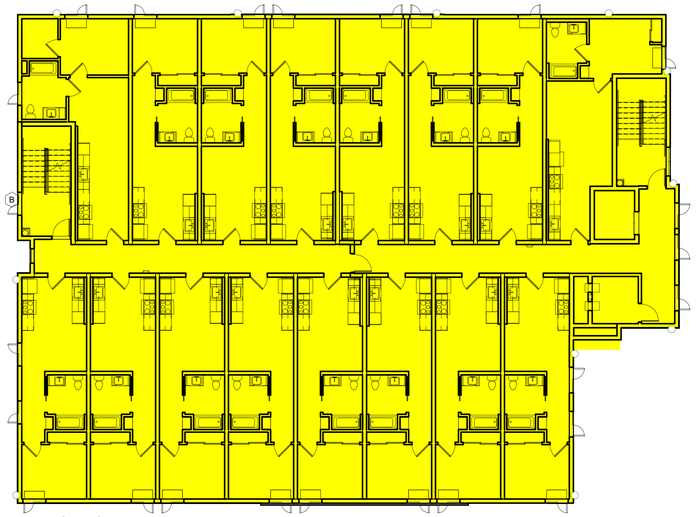
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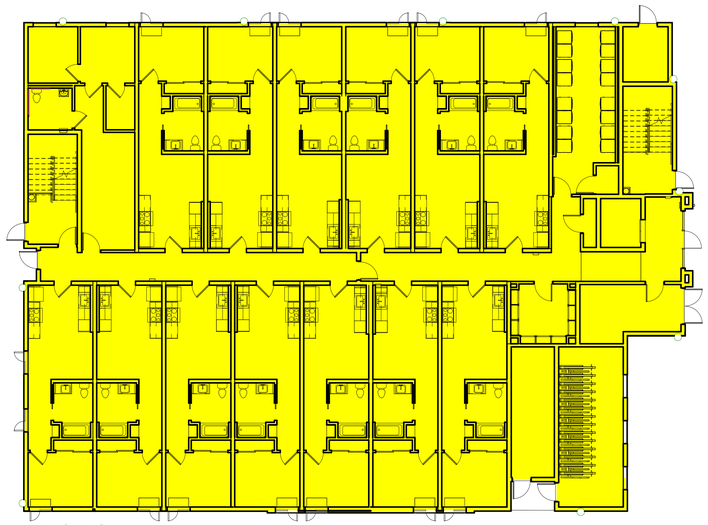
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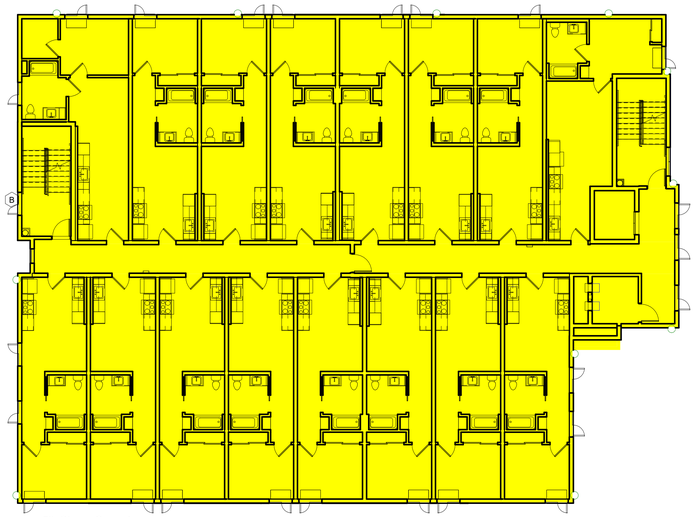
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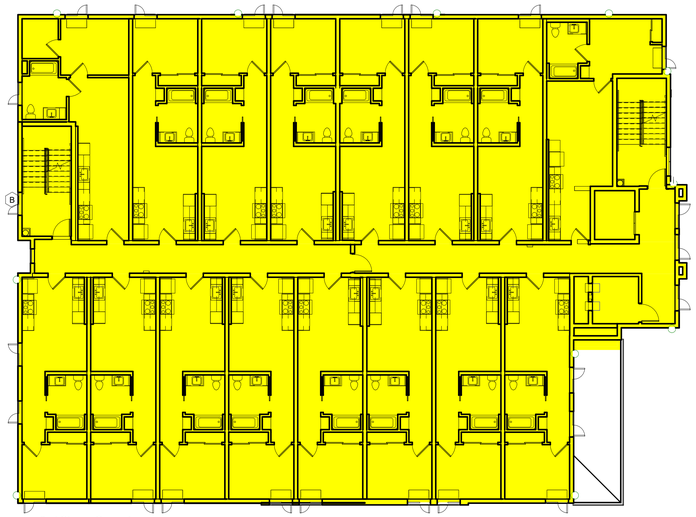
4 4th Story - Gross Area
3/32" = 1'-0"



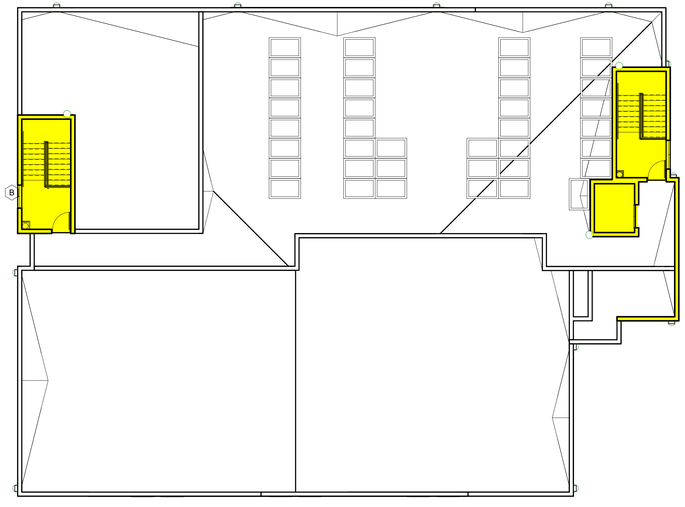
1 1st Story - Gross Area
3/32" = 1'-0"



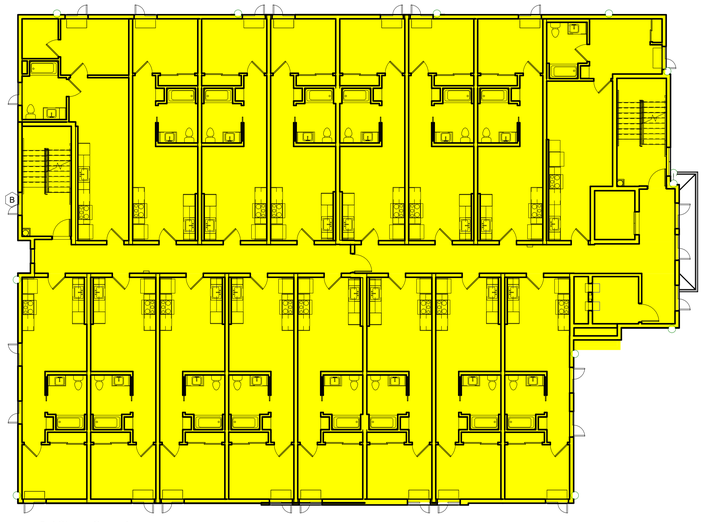
5 5th Story - Gross Area
3/32" = 1'-0"



2 2nd Story - Gross Area
3/32" = 1'-0"



6 Roof - Gross Area
3/32" = 1'-0"



3 3rd Story - Gross Area
3/32" = 1'-0"

Area Tabulation (Totals)	
Level	Area
Not Placed	0 SF
1st Story	9,270 SF
2nd Story	9,118 SF
3rd Story	9,118 SF
4th Story	9,118 SF
5th Story	9,118 SF
Roof Deck	464 SF
Grand total	46,205 SF

ZONING

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HCA Area Exhibit

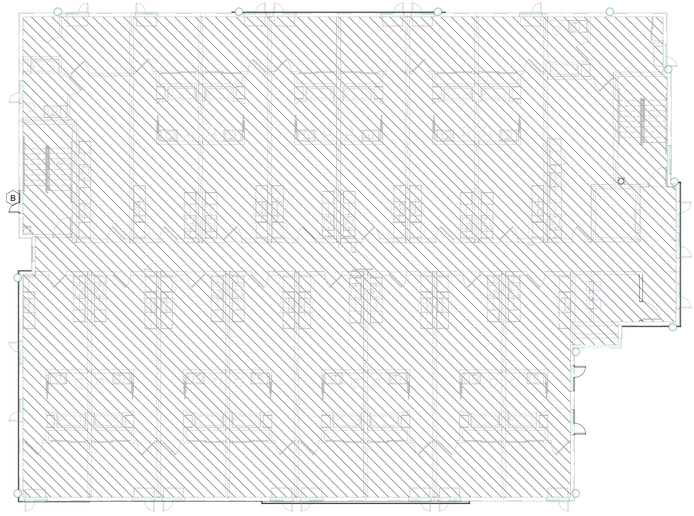
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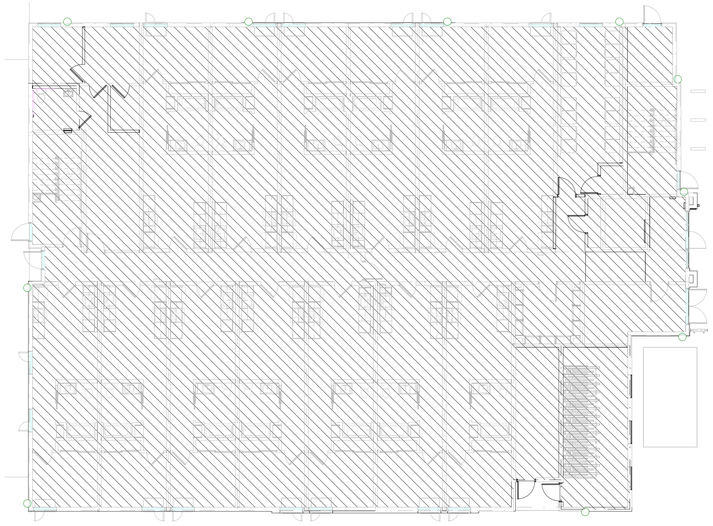
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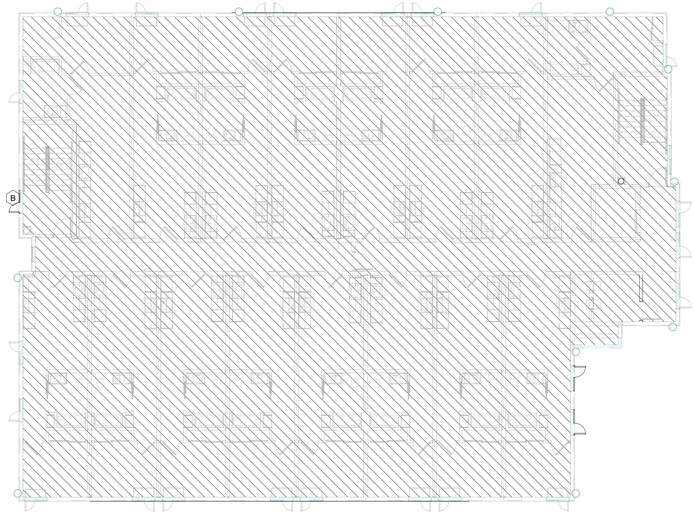
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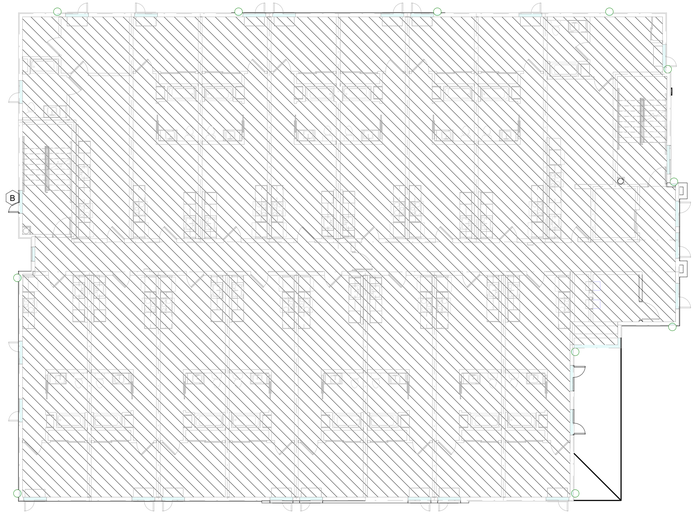
4 4th Story - LABC
3/32" = 1'-0"



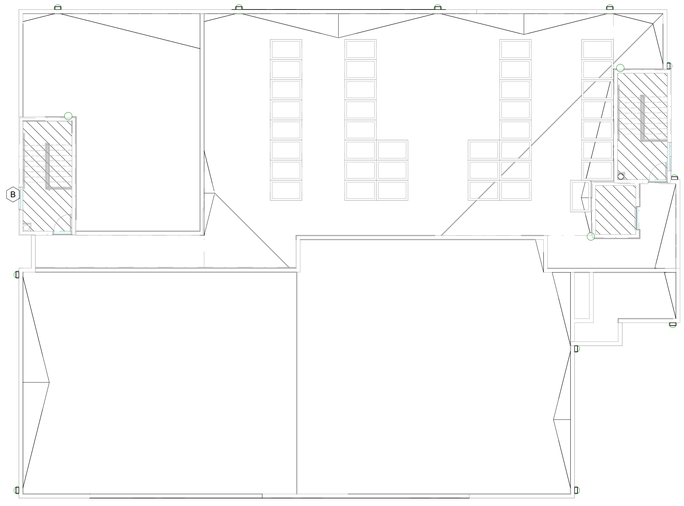
1 1st Story - LABC
3/32" = 1'-0"



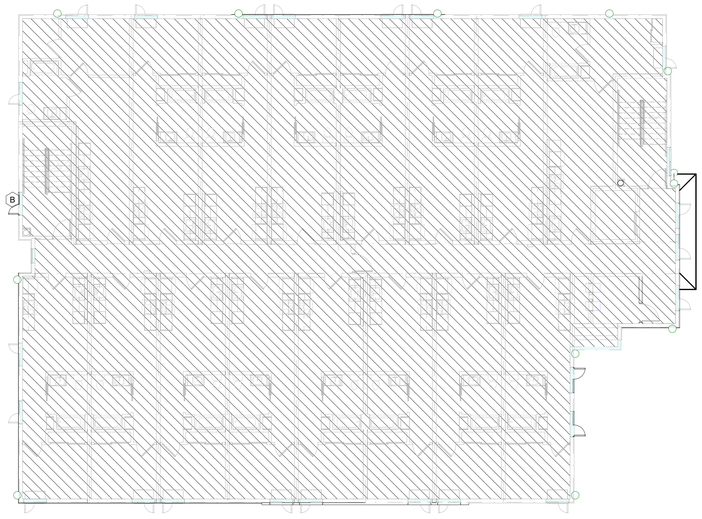
5 5th Story - LABC
3/32" = 1'-0"



2 2nd Story - LABC
3/32" = 1'-0"



6 Roof Deck - LABC
3/32" = 1'-0"



3 3rd Story - LABC
3/32" = 1'-0"

Area Tabulation LABC		
Level	Occupancy Group	Area
1st Story	A-3	553 SF
A-3		553 SF
1st Story	R-2	8,524 SF
2nd Story	R-2	8,892 SF
3rd Story	R-2	8,892 SF
4th Story	R-2	8,892 SF
5th Story	R-2	8,892 SF
Roof Deck	R-2	382 SF
R-2		44,475 SF
Grand total		45,029 SF

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Plan Check Set

LABC Area Exhibit

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SCALE 3/32" = 1'-0"

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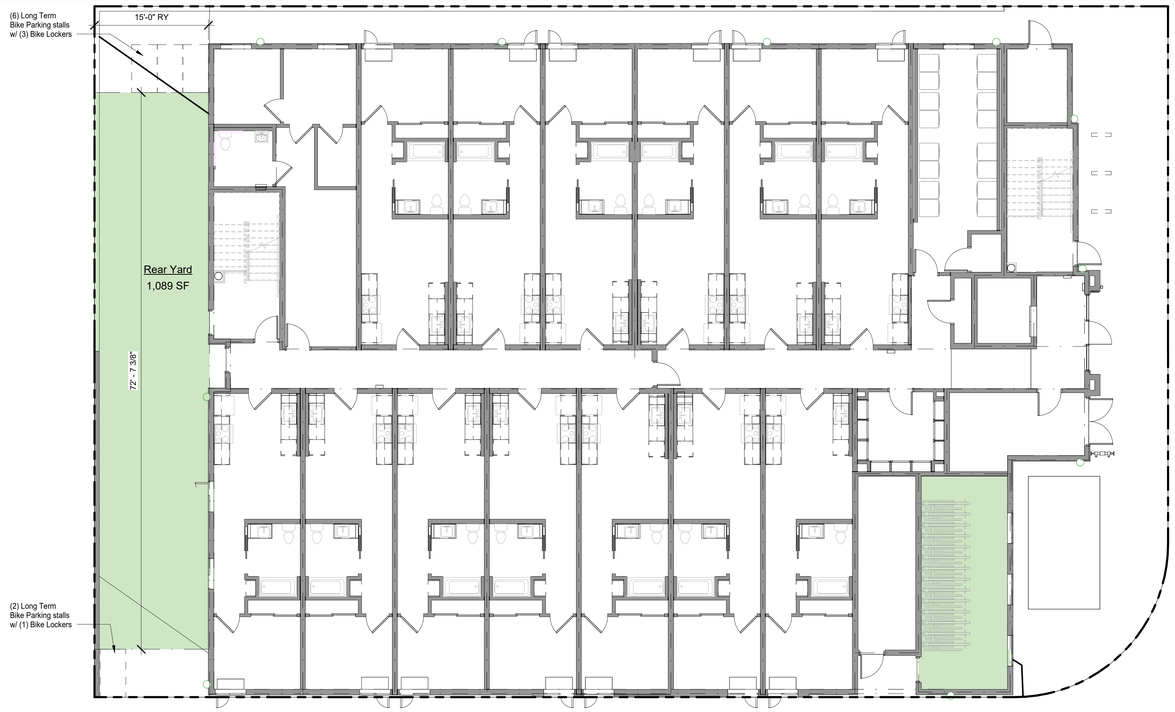
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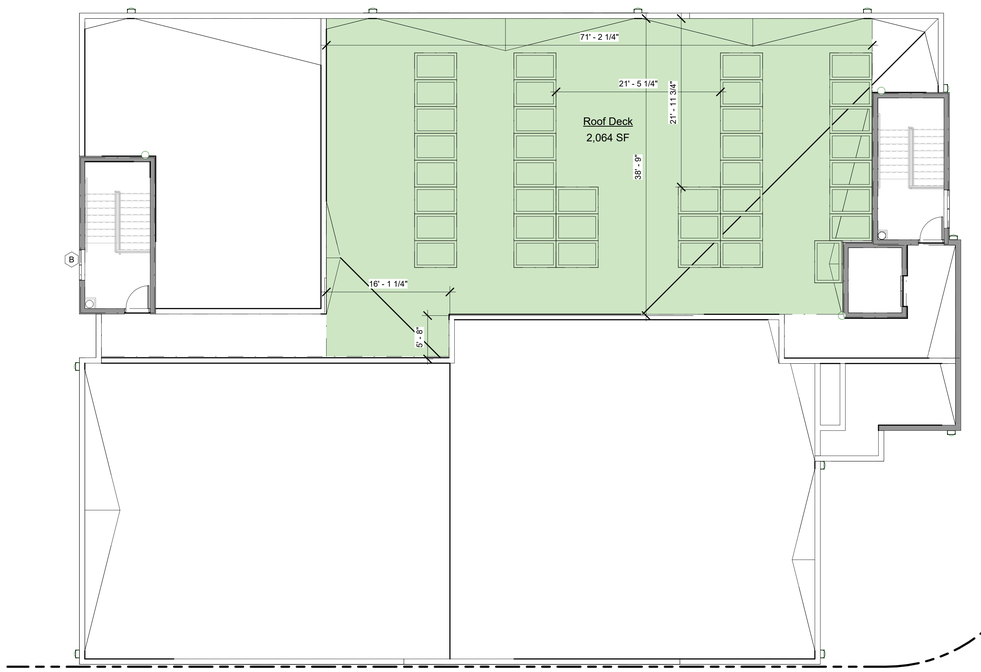
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1 1st Story - Open Space
1/8" = 1'-0"

Open Space Provided		
Level	Name	Area
1st Story	Bike	331 SF
1st Story	Rear Yard	1,089 SF
Roof Deck	Roof Deck	2,798 SF
Grand total		4,218 SF



6 Roof - Open Space
1/8" = 1'-0"

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Plan Check Set

Open Space Exhibit

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SCALE 1/8" = 1'-0"

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1 Site - Grade Plane
3/16" = 1'-0"

Grade Plane/ Building Height Analysis

667.19' + 666.59' + 666.33' + 667.07' = 666.79' Grade Plane
4

Lowest Adjacent Grade (LAG)=	666.33'
Grade Plane=	666.79'
Top of Parapet=	721.62'
Top of Roof Deck=	715.62'
LAMC Height=	55'-3-1/2"
LABC Height=	49'-3-1/2"

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Building Height/
Grade Plane Exhibit

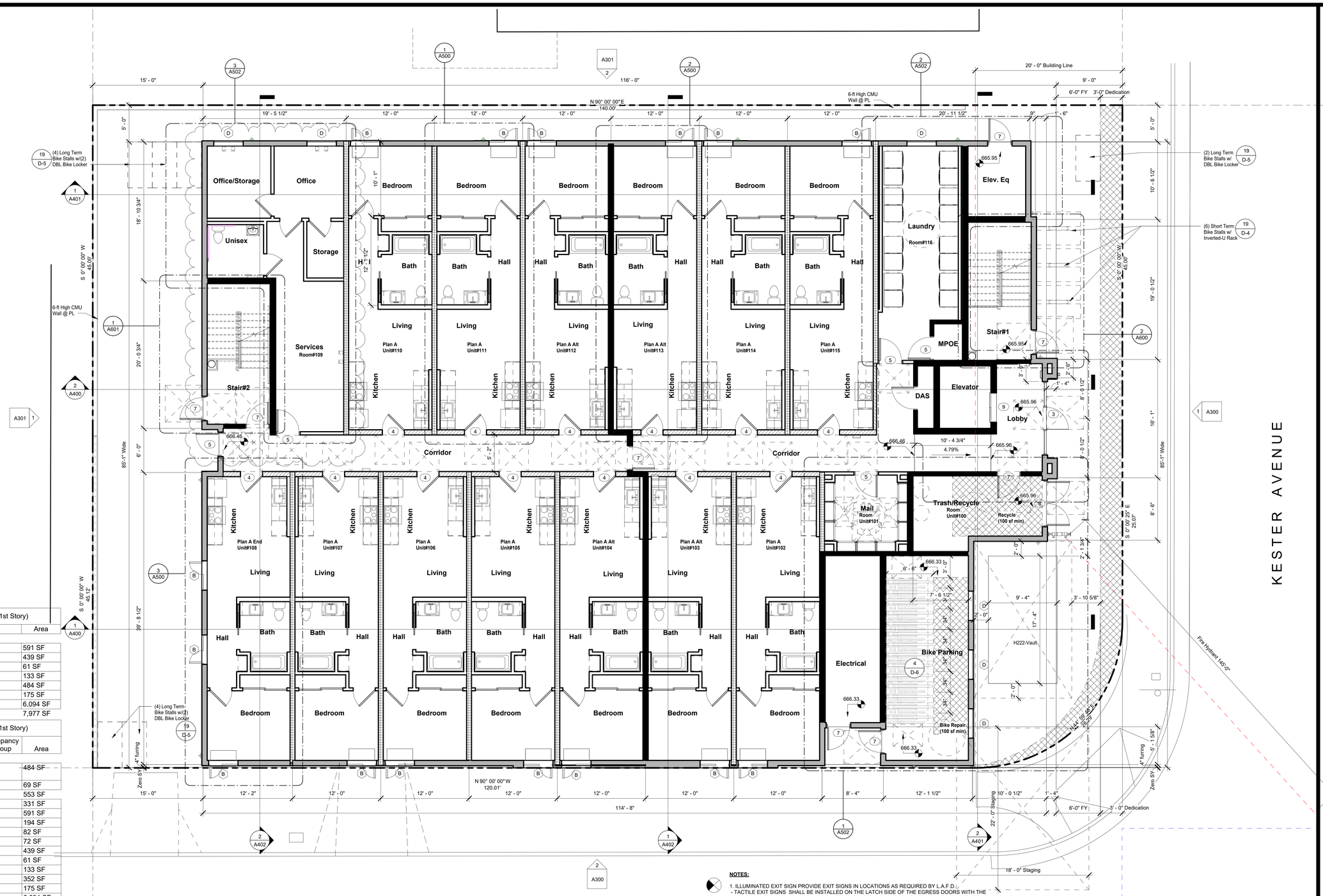
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1 1st Story
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5 D-1, 6 D-1, 7 D-1, 8 D-1, 18 D-1
- Denotes 2-Hour Rated Exterior Fire Partition 2x6 FRT Studs @ 16" o.c.-typ — 14 D-1
- Denotes 1-Hour Rated Fire Partition (Common Wall) STC 50 minimum rated between units — 1 D-1, 2 D-1, 3 D-1, 4 D-1
- Denotes 1-Hour Rated Sound Wall (STC 50) @ Corridors — 11 D-1
- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17 D-1
- Denotes 8'-0" High Ceiling Soffit — 2 D-2, 3 D-2

F.E.C.

NOTES:

1. ILLUMINATED EXIT SIGN PROVIDE EXIT SIGNS IN LOCATIONS AS REQUIRED BY L.A.F.D.
   - TACTILE EXIT SIGNS SHALL BE INSTALLED ON THE LATCH SIDE OF THE EGRESS DOORS WITH THE BASELINES OF THE HIGHEST AND LOWEST TACTILE CHARACTERS AT 48 TO 60 INCHES ABOVE THE FLOOR.
2. F.E.C. INDICATES RECESSED FIRE EXTINGUISHER CABINET W/ 2A 10 BC RATED EXTINGUISHER - SEE DETAIL #4/D-6
3. EGRESS DOORS SHALL READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT (SEE 1008.1.8.3 FOR EXCEPTIONS)
4. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED
5. EXIT SIGNS ILLUMINATED BY AN EXTERNAL SOURCE SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES (54 lux)
6. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.
7. EXIT SIGNS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM THAT WILL PROVIDE AN ILLUMINATION OF NOT LESS THAN 90 MIN. IN CASE OF PRIMARY POWER LOSS.
8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
9. DENOTES SMOKE/CARBON MONOXIDE ALARM HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL. (INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL ALARMS)
10. DENOTES EXHAUST FAN (CONTINUOUS OR HUMIDISTAT CONTROL) SEE MECHANICAL PLANS FOR ADDITIONAL SPECIFICATIONS. EXHAUST FANS SHALL BE ENERGY STAR LABELED, AND DUCTED THRU EXTERIOR WALL/OUTSIDE AIR AS REQUIRED.
11. DENOTES WATER CURTAIN

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

Area Tabulation (LAMC- 1st Story)

Level	Name	Area
1st Story	Corridor	591 SF
1st Story	Laundry	439 SF
1st Story	Lobby	61 SF
1st Story	Mail	133 SF
1st Story	Recreation Room	484 SF
1st Story	Trash	175 SF
1st Story	Units	6,094 SF
Grand total		7,977 SF

Area Tabulation (LABC- 1st Story)

Level	Name	Occupancy Group	Area
1st Story	Recreation Room	A-3	484 SF
1st Story	Restroom	A-3	69 SF
A-3			553 SF
1st Story	Bike	R-2	331 SF
1st Story	Corridor	R-2	591 SF
1st Story	Electrical	R-2	194 SF
1st Story	Elev Equipt	R-2	82 SF
1st Story	Elevator	R-2	72 SF
1st Story	Laundry	R-2	439 SF
1st Story	Lobby	R-2	61 SF
1st Story	Mail	R-2	133 SF
1st Story	Stairs	R-2	352 SF
1st Story	Trash	R-2	175 SF
1st Story	Units	R-2	6,094 SF
R-2			8,524 SF
Grand total			9,078 SF

Area Tabulation (Gross- 1st Story)

Level	Name	Occupancy Group	Area
1st Story	Rear Yard	A-3	1,089 SF
1st Story	Recreation Room	A-3	484 SF
1st Story	Restroom	A-3	69 SF
A-3			1,643 SF
1st Story	Recreation Room	B	16 SF
B			16 SF
1st Story	Bike	R-2	331 SF
1st Story	Corridor	R-2	598 SF
1st Story	Electrical	R-2	194 SF
1st Story	Elev Equipt	R-2	93 SF
1st Story	Elevator	R-2	72 SF
1st Story	Laundry	R-2	439 SF
1st Story	Lobby	R-2	68 SF
1st Story	Mail	R-2	133 SF
1st Story	Stairs	R-2	376 SF
1st Story	Trash	R-2	185 SF
1st Story	Units	R-2	6,212 SF
R-2			8,700 SF
Grand total			10,359 SF

Stockton Architects Inc.
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(949)315-9416

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Van Nuys, CA 91406
(818)-888-9443

DATE	DESCRIPTION	ISSUED TO
Date 1	Revision 1	

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LICENSED REPRESENTATIVE

Plan Check Set

1st Story Floor Plan

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

A201

SCALE: As indicated

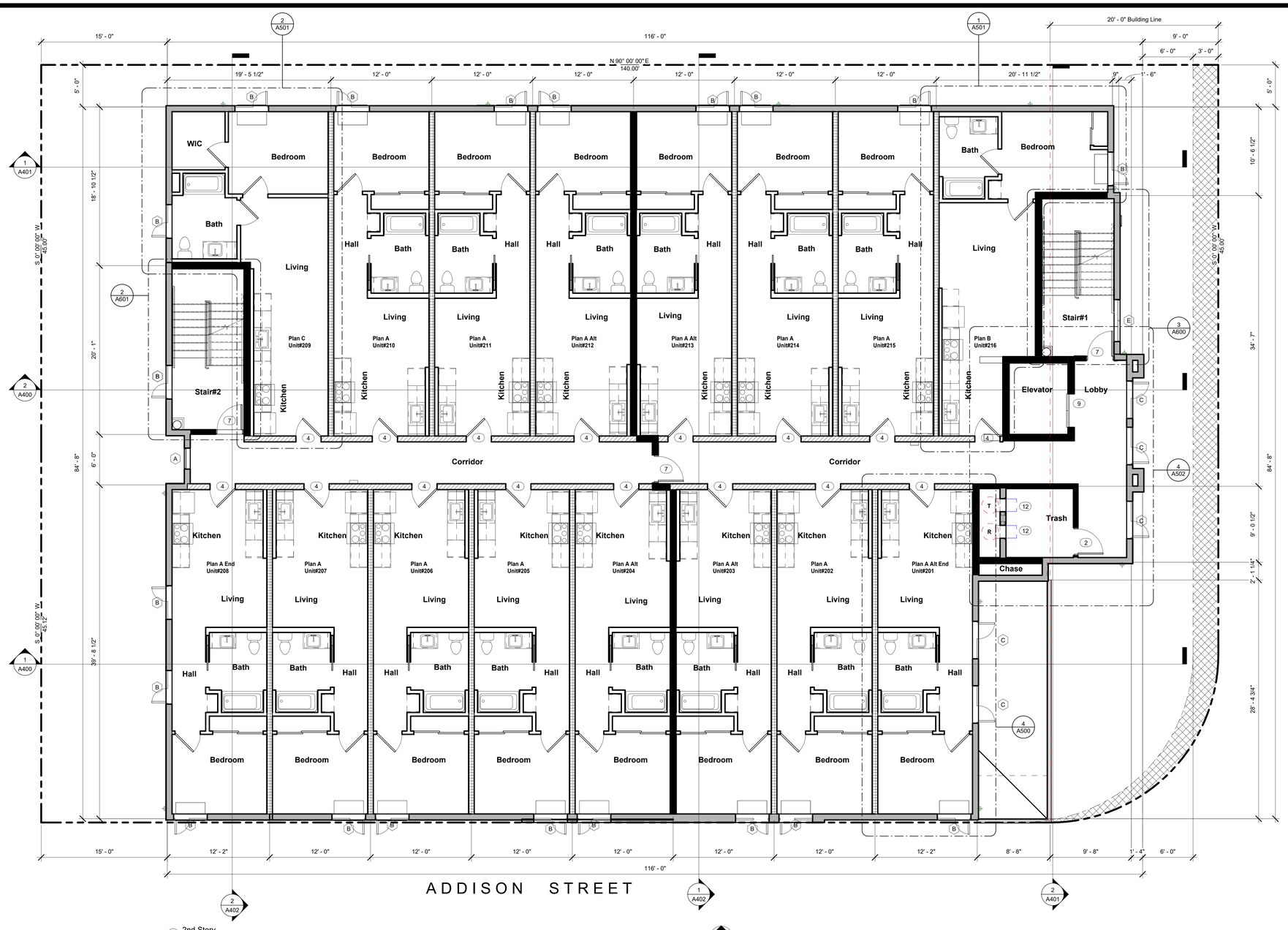
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Area Tabulation (Gross- 2nd Story)			
Level	Name	Occupancy Group	Area
2nd Story	Chase	R-2	38 SF
2nd Story	Chutes	R-2	28 SF
2nd Story	Corridor	R-2	598 SF
2nd Story	Elevator	R-2	72 SF
2nd Story	Lobby	R-2	68 SF
2nd Story	Stairs	R-2	376 SF
2nd Story	Trash	R-2	139 SF
2nd Story	Units	R-2	7,800 SF
R-2			9,118 SF
Grand total			9,118 SF

Area Tabulation (LABC- 2nd Story)			
Level	Name	Occupancy Group	Area
2nd Story	Chase	R-2	32 SF
2nd Story	Chutes	R-2	28 SF
2nd Story	Corridor	R-2	591 SF
2nd Story	Elevator	R-2	72 SF
2nd Story	Lobby	R-2	61 SF
2nd Story	Stairs	R-2	352 SF
2nd Story	Trash	R-2	128 SF
2nd Story	Units	R-2	7,628 SF
R-2			8,892 SF
Grand total			8,892 SF

Area Tabulation (LAMC- 2nd Story)		
Level	Name	Area
2nd Story	Corridor	591 SF
2nd Story	Lobby	61 SF
2nd Story	Trash	128 SF
2nd Story	Units	7,628 SF
Grand total		8,409 SF



1 2nd Story
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5/D-1, 6/D-1, 7/D-1, 8/D-1, 18/D-1
- Denotes 2-Hour Rated Exterior Fire Partition 2x6 FRT Studs @ 16" o.c.-typ — 14/D-1
- Denotes 1-Hour Rated Fire Partition (Common Wall) STC 50 minimum rated between units — 1/D-1, 2/D-1, 3/D-1, 4/D-1
- Denotes 1-Hour Rated Sound Wall (STC 50) @ Corridors — 11/D-1
- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17/D-1
- Denotes 8'-0" High Ceiling Soffit — 2/D-2, 3/D-2

NOTES:

1. ILLUMINATED EXIT SIGN PROVIDE EXIT SIGNS IN LOCATIONS AS REQUIRED BY L.A.F.D.
   - TACTILE EXIT SIGNS SHALL BE INSTALLED ON THE LATCH SIDE OF THE EGRESS DOORS WITH THE BASELINES OF THE HIGHEST AND LOWEST TACTILE CHARACTERS AT 48 TO 60 INCHES ABOVE THE FLOOR.
2. F.E.C. INDICATES RECESSED FIRE EXTINGUISHER CABINET W/ 2A 10 BC RATED EXTINGUISHER - SEE DETAIL #4/D-6
3. EGRESS DOORS SHALL READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT (SEE 1008.1.8.3 FOR EXCEPTIONS)
4. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED
5. EXIT SIGNS ILLUMINATED BY AN EXTERNAL SOURCE SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES (54 lux)
6. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.
7. EXIT SIGNS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM THAT WILL PROVIDE AN ILLUMINATION OF NOT LESS THAN 90 MIN. IN CASE OF PRIMARY POWER LOSS.
8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
9. DENOTES SMOKE/CARBON MONOXIDE ALARM HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL. (INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL ALARMS)
10. DENOTES EXHAUST FAN (CONTINUOUS OR HUMIDISTAT CONTROL) SEE MECHANICAL PLANS FOR ADDITIONAL SPECIFICATIONS. EXHAUST FANS SHALL BE ENERGY STAR LABELED, AND DUCTED THRU EXTERIOR WALL/OUTSIDE AIR AS REQUIRED.
11. DENOTES WATER CURTAIN

F.E.C.

