CHRISTINAGRIFFINARCHITECT PC
10 Spring Street, Hastings-on-Hudson, New York 10706

July 23, 2018

Hastings Architectural Review Board
Village of Hastings-on-Hudson
7 Maple Avenue, Hastings-on-Hudson, NY 10706

Re: Proposed Townhomes at Woodbank, 0 Warburton Avenue

Dear Chairperson and Members of the Architectural Review Board:

As the Architect representing PTG Development, LLC, Owner of 0 Warburton Avenue, I am submitting the attached drawings, dated July 23, 2018, describing six new townhouses at 0 Warburton Avenue, for ARB review. Our submission consists of the following drawings:

Title Page – Sketch of Building
S-1 Building Section, Zoning Data
S-2 Site Plan
S-3 Exterior Lighting Plan, Lighting Fixtures
L-1 Planting Plan (IQ Landscape Architects)
L-2 Layout Plan & Details (IQ Landscape Architects)
A-1 Garage Plan
A-2 First Floor Plan
A-3 Second Floor Plan, Third Floor Plan
A-4 Roof Plan, Roof Materials
A-5 West & East Elevations
A-6 South & North Elevations
A-7 Exterior Details
A-8 West Elevation Color Scheme
A-9 East Elevation Color Scheme
A-10 South & North Color Schemes
A-11 Aerial View of Proposed Building
A-12 Property from the Old Aqueduct
A-13 Property from Nodine Street
A-14 Neighboring Properties
A-15 Neighboring Properties

I look forward to presenting these drawings at the August 6, 2018 Architectural Review Board meeting. Thank you for your time and consideration to review our proposal.

Sincerely,

Christina Griffin AIA LEED AP

cc: PTG Development, LLC

tel.914.478.0799 fax.914.478.0806 www.christinagriffinarchitect.com

TOWNHOMES at WOODBANK

NODINE STREET, HASTINGS-ON-HUDSON, NY 10706

CHRISTINAGRIFFINARCHITECT PC

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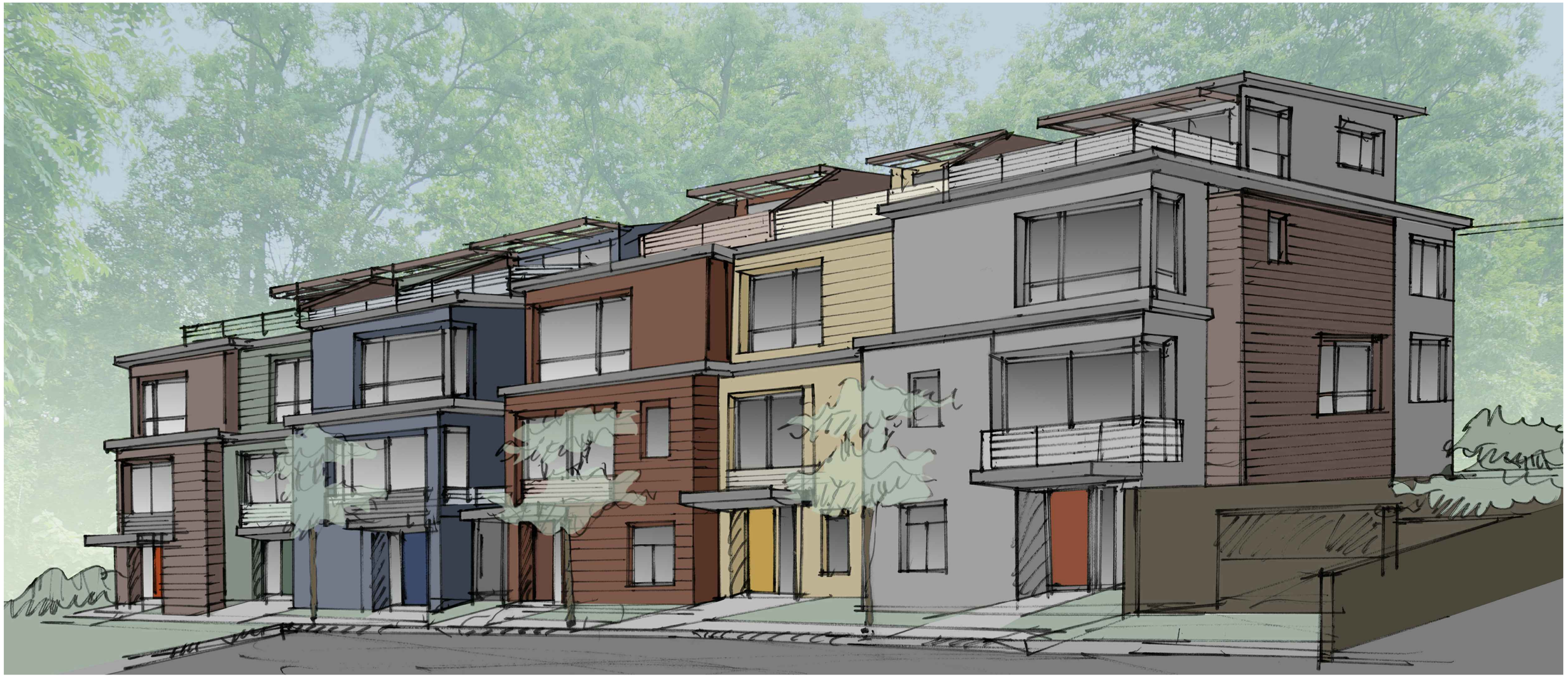


ARB SUBMISSION 7-23-18

LIST of DRAWINGS

COVERAGE CALCULATIONS

LOT AREA	15,978 SF / 0.40 AC
WALLS	70 SF
SIDEWALKS	523 SF
DRIVEWAY (OVER 960 SF) TOTAL DRIVEWAY AREA IS 766 SF	NOT INCLUDED
PRINCIPAL BUILDING FOOTPRINT	5,349 SF
TOTAL COVERAGE	5,942 SF (37%)

NORTH SIDE YARD CALCULATION
13.7 FT = WALL HT. FROM AVG. EXIST. GRADE

13.7 / 2 = 6.9 FT
(MIN. 12'-0" REQUIRED SIDE YARD SETBACK)

SOUTH YARD CALCULATION
20.0 FT = WALL HT. FROM AVG. EXIST. GRADE

20.0 / 2 =10.0 FT
(MIN. 12'-0" REQUIRED SIDE YARD SETBACK)

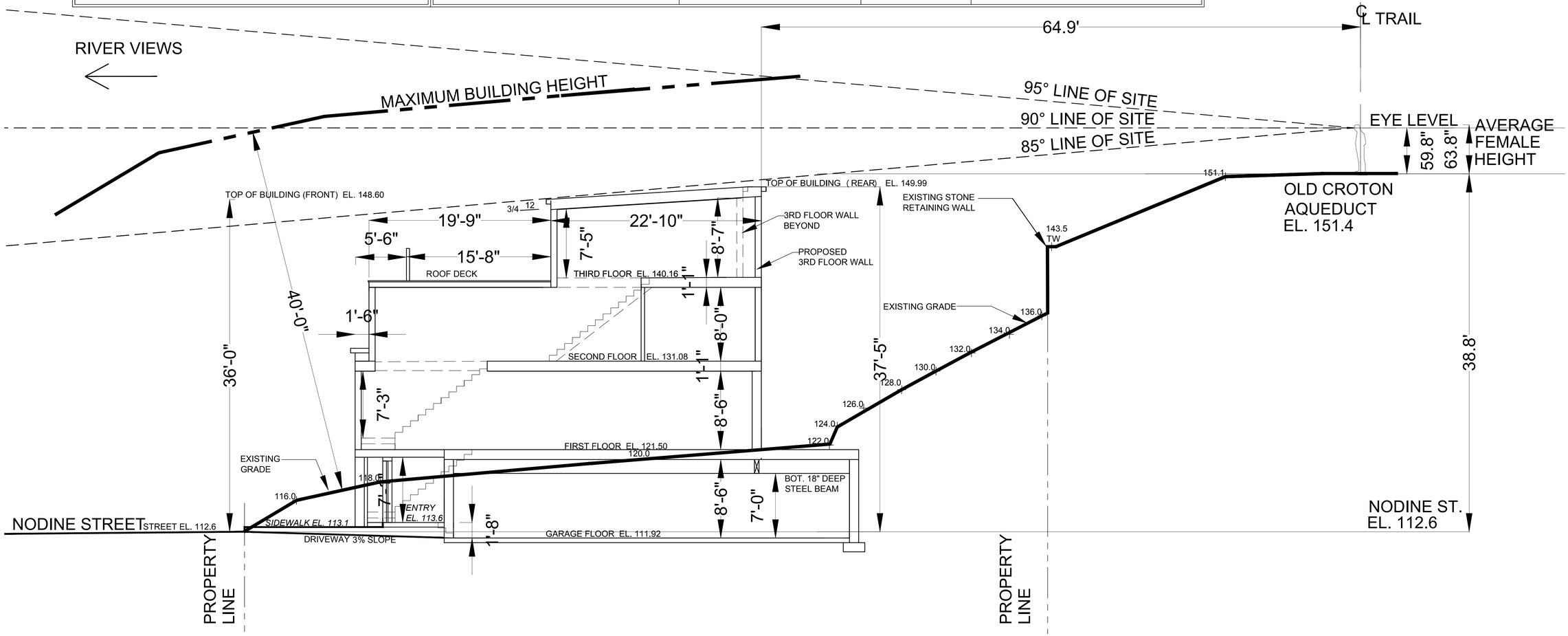
FRONT YARD CALCULATION
14.8 FT = WALL HT. FROM AVG. EXIST. GRADE

14.8/ 2 = 7.4 FT
(MIN. 12'-0" REQUIRED FRONT YARD SETBACK)

TABLE of ZONING DATA

ZONING DISTRICT: MR 1.5 TAX DESIGNATION: SECTION 4.1000, BLOCK 94, LOTS 7 & 8

	REQUIRED	EXISTING	PROPOSED
LOT AREA	1,500 SF / .034 AC	15,978 SF / 0.4 AC	15,978 SF / 0.4 AC
NUMBER OF DWELLING UNITS	10	0	6
MINIMUM LOT AREA PER DWELLING UNIT (DENSITY)	1,500 SF PER UNIT	N/A	2,663 SF PER UNIT
MAXIMUM COVERAGE	15% / 2,397 SF	N/A	37% / 5,942 SF **VARIANCE GRANTED**
MINIMUM LOT WIDTH FRONTAGE	50 FT	105.6 FT	105.6 FT
MAXIMUM BUILDING LENGTH	160 FT	N/A	125.6 FT
MAXIMUM BUILDING HEIGHT	3 STORIES / 40 FT	N/A	3 STORIES / 37.4 FT (36.0 FT AT FRONT OF BLDG.)
MAXIMUM DRIVEWAY SLOPE	3% W/I 30 FT OF PROPERTY LINE	N/A	3%
MAXIMUM CURB CUT	24.0 FT	N/A	16.0 FT
FRONT YARD SETBACK	12 FT	N/A	12.0 FT
REAR YARD SETBACK	30.0 FT	N/A	30.0 FT
SIDE ONE	12.0 FT	N/A	12.0 FT
SIDE TWO	12.0 FT	N/A	18.3 FT
TOTAL OF TWO SIDES	24.0 FT	N/A	30.3 FT
FRONT PARKING SETBACK	10 FT	N/A	12.0 FT (TO GARAGE)
REAR PARKING SETBACK	5 FT	N/A	30.0 FT (TO GARAGE ABOVE GRADE)
SIDE PARKING SETBACK	5 FT	N/A	18.3 FT (TO GARAGE)
PARKING SUMMARY - TOTAL SPACES PROVIDED	12 SPACES	N/A	12 SPACES
OPEN SPACE	3,000 SF PER ZONING CODE (295-71A), OPEN SPACE IS CALCULATED 200 SF FOR EACH BEDROOM. (6) TOWNHOUSES: (3) 3-BEDROOM UNITS + (3) 2-BEDROOM UNITS = 15 BEDROOMS X 200 = 3000 SF	+/-13,402 SF	9,294 SF



A BUILDING SECTION

SCALE: $\frac{3}{16}$" = 1'-0"

TOWNHOMES at WOODBANK

HASTINGS-ON-HUDSON, NY 10706

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ZONING BOARD SUBMISSION	10-5-17
REVISED ZONING BOARD SUB.	1-9-18
REVISED ZONING BOARD SUB.	1-16-18
REVISED PLANNING BOARD SUB.	5-31-18
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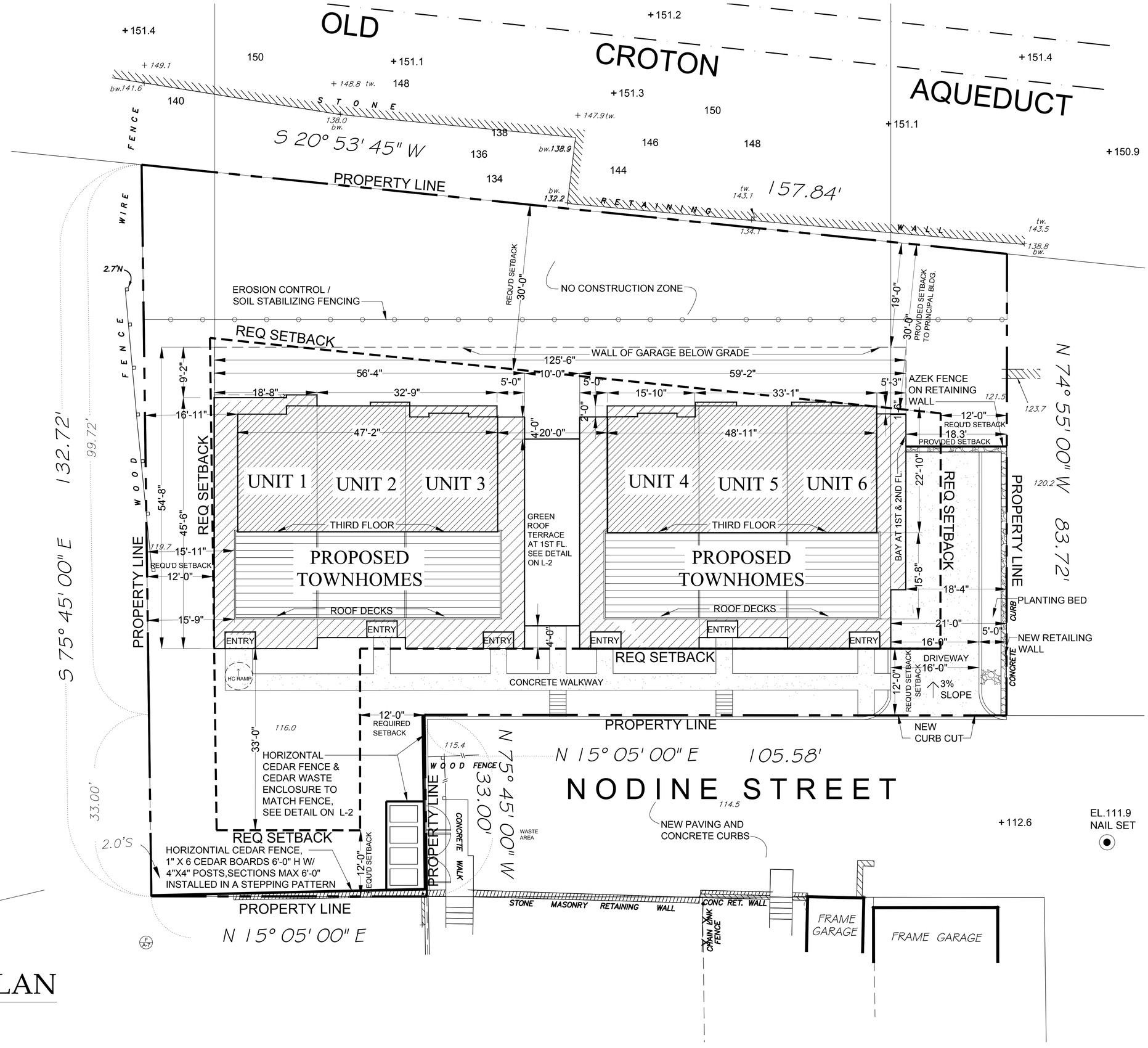
Drawing Title: SITE PLAN

Scale: AS SHOWN

S-1



SITE PLAN

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

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Drawing Title: SITE PLAN

Scale: AS SHOWN

S-2

ELECTRICAL LEGEND

- DUPLEX
- QUAD OUTLET
- BRASS FLOOR OUTLET
- DIRECT LINE
- TELEPHONE/DATA OUTLET
- GROUND FAULT INTERUPTER OUTLET
- SWITCH
- DIMMER
- EXISTING
- RECESSSED LT FIX
- LOW VOLTAGE MR16 RECESSED LT. FIXTURE
- LOW VOLTAGE MR16 ADJUSTABLE REC. LT. FIXTURE
- TRACK LT FIX
- CLG MTD LT FIX
- WALL MTD LT FIX
- PORCELAIN LT FIX
- PENDANT LT FIX
- LOW VOLTAGE PENDANT LT FIX
- EXHAUST FAN
- GRADE LEVEL, LOW VOLTAGE LT. FIX WIRE TO 300 WATT TRANSFORMER
- EXHAUST FAN/ LT FIX
- GRADE LEVEL LANDSCAPE LIGHT, LOW VOLTAGE LT. FIX WIRE TO 300 WATT TRANSFORMER
- GRADE LEVEL PATH LIGHT, LOW VOLTAGE LT. FIX WIRE TO 300 WATT TRANSFORMER
- HARDWIRED SMOKE DETECTOR
- MONOXIDE DETECTOR
- HEAT DETECTOR
- SPEAKER OUTLET
- THERMOSTAT
- HARDWIRED DOOR BELL
- GRADE LEVEL LANDSCAPE LIGHT
- FLOOD LIGHTS
- CAT5 TELEPHONE OUTLET
- CAT5 COMPUTER OUTLET/ RJ6 RECEPTACLE
- HVAC GRILLE
- ADJUSTABLE RECESSED LIGHT FIXURE
- RECESSED SHOWER LIGHT FIXURE
- UNDER CAB. LT FIX
- UNDER CAB. LT FIX
- FLUORESCENT LT FIX
- CEILING FAN
- CEILING FAN W/ LT FIX.
- RECESSED WALL LIGHT, LOW VOLTAGE LT. FIX WIRE TO 300 WATT TRANSFORMER

ELECTRICAL NOTES

1. ALL OUTLETS AND LIGHT FIXTURES ARE NEW UNLESS SHOWN WITH "E" FOR EXISTING.

2. ALL OUTLETS AND SWITCH PLATES SHALL BE SCREWLESS.

3. ALL RECESSED LIGHT FIXTURES SHALL BE LIGHTOLIER LOW VOLTAGE MR16 FIXTURES WITH WHITE STEP BAFFLE.

4. ALL EXHAUST FANS SHALL BE SUPPLIED BY OWNER, AND INSTALLED BY CONTRACTOR.

5. CONTRACTOR TO SUPPLY ALL RECESSED LIGHT FIXTURES, SHOWER LIGHT FIXTURES AND FLUORESCENT LIGHT FIXTURES IN ACCORDANCE WITH ARCHITECT'S SPECIFICATIONS. ALL OTHER LIGHT FIXTURES TO BE PROVIDED BY OWNER, AND INSTALLED BY CONTRACTOR.

6. ALL CAT6 TELEPHONE, CAT6E COMPUTER AND RGG CABLE TV WIRE TO HAVE HOME RUNS TO ENTRY POINT LOCATION IN BASEMENT.

7. IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODE, HARD WIRED SMOKE AND HEAT DETECTORS, AND CARBON MONOXIDE DETECTORS SHALL BE PROVIDED AS FOLLOWS:

   1 HARDWIRED SMOKE DETECTOR PER FLOOR.
   1 SMOKE DETECTOR PER BEDROOM
   1 SMOKE DETECTOR PER HALL OUTSIDE BEDROOMS.
   1 HEAT DETECTOR AT KITCHEN AND UTILITY ROOM.
   1 HARDWIRED CARBON MONOXIDE DETECTOR PER FLOOR.

8. ELECTRICIAN SHALL INCLUDE COST OF ALL ELECTRICAL RECEPTACLES NECESSARY TO MEET CURRENT NATIONAL ELECTRICAL CODE IN CONTRACT.

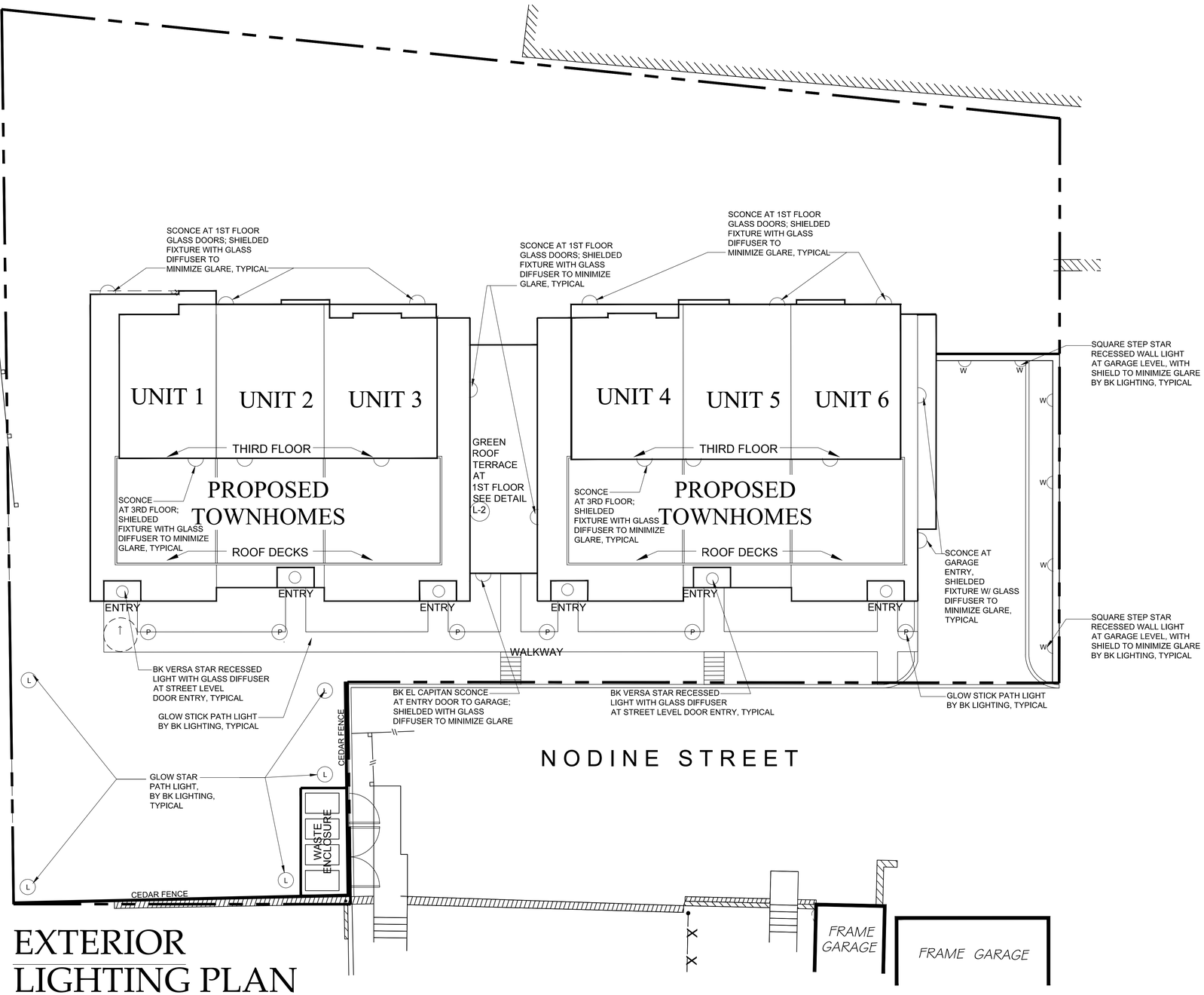
9. IF 2 OR MORE SMOKE DETECTORS GO OFF ALL ALARMS IN BUILDING TO GO OFF.

