



III.A.

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Architectural Review Board Staff Report

Project Type: 9th Amended Site Development Plan

Meeting Date: July 13, 2017

From: Cecilia Dvorak, Project Planner

Location: North side of Olive Boulevard west of Arrowhead Estates Lane

Applicant: Gray Design Group

Description: **Friendship Village of West County 9th ASDP:** An Amended Site Development Plan, Landscape Plan, Lighting Plan, Architectural Elevations and Architect's Statement of Design for a 34.57 acre tract of land zoned "R-4" Residence District with a Conditional Use Permit (CUP) for Nursing Homes located on the north side of Olive Boulevard west of Arrowhead Estates Lane.

PROPOSAL SUMMARY

The request is for construction of a new four-story assisted living and skilled nursing building, a new independent living building, and additions to the existing structures. The subject site is zoned "R-4" Residence District with a Conditional Use Permit (CUP) for Nursing Homes.

ZONING HISTORY OF SUBJECT SITE

The subject site includes four parcels totaling approximately 34.6 acres of land. All of these parcels were incorporated into the City of Chesterfield under the "NU" Non-Urban District designation from St. Louis County. The largest parcel has gone through many iterations of CUPs for the purposes of a Nursing Home complex. The initial CUP #264 was issued by St. Louis County in 1973, and the most recent CUP #37, was issued by the City of Chesterfield in 2015. The various amendments generally served to increase the number of units permitted, add new land into the district, and to amend setbacks to accommodate building additions. The most recent amendment was made in order to allow a higher number of units during the redevelopment phase to ensure a proper transition of residents. The petitioner has submitted various Amended Site Development Plans throughout the years to reflect the expansion of their campus as permitted by the various CUPs.



Figure 1: Aerial Photo

STAFF ANALYSIS

General Requirements for Site Design:

A. Site Relationships

This is a 34.6 acre tract located on the north side of Olive between Faust Park and the Braefield subdivision. The applicant has provided a color site plan showing the location of the proposed new buildings and additions. In order to accommodate the new development, the existing assisted care building and a garage will be demolished. Other structures have already been demolished, and the campus image below indicates the buildings that will be or have been removed.



Figure 2: Campus Aerial Image

Each building is connected through a series of sidewalks and striped crosswalks provide pedestrian connectivity across drive aisles. The proposed Building A will also have an internal courtyard with a walking path and landscaping. Similar winding pathways and landscaping can be seen throughout the site in common areas. Detailing within the building elevations provides for a consistent material palette across the campus with unique uses of material from building to building to unify the aesthetic.



Figure 3: Color Site Plan

B. Circulation System and Access

The site continues to have one main entrance and exit access point in the southeast of the site to Olive Boulevard and one “emergency access only” access point connecting to Arrowhead Estates Lane in the southeast. There will be an additional “emergency access only” access point off of Braefield Drive.

Internally, there is one primary route for vehicles to circulate throughout the site, with an additional loop that connects detached villas to the rest of the campus. Each new addition and the addition of Building A have either adjoining or neighboring courtyards promoting pedestrian circulation throughout the site.

New surface parking for the new Building A is located directly in front of the building. Most of the surface parking for the remaining buildings are combined in front of Building B and next to Building D near the main entrance. Building D will have an additional 52 space lower level parking garage.

C. Retaining Walls

The development proposal includes the addition of terraced retaining walls in the southwest quadrant of the site. The color of the retaining walls is to match the existing retaining walls on campus.



Figure 4: Retaining Wall Material image

General Requirements for Building Design:

A. Scale, Design, Materials and Color

Each building is designed to complement the existing campus aesthetic while advancing the architectural feel to provide a more residential scale, visual interest, and material warmth. Exterior materials used throughout the proposed renovation are a mix of masonry brick veneer, stone masonry, painted cementitious horizontal lap siding, and painted cementitious panel siding with batten trim detailing. Roof elements will be traditional, gable and shed forms clad with ether architectural grade shingles or painted standing seam sheet metal roofing with all rooftop mounted equipment screened from view.

The proposed independent living building design incorporates materials and elements that are similar to the design of the independent living building that was approved in 2012, as show in the following images:



Figure 5: Proposed Independent Living Building D South Elevation



Figure 6: "Rutgers" Independent Living Building approved in 2012

B. Landscape Design, Screening and Fencing

A 30 foot landscape buffer is provided along Olive Boulevard and a 20 foot buffer along Arrowhead Estates Lane. A variety of trees and shrubs are proposed within these buffers; however, the Landscape Plan remains under review and many of the plantings shown on the plan are not reflected in the color site plan or architectural renderings.

The northwest quadrant of the site is heavily wooded and this natural wooded buffer area extends along the northern property line. This area will be preserved.

Recessed roof areas and raised parapets will screen rooftop installed mechanical equipment from view.

C. Lighting

The applicant is adding new lighting fixtures but not planning on adding any new fixture types. The pole-mounted decorative light fixture that will be utilized along internal drive lanes was approved in conjunction with the 7th Amended Site Development Plan in 2013.

Additionally, a pathway light fixture will be utilized along pedestrian walking paths within the courtyard areas. This fixture was approved in 2012 in conjunction with the 6th Amended Site Development Plan.

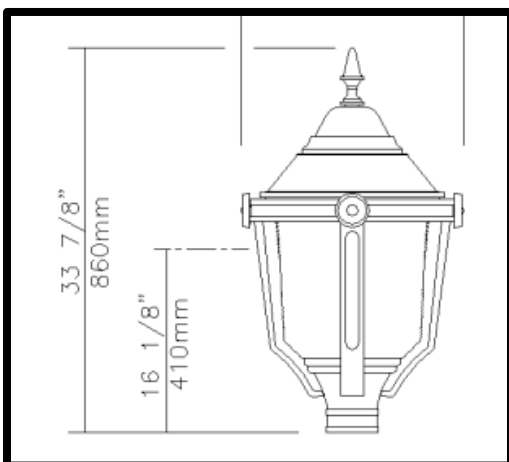


Figure 7: Pole-Mounted Light Fixture



Figure 8: Pathway Light Fixture

D. Multi-Family Architecture

The Unified Development Code includes specific requirements for multi-family architecture.

1. Provide an on-site pedestrian system with access to common ground areas—The buildings are all connected through the sidewalk system. This system allows for pedestrian movement from the buildings to the common areas, courtyards and pond along a route dedicated for pedestrian movement. Sole access to the Olive Boulevard sidewalk is through the main entrance.
2. Express architecturally the individual dwelling units within the building—The proposal does not emphasize the individual dwelling units by finish or color, but the residential balconies express the individual dwelling units within the building.
3. Utilize color, material, and plane changes to articulate facades. Avoid monotonous or institutional designs—The proposal includes color and design changes to avoid a monotonous design. The change and concentration of building material articulate the façade.
4. Primary building material shall be extended and installed so that no more than twelve (12) inches of concrete foundation wall is exposed—The proposal will adhere to this requirement.
5. Respect the scale, proportion and character of the adjacent or predominant neighborhood—The site is between single family residential and Faust Park. The new building and building additions are in similar scale, proportion and character of the existing buildings within the site. The buildings are of larger size than most neighboring buildings, but do not disrupt the scale, proportion, or character any more than their existing state.
6. Provide functional recreation areas—The largest recreational feature on the site is the walking path around the large pond. The new building and additions provide pathways that can be used to connect to the pond. Walking paths with small courtyards are in close proximity to each of the new additions and the proposed Building A.
7. Provide outdoor space for each dwelling—Building features include covered porches and balconies along with interior courtyards. The balconies and porches not only provide outdoor space for each unit but also add an element of depth to the proposed buildings.
8. Provide visual transitions between the street and the dwelling units—Along Olive Boulevard there is the 30 foot parking setback and buffer that provides a break between the residential units and the street. Additionally, along Arrowhead Estates Lane the 20 foot parking setback and buffer also provide a break between the residential units and the street. Sidewalks and landscape areas provided internally between the buildings and parking lots contribute to the visual transition.

DEPARTMENTAL INPUT

Be advised, this project is still going through development review by City Staff and will not proceed to the Planning Commission until all outstanding items have been addressed. All recommendations made by the ARB will be included in Staff's report to the Planning Commission.

Staff requests review and recommendation on this submittal for Friendship Village of West County Amended Site Development Plan.

MOTION

The following options are provided to the Architectural Review Board for consideration relative to this application:

- 1) "I move to forward the Amended Site Development Plan, Landscape Plan, Lighting Plan, Architectural Elevations, and Architect's Statement of Design, for Friendship Village of West County, as presented, with a recommendation for approval (or denial) to the Planning Commission."
- 2) "I move to forward the Amended Site Development Plan, Landscape Plan, Lighting Plan, Architectural Elevations, and Architect's Statement of Design, for Friendship Village of West County, to the Planning Commission with a recommendation for approval with the following conditions..."

Attachments

1. Architectural Review Packet Submittal



**ARCHITECTURAL REVIEW BOARD
Project Statistics and Checklist**

Date of First Comment Letter Received from the City of Chesterfield 9/23/2016

Project Title: Friendship Village - Chesterfield Campus **Location:** 15201 Olive Blvd, Chesterfield, MO 63017

Developer: Friendship Village (Owner) **Architect:** Gray Design Group, Inc. **Engineer:** Civil Engineering Design Consultants, Inc.

PROJECT STATISTICS:

Size of site (in acres): 34.57 Acres **Total Square Footage:** 299,926 SF **Building Height:** Four Stories

Proposed Usage: Senior housing providing a Continuum of Care Retirement Community - Assisted Living Facility, Skilled Nursing Facility, Independent Living Facility, and associated common areas.

Exterior Building Materials: Brick Masonry, Stone, and Cementitious Siding (painted).

Roof Material & Design: TPO low slope roof areas concealed by hip and gable roof forms clad with Architectural Grade Laminated asphalt shingle roofing with standing seam metal roofing accents.

Screening Material & Design: Recessed roof areas and raised parapets will screen rooftop installed mechanical equipment from view.

Description of art or architecturally significant features (if any): Buildings features include covered porches and balconies, interior courtyards. Detailing of the building elevations provides for a consistent material pallet across the campus with unique uses of material from building-to-building to unify the aesthetic.

ADDITIONAL PROJECT INFORMATION: Extensive landscape plantings are provided throughout the site with walking paths, fountains, and other site amenities.

Checklist: Items to be provided in an 11" x 17" format

- Color Site Plan with contours, site location map, and identification of adjacent uses.
- Color elevations for all building faces.
- Color rendering or model reflecting proposed topography.
- Photos reflecting all views of adjacent uses and sites.
- Details of screening, retaining walls, etc.
- Section plans highlighting any building off-sets, etc. (as applicable) (N/A)
- Architect's Statement of Design which clearly identifies how each section in the Standards has been addressed and the intent of the project.
- Landscape Plan.
- Lighting cut sheets for any proposed building lighting fixtures. (as applicable)
- Large exterior material samples. (to be brought to the ARB meeting) (to be provided for ARB presentation.)
- Any other exhibits which would aid understanding of the design proposal. (as applicable) (N/A)
- Pdf files of each document required.

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GRAY DESIGN GROUP

FRIENDSHIP VILLAGE CHESTERFIELD
ARCHITECTURAL DESIGN NARRATIVE

Friendship Village – Chesterfield is a multiple-phase project enhancing the on-site Continuum of Care Retirement Community amenities offered to seniors throughout the community at the existing Friendship Village site on Olive Road.

The proposed project consists of a new four-story Independent Living apartment building, renovation of the existing Independent Living Lobby and community entrance, renovation and expansion of the existing Independent Living Wellness (Trillium) Center, demolition of the existing Assisted Living (Village Care Center) Facility replaced by a new four-story Assisted Living Facility with Memory Care unit and two-story Skilled Nursing Facility. Each building and care-type enjoys its own landscaped site amenities and outdoor courtyard areas with walking paths.