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

ZONING

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Plan Check Set

2nd Story Floor Plan

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

A202

SCALE As indicated

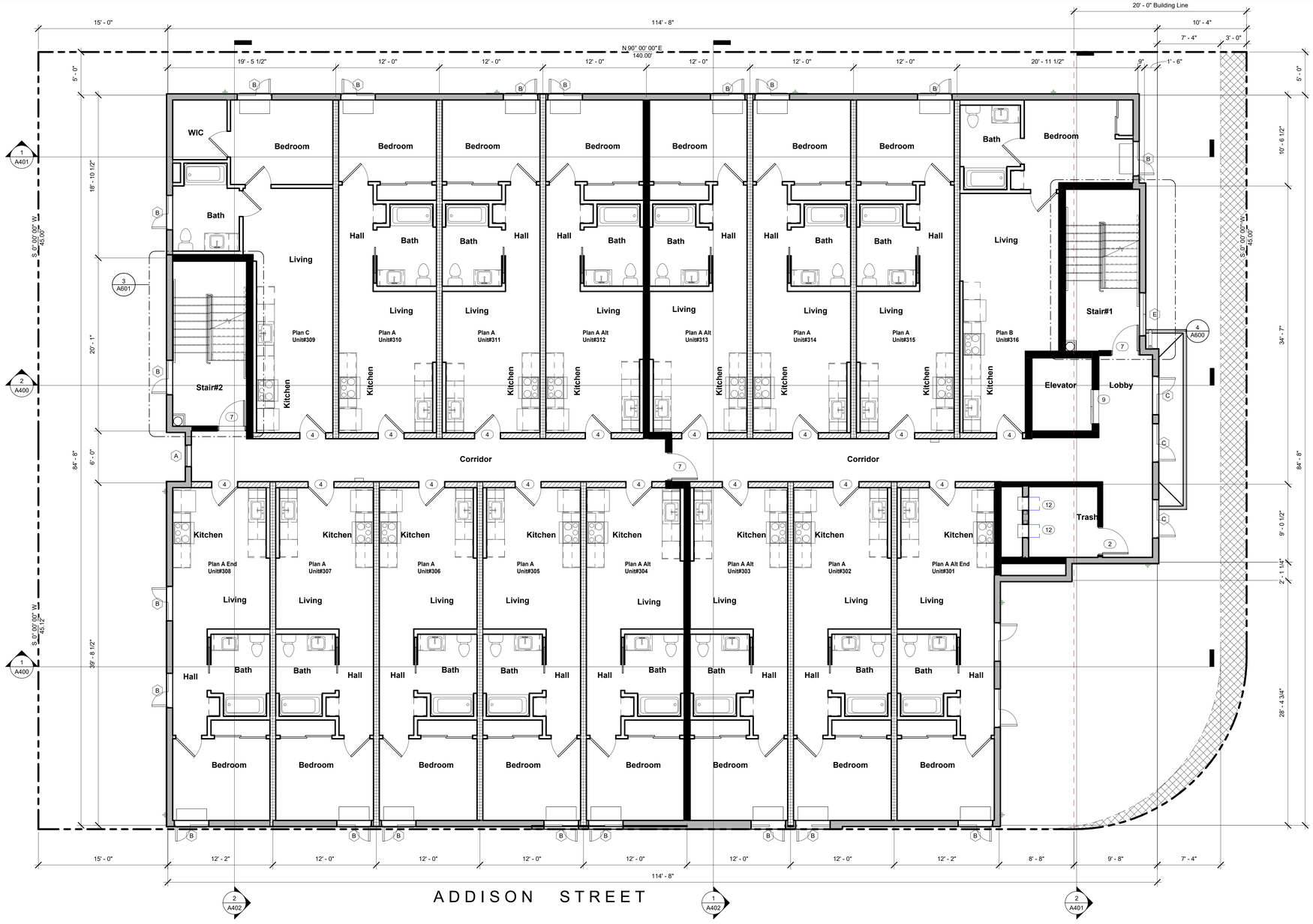
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Area Tabulation (Gross- 3rd Story)			
Level	Name	Occupancy Group	Area
3rd Story	Chase	R-2	38 SF
3rd Story	Chutes	R-2	28 SF
3rd Story	Corridor	R-2	598 SF
3rd Story	Elevator	R-2	72 SF
3rd Story	Lobby	R-2	68 SF
3rd Story	Stairs	R-2	376 SF
3rd Story	Trash	R-2	139 SF
3rd Story	Units	R-2	7,800 SF
R-2			9,118 SF
Grand total			9,118 SF

Area Tabulation (LABC- 3rd Story)			
Level	Name	Occupancy Group	Area
3rd Story	Chase	R-2	32 SF
3rd Story	Chutes	R-2	28 SF
3rd Story	Corridor	R-2	591 SF
3rd Story	Elevator	R-2	72 SF
3rd Story	Lobby	R-2	61 SF
3rd Story	Stairs	R-2	352 SF
3rd Story	Trash	R-2	128 SF
3rd Story	Units	R-2	7,628 SF
R-2			8,892 SF
Grand total			8,892 SF

Area Tabulation (LAMC- 3rd Story)		
Level	Name	Area
3rd Story	Corridor	591 SF
3rd Story	Lobby	61 SF
3rd Story	Trash	128 SF
3rd Story	Units	7,628 SF
Grand total		8,409 SF



ADDISON STREET

KESTER AVENUE

1 3rd Story
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5 D-1, 6 D-1, 7 D-1, 8 D-1, 18 D-1
- Denotes 2-Hour Rated Exterior Fire Partition 2x6 FRT Studs @ 16" o.c.-typ — 14 D-1
- Denotes 1-Hour Rated Fire Partition (Common Wall) STC 50 minimum rated between units — 1 D-1, 2 D-1, 3 D-1, 4 D-1
- Denotes 1-Hour Rated Sound Wall (STC 50) @ Corridors — 11 D-1
- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17 D-1
- Denotes 8'-0" High Ceiling Soffit — 2 D-2, 3 D-2

F.E.C.

NOTES:

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   - TACTILE EXIT SIGNS SHALL BE INSTALLED ON THE LATCH SIDE OF THE EGRESS DOORS WITH THE BASELINES OF THE HIGHEST AND LOWEST TACTILE CHARACTERS AT 48 TO 60 INCHES ABOVE THE FLOOR.
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8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
9. DENOTES SMOKE/CARBON MONOXIDE ALARM HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL. (INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL ALARMS)
10. DENOTES EXHAUST FAN (CONTINUOUS OR HUMIDISTAT CONTROL) SEE MECHANICAL PLANS FOR ADDITIONAL SPECIFICATIONS. EXHAUST FANS SHALL BE ENERGY STAR LABELED, AND DUCTED THRU EXTERIOR WALL/OUTSIDE AIR AS REQUIRED.
11. DENOTES WATER CURTAIN

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

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Plan Check Set

3rd Story Floor Plan

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

A203

SCALE As indicated

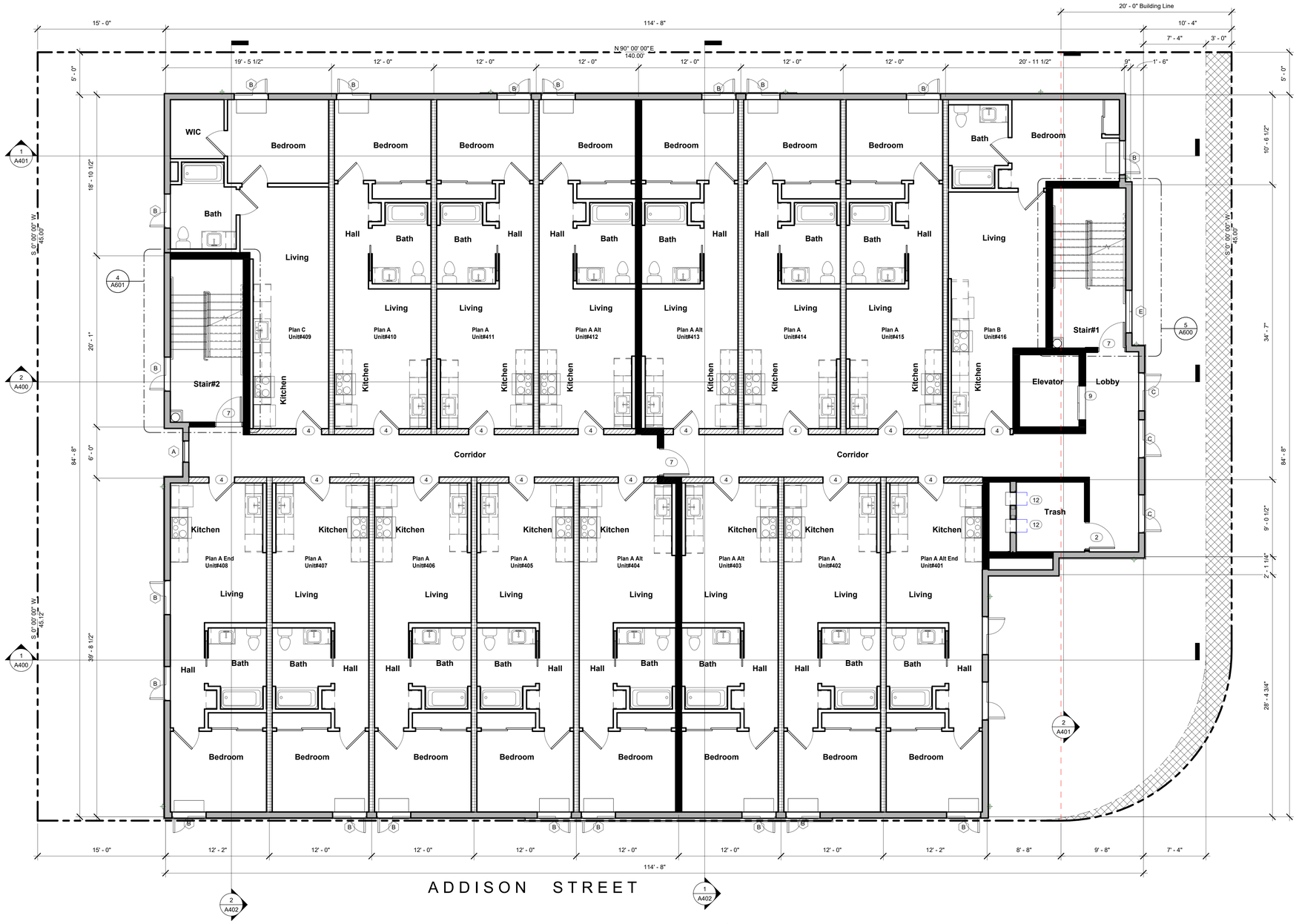
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Area Tabulation (Gross- 4th Story)			
Level	Name	Occupancy Group	Area
4th Story	Chase	R-2	38 SF
4th Story	Chutes	R-2	28 SF
4th Story	Corridor	R-2	598 SF
4th Story	Elevator	R-2	72 SF
4th Story	Lobby	R-2	68 SF
4th Story	Stairs	R-2	376 SF
4th Story	Trash	R-2	139 SF
4th Story	Units	R-2	7,800 SF
R-2			9,118 SF
Grand total			9,118 SF

Area Tabulation (LABC- 4th Story)			
Level	Name	Occupancy Group	Area
4th Story	Chase	R-2	32 SF
4th Story	Chutes	R-2	28 SF
4th Story	Corridor	R-2	591 SF
4th Story	Elevator	R-2	72 SF
4th Story	Lobby	R-2	61 SF
4th Story	Stairs	R-2	352 SF
4th Story	Trash	R-2	128 SF
4th Story	Units	R-2	7,628 SF
R-2			8,892 SF
Grand total			8,892 SF

Area Tabulation (LAMC- 4th Story)		
Level	Name	Area
4th Story	Corridor	591 SF
4th Story	Lobby	61 SF
4th Story	Trash	128 SF
4th Story	Units	7,628 SF
Grand total		8,409 SF



1 4th Story
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5 D-1, 6 D-1, 7 D-1, 8 D-1, 18 D-1
- Denotes 2-Hour Rated Exterior Fire Partition 2x6 FRT Studs @ 16" o.c.-typ — 14 D-1
- Denotes 1-Hour Rated Fire Partition (Common Wall) STC 50 minimum rated between units — 1 D-1, 2 D-1, 3 D-1, 4 D-1
- Denotes 1-Hour Rated Sound Wall (STC 50) @ Corridors — 11 D-1
- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17 D-1
- Denotes 8'-0" High Ceiling Soffit — 2 D-2, 3 D-2

NOTES:

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   - TACTILE EXIT SIGNS SHALL BE INSTALLED ON THE LATCH SIDE OF THE EGRESS DOORS WITH THE BASELINES OF THE HIGHEST AND LOWEST TACTILE CHARACTERS AT 48 TO 60 INCHES ABOVE THE FLOOR.
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8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
9. DENOTES SMOKE/CARBON MONOXIDE ALARM HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL. (INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL ALARMS)
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11. DENOTES WATER CURTAIN

F.E.C.

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

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Plan Check Set

4th Story Floor Plan

DATE	Issue Date
DRAWN BY	Author
CHECKED BY	Checker

A204

SCALE: As indicated

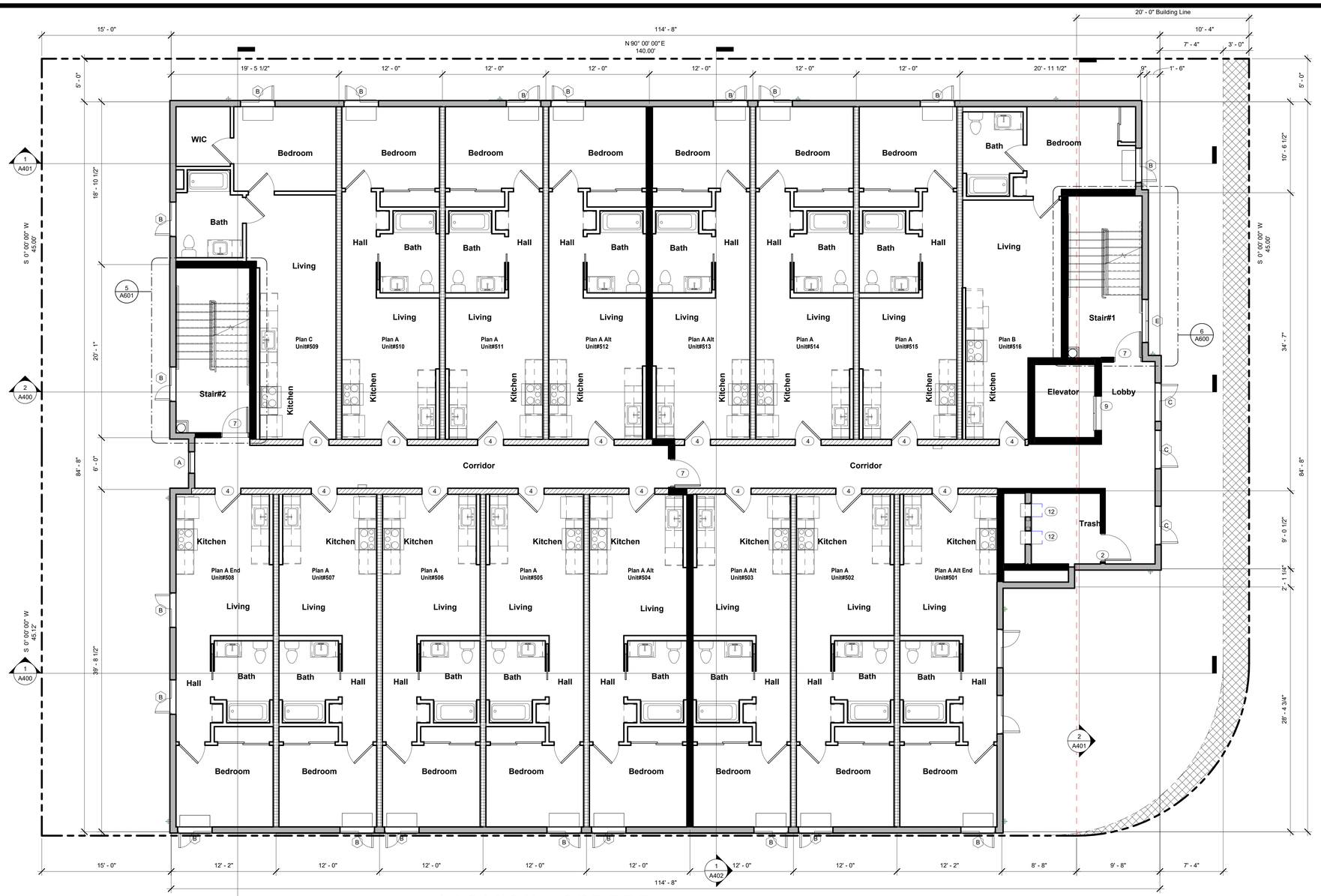
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Area Tabulation (Gross- 5th Story)			
Level	Name	Occupancy Group	Area
5th Story	Chase	R-2	38 SF
5th Story	Chutes	R-2	28 SF
5th Story	Corridor	R-2	598 SF
5th Story	Elevator	R-2	72 SF
5th Story	Lobby	R-2	68 SF
5th Story	Stairs	R-2	376 SF
5th Story	Trash	R-2	139 SF
5th Story	Units	R-2	7,800 SF
R-2			9,118 SF
Grand total			9,118 SF

Area Tabulation (LABC- 5th Story)			
Level	Name	Occupancy Group	Area
5th Story	Chase	R-2	32 SF
5th Story	Chutes	R-2	28 SF
5th Story	Corridor	R-2	591 SF
5th Story	Elevator	R-2	72 SF
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5th Story	Stairs	R-2	352 SF
5th Story	Trash	R-2	128 SF
5th Story	Units	R-2	7,628 SF
R-2			8,892 SF
Grand total			8,892 SF

Area Tabulation (LAMC- 5th Story)		
Level	Name	Area
5th Story	Corridor	591 SF
5th Story	Lobby	61 SF
5th Story	Trash	128 SF
5th Story	Units	7,628 SF
Grand total		8,409 SF



ADDISON STREET

KESTER AVENUE

1 5th Story
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5 D-1, 6 D-1, 7 D-1, 8 D-1, 18 D-1
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- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17 D-1
- Denotes 8'-0" High Ceiling Soffit — 2 D-2, 3 D-2

NOTES:

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8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
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11. DENOTES WATER CURTAIN

F.E.C.

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

ZONING

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LICENSED REPRESENTATIVE

Plan Check Set

5th Story Floor Plan

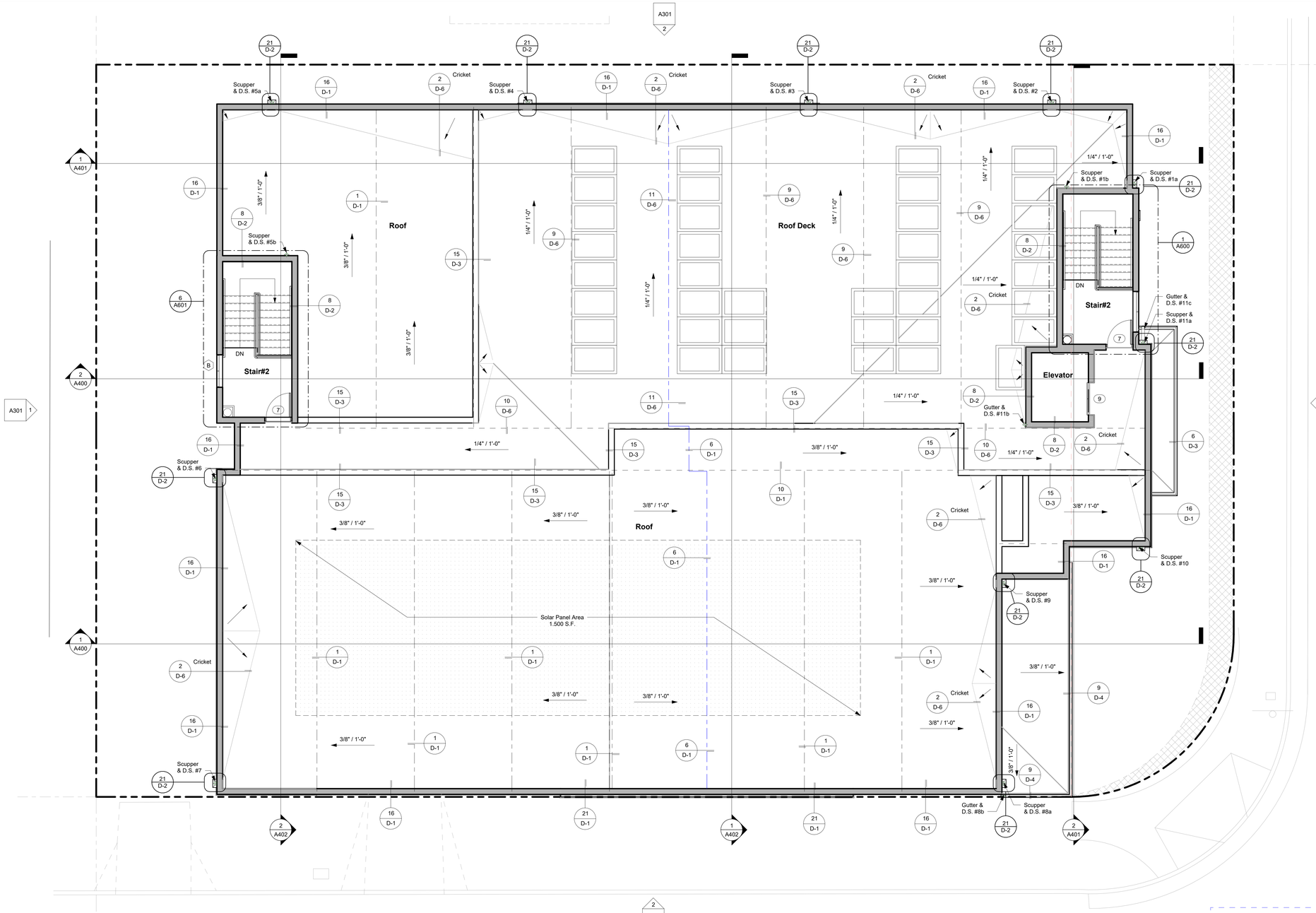
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A205

SCALE As indicated

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1 Roof Deck
3/16" = 1'-0"

WALL LEGEND:

- Denotes 2-Hour Rated 2x Stud Fire Barrier Wall & Shaft Wall @ Stair/Elevator/Ducts STC 50 minimum rated between units — 5 D-1 | 6 D-1 | 7 D-1 | 8 D-1 | 18 D-1
- Denotes 2-Hour Rated Exterior Fire Partition 2x6 FRT Studs @ 16" o.c.-typ — 14 D-1
- Denotes 1-Hour Rated Fire Partition (Common Wall) STC 50 minimum rated between units — 1 D-1 | 2 D-1 | 3 D-1 | 4 D-1
- Denotes 1-Hour Rated Sound Wall (STC 50) @ Corridors — 11 D-1
- Denotes Typical 2x Stud wall (1-hour Rated) @ 16" o.c. — 17 D-1
- Denotes 8'-0" High Ceiling Soffit — 2 D-2 | 3 D-2

NOTES:

1. ILLUMINATED EXIT SIGN PROVIDE EXIT SIGNS IN LOCATIONS AS REQUIRED BY L.A.F.D.
   - TACTILE EXIT SIGNS SHALL BE INSTALLED ON THE LATCH SIDE OF THE EGRESS DOORS WITH THE BASELINES OF THE HIGHEST AND LOWEST TACTILE CHARACTERS AT 48 TO 60 INCHES ABOVE THE FLOOR.
2. F.E.C. INDICATES RECESSED FIRE EXTINGUISHER CABINET W/ 2A 10 BC RATED EXTINGUISHER - SEE DETAIL #4/D-6
3. EGRESS DOORS SHALL READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT (SEE 1008.1.8.3 FOR EXCEPTIONS)
4. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED
5. EXIT SIGNS ILLUMINATED BY AN EXTERNAL SOURCE SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES (54 lux)
6. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.
7. EXIT SIGNS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM THAT WILL PROVIDE AN ILLUMINATION OF NOT LESS THAN 90 MIN. IN CASE OF PRIMARY POWER LOSS.
8. DENOTES SMOKE DETECTORS HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL.
9. DENOTES SMOKE/CARBON MONOXIDE ALARM HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL. (INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL ALARMS)
10. DENOTES EXHAUST FAN (CONTINUOUS OR HUMIDISTAT CONTROL) SEE MECHANICAL PLANS FOR ADDITIONAL SPECIFICATIONS. EXHAUST FANS SHALL BE ENERGY STAR LABELED, AND DUCTED THRU EXTERIOR WALL/OUTSIDE AIR AS REQUIRED.
11. DENOTES WATER CURTAIN

F.E.C.

FLOOR PLAN EGRESS LEGEND:

- EXITING PATH TO MULTIPLE EXITS (250' MAX W/ INCLUDING COMMON PATH)
- COMMON PATH OF TRAVEL (125' MAX)
- DENOTES 2% MAX. SLOPE IN ALL DIRECTIONS

ZONING

LADBS

westcoat. SPECIALTY COATING SYSTEMS

FOR PROFESSIONAL USE ONLY.

SR Series	Availability
SR Tan | 100	Made To Order
SR Gray | 101	Made To Order
Winter Mint | 102	Made To Order
Heather Gray | 103	Made To Order
Powder Blue | 104	Made To Order
Butterscotch | 105	Made To Order
Coral | 106	Made To Order
Seaside | 107	Made To Order
Salmon | 108	Made To Order
Lime | 109	Made To Order
Coconut | 110	Made To Order
Canvas | 111	Made To Order

Lead times based on 5 gallon units

Stock = 2 day lead time | Made To Order = 10 day lead time

Extended manufacturing time may apply to larger volume orders.

Custom Colors available with color matching fee, minimum order and extended manufacturing time.

westcoat. SPECIALTY COATING SYSTEMS — SC-10 SOLAR REFLECTIVE TOPCOATS

SR Gray | 101 — SRI Value 84 — CRRC Prod. ID#1316-0001
SR Tan | 100 — SRI Value 91 — CRRC Prod. ID#1316-0002
Heather Gray | 103 — SRI Value 83
Canvas | 111 — SRI Value 84
Salmon | 108 — SRI Value 72
Coral | 106 — SRI Value 66
Butterscotch | 105 — SRI Value 84
Coconut | 110 — SRI Value 71
Powder Blue | 104 — SRI Value 77
Seaside | 107 — SRI Value 73
Lime | 109 — SRI Value 78
Winter Mint | 102 — SRI Value 79

SR Gray and SR Tan meet the Cool Roof requirements of California Title 24, when installed per Westcoat's Solar Reflective System specifications.

Refer to the SC-10 Acrylic Topcoat Product Specification Sheet for SRI Value test data. See SC-10 Topcoat color chart online for more information, colors and lead time.

CAUTION: Color will vary between products and sheens. This chart is for reference only. Please request an actual color sample or apply sample on site before beginning any project.

CRRC COOL ROOF RATING COUNCIL

westcoat.com / 800.250.4519 / info@westcoat.com 6/24

westcoat.com / 800.250.4519 / info@westcoat.com 10/21

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Roof Deck Plan

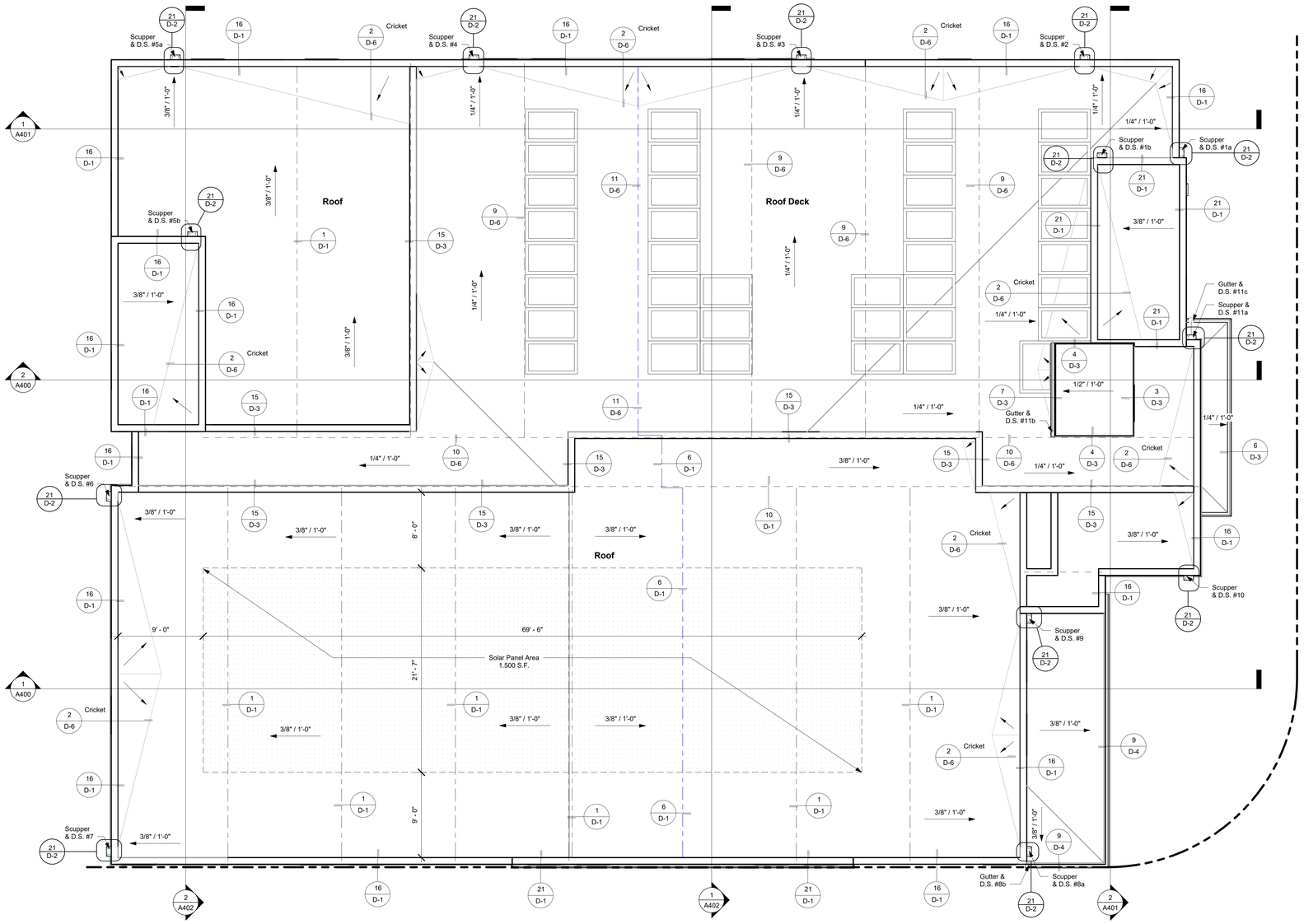
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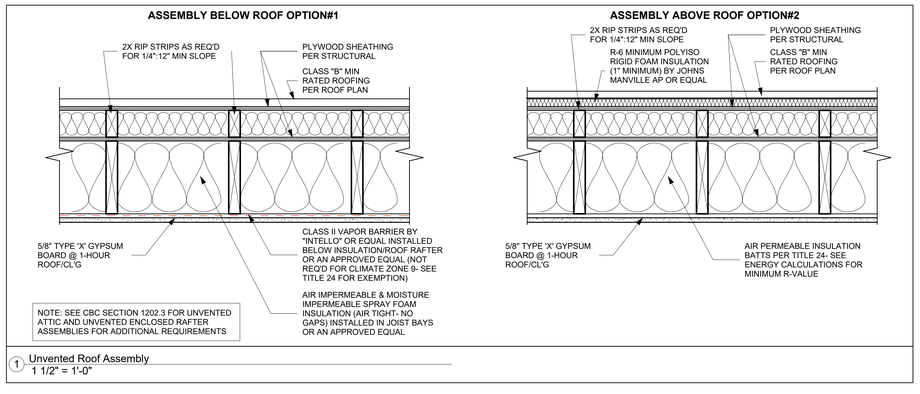
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2 Roof
3/16" = 1'-0"

ATTIC VENT TABULATION :

ALL ATTICS, CONCEALED RAFTERS, AND FLAT ROOFS SHALL BE UNVENTED PER THE DETAIL THIS SHEET.