10. SOUND FOR CARBON MONOXIDE DETECTOR TO BE DIFFERENT THE SOUND FOR SMOKE DETECTORS.

NYS FIRE CODE DATA

1. Annunciator panel to be installed in compliance with Fire Code of New York 907.9.1-1225
2. Fire alarm system shall be monitored by an approved supervising station in compliance with Fire Code of New York 907.15-1225
3. Visible alarm notification appliance to be installed in compliance with Fire Code of New York 907.10-1225 and 907.10.1.4-1225
4. Manual fire alarm boxes to be installed in compliance with Fire Code of New York 907.4-1225
5. Duct smoke detectors to be installed in compliance with Fire Code of New York 907.12-1225
6. All smoke detectors to be installed a minimum of 6" from walls

EMERGENCY LIGHTING LEGEND



EXTERIOR LIGHTING PLAN

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

EXTERIOR LIGHT FIXTURES

SCALE: N.T.S.

BK EL CAPITAN SCONCE SATIN ALUMINUM

BK VERSA STAR RECESSED LIGHT SATIN ALUMINUM

BK SQ. STEP STAR RECESSED WALL SATIN ALUMINUM

BK GLOW STAR PATH LIGHT SATIN ALUMINUM

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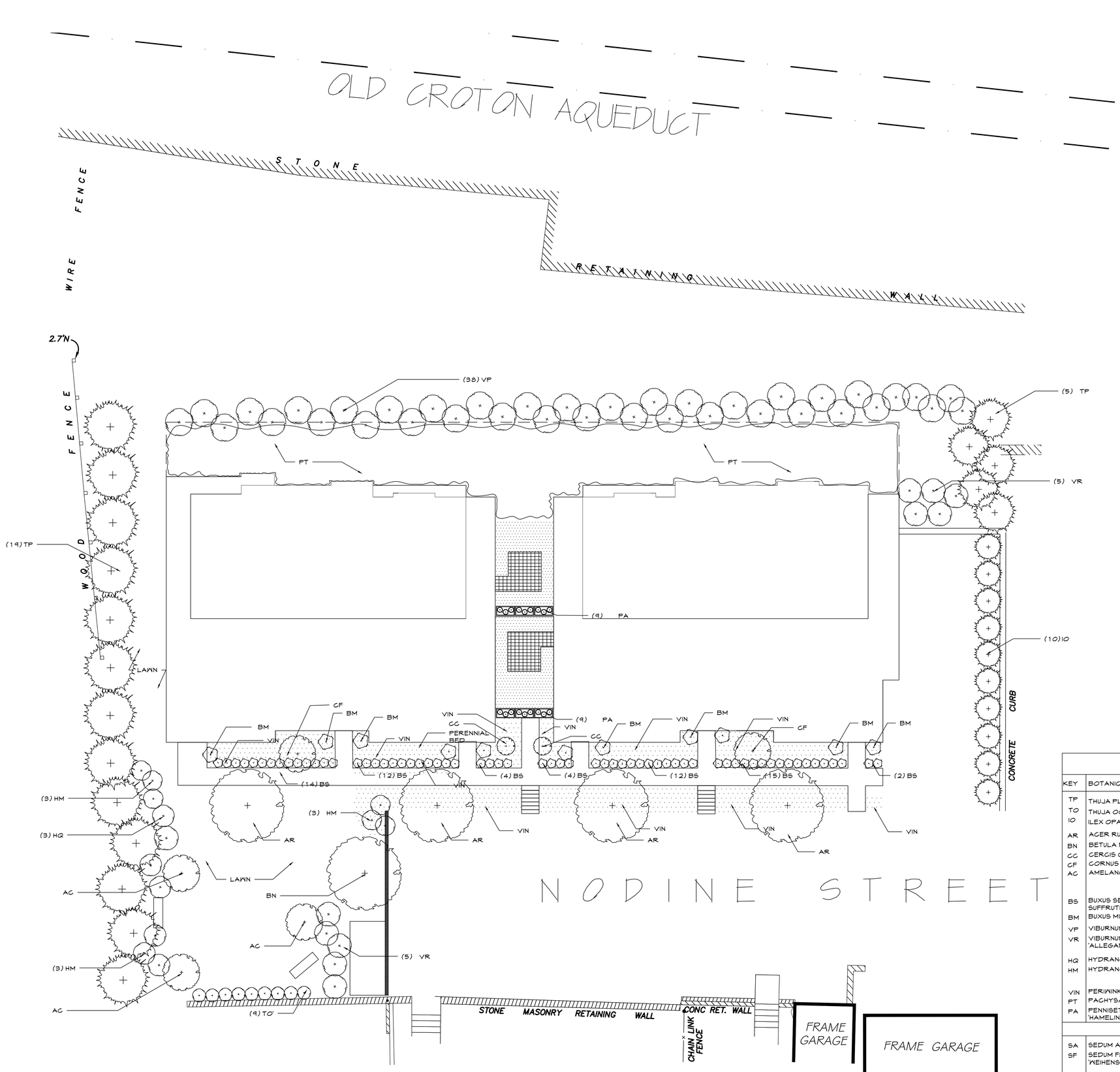
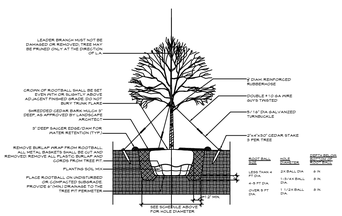
Drawing Title:
LIGHTING PLAN

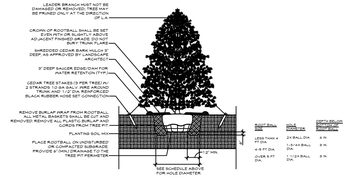
Scale:
AS SHOWN

S-3

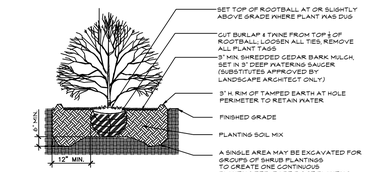




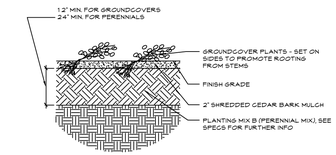
DECIDUOUS TREE PLANTING—OVER 6" CAL.



EVERGREEN TREE PLANTING—WOOD STAKES.



SHRUB PLANTING.



GROUNDCOVER PLANTING.

PLANTING SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
TP	THUJA PLICATA	GIANT ARBORVITAE	8' to 10' HGT.	B&B
TO	THUJA OCCIDENTALIS NIGRA	DARK AMERICAN ARBORVITAE	6' to 8' HGT	B&B
IO	ILEX OPACA	AMERICAN HOLLY	6' to 8' HGT.	B&B
AR	ACER RUBRUM	RED MAPLE 'OCTOBER GLORY'	3" to 3 1/2 " CAL.	B&B
BN	BETULA NIGRA	RIVER BIRCH	12' to 14' HGT.	B&B
CC	CERCIS CANADENIS	EASTERN REDBUD	2 1/2" to 3" CAL.	B&B
CF	CORNUS FLORIDA	FLORIDA DOGWOOD	2 1/2" to 3" CAL.	B&B
AC	AMELANCHIER CANADENIS	SERVICEBERRY	6' to 8' HGT.	B&B
BS	BUXUS SEMPERVIRENS SUFFRUTICOSA	DWARF BOXWOOD	3 GAL.	B&B
BM	BUXUS MICROFHYGIA	WINTERGEM BOXWOOD	5 GAL.	B&B
VP	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	4' to 5' HGT.	B&B
VR	VIBURNUM RHYTIDOPHYLLOIDES 'ALLEGANY'	ALLEGANY VIBURNUM	4' to 5' HGT.	B&B
HQ	HYDRANGEA QUERIFOLIA	OAKLEAF HYDRANGEA	7 GAL.	CONTAINER
HM	HYDRANGEA MACROPHYLLA	ENDLESS SUMMER HYDRANGEA	5 GAL.	CONTAINER
VIN	PERIWINKLE	VINCA BOWLES	1 GAL.	CONTAINER
PT	PACHYSANDRA TERMINALIS	PACHYSANDRA	FLATS	
PA	PENNISETUM ALOPECUROIDES 'HAMELIN'	DWARF FOUNTAIN GRASS	2 GAL.	CONTAINER
GREEN GRID GREEN ROOF				
SA	SEDUM ACRE	ACRE STONECROP		
SF	SEDUM FLORIFERUM 'WEIHENSTEPHANER GOLD'	BAILEY'S GOLD		
SS	SEDUM SPURIUM 'RED CARPET'	STONECROP		

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OLD CROTON AQUEDUCT

STONE FENCE

WIRE FENCE

RETAINING WALL

2.7'N

WOOD FENCE

GREEN GRID GREEN ROOF

AZEK PAVERS STANDARD, 8" X 8"

CORTEN STEEL PLANTER BOX

AZEK PAVERS STANDARD, 8" X 8"

GREEN GRID GREEN ROOF

CORTEN STEEL PLANTER BOX

STONE RETAINING WALL SEE ENGINEERING DRAWING

CURB

CONCRETE

CONCRETE WALK

CONCRETE WALK

HORIZONTAL CEDAR FENCE

GARDEN BENCH

GARBAGE ENCLOSURE GATE

GARDEN BENCH

NODINE STREET

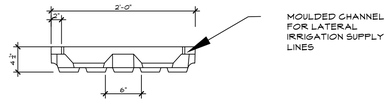
STONE MASONRY RETAINING WALL

CONC RET. WALL

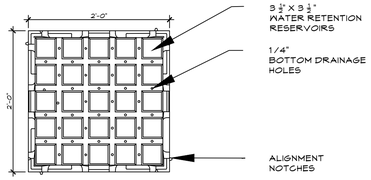
CHAIN LINK FENCE

FRAME GARAGE

FRAME GARAGE



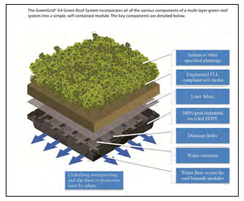
MOULDED CHANNEL FOR LATERAL IRRIGATION SUPPLY LINES



3 1/2" X 3 1/2" WATER RETENTION RESERVOIRS

1/4" BOTTOM DRAINAGE HOLES

ALIGNMENT NOTCHES



GREEN GRID G4 GREEN ROOF SYSTEM

WAYFAIR METALLIC SERIES
CORTEN STEEL PLANTER BOX
16" H X 38" W X 15" D

AZEK STANDARD PAVER
COLOR TO BE 'WATERWHEEL'
8" X 8"

TEAK BENCH
COVENTRY 5 FT

CEDAR FENCE
HORIZONAL STYLE, 6 FT HGT.
1'X6' BOARDS, 4X4 POSTS
TO MATCH NEIGHBOR'S FENCE

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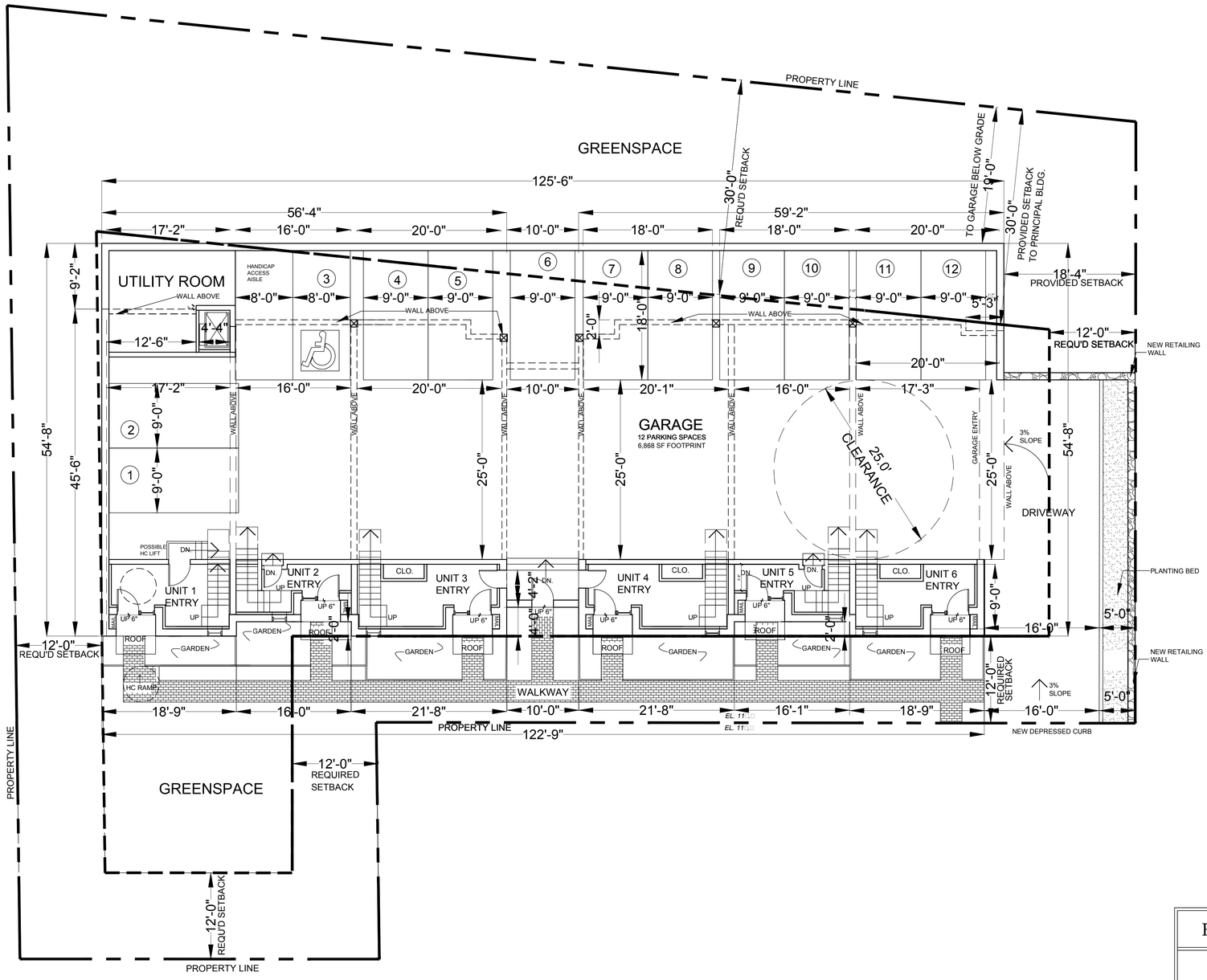

GARAGE PLAN

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

FIN. FLOOR AREA CALCULATIONS

	ENTRY	1ST FL.	2ND FL.	3RD FL.	TOTAL FIN. FLOOR AREA
UNIT 1	120 SF	705 SF	677 SF	245 SF	1,747 SF
UNIT 2	82 SF	592 SF	596 SF	318 SF	1,588 SF
UNIT 3	148 SF	791 SF	760 SF	270 SF	1,969 SF
UNIT 4	148 SF	791 SF	760 SF	270 SF	1,969 SF
UNIT 5	82 SF	593 SF	598 SF	318 SF	1,591 SF
UNIT 6	122 SF	803 SF	760 SF	290 SF	1,975 SF
TOTAL	702 SF	4,275 SF	4,151 SF	1,711 SF	
TOTAL FINISHED FLOOR AREA					10,839 SF

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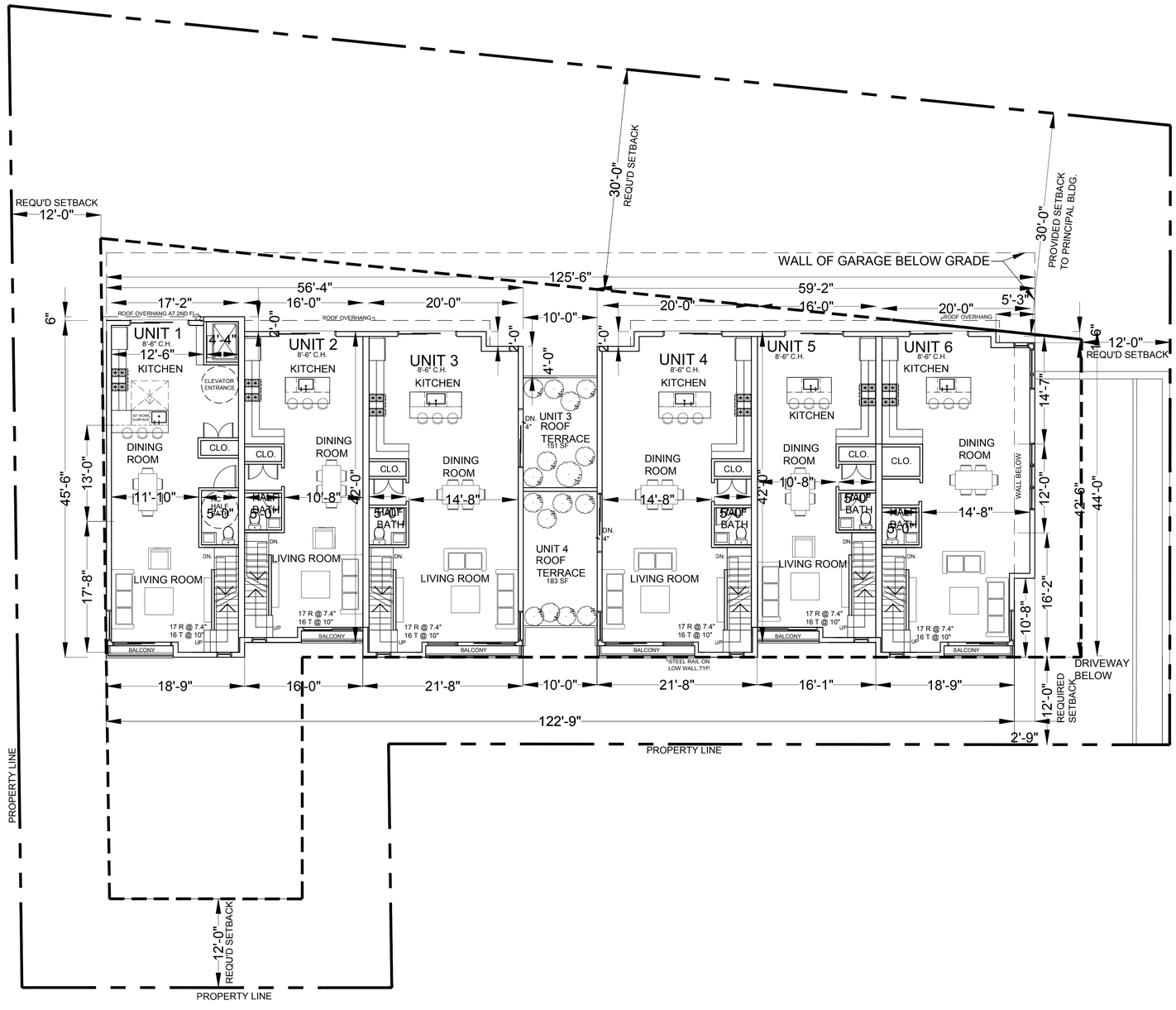
Drawing Title: GARAGE PLAN

Scale: AS SHOWN

A-1



FIRST FLOOR PLAN

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

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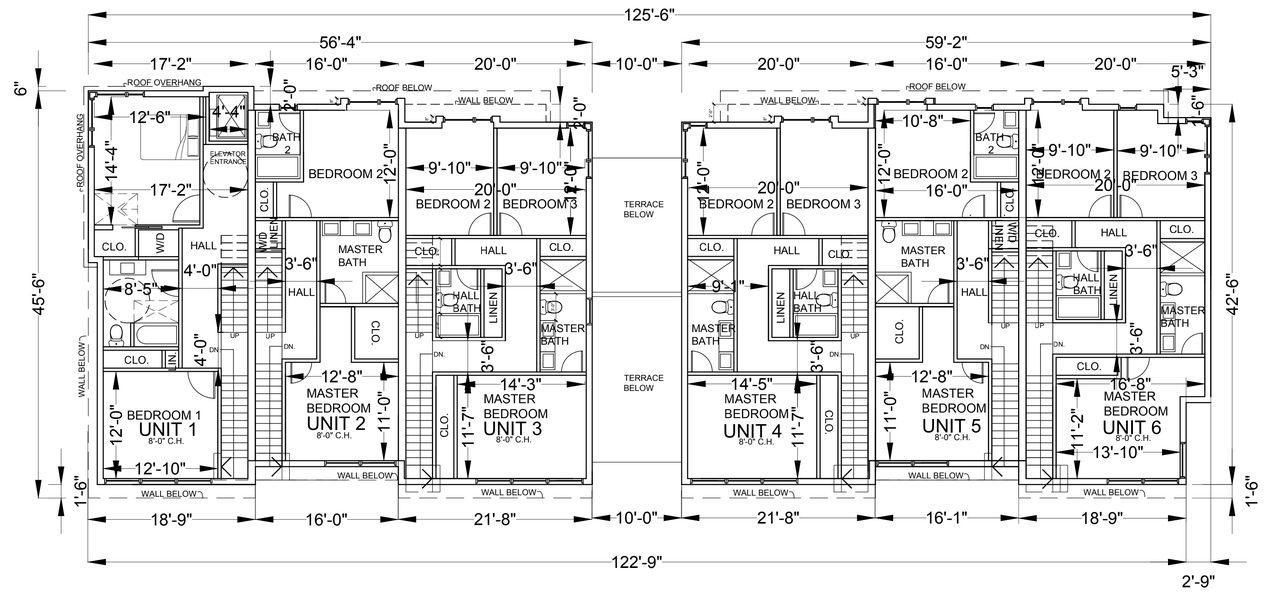
REVISED PLANNING BOARD SUB. 8-14-17
ZONING BOARD SUBMISSION 10-5-17
REVISED PLANNING BOARD SUB. 1-9-18
REVISED ZONING BOARD SUB 1-11-18
REVISED ZONING BOARD SUB 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ARB SUBMISSION 7-23-18