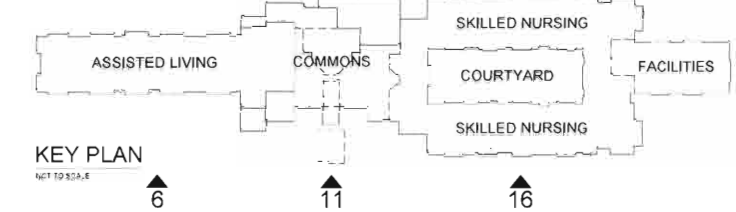
Each building is designed to complement the existing campus aesthetic while advancing the architectural feel to provide a more residential scale, visual interest, and material warmth enhancing the existing campus feel. Exterior materials used through-out the proposed renovation are a mix of masonry brick veneer, stone masonry, painted cementitious horizontal lap siding, and painted cementitious panel siding with batten trim detailing. Roof elements will be traditional hip, gable, and shed forms clad with either architectural grade shingles or painted standing seam sheet metal roofing with all rooftop mounted equipment screened from view.

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FRIENDSHIP VILLAGE CHESTERFIELD ARCHITECTURAL SCOPE SUMMARY

Detailed building-by-building summary of scope is below:

- Independent Living apartment building
 - Four-stories
 - 74 one-bedroom and two-bedroom Independent Living apartments
 - Below-grade enclosed parking garage
 - 116,818 square feet including garage
- Independent Living Lobby and Dining Area
 - One story
 - 12,930 square feet
- Independent Living Wellness (Trillium) Center
 - Two-story
 - 22,486 square feet
 - Beauty salon, fitness area, game rooms, activity room, health clinic, and casual dining
- Assisted Living Facility with Memory Care
 - Four-story
 - 45 one-bedroom and two-bedroom Assisted Living apartments
 - 15 private memory care apartments.
 - Dining areas, activity spaces, beauty salon, living areas, and Chapel
 - 57,609 square feet
- Skilled Nursing Facility
 - Two-story
 - 90 private and semi-private Skilled Nursing apartments
 - 50,765 square feet
 - Dining areas, activity spaces, beauty salon, living areas, and PT/OT treatment areas
 - Central kitchen and laundry facility



6 BUILDING A ELEVATION - ASSISTED LIVING & MEMORY CARE
 SCALE: 1/8" = 1'-0"



11 BUILDING A ELEVATION - BUILDING ELEVATION - ASSISTED LIVING, MEMORY CARE, THERAPY, AND SKILLED NURSING FACILITY
 SCALE: 1/8" = 1'-0"



16 BUILDING A ELEVATION - ASSISTED LIVING, MEMORY CARE, AND SKILLED NURSING FACILITY
 SCALE: 1/8" = 1'-0"

KEYED NOTES

1. ALUMINUM AUTOMATIC SLIDING DOORS
2. FIBER CEMENT BOARD AND TRIM (PAINT)
3. FIBER CEMENT LAP SIDING (PAINT)
4. FIBER CEMENT TRIM (PAINT)
5. BRICK VENEER
6. RIDGE VENT
7. ASPHALT ROOFING SHINGLES
8. STANDING SEAM METAL ROOFING
9. ANDERSON 200 SERIES DOUBLE HUNG WINDOWS
10. ALUMINUM CURTAIN WALL SYSTEM
11. PRE-FINISHED ALUMINUM RAILING SYSTEM
12. PRE-FINISHED ALUMINUM LOUVER
13. DECORATIVE BRACKET
14. INSULATED OVERHEAD COLING DOOR
15. PRE-FINISHED ALUMINUM CORING
16. PRE-FINISHED ALUMINUM DOWNGPOUT. CONNECT TO UNDERGROUND STORM SYSTEM.
17. PRE-FINISHED ALUMINUM GUTTERS
18. GLASS, FIBER REINFORCED CONCRETE COLUMN
19. LIGHT FIXTURE
20. ARCHITECTURAL METAL PANEL SYSTEM

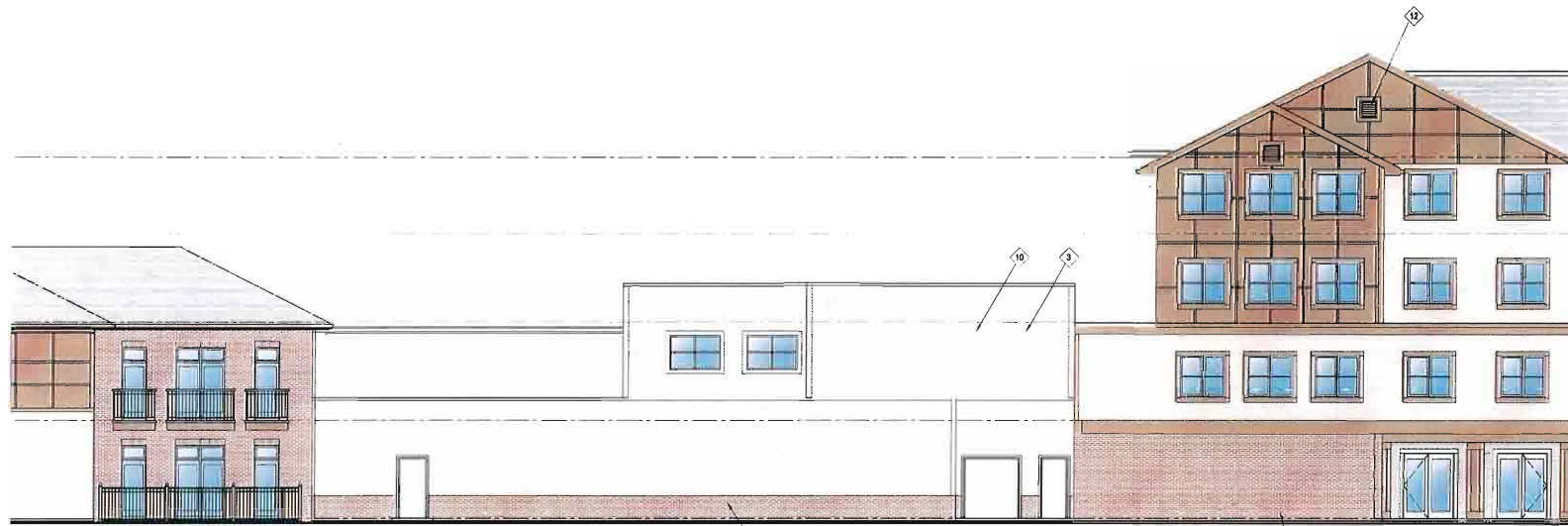
BUILDING ELEVATIONS



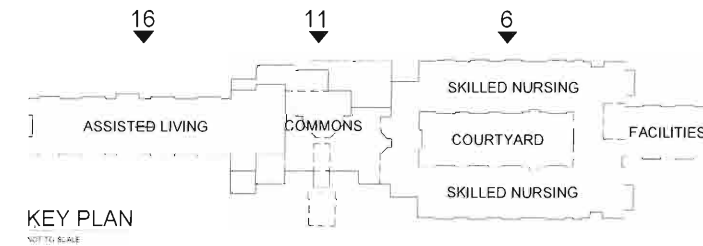
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8 BUILDING A ELEVATION - ASSISTED LIVING & MEMORY CARE
 A6.01 SCALE: 1/8" = 1'-0"



11 BUILDING A ELEVATION - ASSISTED LIVING, MEMORY CARE, THERAPY, AND SKILLED NURSING FACILITY
 A6.01 SCALE: 1/8" = 1'-0"



KEY PLAN
 NOT TO SCALE



18 BUILDING A ELEVATION - ASSISTED LIVING, MEMORY CARE, AND SKILLED NURSING FACILITY
 A6.01 SCALE: 1/8" = 1'-0"

KEYED NOTES

1. ALUMINUM, AUTOMATIC SLIDING DOORS
2. FIBER CEMENT BOARD AND TRIM (PAINT)
3. FIBER CEMENT LAP SIDING (PAINT)
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17. PRE-FINISHED ALUMINUM GUTTERS
18. GLASS FIBER REINFORCED CONCRETE COLUMN
19. LIGHT FIXTURE
20. ARCHITECTURAL METAL PANEL SYSTEM

SCHEMATIC DESIGN - PHASE B2 FOR:
FRIENDSHIP VILLAGE
 ASSISTED LIVING, MEMORY CARE, SKILLED CARE
 15201 OLIVE BLVD, CHESTERFIELD, MO 63017

BUILDING ELEVATIONS



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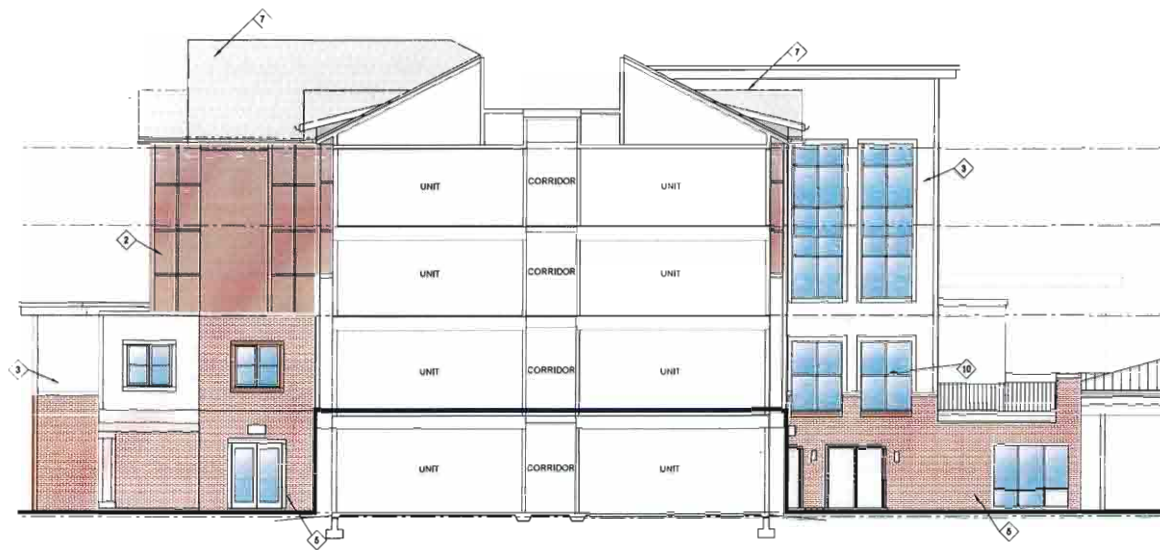
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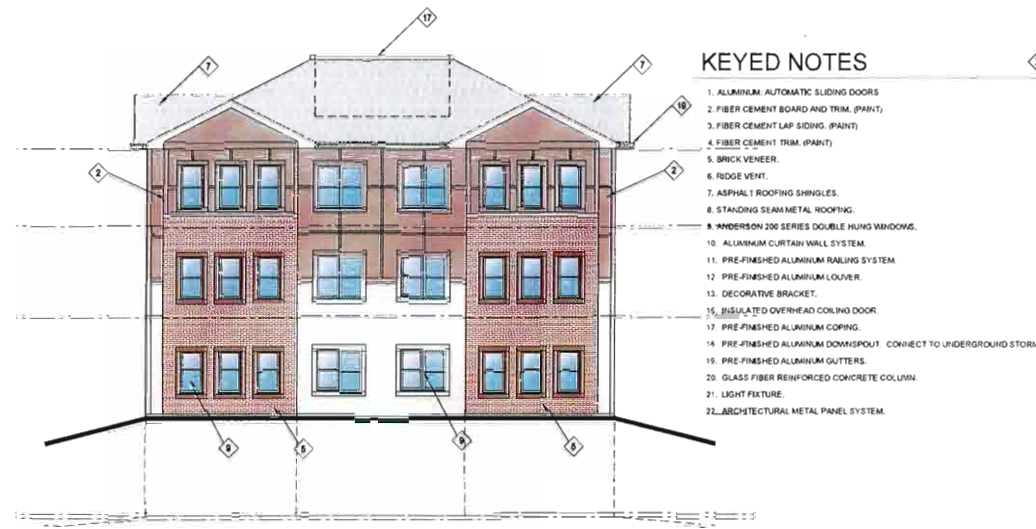
BUILDING ELEVATIONS