1 Unvented Roof Assembly
1 1/2" = 1'-0"



ROOF NOTES:

1 ALL ROOFS SHALL RECEIVE A MINIMUM CLASS "B" COMPOSITION SHINGLE "COOL ROOF" INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN SPECIFICATIONS TO ACHIEVE A WARRANTY AS SELECTED BY OWNER (MAX 100 LBS PER SQUARE) BY "CERTAINTEED" OR AN APPROVED EQUAL ICC-ES# ESR-1389 (Model Landmark TL Solaris Moire Black)

2. FLASH ALL ROOF TO ROOF, VALLEYS, & EDGES WITH 26 GAGE G.I. SHEET METAL (SEAL ALL JOINTS FOR WATERTIGHT FINISH)

3. ALL ROOF TILES SHALL BE INSTALLED WITH A MINIMUM OF (2) FASTENERS PER TILE OR A MINIMUM OF (1) FASTENER FOR INTERLOCKING LUGGED TILES.

4. ALL EXPOSED SHEET METAL TO BE PAINTED SHALL BE BONDERIZED- TYP.

5. PROVIDE G.I. GUTTERS AND DOWN SPOUTS AS REQUIRED ON LOCATIONS AS DIRECTED BY OWNER. CONDUCT ALL WATER TO RAIN TANKS (BMP) - SEE ELEVATIONS AND SITE FOR LOCATIONS.

6. PROVIDE DRAFT STOPS OF NOT LESS THAN 1/2" GYPSUM BOARD ON (1) SIDE OF THE TRUSS/RAFTERS/BLOCKING CONTAINED WITHIN THE CONCEALED SPACE OF THE MANSARD ROOF. DRAFT STOPS SHALL ALIGN WITH THE COMMON 1-HOUR UNIT SEPARATION WALLS BELOW.

7. A FIRE RETARDANT ROOF COVERING IS REQUIRED. CLASS "A" MINIMUM RATED ROOF COVERING SHALL BE INSTALLED ON ALL FLAT ROOFS AND SLOPED ROOFS

GREEN NOTES :

1. THE ELECTRICAL SYSTEM SHALL HAVE SUFFICIENT CAPACITY TO SIMULTANEOUSLY CHARGE ALL DESIGNATED EV SPACES AT THE FULL RATED AMPERAGE OF THE EVSE. PLAN DESIGN SHALL BE BASED UPON A 40-AMPERE MINIMUM BRANCH CIRCUIT. A SEPARATE ELECTRICAL PERMIT IS REQUIRED.

2. THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING PURPOSES AS EV CAPABLE. THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENT AND VISIBLY MARKED EV CAPABLE.

3. THE PANEL OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE.

4. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE SOLAR ELECTRIC INSTALLATION. THE RESERVED SPACE SHALL BE POSITIONED AT THE OPPOSITE (LOAD) END FROM THE INPUT FEEDER LOCATION OR MAIN CIRCUIT LOCATION AND SHALL BE PERMANENTLY MARKED AS "FOR FUTURE SOLAR ELECTRIC."

5. FORM GRN16 AND AN OPERATION AND MAINTENANCE MANUAL, INCLUDING, AT A MINIMUM, THE ITEMS LISTED IN SECTION 4.410.1, SHALL BE COMPLETED AND PLACED INTHE BUILDING AT THE TIME OF FINAL INSPECTION.

6. A COPY OF THE CONSTRUCTION DOCUMENTS OR A COMPARABLE DOCUMENT INDICATING THE INFORMATION FROM ENERGY CODE SECTIONS 110.10(b) THROUGH 110.10(c) SHALL BE PROVIDED TO THE OCCUPANT.

- **SOLAR PANEL** SHOWN HATCHED - (15% REQUIRED) -
(9,517 S.F. x 0.15 = 1,427.5 S.F.)
1,427.5 S.F. MIN. REQ.
1,500 S.F. PROVIDED

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Roof Plan

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1 East
3/16" = 1'-0"



2 South
3/16" = 1'-0"

Grade Plane/ Building Height Analysis

667.19' + 666.59' + 666.33' + 667.07' = 666.79' Grade Plane
4

Lowest Adjacent Grade (LAG)=	666.33'
Grade Plane=	666.79'
Top of Parapet=	721.62'
Top of Roof Deck=	715.62'
LAMC Height=	55'-3-1/2"
LABC Height=	49'-3-1/2"

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Exterior Elevations

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Grade Plane/ Building Height Analysis

667.19' + 666.59' + 666.33' + 667.07' = 666.79' Grade Plane
4

Lowest Adjacent Grade (LAG)=	666.33'
Grade Plane=	666.79'
Top of Parapet=	721.62'
Top of Roof Deck=	715.62'
LAMC Height=	55'-3-1/2"
LABC Height=	49'-3-1/2"

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Exterior Elevations

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3 South Color Elevation
1/8" = 1'-0"



1 East Color Elevation
1/8" = 1'-0"



2 North Color Elevation
1/8" = 1'-0"



4 West Color Elevation
1/8" = 1'-0"



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Color Elevation Exhibits

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A302

SCALE 1/8" = 1'-0"

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Color Rendering

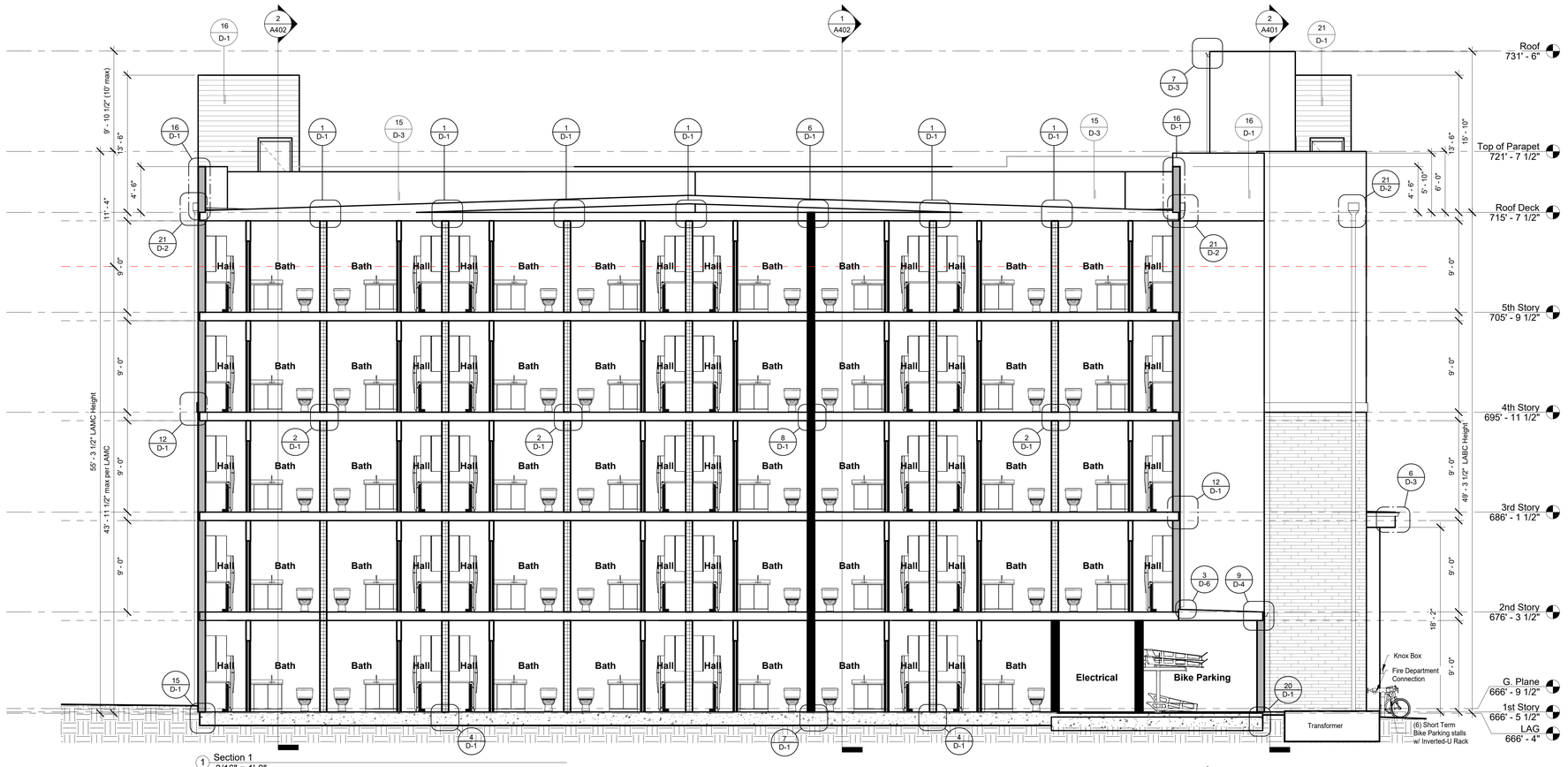
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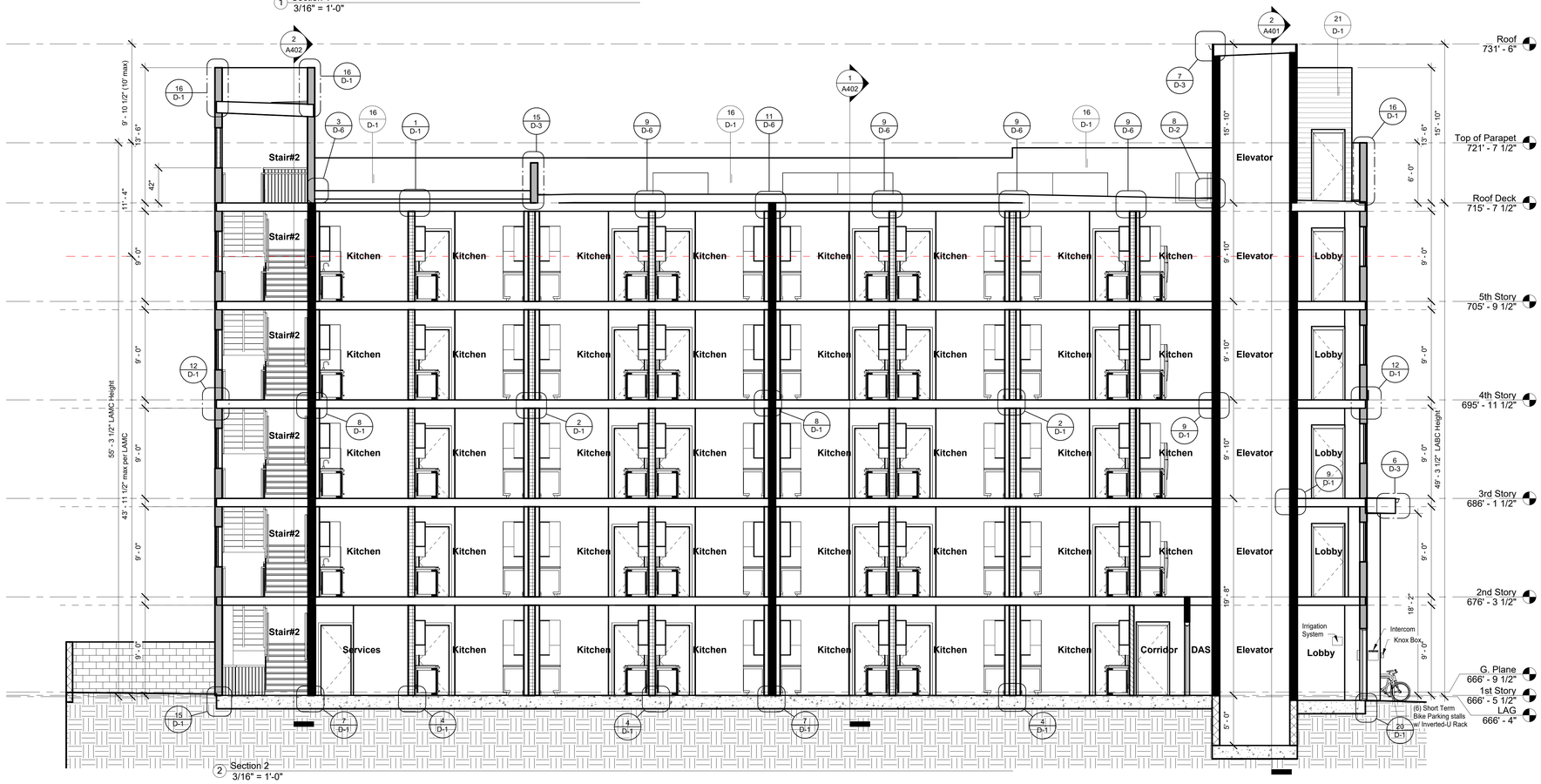
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1 Section 1
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2 Section 2
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Building Sections

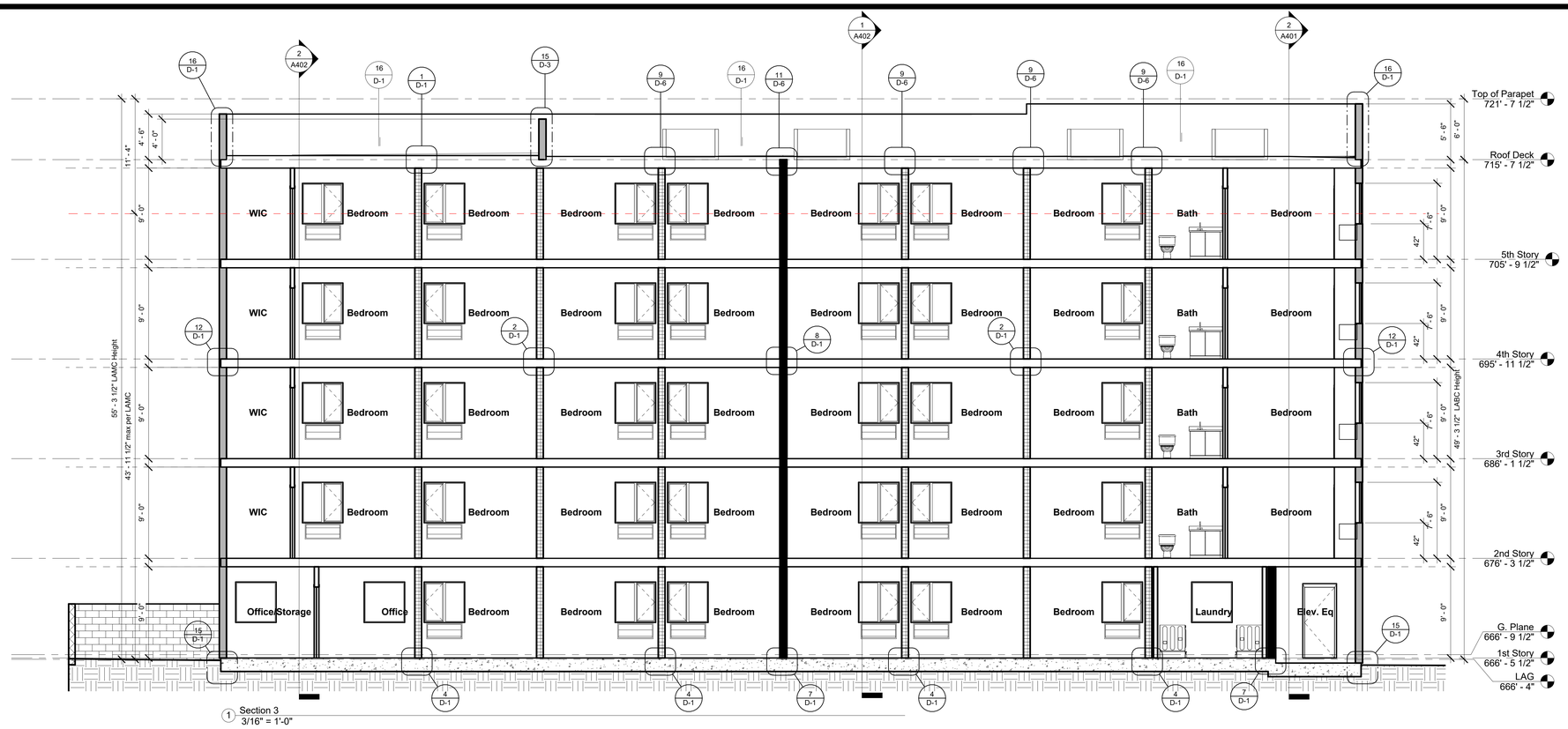
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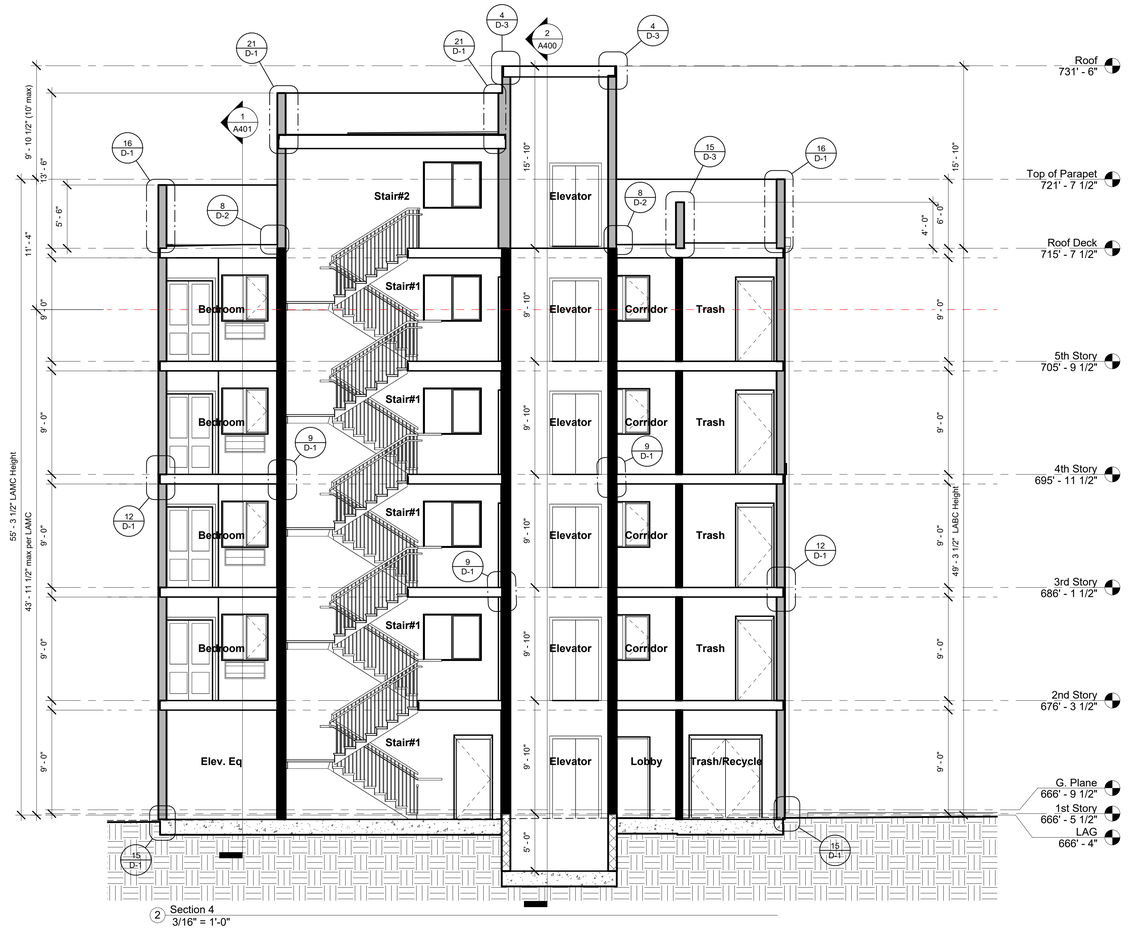
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1 Section 3
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2 Section 4
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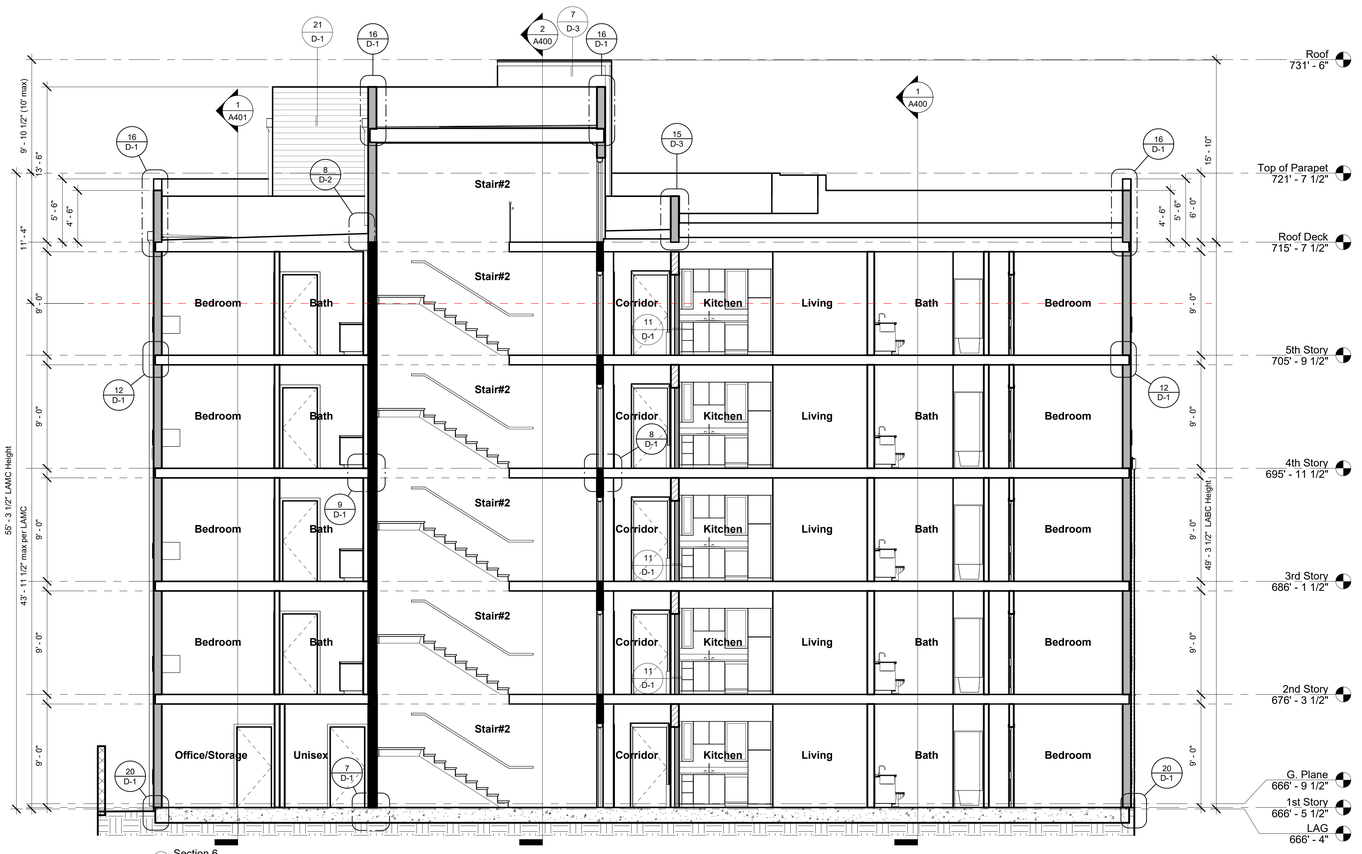
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1 Section 5
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Building Sections

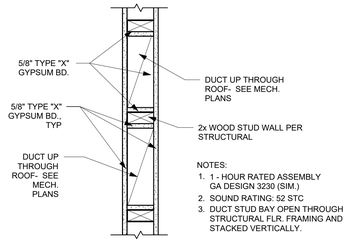
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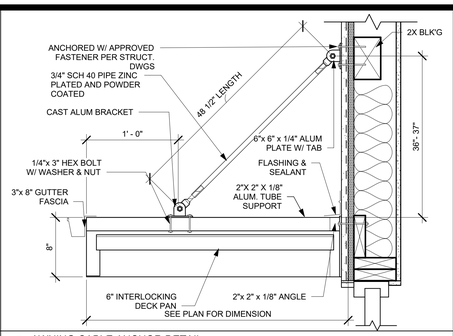
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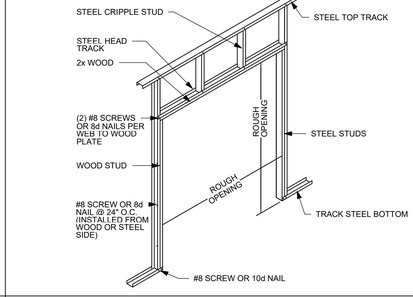
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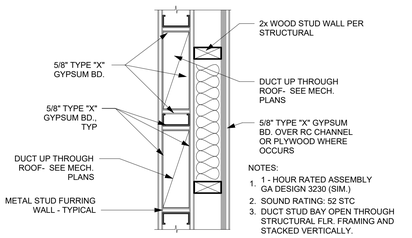
16 DUCT RISER AT INTERIOR WALL
1 1/2" = 1'-0"



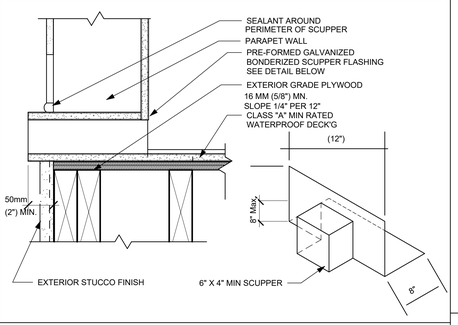
11 AWNING CABLE ANCHOR DETAIL
1 1/2" = 1'-0"



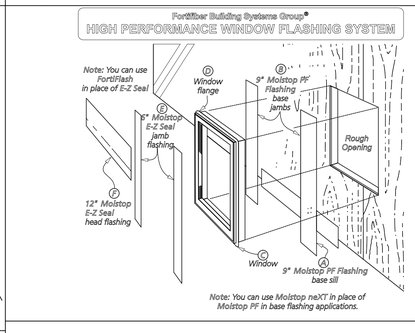
6 WALL OPENING AT STUD DETAIL
3/8" = 1'-0"



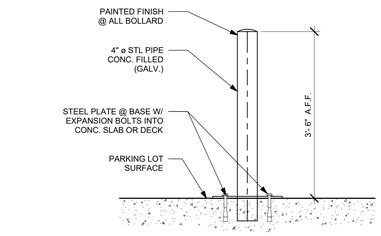
17 DUCT RISER FURRING WALL PLAN
1 1/2" = 1'-0"



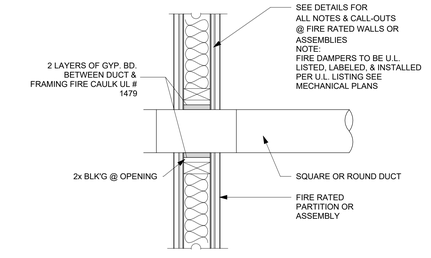
12 SCUPPER OVERFLOW DETAIL
3" = 1'-0"



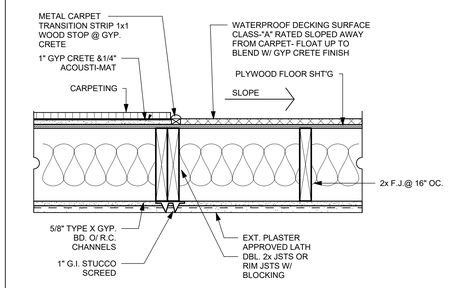
7 DOOR AND WINDOW FLASHING SYSTEM DETAILS
1/4" = 1'-0"



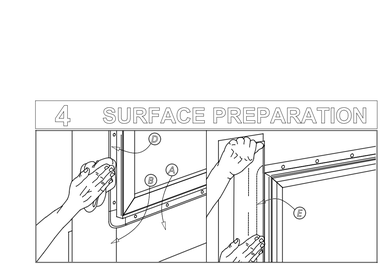
18 BOLLARD DETAIL
1 1/2" = 1'-0"

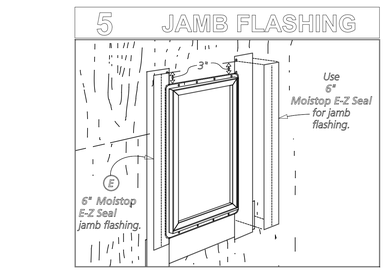


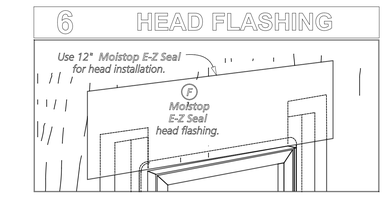
13 SMOKE AND FIRE DAMPER DETAIL
1 1/2" = 1'-0"



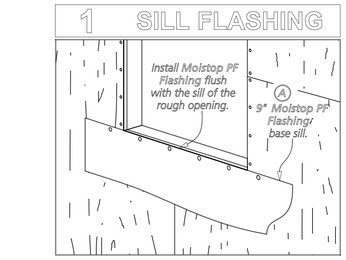
8 FLOOR TRANSITION
1 1/2" = 1'-0"

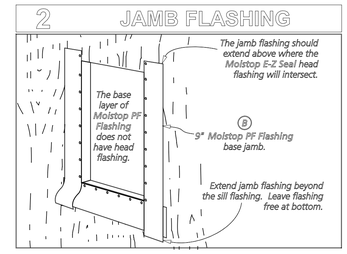


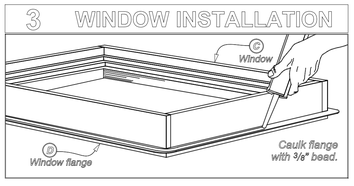


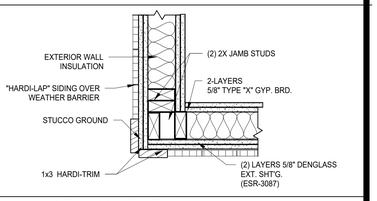


1 DOOR AND WINDOW FLASHING DETAILS
1/4" = 1'-0"

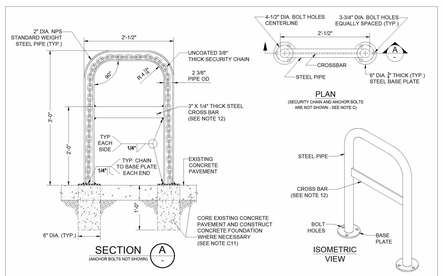




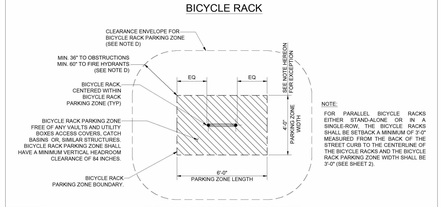




2 EXTERIOR HARDI TRIM CORNER DETAIL
1 1/2" = 1'-0"



BICYCLE RACK



BICYCLE RACK PARKING ZONE AND CLEARANCE ENVELOPE

NOT TO SCALE

BUREAU OF ENGINEERING | DEPARTMENT OF PUBLIC WORKS | CITY OF LOS ANGELES

BICYCLE RACK | STANDARD PLAN S - 671-2

PREPARED	SUBMITTED	APPROVED	SUPERSEDES	REFERENCES
MATIAS PARPAR, BUREAU OF ENGINEERING	EDWARD ARRINGTON, S.E. ENGINEER OF DESIGN		B-4783	S-470
CHECKED: BARRY MASSARING, BUREAU OF ENGINEERING				
PAULINE CHAN, CITY OF LOS ANGELES DEPARTMENT OF TRANSPORTATION (LADOT)	KENNETH R. REDD, P.E. DEPUTY CITY ENGINEER	GARY LEE MOORE, P.E. CITY ENGINEER 06/28/2019	VAULT INDEX NUMBER: B-4785	SHEET 1 OF 4 SHEETS

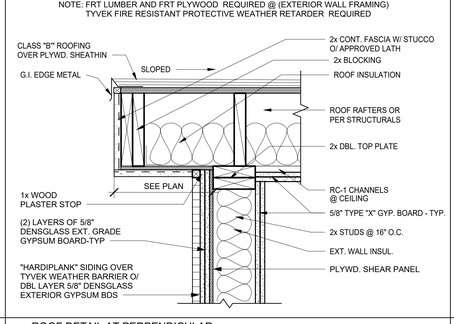
19 INVERTED-U BIKE RACK DETAIL
3/4" = 1'-0"

3 Eave @ Siding
1 1/2" = 1'-0"

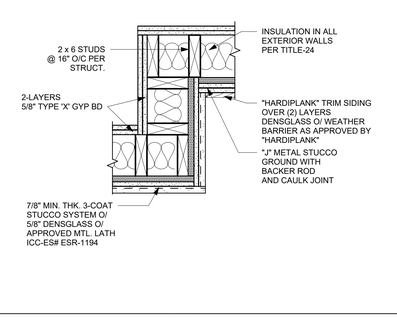
9 ROOF & GUTTER DETAIL PERP. @ SIDING
1 1/2" = 1'-0"

4 STUCCO TO SIDING PLAN VIEW DETAIL
1 1/2" = 1'-0"

15 Railing_Balcony Pony Wall w/ Rail over1
1 1/2" = 1'-0"



10 ROOF DETAIL AT PERPENDICULAR
1 1/2" = 1'-0"



5 STUCCO TO SIDING CORNER DETAIL
1 1/2" = 1'-0"

ZONING

LADBS

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Van Nuys, CA 91406
(818)-888-9443

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Plan Check Set

Details

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DRAWN BY	R. Stockton
CHECKED BY	K. Stockton

D-4

SCALE: As indicated

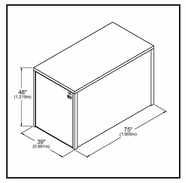
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murdock SUPER SECUR

BICYCLE SECURITY

BIKE-STOR Model M



STANDARD FEATURES

- *Powder coated, hot dipped galvanized steel*
- *14 gage doors*
- *16 gage sides and top*
- *18 gage interior divider*
- *Concealed stainless steel assembly hardware*
- *Pick-resistant vending machine cylinder locks*
- *May be grouped into banks of lockers*

Standard heavy duty construction is hot dipped galvanized steel, powder-coated inside and outside. Doors are all 14 gage and use our Classic locking mechanism. Sides and top are 16 gage and diagonal divider is 18 gage. No wood products are used.

Locker is easily assembled with stainless steel carriage bolts which are concealed and require a wrench on nut side only.

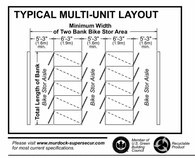
Each Bike Stor locker is anchored to a concrete slab with two 3/8" expansion bolts.

Door hinge is full height 14 gage stainless steel. Pick-resistant vending machine cylinders are used in locks. Lockers may be opened from the inside in case of emergency.

Lockers may be located individually or grouped in banks.

Ask Murdock-Super Secur for technical data, specifications, warranty and delivery information.