Drawing Title: FIRST FLOOR PLAN

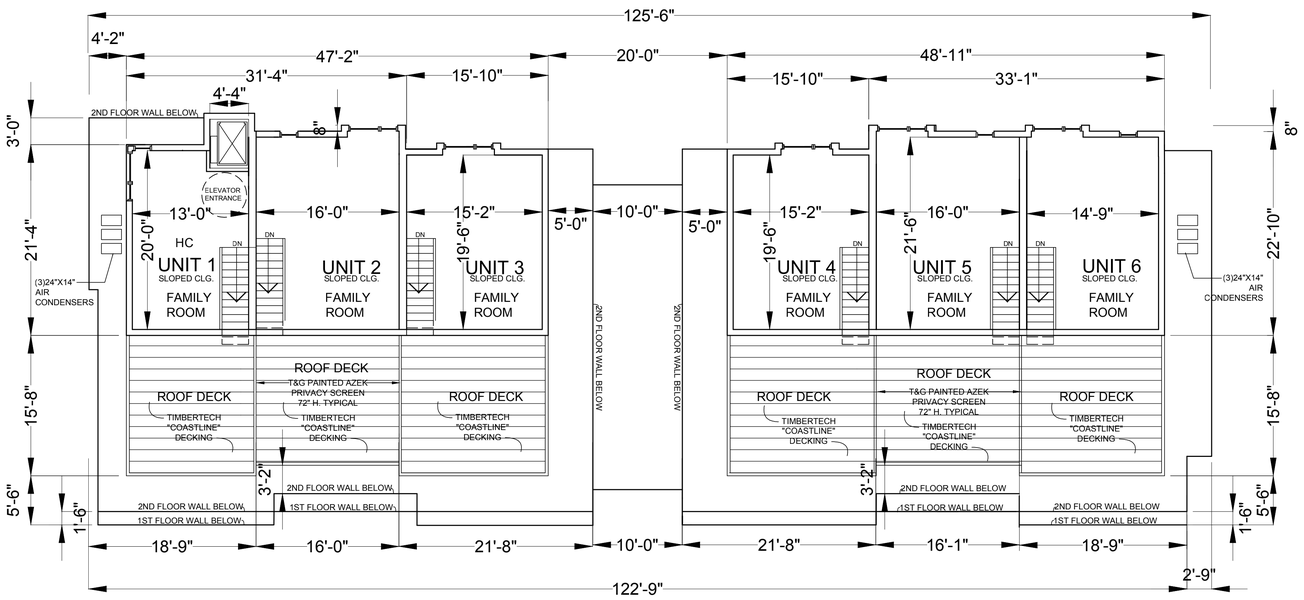
Scale: AS SHOWN

A-2



SECOND FLOOR PLAN

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



THIRD FLOOR PLAN

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

TOWNHOMES at WOODBANK

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REVISED PLANNING BOARD SUB. 8-14-17
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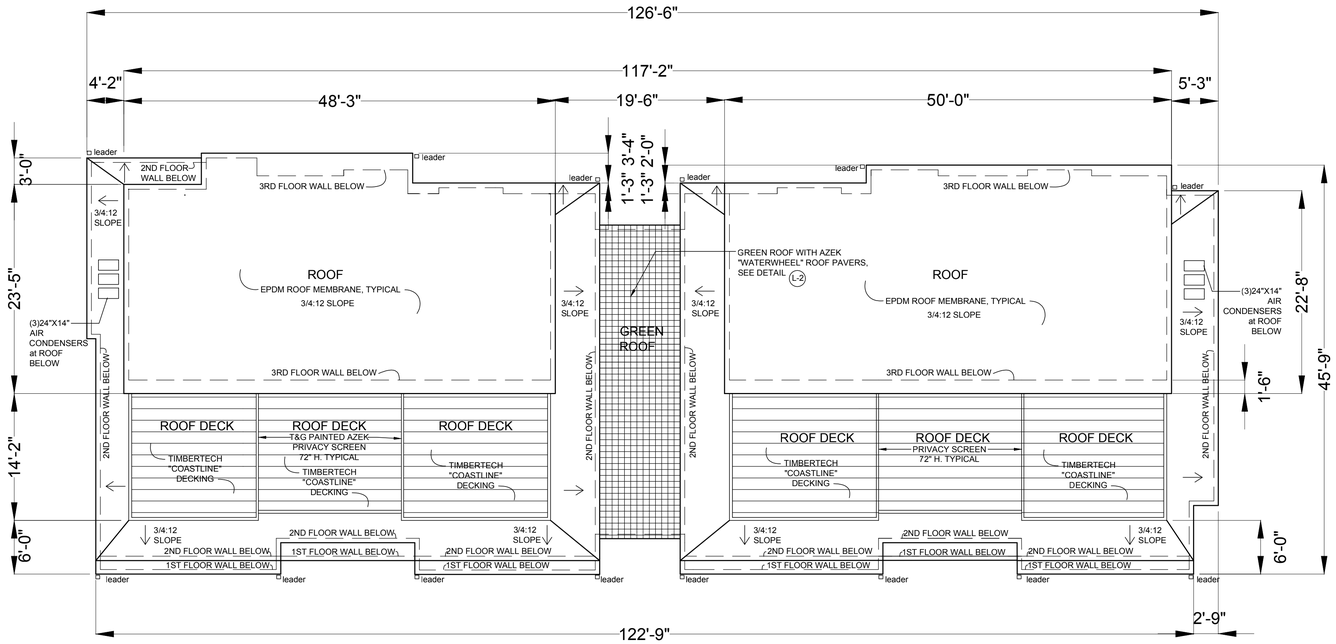
REVISED ZONING BOARD SUB. 1-11-18
REVISED ZONING BOARD SUB. 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ARB SUBMISSION 7-23-18

Drawing Title
2ND FLOOR PLAN
3RD FLOOR PLAN

Scale:
AS SHOWN

A-3



ROOF PLAN

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

ROOF DECKING
TIMBERTECH "COASTLINE"

STANDARD 8"x8" AZEK ROOF PAVERS
at GREEN ROOF
"WATERWHEEL"

TOWNHOMES at WOODBANK

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Drawing Title
ROOF PLAN
ROOF MATERIALS

Scale:
AS SHOWN

Date
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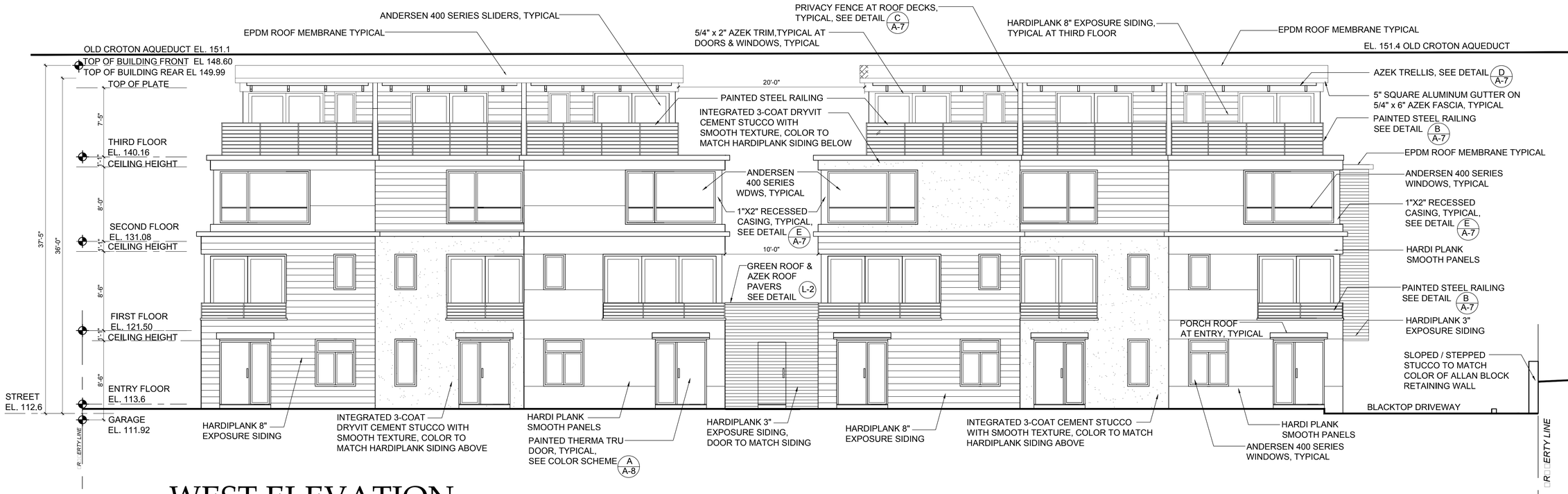
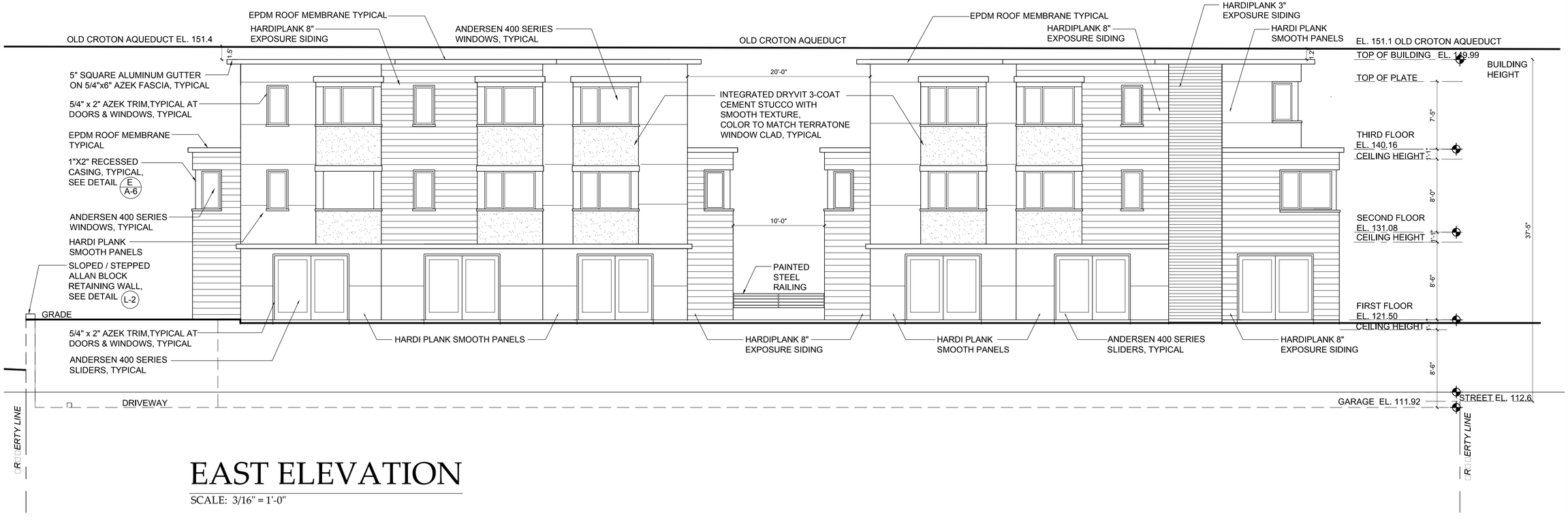
REVISED ZONING BOARD SUB. 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ARB SUBMISSION 7-23-18

A-4



WEST ELEVATION

SCALE: 3/16" = 1'-0"



EAST ELEVATION

SCALE: 3/16" = 1'-0"

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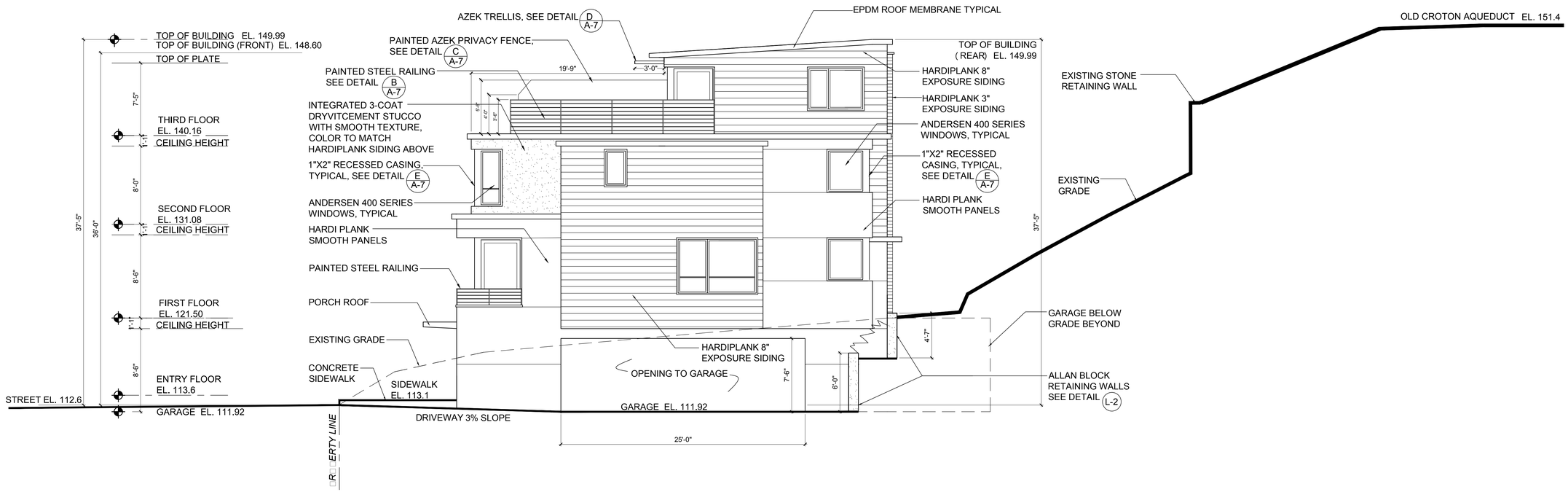
REVISED PLANNING BOARD SUB.	1-18-18
REVISED ZONING BOARD SUB.	2-1-18
REVISED ZONING BOARD SUB.	2-13-18
REVISED PLANNING BOARD SUB.	5-31-18
ARB SUBMISSION 7-23-18	

Drawing Title: EAST & WEST ELEVATION

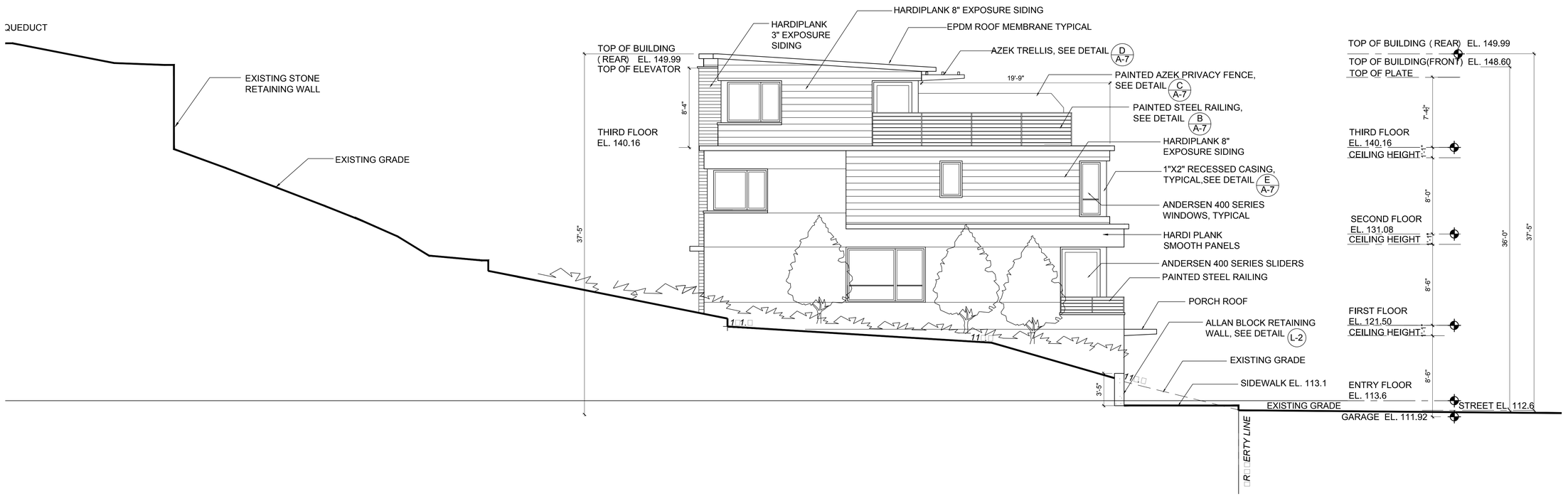
Scale: AS SHOWN

A-5



SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



NORTH ELEVATION

SCALE: 3/16" = 1'-0"

TOWNHOMES at WOODBANK

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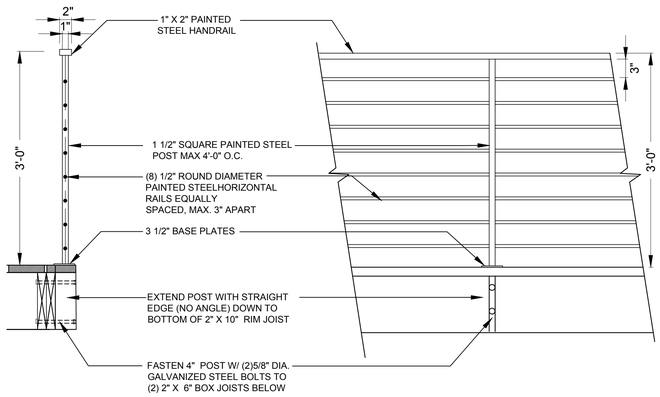
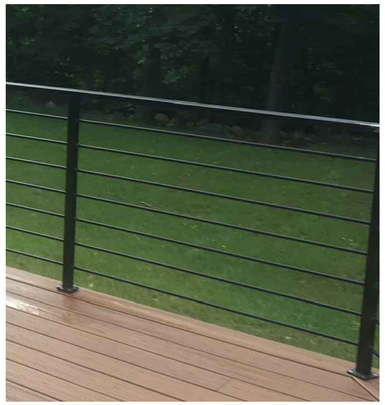
REVISED ZONING BOARD SUB	1-15-18
REVISED ZONING BOARD SUB	2-13-18
REVISED PLANNING BOARD SUB	5-31-18
ARB SUBMISSION 7-23-18	

Drawing Title: NORTH & SOUTH ELEVATION

Scale: AS SHOWN

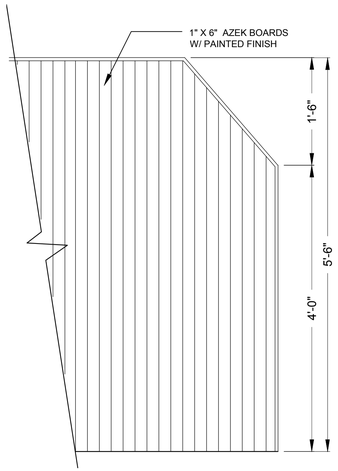
A-6





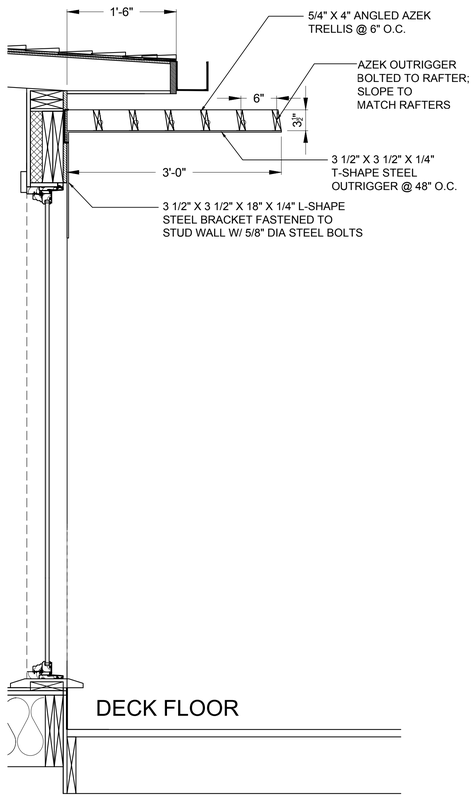
B A-7 PAINTED STEEL RAIL DETAIL

SCALE: 1" = 1'-0"



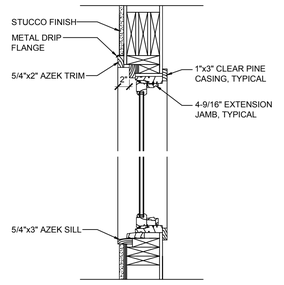
C A-7 PRIVACY FENCE at ROOF DECKS

SCALE: 1" = 1'-0"

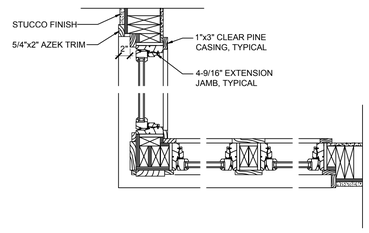


D A-7 TRELLIS DETAIL

SCALE: 1" = 1'-0"



TYPICAL WINDOW SECTION



TYPICAL CORNER WINDOW PLAN

E A-7 EXTERIOR TRIM DETAIL

SCALE: 1" = 1'-0"

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REVISED ZONING BOARD SUB. 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ARB SUBMISSION 7-23-18

Drawing Title: DETAILS

Scale: AS SHOWN

A-7

WEST ELEVATION COLOR SCHEME

SCALE: N.T.S.

PAINTED BLACK STEEL RAILING	AZEK TRELLIS	HARDIPLANK TIMBERBARK SMOOTH	HARDIPLANK MONTEREY TAUPE SMOOTH	HARDIPLANK EVENING BLUE SMOOTH	HARDIPLANK CHESTNUT BROWN SMOOTH	HARDIPLANK AUTUMN TAN SMOOTH	HARDIPLANK GRAY SLATE SMOOTH	HARDIPLANK RICH ESPRESSO SMOOTH	BENJAMIN MOORE WARM GRAY FASCIA	ANDERSEN WINDOW TERRATONE CLAD	EPDM ROOFING	BERGER GUTTER CB GRAY	CONCRETE SIDEWALK

A-7 FRONT DOOR COLORS

UNIT #1	UNIT #2	UNIT #3	UNIT #4	UNIT #5
FRONT DOOR BENJAMIN MOORE #	FRONT DOOR BENJAMIN MOORE #	FRONT DOOR BENJAMIN MOORE #	FRONT DOOR BENJAMIN MOORE #	FRONT DOOR BENJAMIN MOORE #

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REVISED ZONING BOARD SUB. 2.1.18
REVISED ZONING BOARD SUB. 2.13.18
REVISED PLANNING BOARD SUB. 5.31.18
ARB SUBMISSION 7.23.18

Drawing Title:
EAST ELEVATION
COLOR SCHEME

Scale:
AS SHOWN

A-8

EAST ELEVATION COLOR SCHEME

SCALE: N.T.S.