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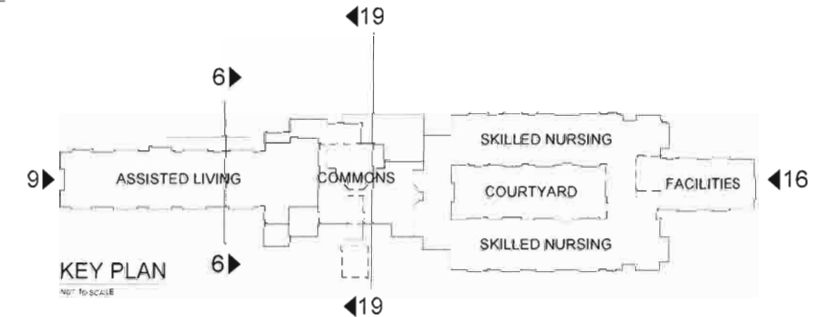
6 BUILDING A ELEVATION - ASSISTED LIVING & MEMORY CARE
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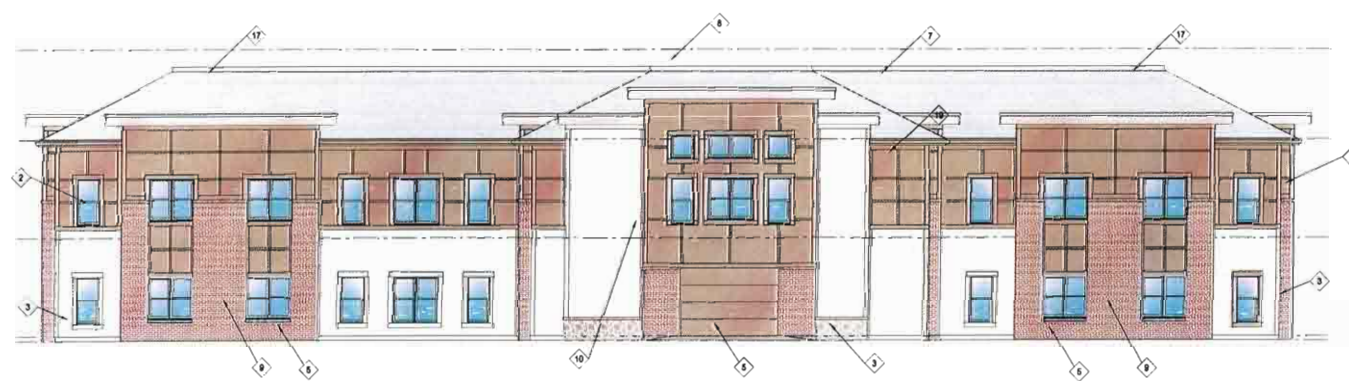
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 A6.02 / SCALE: 1/8" = 1'-0"

KEYED NOTES

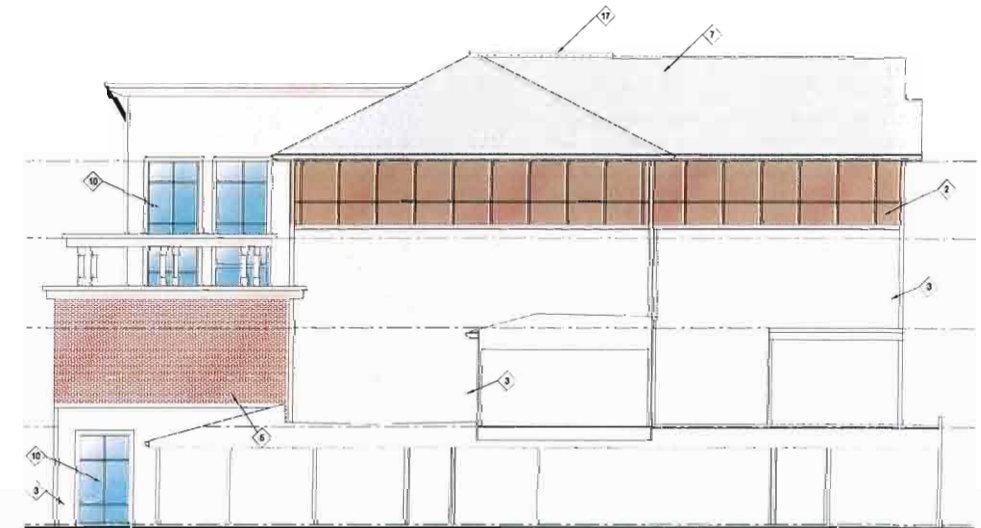
1. ALUMINUM AUTOMATIC SLIDING DOORS
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16. PRE-FINISHED ALUMINUM GUTTERS
17. GLASS FIBER REINFORCED CONCRETE COLUMN
18. LIGHT FIXTURE
19. ARCHITECTURAL METAL PANEL SYSTEM



KEY PLAN
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18 BUILDING A ELEVATION - ASSISTED LIVING & MEMORY CARE
 A6.02 / SCALE: 1/8" = 1'-0"



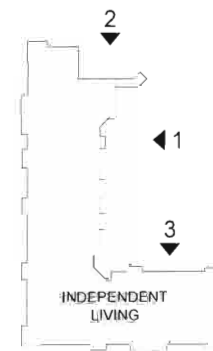
19 BUILDING A ELEVATION - ASSISTED LIVING & MEMORY CARE
 A6.02 / SCALE: 1/8" = 1'-0"



1 BUILDING D - INDEPENDENT LIVING - EXTERIOR ELEVATIONS
 SCALE: 1/8" = 1'-0"

KEYED NOTES

1. ALUMINUM AUTOMATIC SLIDING DOORS
2. FIBER CEMENT BOARD AND TRIM (PAINT)
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4. FIBER CEMENT TRIM (PAINT)
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17. PRE-FINISHED ALUMINUM GUTTERS
18. GLASS FIBER REINFORCED CONCRETE COLUMN
19. LIGHT FIXTURE
20. ARCHITECTURAL METAL PANEL SYSTEM



KEY PLAN



2 BUILDING D - INDEPENDENT LIVING - EXTERIOR ELEVATION
 SCALE: 1/8" = 1'-0"



3 BUILDING D - INDEPENDENT LIVING - EXTERIOR ELEVATIONS
 SCALE: 1/8" = 1'-0"

SCHEMATIC DESIGN - PHASE B2 FOR
FRIENDSHIP VILLAGE
 INDEPENDENT LIVING
 15201 OLIVE BLVD., CHESTERFIELD MO 63017

ILL. NORTH - EXTERIOR ELEVATION



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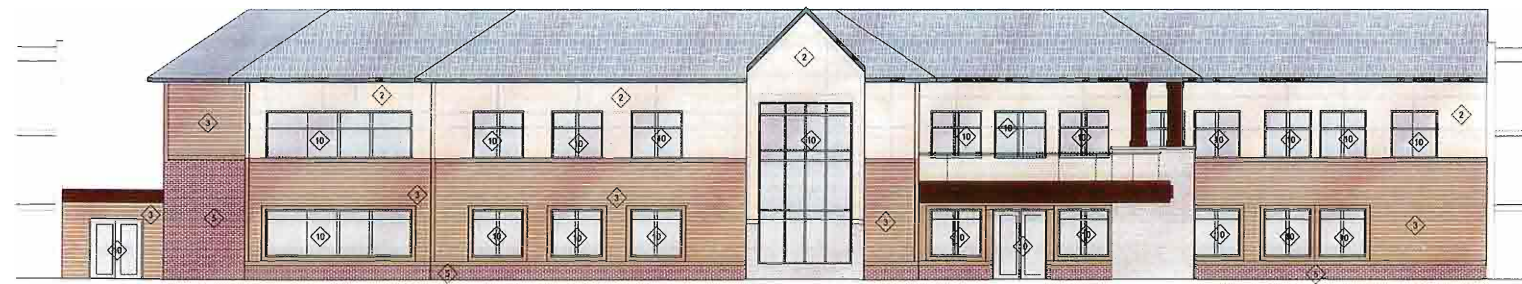
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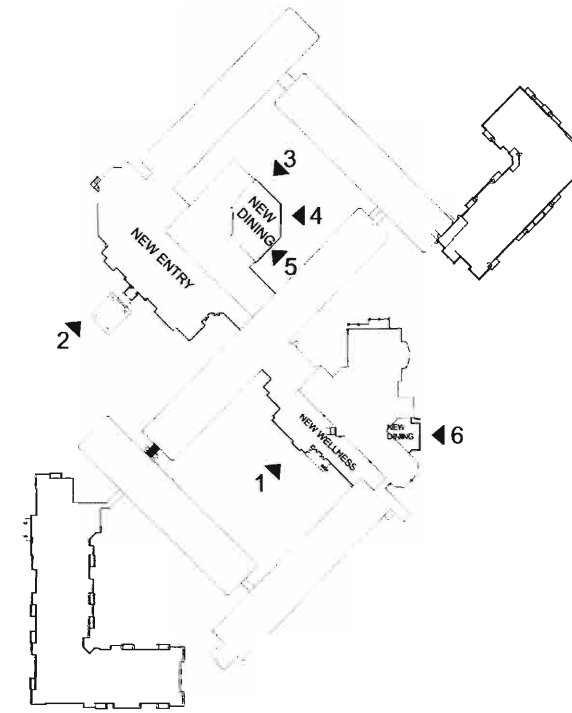
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1 BUILDING B - EXTERIOR ELEVATION - INDEPENDENT LIVING - WELLNESS
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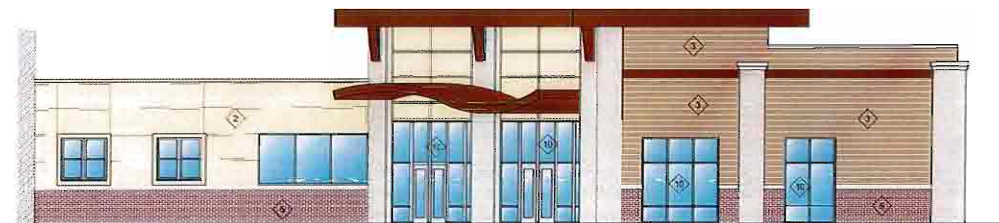
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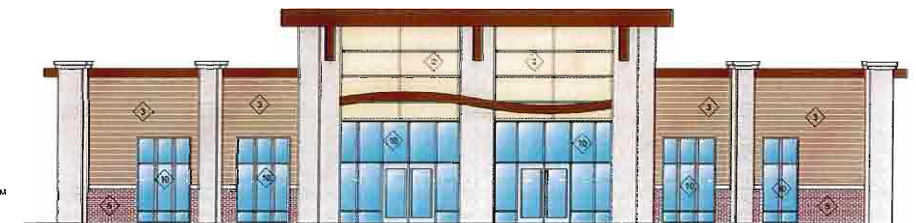
2 BUILDING B - EXTERIOR ELEVATION - INDEPENDENT LIVING NEW ENTRY
 SCALE: 1/8" = 1'-0"

KEYED NOTES

- 1 ALUMINUM AUTOMATIC SLIDING DOOR
- 2 FIBER CEMENT BOARD AND TRIM (PAINT)
- 3 FIBER CEMENT LYP SIDING (PAINT)
- 4 FIBER CEMENT TRIM (PAINT)
- 5 BRICK VENEER
- 6 RIDGE VENT
- 7 ASPHALT ROOFING SHINGLES
- 8 STANDING SEAM METAL ROOFING
- 9 ALUMINUM TO STILES SECURE HUNG WINDOWS
- 10 ALUMINUM CURTAIN WALL SYSTEM
- 11 PREFINISHED ALUMINUM WALL SYSTEM
- 12 PREFINISHED ALUMINUM LOUVER
- 13 DECORATIVE BRACKET
- 14 INSULATED OVERHEAD COILING DOOR
- 15 PREFINISHED ALUMINUM CEILING
- 16 PREFINISHED ALUMINUM DOWNPOUT - CONNECT TO UNDERGROUND STORM SYSTEM
- 17 PREFINISHED ALUMINUM GUTTERS
- 18 GLASS FIBER REINFORCED CONCRETE COLUMN
- 19 LIGHT FIXTURE
- 20 ARCHITECTURAL METAL PANEL SYSTEM