TYPICAL MULTI-UNIT LAYOUT



Please visit ***www.murdock-supersecur.com*** *for most current specifications.*

Member of Bicycle Trade Council

Bicycle Retailer

MURDOCK-SUPER SECUR • 15125 Proctor Avenue • City of Industry, CA 91746 USA
Phone 800-453-7465 or 626-333-2543 • Fax 626-855-4860 • www.murdock-supersecur.com

BIKESTOR-M *Revised: 5/9/2011*

CONFIGURATION

NUMBER OF LOCKER UNITS IN EACH BANK
(Total Length of Each Bank)

- ❑ One Locker (3'-3")
- ❑ Two Lockers (6'-6")
- ❑ Three Lockers (9'-9")
- ❑ Four Lockers (13'-0")
- ❑ Five Lockers (16'-3")
- ❑ Six Lockers (19'-6")
- ❑ Seven Lockers (22'-9")
- ❑ Eight Lockers (26'-0")
- ❑ Nine Lockers (29'-3")
- ❑ Ten Lockers (32'-6")

NUMBER OF BANKS (Minimum Width of Bike-Stor Area)

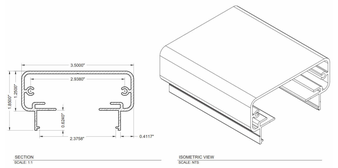
- ❑ One Bank (16'-9")
- ❑ Two Banks (26'-3")
- ❑ Three Banks (39'-9")

MATERIALS & FINISHES

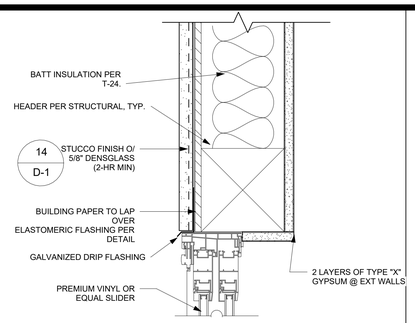
- ❑ Powder Coated Galvanized Steel
  - ❑ Green
  - ❑ Red
  - ❑ Dark Blue
  - ❑ Medium Blue
  - ❑ Light Grey
  - ❑ White
  - ❑ Custom Color
- ❑ Stainless Steel, Satin Finished Exterior
- ❑ Perforated 14 Gage Sides and Doors

LOCK OPTIONS

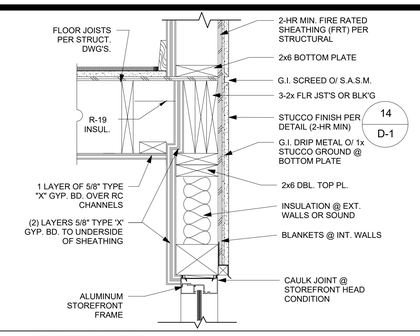
- ❑ Standard T-Handle Lock with CompX Chicago Cylinder
- ❑ T-Handle Lock with Medeco Cylinder
- ❑ T-Handle Lock with Medeco Master-Keyed Cylinder



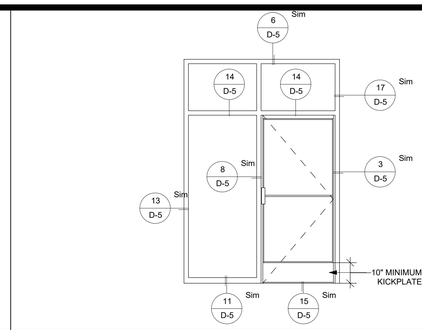
16 CAP DETAIL
1 1/2" = 1'-0"



12 DOOR HEAD AT BALCONY DETAIL
3" = 1'-0"



6 STOREFRONT- HEAD
1 1/2" = 1'-0"



1 STOREFRONT ELEVATION
1/2" = 1'-0"

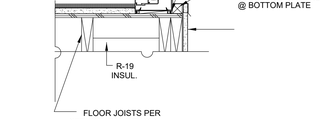
19 Bike Locker
1" = 1'-0"

18 Interior Door- Head/Jamb
3" = 1'-0"

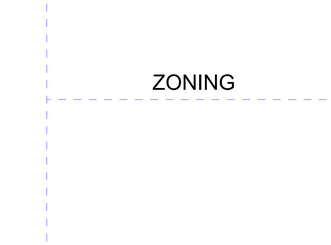
13 STOREFRONT - JAMB DETAIL
1/2" = 1'-0"

8 STOREFRONT- MULLION AT DOOR JAMB
3/8" = 1'-0"

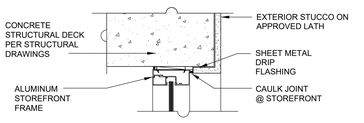
7 STOREFRONT - JAMB @ DOOR
3/8" = 1'-0"



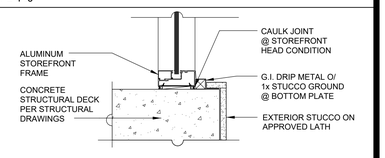
2 STOREFRONT-HEAD @ FLOOR
1 1/2" = 1'-0"



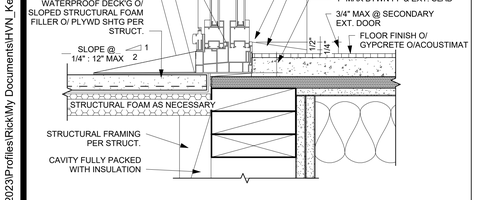
3 STOREFRONT- VERTICAL SILL
1 1/2" = 1'-0"



4 STOREFRONT- HEAD @ CONCRETE
1 1/2" = 1'-0"



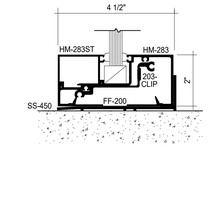
5 STOREFRONT- VERTICAL SILL
1 1/2" = 1'-0"



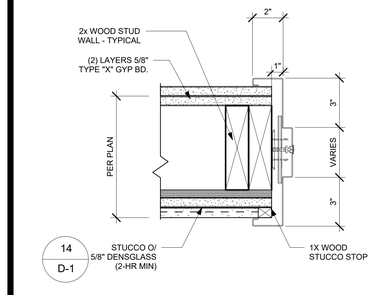
22 DOOR JAMB AT BALCONY DETAIL
3" = 1'-0"

17 STOREFRONT JAMB @ WALL DETAIL
1/2" = 1'-0"

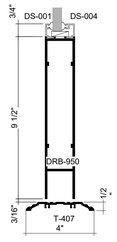
14 STOREFRONT - HORIZONTAL MULLION DETAIL
3/8" = 1'-0"



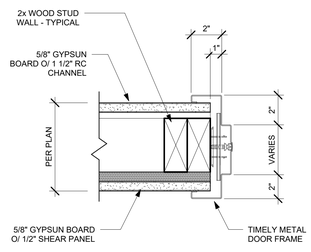
9 STOREFRONT - TRANSOM
3/8" = 1'-0"



55 DOOR JAMB DETAIL AT EXTERIOR CORRIDOR
3" = 1'-0"



15 STOREFRONT @ STILE DETAIL
1/4" = 1'-0"



10 DOOR JAMB DETAIL AT INTERIOR WALL
3" = 1'-0"

67 DOOR SILL AT BALCONY DETAIL
3" = 1'-0"

11 STOREFRONT AT SILL DETAIL
3/8" = 1'-0"

ZONING

LADBS

Stockton Architects Inc.

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(949)315-9416

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CHECKED BY	K. Stockton

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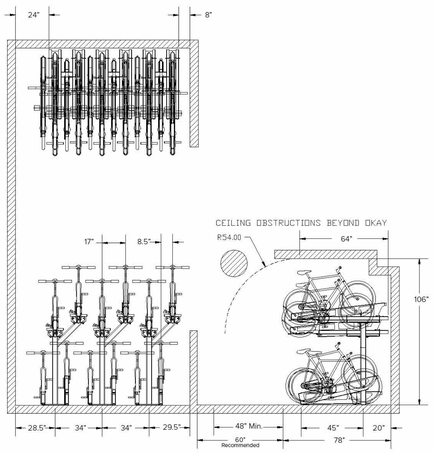


Dero **Decker**

The Dero Decker takes bike parking to the next level. Unlike other two-tier systems our mechanical lift-assist top trays slide down inches from the ground, thus requiring only minimal lifting of the bike into the tray while saving valuable floor space. The Dero Decker has a front wheel safety locking lever and dampers to provide safe lowering of upper trays. Add the e-bike charging option to let users power up their ride while parked.

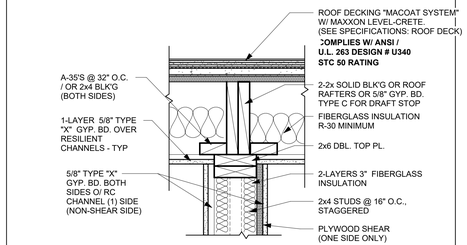
Patent #9,950,592

Dero | Dero **Decker** — **Setbacks** Single Sided



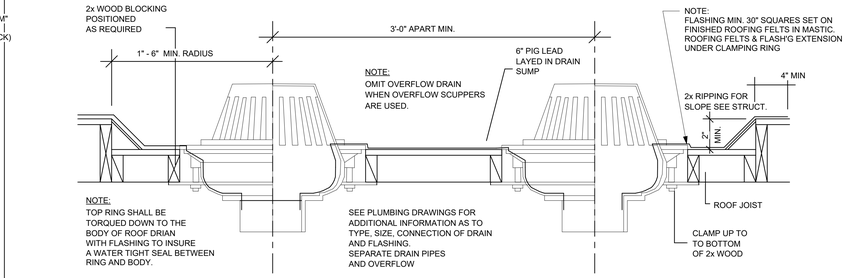
Dero | Dero **Decker** — **Setbacks** Double Sided

4 Bike Rack- 2 Tier
12" = 1'-0"

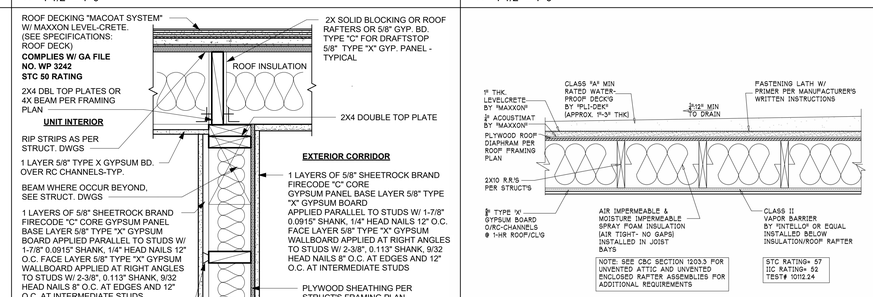


NOTE: AT TJI's PROVIDE 2-LAYERS 1/2" TYPE 'X' GYPSUM BOARD OVER RC-1 RESILIENT CHANNELS AT 16" O.C. (DOUBLE CHANNELS USED AT BUTT JOINTS SECOND LAYER OF GYPSUM OFFSET 16" FROM JOINTS OF FIRST LAYER. (RC-CHANNELS SHALL NOT BE USED OVER PLYWOOD)

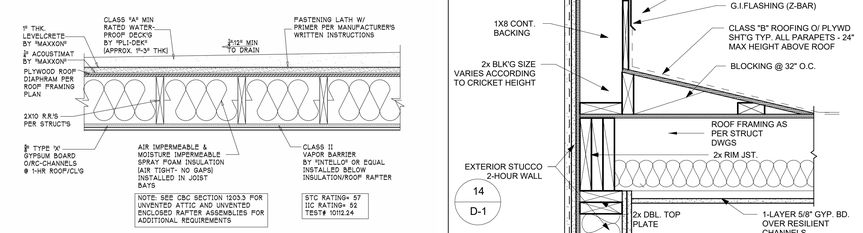
9 Partition Wall @ Roof Deck
1 1/2" = 1'-0"



1 OVERFLOW AND DRAIN DETAIL
1 1/2" = 1'-0"

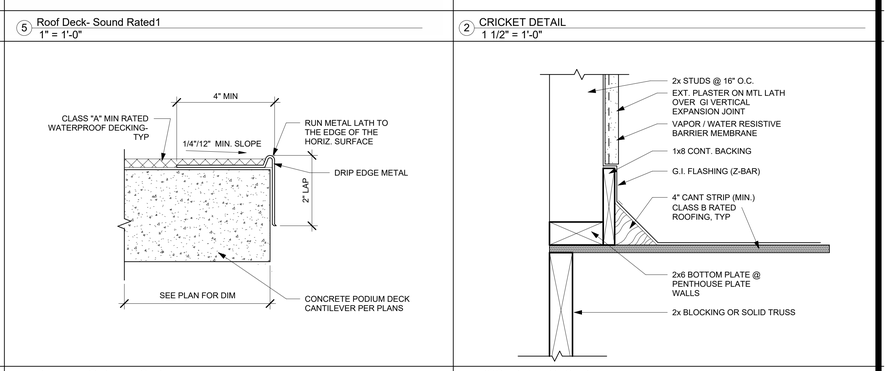


10 Corridor Wall @ Roof Deck
1 1/2" = 1'-0"



5 Roof Deck- Sound Rated1
1" = 1'-0"

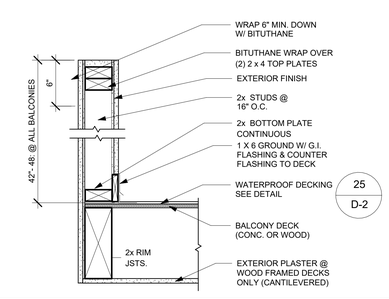
2 CRICKET DETAIL
1 1/2" = 1'-0"



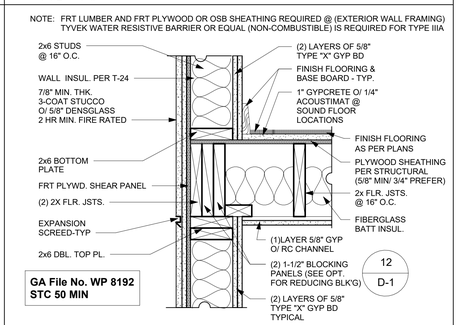
11 FIRE BARRIER @ DECK (2-HOUR)
1 1/2" = 1'-0"

6 Drip Edge @ Podium Cantilever
1 1/2" = 1'-0"

3 ROOF PENTHOUSE DETAIL
3" = 1'-0"



7 Exterior Pony Wall
1 1/2" = 1'-0"



8 Exterior 2-HR Wall- Option 1
1 1/2" = 1'-0"

ZONING

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CHECKED BY	K. Stockton

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ADMINISTRATIVE REVIEW

RIO APPLICATION AND CHECKLIST FOR MINISTERIAL REVIEW

Related Code Sections

Los Angeles Municipal Code (LAMC) Section 13.17 G (Administrative Review) authorizes ministerial review for projects in compliance with Supplemental Use Districts; Ordinance No. 183,145 established the River Improvement Overlay (RIO) District. Procedures for Administrative Review are governed by LAMC Section 13B.3.1. of Chapter 1A.

	Drawing Sheet	Administrative Use Only
Section F. Development Regulations		
1. **Landscaping.** Indicate the drawing sheet that illustrates the percentage of new landscaped area and the associated plant species. The drawing should identify whether a plant is either a native species, Watershed Wise and/or from the Los Angeles County River Master Plan Landscaping Guidelines and Plant Palettes. An exception is made for herbs, fruits, or vegetable plants.	L1	☐
2. **Screening/Fencing.**		
a. **Loading/Off-Street Parking.** For a project with any loading areas and/or off-street parking facilities that contain three or more spaces indicate the drawing sheet that illustrates the location of the parking/loading areas and the location, height and design of the screen/fence that shields views of the parking/loading from the abutting rights-of-way and the LA River.	N/A	☐
b. **Equipment.** For a project that includes any exterior equipment (electrical transformers, mechanical units, water meters) indicate the drawing sheet(s) that illustrate the location of each equipment and any associated screening so that the equipment is screened from public view.	N/A	☐

Docusign Envelope ID: 79EFDC07-A3C5-8ED8-81BB-FB22CB89BDAB

	Drawing Sheet	Administrative Use Only
c. **Exterior Trash Enclosures.** For a project that includes a trash disposal unit indicate the drawing sheet that illustrates the location of the unit(s) and the design of any enclosure(s).	N/A	☐
d. **Fencing.** For any project, with the exception of single-family homes (but including homes built as part of the small lot ordinance), that faces a street that crosses the river or terminates at the river or a river frontage road and/or faces a river frontage road and includes a fence within the front or side yards that is visible from the street, indicate the drawing sheet that illustrates the location and design of the fence.	N/A	☐
3. **Exterior Site Lighting.** Indicate the drawing sheet that illustrates the location and design characteristics of any site and building mounted lighting.	A302	☐
4. **Projects within Inner Core:**		
a. **Landscape Buffer.** Indicate the drawing sheet that illustrates the location of the 10' buffer.	N/A	☐
b. **Fence.** Indicate the drawing sheet that illustrates the location and design, and height of any fence at or within the 10' buffer area.	N/A	☐
c. **Fence Height.** See (b) above.	N/A	☐
d. **Gates.** Indicate the drawing sheet that illustrates the location, height design and operation of the gate(s). Small-lot projects shall comply with the requirements of Section F.4.f.i and therefore the gate may be a single gate from the entire project to the river and not from individual homes.	N/A	☐
e. **Noise.** Projects subject to a conditional use permit for the sale or dispensing of alcoholic beverages, including beer and wine, shall indicate the drawing sheet that illustrates the location and design of all noise-attenuating features such that operational sounds shall not exceed 5 decibels above the existing or presumed ambient levels of the property line(s) of properties on the opposite bank.	N/A	☐

Docusign Envelope ID: 79EFDC07-A3C5-8ED8-81BB-FB22CB89BDAB

	Drawing Sheet	Administrative Use Only
f. **River Access.** See (d) above.	N/A	☐
g. **Riverfront Door.** Indicate the drawing sheet that illustrates the location of a doorway visible to, (not necessarily parallel to) and accessible from the river corridor or frontage road.	N/A	☐

Note: The Administrative Review fee shall be paid prior to receiving the clearance. For instructions on how to obtain City Planning clearances, see Zoning Information (ZI) No. 2358 River Improvement Overlay Use District.

Administrative Review Invoice Number: _____

Signed by: Thomas Beadel — Thomas Beadel — 9/25/2026

Applicant Signature **Date**

5003-5007 KESTER AVENUE, LOS ANGELES, CA. 91403

Applicant Name

SHEET INDEX:

L0: COVER PAGE
L1:LANDSCAPE PLAN
L2:IRRIGATION PLAN & WATER CALCS.
L3:IRRIGATION DETAILS & CITY NOTES
L4:IRRIGATION DETAILS
L5:IRRIGATION DETAILS CONT.
L6:PREFABRICATED PLANTER DETAILS
L7:PAVER DETAILS
L8:PAVER DETAILS CONT.
L9:PAVER MAINTENANCE

5003-5007 KESTER AVENUE

REVISIONS:

THESE DRAWINGS ARE FOR AESTHETIC USE ONLY. THESE DRAWINGS ARE NOT FOR CONSTRUCTION. AS A LICENSED ARCHITECT I AM NOT RESPONSIBLE FOR ANY CONSTRUCTION THAT IS BUILT FROM THESE UNVERIFIED PLANS. DESIGNER IS NOT RESPONSIBLE FOR ANY CONSTRUCTION THAT IS BUILT FROM THESE PLANS. ACCURACY OF THE SURVEY IS ONLY AS GOOD AS THE SURVEY WITH A LICENSED SURVEY.

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LICENSED LANDSCAPE CONTRACTOR
ANGELA M. GOMEZ
LICENSE
027-1011989
Renewal
3-31-2026
STATE OF CALIFORNIA

SHEET TITLE:
COVER PAGE

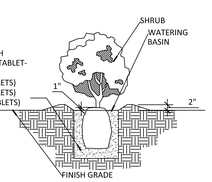
PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

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CHECKED BY: AG
DATE: 9.25.26
SCALE: AS NOTED
JOB NO:
SHEET TITLE: L0

COVER PAGE

LANDSCAPE PLAN

BACKFILL MIX:
1.) ⅓ SITE SOIL
2.) ⅓ SAND
3.) ⅓ GROMULCH
4.) AGRIFORM TABLET- (20-10-5) 1GAL(2 TABLETS) 5GAL(5 TABLETS) 15GAL(8 TABLETS)



SHRUB PLANTING
SCALE: NTS

TOTAL PROJECT LANDSCAPED AREA: 1,182 SQ. FT.

77 UNITS TOTAL: (1) TREE PER (4) UNITS ARE REQUIRED : (20) 24'' BOX TREES ARE REQUIRED

100 % OF PROPOSED SHRUBS AND TREES ARE DROUGHT TOLERANT

PLANTING AND TREE LEGEND:

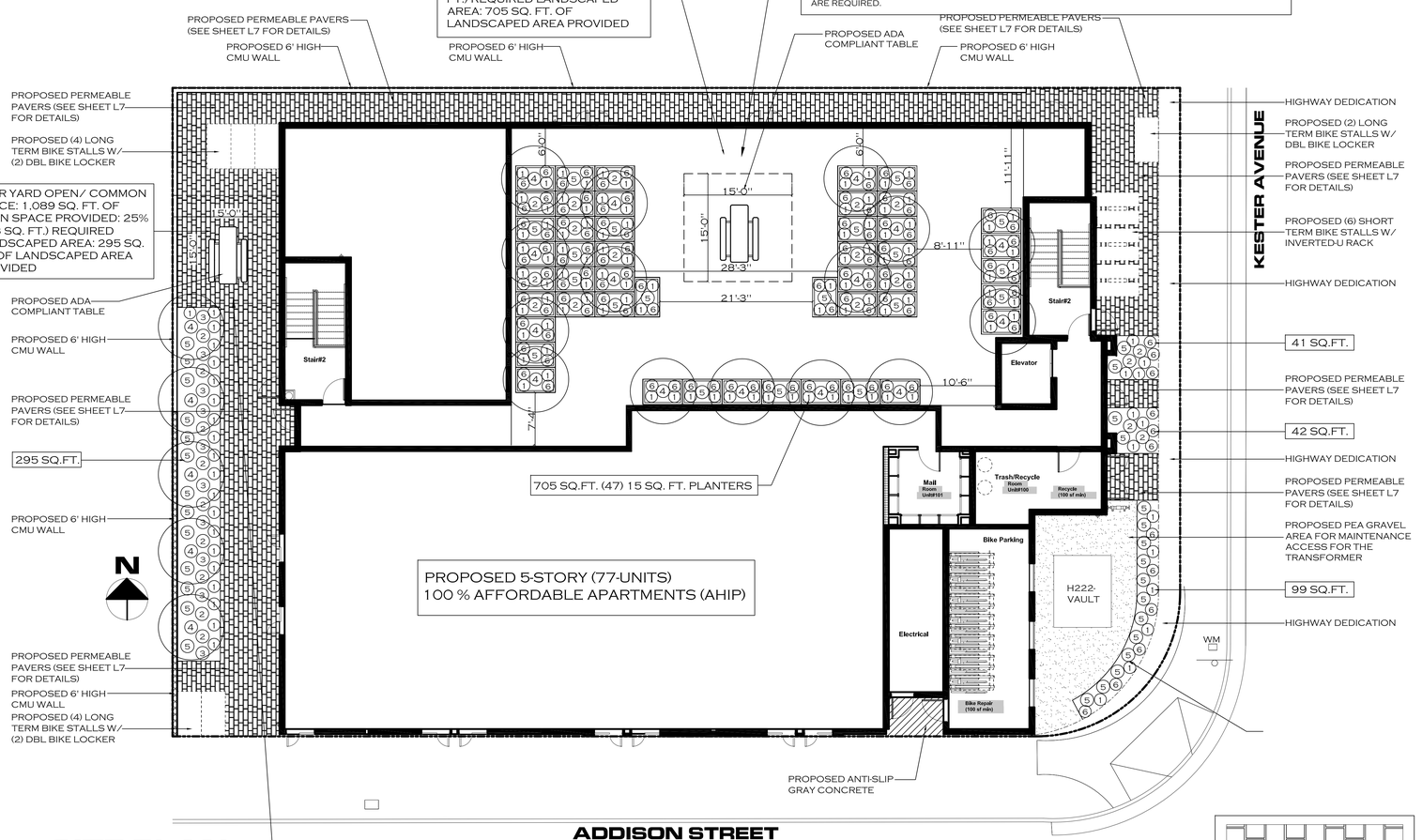
	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	MATURITY HEIGHT	YRS. TO MATURITY	WUCOLS/ PF	SPEC.
1	ARISTIDA PURPUREA	PURPLE THREE-AWN	5 GAL	127	1'-2' IN HEIGHT	1-2 YEARS	VERY LOW/0.2	NATIVE GRASS
2	SALVIA APIANA	WHITE SAGE	5 GAL	26	3' IN HEIGHT	1-2 YEARS	VERY LOW/0.2	NATIVE SHRUB
3	SALVIA LEUCOPHYLLA	PURPLE SAGE	5 GAL	10	4' IN HEIGHT	1-2 YEARS	VERY LOW/0.2	NATIVE SHRUB
4	ARCTOSTAPHYLOS GLAUCA	BIGBERRY MANZANITA (MUST BE 6' TALL AT INSTALL)	24'' BOX	20	10'-15' HEIGHT	3+ YEARS	VERY LOW/0.2	NATIVE TREE
5	TRICHOSTEMA LANATUM	WOOLLY BLUE CURLS	5 GAL	48	2'-4' IN HEIGHT	1-2 YEARS	VERY LOW/0.2	NATIVE SHRUB
6	ERIOPHYLLUM CONFERTIFLORUM	GOLDEN YARROW	1 GAL	106	2' IN HEIGHT	1-2 YEARS	VERY LOW/0.2	NATIVE SHRUB

NOTE: MULCH/ WOOD CHIPS (ALL BEDS) MULCH SHALL BE 3'' THICK (NO SOIL SHALL BE VISIBLE IN ANY PLANTER AREA)

100 % OF ALL SHRUBS/ TREES ARE DROUGHT TOLERANT AND CALIFORNIA NATIVE AND RIO DISTRICT APPROVED

ROOF DECK OPEN/ COMMON SPACE: 2,798 SQ. FT. OF OPEN SPACE PROVIDED: 25% (700 SQ. FT.) REQUIRED LANDSCAPED AREA: 705 SQ. FT. OF LANDSCAPED AREA PROVIDED

COMMON OPEN SPACE SHALL HAVE A MINIMUM DIMENSION OF 15 FEET AND A MINIMUM AREA OF 400 SF PROVIDED PER LAMC 12.21 G2.a.1.iii.
WITH THE INTENT OF USABILITY FOR PASSIVE / ACTIVE RECREATION IN MIND (12.21.G.2.), WE LOOK FOR THE ''NO HORIZONTAL DIMENSION LESS THAN 15 FEET'' (15FT X 15FT CLEAR AREA) SOMEWHERE WITHIN THE OPEN SPACE BOUNDARY REQUIRED PER LAMC 12.21. G.2.A.1.iii. IT DOES NOT NEED TO MEET THE 15FT CLEAR IN THE ENTIRETY THROUGHOUT, AS WE UNDERSTAND PLANTING, TREES, AND CIRCULATION ARE REQUIRED.



SITE PLAN
SCALE: 1/8"=1'-0"

COMMON OPEN SPACE SHALL HAVE A MINIMUM DIMENSION OF 15 FEET AND A MINIMUM AREA OF 400 SF PROVIDED PER LAMC 12.21 G2.a.1.iii.
WITH THE INTENT OF USABILITY FOR PASSIVE / ACTIVE RECREATION IN MIND (12.21.G.2.), WE LOOK FOR THE ''NO HORIZONTAL DIMENSION LESS THAN 15 FEET'' (15FT X 15FT CLEAR AREA) SOMEWHERE WITHIN THE OPEN SPACE BOUNDARY REQUIRED PER LAMC 12.21. G.2.A.1.iii. IT DOES NOT NEED TO MEET THE 15FT CLEAR IN THE ENTIRETY THROUGHOUT, AS WE UNDERSTAND PLANTING, TREES, AND CIRCULATION ARE REQUIRED.

CITY NOTE: A MINIMUM OF 25 PERCENT OF THE COMMON OPEN SPACE AREA SHALL BE PLANTED WITH GROUND COVER, SHRUBS OR TREES. AT LEAST ONE 24-INCH BOX TREE FOR EVERY FOUR DWELLING UNITS SHALL BE PROVIDED ON SITE AND MAY INCLUDE STREET TREES IN THE PARKWAY. FOR A SURFACE AREA NOT LOCATED DIRECTLY ON FINISHED GRADE THAT IS USED FOR COMMON OPEN SPACE, AND LOCATED AT GROUND LEVEL OR THE FIRST HABITABLE ROOM LEVEL, SHRUBS AND/OR TREES SHALL BE CONTAINED WITHIN PERMANENT PLANTERS AT LEAST 30-INCHES IN DEPTH, AND LAWN OR GROUND COVER SHALL BE AT LEAST 12-INCHES IN DEPTH. ALL REQUIRED LANDSCAPED AREAS SHALL BE EQUIPPED WITH AN AUTOMATIC IRRIGATION SYSTEM AND BE PROPERLY DRAINED. PER LAMC 12.21 G2.a.3. APPLY FOR ALL PLANTER ON THE ROOF

LANDSCAPE POINT SYSTEM:

TOTAL LOT SQUARE FOOTAGE:	12,531.7 SQ. FT.	
POINTS REQUIRED:		15 POINTS
POINTS PROVIDED		
USE OF CLASS 1 OR CLASS II COMPOST PRODUCED USING CITY ORGANIC MATERIALS (TOPGRO IN A MAJORITY OF LANDSCAPED AREAS		5 POINTS
PLANTS 100% LOS ANGELES AREA NATIVES THAT WILL REMAIN IN GOOD HEALTH ON NATURAL RAINFALL AFTER THREE YEARS ESTABLISHMENT (75% OF REQ. LANDSCAPE POINTS)		11.25 POINTS
TOTAL POINTS PROVIDED:		16.25 POINTS

WATER MANAGEMENT POINT SYSTEM:

TOTAL LOT SQUARE FOOTAGE:	12,531.7 SQ. FT.	
POINTS REQUIRED:		200 POINTS
ALL PLANTS ON SITE THOSE THAT WILL IN THE DESIGNED LOCATION, AND PROPERLY ESTABLISHED FOR 3 YEARS, REMAIN IN GOOD HEALTH ON NATURAL RAINFALL (EXISTING PLANTS THAT COMPLY MAY BE COUNTED 100% OF REQUIRED WATER MANAGEMENT POINTS		200 POINTS
TOTAL POINTS PROVIDED:		200 POINTS

NOTES:

''THE SUBDIVIDER SHALL RECORD A COVENANT AND AGREEMENT SATISFACTORY TO THE ADVISORY AGENCY GUARANTEEING THAT:

A. THE PLANTING AND IRRIGATION SYSTEM SHALL BE COMPLETED BY THE DEVELOPER BY THE DEVELOPER/BUILDER PRIOR TO THE CLOSE OF ESCROW OF 50 PERCENT OF THE UNITS OF THE PROJECT PHASE.

B. SIXTY DAYS AFTER LANDSCAPE AND IRRIGATION INSTALLATION, THE LANDSCAPE PROFESSIONAL SHALL SUBMIT TO THE HOMEOWNERS/PROPERTY OWNERS ASSOCIATION A CERTIFICATE OF SUBSTANTIAL COMPLETION. (12.40 G. LAMC)

C. THE DEVELOPER /BUILDER SHALL MAINTAIN THE LANDSCAPE AND IRRIGATION FOR 60 DAYS AFTER COMPLETION OF THE LANDSCAPE AND IRRIGATION INSTALLATION.

D. THE DEVELOPER/BUILDER SHALL GUARANTEE ALL TREES AND IRRIGATION FOR A PERIOD OF SIX MONTHS AND ALL OTHER PLANTS FOR A PERIOD OF 60 DAYS AFTER LANDSCAPE AND IRRIGATION INSTALLATION.''

LANDSCAPE PROFESSIONAL

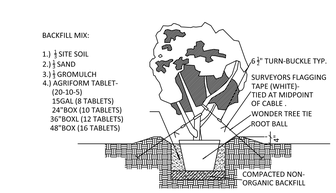
ANGELA M. GOMEZ
A. GOMEZ LANDSCAPING DESIGNS
P.O BOX 1387
SIMI VALLEY, CA. 93063
ANGIE@AGOMEZDESIGNS.COM
805-823-5068
CA-27: 1011989

NOTE: HARDSCAPE HATCH DETAIL

100% OF ALL PROPOSED HARDSCAPE ARE PERMEABLE PAVERS, SEE MANUFACTURER DETAILS ON SHEET L7

TOTAL LANDSCAPE CALCULATIONS:
TOTAL OUTDOOR OPEN/ COMMON SPACE: 3,887 SQ. FT.
-ROOF DECK: 2,798 SQ. FT.
-REAR YARD: 1,089 SQ. FT.
TOTAL REQUIRED OPEN SPACE LANDSCAPE: 25% OF 3,887= 972 SQ. FT.
TOTAL OPEN SPACE LANDSCAPED AREA PER PLAN: 1,000 SQ. FT.





TREE GUYING
SCALE: NTS

ANOVA.

(800) 218-1327
specify@anovafurnishings.com
anovafurnishings.com

F1038

8' Rectangular Expanded Steel ADA Table, Portable Frame



Accessories
1-Hole Hold Down Kit A2375
2-Hole Hold Down Kit A2376

Material
The tabletop and 2 flat bench seats are made of 3/4'' #9 expanded steel with a diamond shape cut-out pattern and features a traditional edge. Tabletop extends 2'137'' from the frame on one side, allowing for wheelchair access and is ADA-compliant.
Tabletop is designed to support up to 100 lbs. per square foot; seats will support up to 200 lbs. per linear foot.
The frame is made of 2.38'' O.D. steel tubing.

Features
Federally ADA-compliant. The tabletop and seats are protected by the patented Fusion Advantage™ process.
The frames are portable in design allowing for flexibility in placement. **Optional hold down kits are sold separately.**

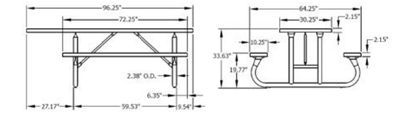
Finish
Tabletop and seats are protected by the patented Fusion Advantage which is a heat fused pastisol coating with an average .925'' thickness that creates an impervious rustproof barrier and resists UV deterioration, mildew, staining and fading. Plastisol is then encapsulated with a richly tinted, high-performance powder coating that won't rust, fade, peel, chip, crack, mold, or mildew. The finish has been tested to the requirements of ASTM D3354 and is in compliance with California Uniform Fire Code 1103.2.1.4.2.
Fade-resistant, powder coated steel frame features a state-of-the-art primer proven to prevent rusting. Treated components exceed the industry standard by 34% in testing by independent sources.