PAINTED BLACK STEEL RAILING

AZEK TRELLIS

HARDIPLANK TIMBERBARK SMOOTH

HARDIPLANK MONTEREY TAUPE SMOOTH

HARDIPLANK EVENING BLUE SMOOTH

HARDIPLANK CHESTNUT BROWN SMOOTH

HARDIPLANK AUTUMN TAN SMOOTH

HARDIPLANK GRAY SLATE SMOOTH

HARDIPLANK RICH ESPRESSO SMOOTH

BENJAMIN MOORE WARM GRAY FASCIA

ANDERSEN WINDOW TERRATONE CLAD

EPDM ROOFING

BERGER GUTTER CB GRAY

CONCRETE SIDEWALK

TOWNHOMES at WOODBANK

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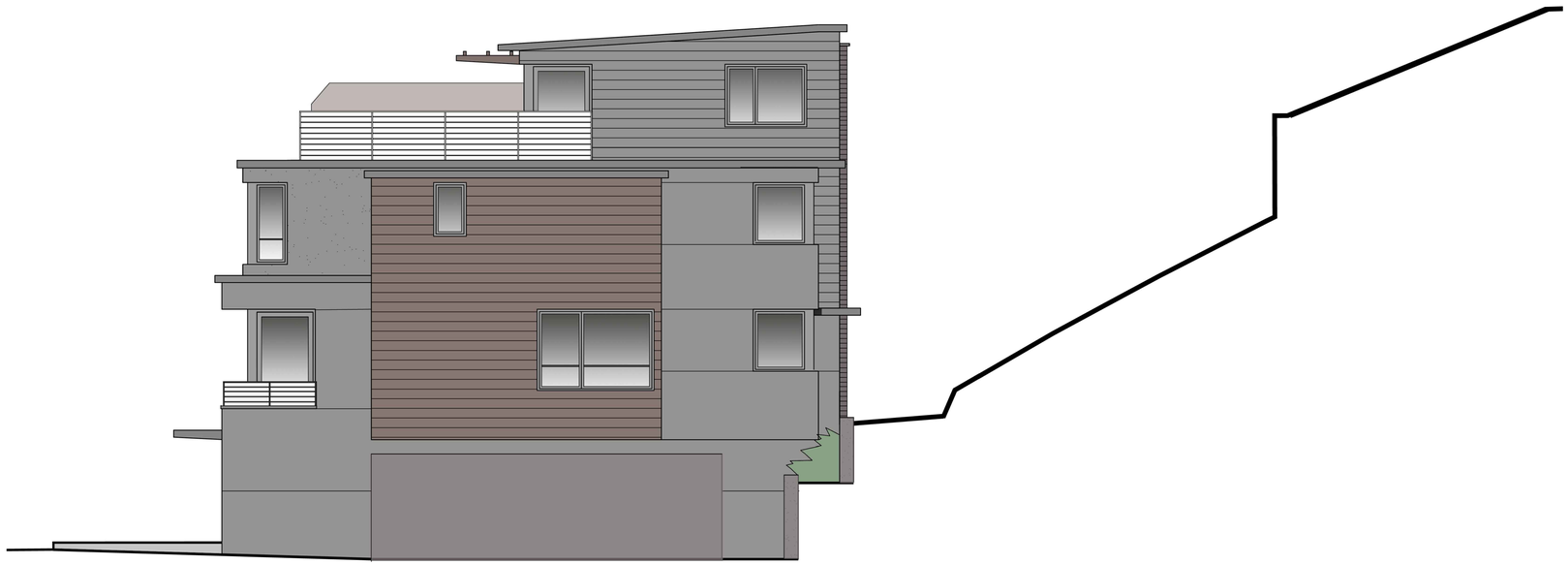
REVISED ZONING BOARD SUB. 1-15-18
REVISED ZONING BOARD SUB. 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ARB SUBMISSION 7-23-18

Drawing Title: EAST ELEVATION COLOR SCHEME

Scale: AS SHOWN

A-9



SOUTH ELEVATION
COLOR SCHEME

SCALE: N.T.S.

NORTH ELEVATION
COLOR SCHEME

SCALE: N.T.S.

AZEK RAILING | AZEK TRELLIS | HARDIPLANK TIMBERBARK SMOOTH | HARDIPLANK GRAY SLATE SMOOTH | ALLAN BLOCK GRANITE GRAY RETAINING WALL | CONCRETE SIDEWALK | ALLAN BLOCK & STUCCO RETAINING WALLS

TOWNHOMES at WOODBANK

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ZONING BOARD SUBMISSION	10-5-17
REVISED PLANNING BOARD SUB.	1-18-18
REVISED ZONING BOARD SUB.	2-13-18
REVISED ZONING BOARD SUB.	2-13-18
REVISED PLANNING BOARD SUB.	5-31-18
ARB SUBMISSION 7-23-18	

Drawing Title: EAST ELEVATION, COLOR SCHEME

Scale: AS SHOWN

A-10

VIEW OF PROPOSED BUILDING - AERIAL VIEW 1

TOWNHOMES at WOODBANK

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Drawing Title
VIEW PRESERVATION

Date
REVISED PLANNING BOARD SUB. 12-6-17

Scale:
AS SHOWN

A-11

PROPERTY FROM the OLD AQUEDUCT

SCALE: N.T.S.

TOWNHOMES at WOODBANK

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Drawing Title: PROPERTY

Scale: AS SHOWN

Date:
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PLANNING BOARD SUBMISSION 3-1-17
REVISED PLANNING BOARD SUB. 5-4-17
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REVISED PLANNING BOARD SUB. 1-9-18
REVISED ZONING BOARD SUB. 1-15-18
REVISED ZONING BOARD SUB 2-13-18
REVISED PLANNING BOARD SUB. 5-31-18
ABB SUBMISSION 7-23-18

A-12

PROPERTY FROM NODINE STREET

SCALE: N.T.S.

TOWNHOMES at WOODBANK

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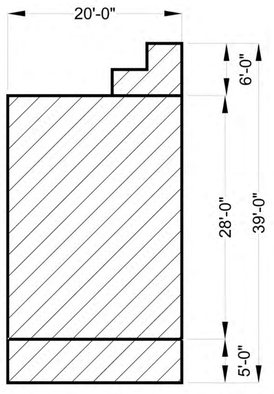
REVISED PLANNING BOARD SUB.	1-9-18
REVISED ZONING BOARD SUB.	1-11-18
REVISED ZONING BOARD SUB.	2-13-18
REVISED PLANNING BOARD SUB.	5-31-18
ARB SUBMISSION 7-23-18	

Drawing Title: PROPERTY

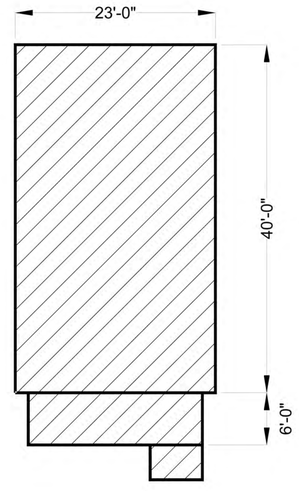
Scale: AS SHOWN

A-13

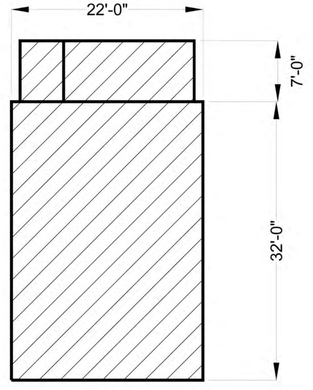
#378 WARBURTON



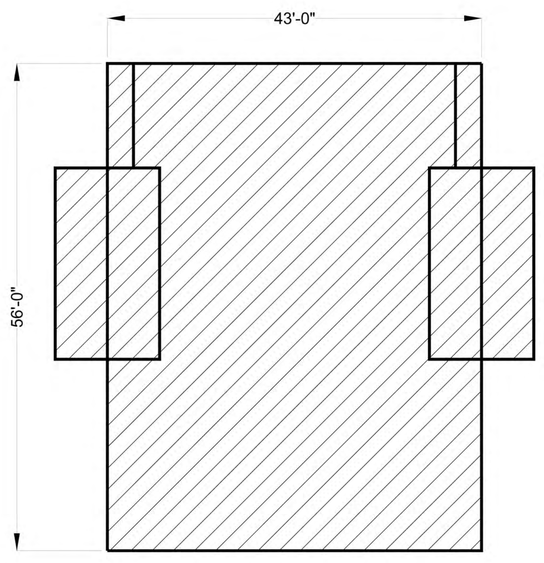
#374 WARBURTON



#370 WARBURTON



#376 NODINE



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Date
ZONING BOARD SUBMISSION 1-11-18

Drawing Title
VIEW PRESERVATION

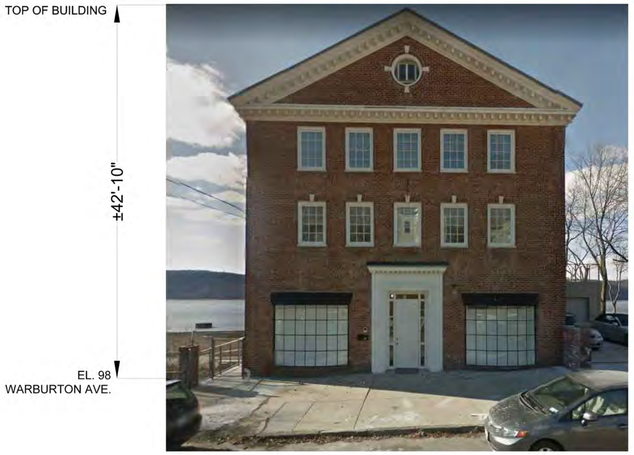
Scale
AS SHOWN

A-14

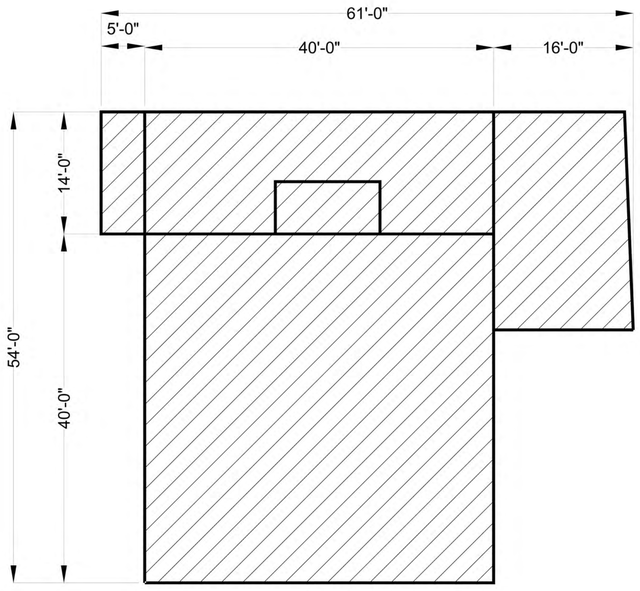
TOWNHOMES AT WOODBANK

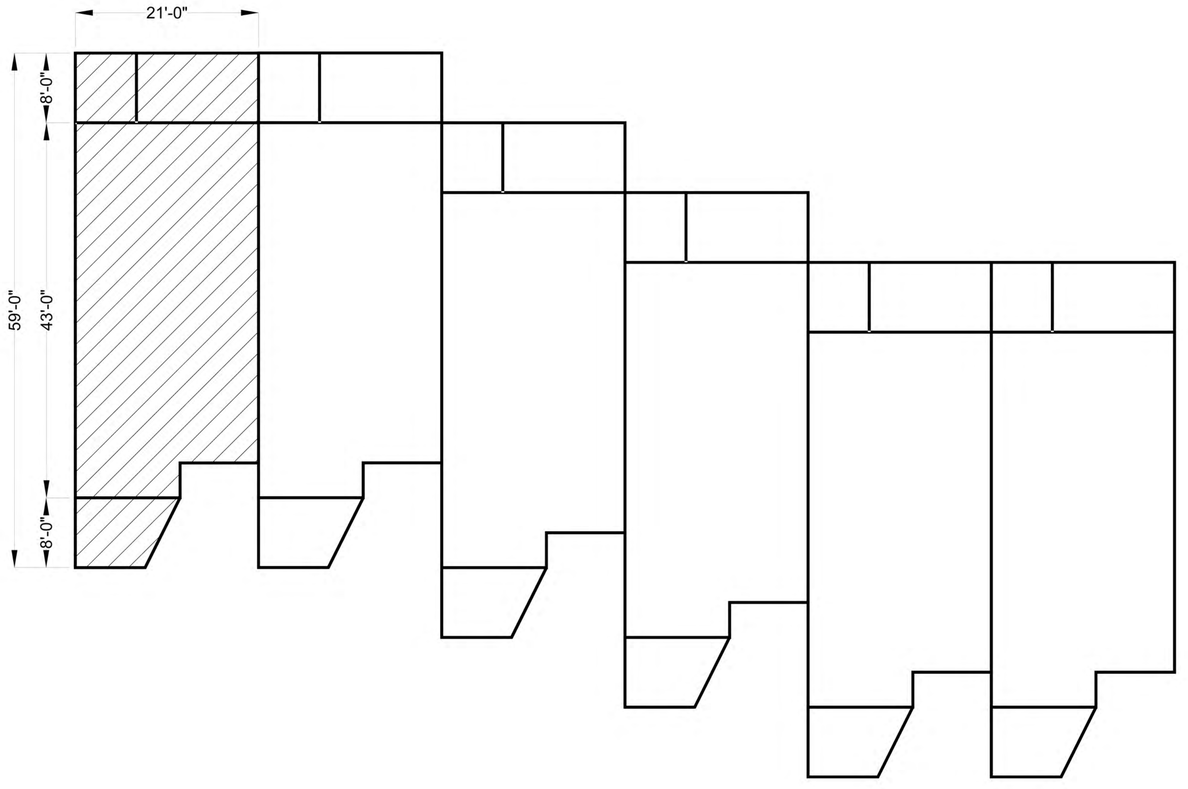
MASSING COMPARISON TO NEIGHBORING PROPERTIES

#385 WARBURTON



HASTINGS LANDING





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Date
ZONING BOARD SUBMISSION 1-11-18

Drawing Title
VIEW PRESERVATION

Scale
AS SHOWN

A-15

TOWNHOMES AT WOODBANK

MASSING COMPARISON TO NEIGHBORING PROPERTIES

Andersen WINDOWS • DOORS

400 SERIES

CASEMENT WINDOWS

Andersen® 400 Series casement windows are built to perform beautifully. Their solid wood frames and sash provide strength, while the vinyl covering and weather-tight construction keep the window and your home protected from the elements. On the inside you have the choice of natural pine or a low-maintenance white, dark bronze or black* finish. For added style there is a wide range of grille, hardware and art glass options. It's no wonder that they are our best-selling windows of all time.

DURABLE

- Virtually maintenance-free
- Perma-Shield® exteriors never need painting and won't peel, blister, flake or corrode**
- Frame exterior is protected by a tough vinyl cover that resists dents and repels water and provides long-lasting protection
- Available with Stormwatch® protection for coastal areas

ENERGY EFFICIENT

ASK ABOUT ENERGY STAR

- Weather-resistant construction for greater comfort and energy efficiency
- Weatherstripping is designed to seal out drafts, wind and water
- Variety of Low-E4® glass options are available to help control heating and cooling costs in any climate
- Many 400 Series casement windows have options that make them ENERGY STAR® v. 6.0 certified throughout the U.S.

BEAUTIFUL

- Seven exterior color options
- Natural pine, white, dark bronze or black* interiors
- Extensive hardware selection
- Add style with grilles, exterior trim, art glass or patterned glass

EXTERIOR COLORS

White | Canvas | Sandtone | Terratone | Forest Green | Dark Bronze | Black

CUSTOM SIZES

*Dark Bronze and Black interiors are only available with Dark Bronze and Black exteriors respectively. See your Andersen dealer for availability. **Visit andersenwindows.com/warranty for details.

400 SERIES CASEMENT WINDOWS

GLASS OPTIONS

- Low-E4® glass
- Low-E4 glass with HeatLock® technology
- Low-E4 Sun glass
- Low-E4 SmartSun™ glass
- Low-E4 SmartSun glass with HeatLock technology

Additional glass options are available. Contact your Andersen dealer.

ART GLASS

A wide range of art glass designs are available to add beauty to your home.

PATTERNED GLASS

Available in four attractive patterns ideal for letting light into the home while obscuring vision.


Obscure


Cascade


Reed

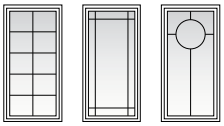

Fern

EXTERIOR TRIM

Available in 11 colors to complement your exterior.

GRILLES

Choose from dozens of popular designs or work with Andersen to create custom patterns



INTERIOR OPTIONS


Pine


White


Dark Bronze*


Black*

Naturally occurring variations in grain, color and texture of wood make each window one-of-a-kind. All wood interiors are unfinished unless prefinished White, Dark Bronze or Black is specified.

HARDWARE FINISHES


Antique Brass


Black


Bright Brass


Brushed Chrome


Distressed Bronze


Distressed Nickel


Gold Dust


Oil Rubbed Bronze


Polished Chrome


Satin Nickel


Stone


White

Distressed bronze and oil rubbed bronze are "living" finishes that will change with time and use.

HARDWARE

CLASSIC SERIES™


Stone | **White**

ESTATE™


Antique Brass | Bright Brass
Brushed Chrome | Distressed Bronze
Distressed Nickel | Oil Rubbed Bronze
Polished Chrome | Satin Nickel

TRADITIONAL FOLDING


Antique Brass | Black | Bright Brass
Distressed Bronze | Distressed Nickel
Gold Dust | Oil Rubbed Bronze | Satin Nickel
Stone | White

CONTEMPORARY FOLDING


Black | Bright Brass
Gold Dust | Oil Rubbed Bronze
Satin Nickel | Stone | White

*Dark Bronze and Black interiors are only available with Dark Bronze and Black exteriors respectively. See your Andersen dealer for availability.
Printing limitations prevent exact color and finish duplication. See your Andersen dealer for actual finish samples.

WINDOWS • DOORS Andersen

For more information, visit **andersenwindows.com/400series**

For help finding an Andersen product or dealer near you, please call us at 877.577.7655 or visit andersenwindows.com.

Design Ideas

For Your Outdoor Living Spaces

Allan Block®
Retaining Walls
& Patio Walls
Ideas Catalog

ALLAN BLOCK

allanblock.com

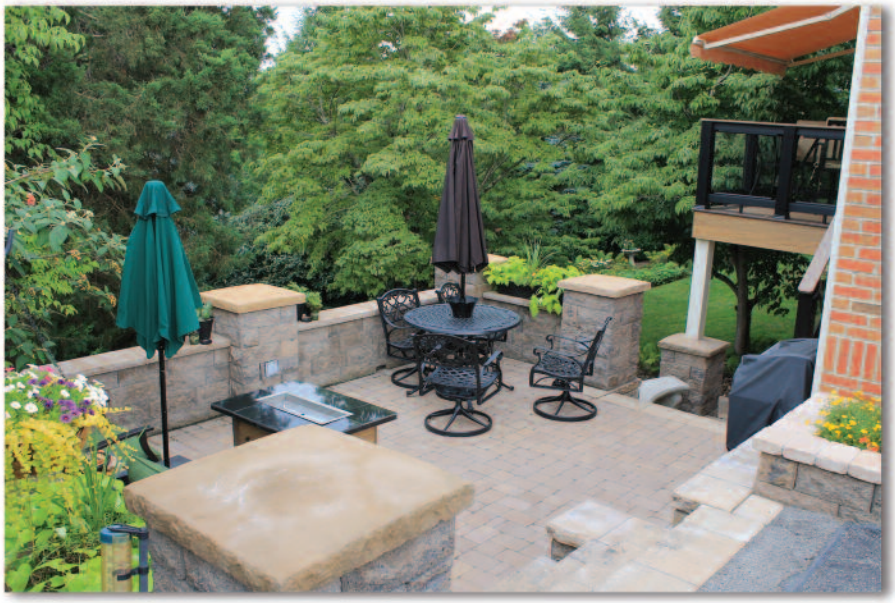
Retaining and Patio Walls

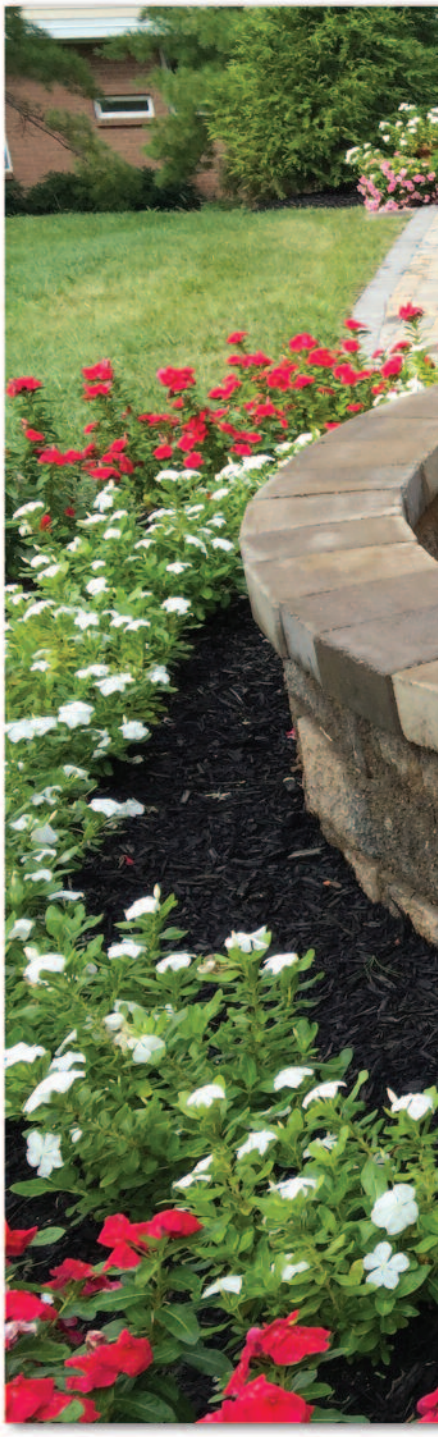
The Allan Block products are inspired by nature to help create beautiful outdoor spaces in the world we live in.

S

We pride ourselves on the training we provide to our Allan Block network of professionals so you can be confident in your choice.

Allan Block has many products available to help you transform your outdoor living area to a backyard destination. We hope our ideas will inspire you to create your own masterpiece to enjoy for years with family and friends.





Dress up your backyard space to entertain family and friends while enjoying the great outdoors.

Outdoor Rooms

Move the fun outdoors for a relaxed and casual atmosphere with built-in seating, firepits, kitchens and more.

Outdoor Entertaining

Enjoy your surroundings by transforming your outdoor space into a gathering spot for family and friends.

Create cozy spaces for fireside chats or open areas for large get-togethers. Build memories that last a lifetime.

Claim more space by turning sloping yards into something extraordinary with beautiful gardens and planted terraces.

Sloping Yards

Use grade changes to your advantage by adding multiple walls or stairways to elevate your architectural style with a warm inviting outdoor space.

Entryways

Create a bold statement or charm your guests with visual elegance.

Flowing curves, stunning stairways or graceful transitions will welcome you home. With the AB Collections we have the products to accent your architectural style.

With our design flexibility you can build strong, durable patios in any size and shape with very little maintenance.

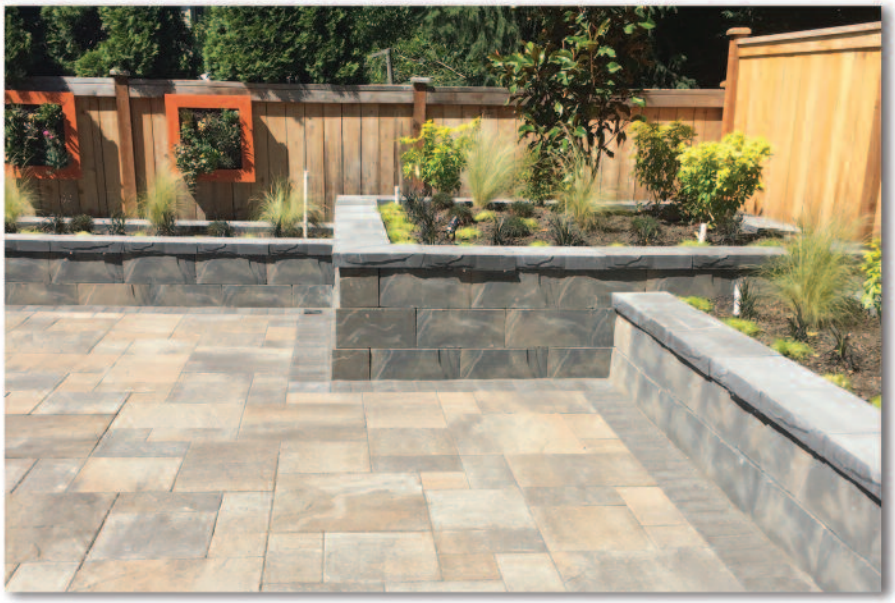
Patios

Create more usable space or multi-level patios for a quiet getaway or to entertain family and friends.

Stairways

Enhance your outdoor spaces with stylish and functional stairways to easily connect upper and lower elevations in elegant transitions.

Stairways add a visual element that can flow through the landscape with curves or follow along the side of a slope. The design possibilities are endless.