3 BUILDING B - EXTERIOR ELEVATION - DINING ROOM ADDITION
 SCALE: 1/8" = 1'-0"



4 BUILDING B - EXTERIOR ELEVATION - DINING ROOM ADDITION
 SCALE: 1/8" = 1'-0"



5 BUILDING B - EXTERIOR ELEVATION - DINING ROOM ADDITION
 SCALE: 1/8" = 1'-0"



6 BUILDING C - EXTERIOR ELEVATION - DINING ROOM ADDITION
 SCALE: 1/8" = 1'-0"



David Ruiz Art

ASSISTED LIVING - BUILDING A RENDERING

SENIOR LIVING DEVELOPMENT

15201 OLIVE BOULEVARD
CHESTERFIELD, MISSOURI



06.27.17

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FRIENDSHIP
VILLAGE

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SKILLED NURSING - BUILDING A RENDERING

SENIOR LIVING DEVELOPMENT

15201 OLIVE BOULEVARD
CHESTERFIELD, MISSOURI



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NEW ENTRANCE - BUILDING B RENDERING

SENIOR LIVING DEVELOPMENT

15201 OLIVE BOULEVARD
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INDEPENDENT LIVING RENDERING - BUILDING D

SENIOR LIVING DEVELOPMENT

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EXISTING BUILDING PHOTOS

SENIOR LIVING DEVELOPMENT

15201 OLIVE BOULEVARD
CHESTERFIELD, MISSOURI



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06.26.17



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 Fax: 314.720.1101
 www.cedc.net

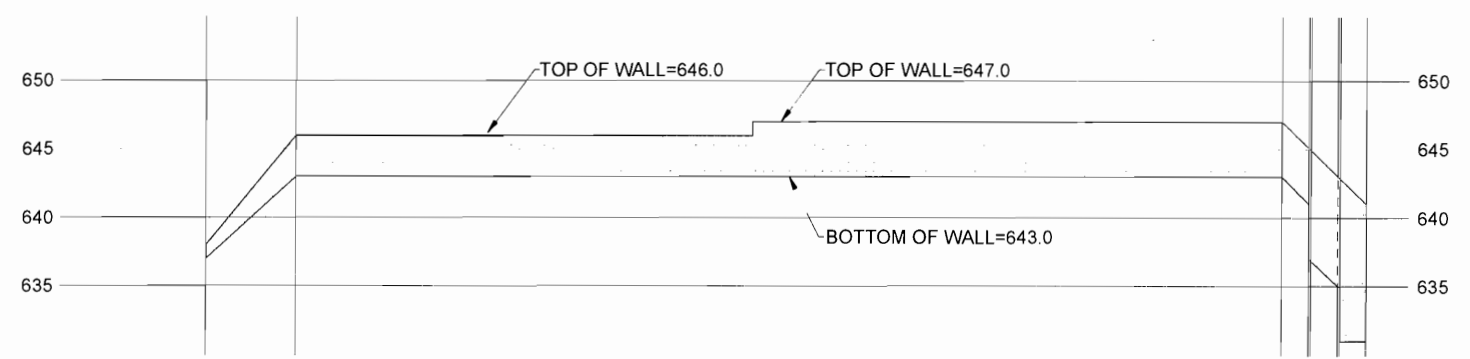
CEDC
 CIVIL ENGINEERING
 DESIGN CONSULTANTS

9th Amended Site Development Plan
Friendship Village Chesterfield
 15201 Olive Blvd.
 Chesterfield, Missouri 63017

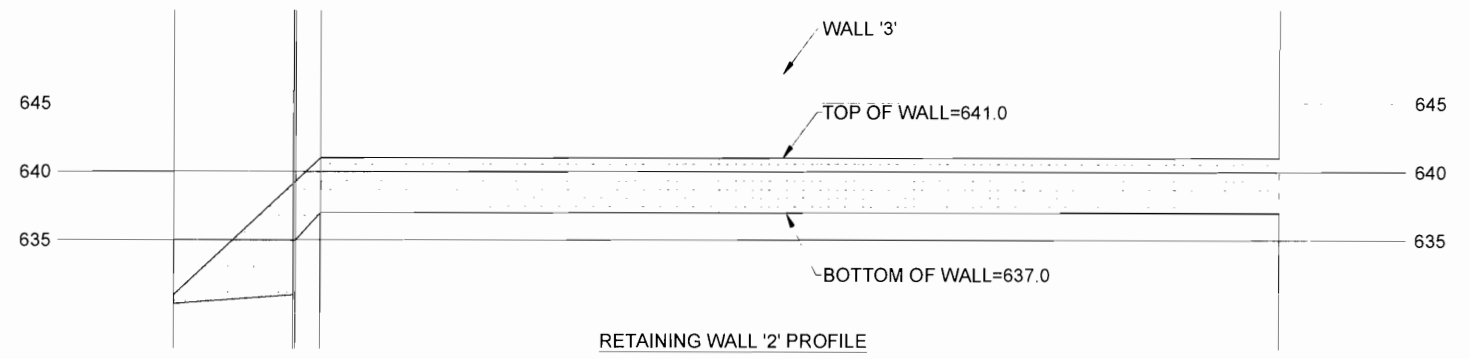
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No	Description	Date
City Submittal		08/26/16
REV PER CITY		05/03/17

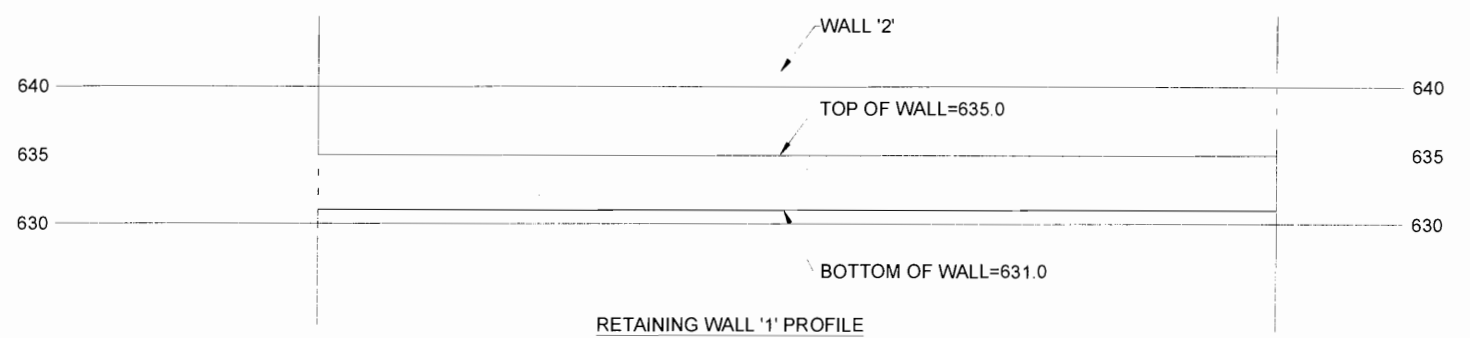
ARB EXHIBIT
 (WALL
 ELEVATION)