Assembly
This product requires some assembly. Stainless steel assembly hardware is included.

Color
See website or sales representative for color choices.

Maintenance
The product is virtually maintenance-free and requires only periodic cleaning with a sponge and a solution of mild detergent and water to remove surface dirt. Do not clean with solvent or petroleum base products.

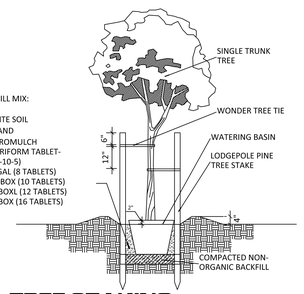
Warranty
20-year limited structural warranty with 7-year finish warranty from the date of purchase. See full details on multi-year warranties for components at anovafurnishings.com/warranty.
Manufactured in the U.S.



© 2024 ANOVA®

May - 2024

ADA TABLE
SCALE: NTS



TREE STAKING
SCALE: NTS

PERMEABLE PAVERS
SCALE: NTS

TREE/DRAINAGE INSTALLATION NOTE:
LANDSCAPE CONTRACTOR SHALL COORDINATE THE TREE ROOTBALL LOCATION WITH THE MECHANICAL DRAINAGE LINE LOCATIONS TO ASSURE NO CONFLICTS WITH THE PLACEMENT OF EACH. WHEN A DRAINLINE LOCATION IS LOCATED ADJACENT TO THE TREE'S ROOTBALL, A ROOT BARRIER DEVICE SHALL BE IMPLEMENTED.

ADDITIONAL NOTE:
ALL TREES WITHIN 8' OF HARDSURFACE SHALL HAVE A ROOT BARRIER INSTALLED.

PLANTING
1. ALL TREES 5 GAL OR LARGER SHALL BE SINGLE STAKED.
2. ALL TREES 24'' BOX OR LARGER SHALL BE DOUBLE STAKED FOR SINGLE TRUNK TREES, GUYED FOR MULTI-TRUNK TREES.
3. GROUND-COVER PLANT MATERIAL SHALL BE TRIANGULARLY SPACED.

SOIL PREPARATION
1. ALL TURF AREAS TO RECEIVE ROTOTILLING AND SOIL PREPARATION TO A DEPTH OF 6''
2. SHRUB AREAS TO RECEIVE SOIL PREPARATION AT LOCATION OF SHRUB ONLY.
3. GROUND COVER AND COLOR AREAS TO RECEIVE SOIL PREPARATION THROUGHOUT PLANTING AREA TO A DEPTH OF 2''.


SALVIA LEUCOPHYLLA 'PURPLE SAGE'


ARCTOSTAPHYLOS GLAUCA


SALVIA APIANA 'WHITE SAGE'


TRICHOSTEMA LANATUM 'WOOLLY BLUE CURLS'


ERIOPHYLLUM CONFERTIFLORUM 'GOLDEN YARROW'


ARISTIDA PURPUREA 'PURPLE THREE-AWN'

5003-5007 KESTER AVENUE

REVISIONS:
9.25.26

THESE DRAWINGS ARE FOR AESTHETIC USE ONLY. AND SHALL BE DESIGNED BY A STRUCTURAL ENGINEER OR OTHER QUALIFIED DESIGNER FOR ACTUAL CONSTRUCTION. ALL DIMENSIONS ARE TO BE FIELD VERIFIED BY CONTRACTOR. ANY DISCREPANCIES NOT RESPONSIBILITY OF THE DESIGNER. DRAWINGS ARE NOT TO BE SCALED WITH A LICENSED SURVEY.

GOMEZ DESIGNS
LANDSCAPE DESIGN & INSTALLATION
C. 805.520.1297 - C. 805.823.5068
AGOMEZDESIGNS.COM

LICENSED LANDSCAPE CONTRACTOR
ANGELA M. GOMEZ
LICENSE NUMBER
C27-1011989
EXPIRATION DATE
08-31-2026
STATE OF CALIFORNIA

SHEET TITLE:
LANDSCAPE PLAN

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

DRAWN BY: AG
CHECKED BY: AG
DATE 7.27.26
SCALE AS NOTED
JOB NO:
SHEET TITLE L1

LANDSCAPE PLAN

IRRIGATION PLAN & WATER CALCS.

NOTES

- DO NOT WILLFULLY INSTALL THE SYSTEM AS DESIGNED. WHEN IT IS OBVIOUS THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT WERE NOT KNOWN DURING DESIGNING. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS AUTHORIZED REPRESENTATIVE, OTHERWISE THE IRRIGATION CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- THIS DESIGN IS DIAGRAMMATIC. EQUIPMENT SHOWN IN PAVED AREAS IS FOR CLARIFICATION ONLY, AND IS TO BE INSTALLED IN PLANTING AREA WHEREVER POSSIBLE.
- UNLESS OTHERWISE NOTED, 120 VOLT ELECTRICAL POWER FOR CONTROLLER(S) TO BE PROVIDED BY OTHERS. THE IRRIGATION CONTRACTOR WILL MAKE FINAL ELECTRICAL CONNECTION TO AUTOMATIC CONTROLLER(S) FROM OUTLET PROVIDED BY OTHERS.
- ALL WIRES FROM CONTROLLER TO AUTOMATIC VALVES TO BE COPPER, DIRECT BURIAL, MIN. #14 GAUGE. INSTALL IN SAME TRENCH AS MAINLINE PIPING WHERE POSSIBLE. MIN. COVERAGE OVER WIRE TO BE 18". COMMON WIRE TO BE WHITE IN COLOR. CONTROL WIRES TO BE A DIFFERENT COLOR FOR EACH CONTROLLER USED. BUNDLE AND TAPE WIRES TOGETHER MIN. 20' ON CENTER.
- FINAL LOCATIONS FOR BACKFLOW PREVENTER(S) AND CONTROLLER(S) TO BE DETERMINED BY OWERS AUTHORIZED REPRESENTATIVE, IN THE FIELD.
- INSTALL EQUIPMENT AS PER DETAILS.
- INSTALL ALL EQUIPMENT (VALVES, GATE VALVES, BOXES ETC.) IN PLANTING AREAS ONLY, NOT IN LAWN AREAS.
- PROVIDE MIN. 18" COVERAGE OVER ALL PRESSURE LINES, AND A MIN. OF 12" COVERAGE OVER ALL NON-PRESSURE LINES. ALL PIPING UNDER PAVING TO BE MIN. SCHEDULE 40 P.V.C. AND TO HAVE MIN. 24" COVER OVER PIPING.
- IRRIGATION CONTRACTOR TO FLUSH ALL LINES AND ADJUST ALL SPRINKLERS FOR MAXIMUM PERFORMANCE, AND TO PREVENT OVERSPRAY ONTO WALKS, DRIVES, BUILDINGS , ETC.. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT ACTUAL SITE CONDITIONS.
- ALL SPRINKLER HEADS WILL BE ADJUSTED TO THROW "HEAD TO HEAD", WITH NO OVERSPRAY.
- DRIPPERLINE WILL BE INSTALLED MAXIMUM 2" FROM HARDSURFACE AND WILL BE SPACED AT MAXIMUM 18" ON CENTER IN PLANTING AREAS.ALL TUBING WILL BE CONNECTED TO EITHER P.V.C. HEADER OR TO OTHER TUBING THERE WILL BE NO "DEAD ENDS" DRIPPERLINE WILL BE INSTALLED ON SURFACE OF FINISH GRADE, AND STAPLED IN PLACE, AND COMPLETELY COVERED WITH A LAYER OF MULCH. TUBING WILL NOT BE VISABLE. TUBING LOCATION ARE DIGRAMMATIC AND WILL BE INSTALLED TO COVER ENTIRE AREA WHERE SHOWN.
- IRRIGATION CONTRACTOR WILL INSTALL SWING CHECK VALVES OR SRING LOADED CHECK VALVES AS REQUIRED TO ELIMINATE DRAINAGE FROM LOW SPRINKLERS. THIS WILL BE IN ADDITION TO ANY CHECK VALVES SHOWN ON PLAN.
- ALL P.V.C. MAINLINE FITTINGS TO BE "LONG SOCKET" TYPE AS MANUFACTURED BY DURA COMPANY.
- UPON COMPLETION, IRRIGATION CONTRACTOR TO SUPPLY TO OWNER, A COMPLETE SET OF REPRODUCIBLE "AS-BUILT" DRAWINGS. DRAWINGS WILL SHOW LOCATION OF ALL VALVES, CROSSINGS, QUICK COUPLING VALVES, ETC. EACH CONTROLLER TO HAVE ITS OWN CONTROLLER CHART. CHART WILL CLEARLY SHOW EACH AREA SPRINKLED IN A DIFFERENT COLOR , AND WILL BE LAMINATED BETWEEN 2 LAYERS OF 10 MIL. CLEAR PLASTIC.
- THE IRRIGATION SYSTEM SHALL BE FULLY GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER. ANY DEFECTIVE MATERIALS OR POOR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY IRRIGATION CONTRACTOR AT NO COST TO OWNER.

WATER EFFICIENT LANDSCAPE WORKSHEET

AREAS (SQUARE FOOTAGES)

LANDSCAPE AREA 1,182 SQ. FT.

MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

Maximum Applied Water Allowance shall be calculated using this equation:
MAWA = (ETo) (0.62) [(ETAF x LA) + (0.45 x SLA)]

(50.1) (0.62) [(0.55 x 1,182) + (0.45 x 0)]
31.062 (650)
20,190

MAWA= 20,190 GALLONS PER YEAR

where:
MAWA = Maximum Applied Water Allowance (gallons per year)
ETo= reference evapotranspiration (inches per year: 50.1")
ETAF= ET Adjustment Factor (0.55)
LA = Landscaped Area includes Special Landscape Area (square feet)
0.62 = Conversion factor (to gallons per square foot)
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.45 = the additional ET Adjustment Factor for Special Landscape Area

TOTAL M.A.W.A.

20,190 GALLONS PER YEAR

ETWU CALCULATION

HYDROZONE	TYPE	PLANT FACTOR	AREA (HA)	PF x HA
A1 (PLANTER)	VERY LOW (DRIP)	0.2	1,182 SF	236
SUM			1,182 SF	236

E.T.W.U. FOR HYDROZONES A1 (DRIP) VERY LOW

$$ETWU = (ETo)(0.62)\left(\frac{PF \times HA}{IE} + SLA\right)$$

$$50.1(0.62)\left(\frac{236}{0.81} + 0\right)$$

$$31.062\left(291\right)$$

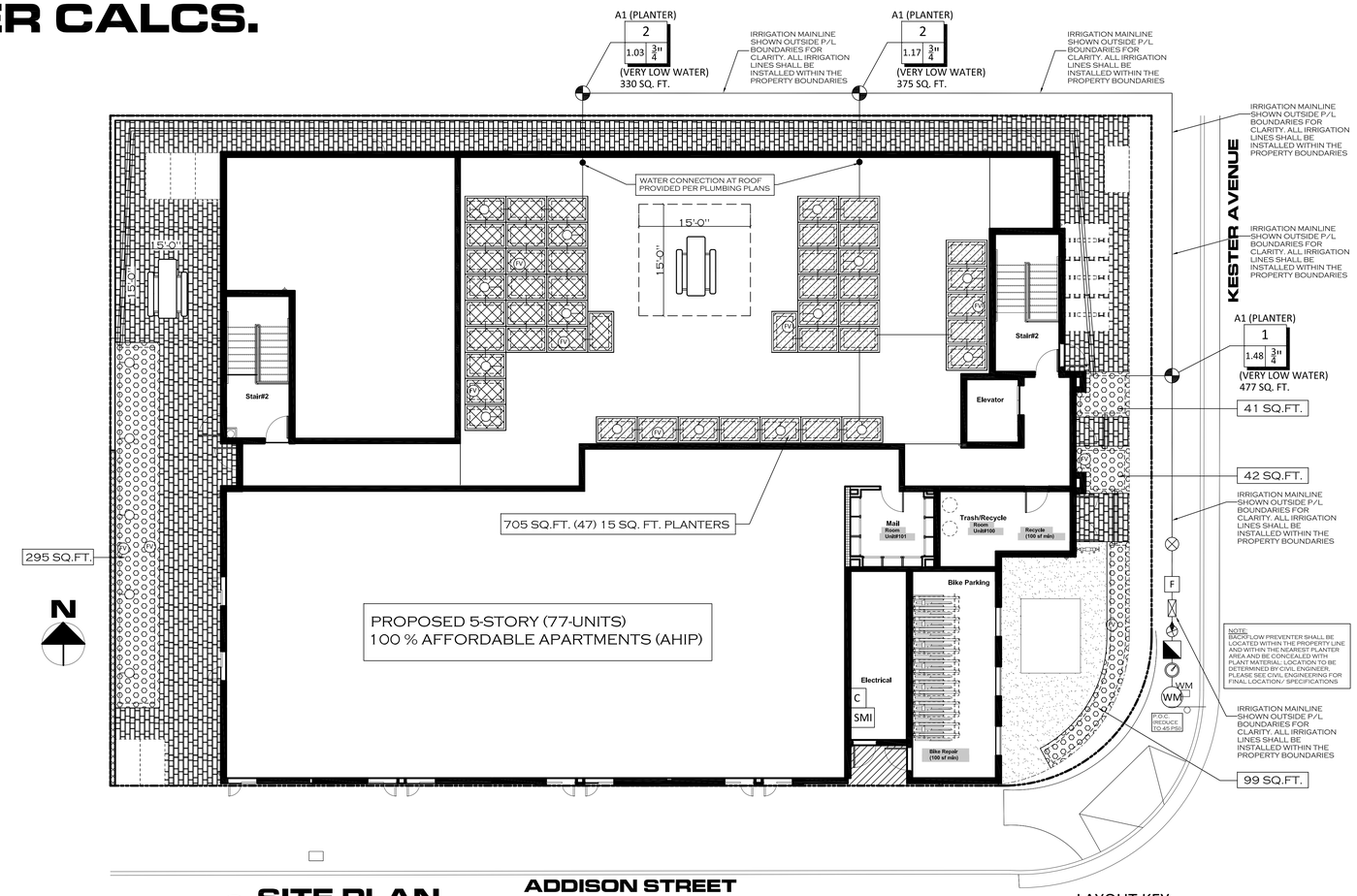
9,039

where:
$ETWU = ETWU = (ETo)(0.62)\left(\frac{PF \times HA}{IE} + SLA\right)$

ETo= Reference evapotranspiration (inches per year)
PF= Plant Factor from WUCOLS, Water Use Classification of Landscape Species published by UC Extension, DWR and USBR, 2000.
HA= Hydrozone area in sq. ft.
SLA= Special landscape area in sq. ft.
0.62= Conversion factor (to gallons per sq. ft.)
IE= Irrigation efficiency (min. 0.71) overhead spray= 0.75, drip devices= 0.81

TOTAL E.T.W.U.

9,039 GALLONS PER YEAR



SITE PLAN

SCALE: 1/8"=1'-0"

ADDISON STREET

MONTHLY AVERAGE REFERENCE EVAPOTRANSPIRATION LOS ANGELES

JANUARY	2.2
FEBRUARY	2.7
MARCH	3.7
APRIL	4.7
MAY	5.5
JUNE	5.8
JULY	6.2
AUGUST	5.9
SEPTEMBER	5.0
OCTOBER	3.9
NOVEMBER	2.6
DECEMBER	1.9
ANNUAL ETO	50.1

REFERENCE:
http://cityplanning.lacity.org/Forms_Procedures/2405.pdf
Appendix C
Reference Evapotranspiration (ETo) Table*

IRRIGATION SCHEDULE FOR ESTABLISHMENT PERIOD

(WATERING TIMES WILL AUTOMATICALLY ADJUST BY SMART CONTROLLER)

DAILY RUN TIMES (IN MINUTES) 3 DAYS A WEEK

JANUARY	10
FEBRUARY	14
MARCH	16
APRIL	18
MAY	22
JUNE	22
JULY	24
AUGUST	24
SEPTEMBER	20
OCTOBER	16
NOVEMBER	12
DECEMBER	10

NOTE: NO IRRIGATION SHALL BE APPLIED BETWEEN THE HOURS OF 10 AM & 8 PM

HYDROZONE TABLE

ZONE	PLANT TYPE	HYDROZONE DESCRIPTION	IRR. METHOD	SQ. FT.	% OF TOTAL LANDSCAPE AREA
A1	PLANTER	VERY LOW / 0.2	DRIP	1,182	100 %
TOTAL				1,182 SQ. FT.	100 %

LAYOUT KEY

SYMBOL	DESCRIPTION	DETAIL
IV	MANUAL FLUSH VALVE: NETAFIN MODEL# TLSOV INSTALL IN VALVE BOX WITH GRAVEL SUMP. REFER TO DETAILS AND SPEC. FOR QUANTITY AND LOCATION	A
	LOW/HIGH FLOW CONTROL ZONE KIT KIT IS PRE-ASSEMBLED WITH CONTROL VALVE. FILTER, AND PRESSURE REGULATOR	B
	HUNTER PRO-ASV 075 REMOTE CONTROL VALVE WITH FLOW CONTROL	I
WM	EXISTING 1" POTABLE WATER METER FOR RESIDENCE.	
P.O.C.	MAKE CONNECTION TO (E) POTABLE WATER LINE ON DISCHARGE SIDE OF (E) 2" WATER METER. CITY STATIC WATER PRESSURE (TBD) SYSTEM REQUIRES APPROX. 6 GPM	
	WILKINS MODEL # 500XL PRESSURE REDUCING VALVE, W/ REDUCED PRESSURE SET AT 42 PSI	V
SMI	HUNTER SOIL-CLIK (SOIL MOISTURE INTERFACE)	J
C	HUNTER 12 PRO-C STATION CONTROLLER WITH HUNTER MODEL WSS SOLAR SYNC PANEL MOUNTED ON INSIDE ELECTRICAL ROOM WALL (GFCI OUTLET REQUIRED)	J
	1" PVC PRESSURE MAINLINE- SCHED. 40, BURY 18" DEEP (1")	
	17MM DRIPLINE (DIAGRAMMATIC, REFER TO INSTALLATION DETAILS & IRR. LEGEND FOR ACTUAL LAYOUT & SPACING)	SHEET L3
	PVC SCHEDULE 40 LATERAL PIPING 2" & PVC SCHEDULE 40 SLEEVING (2x SIZE OF WORKING PIPE) PLACE UNDER HARDSCAPE	
	FEBCO 765 REDUCED PRESSURE BACKFLOW PREVENTER	U
	KING BRO B.T.U. BALL VALVE SHUTOFF (OR EQUAL) (1½")	
F	IRRITROL FS-B-100 FLOW SENSOR 0.75 SIZE IN PVC "T"	S
	0.75" IRRIGATION SUB-METER: NETAFIM WM-100-1.0-RS-M (DISPLAY IN GALLONS FOR HOMEOWNER) INSTALL IN (1) #1419 CARSON BOX W/ LID)	SHEET L3
	PCN-50 (0.5 GPM) TREE FLOOD BUBBLER W/ ROOT ZONE WATERING KIT	T
	SUPERIOR 3200 NORMALLY CLOSED MASTER VALVE LINE SIZE	I
	VALVE ZONE (STATION) VALVE ZONE (STATION) VALVE SIZE MAX. GPM DEMAND	

IRRIGATION LEGEND

HYDROZONE	STATION	SYMBOL	DESCRIPTION	GPM	PSI	LAYOUT TYPE	CONTROL ZONE KIT & DISC FILTER #	DETAIL	APPLICATION RATE	MAX LENGTH SINGLE LATERAL	TIME TO APPLY ½" OF WATER	RANGE OF PRECIPITATION RATE	FEET OF DRIPLINE	# OF DRIPPERS	# OF TLS6 STAPLES	PRESSURE REGULATOR MODEL #
A1 (PLANTER) 477 SQ. FT.	1 (VERY LOW DRIP)		NETAFIM DRIP IRRIGATION- TECHLINE CV EMITTER APPLICATION RATE: 89.04 GPH	1.48	45	'LITE' ON-SURFACE , 18" LATERAL SPACING. 18" DRIPPER SPACING 4 x TLCV4-1801	1 x LVCZS8010075-LF 1 x DF075-120	E,C,D,F	0.30 IN/HR	620	50 MINUTES	0.34"- 0.45"	318	212	106	1 x PRV075LF50V2K
A1 (PLANTER) 375 SQ. FT.	2 (VERY LOW DRIP)		NETAFIM DRIP IRRIGATION- TECHLINE CV EMITTER APPLICATION RATE: 70.00 GPH	1.17	45	'LITE' ON-SURFACE , 18" LATERAL SPACING. 18" DRIPPER SPACING 3 x TLCV4-1801	1 x LVCZS8010075-LF 1 x DF075-120	E,C,D,F	0.30 IN/HR	620	50 MINUTES	0.34"- 0.45"	250	167	84	1 x PRV075LF50V2K
A1 (PLANTER) 330 SQ. FT.	3 (VERY LOW DRIP)		NETAFIM DRIP IRRIGATION- TECHLINE CV EMITTER APPLICATION RATE: 61.60 GPH	1.03	45	'LITE' ON-SURFACE , 18" LATERAL SPACING. 18" DRIPPER SPACING 3 x TLCV4-1801	1 x LVCZS8010075-LF 1 x DF075-120	E,C,D,F	0.30 IN/HR	620	50 MINUTES	0.34"- 0.45"	220	147	74	1 x PRV075LF50V2K

TOTAL 1,182 SQ. FT.

5003-5007 KESTER AVENUE

REVISIONS:

GOMEZ DESIGNS
LANDSCAPE DESIGN & INSTALLATION
O. 805.823.5068
AGOMEZDESIGNS.COM

THESE DRAWINGS ARE FOR AESTHETIC LAY-OUT, PLANTING AND IRRIGATION DESIGN ONLY. THEY ARE NOT ENGINEERED AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR SITE OBSERVATION AND FIELD ADJUSTMENTS AS NECESSARY TO ENSURE PROPER COVERAGE AND FULL LINE ACCURACY. DESIGNER WILL NOT BE SUPPLIED WITH A LEED RISED SURVEY.

SHEET TITLE:
IRRIGATION PLAN & WATER CALCS.

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

ANGELA M. GOMEZ
LANDSCAPE CONTRACTOR
C27-1011989
RENEWAL 3-31-2026
LICENSED LANDSCAPE CONTRACTOR
STATE OF CALIFORNIA

DRAWN BY: AG
CHECKED BY: AG
DATE: 9.25.26
SCALE: AS NOTED
JOB NO:
SHEET TITLE: L2

IRRIGATION PLAN & WATER CALCS.

IRRIGATION DETAILS & NOTES

PERFORMANCE APPROACH
(For landscape areas of 500 square feet and over)
Landscape Documentation Package (Title 23, Chapter 2.7 §492.3)

1. Add, sign and date the following statement on the plans: "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."

2. Water Efficient Landscape Worksheet that includes a hydrozone information table and water budget calculations shall be submitted for plan check.

Water Efficient Landscape Worksheet (Title 23, Chapter 2.7 §492.4 and §492.13)

Incorporate the Water Efficient Landscape Worksheet into plans. Show that the Maximum Applied Water Allowance (MAWA) meets or exceeds the calculated Estimated Total Water Use (ETWU).
The evapotranspiration adjustment factor (ETAF) for the landscape project shall not exceed a factor of (0.55 for residential areas) (0.45 for non-residential areas).
The plant factor used shall be from WUCOLS or from horticultural researchers with academic institutions. WUCOLS plants database can be found on-line at:
<http://ucanr.edu/sites/WUCOLS/>
All water features shall be included in the high water use hydrozone. All temporary irrigated areas shall be included in the low water use hydrozone.
All Special Landscape areas shall be identified on the plans. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.
For the purpose of calculating ETWU, the irrigation efficiency is assumed to be 0.75 For overhead spray devices and 0.81 for drip system devices.

Landscape Design Plan (Title 23, Chapter 2.7 §492.6)

The landscape design plans, at a minimum, shall:
- Delineate and label each hydrozone by number, letter, or other methods.
- Identify each hydrozone as low, moderate, high water, or mixed water use.
- Identify recreational areas, areas solely dedicated to edible plants, areas irrigated with recycled water, type and surface area of water features, impermeable and permeable hardscape, and any infiltration systems.

For hydrozone with a mix of both low and moderate water use plants or both moderate and high water use plants, the higher plant factor or the plant factor based on the proportions of the respective plant water uses shall be used. Hydrozones containing a mix of low and high water use plants is not permitted.

Turf is not allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape.
Add note to plans: "Recirculating water systems shall be used for water features"
Add note to plans: "A minimum 3inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated."
Add note to plans: "For soils less than 6% organic matter in the top 6 inches of soil, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil.

Irrigation Design Plan (Title 23, Chapter 2.7 §492.7)

The irrigation plans, at a minimum, shall contain the following:
- Location of dedicated landscape water meter(s).
- Location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices.
- Static water pressure at the point of connection the public water supply
- Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station.

A dedicated water service meter or private submeter shall be installed for all (non-residential irrigated landscapes of at least 1,000sqft) (residential irrigated landscape areas of at least 5,000sqft).
Automatic weather-based or soil-moisture based. Irrigation controllers shall be installed on the irrigation system.

Add note to plans: "Pressure regulating devices are required if water pressure is below or exceeds the recommended pressure of the specified irrigation devices."
Manual shut-off valves shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency or routine repair.
Add note to plans: "Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur."
Areas less than 10-feet in width in any direction shall be irrigated with subsurface or drip irrigation.
Overhead irrigation shall not be permitted within 24-inches of any non-permeable surface

Required Statements and Certification (Title 23, Chapter 2.7 §492.6, §492.7 and §492.9)

Add the following statement on the landscape and irrigation plans: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plans".

The final set of landscape and irrigation plans shall bear the signature of a licensed landscape architect, licensed landscape contractor, certified irrigation designer, licensed architect, licensed engineer, licensed land surveyor, or personal property owner.

Add note to plans: "A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes."
Add note to plans: "A Certificate of Completion shall be filled out and certified by either the signer of the landscape plans, the signer of the irrigation plans,or the licensed landscape contractor for the project."
Add note to plans: "An irrigation audit report shall be completed at the time of final inspection."

PRESCRIPTIVE APPROACH
(For landscape areas between 500 and 2,500 square feet) Plant Material (Title 23, Chapter 2.7, Appendix D (b) (3))

1. For residential areas, 75% of landscape, excluding edibles and areas using recycled water, shall consist of plants that average a WUCOLS plant factor of 0.3. WUCOLS plants database can be found on-line at: <http://ucanr.edu/sites/WUCOLS/>
3. Add note to plans: "A minimum 3inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated."2. For non-residential areas, 100% of the plants, excluding edibles and areas using recycled water, shall consist of plants that average a WUCOLS plant factor of 0.3.

Turf (Title 23, Chapter 2.7, Appendix D (b) (4))

Turf shall not exceed 25% of the landscape area in residential areas.
No turf permitted in non-residential areas
Turf not permitted on slopes greater than 25%.
Turf is prohibited in parkways less than 10 feet wide.

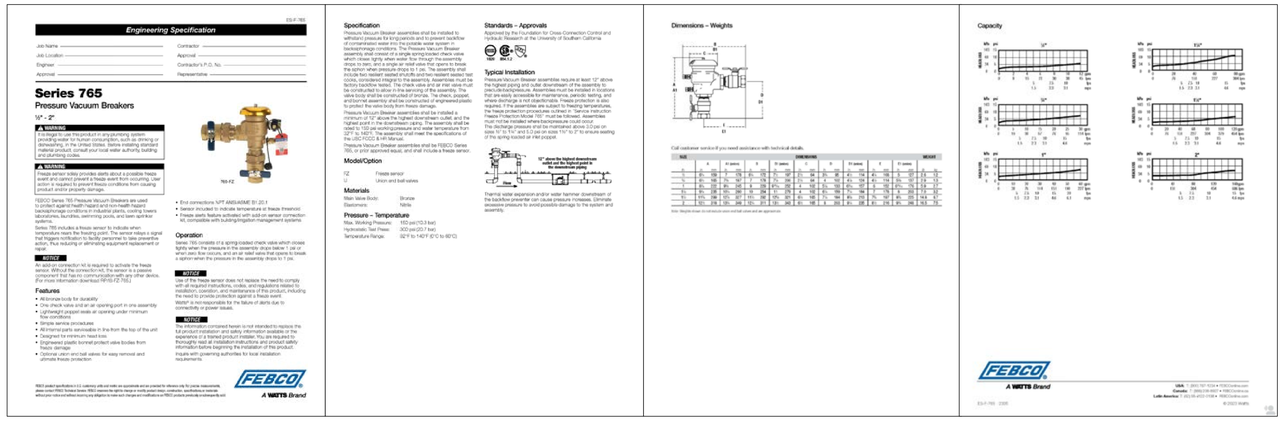
Irrigation (Title 23, Chapter 2.7, Appendix D (b) (5))

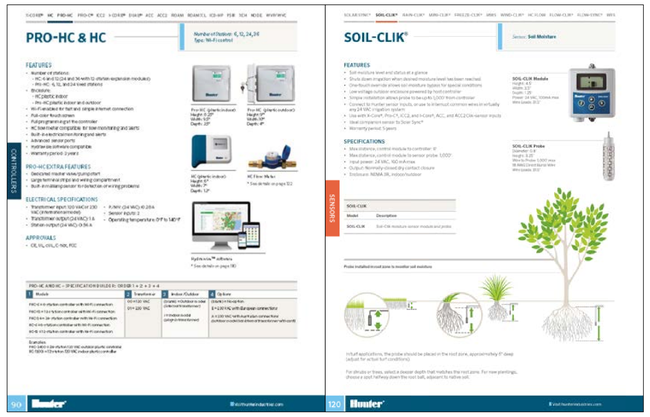
Automatic weather-based or soil-moisture based irrigation controllers shall be installed on the irrigation system. The irrigation controller shall be of a type which does not lose programming data in the event the primary source is interrupted.
Pressure regulators shall be installed on the irrigation system to ensure dynamic pressure of the system is within the manufacturer's recommended pressure range.
Manual shut-off valves shall be installed as close as possible to the point of connection of the water supply.
Areas less than 10-feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
For non-residential projects with landscape areas of 1,000sqft or more, private submeter(s) to measure landscape water use shall be installed.
Add note to plans: "At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule of landscape and irrigation maintenance."
Add note to plans: "Unless contradicted by a soils test, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil."

Required Statements and Certification (Title 23, Chapter 2.7, Appendix D (b) (1) and (6))

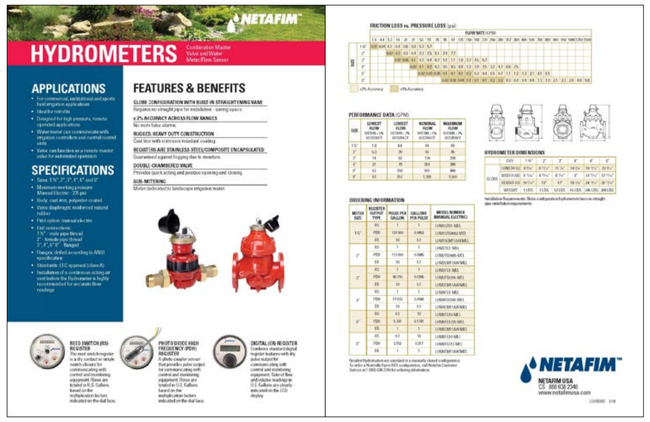
15. The final set of landscape plans shall have the applicant's signature and date with the statement, "I agree to comply with the requirements of the prescriptive compliance option of the MWELO."

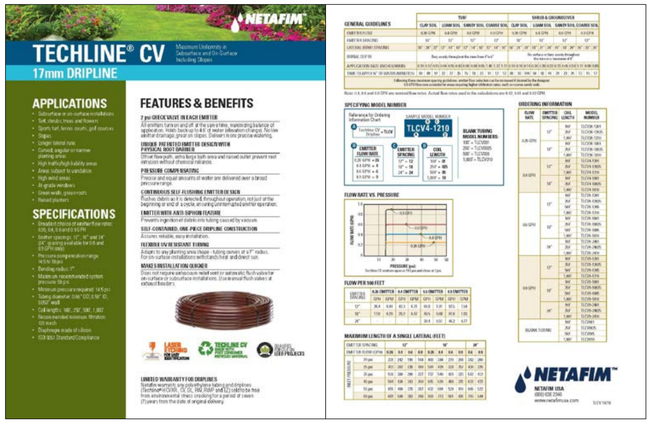
16. Add note to plans: "At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance."

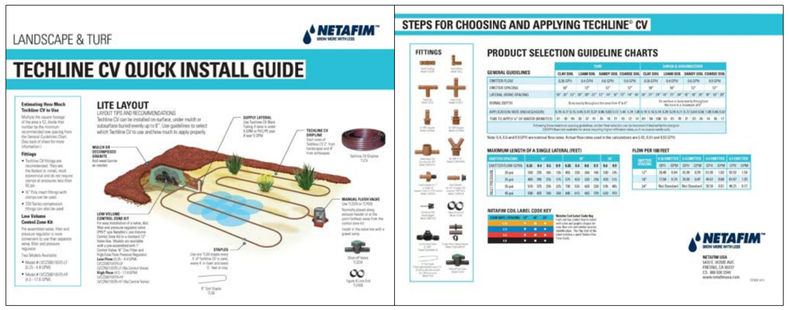


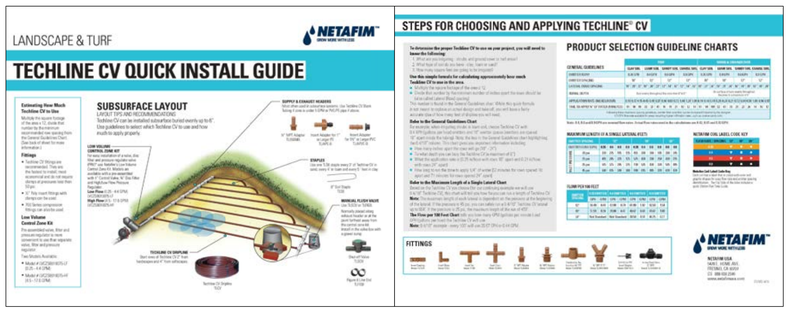


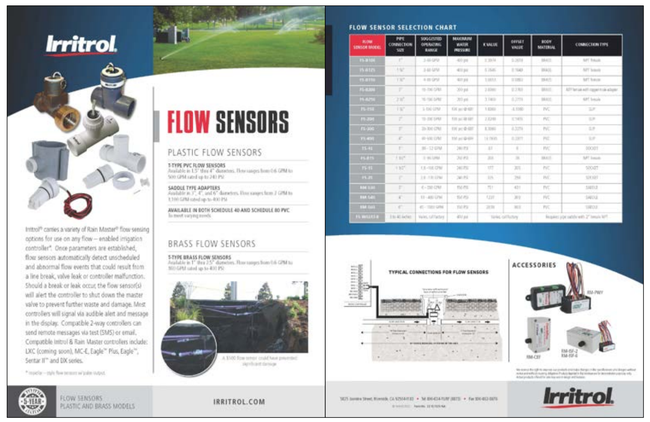














REVISIONS:

These drawings are for instruction use only and shall be designed by a state licensed professional engineer or a licensed landscape architect. All licensed architect designers all licensed engineers all verified information is not responsible for any errors or omissions on these plans. Any use of these plans without authorization is prohibited.