Upgrade your backyard space and extend your home outdoors, adding beauty and function.

Backyard Spaces

Design a comfortable outdoor living space with a purpose. Envision a relaxed kitchen or bar space, a private oasis or a backyard entertaining area.

Lighting

Accentuate moonlit evenings with lighting and create enjoyable outdoor spaces for family and friends.

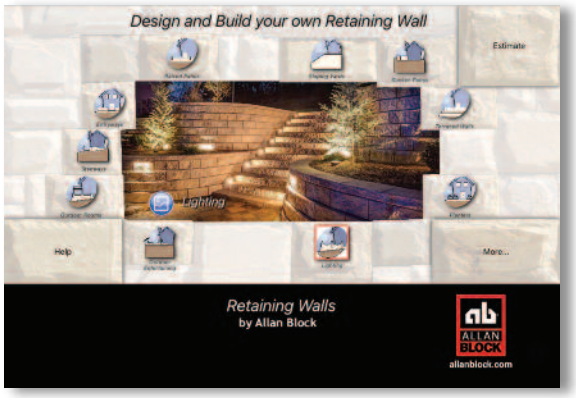
Highlight the beauty of your backyard or mark the boundaries with warm, subtle lighting.

Design and Estimating

Estimating made easy with our great tools.

Retaining Wall App

Design and estimate your retaining wall projects with material outputs given for all retaining wall collections. A detailed package is generated and emailed instantly.



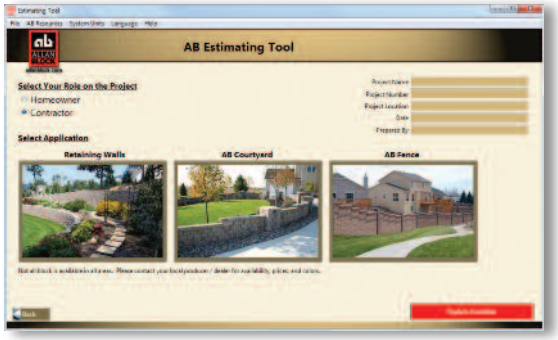
Courtyard Patio Wall App

Design and estimate two-sided patio walls using panels, posts, corners and more or choose from pre-designed options. A detailed package is generated and emailed instantly.

Apps are available for tablet, mobile devices and Mac/PC computers.

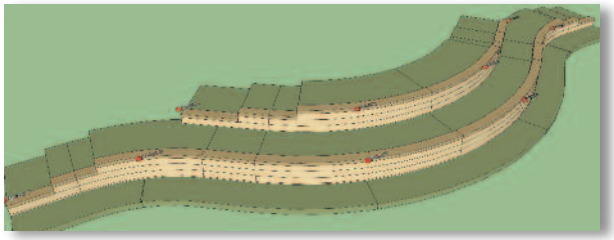
Estimating Tool

Estimating your project for retaining walls, patio walls and/or fences all in one tool. Choose the product, enter the project's details and instantly receive a detailed list that includes quantities for the block, rock, grid and more.



3D Modeling Tool

New for 2018, using the estimating Apps our AB Design Center will email a file that can be opened in the free 3D modeling tool SketchUp.



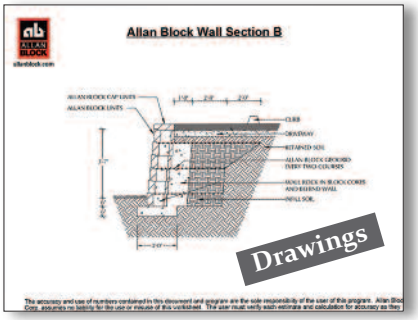
From App to 3D design in seconds.

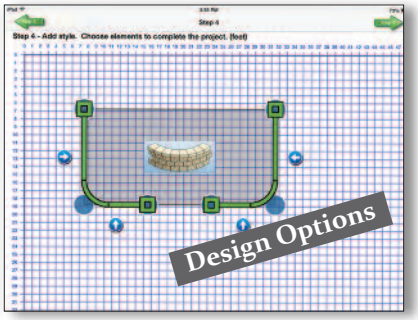
Visit allanblock.com for complete installation details.

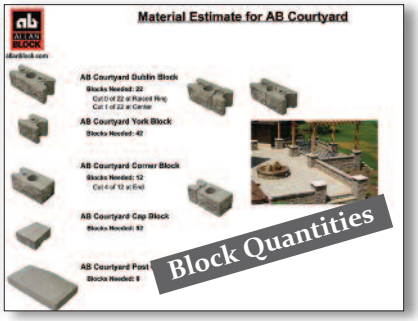
Use the Allan Block Apps or the AB Estimating Tool to create a detailed material estimate on your next project. By simply entering in the project details, you can generate specific drawings and product estimates from all the available Allan Block products.

Download them today to check out the great design and estimating tools available to you for FREE.

Download Today!







Visualize the Project

NEW FOR 2018

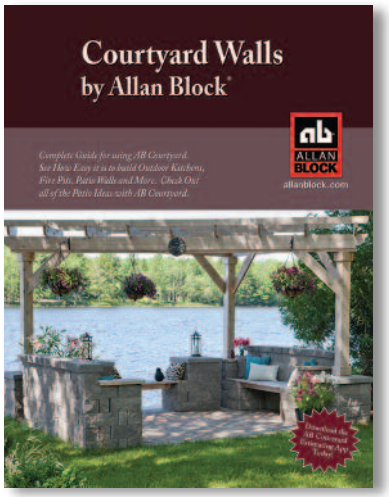
The Allan Block Apps can create a file with the details of your project that can be used in a 3D modeling tool to create a visual image of your project. Then use images from the library to create and design the look you want to achieve for your outdoor space.

Visit allanblock.com for complete installation details.

Installation

What is a Courtyard Wall

An AB Courtyard Patio Wall is a two-sided free-standing wall system that is durable, versatile and a cost-effective way to bring value to your landscaping. The AB Courtyard patio wall blocks stack up quick and easy and can be used to surround patios giving definition to outdoor rooms and additional seating. They can also be used to create patio elements like custom outdoor kitchens, BBQ surrounds, firepits, ponds and much more.



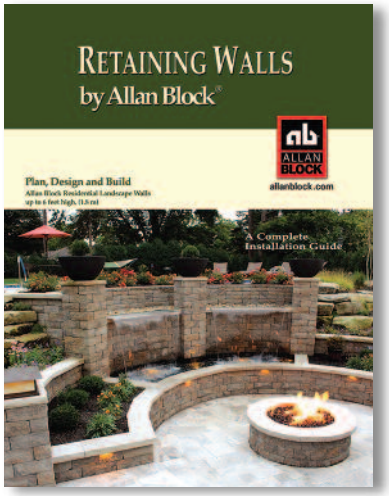
The Allan Block Courtyard Wall Installation Guide includes complete and detailed installation information. Download today at allanblock.com.

What is a Retaining Wall

A retaining wall is a structure that holds or retains the soil behind it. There are many types of materials that can be used to create retaining walls such as concrete blocks, poured concrete, treated timbers, rocks or boulders. Some are easy to use, others have a shorter life span, but all can retain soil.

Retaining walls are built for many purposes from simple planters or raised patios up to managing large grade changes or commercial projects.

Using the Allan Block products gives you a lifetime of durability and versatility with your design. The system can be used with one block style or by blending the modular blocks together to create a patterned appearance for a unique one-of-a-kind look.



The Allan Block Retaining Wall Installation Guide includes complete and detailed installation information. Download today at allanblock.com.

Visit allanblock.com for complete installation details.

Build an Allan Block Courtyard Patio Wall

Panel Installation

1. Determine the location of the wall panel on an existing concrete or paver pad. If installing on soil dig a trench that is 3 in. deep x 7 in. wide (75 mm x 178 mm) the length of the wall panel. Fill the trench with wall rock, compact and level to create a solid foundation.

2. With the raised rings facing up, install the first two courses of block at the same time on the existing patio or level foundation of wall rock. Tamp and level the blocks into place. Install the first two courses at the same time to ensure that the blocks line up properly.

3. Continue stacking courses of blocks in the pattern you have chosen until the desired height is achieved. Remember to offset the block seams on each course of blocks from the course below.

4. Finish the wall panel with Wall Caps. Secure in place with a bead of masonry adhesive.

More Information
Wall Panels

More Information
Posts

Installation
Videos

Post Installation

1. Determine the location of the post/pillar on an existing patio. If installing on soil, dig a hole that is 4 in. deep and 24 in. square (100 mm x 600 mm). Fill with wall rock, compact and level to create a solid foundation.

2. Using 4 AB Courtyard Corner Blocks, install the first course by placing the blocks with the long sides facing out. Square up the blocks, tamp into place and level.

3. Continue stacking courses until the desired height is achieved. Alternate between the patterns to offset the seams from the course below.

4. Finish with two Post Caps. Secure in place with a bead of masonry adhesive.

Visit allanblock.com for complete installation details.

Build an Allan Block Retaining Wall

Gravity Walls

1. Mark the location of the retaining wall and dig a trench a minimum of 6 in. deep and 24 in. wide (150 mm x 600 mm) for gravity walls up to 3 ft (0.9 m). If reinforcement will be needed, additional excavation will need to be completed to accommodate the length of the grid, see allanblock.com for complete details. Excavated materials that can not be used as backfill material will need to be discarded. Compact the trench thoroughly with a hand tamper or plate compactor. Install a drain pipe at the back of the trench for walls with poor drainage, over 4 ft. (1.2 m) tall or any reinforced walls. Make sure the drain pipe can be vented to daylight. Place a minimum of 6 in. (150 mm) of wall rock in the trench. Do not use sand. Compact thoroughly with a hand tamper or plate compactor. Level the entire trench.

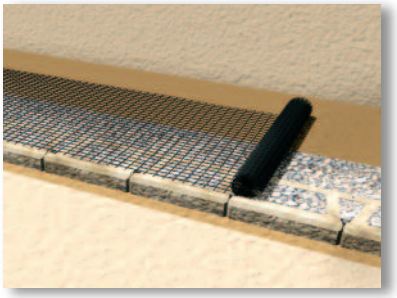
2. Install the blocks on the wall rock foundation with the raised front lip facing up and forward near the front of the trench. Verify the proper position of the AB blocks by sighting down the back of the raised front lip or using a string line. Level each block from side to side and front to back as installed, make adjustments as necessary. Careful attention to a straight and level base course will ensure a quality finished wall.

3. Once the entire base course is installed, fill in front of the blocks with on-site soils to keep the base course from shifting while filling and compacting the blocks. Fill the hollow cores and 12 in. (300 mm) behind the block with wall rock to the height of the block. Use infill or approved on-site soils to backfill behind the wall rock to the height of the block. Using a hand tamper or plate compactor, compact the wall rock and on-site soils behind the block in a path parallel to the wall. Check the base course of blocks for level and adjust as needed.

4. If reinforcement is needed see next page and go to allanblock.com for complete details. Sweep off the top surface of the installed blocks. Stack the next course so that the block seams are offset from the course below. Check each block for level and alignment, making adjustments as needed. Fill the hollow cores and behind the block with wall rock, to the height of the block. Use infill or approved on-site soils to backfill behind the wall rock. Using a plate compactor, compact on the blocks to lock them together as well as the area behind the blocks as previously done. Repeat these steps to the top of wall.

5. Install AB Capstones for a clean, finished look. Secure in place with masonry adhesive. For a different finishing option fill the hollow cores and behind the top course with rock, mulch or dirt if plantings are desired up the face of the wall.

Visit allanblock.com for complete installation details.



Use AB Reinforcement Grid when required for building taller walls or walls in poor soils.

Reinforced Walls

1. If reinforced walls are needed, excavate behind the wall to accommodate the design length of the geogrid. Refer to your approved plans for exact length. Installing Reinforced Walls will be the same as Gravity Walls for trench and base course installation as shown on previous page. Once base course is installed and compacted, begin installing the first layer of AB Reinforcement Grid by rolling it out along the back of the wall on top of the blocks. Stake grid in place.

2. Continue installing your next courses of blocks as shown in Step 4 under Gravity Walls. Per your approved plans, install geogrid on every other course of the wall.

3. See allanblock.com for complete installation details when installing geogrid on curves and corners.

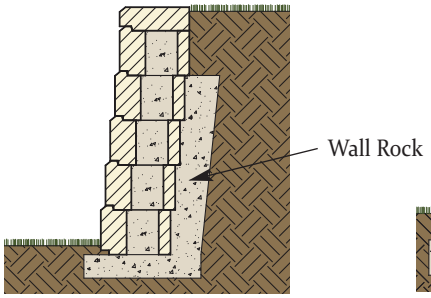
More Information Gravity Walls

More Information Reinforced Walls

Installation Videos

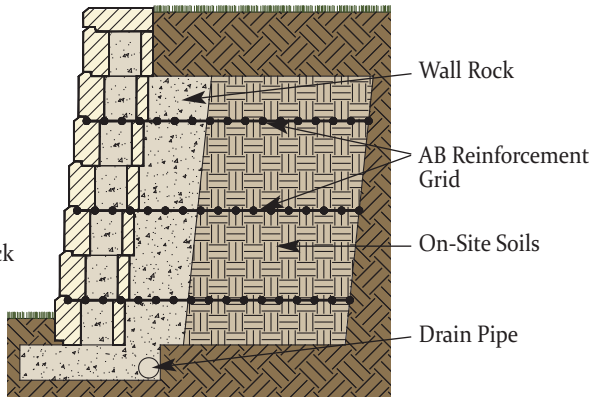
Retaining Wall Types

Gravity Walls



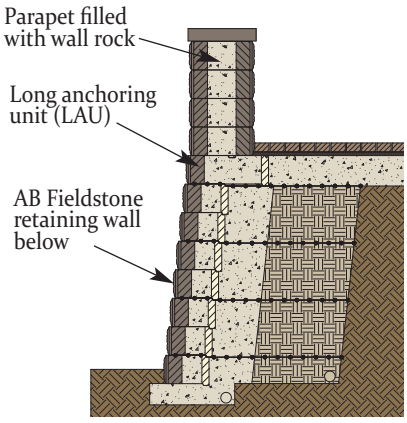
For Gravity Wall Installation - Walls under 4 ft (1.2 m)

Reinforced Walls



For Reinforced Wall Installation - Walls over 4 ft (1.2 m)

Parapets with AB Fieldstone



Build free standing parapets on existing surfaces or above retaining walls.

Visit allanblock.com for complete installation details.

Block Collections

AB® Collection - Retaining Walls

AB Stone & AB Classic
Approx. 1 blk/ft² (11 blk/m²)
8 in. H x 12 in. D x 18 in. L
(200 mm H x 300 mm D x 460 mm L)
75 lbs (35 kg)

AB Jumbo Junior
Approx. 2 blk/ft² (22 blk/m²)
8 in. H x 9.5 in. D x 9 in. L
(200 mm H x 240 mm D x 230 mm L)
35 lbs (15 kg)

AB Lite Stone
Approx. 2 blk/ft² (22 blk/m²)
4 in. H x 12 in. D x 18 in. L
(100 mm H x 300 mm D x 460 mm L)
35 lbs (15 kg)

AB Junior Lite
Approx. 4 blk/ft² (44 blk/m²)
4 in. H x 12 in. D x 9 in. L
(100 mm H x 300 mm D x 230 mm L)
18 lbs (10 kg)

Caps and Corners are available.

AB Aztec® Collection - Retaining Walls

New for 2018

AB Aztec Classic
Approx. 1 blk/ft² (11 blk/m²)
8 in. H x 12 in. D x 18 in. L
(200 mm H x 300 mm D x 460 mm L)
75 lbs (35 kg)

AB Aztec Junior
Approx. 2 blk/ft² (22 blk/m²)
8 in. H x 9.5 in. D x 9 in. L
(200 mm H x 240 mm D x 230 mm L)
35 lbs (15 kg)

AB Aztec Lite Stone
Approx. 2 blk/ft² (22 blk/m²)
4 in. H x 12 in. D x 18 in. L
(100 mm H x 300 mm D x 460 mm L)
35 lbs (15 kg)

AB Aztec Junior Lite
Approx. 4 blk/ft² (44 blk/m²)
4 in. H x 12 in. D x 9 in. L
(100 mm H x 300 mm D x 230 mm L)
18 lbs (10 kg)

Caps and Corners are available.

AB Europa® Collection - Retaining Walls

AB Dover
Approx. 1 blk/ft² (11 blk/m²)
8 in. H x 10.5 in. D x 18 in. L
(200 mm H x 265 mm D x 460 mm L)
80 lbs (35 kg)

AB Palermo
Approx. 2 blk/ft² (22 blk/m²)
8 in. H x 9.5 in. D x 9 in. L
(200 mm H x 240 mm D x 230 mm L)
35 lbs (15 kg)

AB Barcelona
Approx. 2 blk/ft² (22 blk/m²)
4 in. H x 10.5 in. D x 18 in. L
(100 mm H x 265 mm D x 460 mm L)
40 lbs (20 kg)

AB Bordeaux
Approx. 4 blk/ft² (44 blk/m²)
4 in. H x 10.5 in. D x 9 in. L
(100 mm H x 265 mm D x 230 mm L)
20 lbs (10 kg)

Caps and Corners are available.

Visit allanblock.com for more information.

Get More
Information Here

AB Fieldstone Collection® - Retaining Walls

Made with Recycled Materials

812 facing unit w/SAU
Approx. 1.5 blk/ft² (16 blk/m²)
8 in. H x 13 in. D x 12 in. L
(200 mm H x 330 mm D x 300 mm L)
60 lbs (30 kg)

812 facing unit w/LAU
Approx. 1.5 blk/ft² (16 blk/m²)
8 in. H x 23 in. D x 12 in. L
(200 mm H x 585 mm D x 300 mm L)
90 lbs (40 kg)

824 facing unit w/SAU
Approx. 0.75 blk/ft² (8 blk/m²)
8 in. H x 13 in. D x 24 in. L
(200 mm H x 330 mm D x 600 mm L)
125 lbs (55 kg)

824 facing unit w/LAU
Approx. 0.75 blk/ft² (8 blk/m²)
8 in. H x 23 in. D x 24 in. L
(200 mm H x 585 mm D x 600 mm L)
185 lbs (85 kg)

AB Fieldstone Cap
3.5 in. H x 11.5 in. D x 17.5 & 14.5 in. L
(90 mm H x 290 mm D x 450 & 350 mm L)
55 lbs (25 kg)

AB Dogbone
4 in. H x 7 in. D x 2.5 in. L
(100 mm H x 175 mm D x 60 mm L)

SAU - Short anchoring unit, LAU - Long anchoring unit

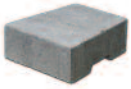
AB Courtyard Collection® - Patio Seating Walls

AB Dublin
Approx. 1.5 blk/ft² (16 blk/m²)
6 in. H x 7 in. D x 16.5 in. L
(150 mm H x 175 mm D x 420 mm L)
40 lbs (20 kg)

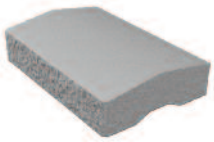
AB York
Approx. 3 blk/ft² (32 blk/m²)
6 in. H x 7 in. D x 7.5 in. & 9 in. L
(150 mm H x 175 mm D & 190 mm x 230mm L)
20 lbs (10 kg)

AB Corner Block
6 in. H x 7 in. D x 15 in. & 15.5 in. L
(150 mm H x 175 mm D x 380 & 400 mm L)
42 lbs (20 kg)

AB Post Cap
3.0 in. H x 12 in. D x 24 in. L
(75 mm H x 300 mm D x 610 mm L)
70 lbs (32 kg)
Two caps needed per post



AB Wall Cap
3.5 in. H x 10 in. D x 7 in. & 9.25 in. L
(90 mm H x 250 mm D x 175 & 235 mm L)
22 lbs (10 kg)

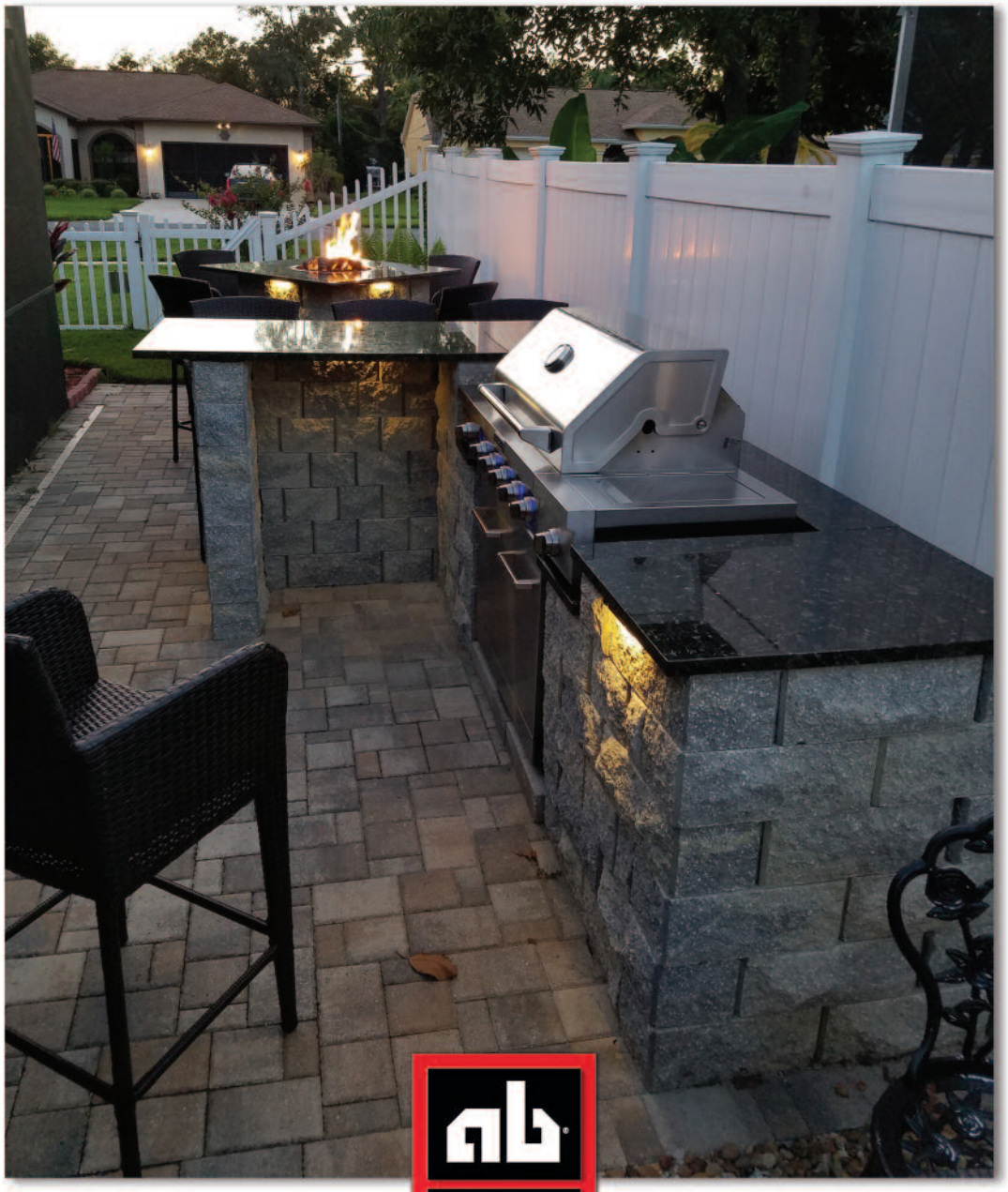


AB Fence Post Cap
5 in. H x 12 in. D x 18 in. L
(130 mm H x 300 mm D & 460 mm L)
60 lbs (30 kg)
Can be used for panel caps

Contact local representative for availability, exact specifications and colors for all Allan Block products.