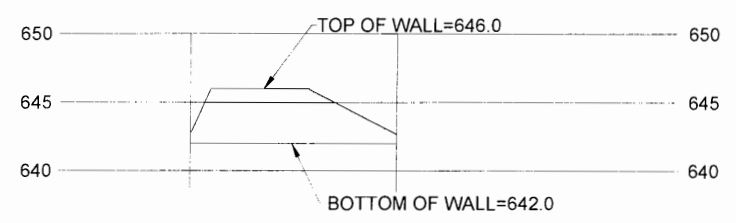
RETAINING WALL '3' PROFILE



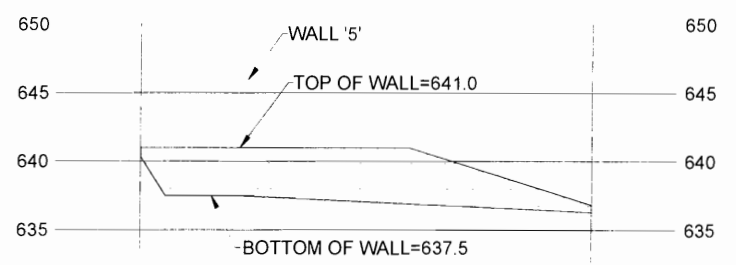
RETAINING WALL '2' PROFILE



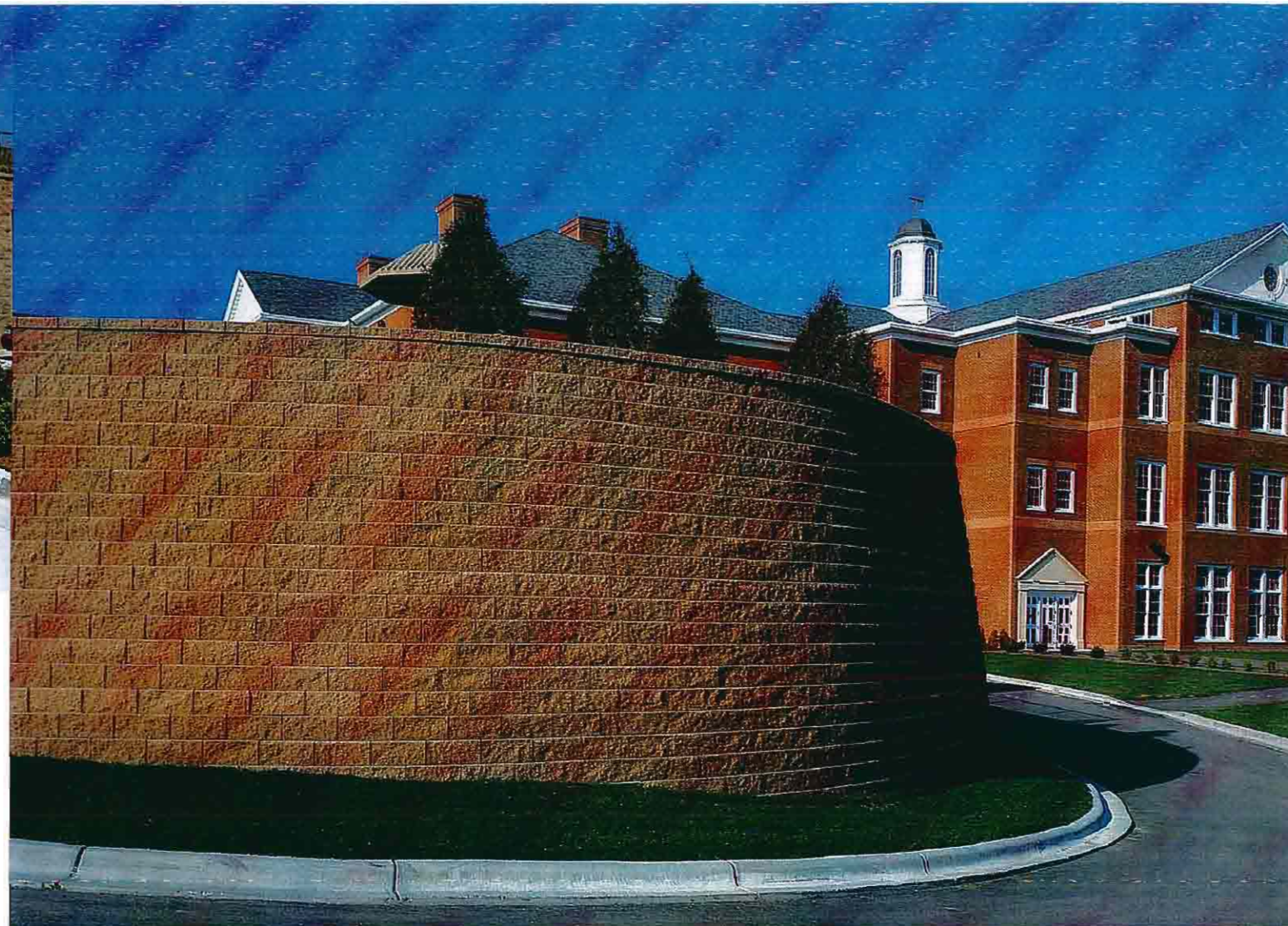
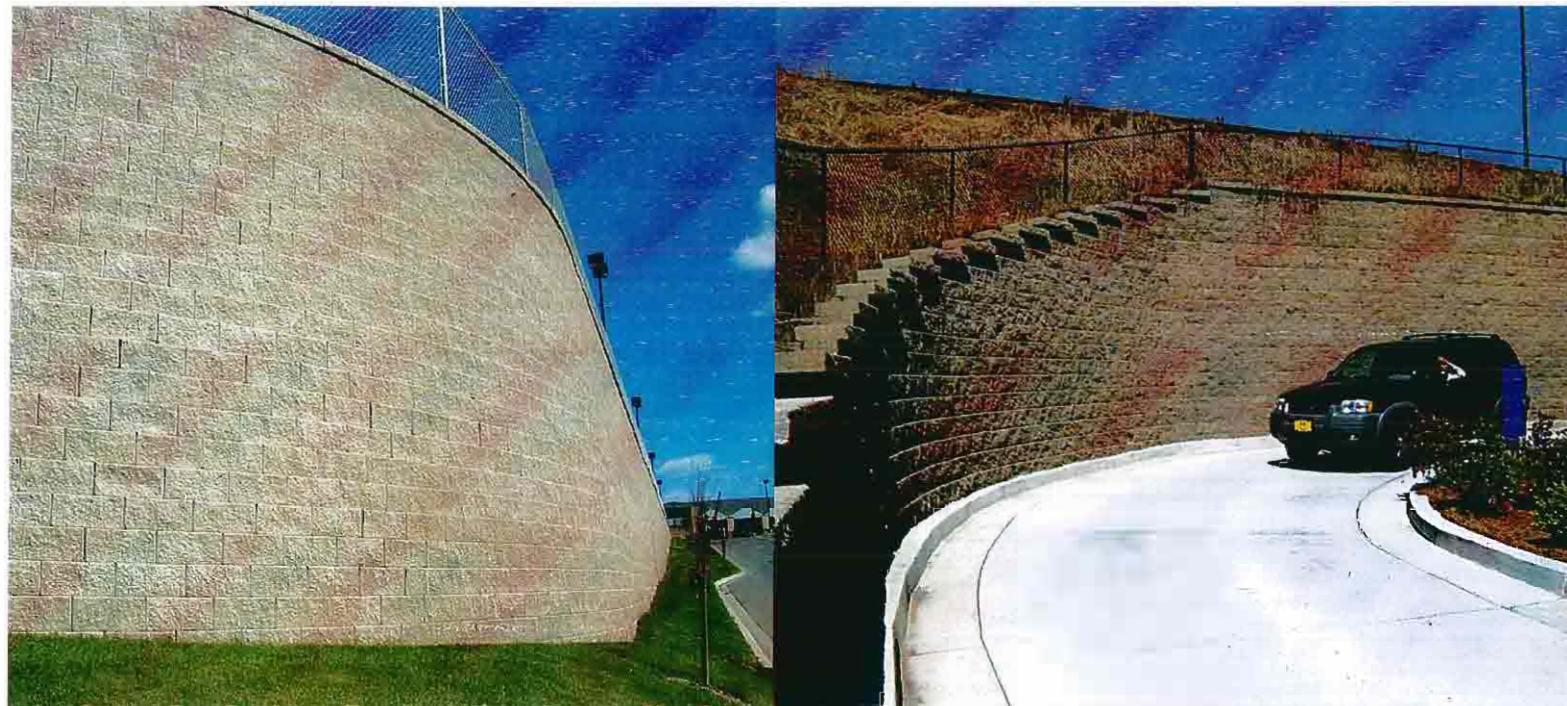
RETAINING WALL '1' PROFILE



RETAINING WALL '5' PROFILE



RETAINING WALL '4' PROFILE



EASY TO INSTALL

VERSA-LOK Square Foot walls are built on a 6-inch-thick crushed-rock leveling pad; no concrete footings are required. Unit cores are filled with crushed rock in the base course and free-draining angular gravel in all other courses. Each course is connected using VERSA-TUFF nylon/fiberglass pins; no mortar is used. For complete installation details, please consult the VERSA-LOK Square Foot Design & Installation Guidelines, available from your VERSA-LOK representative or at www.versa-lok.com.

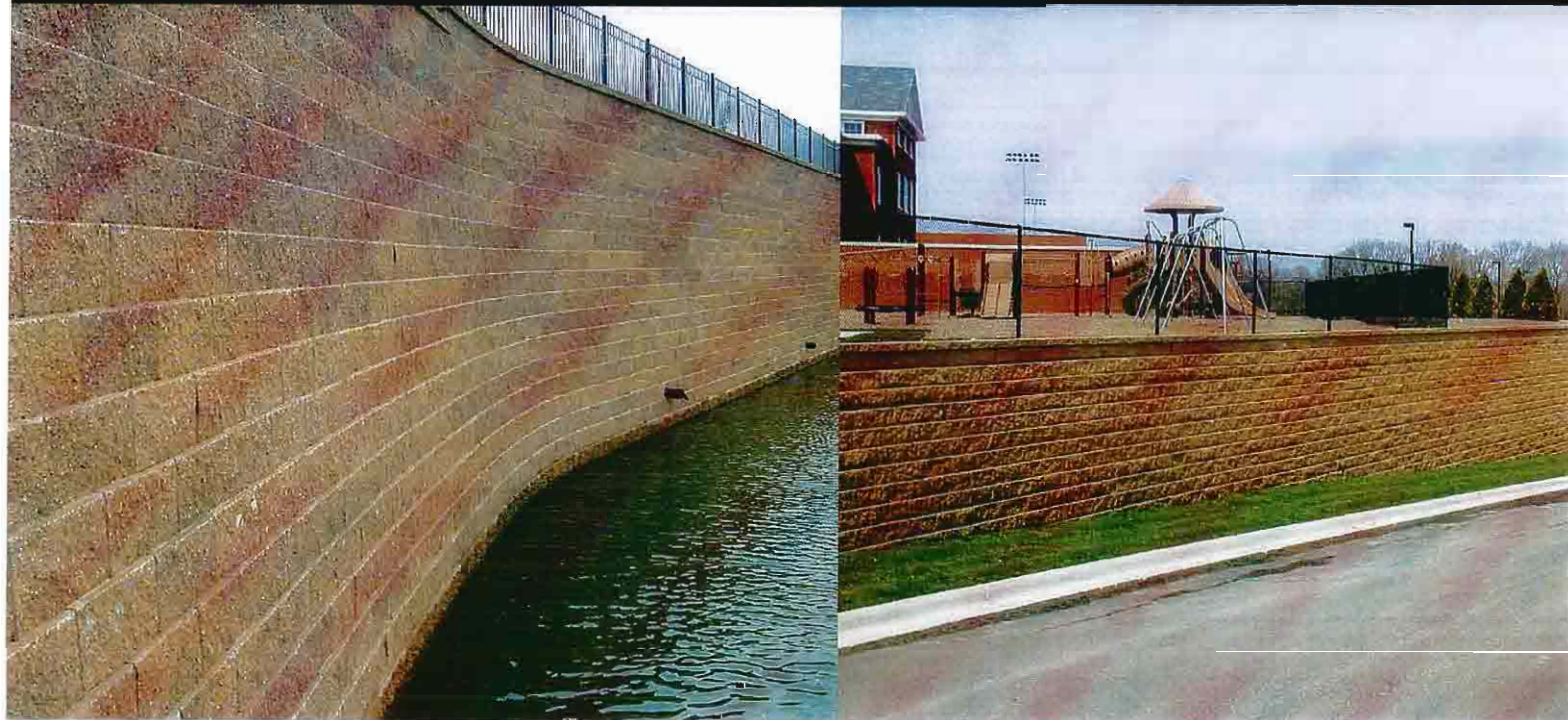
IMPORTANT NOTICE

The maximum stable unreinforced VERSA-LOK Square Foot wall is 3 feet and may be lower depending on soil, site and loading conditions (including terraces). Taller walls need geogrid soil reinforcement, designed by a qualified engineer. Check your local building code requirements. Please contact your supplier or VERSA-LOK for assistance.

Color of retaining wall to match existing retaining walls on campus

SQUARE FOOT *Retaining Walls*





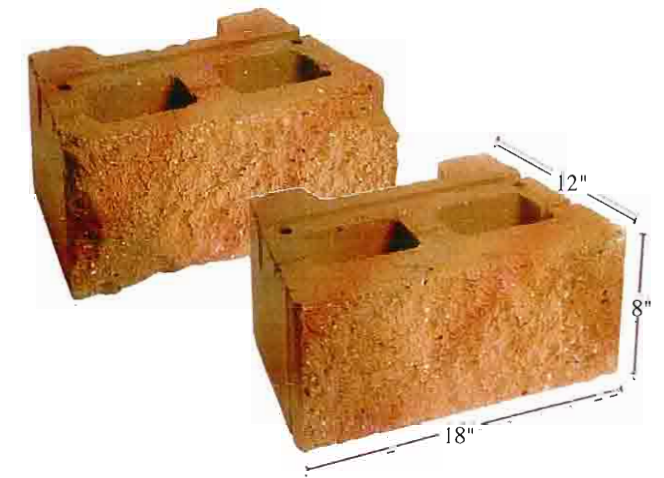
ECONOMY OF SCALE

With a full square foot of wall coverage per unit, you'll save on installation time with Square Foot. That will make your bottom line look better—and on a large project, that can make the difference necessary to win a bid. From large commercial developments to transportation and Corps of Engineers projects, Square Foot can help you land the big projects when it counts.

Retain your competitive edge with VERSA-LOK Square Foot.

SQUARE FOOT SPECIFICATIONS

Height.....	8"
Width (face):	18"
Depth:.....	12"
Face area:	1 sq. ft.
Weight (without aggregate fill):	87 lbs.
Minimum outside radius:	4' 6"
Setback:.....	1" (7 degrees) or 1/4" (1.8 degrees)



SQUARE FOOT. SQUARE DEAL.

When you need to retain a lot of ground economically, VERSA-LOK Square Foot can meet your project's design specs and budget and build a great-looking retaining wall for your client. Each 87-pound unit covers a full square foot of wall space affordably and attractively, making VERSA-LOK Square Foot a smart choice for large public works, institutional and commercial projects. Square Foot's unique hybrid design combines the versatility of VERSA-LOK's top-pinning technology with cost-effective hollow-core unit construction.

BUILT TO LAST

Square Foot units are engineered to provide the construction flexibility you need in a large retaining wall project. Its unique trapezoidal design enables inside and outside curves with one of the tightest radiuses in the industry (4' 6"). And VERSA-LOK's top-pinning system ensures quick, accurate alignment, variable-bond construction and tighter vertical joints.

Square Foot retaining walls can be built with a traditional 1-inch setback or near-vertical, and will accommodate geogrid reinforcement to build walls to any height. With no mortar or concrete footings, Square Foot walls remain flexible in climates that experience freeze-thaw cycles. And Square Foot's thick face affords better durability than other cored systems.

Finish off your Square Foot wall with matching VERSA-LOK cap units.