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AGOMEZDESIGNS.COM

ANGELA M. GOMEZ
LICENSE
C27-1011989
Renewal 9-31-2026
STATE OF CALIFORNIA

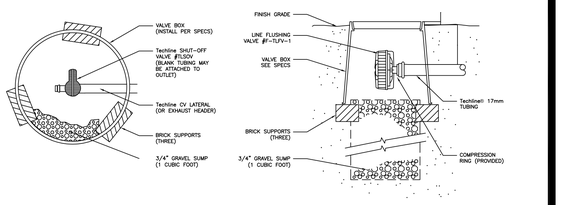
SHEET TITLE:
IRRIGATION DETAILS & NOTES

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

DRAWN BY: AG
CHECKED BY:
DATE 9.25.26
SCALE AS NOTED
JOB NO:

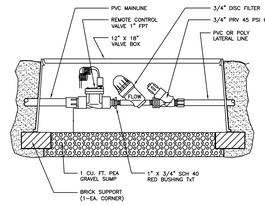
SHEET TITLE:
L3

IRRIGATION DETAILS & NOTES



A

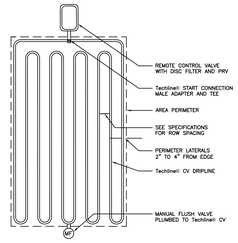
TECHLINE CV MANUAL LINE FLUSH VALVE



P/N LVCZS80-10075-HF 4.5 - 17.6 GPM

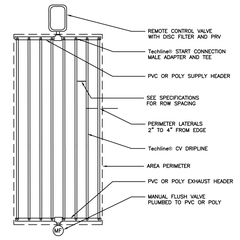
B

LOW VOLUME CONTROL ZONE ASSEMBLY



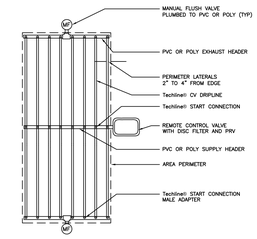
C

TECHLINE CV LITE END FEED LAYOUT



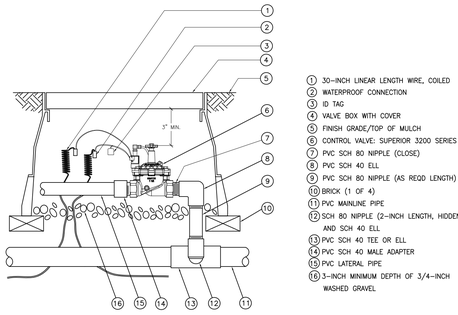
D

TECHLINE CV LITE END FEED LAYOUT



F

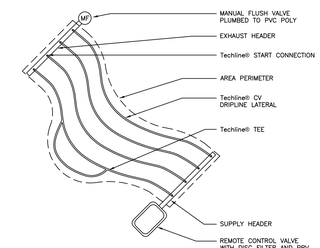
TECHLINE CV CENTER FEED LAYOUT



1. 30-INCH LINEAR LENGTH WIRE, COILED
2. WATERPROOF CONNECTION
3. ID TAG
4. VALVE BOX WITH COVER
5. FINISH GRADE/TOP OF MULCH
6. CONTROL VALVE: SUPERIOR 3200 SERIES VALVE
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (AS REQD LENGTH)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

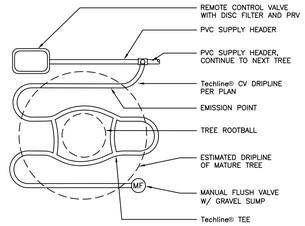
I

MASTER VALVE 3200 SERIES



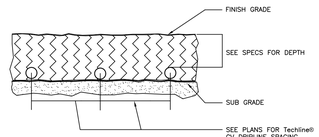
G

TECHLINE CV IRREGULAR AREAS



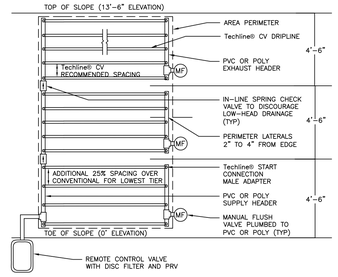
E

TECHLINE CV TUBING & ACCESSORIES FOR TREE



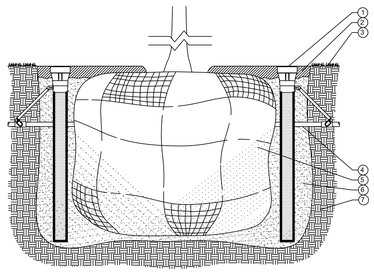
H

TECHLINE CV SUBGRADE INSTALLATION



L

TECHLINE CV SLOPE LAYOUT



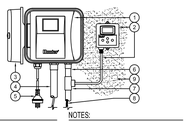
LEGEND:
1. 36" ROOT ZONE WATERING SYSTEM PER PLAN
2. MULCH
3. FINISHED GRADE
4. LATERAL PIPE - SIZE PER PLAN
5. ROOT BALL
6. AMENDED SOIL MEDIA (PER SOILS REPORT)
7. NATIVE SOIL

NOTES
INSTALL RZWS SLEEVE OVER TUBE TO HELP
PREVENT SOIL INTRUSION

T

Hunter® HM.RZWS.03

ROOT ZONE WATERING SYSTEM



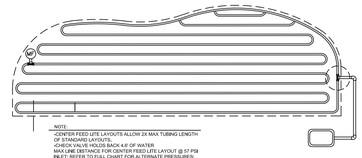
DETAIL LEGEND:
1. IRRIGATION CONTROLLER, INDOOR/OUTDOOR WALL MOUNT, PER PLAN
2. SOIL-CLIK MODULE AND PROVIDED CABLE
3. PLASTIC CONTROLLER DOOR
4. CONTROL WIRE CONDUIT TO PLANTER, SIZE AS REQUIRED
5. 120 VAC CABLE & PLUG FOR CONNECTION TO GROUNDED 120 VAC POWER RECEPTACLE
6. SOIL-CLIK WIRE CONDUIT, 3/4"[19mm] SIZE.
7. 3/4"[19mm] TEE FOR SOIL-CLIK SENSOR CABLE
8. TWO (2) WIRES TO PROBE
9. SURFACE TO MOUNT CONTROLLER PER PLAN

NOTES:
A. COMPLETE INSTALLATION IN ACCORDANCE WITH HUNTER'S SPECIFICATIONS. REFER TO PRODUCT INSTALLATION GUIDE PRIOR TO INSTALLATION.
B. CONTROLLER ACCEPTS 120 VOLTS A.C. OR 230 VOLTS A.C. (INTERNATIONAL MODEL). HARD WIRE OR PLUG INTO A GROUNDED POWER SOURCE.
C. MODEL NUMBER AND SPECIFICATIONS PER PLAN.
D. MOUNT CONTROLLER LCD SCREEN AT EYE LEVEL WHEN FEASIBLE..

IRRIGATION CONTROLLER,
WALL MOUNT WITH SOIL-CLIK
Hunter®

J

CONTROLLER

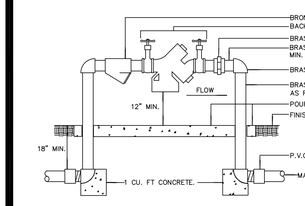


NOTE:
-CENTER FEED LITE LAYOUTS ALLOW 24 MAX TUBING LENGTH OF STANDARD LAYOUTS.
-CHECK VALVE HOLDS BACK 4.6' OF WATER
MAX LINE DISTANCE FOR CENTER FEED LITE LAYOUT @ 57 PSI INLET: REFER TO FULL CHART FOR ALTERNATE PRESSURES:

.268 12" O.C. = 1.310'	.6 @ 12" O.C. = 756'
.268 18" O.C. = 1.884'	.6 @ 18" O.C. = 1,079'
.960 12" O.C. = 960'	1.2 @ 12" O.C. = 574'
.4 @ 18" O.C. = 1.368'	.9 @ 18" O.C. = 820'

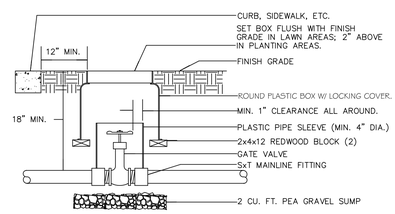
K

TECHLINE CV LITE IRREGULAR AREAS



Q

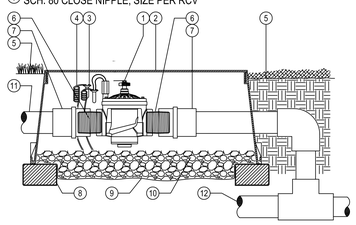
BACKFLOW PREVENTER



R

GATE VALVE

LEGEND
1. HUNTER REMOTE CONTROL VALVE (ICV) WITH FLOW CONTROL
2. IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, SIZE PER RCV
7. PVC SLIP X FPT ADAPTOR
8. BRICK SUPPORTS (4)
9. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
10. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
11. IRRIGATION LATERAL
12. MAINLINE AND FITTINGS



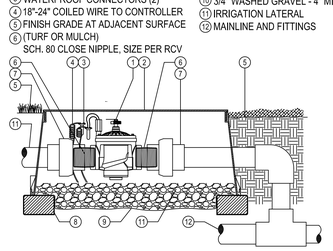
SPECIFICATION BUILDER (ICV)

	1 = MODEL	2 = INLET/OUTLET	3 = OPTIONS (FACTORY INSTALLED)	4 = OPTIONS (USER INSTALLED)
ICV	ICV-101G-* 1" GLOBE VALVE	BLANK) =SPT THREAD	BLANK = NO OPTION	BLANK = NO OPTION
	ICV-151G-* 1-1/2" GLOBE VALVE		FL = FLOW SHUTH	V = FEELANCE WATER 10 HANDLE
	ICV-201G-* 2" GLOBE VALVE		CC = SOLENOID CONNECTOR	CC = SOLENOID CONNECT COVER
			DC = DECODER SOLENOID	DC = DECODER SOLENOID
	ICV-201-* 2" GLOBE/ANGLE VALVE			44-ASY = ACCU-SYNC ADJUSTABLE PRESSURE REGULATOR
				40-SS * = ACCU-SYNC PRESSURE REGULATOR 20 = 20 PSI 30 = 30 PSI 40 = 40 PSI 50 = 50 PSI 60 = 60 PSI

M

IN-LINE VALVES

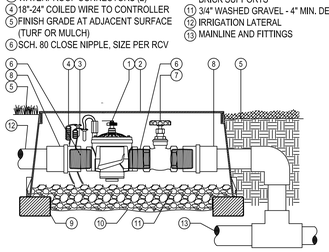
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11. IRRIGATION LATERAL
12. MAINLINE AND FITTINGS



N

IN-LINE VALVES WITH UNIONS

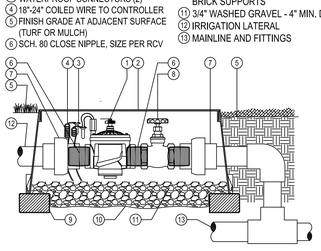
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6. SCH. 80 CLOSE NIPPLE, SIZE PER RCV
7. ISOLATION VALVE, SIZE AND TYPE PER PLAN
8. PVC SLIP X FPT ADAPTOR
9. BRICK SUPPORTS (4)
10. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
11. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
12. IRRIGATION LATERAL
13. MAINLINE AND FITTINGS



O

IN-LINE VALVES WITH ISOLATION VALVE

LEGEND
1. HUNTER REMOTE CONTROL VALVE (ICV) WITH FLOW CONTROL
2. IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, SIZE PER RCV
7. PVC SLIP (OR FPT) X FPT UNION
8. ISOLATION VALVE, SIZE AND TYPE PER PLAN
9. BRICK SUPPORTS (4)
10. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
11. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
12. IRRIGATION LATERAL
13. MAINLINE AND FITTINGS



P

IN-LINE VALVES WITH UNIONS & ISOLATION VALVE

REVISIONS:

THESE DRAWINGS ARE FOR AESTHETIC USE ONLY. ALL PERMITS, ENGINEERING, AND CONSTRUCTION SHALL BE PERFORMED BY A LICENSED ARCHITECT, ENGINEER, PLANNER OR A LICENSED CONTRACTOR AS REQUIRED BY LAW. USE OF THESE DRAWINGS FOR CONSTRUCTION PURPOSES WITHOUT PROPER LICENSING IS THE SOLE RESPONSIBILITY OF THE USER. DESIGNER IS NOT RESPONSIBLE FOR ACCURACY OF DRAWINGS IF A TOPOGRAPHIC SURVEY WAS NOT SUPPLIED WITH A LICENSED SURVEY.

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LANDSCAPE DESIGN & INSTALLATION
O. 805.520.1297 - C. 805.823.5068
AGOMEZDESIGNS.COM

CERTIFIED LANDSCAPE CONSTRUCTION PROFESSIONAL
ANGELA M. GOMEZ
CERTIFIED LANDSCAPE CONSTRUCTION PROFESSIONAL
CZ7-1011989
RENEWAL
3-31-2025
STATE OF CALIFORNIA

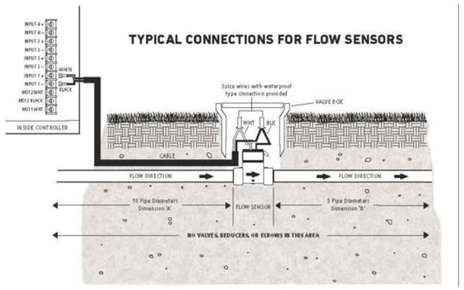
SHEET TITLE:
IRRIGATION DETAILS

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

DRAWN BY: AG
CHECKED BY: AG
DATE: 9.25.26
SCALE: AS NOTED
JOB NO.:
SHEET TITLE: **L4**

IRRIGATION DETAILS

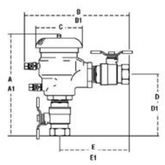
S



IRRITROL FLOW SENSOR

U

Dimensions – Weights



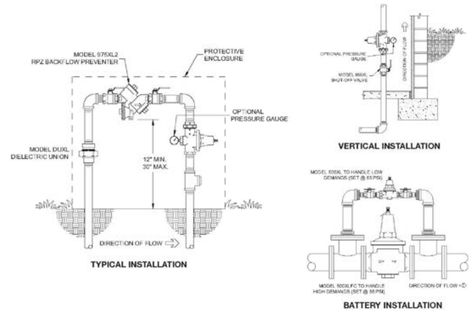
Call customer service if you need assistance with technical details.

SIZE	DIMENSIONS												WEIGHT	
	A		A1 (union)		B		B1 (union)		C		D		E		E1 (union)			
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
½	6½	159	7	178	6½	172	7⅞	197	2½	64	3¾	95	4½	114	4½	108	5	127	2.6	1.2
¾	6½	165	7⅛	187	7	178	7⅞	200	2½	64	4	102	4½	124	4⅝	114	5⅜	137	2.9	1.3
1	8¾	222	9⅝	245	9	229	9¹⁵⁄₁₆	252	4	102	5¼	133	6³⁄₁₆	157	6	152	6¹⁵⁄₁₆	176	5.9	2.7
1¼	9¼	235	10⅜	266	10	254	11	279	4	102	6¼	159	7¼	184	7	178	8	203	7.6	3.2
1½	11¼	299	12⅜	327	11½	292	12⅝	321	6½	165	7¼	184	8½	213	7¾	197	8¼	225	14.8	6.7
2	12½	318	13⅜	349	12¼	311	13⅝	343	6½	165	8	203	9¼	235	8½	216	9¾	248	16.5	7.5

Note: Weights shown do not include union end ball valves and are approximate.

FEBCO 765 REDUCED PRESSURE BACKFLOW PREVENTER

V



WILKINS 500XL PRESSURE REDUCING VALVE

REVISIONS:

THESE DRAWINGS ARE FOR ARCHITECTURE ONLY AND SHALL BE DESIGNED BY A STRUCTURAL ENGINEER. ALL STRUCTURAL DESIGN SHALL BE PREPARED BY A LICENSED ARCHITECT OR ENGINEER. ALL DIMENSIONS SHALL BE FIELD VERIFIED. DO NOT SCALE DRAWINGS. VERIFIED DIMENSIONS ARE NOT RESPONSIBILITY OF ARCHITECT OR ENGINEER. ARCHITECT OR ENGINEER IS NOT RESPONSIBLE UNLESS A COPY OF THIS DRAWING WAS NOT SUPPLIED WITH A LICENSED SEAL.

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LICENSED LANDSCAPE CONTRACTOR
ANGELA M. GOMEZ
LICENSE NUMBER
C27-1011989
RENEWAL
9-31-2026
STATE OF CALIFORNIA

SHEET TITLE:
IRRIGATION DETAILS CONT.
—

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

DRAWN BY: AG
CHECKED BY: AG
DATE: 9.25.26
SCALE: AS NOTED
JOB NO:
SHEET TITLE: L5

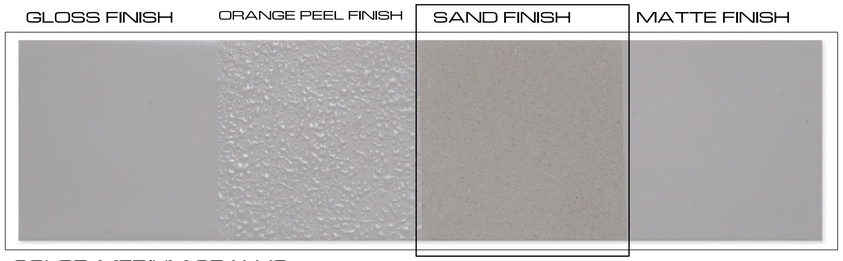
IRRIGATION DETAILS CONT.

PREFABRICATED ROOF PLANTERS



STANDARD RECTANGLE PLANTER:
RL603648 (60" W X 36" W X 42" H X 3" RIM) 150 POUNDS EMPTY

GLOSS FINISH | ORANGE PEEL FINISH | SAND FINISH | MATTE FINISH



COLOR: MEDIUM GRAY 18

Freestanding Planters

Old Town FIBERGLASS

Rectangles - Standard



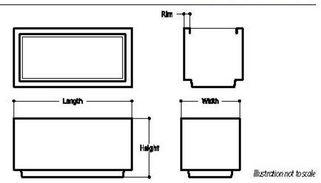


Illustration not to scale

Model No.	Length	Width	Height	Rim	Weight
RL361212	36"	12"	12"*	1-½"	28
RL361222	36"	12"	22"*	1-½"	41
RL361522	36"	15"	22"*	1-½"	45
RL361824	36"	18"	24"*	2"	51
RL362418	36"	24"	18"*	2-½"	49
RL362424	36"	24"	24"*	2-½"	60
RL362430	36"	24"	30"*	2-½"	70
RL481224	48"	12"	24"*	1-¼"	56
RL481228	48"	12"	28"*	1-¼"	62
RL481524	48"	15"	24"*	1-¼"	60
RL481542	48"	15"	42"*	1-¼"	90
RL481818	48"	18"	18"*	2"	53
RL481824	48"	18"	24"*	2"	66
RL482424	48"	24"	24"*	2-½"	73
RL482430	48"	24"	30"*	2-½"	85
RL482442	48"	24"	42"*	2-½"	96
RL482448	48"	24"	48"*	2-½"	121
RL483036	48"	30"	36"*	3"	95
RL483644	48"	36"	44"*	3"	138
RL483648	48"	36"	48"*	3"	129
RL601234	60"	12"	34"*	1-½"	85
RL601522	60"	15"	22"*	1-½"	66
RL601524	60"	15"	24"*	1-½"	70
RL601812	60"	18"	12"*	2"	50
RL601842	60"	18"	42"*	2"	110
RL602424	60"	24"	24"*	2-½"	86

*The fabrication method used in the production of these planters enables us to easily reduce the height of the planter.

All are available with a flat/flush bottom.

Note:
Please contact us if you don't see the shape or size of planter you need--we welcome custom orders. Planter irrigation and custom internal modifications available. All orders are subject to the Terms and Conditions outlined in this Price List. Specifications are available on our web site.

Old Town Fiberglass, Inc.
767 North Hariton Street
Orange, CA 92868-4015
Tel: 714.633.3732
E-mail: Info@OldTownFiberglass.com
On-line: Oldtownfiberglass.com

Freestanding Planters

Old Town FIBERGLASS

Rectangles- Standard



Model No.	Length	Width	Height	Rim	Weight
RL602430	60"	24"	30"*	2-½"	100
RL602436	60"	24"	36"*	2-½"	114
RL602442	60"	24"	42"*	2-½"	128
RL603042	60"	30"	42"*	3"	142
RL603648	60"	36"	48"*	3"	150
RL721418	72"	14"	18"*	2"	67
RL721522	72"	15"	22"*	2"	78
RL721530	72"	15"	30"*	2"	97
RL721816	72"	18"	16"*	3"	70
RL721836	72"	18"	36"*	3"	120
RL722424	72"	24"	24"*	2-¾"	99
RL722430	72"	24"	30"*	2-¾"	115
RL722436	72"	24"	36"*	2-¾"	131
RL722442	72"	24"	42"*	2-¾"	147
RL723030	72"	30"	30"*	3"	129
RL723042	72"	30"	42"*	3"	163
RL723636	72"	36"	36"*	3"	159
RL723648	72"	36"	48"*	3"	170
RL842442	84"	24"	42"*	3"	167
RL961824	96"	18"	24"*	2"	113
RL961834	96"	18"	34"*	2"	144
RL961842	96"	18"	42"*	2"	175
RL962418	96"	24"	18"*	2-½"	107
RL962424	96"	24"	24"*	2-½"	127
RL962430	96"	24"	30"*	2-½"	147
RL962436	96"	24"	36"*	2-½"	167
RL962438	96"	24"	38"*	2-½"	174
RL963036	96"	30"	36"*	2-½"	137
RL963648	96"	36"	48"*	3"	212
RL1081836	108"	18"	36"*	2"	146
RL1082436	108"	24"	36"*	2"	139
RL1082442	108"	24"	42"*	3"	182
RL1083642	108"	36"	42"*	3"	211
RL1201816	120"	18"	16"*	2"	1120
RL1201836	120"	18"	36"*	2"	162

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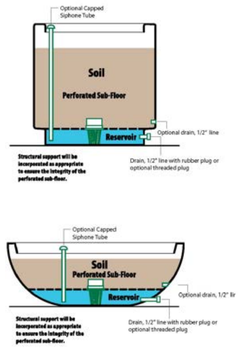
Old Town Fiberglass, Inc.
767 North Hariton Street
Orange, CA 92868-4015
Tel: 714.633.3732
E-mail: Info@OldTownFiberglass.com
On-line: Oldtownfiberglass.com

Accessories

Old Town FIBERGLASS

Perforated Sub-Floor Water Reservoir

An internal fiberglass, perforated "sub-floor" is laminated into the planter bottom 3" above the planter floor. This partition allows water to drain into the reservoir below. By watering the plant's root ball, the reservoir acts as an irrigation system. Upon request an optional drain fitting with screw cap is provided for easily controlled drainage. A hose or permanent drain line may be connected to this fitting to ensure that water will not rise above the sub-floor. A siphon tube more is optional.



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Accessories

Old Town FIBERGLASS

Planter Options

Casters
Heavy-duty swivel casters are optional for many planters--contact Old Town Fiberglass for applicability and up-charge.

Reinforcement
If a planter is to be fastened to a wall or if you wish to fasten a screen to a planter we recommend appropriate internal reinforcement. Please discuss your application with Old Town Fiberglass and we will recommend appropriate structural enhancements. Extra charges will apply and will be quoted by Old Town Fiberglass at time of order.





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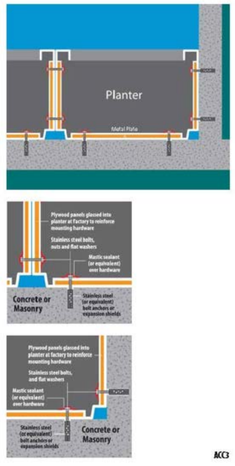
Accessories

Old Town FIBERGLASS

Attachment of planters to floors, walls or to other planters.

If a planter is to be fastened to a wall or floor or if you wish to fasten a screen to a planter, appropriate internal reinforcement is recommended. Plywood reinforcing panels laminated into the planter at the time of manufacture will ensure that the mechanical attachment is secure and will not compromise the structural integrity of the planter. See illustrations for typical plywood placement (shown in orange). Please discuss your application with Old Town Fiberglass and we will recommend appropriate structural enhancements. Extra charges will apply and will be quoted by Old Town Fiberglass at time of order.

Old Town Fiberglass recommends that corrosion-resistant (stainless steel or equivalent) bolts, over-sized flat washers and hex nuts be used with corrosion-resistant anchors or expansion shields. Select a bolt diameter appropriate for the size and weight of the planter and the number of bolts used. To prevent leaks and water migration into the plywood panels, all exposed hardware inside the planter must be completely covered and sealed after installation with a flexible, waterproof mastic or equivalent sealant.



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Planters and Planter Liners

Old Town FIBERGLASS

Specifications

1.0 General

1.1 Work Included
A. Provision of fiberglass planters and/or the provision and installation of custom fiberglass planter liners.

1.2 Related Work
A. Section 03300 Cast-in-Place concrete
B. Section 04200 Masonry
C. Section 06100 Rough Carpentry
D. Section 06200 Finish Carpentry

1.3 Submittals
A. Product Data: Manufacturer's standard catalog cut sheets.
B. Samples: As required for color/finish selection or material thickness.
C. Shop drawings for custom planter liners as necessary, showing critical sizes and dimensions for installation and integration with other work.

1.4 Delivery, Storage and Handling
A. Contractor to inspect planters and/or planter liners after delivery for signs of damage during transit.
B. Contractor to protect planters and/or planter liners and components from damage during storage on job-site.

1.5 Project Conditions
A. Contractor to provide adequate structural support for planters and planter liner units.
B. Contractor to protect planters and planter liners from damage by adjacent work.

2.0 Products

2.1 Acceptable Manufacturers
A. Fiberglass Planters and Fiberglass Planters Liners manufactured and installed by:
Old Town Fiberglass, Inc.
456 South Montgomery Way
Orange, CA 92868-4015
Tel: 714.633.3732
E-mail: Info-@OldTownFiberglass.com
On-line: OldTownFiberglass.com

2.2 Fiberglass Planter and Custom Fiberglass Liner Construction
A. Materials: All parts shall be constructed of glass fiber reinforced polyester resin.
1. Glass fibers shall be Owens Corning or equivalent, 1/2" to 3/4" long.
2. Polyester resin shall be compounded by a reputable manufacturer.
3. Glass matting shall be Owens Corning or equal with a chrome finish.
4. Gelcoat shall be Reichem Plastics, Inc. in specified color.
B. Construction: planters, planter liners or liner components shall be fabricated by the spray laminate method using suitable molds to attain the desired surface finish. The finished reinforced plastic material shall be not less than 5/32" thick and thicker in those areas requiring additional structural strength. Where ribs or stiffeners are to be fabricated to planter or liner section by spray laminating over premolded forms, the stiffeners or ribs shall be located and spray laminated into position before the section to which they are to be attached has passed the gel-state of curing and the finished joint shall be strong and durable.

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Planters and Planter Liners

Old Town FIBERGLASS

Specifications (Continued)

C. Performance characteristics and capacities: Finished planter and planter liner to meet the following minimum performance standards:

Ultimate flexural strength, psi	16,500
Ultimate tensile strength, psi	8,700
Flexural modulus, psi	620,000
Tensile modulus, psi.	630,000
Compressive strength, psi	23,000
Glass content, average	35%
Barcol hardness	80

D. Planter finish: semi-gloss, smooth matte, sand or orange peel gelcoat in 21 standard or custom colors.
Liner finish: natural fiberglass with option of on-site spraying of exposed surfaces
E. Sizes: Standard or custom fabricated sizes to match existing sizes and configurations.
F. Fire-retardant properties can be added upon request.

2.3 Planter and Planter Liner Accessories
A. Field installed drainage and irrigation systems and/or "Perforated Sub-Floor" as specified.

3.0 Execution

3.1 Preparation
A. Prior to planter liner fabrication, Contractor shall verify as-built dimensions of planter area or receptacles to ensure proper size, fit and quantity required.
B. Contractor to ensure that supporting structure is adequate for the weight of the planter and/or planter liner and the contents including: vegetation, soil, and irrigation water. Weight calculations should consider a "worst case scenario" when a drain may become plugged and the planter or liner fills with rain or irrigation water. To calculate the weight of a planter filled with water determine the total volume of the planter or liner in cubic feet and multiply by 62.5 lbs./cubic foot. Add this weight to the weight of the planter and the weight of the vegetation (at maturity) to be planted.
C. Contractor to provide holes in adjacent structure to allow for drain and irrigation supply lines as required. Old Town Fiberglass will coordinate.

3.2 Installation
A. Install planters and/or planter liners permanently or to allow for easy removal if necessary.
B. Install planters and/or liners to permit adequate drainage and irrigation.
C. Contractor to provide flashing if specified--Old Town Fiberglass will coordinate.
D. Contractor to provide plumbing connections to supply and drain lines as required.
E. Contractor to conduct comprehensive water test to ensure the integrity of the planter and/or liner and all plumbing fittings and lines.

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On-line: Oldtownfiberglass.com

REVISIONS:

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LICENSED LANDSCAPE CONTRACTOR
ANGELA M. GOMEZ
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C27-1011989
RENEWAL
5-31-2025
STATE OF CALIFORNIA

SHEET TITLE:
PREFABRICATED ROOF PLANTERS

PROJECT ADDRESS:
HVN DEVELOPMENT
5003-5007 KESTER AVENUE
LOS ANGELES, CA. 91403

DRAWN BY: AG
CHECKED BY: AG
DATE: 9.25.26
SCALE: AS NOTED
JOB NO.:
SHEET TITLE: L6

PREFABRICATED ROOF PLANTERS

12508-12512 PACIFIC AVENUE

PERMEABLE PAVER DETAILS

Angelus PAVING STONES AngelusPavingstones.com — SOUTHERN CALIFORNIA OUTDOOR LIVING PAVERS & WALLING

Permeable Aqualina

The new permeable Aqualina paver offers the same contemporary lines of the standard Aqualina paver, with the added benefit of permeability. This paver is 100mm, traffic rated and can be machine laid for maximum installation efficiency. The Permeable Aqualina is perfect for parking lots and traffic areas where reduced stormwater runoff is desired. The 3/8" gap in between the stones allow excellent permeability while meeting ADA requirements.

Stocked Colors:
Dark gray-Pewter-Charcoal



Shown: Dark Gray- Pewter- Charcoal



Permeable Aqualina
6 Stone Package
3.38 x 9.45"
3.38" x 11"
3.38" x 12.6"
3.38" x 14.18"
4.5" x 9.45"
4.5" x 11"
4.5" x 12.6"
4.5" x 14.18"

Permeable Aqualina	100mm
Size (in inches)	(see left)
Sq Ft per Stone	varies
Stones per Sq Ft	varies
Sq Ft per Pallet	81
Stones per Pallet	224
Weight per Stone	varies
Weight per Pallet	3265 lbs

For custom color options contact your Angelus Sales Representative at:
(951) 328-9115 or
(805) 485-1137

For more information on Related Pavers & Walls Products visit: AngelusPavingstones.com

NOTE: ALWAYS VIEW PRODUCT SAMPLES PRIOR TO INSTALLATION The color and texture of Angelus products are not specific to any product or groups of products. Variation in color, shades of color, texture, and aggregate exposure is inherent in all concrete products and exact matches cannot be guaranteed. Not all products are stocked in all colors. Charts with non-product related color availability are shown from product pages. Colors and textures represented in print and online are as close as possible to the actual product. Photographic techniques, printing techniques and viewing conditions – as well as actual viewing conditions – can alter perception of color.

Angelus Permeable Interlocking Concrete Pavers (PICP) Fact Sheet

Angelus SOUTHERN CALIFORNIA OUTDOOR LIVING PAVERS & WALLS



PICP Stormwater Benefits

- Infiltrates, filters and decreases stormwater runoff rate and reduces Total Maximum Daily Loads (TMDLs)
- LEED® points eligible for Sustainable Sites, Rainwater Management, and for Innovative Design; Contributors to Green Globe points
- Meets U.S. Environmental Protection Agency (EPA) storm performance criteria as a structural best management practice (BMP) while providing parking, road and pedestrian surfaces
- Helps meet local, state and provincial stormwater drainage design criteria and provides compliance with the U.S. National Pollutant Discharge Elimination System (NPDES) regulations
- Provides 100% pervious surface by runoff passing through small, aggregate-filled openings between solid high-strength durable concrete pavers
- Reduces or eliminates storm water detention and retention ponds, storm sewers, drainage infrastructures and related costs
- May be used on sloped sites with proper design
- The modular concrete units allow for project phasing; open-graded base and subbase materials are typically available locally
- Reduces contained sewer overflows (CSO) and supports green infrastructure programs
- May be designed with underground storm water storage systems, over many slower-draining clay soils and in cold climates
- Processes and reduces pollutants from vehicular oil drippings



ATTRACTIVE ■ DURABLE ■ ENVIRONMENTALLY COMPLIANT

APPLICATION OPPORTUNITIES

URBAN: Office plazas, sidewalk replacement, street tree planting areas, on-street parking, parking lots, parks and outdoor seating areas
SUBURBAN: Parking lots, parks, driveways, parking bays on roadways, subdivision roads and sidewalks
REDEVELOPMENT SITES: Parking areas, plazas and public spaces, sidewalks and greenfields

POLLUTANT REMOVAL EFFICIENCIES

(Compared to impervious runoff)
Zinc: 62-88%
Copper: 66-89%
Total Suspended Solids: 60-90%
Total Phosphorous: 65%

Angelus products available with recycled content

Permeable Interlocking Concrete Pavement A Low Impact Development Tool

PICP supports LID Principles

1. Conserve vital ecological and natural resources: trees, streams, wetlands and drainage courses
2. Minimize hydrologic impacts by reducing imperviousness, conserving natural drainage courses, reducing clearing, grading and pipes
3. Maintain pre-development time of concentration for runoff by routing flows to maintain travel times and discharge control
4. Provide runoff storage and infiltration uniformly throughout the landscape with small, on-site decentralized infiltration, detention and retention practices such as permeable pavement, bioretention, rain gardens open swales and roof gardens
5. Educate the public and property owners on runoff and pollution prevention measures and benefits



Machine Installed



Hand Installed



Permeable Interlocking Concrete Pavement Meets Low Impact Development Goals

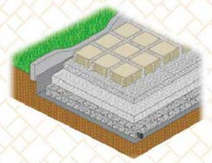
- Conserves on-site space: roads, parking, storm water infiltration and retention all combined into the same space creating more green space or building opportunities
- Preserves wooded area that would otherwise be cleared for storm water detention or retention ponds
- Increases site infiltration that helps maintain pre-development runoff volumes, peak flows and time of concentration
- Promotes tree survival and growth
- Contributes to urban heat island reduction through evaporation and reflective, light colored pavers
- Highly visible, cost effective exemplary demonstration of cornerstone LID technique for public and private development

Design Software Available

Software from ICPI for permeable pavement called Permeable Design Pro incorporates research from a range of university research studies.