Visit allanblock.com for more information.

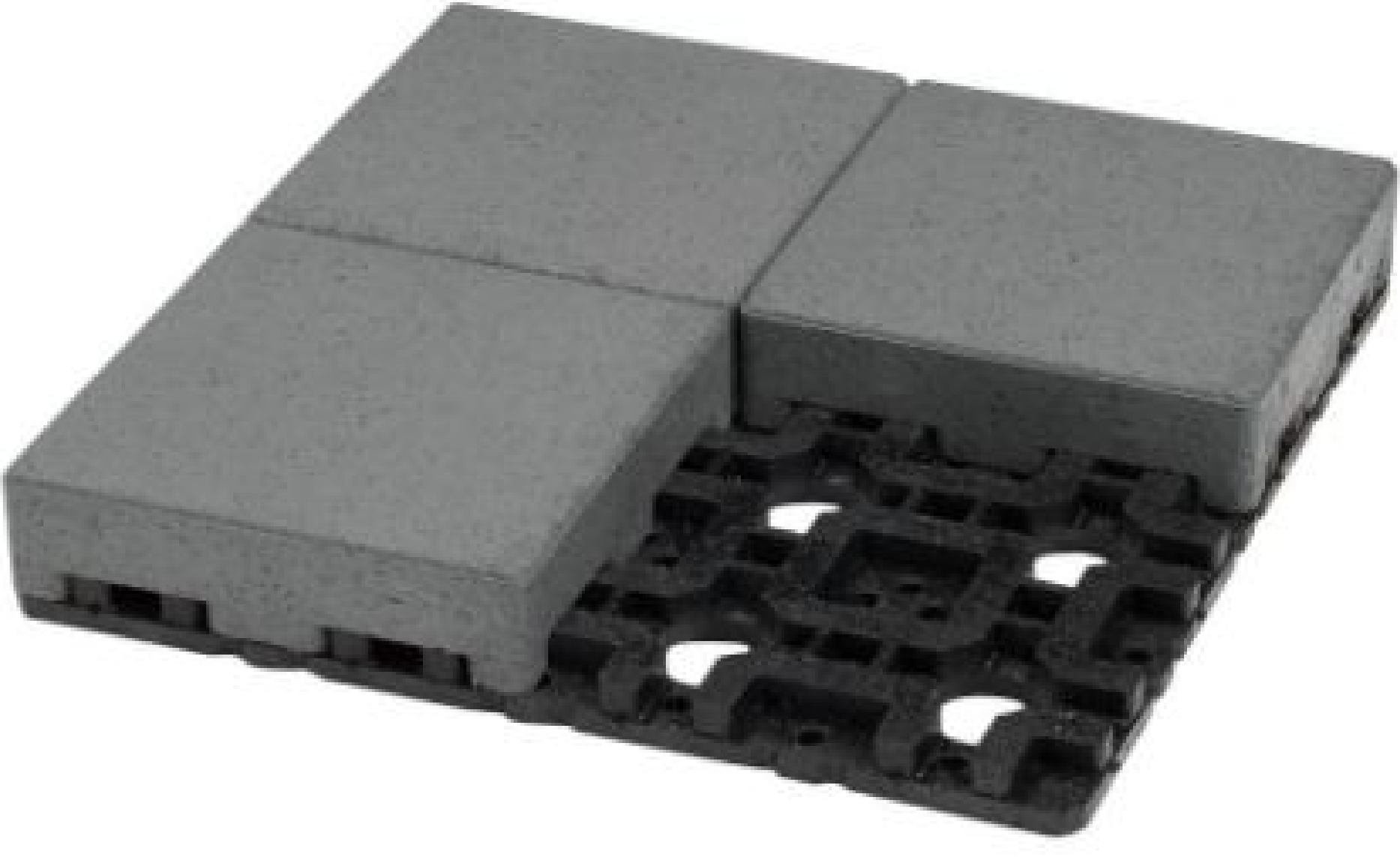
Visit allanblock.com for more information on the ideas and products from Allan Block.



ALLAN BLOCK

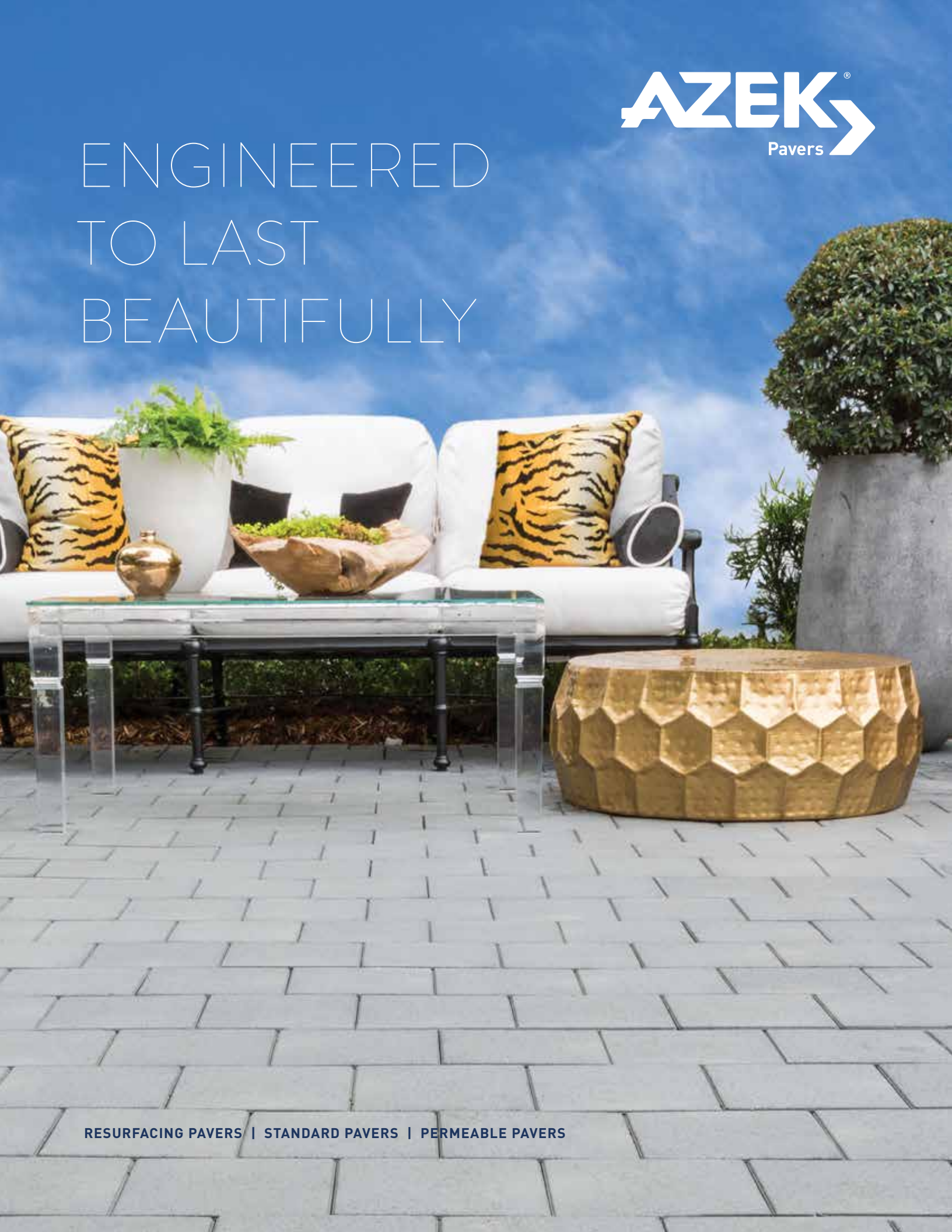
allanblock.com

 Ph: 952-835-5309 Fax: 952-835-0013 Doc. # L0400-0218



AZEK® Pavers

ENGINEERED TO LAST BEAUTIFULLY



RESURFACING PAVERS | STANDARD PAVERS | PERMEABLE PAVERS

Why AZEK® Pavers?

AZEK Pavers are a simple way to create an outdoor oasis that will enhance the beauty and value of your home. Made from up to 95% post-consumer recycled content, AZEK Pavers are not only designed to inspire, they are engineered to endure. Their patented design and light weight makes installation easy. Plus, AZEK Pavers resist stains and scratches and are much more comfortable to walk on. Complete with a lifetime limited warranty against cracking in residential applications, your project is guaranteed to last beautifully.

From our Cover: AZEK Standard Pavers - 8"x8" in Waterwheel
AZEK Standard Pavers - 8"x8", 4"x8" and 4"x4" in Redwood and Boardwalk

AZEK Paver Projects

Resurfacing Projects

Elevate your outdoor area by upgrading dated design with AZEK Resurfacing Pavers. They use a patented grid system, making installation simple and can transform a variety of spaces like existing decks, or old, cracked patios and walkways. They also make the perfect solution for rooftop patios and balconies.

In-Ground Projects

Inspired to develop your own design? Standard Pavers can be used for most in-ground projects. They make the perfect solution for the new construction of patios, walkways, driveways and commercial spaces. Choose from a variety of colors and sizes, or for storm-water management projects use AZEK Permeable Pavers.

To find a dealer near you, visit www.azek.com/locator

Beauty and benefits that last

AZEK Pavers are made with up to 95% high performance, recycled composite material making them durable and long-lasting. And, those are only a few of the many benefits homeowners get to experience when they choose AZEK Pavers.

Lightweight and easy to carry

Put AZEK Pavers where they've never gone before. AZEK Pavers are 1/3rd the weight of traditional pavers, making them ideal for resurfacing decks and flat roofs.

Quick and easy installation

Our patented paver and grid system allows for installation in less than 40% of the time of traditional concrete pavers and can be done using common household tools.

Resists stains, scratches, and cracking

AZEK Pavers resist many everyday spills like ketchup and barbecue sauce. They are also scratch resistant and will not crack like most concrete, so your paver surface will last beautifully for years to come.

Warranty

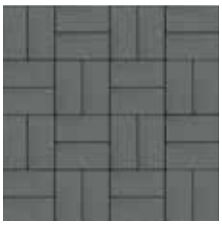
Backed with the promise of high-quality that comes with the AZEK name, AZEK Pavers come with a 10 year limited warranty, and an additional lifetime no crack guarantee in residential applications.

Depending on environmental conditions, all AZEK Paver colors may appear to change over time as part of the natural weathering process.

Installation that's easy

Patented Grid System

The patented grid system not only takes less time to install than traditional concrete pavers, it makes creating patterns and designs easier than ever. Choose from five colors, three paver sizes, and a variety of patterns for a form and function that fits your home.


Basketweave


Herringbone


Running Bond


Block Lattice


Soldiered


Plainweave

Go online and discover your individual style at www.azek.com/pavervisualizer

Resurfacing made easy

Revitalize your home by transforming an old concrete patio, walkway, or deck into a new and more beautiful space with AZEK® Resurfacing Pavers. AZEK Resurfacing Pavers are also a perfect way to increase usable space such as rooftops and balconies. AZEK Pavers make these projects achievable for the weekend warrior, and leave your space transformed into a beautiful oasis. Our patented grid system allows you to install AZEK Pavers in less than 40% of the time of traditional concrete pavers, and in resurfacing and rooftop applications, eliminates the hassle of sand, gravel and tamping. Turn your remodeling project into an easy weekend project with AZEK Resurfacing Pavers.

To find a dealer near you, visit www.azek.com/locator

Transform your space

Resurface Patios

Tired of that boring concrete patio? Use AZEK Pavers to turn your old patio into the beautiful space you have always wanted. The patented grid system installs directly over old concrete without the hassle or mess of traditional concrete pavers. Make your space new again with the beauty of AZEK Resurfacing Pavers.

Resurface Decks

Stop painting or staining that old deck. Instead, transform your deck into a beautiful space with AZEK Resurfacing Pavers. AZEK Resurfacing Pavers install directly on top of an old, structurally sound deck surface and unlike real wood, they resist stains, scratches, and require very little maintenance.

Repurpose Rooftops

Do you dream of expanding your outdoor living space with a green rooftop patio or balcony? With AZEK Pavers, your dream can become a reality. AZEK Pavers are 1/3 the weight of traditional concrete pavers and are made of up to 95% post-consumer recycled content making them the perfect green solution for your rooftop project.

Resurface Walkways

AZEK Resurfacing Pavers are perfect for those walkways that need a little TLC. AZEK Pavers resist cracking from freeze/thaw cycles and are resistant to harsh weather, mold, mildew and moisture damage. Bring the beauty back to your old cracked and stained walkway...AZEK Pavers are the answer.

Finishing touch

Add the perfect finishing touch to your paver project with AZEK Accessory Pavers. AZEK Accessory Pavers come in a variety of styles and colors making it easy for you to customize your space to fit your own personal style. And because AZEK Pavers can be cut using a traditional jig saw or miter saw, your project can be easily customized to your space.

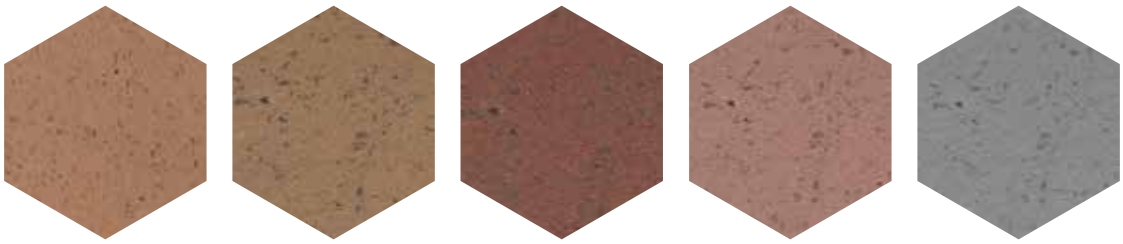
Resurfacing Bullnose Pavers
The Resurfacing Bullnose Pavers are great for projects where you want to create an elegant border or design detail. These pavers have a radius edge making them perfect for the stairs on your deck resurfacing project.

Resurfacing Transition Pavers
The Resurfacing Transition Pavers are great for projects where you need to transition from one surface to another. These pavers have a gradual slope making them the perfect finishing touch.

Soldier Course Accessory Pavers
The soldier course accessory paver that makes it easy to add a beautiful border to your project. Just lay out and adhere to the grid. Soldier wedge and soldier full pavers are only available for AZEK Standard Pavers.

Colors and styles

RESURFACING PAVERS - AZEK Resurfacing Pavers come in a variety of colors and styles making it easier than ever to transform your old deck or patio into a beautiful new space. To design your own personal outdoor oasis, visit **www.azek.com/pavervisualizer**.



Boardwalk | Olive | Redwood | Village | Waterwheel

4” x 8” Resurfacing Paver With Grid | 8” x 8” Resurfacing Paver | 4” x 4” Resurfacing Paver | Resurfacing Bullnose Paver | Resurfacing Transition Paver

RESURFACING PAVER PRODUCTS 1.75” HEIGHT	COLOR OPTIONS				
	Boardwalk	Olive	Redwood	Village	Waterwheel
4" x 8" Resurfacing Paver	★	★	★	★	★
8" x 8" Resurfacing Paver	★	★	★		★
4" x 4" Resurfacing Paver	★	★	★		★
Resurfacing Bullnose Paver	★	★	★	★	★
Resurfacing Transition Paver	★		★		★
ENKADRAIN 3801 Drainage Mat					

Grids are 16" x 16". Height listed is paver and grid combined.
For complete warranty information visit http://azek.com/resources/warranty-and-care/paver-warranty

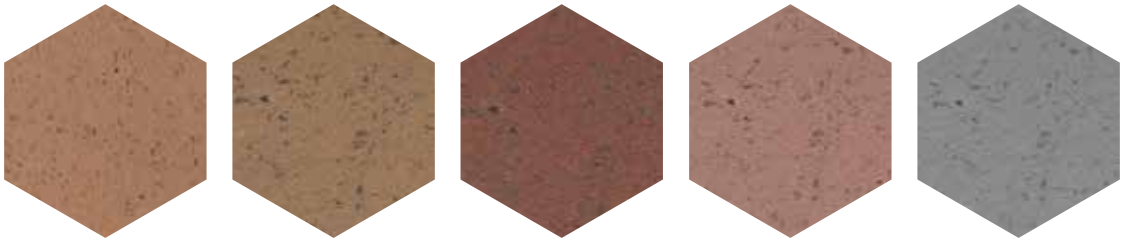
Standard Pavers

AZEK Standard Pavers have the features and benefits of AZEK Resurfacing Pavers with the added strength to be used for in-ground applications. They are installed using an aggregate base under the patented grid system and are best used for the new construction of patios, walkways, driveways and commercial spaces. For areas in need of a water management solution, choose AZEK Permeable Pavers.

AZEK Permeable Pavers - 4"x8" in Redwood, Boardwalk and Olive

Colors and styles

STANDARD PAVERS - AZEK Standard Pavers are the perfect choice for most new in-ground landscaping projects. With five stone-like colors and a variety of sizes, they are the smart choice for outdoor design. To design your own personal outdoor oasis, visit **www.azek.com/pavervisualizer.**



Boardwalk | Olive | Redwood | Village | Waterwheel

4” x 8” Standard Paver With Grid | 8” x 8” Standard Paver | 4” x 4” Standard Paver | Standard Soldier Wedge Paver | Standard Soldier Full Paver

PAVER PRODUCTS	STANDARD 2.38” HEIGHT	PERMEABLE 2.38” HEIGHT	COLOR OPTIONS				
			Boardwalk	Olive	Redwood	Village	Waterwheel
4" x 8"	★	★	★	★	★	★	★
8" x 8"	★		★	★	★	★	★
4" x 4"	★		★	★	★	★	★
Soldier Course Wedge	★				★		★
Soldier Course Full	★				★		★
ENKADRAIN 3801 Drainage Mat							

Grids are 16" x 16". Height listed is paver and grid combined.
For complete warranty information visit http://azek.com/resources/warranty-and-care/paver-warranty

AZEK Resurfacing Pavers - 4"x8" in Redwood, Boardwalk, Waterwheel and Village

AZEK BUILDING PRODUCTS

5215 Old Orchard Rd Suite 725 | Skokie, IL 60077 |

For more information please visit AZEK.com or call 877-ASK-AZEK. **LIT-APAVER 2/17**

EL CAPITAN SERIES™

EC

Adjust-a-Lumen® (BKSSL®) | MR16 Halogen

MATERIAL*

ALU

BR

SS

FOR USE WITH

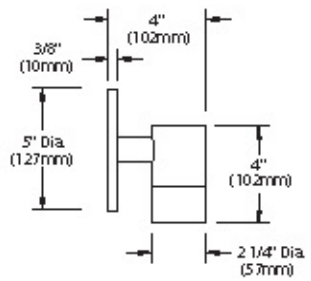
Power Supplies

Options

"For the Palm Springs Aerial Tramway we wanted to make sure we could provide a fixture that could provide the perfect ambient light and have a unique style, as always of course B-K Lighting had the perfect fixture...El Capitan Series™."

Fernando Rodriquez, MRC Engineering Inc., BKU Spring 2013

Shown with 'C' cap
in Brown Patina Powder (BPP) finish



*El Capitan Series™ with MR16 Halogen source is only available in aluminum and brass. See page 359 for Catalog ordering information.

GLOW STAR™ GL

Adjust-e-Lume® (BKSS LS)

MR16 Halogen

MATERIAL*

ALU

FOR USE WITH

Power Supplies

Options

Mounting

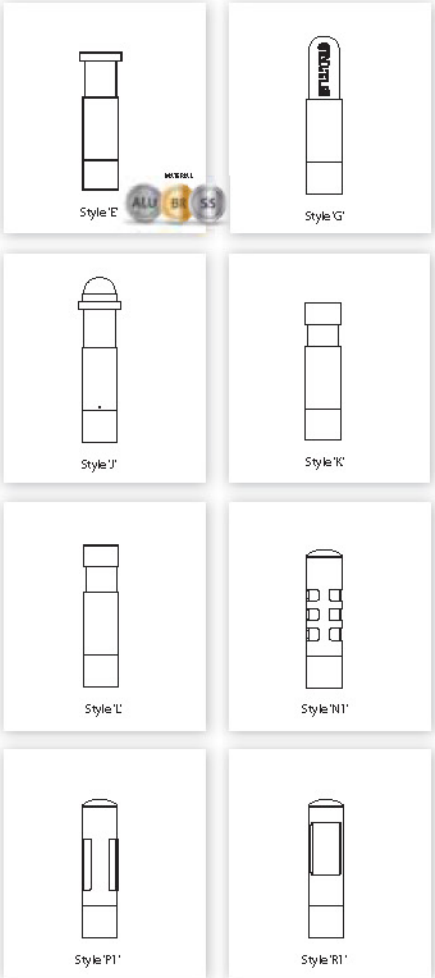
"I love the craftsmanship and machining that goes into every product. B-K has really engineered their fixtures, from the materials they choose, how they seal their lens, down to the specific internal gasketing, all to withstand the harsh outdoor environment."

Kylie Gabbard, Pritchard Peck Lighting, Summer 2014

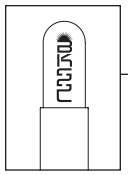
Style 'J'
Shown in
White Satin (WHP) finish

Style 'N1'
Shown in
Black Wrinkle (BLW) finish

Style 'E'
Shown in
Bronze Wrinkle (BZW) finish



*'Glow Star™' Style 'E' with MR16 Halogen source is only available in aluminum and brass. See pages 316-317 for Catalog ordering information.



GLOW STAR™

PROJECT:	
TYPE:	
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

	GL	LED										
Example:	- GL	- LED	- e65	- A9	- BZW	- J	- 12	- PP12	- T	- ART		

Material

Blank - Aluminum **B** - Brass *(Style 'E' Only)* **S** - Stainless Steel *(Style 'E' Only)*

Series

GL - Glow Star™ Pathlight

Source

LED - **'e'** Technology with Integral Driver (See Specifications for Dimming)
Designed for use with remote 12VAC BKSSL® transformers. Requires magnetic Low Voltage dimmer.