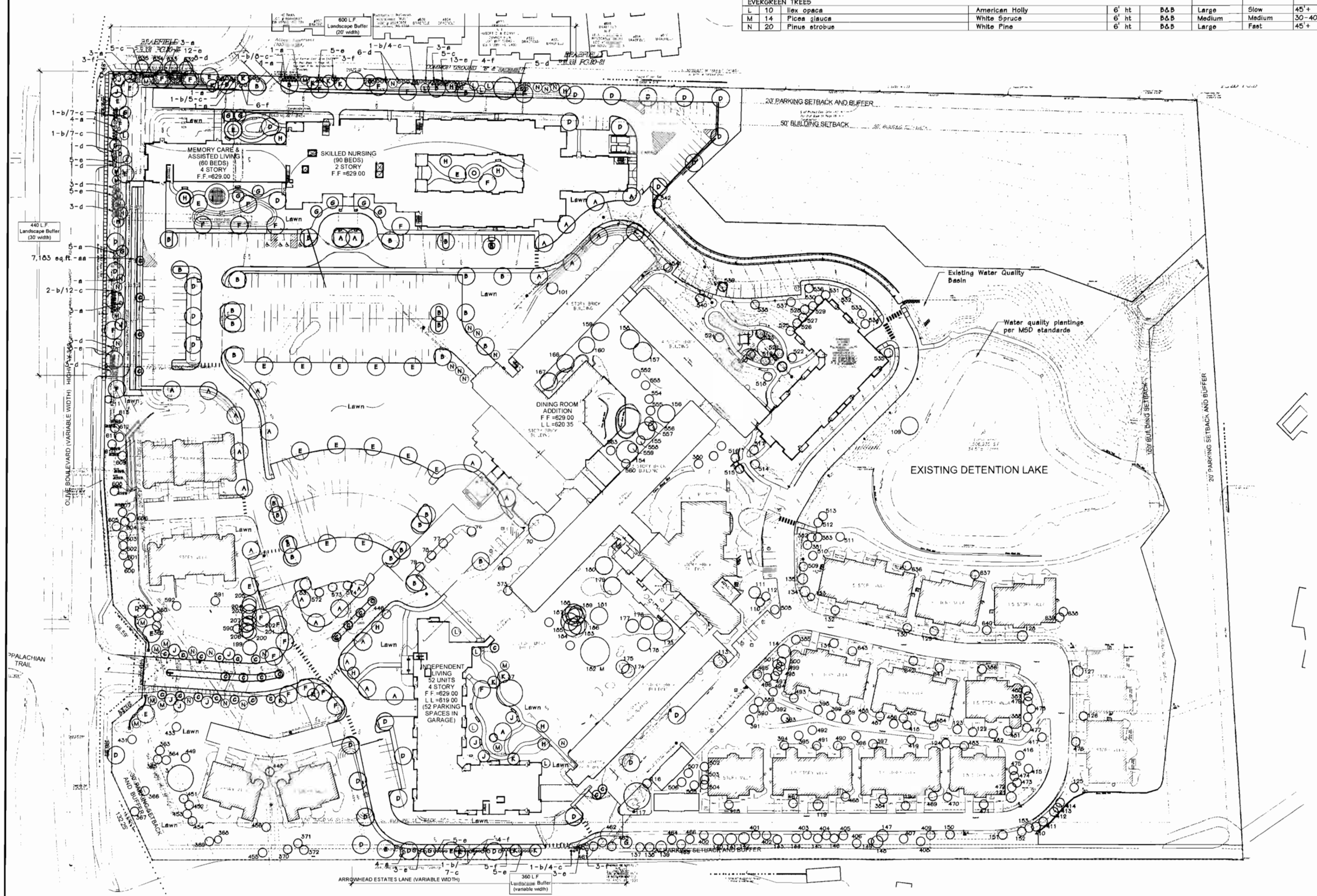


Gerald Saunders
 Missouri License # LA-000117
 Consultants

PLANT	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	FRUIT
DECIDUOUS SHRUBS					
a	30	Hammamelis x intermedia 'Arnold Promise'	Arnold Promise Witch Hazel	24-36"	B&B
b	9	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	24-36"	B&B
c	64	Ilex verticillata 'Nana'	Red Sprite Winterberry	24-36"	B&B
d	33	Lindera benzoin	Spicebush	24-36"	B&B
e	64	Physocarpus opulifolius 'Seward'	Summer Wine Ninebark	24-36"	B&B
EVERGREEN SHRUBS					
f	28	Chamaecyparis pisifera 'Dow Whiting'	Soft Serve False Cypress	4-5'	
GROUNDCOVERS					
aa	7,163 sq.ft. groundcover				

PLANT	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	FRUIT	SIZE CLASS	GROWTH RATE	MATURE SIZE
CANOPY TREES								
A	29	Acer x freemanii 'Jeffered'	Autumn Blaze Maple	2.5 cal	B&B	Large	Fast	45'+
B	31	Gleditsia triacanthos var inermis 'Skycole'	Skyline Honeylocust	2.5 cal	B&B	Large	Fast	45'+
C	26	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	2.5 cal	B&B	Large	Slow/Medium	45'+
D	33	Quercus bicolor	Swamp White Oak	2.5 cal	B&B	Large	Medium	45'+
E	26	Quercus coccoloba	Scarlet Oak	2.5 cal	B&B	Large	Medium/Fast	45'+
F	24	Taxodium distichum 'Mickelson'	Shawnee Brave Bald Cypress	2.5 cal	B&B	Large	Medium	45'+
UNDERSTORY TREES								
G	14	Prunus 'Kanzan'	Kwanzan Cherry	2.5 cal	B&B	Medium	Medium	25-30'
H	13	Cercis canadensis var texensis	Oklahoma Redbud	2.5 cal	B&B	Medium	Fast	25-30'
J	13	Magnolia stellata	Star Magnolia	2.5 cal	B&B	Small	Medium	15-20'
K	13	Melaleuca 'Royal Raindrop'	Royal Raindrop Crabapple	2.5 cal	B&B	Small	Medium	15-20'
EVERGREEN TREES								
L	10	Ilex opaca	American Holly	6' ht	B&B	Large	Slow	45'+
M	14	Picea glauca	White Spruce	6' ht	B&B	Medium	Medium	30-40'
N	20	Pinus strobus	White Pine	6' ht	B&B	Large	Fast	45'+

KEY
 ○ Existing Tree(s)
 To Remain



LANDSCAPE PLAN
 SCALE 1" = 50'



Open Space: 63.2%

Note: All new landscaped areas shall be provided with a mechanical, in-ground irrigation system.

9th Amended Site Development Plan Friendship Village of Chesterfield

15201 Olive Blvd., Chesterfield, Missouri 63017

Revisions:

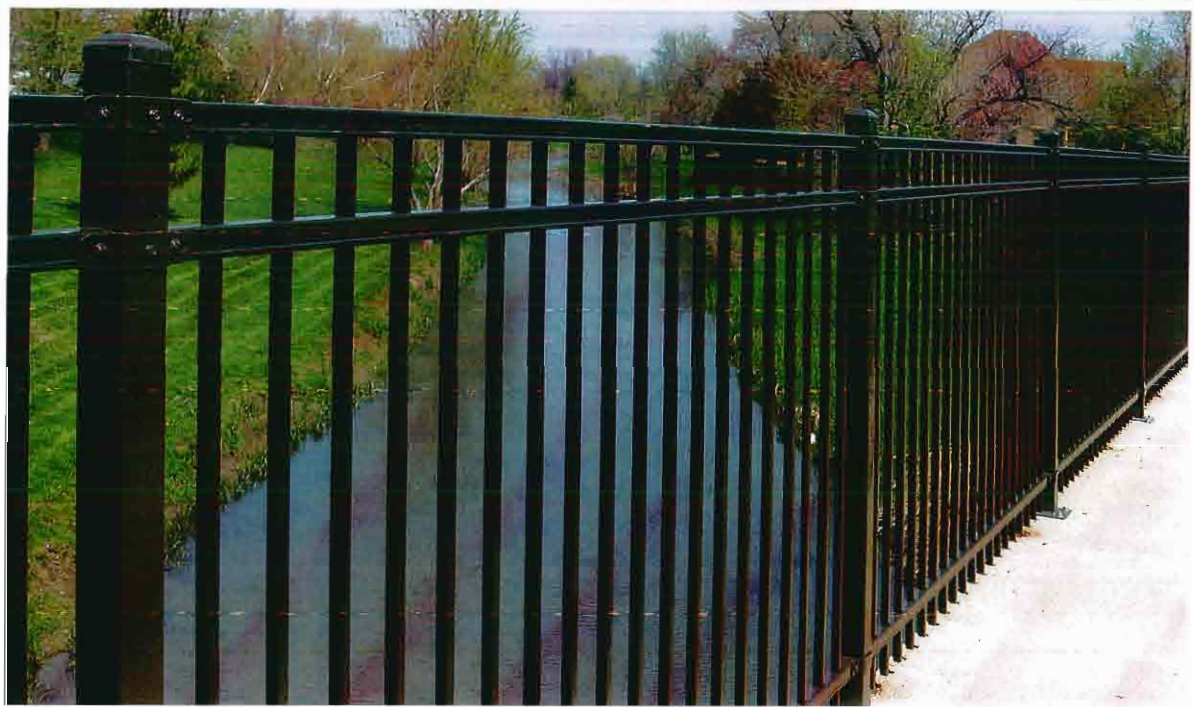
Date	Description	No
9/2/16	City Comments	
5/3/17	Plan Changes	

Drawn: KP
 Checked: JS

loomisAssociates
 Landscape Architects/Planners
 2000 South Brentwood Blvd., Suite 100
 Brentwood, Missouri 63104
 Phone: 636.251.1100
 Email: info@loomisassociates.com

Sheet Title: Landscape Plan
 Sheet No: L-1
 Date: 06/26/16
 Job #: 660.051

MONTAGE PLUS®



ORNAMENTAL STEEL FENCE

Montage Plus ornamental steel fence has the *versatility to fit many different project applications*. With its ability to *traverse varying grades*, variety of *distinct product styles* and unmatched coating performance, Montage Plus is the *preferred choice for ornamental fence*.



PRIMARY APPLICATIONS

- ▶ **Commercial Developments**
- ▶ **Self Storage**
- ▶ **Apartments (Multi-Family)**
- ▶ **Parks & Recreation**
- ▶ **Schools & Universities**



AMERISTARFENCE.COM | 888-333-3422

ASSA ABLOY, the global leader in door opening solutions

AMERISTAR®

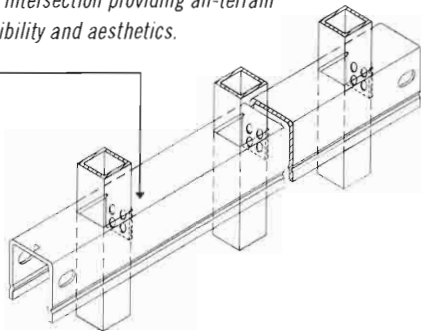
ASSA ABLOY

MONTAGE PLUS[®]

ORNAMENTAL STEEL FENCE

.75"sq x 18ga PICKETS | 1.4375" x 1.5" x 14ga RAILS | 2.5"sq x 16ga POSTS

Each picket is precisely welded at each rail intersection providing all-terrain flexibility and aesthetics.



STYLE OPTIONS



Also available in Pool, Pet & Play (3" air spacing) – styles vary

PROFUSION WELDED STEEL



All Montage fence panels are fabricated using Ameristar's ProFusion welding process. This technique combines laser and fusion technology to create a virtually invisible structural connection at every picket to rail intersection. Unlike typical aluminum fence systems that are held together with unsightly screws, the ProFusion weld used with Montage promotes a "good neighbor" profile with sleek lines and no exposed picket to rail fasteners. When compared to aluminum fencing, Montage's welded steel construction is unmatched in strength and durability.



E-COAT™ PROTECTIVE FINISH

Montage galvanized steel framework is subjected to a multi-stage pre-treatment/wash (with zinc phosphate), followed by a duplex cathodic electrocoat system consisting of an epoxy primer, which significantly increases corrosion protection, and an acrylic topcoat, which provides the protection necessary to withstand adverse weathering effects. This process results in years of maintenance-free ownership.