Contact Angelus for more information

Typical PICP System



- Pavers conform to ASTM C936. Installation by hand or machine
- Open-graded crushed stone recommended for all aggregates
- Edge restraint–concrete curbs
- Joint filling stone gradation: ASTM No. 8, 89, or 9
- 100% permeable surface
- Bedding gradation: ASTM No. 8
- Base gradation: ASTM No. 57
- Sub base gradation: ASTM No. 2, 3 or 4
- Optional–geotextile: consult manufacturers for selection
- Under Drain as required
- Soil subgrade: classified per ASTM D3487; tested for permeability per ASTM D3385













Curve Number & Rational Method Runoff Coefficients

NRCS Curve Numbers (CN) and Rational Method runoff coefficients ('C' value) used depend on the soil infiltration rate, base storage and design storm. In every case, PICP yields significantly lower CN and C values than impervious pavement per the table below.

Land Cover	Infiltration Rates in./hr. (mm/hr)	Curve Number CN	Runoff Co-efficient C
Permeable Interlocking Concrete Pavement	Up to 50 in./hr (1270 mm/hr) with maximum 3/4 in./hr (75-100 mm/hr) with no maintenance	45–60	0.00-0.30
Impervious Asphalt or Concrete Pavement	0 in./hr (0 mm/hr)	95–98	0.90-0.95

Rainwater Quantity and Quality Benefits



Volume Reduction

Research has demonstrated that the PICP can reduce runoff as much as 100% from a 3 in. (75 mm) rain event with sandy soil and a minimum of 12 in. (300 mm) thick open-graded aggregate base.

Given regional variations in annual rainstorms and PICP base storage capacities, PICP can reduce annual outflows between 30% and 80%. Well-maintained PICP can reduce flow rates by 20% to 90% from intense rain events and up to 100% for many storms. This yields corresponding reduction in runoff pollution.

Peak Flow Reduction and Delay

PICP can reduce peak flow by as much as 85%, producing a hydrograph nearer to pre-development conditions. Peak flow is generally proportional to rainfall intensity. Permeable pavers delay the timing of peak flow runoff from several hours to several days.

Water Quality Improvement

PICP treats storm water by slowing runoff velocities to allow for sedimentation and filtering by aggregates in the surface openings and base. Oils adhere to small soil particles and aggregates and then are digested by bacteria.



Additional Benefits

- *ADA Compliant*
- *Concrete pavers available in various shapes and colors; colored pavers mark lanes and parking spaces*
- *Simplifies surface and subsurface repairs by re-installing the same paving units; no unsightly patches or weakened pavement cuts*

FAQs

Can PICP be used on clay soil? Yes. Even in clay soils, PICP reduces runoff and helps to capture "first flush" runoff and reduce pollution.

Can PICP be used to replace conventional storm water management tools such as detention basins? Yes. In both colder and warmer climates, PICP has been used to reduce or eliminate the need for conventional storm water pipe infrastructure, detention basins and drop inlets.

Is maintaining PICP difficult? No. PICP can be maintained through street sweeping and vacuuming based on periodic inspection.

Can PICP be used in cold climates? Yes. PICP has been very successful in many Canadian and northern United States applications. It remains stable through freezing and thawing cycles.

References

Ferguson, B. K. Porous Pavements. Boca Raton, FL: CRC Press 2005

Smith, David R. Permeable Interlocking Concrete Pavements: Selection • Design • Construction • Maintenance, Herndon, VA: ICPI 4th ed., 2011. www.icpi.org

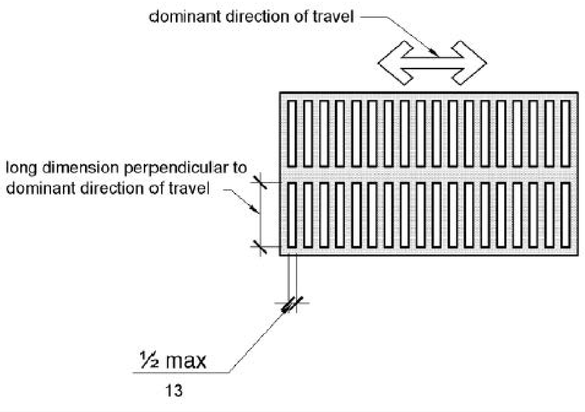
Angelus Block Co., Inc.
www. AngelusPavingStones.com • Info@angelspavingstones.com
Rialto (951) 328-9115 • Oxnard (805) 485-1137

AQUALINA

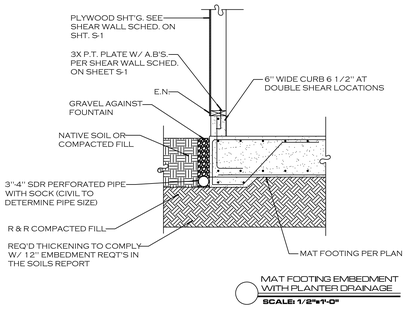
Blended Colors (swatches shown in Aqualina)



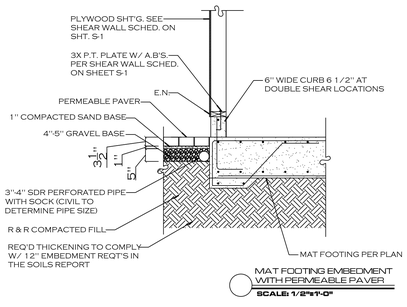
DARK GRAY - PEWTER - CHARCOAL



11B-302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than ½ inch (12.7 mm) diameter except as allowed in Sections 11B-407.4.3, 11B-409.4.3, 11B-410.4, 11B-810.5.3 and 11B-810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.



MAT FOOTING EMBEDMENT WITH PLANTER DRAINAGE
SCALE: 1/2"=1'-0"



MAT FOOTING EMBEDMENT WITH PERMEABLE PAVER
SCALE: 1/2"=1'-0"

11B-303 Changes in level

***11B*-303.1 General.** Where changes in level are permitted in floor or ground surfaces, they shall comply with *Section 11B-303*.

Exceptions:

1. Animal containment areas shall not be required to comply with *Section 11B*-303.
2. Areas of sport activity shall not be required to comply with *Section 11B*-303.

***11B*-303.2 Vertical.** Changes in level of ¼ inch (6.4 mm) high maximum shall be permitted to be vertical *and without edge treatment.*



FIGURE *11B*-303.2
VERTICAL CHANGE IN LEVEL

***11B*-303.3 Beveled.** Changes in level between ¼ inch (6.4 mm) high minimum and ½ inch (*12.7* mm) high maximum shall be beveled with a slope not steeper than 1:2.

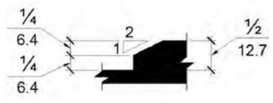
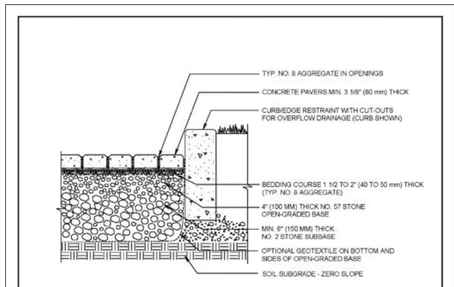
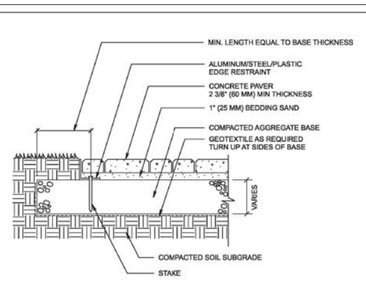


FIGURE *11B*-303.3
BEVELED CHANGE IN LEVEL



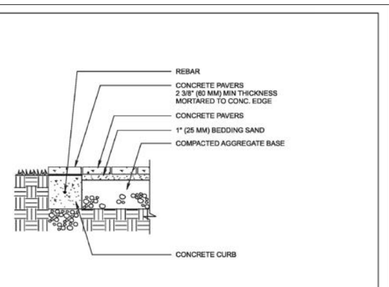
NOTES:
1. 2 3/8" (60 MM) THICK PAVERS MAY BE USED IN PEDESTRIAN APPLICATIONS.
2. NO. 2 STONE SUBBASE THICKNESS VARIES WITH DESIGN. CONSULT ICPI PERMEABLE INTERLOCKING CONCRETE PAVEMENT MANUAL.

PERMEABLE PAVEMENT WITH FULL EXFILTRATION TO SOIL SUBGRADE
DRAWING NO. ICPI-68
SCALE NO SCALE

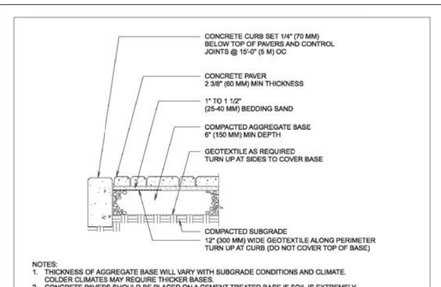


NOTE:
THICKNESS OF AGGREGATE BASE WILL VARY WITH SUBGRADE CONDITIONS AND CLIMATE. COLDER CLIMATES MAY REQUIRE THICKER BASES.

PATIO/WALK/RESIDENTIAL DRIVEWAY W/ ALUMINUM / STEEL / PLASTIC EDGE
DRAWING NO. ICPI-53
SCALE F.S.

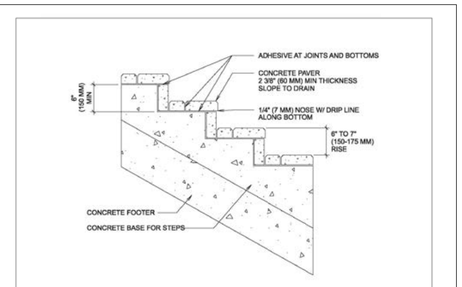


RESIDENTIAL DRIVEWAY WITH SUBMERGED CONCRETE CURB
DRAWING NO. ICPI-49
SCALE F.S.



NOTES:
1. THICKNESS OF AGGREGATE BASE WILL VARY WITH SUBGRADE CONDITIONS AND CLIMATE. COLDER CLIMATES MAY REQUIRE THICKER BASES.
2. CONCRETE PAVERS SHOULD BE PLACED ON A CEMENT TREATED BASE IF SOIL IS EXTREMELY WEAK OR CONSTANTLY SATURATED. PAVERS CAN BE OVERLAID OR INLAID ON EXISTING ASPHALT OR CONCRETE DRIVEWAYS.
3. CONSULT ICPI TECH SPEC 2 FOR GUIDELINES ON SPECIFICATIONS FOR BASE MATERIALS, SUBGRADE SOIL AND BASE COMPACTION.
4. PLASTIC, STEEL, ALUMINUM OR PRECAST CONCRETE, EDGING MAY BE USED.

RESIDENTIAL DRIVEWAY WITH CONCRETE EDGES
DRAWING NO. ICPI-09
SCALE F.S.



NOTES:
1. USE OF MORTAR IS NOT RECOMMENDED EXCEPT IN NON-FREEZE-THAW AREAS.
2. SAW DRIP LINES INTO BOTTOMS OF ALL STEP NOSES.

STEPS WITH CONCRETE PAVERS
DRAWING NO. ICPI-19
SCALE F.S.

REVISIONS:

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LICENSED LANDSCAPE CONTRACTOR ANGELA M. GOMEZ LANDSCAPE CONTRACTOR C27-1011989 RENEWAL 9-31-2009 STATE OF CALIFORNIA

SHEET TITLE:
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DATE 9.25.26
SCALE AS NOTED
JOB NO:
SHEET TITLE
L7

PERMEABLE PAVER DETAILS

PAVER DETAILS CONT.

Tech Spec Guide

icpi Interlocking Concrete Pavement Institute®

Your requested ICPI Tech Spec follows this page.

Design and Installation Professionals frequently turn to interlocking concrete pavements and permeable interlocking concrete pavements because they offer lower initial and life-cycle costs and provide environmentally sustainable solutions.

ICPI provides resources for ICP and PICP design, construction, and maintenance. These include: Tech Specs, Guide Specs, Detail Drawings, Construction Tolerance Guides, Fact Sheets, Design Manuals and design software. ICPI also offers several relevant continuing education courses at icpi.org and asce4ly.com

Find the right guide for your location.

Many ICPI members subscribe by state or province to this Tech Spec service to support the development and revision of these technical documents. The ICPI website Technical Center offers the opportunity to select Tech Specs by state or province.

This ICPI Tech Spec is provided courtesy of Angelus Paving Stones

https://icpi.org/angelusblock

ICPI Tech Spec Library

- Tech Spec 1: Glossary of Terms for Segmental Concrete Pavement
- Tech Spec 2: Construction of Interlocking Concrete Pavements
- Tech Spec 3: Edge Restraints for Interlocking Concrete Pavements
- Tech Spec 4: Structural Design of Interlocking Concrete Pavement for Roads and Parking Lots
- Tech Spec 5: Cleaning, Sealing and Joint Sand Stabilization of Interlocking Concrete Pavement
- Tech Spec 6: Reinstatement of Interlocking Concrete Pavements
- Tech Spec 7: Repair of Utility Cuts in Interlocking Concrete Pavements
- Tech Spec 8: Concrete Grid Pavements
- Tech Spec 9: Guide Specification for the Construction of Interlocking Concrete Pavement
- Tech Spec 10: Application Guide for Interlocking Concrete Pavements
- Tech Spec 11: Mechanical Installation of Interlocking Concrete Pavements
- Tech Spec 12: Snow Melting Systems for Interlocking Concrete Pavements
- Tech Spec 13: Slip and Skid Resistance of Interlocking Concrete Pavements
- Tech Spec 14: Segmental Concrete Paving Units for Roof Decks
- Tech Spec 15: A Guide for the Specification of Mechanically Installed Interlocking Concrete Pavers
- Tech Spec 16: Achieving LEED Credits with Segmental Concrete Pavement
- Tech Spec 17: Bedding Sand Selection for Interlocking Concrete Pavements in Vehicular Applications
- Tech Spec 18: Construction of Permeable Interlocking Concrete Pavement Systems
- Tech Spec 19: Design, Construction and Maintenance of Interlocking Concrete Pavement Crosswalks
- Tech Spec 20: Construction of Bituminous-Sand Set Interlocking Concrete Pavement
- Tech Spec 21: Capping and Compression Strength Testing Procedures for Concrete Pavers
- Tech Spec 22: Geosynthetics for Segmental Concrete Pavements
- Tech Spec 23: Maintenance Guide for Permeable Interlocking Concrete Pavements
- Tech Spec 25: Construction Guidelines for Segmental Concrete Paving Slabs and Planks in Non-Vehicular Residential Applications

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Tech Spec 18

icpi Interlocking Concrete Pavement Institute®

Construction of Permeable Interlocking Concrete Pavement Systems

INTRODUCTION

Permeable interlocking concrete pavement (PICP) is recognized by federal and state stormwater and transportation agencies as a Best Management Practice (BMP) and Low Impact Development (LID) tool to reduce runoff and water pollution. In addition, PICP offers unique design opportunities for add-existing combined sewer overflows with green alleys and streets, as well as save in parking lot and pedestrian surfaces. Traditional stormwater management solutions focus on collecting, concentrating and centralizing the disposal of stormwater. As a key BMP and LID tool, PICP helps decentralize, de-centralize and move widely distributive runoff through infiltration, detention, filtering and treatment.

The Interlocking Concrete Pavement Institute (ICPI) provides a comprehensive, 56-page manual entitled *Permeable Interlocking Concrete Pavements*, which covers design, specifications, construction and maintenance. This manual is available on www.icpi.org and provides extensive information from academic research and practical field experience. This Tech Spec bulletin provides a summary of PICP construction

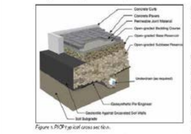


Figure 1. PICP cross-section.

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Figure 2. Various types of paving units used in PICP.

Open-graded subbase reservoir—The stone sizes are larger than the base, primarily 3 in. down to 2 in. (75 mm down to 50 mm), typically ASTM No. 2, 3 or 4 stone. Like the base layer, water is stored in the spaces among the stones. The subbase layer thickness depends on water storage requirements and traffic loads. A subbase layer may not be required in pedestrian or residential driveway applications. In such instances, the base layer thickness is increased to provide water storage and support.

Underdrain (as required)—Where PICP is installed over low-infiltration soils, underdrains facilitate water removal from the base and subbase. The underdrains are perforated pipes that direct to a swale or streams, or connect to an outlet structure. Another option is with underdrains connect to plastic or concrete vaults or plastic crates. These can store significant amounts of runoff.

Geotextile (design option per engineer)—This functions primarily as a separation material between the subbase and subgrade by preventing the migration of soil into the aggregate subbase or base. Geotextiles are required along the sides of most PICP applications.

Subgrade Soil—This is the layer of soil immediately beneath the aggregate base or subbase. The infiltration rate of the saturated subgrade determines how much water can drain from the aggregate into the underlying soils. The subgrade soil is generally not compacted as this can substantially reduce soil infiltration. However, some poorly draining clay soils are often compacted to help ensure structural stability especially when saturated. Since compaction reduces infiltration, storage in the strorm water must be considered in the hydrologic design via the base/subbase thickness and use of perforated pipe underdrains.

- Lower life-cycle costs than conventional pavements
- Capable of integration with horizontal ground source heat pumps to reduce building heating and cooling energy costs
- Enables landowner credits on stormwater utility fees
- Does not require sealing which lowers maintenance costs

Paver surface units

- 50-year design life based on proven field performance
- Most styles are ADA compliant
- Colored units can make parking stalls and driving lanes; light colors can reduce night time lighting needs
- Eliminates puddles on parking lots, walkways, entrances, etc.
- Capable of plowing with municipal snow removal equipment
- Durable, high-strength, low-absorption concrete units resist freeze-thaw, heaving and degradation from deicing materials
- Reduced ice and deicing material use/costs due to rapid ice melt and surface infiltration
- Reduced liability from slipping on ice due to rapid ice melt and surface infiltration
- Provides traffic calming
- Paver surface can be coated with photocatalytic materials to reduce air pollution
- Units with high SRI surfaces help reduce micro-climatic temperatures and contributes to urban heat island reduction
- Units manufactured with recycled materials and cement replacements can reduce greenhouse gas emissions

Simpler Maintenance & Repairs

- Paving units and base material can be removed and reinstalled
- Utility cuts into the pavement do not cause damage to the surface that can in turn decrease pavement life
- Capable of winter repairs
- No unsightly patches from utility cuts
- Surface cleaning with standard vacuum equipment
- Clogged surfaces may be restored with vacuum equipment to reestablish high infiltration rates

SYSTEM BASICS

PICP is recommended in the following areas:

- Residential patios, walks and driveways
- Walks, parking lots, main and service driveways around commercial, institutional, recreational and cultural buildings
- Low speed (<40 mph or 65 kph) residential roads
- Non-commercial boat landings and marinas.
- Industrial sites that do not receive hazardous materials, i.e., where there is no risk to groundwater or soils from spills.



Figure 3. A large PICP parking lot manages an overall site slope of 13% using terraced areas.

- Storage areas for shipping containers with non-hazardous contents.

When evaluating a site, the following characteristics should be considered:

- Runoff from contributing at-grade impervious areas does not exceed five times the area of the PICP receiving the runoff.
- The estimated depth from the bottom of the pavement base, for full or partial infiltration systems, to the seasonal high level of the water table is greater than 2 feet (0.61 m). Greater depths may be required to obtain additional filtration of pollutants through the soil.
- PICP is down slope from building foundations and the foundations have piped drainage at the footers. Waterproofing such as an impermeable liner is recommended on basement walls against PICP.
- The slope of the permeable pavement surface is at least 1% and no greater than 12%. Figure 3 illustrates a large unique PICP parking lot near Atlanta, Georgia with a slope of 12% across the site. PICP surface slopes are typically 5% or less. There should be a minimum 1% surface slope to enable removal of water in the extreme case of the entire system filling with water such that it emerges from the surface.
- Land surrounding and draining into the PICP does not exceed 20% slope.
- At least 100 ft (30 m) should be maintained between PICP and water supply wells. (Local jurisdictions may provide additional guidance or regulations.)
- Sites where the owner can meet maintenance requirements.
- Sites where runoff draining onto PICP surface is not from soil erosion, exposed topsoil or mulch.
- Sites where there will not be an increase in impervious cover draining into the PICP (unless the pavement is designed to infiltrate and store runoff from future increases in impervious cover due to future development).
- Sites where space constraints, high land prices, treesprserve space conservation, land used by detention facilities, and/ or runoff fees additional development make PICP a cost-effective solution.
- Sites outside permafrost regions

SITES TO AVOID

PICP is not recommended on any site classified as a stormwater hotspot, i.e., if there is any risk that storm water can infiltrate and contaminate groundwater. These land uses and activities may include the following:

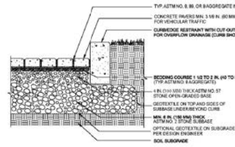


Figure 4. Partial infiltration cross section allows storage and infiltration. Overflows are to swales, bioretention areas or storm sewer inlets.



Figure 5. Elmhurst College, Elmhurst, Illinois parking lots uses full infiltration through the soil subgrade with overflows directed through curb inlets into bioretention areas and overflow drains to manage extreme rain events.

- Vehicle salvage yards, recycling facilities, fueling stations, service and maintenance facilities, equipment and cleaning facilities
- Fleet storage areas (bus, truck, etc.)
- Commercial marina service and maintenance areas
- Outdoor liquid container storage areas
- Outdoor unloading facilities in industrial areas
- Public works material/equipment storage areas
- Industrial facilities that generate or store hazardous materials
- Storage areas for commercial shipping containers with contents that could damage groundwater and soil
- Other land uses and activities not suitable for infiltration as designated by an appropriate review authority

BASIC PICP SYSTEMS

PICP can be built with full, partial or no infiltration of the open-graded stone base into the soil subgrade.

Full Infiltration—Full infiltration directs water through the base/subbase and infiltrates into the soil subgrade. This is the most common application over high infiltration soils such as gravels and sands. Overflows are managed via perimeter drains to swales, bioretention areas, or storm sewer inlets. Figure 4 illustrates schematic cross-section of a full infiltration PICP. Overflow drainage can exit from the surface but is better managed via large drainpipes from within the base. Figure 5 illustrates an example of a building PICP overflows via curb inlets to bioswales.

Partial Infiltration—Partial infiltration relies on drainage of the base/subbase into the subgrade soil and drainage pipes to direct excess water to a stormsewer, daylight or a stream. This controls the amount of time the subgrade is saturated. This design is common to lower infiltration rate soils such as silts and clays. Perforated drain pipes are typically placed in trenches in the subbase and covered with ASTM No. 57 stone to protect them while the ASTM No. 2 stone is compacted. Figure 6 illustrates a schematic cross-section of partial infiltration design. Figure 7 shows a full depth concrete grade beam being used to separate the open-graded base from the adjacent pavement structure.

Outflow from the system is controlled by the outflow structure which retains a specific amount of water which is calculated to infiltrate into the subgrade in the specified amount of time. Water is typically detained for 24 to 48 hours. Soils with infiltration rates as low as 0.01 in./hr (2 x 10^-7 cm/sec) can infiltrate about 0.5 in. (13 mm) over 48 hours. Stormwater in excess of the infiltration volume will flow over the weir and out of the system. The weir is designed to

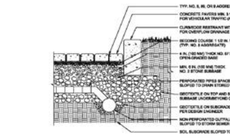


Figure 6. Partial infiltration through the soil subgrade. Perforated pipes can be raised above the soil subgrade to drain water from higher depth reservoirs. Smaller storms which often contain higher pollutant concentrations can be captured below the perforated pipes, stored and infiltrated.



Figure 7. Typical cast-in-place concrete curb divides PICP from an adjacent impervious pavement.

control the discharge volume and rate. Figure 8 shows the outflow control structure.

No Infiltration—This is required when the soil has very low permeability or low strength, or there are other site limitations. The assembly is a detention pond with an outlet. An impermeable geomembrane may be used if the pollutant loads are expected to exceed the capacity of the base/subbase and soil subgrade to treat them. The geomembrane can be:

- Underlying geology and soils maps
- Identifying the NRCS hydrologic soil groups (A, B, C, D)
- Verifying history of fill soil, previous disturbances or compaction
- Review of topographical maps and identifying drainage patterns
- Identifying streams, wetlands, wells and structures
- Confirming absence of stormwater hotspots
- Identifying current and future land uses draining onto the site

PICP design involves structural and hydrological analyses. PICP design merges these two previously disconnected spheres of civil engineering and design. The base/subbase reservoir is determined for hydrological and structural (vehicular traffic loading) needs, and the thicker section is selected for drainage, specifications and construction.

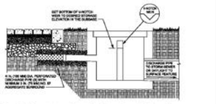


Figure 8. Outflow structure used to retain infiltration volume in subbase, while allowing excess water volume to be released.



Figure 9. PICP design flow chart. See accompanying text that explains each step.



Figure 10. This temporary permeable edging around base soil replaces stitching because it restrains sediment while allowing water to pass.



Figure 11. Large PICP projects may require the washing equipment for trucks to keep mud from contaminating PICP aggregates.

Thicken this layer at transitions to match elevations of adjacent pavement surfaces subject to vehicular traffic. A similar more costly approach can be taken using a temporary asphalt wearing course rather than the additional base aggregate and geotextile.

When construction traffic has crossed and adjacent soils are vegetated or stabilized with erosion control mats, remove geotextile and soiled aggregate (or the asphalt) and install the remainder of the PICP system per the project specifications.

4. Establish temporary road or roads for site access that do not allow construction vehicle traffic to ride over and contaminate the PICP base materials and/ or surface with mud and sediment. Other trades on the jobsite need to be informed on using temporary road(s) and staying off the PICP. The temporary road is removed upon completion of construction and opening of the PICP surface to traffic.

Other practices such as keeping muddy construction equipment away from the PICP, installing silt fences, staged excavation, and temporary drainage swales that divert runoff away from the area will make the difference between a pavement that infiltrates well or poorly. A simple technology that may be more effective than silt fences can help block sediment from eroding from bare soil. This consists of plastic temporary curbs with fabric in them to block the movement sediment from bare soil. Figure 10 illustrates this device.

Another more involved practice is washing station for truck tires. Larger PICP projects may require this level of cleanliness as trucks enter a muddy PICP site. Figure 11 illustrates truck washing equipment which naturally requires disposal of dewatered sediment.

Excavation of or an existing pavement—In some cases, the excavated area for base and PICP can be used as a sediment trap if there is time between the excavation and aggregate base installation. This is done by excavating within

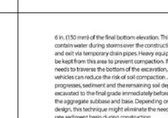


Figure 12. Observation well into PICP base and subbase with top accessible directly from the surface to observe drain-down rate.

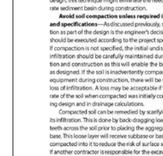


Figure 13. Observation well with PVC pipe and bubbling to measure flow rates.

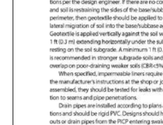


Figure 14. Observation well installed outside of pavement area.



Figure 15. A 10 ton (9 t) vibratory roller compactor settles ASTM No. 8 stone subbase for a large shopping center parking lot.



Figure 16. Perimeter berms inside with dense-graded base are in place prior to placing open-graded aggregate in the driveway.

remove water before it can collect next to the base supporting the impervious pavement. Curbs installed against existing impervious pavement and base may cause erosion and weakening of the base from excavation due to installing the PICP. Eroded spaces can be filled with concrete to support the asphalt or concrete surface and base next to the curb.

For pedestrian areas and residential driveways, an edge restraint option is using compacted, dense-graded berms around PICP base perimeter with plastic or metal edging fastened to their surface. The dense-graded base is a foundation for metal or plastic edging secured with steel spikes. These edge restraints are installed on the dense-graded berms in a manner identical to those on interlocking concrete pavement driveways. Figure 16 shows a typical cross-section of this construction and Figure 17 illustrates the berms in place prior to filling the driveway with open-graded aggregate. Figure 18 shows compaction of both types of bases. Figure 19 shows the pavers in place against a plastic edge



Figure 17. Typical cross section detail using a dense-graded base berm as a foundation for anchoring metal or plastic edge restraints.

Figure 18. Compacting the berms along the perimeter and the PICP base

restrained spiked or nailed into the dense-graded base. The edge restraint contains some of the bedding layer such that at least the bottom half of the pavers is also contained by the edging.

Place and compact the aggregate base—The ASTM No. 57 base layer is spread and compacted as one 4 in. (100 mm) lift. Like the subbase aggregate, the initial passes with the roller can be with vibration to consolidate the base material as shown in Figure 21. A 13,500 lbf (60 kN) plate compactor (Figure 22) also can be used to compact the No. 57 base layer. Surface tolerance of the compacted No. 57 stone shall be +/- ½ in. (19 mm) over a 16 ft. (3 m) straightedge.

Equipment drivers should avoid rapid acceleration, hard braking, or sharp turning when driving on the compacted No. 2 subbase and on the No. 57 base. Tracked equipment is recommended. If the subbase or base surfaces are disturbed, they should be re-leveled and re-compacted.

A test section of the subbase and base should be constructed initially for compaction monitoring. The section will indicate settlement of the pavement section, and be used

Figure 19. Edge restraint is spiked into the dense-graded base berms so it can hold the pavers in place during compaction and service.

Figure 20. A 5 ton (4.5 t) 44 vibratory plate compactor is used on this ASTM No. 57 stone base.

Figure 21. A 13,500 lbf (60 kN) plate compactor for Figure 22) also can be used to compact the No. 57 base layer.

Figure 22. Testing base stiffness using light-weight deflectometer.

three drops and calculates the average deflection. As the force is instantaneously applied, the plate presses into the soil or aggregate. The amount of plate movement or deflection is directly related to the stiffness of the compacted soils or base. This easy-to-use test method does not require soil testing in the lab or operator certification. The machine also calculates a resilient modulus. Each test (all six drops) takes about 2 minutes, so a number of tests across a site can be conducted quickly.

(WD testing is a relatively new technology from Germany gaining broad acceptance by state and provincial DOTs for testing the stiffness of compacted soils, as well as dense-graded and open-graded aggregates.

If a light-weight deflectometer is not available, a nuclear density gauge running in backscatter mode can be used to test the density of the No. 57 base layer (Figure 24). The guide construction specification includes guidance on this test method. The purpose of this test method is to attain consistent density and is not as consistent as the LWD test method. Besides nuclear density gauges, (nonnuclear) stiffness gauges may also be used to assess compacted base density.

Place and screed the bedding layer—When subbase and base lifts are compacted, the surface should then be topped with a 2 in. (50 mm) thick layer of No. 8 crushed stone bedding layer. This layer is screeded and leveled over the No. 57 base. Metal rails are placed on the compacted No. 57 layer and are used to guide screeding elevations. Various sizes of screeding equipment can be used ranging from hand tools, bucket screeds powered manually or by machine, or a modified asphalt spreader that uses a laser guidance system to maintain elevations. Figure 25 and 26 illustrate examples of screeding equipment. A moist bedding layer facilitates screeding.

The surface tolerance of the screeded No. 8 bedding material should be ± ½ in. over 10 ft. (± 10 mm over 3 m). The concrete pavers should be placed immediately after the No. 8 stone bedding is placed and screeded. Construction equipment and foot traffic should be kept off the screeded layer.

Install the pavers manually or with mechanical installation equipment—After screeding the bedding material, the pavers are placed on this layer. Paver installation can be by hand or with mechanical equipment. Spacing between units is ⅛ in. (12 mm) or less in order to comply with ADA requirements. Mechanized installation may be a cost-efficient means to install the units and reduces installation time. Figure 27 and 28 shows mechanized equipment placing permeable paver layers manufactured for placement in their final laying pattern. Mechanical installation requires careful planning including selection available paver layer patterns from local manufacturers and well-orchestrated material flow logistics in order to gain efficiencies. For further information on mechanical installation, consult *ICPI Tech Spec 11—Mechanical Installation of Interlocking Concrete Pavements* and *ICPI Tech Spec 15—A Guide for the Construction of Mechanically Installed Interlocking Concrete Pavements.*



Figure 24. Manually screeding the No. 8 stone setting bed.



Figure 25. A screed is pulled by equipment can be more efficient and productive.

The following items should be discussed and determined:

1. Soil panel (mock-up) locations and dimensions.
2. Methods for keeping all materials free from sediment during storage, placement, and on compacted areas.
3. Methods for checking slopes, surface tolerances, and elevations.
4. Concrete paving unit delivery method(s), timing, storage location(s) on the site, staging, paving (start point(s) and direction(s).
5. Anticipated daily paving production and actual record.
6. Diagram of paving/laying/layer pattern and joining layer as indicated on the drawings.
7. Monitoring/verifying joint dimensional tolerances in the manufacturing facility and on-site if the concrete paving units are internationally installed.
8. Testing intervals for sieve analyses of aggregates and for the concrete paving units.
9. Method(s) for tagging and numbering concrete unit pavers/pavings as delivered to the site.
10. Testing lab location, test methods, report delivery, contents and timing.
11. Engineer inspection intervals and procedures for correcting work that does not conform to the project specifications.
12. Procedure for testing and approval of subgrade, subbase and base.
13. Curb tips and installation schedule.

Thickness of the paver joints and sweep the surface clean—The paver joints are filled with ASTM No. 8, 89 or 9 stone. Depending on the PICP area, spreading and sweeping can be done with shovels and brooms, or larger areas with machines and swept into the paver joints with powered brooms or sweepers. Over the pavers are flushed with ⅛ in. or 6 mm of the paver surface), the surface must be swept clean prior to compaction as loose stones on the surface can mar the pavers when in contact with a plate compactor. Figure 29 illustrates various filling and sweeping methods.