LED Type

e64 - 7WLED/2.7K **e66** - 7WLED/4K
e65 - 7WLED/3K **e74** - 7WLED/Amber

Adjust-e-Lume® Output Intensity *(Choose factory setting)*

A9 (Standard), **A8, A7, A6, A5, A4, A3, A2, A1**

Finish

Aluminum & Brass Finishes

Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Brass Finishes

Machined	MAC
Polished	POL
Mitique™	MIT

Stainless Finishes

Machined	MAC
Polished	POL
Brushed	BRU *Interior use only.*

Premium Finish

ABP	Antique Brass Powder	CMG	Cascade Mountain Granite	RMG	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	CRI	Cracked Ice	SDS	Sonoran Desert Sandstone
AQW	Antique White	CRM	Cream	SMG	Sierra Mountain Granite
BCM	Black Chrome	HUG	Hunter Green	TXF	Textured Forest
BGE	Beige	MDS	Mojave Desert Sandstone	WCP	Weathered Copper
BPP	Brown Patina Powder	NBP	Natural Brass Powder	WIR	Weathered Iron
CAP	Clear Anodized Powder	OCP	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Style

E*, G, J, K, L, N1, P1, R1
**Also available in Brass and Stainless Steel*

Base (Specify in inches)

2 - 2" with female Pipe Thread Base *(Standard)*
6 - 6" with Anchor Base
12 - 12" with Anchor Base
18 - 18" with Anchor Base
24 - 24" with Anchor Base

Mounting Options

For 2" Base Models:
PP12B - 12" Power Pipe™ Stake Mounting with B Cap
PP18B - 18" Power Pipe™ Stake Mounting with B Cap

For 6-24" Base Models:
PP12 - 12" Power Pipe™ Stake Mounting
PP18 - 18" Power Pipe™ Stake Mounting

SF - Stability Flange *(for use with Power Pipe™)*

Transformer Options

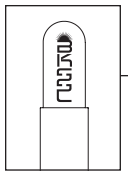
Blank - Less Transformer
TRe20 - Integral TRe20 Electronic Transformer *(105-300 VAC. 50/60 Hz. Non-Dimming. For use with 6-24" Base mounting only)*

Options

ART - Laser Engraved Graphics *(Available on style 'G' only. Requires vector based graphics file by others.)*

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 05-17-17
DRAWING NUMBER SUB000941

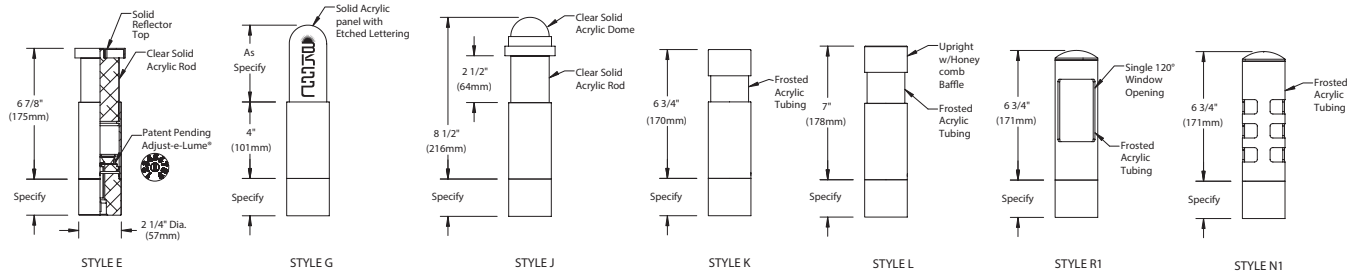


the power of dimming with adjust-e-lume® TECHNOLOGY

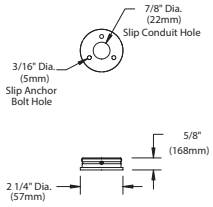
GLOW STAR™

PROJECT:	
TYPE:	

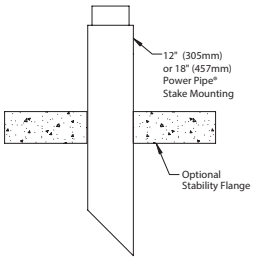
STYLE



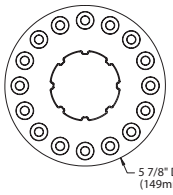
ANCHOR BASE

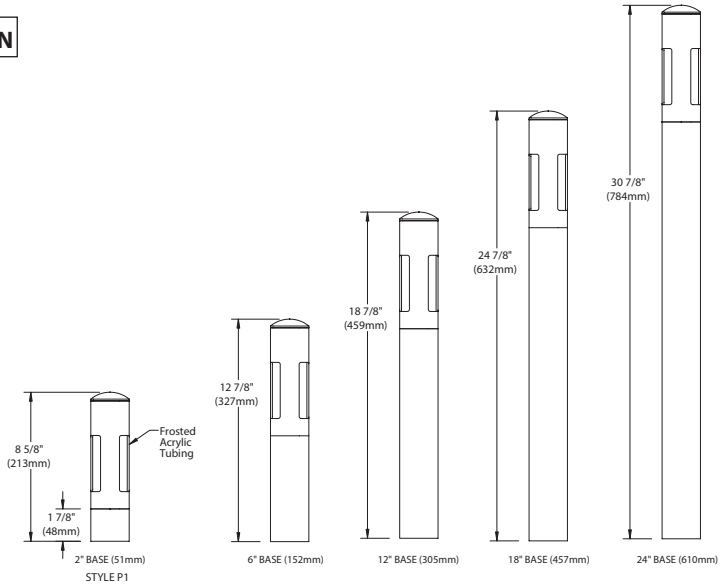


POWER PIPE™ MOUNTING OPTION



OPTIONAL STABILITY FLANGE





All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Style
Fully machined housing provides wide assortment of visual effects. Style 'E', 'G', and 'J' feature solid clear acrylic rod. Style 'J' additionally features solid acrylic dome for uplight. Specify panel height (4", 6", or 9") and artwork for Style 'G' (vector based artwork by others). Style 'K', 'L', 'N1', 'P1' and 'R1' feature frosted Pyrex® lens. Style 'L' additionally features uplight component with honeycomb baffle to reduce visual brightness.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6). Style 'E' optic is additionally available in Brass (Type 360) or Stainless Steel (Type 316).

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. High temperature, silicone 'O' Ring provides water-tight seal.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to <1A. Conforms to Safety Std. C22.2 No. 250.13-12.

Dimming
Line voltage dimmable via magnetic low voltage dimmer. For use with low voltage dimmer with dedicated neutral conductor. For purposes of dimming: Remote magnetic transformer with BKSSL® Power of 'e' technology loads should be loaded to 25% of the transformer VA (watts) rated value.

Adjust-e-Lume® (Pat. Pending)
Integral electronics allows dynamic lumen response at the individual fixture. Indexed (100% to 25% nom.) lumen output. Maintains output at desired level or may be changed as conditions require. Specify factory preset output intensity.

Installation
2" Base features ½" female pipe thread for mounting (hardware by others).

6-24" Bases feature machined anchor base with 7/8" dia. slip conduit hole and [3] 3/16" dia. anchor bolt holes (hardware by others). Available in standard increments to facilitate fixture elevation above grade. Optional 12" or 18" Power Pipe™ for direct burial into soil or concrete. Power Pipe™ additionally features optional 6" diameter, molded stability flange, which simplifies installation and projects into substrate to reinforce housing stability.

Transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers. Also available with optional integral, TRe20 electronic transformer. 105-300VAC primary voltage. 50/60Hz. Non Dimming. 20VA maximum load.

Wiring
Teflon® coated, 18AWG, 600V, 250° C rated and certified to UL 1659 standard.

Hardware
Tamper-resistant, stainless steel hardware.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish. (Brushed finish for interior use only).

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. Suitable for installation within 4' of the ground. IP66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

®Teflon is a registered trademark of DuPont Corporation.
®Energy Star is a registered trademark of the United States Environmental Protection Agency.®Pyrex is a registered trademark of Corning Incorporated.

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93638 • USA
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www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
05-17-17	SUB000941

LAMP & DRIVER DATA

e64, e65, e66, e74

DRIVER DATA	Input Volts	InRush Current	Operating	Dimmable	Operation Ambient Temperature
	12VAC/DC 50/60Hz	<250mA (non-dimmed)	700mA	Magnetic Low Voltage Dimmer	-22°F-194°F (-30°C - 90°C)

LM79 DATA

BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)
e64	2700K	80	7
	2700K	80	7
	2700K	80	7
	2700K	80	7
e65	3000K	80	7
	3000K	80	7
	3000K	80	7
	3000K	80	7
e66	4000K	80	7
	4000K	80	7
	4000K	80	7
	4000K	80	7
e74	Amber (590nm)	~	7

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens (L_{70})
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000
50,000

OPTICAL DATA

Angle	CBCP	Delivered Lumens
13°	5993	456
16°	4546	445
23°	1726	397
31°	1131	399
13°	6131	466
16°	4650	455
23	1766	406
31°	1157	409
13°	6889	524
16°	5225	511
23°	1984	456
31°	1300	459
~	~	~

OPTICS

Optic	Angle
NSP - Narrow Spot	13°
SP - Spot	16°
MFL - Medium Flood	23°
WFL - Wide Flood	31°

The New Seamless GreenGrid Modular Vegetative Green Roof System

GreenGrid® ROOFS
Engineered to Perform
Designed to Inspire

The 4th Generation GreenGrid® Module Has Arrived

These new zero-edged modules are the 4th generation of GreenGrid®, keeping the functionality of the original modular green roof system, but adding a more aesthetic zero-edge design, enhanced design versatility, and maximized stormwater retention.

Unlike hybrid /subterranean modular systems and traditional layered systems, G4 modules can be easily accessed and removed to perform maintenance or repairs to the underlying roof without damaging the vegetation. Additionally, G4 modules are specifically designed to maximize stormwater control, featuring deeper built-in reservoirs for additional stormwater retention.

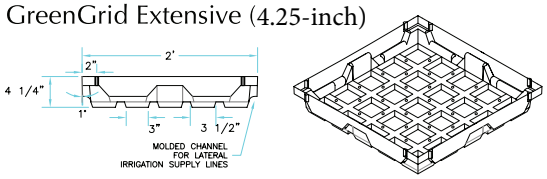
GreenGrid offers versatility and design flexibility, with modules available in three different depths for a variety of planting options. Modules can be pre-grown at our nurseries to meet plant coverage specifications up to 95% and delivered to the job site to create an instant mature green roof. This translates to a successful green roof with less up-front maintenance, plus a beautiful look from day one. In addition, GreenGrid modules can be custom cut with curves or angles.

www.GreenGridRoofs.com

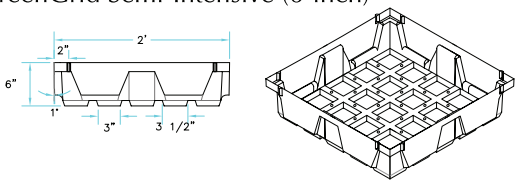
WESTON SOLUTIONS®
The Trusted Integrator for Sustainable Solutions

U.S. Patents: 6,711,851 | 6,862,842 | 7,900,397 | 7,997,027 | 8,132,365 | 8,555,545
Canadian Patents: 2,416,457 | 2,418,262 | 2,416,463 – Japanese Patent: 4,885,407
Additional U.S. and international patents pending

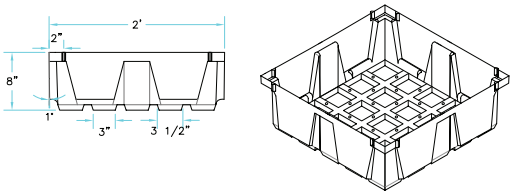
GreenGrid Extensive (4.25-inch)



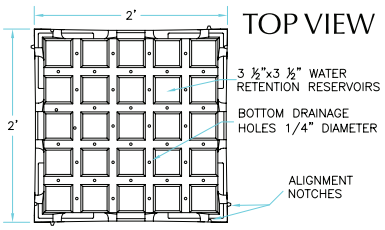
GreenGrid Semi-Intensive (6-inch)



GreenGrid Intensive (8-inch)



Pre-Vegetated 4.25-inch Module



GreenGrid Component	Specification Description and Notes			
G4 System Modules	Dimensions (W x L)		Depth (D)	
	Standard Units	SI Units	Standard Units	SI Units
Extensive	24 in. x 24 in. [OD ± 1/8 in.]	60.96 cm x 60.96 cm [OD ± 0.318 cm]	4.25 in.	10.80 cm
Semi-Intensive			6.0 in.	15.24 cm
Intensive			8.0 in.	29.32 cm
Weight Range	Approximate Minimum Note 1		Approximate Maximum Note1	
Extensive	26 lbs/sf	126.9 kg/m^2	30 lbs/sf	146.5 kg/m^2
Semi-Intensive	39 lbs/sf	190.4 kg/m^2	44 lbs/sf	214.8 kg/m^2
Intensive	52 lbs/sf	253.9 kg/m^2	58 lbs/sf	283.2 kg/m^2
Drainage Clearance	3/4 in.	1.91 cm	All size modules	
Module Material	Wall Thickness		100% pre-consumer high molecular weight polyethylene. Protected with UV inhibitors and stabilizers (20 year warranty standard)	
Extensive	0.187 in. [187 mil]	4.75 mm		
Semi-Intensive	0.200 in. [200 mil]	5.08 mm		
Intensive	0.225 in. [225 mil]	5.72 mm		
Module Color	Black [custom colors available upon request]			
Filter Layer	Spunbonded polypropylene geotextile			
Growing Medium	Proprietary engineered blend of organic and inorganic components. Blended to satisfy FLL guidelines. Custom blends available to meet project-specific needs [e.g., weight, water holding capacity, etc.].			
Vegetation	Succulent groundcovers, conventional perennials and grasses, and/or native forbs and grasses. Consult Weston GreenGrid horticulturists for specific recommendations.			
Typical Underlayment	New or existing single-ply EPDM, TPO, PVC, BUR, or hot/cold fluid applied membranes. Contact selected waterproofing system manufacturer for specific requirements and/or materials compatibility.			
Module Connectors	Nylon/Plastic panel fasteners or zip ties. 1/4 in. (0.64 cm) drill hole diameter required.			
Irrigation Systems	Proprietary system designed based on project-specific requirements.			

Note 1: All weights are presented with growing media at maximum water-holding capacity. Conservative estimates for vegetation and module weight per SF have been included in above weight ranges. Weights may vary based on requirements for project-specific vegetation selections and variations in regional materials incorporated into engineered growing media. Consult GreenGrid representative for further information.

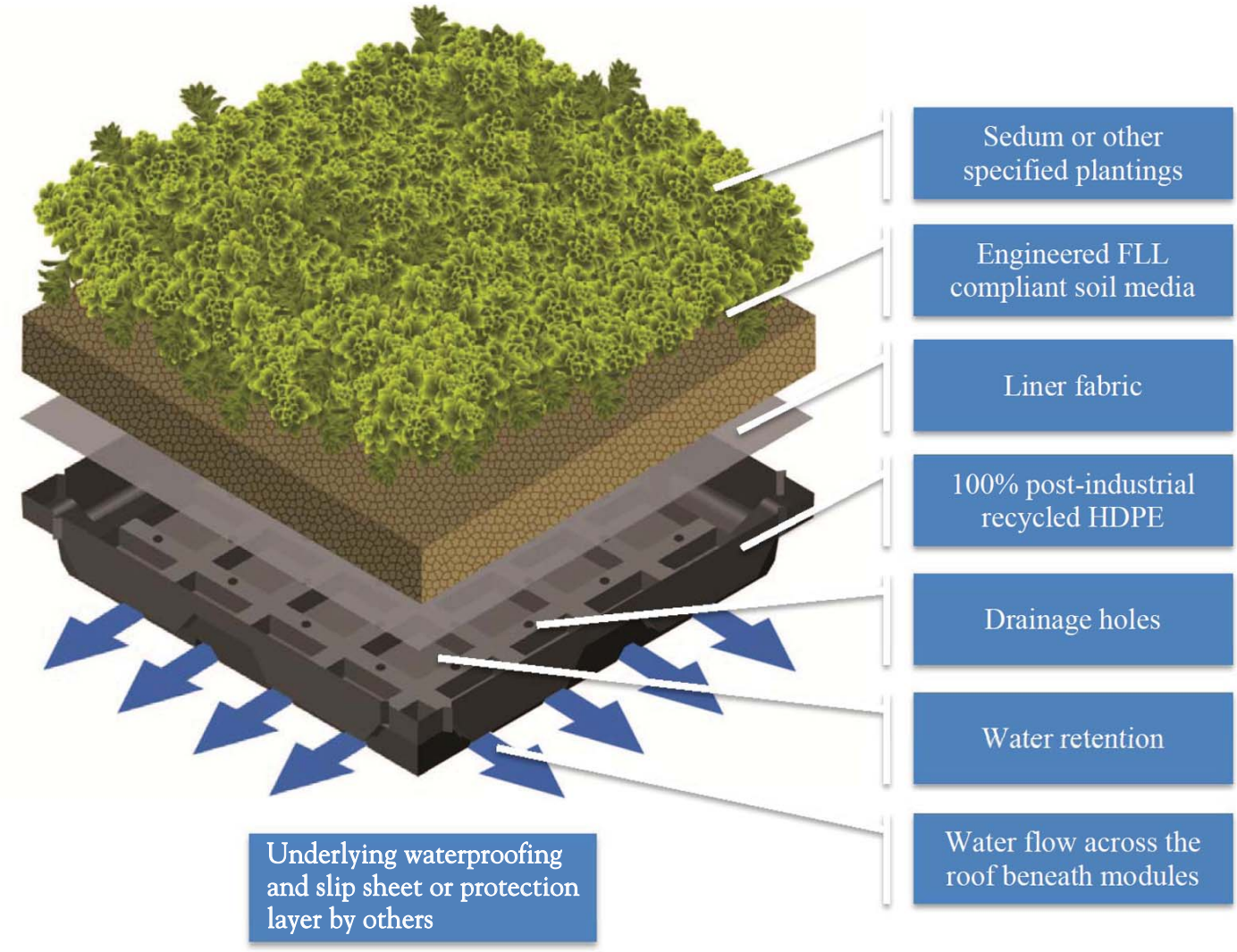
Local contacts are available on our Web site www.GreenGridRoofs.com or contact our headquarters office at 888-404-4743

GreenGrid® Submittal:

G4 System Cutaway

GreenGrid® ROOFS
Engineered to Perform
Designed to Inspire

The GreenGrid® G4 Green Roof System incorporates all of the various components of a multi-layer green roof system into a simple, self-contained module. The key components are detailed below.



888-404-4743
www.GreenGridRoofs.com

WESTON SOLUTIONS

VERSA STAR™

VS

Adjust-a-Lume® (RSSL®) | MR16 Halogen | GU10 Line Voltage

MATERIAL

ALU

BR

SS

FOR USE WITH

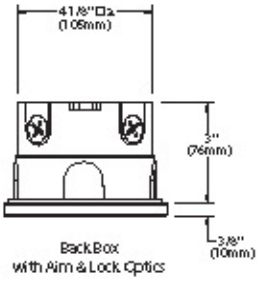
Power Supplies

Options

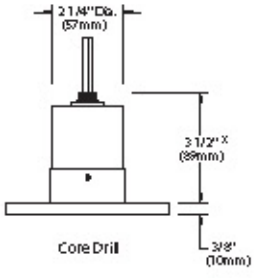
"B-K designs their luminaires with the lighting designers' needs and wants in mind. Besides the excellent performance, the quality craftsmanship and the attention to details, we can always count on B-K's support like a family."

Joseph Yam, Prudential Lighting, Summer 2010

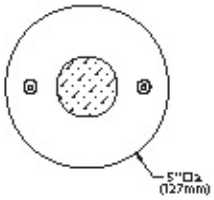
Shown in
Satin Aluminum (SAP) finish



Back Box
with Aim & Lock Optics



Core Drill



*Dimensions shown for Adjust-a-Lume®/MR16 Halogen cored hole body/GU10 cored hole body/diameter 4" (102mm). Back box option available in Adjust-a-Lume® and MR16 Halogen only. See page 330 for Catalog ordering information.

SQUARE STEP STAR™

SQ

Adjust-e-Lume® (BKSSL®) | MR16 Halogen | GU10 Line Voltage

MATERIAL

ALU

BR

FOR USE WITH

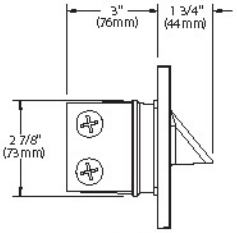
Power Supplies

Options

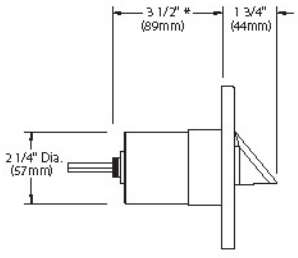
"When thinking of B-K Lighting there's a lot of "good" in my mind based on a history of QUALITY and INNOVATION. B-K's products are, and always have been at the tip of the spear in both categories. In a world of mergers, with corporate leadership coming and going, the fact B-K's original founders are still running the operation is a testament these qualities are cultural within B-K and will remain so."

George Bovee, JTH Lighting Alliance, BKU Fall 2005

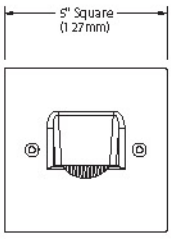
Shown with
Black Wrinkle (BLW) finish



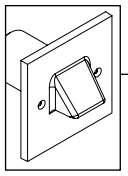
Back Box
with Aim & Lock Optics



Core Drill



*Dimension shown for Adjust-e-Lume® MR16 Halogen coredrill body. GU10 coredrill body dimension 4" (102mm). Backbox option available in Adjust-e-Lume® and MR16 Halogen only. See page 349 for Catalog ordering information.



CORE DRILL SQUARE STEP STAR™

GU10 Line Voltage MR16

PROJECT:	

TYPE:	
CATALOG NUMBER:	
LAMP(S):	
NOTES:	

CATALOG NUMBER LOGIC

Example: B - CD-SQ - GU - 425 - MIT

Material
- **Blank** - Aluminum
- **B** - Brass

Series
- **CD-SQ** - Core Drill Square Step Star™

Source
- **GU** - GU10 Line Voltage MR16

Lamp
- 0 - By Others
- **425** - 20PAR16/FL25 (20W), 25° Flood
- **426** - 35PAR16/FL30 (35W), 30° Flood
- **427** - 50PAR16/FL30 (50W), 30° Flood
- **424** - 50PAR16/FL40 (50W), 40° Flood

Finish

Aluminum & Brass Faceplates

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Brass Faceplates

Machined	**MAC**
Polished	**POL**
Mitique™	**MIT**

Premium Finish

ABP	Antique Brass Powder	**CMG**	Cascade Mountain Granite	**RMG**	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	**CRI**	Cracked Ice	**SDS**	Sonoran Desert Sandstone
AQW	Antique White	**CRM**	Cream	**SMG**	Sierra Mountain Granite
BCM	Black Chrome	**HUG**	Hunter Green	**TXF**	Textured Forest
BGE	Beige	**MDS**	Mojave Desert Sandstone	**WCP**	Weathered Copper
BPP	Brown Patina Powder	**NBP**	Natural Brass Powder	**WIR**	Weathered Iron
CAP	Clear Anodized Powder	**OCP**	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

LAMP DATA

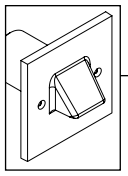
BK No.	Lamp Watts	Description	Rated Life (hrs.)	Center Beam Candlepower	Beam Angle	Beam Type
425	20	20PAR16/FL25	2,000	230	25°	Flood
426	35	35PAR16/FL30	3,000	500	30°	Flood
427	50	50PAR16/FL30	3,000	500	30°	Flood
424	50	50PAR16/FL40	1,000	640	40°	Flood

B-K LIGHTING

40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 08-18-17

DRAWING NUMBER SUB-1485-00

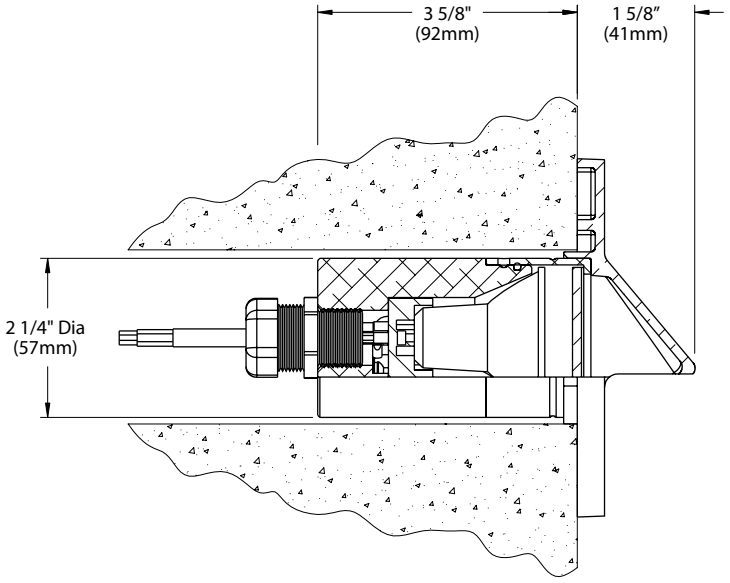


CORE DRILL SQUARE STEP STAR™

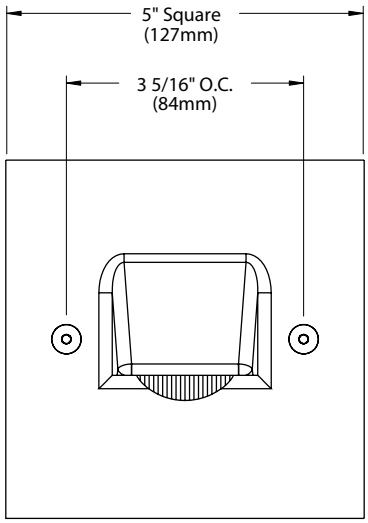
GU10 Line Voltage MR16

PROJECT:	
TYPE:	

SIDE VIEW



FACEPLATE DETAIL



All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chloro-fluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Core Drill
Allows for mounting into existing structures that will not easily accept a standard box. Machined from solid, copper-free aluminum. Weather-tight cable connector with 5'0," 12Ga., 3 wire line voltage cable. 2-1/2" dia. hole required for slip fit.