20 YEAR LIMITED WARRANTY

The Montage families of fencing products are manufactured from superior quality materials by skilled craftsmen with the highest standards of workmanship in the industry. Ameristar is confident in offering Montage with a 20 year limited warranty.



DOMESTIC MANUFACTURING

Ameristar is committed to providing products that are manufactured in the USA. We have made significant investments in technology, process improvement, and employee training in an effort to secure American jobs and combat inferior import products.

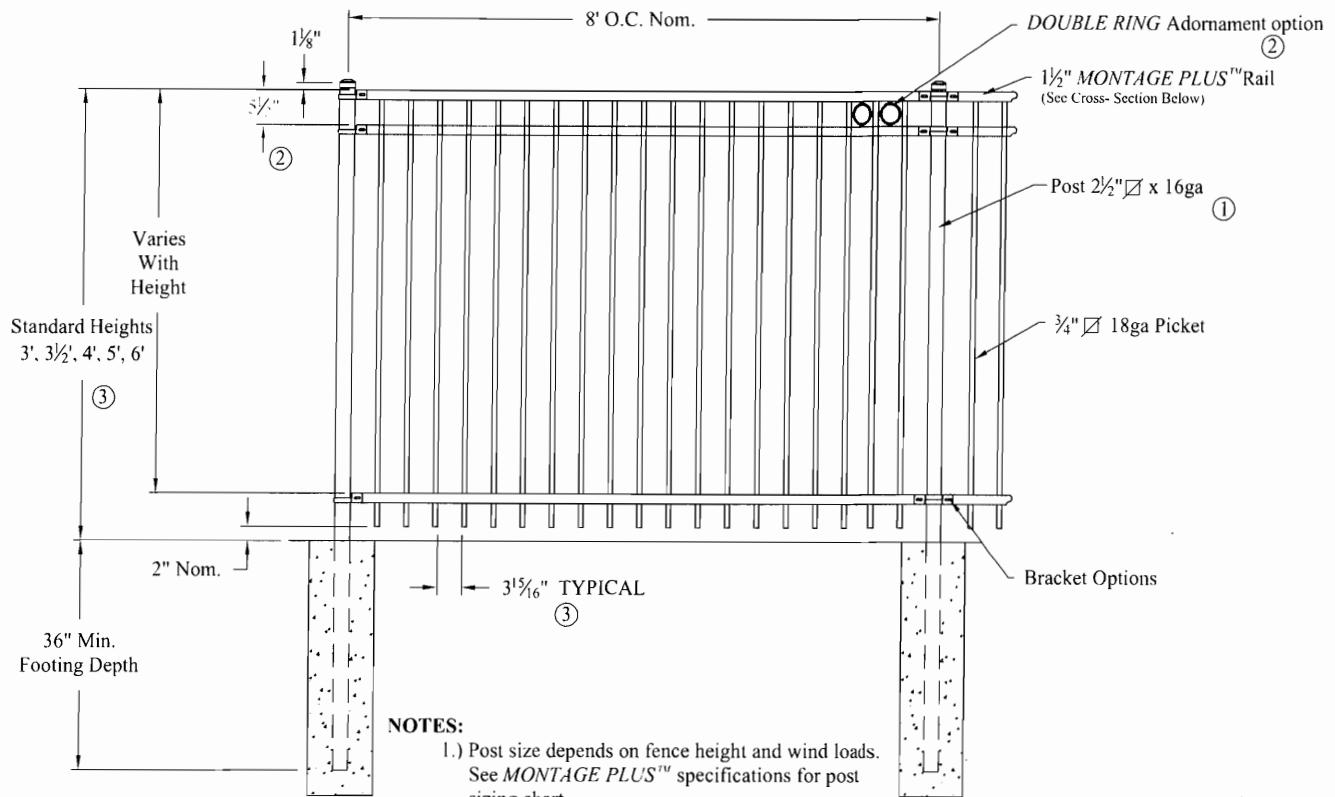
#DMP | REVISED 05/2014



FENCE PRODUCTS

TO PLACE YOUR ORDER CALL 888-333-3422

VISIT AMERISTARFENCE.COM

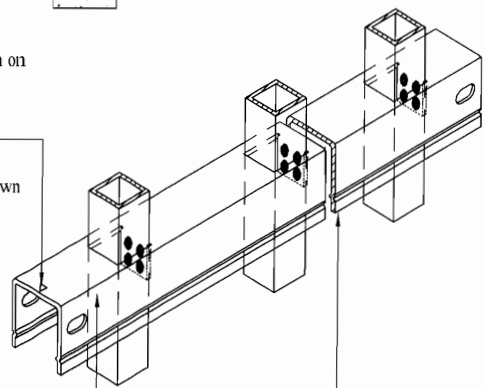


NOTES:

- 1.) Post size depends on fence height and wind loads. See *MONTAGE PLUS™* specifications for post sizing chart.
- 2.) Third rail required for *Double Rings*.
- 3.) Available in 3" air space and/or Flush Bottom on most heights.

RAKING DIRECTIONAL ARROW

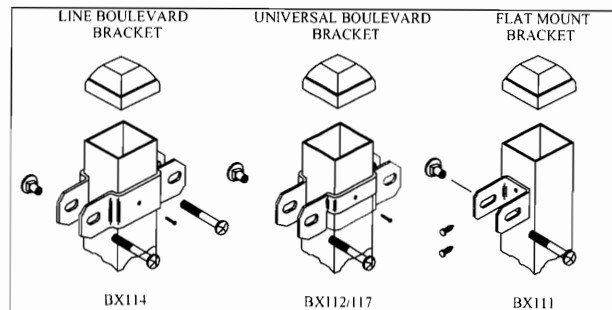
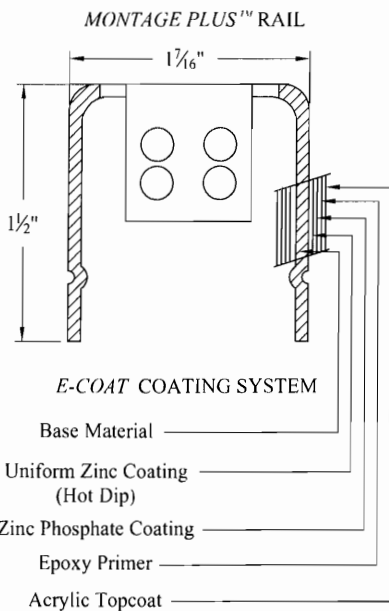
Welded panel can be raked 30° over 8' with arrow pointing down grade.



PROFUSION™ WELDING PROCESS

No exposed welds,
Good Neighbor profile - Same appearance on both sides

MONTAGE PLUS™ RAIL
Specially formed high strength architectural shape.



COMMERCIAL STRENGTH WELDED STEEL PANEL
PRE-ASSEMBLED

Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

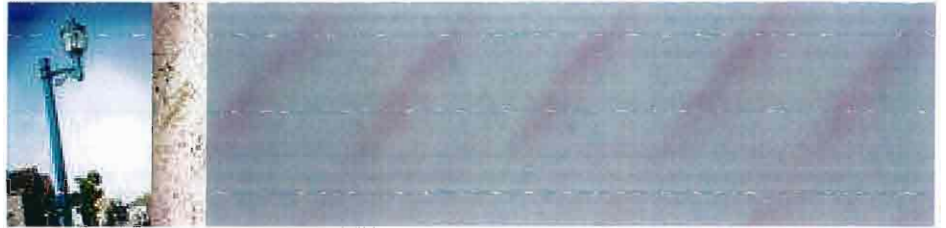
IRMISO

Title: **MONTAGE PLUS MAJESTIC 2/3-RAIL**

DR: CI	SH. 1 of 1	SCALE: DO NOT SCALE
CK: ME	Date 6/28/10	REV: e



1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com



ZENITH

SERIES

Product Overview and Technical information >>

PHILIPS
LUMEC



>>
LUMINAIRE > Z41-AC
BRACKET > M50-1A
POLE > P135A-850





ZENITH

SERIES

Flexibility and Precision / By combining high-tech optics with elements of modern design, the Zenith gives designers great flexibility and freedom. The Zenith is a compact floodlight that uses long arc double-ended metal halide lamps. It was specially developed for lighting large areas, such as parks, sports fields, public areas, and halls.







>>
LUMINAIRE > Z41-AC
BRACKET > M50-1A
POLE > P135A-850

FUNCTIONAL PRECISION

The Zenith's power becomes apparent when it lights up. The classically inspired modern design houses state-of-the-art technology designed for performance. Zenith's prismatic globe provides excellent pole spacing, making it possible to have the maximum amount of light with the minimum amount of luminaires.

FLEXIBLE DESIGN

The Zenith has many features that allow its appearance to be customized and personalized. This flexibility offers designers and landscape architects the freedom to create the perfect product with the certainty that no matter what the appearance of the luminaire turns out to be, the interior components stay the same, simplifying maintenance across the board, and providing the best possible photometric performance. >>

BENEFITS

Powerful light output thanks to long arc double-ended metal halide lamps.

- Excellent performance in the most demanding environments.
- Toolfree access for ease of maintenance.
- Precise optics maximize pole spacing.
- Vertical illumination increases feeling of safety.

LUMINAIRES

Conform to the UL 1598 and CSA C22.2 No. 250.0-08 standards

Z12-SFZ4
EPA: 2.01 sq. ft.
Weight: 19 lbs (8.6 kg)

Z14-SFZ4
EPA: 2.38 sq. ft.
Weight: 27 lbs (12.2 kg)

Z40-SFZ4
EPA: 2.32 sq. ft.
Weight: 26 lbs (11.8 kg)

Z40F-SFZ4
EPA: 2.12 sq. ft.
Weight: 16 lbs (7.3 kg)

Z40G-SFZ4
EPA: 2.44 sq. ft.
Weight: 26 lbs (11.8 kg)

Z41-SFZ4
EPA: 2.02 sq. ft.
Weight: 35 lbs (15.9 kg)

Z47-SFZ4
EPA: 2.24 sq. ft.
Weight: 20 lbs (9.1 kg)

Z47A / Z47L-SFZ4
EPA: 2.19 sq. ft.
Weight: 26 lbs (11.8 kg)
Z47A : glass top / Z47L : acrylic top

Z47G-SFZ4
EPA: 2.52 sq. ft.
Weight: 26 lbs (11.8 kg)

LAMPS / LED

These LED lamp details are showing typical delivered lumens relative to the complete luminaire with EcoSwap.

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)

LED rated life = 70,000 hrs¹ - Driver rated life = 100,000 hrs

LAMP	TYPICAL DELIVERED LUMENS ²	TYPICAL LAMP WATTAGE (W)	TYPICAL SYSTEM WATTAGE ³ (W)	TYPICAL CURRENT @ 120 V (A)	TYPICAL CURRENT @ 240 V (A)	TYPICAL CURRENT @ 277 V (A)	LED CURRENT (MA)	HPS EQUIVALENT ⁴	LUMINAIRE EFFICACY RATING (LM/W)
40W42LED4K-R	3430	40	45	0.48	0.24	0.22	333	70	76
65W42LED4K-R	5050	65	70	0.72	0.36	0.32	500	100	72

¹ L70 = 70,000 hrs (at ambient temperature = 25°C and forward current = 500 mA).

² May vary depending on the optical distribution used.

³ System wattage includes the lamp and the LED driver.

⁴ Equivalence should always be confirmed by a photometric layout.

Note : Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

OPTICAL SYSTEM / LED



EcoSwap

Rotomatic toolfree system composed of 4 main components: LED lamp / Optical System / Heat Sink / Driver

Lamp

Lamp type Philips Lumileds Luxeon R. Composed of 42 high performance white LEDs, 40w/65w lamp wattage. Color temperature of 4000 Kelvin nominal, 70 CRI. Operating lifespan based on LM80 results after which 50% still emits over 70% (L70) of its original lumen output. Use of a metal core board insures greater heat transfer and longer lifespan of the light engine.