Compact the pavers—After the PICP surface is swept clean, it is compacted with a plate compactor. A minimum of two passes should be made with the second pass in a perpendicular direction from the first pass. The path of the plate compactor should overlap several inches (cm). For paving units 3 ⅛ to 4 in. (80 to 100 mm) thick, the plate compactor should exert a minimum 5,000 lbf (22 kN) at 75 to 90 Hz. Figure 30 shows permeable pavers being compacted for a street project using a large plate compactor.

Top up joints with joint filling stone as needed and sweep the surface clean—Compaction can cause some settlement of the aggregates inside the joints. If the aggregates are more than ⅛ in. (6 mm) from the



Figure 26. PICP paver compaction shows that pavers need to be set about ⅛ in. (3 mm) above their final elevation before compaction and ⅛ in. (3 mm) after compaction to account for downward movement.

paver surface, they should be topped up to this level with additional aggregates. The paver surface should be swept clean prior to opening the PICP to traffic.

Aggregates in the paver joints can settle in early in the life of the pavement. Some settlement can be reduced through consistent, thorough compaction of the base, pavers and bedding layers. However, it is advisable for the contractor to return to the site after six months, inspect the joints and top them up with aggregate if they have settled to more than ½ in. (6 mm) below the paver surface. This service should be included in the construction specifications.

Construction Checklist

The following provides a convenient checklist for contractors and project inspectors.

Pre-construction meeting

- ❑ Walk through site with builder/contractor/subcontractor to review erosion and sediment control plan/stormwater pollution prevention plan or SWPPP)
- ❑ Determine when PICP is built in project construction sequence; before or after building construction, and measures for PICP protection and surface cleaning
- ❑ Aggregate material locations identified (hard surface or on geotextile)
- ❑ Sediment management
  - ❑ Access routes for delivery and construction vehicles identified
  - ❑ Vehicle tire/track washing station (if specified in ESC plan/SWPPP) location / maintenance

Excavation

- ❑ Utilities located and marked by local service
- ❑ Excavated area marked with paint and/or stakes
- ❑ Excavation size and location conforms to plan
- ❑ Sediment management:
  - ❑ Excavation hole as sediment trap cleaned immediately before subbase stone placement and runoff wastes with sediment diverted away from the PICP, or
  - ❑ All runoff diverted away from excavated area.
  - ❑ Temporary soil stockpiles should be protected from run-on, run-off from adjacent areas and from erosion by wind.
  - ❑ Ensure linear sediment barriers (if used) are properly installed, free of accumulated litter, and built up sediment less than ½ the height of the barrier.
  - ❑ No runoff enters PICP until soils stabilized in area draining to PICP
- ❑ Foundation walls
  - ❑ At least 10 ft (3 m) from foundation walls with no waterproofing or drainage
  - ❑ At least 100 ft (30 m) from water supply wells
- ❑ Soil subgrade rocks and roots removed, voids refilled with permeable soil
- ❑ Soil compacted to specifications (if required) and field tested with density measurements per specifications
- ❑ No groundwater seepage or standing water. If so dewatering or dewatering permit may be required.

Geotextile (if specified)

- ❑ Meets specifications
- ❑ Placement and down slope overlap (min. 2 ft or 0.6 m) conform to specifications and drawings
- ❑ Sides of excavation covered with geotextile prior to placing aggregate base/subbase
- ❑ No tears or holes
- ❑ No wrinkles, pulled taught and staked

Impermeable Liner (if specified)

- ❑ Meets specifications
- ❑ Placement, field welding, and seals at pipe penetrations done per specifications

Drain pipes/observations wells

- ❑ Size, perforations, locations, slope, and outfalls meet specifications and drawings
- ❑ Verify elevation of overflow pipes

Subbase, base, bedding and jointing aggregates

- ❑ Sieve analysis from quarry conforms to specifications
- ❑ Storage on hard surface or geotextile to keep sediment-free
- ❑ Thickness, placement, compaction and surface tolerances meet specifications and drawings

Edge restraints

- ❑ Elevation, placement, and materials meet specifications and drawings

Permeable interlocking concrete pavers

- ❑ Meet ASTM/CSA standards (as applicable) per manufacturer's test results
- ❑ Elevations, slope, laying pattern, joint widths, and placement/compaction meet drawings and specifications

Table x. Recommended edge restraints for PICP

Edge Restraint Type	Pedestrian Only	Residential Driveway	Parking lot or street
Cast-in-place concrete curb	Yes	Yes	Yes
Precast concrete curb	Yes	Yes	Yes
Cut stone curb	Yes	Yes	Yes
Compacted, dense-graded berms around PICP base perimeter with spiked metal or plastic edging to restrain Pavers	Yes	Yes	No

If there is a risk of drain pipe damage, consider using a heavy gauge pipe or test the pipe and base in a trial area with compaction equipment prior to placing and compacting a large area. Perforations in pipes should terminate 1 ft (0.3 m) short of the sides of the opening for the base. When corrugated metal drain pipes are used, they should be aluminized, and aluminized pipe in contact with concrete should be coated to prevent corrosion. Perforated drain pipes should have caps fastened to the upslope ends. Daylighted drain pipes require wire mesh over the openings to keep out debris and animals.

Observation Wells—A 4 to 6 in. (100 to 150 mm) diameter vertical perforated pipe that serves as an observation well may be specified in PICP subject to vehicular traffic. The pipe should be kept vertical during filling of the excavated area with open-graded aggregate and during compaction. The pipe should be located in the lowest elevation and a minimum of 3 ft (1 m) from the PICP side. Figures 12, 13 and 14 illustrate a well accessible from the surface and another with the pipe under the pavers to prevent damage from vandals.

Place and compact the aggregate subbase—ASTM No. 2 subbase material should be spread in lifts up to 6 in. (150 mm). Compaction is typically done with a 10 ton (9 t) steel vibratory roller or a 13,500 lbf (60 kN) plate compactor.

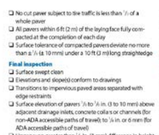


Figure 27. A 10 ton (9 t) vibratory roller compactor settles ASTM No. 2 stone subbase material should be spread in lifts up to 6 in. (150 mm). Compaction is typically done with a 10 ton (9 t) steel vibratory roller or a 13,500 lbf (60 kN) plate compactor.

Greater lift thicknesses are normal (i.e., 12 in. or 0.3 m) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is complete when no visible movement can be seen in the base when rolled by the compacted metal drain pipes are used, they should be aluminized, and aluminized pipe in contact with concrete should be coated to prevent corrosion. Perforated drain pipes should have caps fastened to the upslope ends. Daylighted drain pipes require wire mesh over the openings to keep out debris and animals.

- ❑ No cut paver subject to tire traffic is less than ⅓ of a whole paver
- ❑ All pavers within 6 ft (2 m) of the laying face fully compacted at the completion of each day
- ❑ Surface tolerance of compacted pavers deviate no more than a ⅛ in. (3 mm) under a 10 ft (3 m) long straightedge

Final Inspection

- ❑ Surface swept clean
- ❑ Elevations and slope(s) conform to drawings
- ❑ Transitions to impervious paved areas separated with edge restraints
- ❑ Surface elevation of pavers ⅛ to ¼ in. (3 to 10 mm) above adjacent drainage inlets, concrete collars or channels (for non-ADA accessible paths of travel) to ⅛ in. or 6 mm (for ADA accessible paths of travel)
- ❑ Lippage no greater than ⅛ in. (3 mm) difference in height between adjacent pavers
- ❑ Bond lines for paver courses ≤ ⅛ in. (≤ 15 mm) over a 50 ft (15 m) string line
- ❑ Stabilization of soil in area draining into permeable pavement (min. 20 ft (6 m) wide vegetative strips recommended)
- ❑ Drainage swales or storm sewer inlets for emergency overflow if storm sewer inlets are used, confirm overflow drainage to them.
- ❑ Runoff from non-vegetated soil diverted from PICP surface
- ❑ Test surface for infiltration rate per specifications using ASTM C1701, minimum 100 in./hr (2500 mm/hr) recommended

PICP Specialist Course

ICPI offers a one day PICP Specialist Course for training on PICP best construction practices. Installers who complete the course, pass the exam and meet the minimum experience requirements earn the PICP Specialist designation. This course is referenced as a requirement in a increasing number of commercial, municipal and state specifications. The classroom program is for contractors building residential and/or commercial interlocking concrete pavement installations, and who wish to move into the permeable pavement market. Participants should be experienced contractors, and participants should have completed the ICPI Concrete Paver Installer Course. The PICP Specialist Course is approved for ICPI installer continuing education.

The course cover PICP systems, job planning and documentation, job layout, flow and estimating quantities, soil and site characteristics, subbase and base materials, edge restraints, bedding and jointing materials, paver selection and installation, and maintenance. Participants who take the course receive a student manual and those that earn

PAVER MAINTENANCE

Tech Spec Guide

icpi Interlocking Concrete Pavement Institute®

Your requested ICPI Tech Spec follows this page.

Design and Installation Professionals frequently turn to interlocking concrete pavements and permeable interlocking concrete pavements because they offer lower initial and life cycle costs and provide environmentally sustainable solutions.

ICPI provides resources for ICP and PICP design, construction, and maintenance. These include: Tech Specs, Guide Specs, Detail Drawings, Construction Tolerance Guides, Fact Sheets, Design Manuals and design software. ICPI also offers several relevant continuing education courses at icpi.org and aecdaily.com

Find the right guide for your location.

Many ICPI members subscribe by state or province to this Tech Spec service to support the development and revision of these technical documents. The ICPI website Technical Center offers the opportunity to select Tech Specs by state or province.

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ICPI Tech Spec Library

- Tech Spec 1: Glossary of Terms for Segmental Concrete Pavement
- Tech Spec 2: Construction of Interlocking Concrete Pavements
- Tech Spec 3: Edge Restraints for Interlocking Concrete Pavements
- Tech Spec 4: Structural Design of Interlocking Concrete Pavement for Roads and Parking Lots
- Tech Spec 5: Cleaning, Sealing and Joint Sand Stabilization of Interlocking Concrete Pavement
- Tech Spec 6: Reinstatement of Interlocking Concrete Pavements
- Tech Spec 7: Repair of Utility Cuts Using Interlocking Concrete Pavements
- Tech Spec 8: Concrete Grid Pavements
- Tech Spec 9: Guide Specification for the Construction of Interlocking Concrete Pavement
- Tech Spec 10: Application Guide for Interlocking Concrete Pavements
- Tech Spec 11: Mechanical Installation of Interlocking Concrete Pavements
- Tech Spec 12: Snow Melting Systems for Interlocking Concrete Pavements
- Tech Spec 13: Slip and Skid Resistance of Interlocking Concrete Pavements
- Tech Spec 14: Segmental Concrete Paving Units for Roof Decks
- Tech Spec 15: A Guide for the Specification of Mechanically Installed Interlocking Concrete Pavements
- Tech Spec 16: Achieving LEED Credits with Segmental Concrete Pavement
- Tech Spec 17: Bedding Sand Selection for Interlocking Concrete Pavements in Vehicular Applications
- Tech Spec 18: Construction of Permeable Interlocking Concrete Pavement Systems
- Tech Spec 19: Design, Construction and Maintenance of Interlocking Concrete Pavement Crosswalks
- Tech Spec 20: Construction of Bituminous-Sand Set Interlocking Concrete Pavement
- Tech Spec 21: Capping and Compression Strength Testing Procedures for Concrete Pavers
- Tech Spec 22: Geosynthetics for Segmental Concrete Pavements
- Tech Spec 23: Maintenance Guide for Permeable Interlocking Concrete Pavements
- Tech Spec 25: Construction Guidelines for Segmental Concrete Paving Slabs and Planks in Non-Vehicular Residential Applications

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Tech Spec 23

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Maintenance Guide for Permeable Interlocking Concrete Pavements

Introduction

Permeable interlocking concrete pavements (PICP) are a proven method for reducing stormwater runoff and pollutants while supporting pedestrian and vehicular traffic. Many laboratory and in-situ research projects over the past two decades by universities, government stormwater agencies, and industry have demonstrated significant runoff and pollutant reductions with cost-saving benefits. The U.S. Federal Highway Administration **www.fhwa.dot.gov/pavement/concrete/pubs/hif19021.pdf** has published information supporting PICP use in walkways, plazas, driveways, parking lots, alleys and streets.

Like all stormwater control measures, PICP requires maintenance as it traps sediment on its surface not unlike an air conditioning filter. Larger particles are initially trapped while allowing water to pass. Some enter the jointing stone and are trapped there. The jointing stone with larger particles eventually captures smaller particles and this decreases the infiltration rate over time. While still infiltrating water, many smaller particles are trapped within the surface and interior joints. Smaller particles are trapped and eventually decrease infiltration which results in surface ponding.

Every PICP site varies in sediment deposition onto its surface, particle size distribution, and the resulting cleaning frequency. For example, beach sand (a coarse particle size distribution) on the surface will not clog as quickly and require less effort removing than fine clay sediment. Besides the particle size distribution, the rate of surface infiltration decline also depends on the traffic, size, and slope of a contributing impervious area, adjacent vegetation and eroding soil, paver joint widths and jointing stone sizes. ICPI offers a PICP site selection



Figure 1. PICP is seeing increased use in municipal streets to reduce stormwater runoff, local flooding, storm pipe upsizing, and combined sewer overflows. These streets are in Atlanta, GA.

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Figure 2. Sand-filled joints and bedding common to interlocking concrete pavement are not used in PICP.

tool on **www.icpi.org/software** to help identify favorable sites and avoid one that may incur additional maintenance.

While routine maintenance assures long-term infiltration, surface infiltration can be restored from neglected maintenance. A significant advantage of PICP is its ability to remove settled or wheel-packed sediment in the joints. This Tech Spec provides guidance on routine and restorative maintenance practices that support surface infiltration. This bulletin also provides guidance on maintaining the surface as an acceptable pedestrian and vehicular surface.

Practices Supporting Surface Infiltration

PICP design and construction that complies with ICPI guidelines are fundamental to long-term surface infiltration. Guidelines are found in ASCE 68-18 standard on PICP, the ICPI manual, *Permeable Interlocking Concrete Pavements* and in *ICPI Tech Spec 18–Construction of Permeable Interlocking Concrete Pavements* available on **www.icpi.org**. Some essential characteristics described below support continued infiltration.

PICP doesn't use sand. Unlike interlocking concrete pavements, sand jointing or bedding materials to support paving units and dense-graded aggregate bases are not used in PICP. Sand joints and bedding allow very little water to enter and often eventually clog for traffic borne detritus and sediment.

Construction E & S control is essential. Erosion and sediment control during construction is covered in the previously mentioned documents, and is customized to each project via the Stormwater Pollution Prevention Plan or SWPPP. An inspection checklist is provided at the end of this bulletin that includes sediment control. If the PICP is built first and construction traffic must use it, then it will very likely require vacuum cleaning upon construction completion. The ideal situation is PICP constructed late in the project such that it will not receive much construction traffic and sediment. This may require using temporary construction roads.

If PICP receives run-on from upslope pervious or impervious areas, inspect these areas for erosion and sediment, yard waste, materials storage, etc. Sweep or vacuum the contributing drainage area clean and free of any dirt, leaves and mulch as they are a major source of PICP clogging. Lawn and planting beds should be sloped away from PICP areas.

Maintain filled joints with stones. The jointing stones capture sediment at the surface so it can easily be removed. If sediment is allowed to settle and consolidate, then cleaning becomes more difficult since the sediment is inside the joint rather than on the surface. Settlement of jointing stones in the first few months is normal so PICP as open-graded aggregates for jointing and bedding choke into the larger base aggregates beneath and stabilize. This settlement often requires the joints to be refilled with aggregates three to six months after their initial installation. If possible, this should be included in the initial construction contract specifications. Aggregate-filled joints facilitate sediment removal at the surface and provide interlock for pavement structural stability.

Keeping the joints filled during the PICP service life is essential to trapping sediment and facilitating its removal at the surface and ensuring long term performance. Permeable segmental paving systems that do not use jointing aggregates may incur higher maintenance time and costs to extract accumulated sediment from deep within the joints and bedding, or eventually move through the base/subbase aggregates onto the subgrade and reduce its infiltration.

Filled paver joints means filled to the bottom of the paver chamfers with jointing stone. If the pavers have very



Figure 3. Whether eroded onto or dumped on PICP, erosion and sediment control are essential during construction.



Figure 4. Keeping PICP joints filled with permeable aggregate facilitates removal of accumulated sediment.



small or no chamfers, then they should be filled within ¼ in. (6 mm) of the paver surface. Should the top of jointing stone settle below ¼ in. (6 mm), vacuum equipment can be less effective in removing sediment and cleaning becomes potentially more expensive.

Manage mulch, topsoil and winter sand. Finally, stockpiling mulch or topsoil on tarps or on other surfaces during site maintenance activities rather than directly on the PICP surface helps maintain infiltration. Figure 5 illustrates an example of correct management of landscaping material on PICP, as well as the need to exposed soil slopes.

Sand used in the winter for traction is not recommended. Figure 6 illustrates the consequence to PICP joints when subjected to winter sand for traction. If used, sand should be removed with vacuuming in the spring to prevent a substantial decrease in surface infiltration. Using jointing aggregate is recommended as a better alternative to using sand for winter traction. In addition, the aggregate can provide some refilling of the joints.



Figure 5. Mulch placed on tarps prevents more expensive cleaning of PICP.

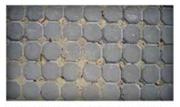


Figure 6. Sand from winter maintenance must be removed the following spring.

Surface Infiltration Inspection & Testing

Visual Inspection—Effective ways to assess PICP surface infiltration is by conducting visual inspections or tests on the surface before, during and immediately after rainfall.

Inspect Before a Rainfall—Sediment crusted in the joints when dry is the most opportune time to remove it. During dry periods, the sediment layer in each joint can sometimes dry out and curl upward. This layer can be easily loosened by vacuum equipment.

Additionally, deciduous leaves and pine needles eventually get crushed by traffic, degrade, and work their way into the joints, thereby reducing infiltration. See Figures 7 and 8. The site should be inspected for sediments from adjacent eroding areas and those areas stabilized immediately.

Weeds growing from within joints indicate accumulated sediment in the joints and neglected maintenance. See Figure 9. Weeds will not germinate unless there is accumulated sediment. Weeds should be removed by hand. Herbicide may kill weeds, but dead vegetation and roots will remain. They typically reduce infiltration and should eventually be removed.

Inspect During and Just After a Rainstorm— The extent of puddles and bird baths observed during and especially after rainstorm indicate a need for surface cleaning.

Table 1. ASTM C1781 test results: relationship between time required to infiltrate and calculated surface infiltration rate

Time to infiltrate water		Approximate surface infiltration rate inches/hr (mm/hr)	
Minutes	Seconds	8 lbs. (3.6 kg) water	40 lbs. (18 kg) water
0.5	30	236 (5.913)	1,175 (29.564)
1	60	117 (2.956)	587 (14.782)
2	120	59 (1.478)	294 (7.391)
4	240	29 (739)	147 (3.696)
6	360	20 (493)	96 (2.464)
8	480	15 (370)	73 (1.848)
15	900	9 (197)	39 (985)
30	1800	4 (99)	20 (493)
60	3600	2 (49)	10 (246)

Note: I = (K • M)/(Δ • t), where
I = Surface infiltration rate, in./hr (mm/hr)
K = 126,870 for US customary units (4,583,666,000 for metric)
M = water mass, lbs (kg)
D = ring diameter (12 in. or 305 mm)
t = time for water to infiltrate in seconds

Acceptable performance > 100 in./hr (2,500 mm/hr)
Plan to clean soon
Clean immediately < 20 in./hr (500 mm/hr)

A minor amount of ponding is likely to occur particularly at transitions from impervious pavement surfaces to PICP. This often occurs first as sediment is transported by runoff and vehicles. See figures 10 and 11. Should ponding areas occupy more than 20% of the entire PICP surface, then surface cleaning should be conducted. While a rainstorm's exact conclusion is difficult to predict, standing water on PICP for more than 15 minutes during or after a rainstorm likely indicates a location approaching clogging.

Test Surface Infiltration—A quick and subjective test for the amount of surface infiltration is pouring water on PICP. If the water spreads rather than infiltrates, the extent of spreading suggests an area that may be clogging. Should more than approximately 20% of the surface area see ponding during or immediately after a rainstorm, a more objective measure of surface infiltration of these areas can be accomplished using ASTM C1781 *Standard Test Method for Surface Infiltration Rate of Permeable Unit Pavement Systems*. Figure 12 illustrates the test set up using a 12 in. (300 mm) diameter ring set on plumber's putty. (The ring can be metal or plastic.) Figure 13 illustrates the test apparatus in



Figure 7 and 8. Pine needles and leaves eventually will degrade and get compacted into the joints from traffic. They should be removed by sweeping or vacuuming before that happens.





Figure 9. Weeds indicate sediment accumulation and lack of surface cleaning to remove it.



Figure 10. Erosion of adjacent asphalt and sediment deposition on PICP.



Figure 11. Ponding on PICP typically first occurs at the junction with impermeable pavement.









Figure 12. Steps in setting up test equipment for measuring surface infiltration using ASTM C1781.

place with water poured into it.

ASTM C1781 test method begins with "pre-wetting" an area inside the ring to ensure the surface and materials beneath are wet. This is done by slowing pouring 8 lbs (3.6 kg) of water while not allowing the head of water on the paver surface to exceed ¼ in. (13 mm) depth. If the time to infiltrate 8 lbs of water is less than 30 seconds (using a stopwatch typically on a cell phone), the subsequent test is done using 40 lbs (18 kg) of water. If more than 30 seconds, then 8 lbs of water is used in the subsequent tests. Again, a ¼ in. (10 mm) head is maintained during the pour while being timed with a stopwatch. The surface infiltration rate is calculated using formulas in the test method.

If infiltration measurements on ponded areas consistently result in rates below 20 in./hour (508 mm/hr), they require immediate surface cleaning. PICP surfaces sloped over 2% with less than 40 in./hr infiltrate rate require immediate surface cleaning. An infiltration rate of 20 in./hr equates to 30 minutes' infiltration time and 40 in./hr results in 15 minutes. Table 1 further illustrates the relationship between time



Figure 13. ASTM C1781: pouring the wanter into a 12 in. (300 mm) inside diameter ring set on plumber's putty.

aggregates remain in place while removing loose debris such as leaves from the surface. See Figure 15.

Rotary Brush with Plastic Bristles—These are often used to spread jointing stone during construction. Same equipment can be used to clean surface to top of joints. Bristles can flip debris out of joints (depends on bristle reach into the joints). A small amount of aggregate may need to be replaced in the joints after using. See Figure 16.

Wet/Dry Shop Vacuum or Walk-behind Vacuum—Use equipment with a minimum 4 (peak) HP motor with minimum 130 cubic feet (3.7 m^3) per minute suction. These machines can remove some jointing aggregates so they may require replenishment. See Figures 17 and 18.

Power Washer—This equipment should be capable of 1,400 to 1,800 psi (9.6 to 12.4 MPa) pressure. Apply the spray at a 30° angle approximately 18 to 24 in. (45 to 60 cm) from the surface and adjust as needed. This equipment will evacuate jointing aggregate and replenishment will be required. Power washing alone generally is not an optimal cleaning approach because there is almost no opportunity on most sites to remove the water-suspended sediment before the water is absorbed back into the pavement. See Figure 19.

Cleaning Large PICP Areas

These are typically over 2,000 sf or 200 m^2 such as large plazas, long sidewalks and driveways, parking lots, alleys and streets. Equipment options follow:

Street Sweepers—These typically have rotating plastic bristle brushes positioned near the curb side and center pickup into a hopper at the rear. Do not use water as it slows removal of loose dirt into the machine. This machine does provide a small vacuum force to manage dust, but the cleaning action is provided by the mechanical sweeping, so it is moderately effective among large machines for removing sediment in the joints. Bristles from the the main broom can reach into joints parallel to the direction of the broom rotation, but have little effect on the joints not aligned with the broom rotation. See Figure 20.

Regenerative Air Sweepers—Includes a box positioned under the truck and on the pavement through which air is blown and recirculated (hence the term regenerative air). The pavement must have no convex (or reverse) crown in order to create an adequate seal for suction in the box. Air pressure flowing through it picks up loose debris and sediment. Rotating brushes can be used to direct dirt and debris toward the box. See Figure 21.



Figure 14. Bristle broom for removing loose debris



Figure 15. Blowing debris to curbs or gutters for removal and disposal.



Figure 16. Rotary brushes increase cleaning efficiencies.



Restorative Infiltration Maintenance for Large Clogged Surfaces

Restorative maintenance is conducted when sediment has lodged in the jointing stones from traffic and weather. The condition indicates that the PICP surfaces have not been regularly cleaned. Restorative maintenance requires some or complete removal of the jointing aggregate to increase infiltration. The depth of jointing stone removed depends on the penetration depth of the sediment into the joints. This can be determined on a sample of a few clogged joints (typically where ponding occurred) by prying out stones and sediment with a flat head screwdriver until little or no accumulated sediment appears.

True Vacuum Sweepers—These can withdraw jointing material and even the concrete pavers. Therefore, the vacuum engine revolutions must be adjusted by the machine operator during a few test runs to find the setting that withdraws the needed depth of sediment and jointing aggregate. After withdrawal, jointing aggregates will require replenishment. The suction orifice is typically about a yard (meter) wide and positioned on the curb side of the truck. Extremely clogged surfaces will require two or more passes. Figure 22 shows this machine. It is often used by municipalities to clean out storm drain catch basins and may require a separate vacuum attachment to clean pavements.

High-power Washing and Vacuum Equipment—Figure 23 shows the equipment for restorative cleaning where water is applied to help loosen sediment and stones in the joints. Figure 23 shows a vacuum that withdraws sediment and stones immediately after applying water. The water and debris are drawn into a vac truck.





Figure 17. Wet/dry shop vacuum cleans loose sediment from a PICP resident full driveway.

Figure 18. Walk-behind vacuum cleans a small parking area.

Figure 19. Power washing requires a little practice to minimize jointing stone removal.



Figure 20. This type of mechanical sweeper removes sediment from joints parallel to the direction of the broom rotation.



Figure 21. A regenerative air machine does routine cleaning in a PICP parking lot.





Figure 22. A true vacuum machine cleaning neglected PICP.



concrete, and permeable interlocking concrete pavement). Contributory drainage from an adjacent parking lot provided an opportunity for accelerate clogging and collect data for 9:1 and 5:1 drainage ratios. The following six pavement cleaning methods were evaluated over a 4-year period: manual cleaning with a masonry trowel; Leaf blower and broom; true vacuum; water-enhanced vacuum; high pressure air system; and pressure washer with soil vacuum. An evaluation of the efficiency of each method was based on comparing surface infiltration rates, pre and post cleaning. Surface variability was high due to surface flow patterns across the permeable surfaces. All cleaning methods improved surface infiltration rates. PICP showed the greatest recovery compared to pervious concrete or pervious asphalt. These systems were more difficult to maintain due to sedimentation penetrating into the solid matrix related to the twisting of interconnected pores created during placement. Different cleaning methods produce different results however, in all instances, when the same method was applied, PICP showed the greatest recovery in infiltration capacity. At this particular site the majority of clogging occurred within the top 1 inch. A complete copy of the report can be found at **https://tinyurl.com/yy9nhou8**.

Inspection Intervals and Procedures for Maintaining Surface Infiltration

Routine maintenance provides the best infiltration performance by implementing the following procedures:

1. **Weekly**—Prevent contamination from routine landscape maintenance such as grass clippings from mowing, hedge trimming, mulching plant beds, etc. by:
   - Broom sweep debris from the paver surface, or
   - Blow debris from the paver surface with a powered leaf blower onto other surfaces that will not retransmit it to the PICP surface.
   - Mechanically sweep paver surface.
   - Remove loose debris, leaves, needles, sediment, topsoil, mulch, etc. after severe rain storms using the above procedures.
   - Collect and dispose of debris.
2. **Semi-annually**—Remove loose surface debris from the pavers and jointing stones (1) when trees have defoliated in the fall and (2) at the end of winter snowfall.
   - Use a wet/dry vacuum for small areas and a regenerative air machine for larger areas.



Figure 23. This equipment provides combined washing and vacuum of jointstained PICP.



Figure 24. This equipment blows sediment and soiled aggregate from the joints and uses vacuum equipment to remove them.



Figure 25. No matter the equipment used, after removing sediment and soiled aggregate, clean aggregate is placed in the joints, the surface cleaned and compacted.

- Replenish jointing stone as needed to the bottom of the paver chamfers.
- Check any observation wells and outlet pipes from underdrains to confirm drain down and water outflows.

3. **As needed**—based on observation and during rainstorms and subsequent surface infiltration tests, remove and replenish the jointing stones and sediment using restorative cleaning equipment and procedures.

Note: *Various factors will affect each project's routine maintenance schedule and each must be reviewed individually.*

Winter Maintenance

Snow Removal—Unlike other permeable pavement surfaces, PICP demonstrates durability in the winter. PICP can be plowed with steel or hard rubber blades. Steel blades typically scratch all pavement surfaces. When using commercial snow removal companies, confirm in writing they provide protective edges on the snowplow equipment to avoid scratching the surface. Most pavers have chamfers on their surface edges which can help protect the edges from chipping by snow plows. For smaller areas, use a plastic snow shovel and tht snow blowers with plastic on the scoops and on the gliders. When possible deposit plowed snow onto grassy areas and not on the PICP when the plowed snow is dirty. Such dirt will remain and likely help clog the PICP surface after the snow melts.

Deicers—When used sparingly, deicers should not damage PICP surfaces as the brine typically forms on the surface to lower the freezing temperature of water and eventually moves into the joints with melting ice or snow. Some deicers will accelerate surface wear on some styles of pavers with bisected or hammered surfaces.

A 2020 University of Toronto study on pavement deicing operations quantified some significant winter safety benefits when using PICP. Besides confirming that the use of permeable pavers can eliminate the occurance of snow melt refreezing and forming black ice, snow and ice can also melt and dry quicker when deicers are used on PICP. More importantly, the research confirmed that a much lower deicing salt application rate is required on PICP compared to impervious asphalt, while still maintaining a high level



Figure 26. This is an example of snow that should have been dug as shed on a grassy area. If such areas are not available, then vacuum clean the PICP in the early spring.

Table 2. Maintenance guidelines for all PICP distresses

Distress	Activity	Frequency
Clogging	Schedule appropriate routine cleaning method based on site conditions. Utilize restoration cleaning methods as needed when surface infiltration rates decrease below project threshold. Hot spot cleaning may be appropriate.	1 to 2 times annually; adjust frequency based on sediment loading.
Clogged/Damaged Secondary Features	Clean out or repair secondary drainage features.	Annually, after major rain event
Depressions	Repair all paver surface depressions, exceeding 0.5 in. (13 mm)	Annually, repair as needed
Rutting	Repair all paver surface rutting, exceeding 0.6 in. (15 mm)	Annually, repair as needed
Faulting	Repair all paver surface faulting, exceeding 0.25 in. (6 mm)	Annually, repair as needed
Damage Paver Units	Replace medium to high severity cracked, spalled or chipped paver units	Annually, repair as needed
Edge Restraint Damage	Repair pavers offset by more than 0.25 in. (6 mm) from adjacent units or curbs, inlets, etc.	Annually, repair as needed
Excessive Joint Width	Repair pavers exhibiting joint widths exceeding 0.5 in. (13 mm)	Annually, repair as needed
Joint Filler Loss	Replenish aggregate in joints	As needed
Horizontal Creep	Repair areas exhibiting horizontal creep exceeding 0.4 in. (10 mm)	Annually, repair as needed
Excessive Settlement	For settlements greater than 1 in. consult a pavement engineer versed in OGA design and construction to determine cause and correction.	As needed.
Additional Distresses	Missing pavers shall be replaced. A geotechnical investigation is recommended for pavement heaves.	Annually, repair as needed

of slip and skid resistance. The study also demonstrated that PICP systems can attenuate and buffer the release of salt back into the environment, an important finding since there is concern about snowmelt and stormwater runoff environmentally damaging lakes and rivers.

Deicer types acceptable for use in on PICP surfaces include sodium chloride, calcium chloride and potassium chloride. Do not use magnesium chloride as it will eventually destroy all concrete materials. Anti-icing agents that contain ammonium nitrate and ammonium sulfate should not be used since they can also erode concrete. Always read and follow the manufacturer's recommendations for use and heed all warnings and cautions.

Maintenance for Other Distresses

Over time and traffic, PICP can exhibit other distresses besides surface ponding from clogged joints. These are outlined in Table 2 and remedies are provided.

Utility Restoration Guidelines

1. Remove and store pavers for reuse. Secure undisturbed pavers in opening with wood or metal frame.
2. Remove and dispose of all jointing and bedding aggregate as they typically cannot be re-used.
3. Remove the aggregate base and subbase material. Incidental mixing of base and subbase aggregates is acceptable, but make every effort to separate them. Store in on impermeable pavement or a geotextile to prevent contamination. Do not reuse contaminated aggregate.
4. Re-compact subgrade material as required for stability during utility repairs.
5. Repair or install utility as required.
6. If below the bottom of the subbase, place and compact dense-graded road base in lifts not exceeding 6 in. (150 mm) and compact to 100 percent of standard Proctor maximum dry density. The top of the dense-graded aggregate should be at the same elevation as the bottom of the open-graded subbase aggregate. Alternately flowable fill could be used to reestablish the subgrade surface.
7. Reinstate and compact the subbase aggregate in minimum 6 in. (150 mm) lifts. Use a minimum 13,500 (65 kN) plate compactor with a compaction indicator. Add new subbase aggregate if needed.
8. Reinstate and compact the base aggregate as one 4 in. (100 mm) lift. Use a minimum 13,500 lbf (65 kN) plate compactor with a compaction indicator. A lightweight deflectometer (LWD) can be used to ensure that deflections of the compacted base aggregate are below an average of 0.5 mm (assuming a minimum 12 in. (300 mm)) compacted aggregate subbase. An LWD should be used according to ASTM E2835.
9. Place and screed new bedding aggregate in a consistent thickness layer between 1.5 and 2 in. (38 and 50 mm).
10. Reinstate pavers with at surface at least 1 in. (25 mm) higher than the final elevation. Compact the pavers in two perpendicular directions with a minimum 5,000 lbf (22 kN) plate compactor. Fill joints with aggregate, sweep away excess, and compact the pavers in two perpendicular directions again. Compact pavers so they are level with surrounding pavers.
11. Sweep surface clean and remove any excess aggregate and debris.

Other recommendations include keeping all removed materials clean and free of sediment and debris. Minimize excess debris from construction activities and equipment entering the permeable surface. Store all materials away from the permeable surface, otherwise separate materials from the permeable surface with geotextile. Pavement cuts located parallel and close to the wheel path should be extended to include the wheel path. Cuts located within 3 ft (1 m) of a curb or construction joint should include the removal of the adjacent base and subbase to the edge of the curb or construction joint.

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