Faceplate
Copper-free, cast aluminum construction with machined finish. Also available in solid machined brass. Countersunk holes provide for flush hardware mounting.

Lamp
For use with bi-pin GU10 line voltage lamps. Halogen Lamps Only.

Installation
For use with 50 watt maximum lamp when installed into non-combustible materials.

Lens
Heat treated rectilinear lens provides wide lateral distribution and long forward throw.

Aiming & Control
90° optical cutoff for mounting heights well below typical visual glare angles.

Socket
specification grade, ceramic body, lamp holder. GU10 base. Nickel alloy contacts and heat resistant, spring loaded, stainless steel lamp retaining clips.

Wiring
Teflon® coated, 18AWG, 600V, 250° C rated and certified to UL 1659 standard. Anti-Siphon Valve (ASV™) prevents "wicking" through conductor insulation.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish.

Warranty
5 year limited warranty.

Listings
UL Listed. Certified to CAN/CSA/ANSI Standards. Suitable for outdoor use. Suitable for use in wet locations. RoHs compliant. IP65 Rated. Made in the USA.

®Teflon is a registered trademark of DuPont Corporation.

The information contained in this technical specification includes patented product information, materials, and construction practices associated with installation of the GreenGrid® green roof system. This specification is intended to assist Design Professionals, Architects and Specifiers of green roof systems. Additional information is available at www.greengridroofs.com

SECTION 07 33 63 – VEGETATED GREEN ROOF SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section specifies all labor, materials, equipment and services necessary to furnish and assemble a Vegetated Green Roof System, as provided by GreenGrid® and as shown on the Drawings and described herein.

B. SCOPE OF WORK:

1. Section describes Vegetated Green Roof Systems for modular extensive trays (4.25-inch depth), semi-intensive modules (6-inch), and intensive modules (8-inch).

C. RELATED SECTIONS AND DOCUMENTS:

1. Section 075563 - Waterproofing or Membrane Roofing for Green Roofing Systems
2. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.
3. GreenGrid® green roof technical specifications at: www.greengridroofs.com
4. Section 072113 – Lightweight Expanded Polystyrene
5. Section 328000 – Irrigation Systems for Green Roof

1.2 REFERENCES

A. Standards for Vegetated Green Roof Systems:

1. Vegetated Green Roof System Manufacturer's specifications, plans and guides
2. ASTM E2396 Standard Testing Method for Saturated Water Permeability of Granular Drainage Media for Green Roof Systems
3. ASTM E2397 Standard Practice for Determination of Dead Loads and Live Loads Associated with Green Roof Systems
4. ASTM E2398 Standard Test Method for Water Capture and Media Retention of Geocomposite Drain Layers for Green Roof Systems
5. ASTM E2399 Standard Test Method for Maximum Media Density for Dead Load Analysis
6. ASTM E2400 Standard guide for Selection, Installation, and Maintenance of Plants for Green Roof Systems
7. ASTM D5261: Standard Test Method for Measuring Mass per Unit Area of Geotextiles
8. Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e.V.(abbreviated as "FLL" guide), [aka Landscaping and Landscape Development Research Society], German Green Roof Guidelines for planning, execution and upkeep of Green Roofs
9. ANSI/SPRI VF-1 External Fire Design Standard for Vegetative Roofs
10. ANSI/SPRI RP-14 Wind Design Standard for Vegetative Roofing Systems

1.3 DEFINITIONS

A. Contract Documents: All specifications and Drawings that collectively describe the requirements for construction of the Project.

B. Vegetated Green Roof: An area of landscaped planting constructed over a waterproofed substrate and separated from the natural ground by a structure.

C. Vegetated Green Roof System: The complete system of materials and components which are installed above the waterproofing and result in a vegetated green roof surface.

D. Extensive Green Roof: These extensive green roof systems are constructed in shallow soil depths nominal 4-inches with hearty, drought-tolerant plants such as sedums, herbs and groundcovers. In northern climates, extensive green roofs typically do not require permanent irrigation systems. However irrigation may be needed in semi-arid and arid climates. Extensive green roof systems are low-maintenance and typically require occasional weeding or plant maintenance on an annual basis.

E. Semi-intensive Green Roof: The semi-intensive green roof systems are planted in 6-inch (15.24 cm) depths to support a wider array of plant varieties such as sedums, perennials and ornamental grasses. The semi-intensive systems require more maintenance associated with perennial plantings and often utilize drip-irrigation systems for watering especially in arid or humid climates.

F. Intensive Green Roof: A complex landscaping ecosystem requiring regular maintenance consisting of soil depths of 8- inches (29.32 cm) or deeper and planted with a wide variety of plant species that may include herbaceous perennials, ornamental grasses, and small shrubs that are suited to the regional climate. Roof top gardens are often assembled using intensive green roof systems. Intensive green roof systems will require irrigation systems in most climates and depending on plantings. Intensive green roof maintenance is more labor-intensive and similar to ground-level landscapes using advanced horticultural care.

G. Growing Medium or Substrate: An engineered, blended mixture composed of composted organic matter and lightweight, coarse and porous aggregate. The substrate is blended to be lightweight and conducive to vigorous plant growth.

H. Filter Fabric: Woven geotextile that is placed within the module (optional) prior to filling media to reduce likelihood of fines being released via the drainage holes.

I. Sedum Tile or Mat: An integrated layer of sedum which covers the entire surface of growing media in the green roof modules. The sedum may be grown in the modules from plugs or cuttings, or alternatively pre-grown in a production field and harvested into tiles or mat and then rooted in the modules.

J. Green Roof System Installer (or ‘Installer’): Company retained to install the green roof system as per this specification.

K. Green Roof System Provider: Company (Weston Solutions, Inc.) that is the exclusive licensee for the GreenGrid® green roof system and furnishes and delivers the green roof system to the project site.

L. Waterproofing Provider: Company that provides and/or certifies all materials required for installation of the building/roof waterproofing, furnishes and verifies installation and water tightness and confirms acceptability prior to installation of the Green Roof System.

M. Polystyrene Insulation: The Green Roof System must be fully supported. On roof surfaces that are uneven or require different profiles, rigid polystyrene insulation can be used beneath the green roof modules.

1.4 VEGETATED GREEN ROOF SYSTEM DESCRIPTION

A. Design Considerations:

1. The plants are grown in a growth media layer contained within a module which is designed to promote drainage and distribute moisture.

2. The weight of the system at Maximum Water Capacity as per ASTM E2399. The green roof system dead load, measured according to ASTM D2397, when added to the weight of the waterproofing system, shall not exceed the maximum allowable dead load for the roof. The Owner, Design Professional, Architect or Specifier shall review and verify the adequacy of the building or structure to support the green roof system in all conditions.

3. The Owner or designated Representative shall verify the integrity of the waterproofing surface prior to installation of the green roof system.

4. Building codes are beyond the purpose and intent of this specification. The Owner, Design Professional, Architect or Specifier shall review applicable federal, state, regional and local building codes in regard to green roof installations and limitations.

B. Performance Requirements: Vegetated roof covering system shall:

1. Support sedums, herbs, perennials, moss and other vegetated groundcovers;

2. Provide efficient drainage of moisture that is in excess of that required for the vigorous growth of the installed vegetation;

3. Protect roof waterproofing materials from damage caused by exposure to ultraviolet radiation, physical abuse, and rapid temperature fluctuations

4. Retain moisture in accordance with ASTM E2398.

1.5 SUBMITTALS

A. Shop Drawings: Submit to the Green Roof Provider a scaled plan or Drawing illustrating the green roof layout, location of roof drains, and roof details such as walkways, mechanical equipment, and accessories. Such documentation is required to support the warranty.

B. Product data for vegetated green roof systems, components with descriptive data, plant lists, technical data bulletins, and specifications, indicating limitations.

C. Product substitutions or components that vary from the specification shall be submitted in advance for review and approval.

D. Green Roof Provider Information: Technical product data or bulletins, specifications, LEED® submittals, installation guide and maintenance protocols.

E. Certifications (optional): Verification that Installer is qualified to perform work of this Section.

F. Warranty: Submit product warranty and insure Owner is registered with Provider.

G. Maintenance Guide: Written recommendations for maintenance of the vegetated green roof system that describes a maintenance schedule for watering, weeding and plant care.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility: Vegetated green roof components shall be from a single source, the GreenGrid® green roof system. Installer may request inspection or oversight during installation from the Green Roof Provider.

B. There shall be no deviation from this Specification or the Drawings. Installer assumes liability for any deviations from Specifications and/or Drawings.

C. Installer Qualifications: Installer shall be qualified to install the vegetative green roof system. If Installer does not meet the minimum requirements, Green Roof Provider technical representative shall be present for at least 1 work day to verify training and module handling.

D. Roofing Inspection: By Owner or designated Waterproofing Provider to verify that the waterproofing surface is approved for installation of the vegetated green roof system.

1. At a minimum, a slip sheet or protection layer (6 ounce non-woven geotextile or equivalent) may be required to protect the work surface and waterproofing warranty. Verify and document the need for a slip sheet or protection layer.

2. Verify existing roof loads and roof load limitations prior to hoisting green roof materials.

E. Once the green roof installation is complete, an inspection shall be conducted by a technical representative of the Green Roof Installer and/or the Green Roof Provider to verify that the green roof system was installed properly.

1.7 PRODUCT DELIVERY, HANDLING, STORAGE, PROTECTION

A. Green roof modules are to be delivered in good condition. Green roof modules are to be handled carefully and to prevent damage to the plants. Modules shall have plastic unwrapped (if shipped on pallets) the same day as delivery to avoid plant damage caused by overheating.

B. Conduct roof top staging of green roof system components after verifying roof loads and acceptable staging areas. Stage green roof modules over plywood panels or protective sheeting.

C. Green roof modules are to be conveyed to the roof surface with equipment that is designed and certified to hoist the associated weights safely and in accordance with equipment capacity, and local codes and regulations.

D. Protect the roof deck and waterproofing membranes using appropriate materials such as plywood sheeting. Avoid using sharp tools and keep the roof surfaces clean and free of soil, grit, or debris.

1.8 WARRANTY

A. Module Warranty: The Product is warranted for a period of twenty years from the date of shipment. The Product is defined as the GreenGrid® module(s) and excludes media and plants or any accessories.

B. Standard Plant Warranty: Plants shall be pre-grown and shipped in a healthy condition and specified plant coverage depending on planting schedule, season and anticipated growth. All plants found to be dead or damaged during shipment will be replaced at no additional charge during the initial 30 days from shipment. The 30-day plant warranty covers those plant species selected. The warranty is not effective for installations completed outside of the recommended installation season (April 15th to October 15$^{th)}$.

C. Extended Plant Warranty: Extended plant warranty may be available for 1-year and 2-year periods, upon request, or when and as specified.

D. Overburden Removal: A ‘wrap-around’ or total system warranty that combines the Waterproofing Provider and Green Roof Provider warranties and provides for overburden removal may be available, on request, or when and as specified. Requires use of the GreenGrid® system with Carlisle or Mule-Hide products.

1.9 MAINTENANCE

A. The vegetated green roof system Installer shall maintain the modules for at least 30 days following installation.

B. Maintenance during the initial 30-days shall follow industry accepted horticultural practices.

1. Watering: two watering events per week to sufficiently saturate the growing medium.
2. Provide spot weeding (by hand), as needed, to maintain plant health and prevent weed to flower and set seed, and to prevent woody plants to establish. Do not use any pesticides which include herbicides.

3. Repair, rework and replant, if necessary, areas where wash out caused erosion, and replace dead plants.

C. Maintenance protocols:

1. Provide the GreenGrid® maintenance guide and protocols to the Owner for extended maintenance of the green roof system.

2. Provide a report(s) to the Owner outlining post-installation green roof conditions and observations about plant care and the initial maintenance period.

PART 2 - PRODUCTS

2.1 GREENGRID® GREEN ROOF SYSTEM

A. General: The green roof components for this system are specifically the GreenGrid® green roof system. The use of other products is not the responsibility of GreenGrid® and is expressedly disclaimed by the warranty.

B. Provided By: Weston Solutions, Inc: 124 Hebron Avenue, Suite 3B, Glastonbury, CT 06033 Product Technical Information and Sales: (888) 404-4743 or by email (see website) at www.greengridroofs.com

2.2 GREENGRID® COMPONENTS

A. Modular Trays: The tray or module with built-in water retention and drainage channels shall eliminate the need for additional drainage material and root barriers, except where required by the Waterproofing Provider.

1. Material: Modules are formed from 100% pre-consumer recycled, high molecular weight polyethylene (HMWPE) protected with UV inhibitor and stabilizers. Black color. Thickness standards as follows:
    a. Extensive: 187 mil
    b. Semi-Intensive: 200 mil
    c. Intensive: 225 mil

2. Modules size (L x W): 2 ft. (60.96 cm) x 2 ft. (60.96 cm). Module outside diameter (OD) is +/- 1/8 inch (0.318 cm). Drainage clearance above roof surface 0.75-inch (1.91 cm). Depth of modules as follows:
    a. Extensive 4.25-inch (10.80 cm)
    b. Semi-Intensive 6-inch (15.24 cm)
    c. Intensive 8-inch (29.32 cm)

3. Weight (bulk density at maximum water holding capacity)
    a. Extensive: 26 to 30 lbs/sf (126 to 147 kg/m^2)
    b. Semi-Intensive: 39 to 44 lbs/sf (190 to 215 kg/m^2)
    c. Intensive: 52 to 60 lbs/sf (254 to 284 kg/m^2)

B. Growing Media or Substrate: Provide in accordance with ASTM references. Growing media is available in different blends based on geographic availability of resources and as follows:

1. Shall be engineered light-weight materials consisting of inorganic aggregate and organic components blended to satisfy FLL guidelines.
2. Blended media shall have high water holding capacity while maintaining air porosity within the growth media. Available in bulk and smaller 1.5 CF sacks.
3. Custom blends may be available to meet project-specific requirements.

C. Green Roof Vegetation (Plants):

1. Vegetation shall be pre-grown and in healthy condition rooted in the modules prior to shipment and delivery in most cases. An alternative approach is noted below using sedum mat or tile. Vegetation shall be installed in accordance with the landscape design or GreenGrid® layout Drawing.

2. Plant selection shall conform to the USDA Plant Hardiness Zone and classification. Refer to the Provider's technical bulletins and data. Plants shall be composed of drought resistant ground covers such as sedums, herbs, succulents, perennials and grasses. Plant varieties shall be suited to the local or regional climate and conditions. Horticulturalists and Landscape Architects can be helpful for consultation.

3. Plant Density and Coverage: Plant stock and selection shall consider the timeframe for pre-growing and the percent of coverage desired at installation. A fully mature, pre-grown module typically requires 10 to 12 weeks of growing (using plugs and cuttings) to attain 95% plant coverage or better upon delivery and installation. Shorter timeframes between ordering and installation will result in lower plant coverage.

4. Planting Methods

   a. Pre-Grown at nursery: using sedum cuttings or plugs at planting density or spacing as shown on the Drawings.

   b. Sedum Mat or Tile: Sedum mat or tile are grown to maturity and can be installed in modules at the nursery prior to shipping, or can be shipped to the work site and rooted in modules. Typically sedum mat is harvested in larger pieces similar to sod and then rolled for shipping. Mat can then but cut into sedum tile. Sedum tiles measure 2 square feet and typically weigh about 4.5 pounds. Sedum tile are pre-grown using 4 to 5 sedums and rooted in the prefilled modules. Timeframe between ordering and installation can be shortened using sedum mat or tile.

2.4 GREEN ROOF ACCESSORIES

A. Slip Sheet or Protection Layer: Protection slip sheet as recommended or approved by the waterproofing Provider for use during installation of the vegetated green roof modules. In the absence of a recommendation from the waterproofing Provider, we recommend using:

1. Nonwoven needle-punched geotextile of 6 ounce/square yard (weight) in accordance with ASTM D5261. Geotextile manufactured for subsurface drainage and separation.

B. Walkway Pavers (optional): Access to the green roof to conduct roof maintenance or if arranged as an accessible, garden-style roof can be accomplished using walkway pavers. Numerous options are commercially available such as:

a. Textured concrete pavers – 2'x2'x2" precast concrete plaza pavers weighing approximately 18-25 psf with a minimum compressive strength of 6,500-8,500 psi. Available in several standard colors. Use a pedestal.
b. Brazilian hardwood ipe´ pavers (2'x2' squares). Use a pedestal.
c. Rubber pavers – (2'x 2' squares), many are manufactured from recycled rubber. Lay flat on roof surface (no pedestal).

C. Module Connectors (optional): The modules can be interconnected, if desired, using nylon/plastic panel fasteners or zip ties. Small holes 0.25-inch (0.64 cm) can be drilled in the side of the modules to assemble fasteners.

D. Polystyrene Insulation (optional): Used to taper uneven surfaces or build up underneath the green roof modules and provide support. Many products available from Insulfoam, Dow Roofmate, Foamular and others. Typical compressive strength of 40 psi, moisture resistant, closed cell expanded polystyrene with ¼-inch crossing drainage channels. Available in many board sizes, 4'x4', 2'x8' and 4'x8' and varying thicknesses.

E. Irrigation (optional): If required, allow for drip irrigation lines to be inserted through an integrated irrigation channel in the module during installation. Drip irrigation lines can be installed on top of the pre-grown modules. Water shall be delivered directly and evenly to plants for uniform plant growth. Drip Lines for irrigation shall contain emitters on 12" spacing. Other pop-up sprinklers and spray systems are commercially available. Consult a qualified irrigation specialist to determine appropriate design, system details and configuration, materials and maintenance requirements.

F. Edge Treatment (optional): Decorative edge treatment is available from Permaloc, or equivalent suppliers, in multiple sizes, and color for use as landscape edging around the perimeter of the vegetated green roof system in all depths.

G. Stone Ballast (optional): Clean stone or 'river rock', nominal 1-1/2" diameter (#4) rounded stone can be used to infill around roof drains or along irregular-shaped areas.

H. Drain Covers (optional): Stainless steel drain enclosure and cover to enclose roof drains. Provide standard 24-inch by 24-inch or custom sizes as necessary to fit roof drains and fit within modular green roof system. Drain covers shall have L-shaped tabs at the bottom edges to anchor beneath the modules.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Qualified Installers including General Contractors, Roofing Contractors and Landscape Contractors can install the GreenGrid® system by following the Installation Guide. A pre-installation conference call/meeting may be appropriate for new Installers. Install the vegetated green roof system according to specifications, applicable codes and regulations.

B. Safety: Installers are solely responsible to comply with all applicable safety and fall protection codes, laws and regulations as required by federal, state and local codes and regulations.

3.2 INSTALLATION SEASON

A. When plants are properly adapted and acclimated to the local weather conditions. In northern climates and unless otherwise permitted, modules shall be installed between April 15th and October 1st, except when temperatures are below 35° F. In more southern climates, the installation season will depend on seasonal weather conditions.

3.3 WORK AREA PREPARATION

A. Prepare Surface:

1. All surfaces to be smooth, free of debris, soil, and grit prior to placing modules. All surfaces shall be maintained clean and free of debris, soil, and grit during installation. Never walk upon such materials as they may damage waterproofing membrane. If required, clean the surface as recommended by Waterproofing Provider.

B. Protect Roof Surface and Structures:

1. Traffic over the working area shall be restricted and controlled to qualified personnel only. Provide safety signage, barriers and safety equipment, as appropriate.

2. Protect heavily traveled areas or use protected layers during mobilization of materials and equipment to the work area, as recommended by the Waterproofing Provider.

3. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.

C. Inspect the Work Area

1. Perform a pre-installation inspection of the work areas.

2. Install slip sheet or protection layer above the roof membrane waterproofing in accordance with manufacturer's guidance. The roof surface shall be smooth, free of debris and grit before installing a slip sheet or protective layer.

3. Perform module installation only after appropriate roof waterproofing system has been installed, tested for leaks, and certified to be ready for installation of green roof system. Verify that roof assembly is watertight and free draining.

3.4 INSTALLING GREEN ROOF MODULES

A. Handle the modules with care. Do not drop, kick or point-load the modules during installation.

B. Place modules above the slip sheet or protective layer in accordance with the landscape design or layout Drawing. Modules shall be placed in straight rows, positioned tight beside each module and in proper orientation according to the landscape design.

C. After installation, modules shall be immediately watered so as to thoroughly moisten growing media throughout. Water shall be free of substances harmful to plant growth.

D. Do not install modules directly in low sections of roof where water ponds or where modules will block flow of drainage, or on saturated roof surface or during freezing weather conditions.

E. If required, install an irrigation system according to the manufacturer specifications and instructions. If an irrigation system is not required, provide hoses/sprayers for temporary irrigation, as needed, to conduct initial watering for plant maintenance.

F. Cut modules, only if necessary, to offset structures or roof edges, or around obstructions. Install partial or cut planter modules with the cut edge facing another module or edging.

3.5 QUALITY CONTROL

A. The Installer shall inspect roof conditions daily and document in writing and with photographs all work during handling and installation of the Vegetated Green Roof System.

B. As-built records should include all variations to plans, any variation in layout because of roof obstructions or other changes and installation rate.

3.6 CLEAN UP AND PROTECTION

A. Excess waste material shall be removed daily. Keep roof clean and work area in an orderly condition. Protect landscaped materials and green roof system work from damage. Maintain protection during maintenance periods.

B. Protect and insure, if necessary, staged or installed materials is the responsibility of the Installer. Work area concerns may include, but not be limited to, fire, theft, and vandalism. The Installer is responsible for all costs incurred in replacing materials prior to date of substantial completion.

3.6 MAINTENANCE

A. Maintain modules, including watering, spot weeding, application of herbicides, fungicides, insecticides, fertilizers, and replanting until a full, uniform stand of plants free of weeds, undesirable species, disease, and insects is achieved and accepted by the Architect.

1. Water modules/plants as required to establish proper rooting.
2. Repair, rework, and replant all areas that have not become established.
3. Conduct plant care and maintenance according to the maintenance guide and recommendations.

3.7 ACCEPTANCE

A. Inspection to determine acceptance of modules will be made by the Owner or designated Representative, upon notification by the Installer. Advanced notification shall be provided at least 5 working days before a requested inspection.

1. Modules will be acceptable, provided all requirements, including maintenance period, have been complied with, and healthy plants are established.

B. Owner will assume maintenance and care of vegetated green roof system following acceptance, except as modified by a maintenance service agreement between Owner and Green Roof Provider or Installer.

END OF SECTION