Optical System

Composed of high performance acrylic refractors lenses to achieve desired optimized distribution to get maximum spacing, target lumens will create a perfect lighting uniformity. Performance shall be tested by independent lab for LM63 and LM79 and TM15 (IESNA) certifying its photometric performance.

RLE3: Asymmetrical
RLE5: Asymmetrical (Square)

> House shield available in option (HS)

VOLTAGE

120 / 208 / 240 / 277

* Photometry available on Philips Lumec web site www.lumec.com

LAMPS / HID

WATTAGE	2 / 3 / 5
50 MH, medium	✓
70 MH, medium	✓
100 MH, medium	✓
150 MH, medium	✓
175 MH, mogul	✓
35 HPS, medium	✓
50 HPS, mogul	✓
70 HPS, mogul	✓
100 HPS, mogul	✓
150 HPS, mogul	✓

✓ : Available

OPTICAL SYSTEMS / HID

(Lamps not included)



Optics

Large round acrylic or polycarbonate refractor featuring two series of prisms controlling the lamp's horizontal and vertical luminous flux.

2: Asymmetrical
3: Asymmetrical
5: Symmetrical

> House shield available in option (HS)

* Photometry available on Philips Lumec web site www.lumec.com

VOLTAGE

HID : 120 / 208 / 240 / 277 / 347 / 480

¹ Multi-top ballast also available.

LAMPS / QL

WATTAGE	2 / 3 / 5
55 QL	✓
85 QL	✓

✓ : Available

High frequency generator for induction lamp (4000K).

Instant start. Operating range 50-60 Hz or DC.

Lamp minimum starting temperature -40F (-40 °C).

OPTICAL SYSTEMS / QL

(Lamps included)



Optics

Large round acrylic or polycarbonate refractor Asymmetrical featuring two series of prisms controlling the Symmetrical lamp's horizontal and vertical luminous flux.

2: Asymmetrical
5: Symmetrical

> House shield available in option (HS)

* Photometry available on Philips Lumec web site www.lumec.com

VOLTAGE

120 / 208 / 240 / 277

LUMINAIRE OPTIONS

- HS** House shield
- PH7** Button-type photoelectric cell
- BC** Block connectors (available with the SFZ53 only)
- FN** Decorative finial (see below)
- FNC** Copper-color painted finial

ADAPTORS



SFZ3* / SFZ4



SFZ53

* The SFZ3 and SFZ53 slip fit over a 3" (76 mm) round by 2 3/4" (70 mm) long tenon.
The SFZ53 model features a door. (SFZ53 only applicable on Z12 / Z47 / Z47A / Z47L)

FILIALS

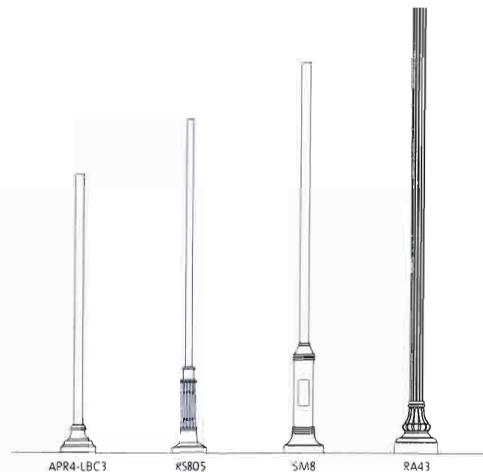
(Finial shown with luminaire comes standard)



FN1 FN2 FN3 FN4 FN6 FN8 FN9 FN10

POLES AND POLE OPTIONS

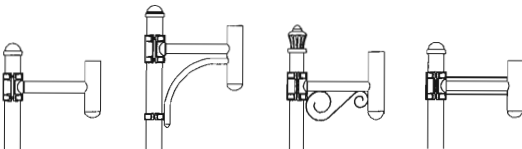
(Consult the Pole Guide for details and the complete line of poles)



APR4-LBC3 KS805 SM8 RA43

MOUNTINGS

(Consult the Pole Guide for details and the complete line of mountings)



M10 M30 M50 M70

FINISHES

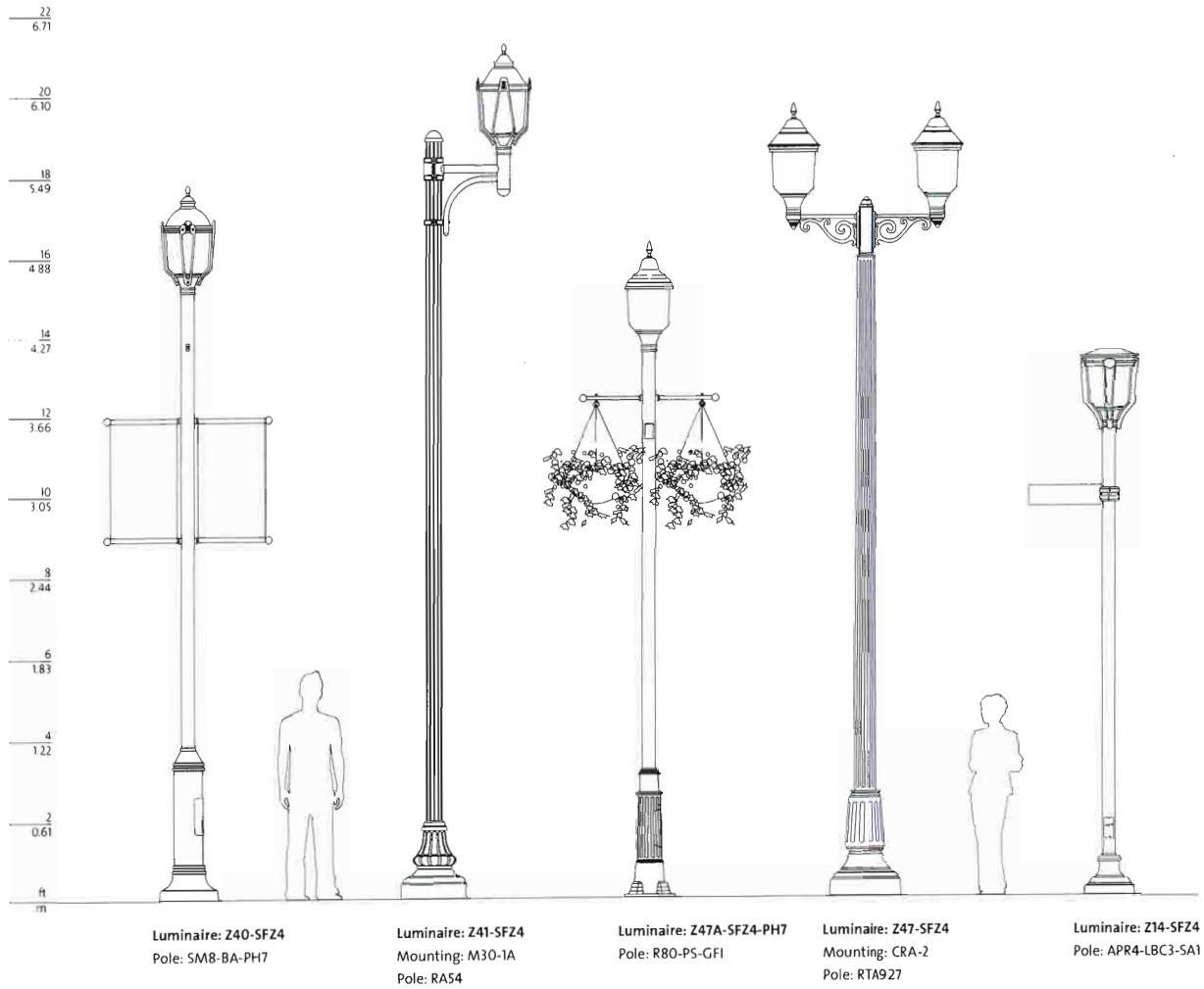
(Consult Philips Lumec's Color Chart for complete specifications)

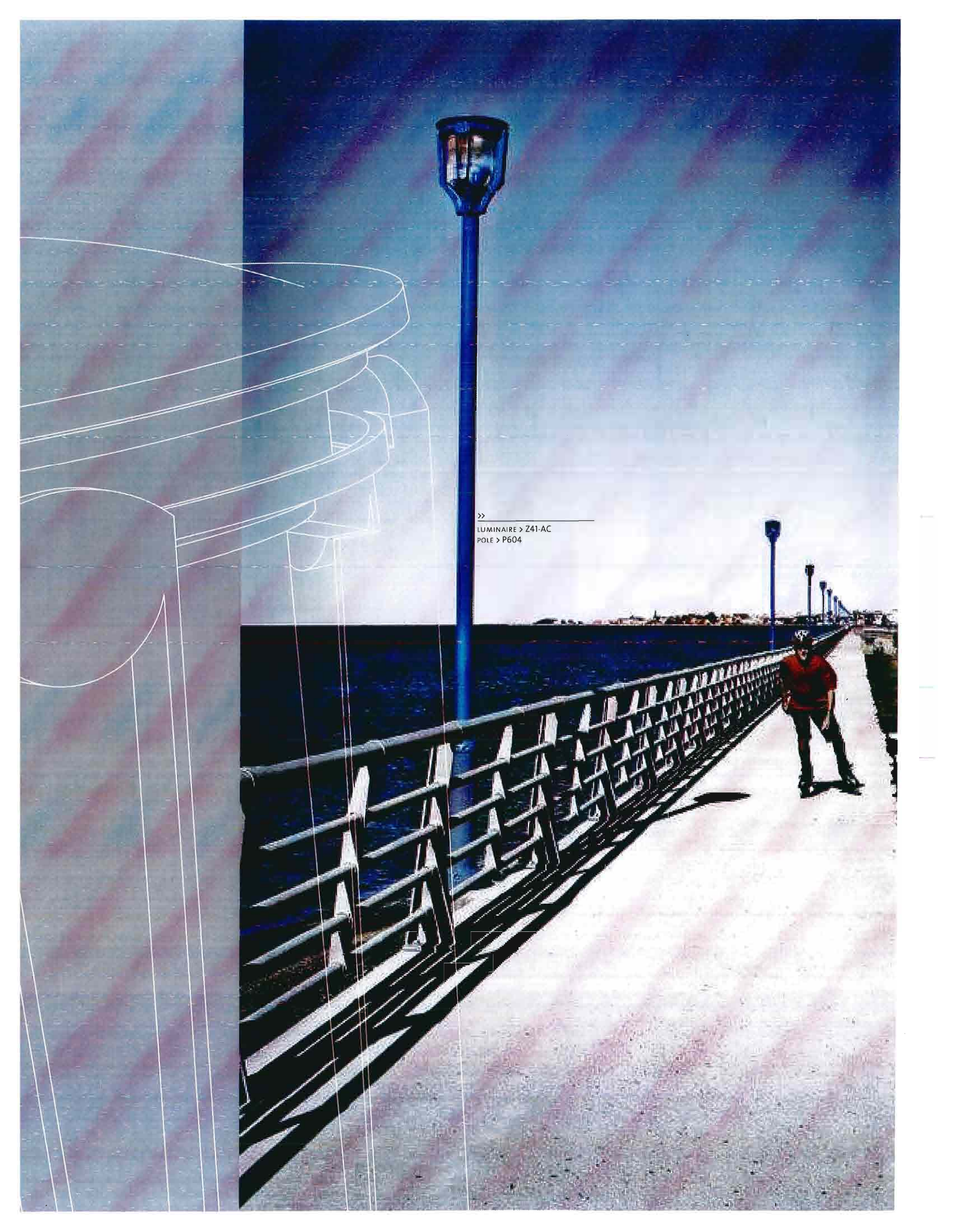
The specially formulated Lumital powder coat finish is available in a range of many standard colors.

ORDERING SAMPLE

LUMINAIRE	LAMP	OPTICAL SYSTEM	VOLTAGE	ADAPTOR	OPTIONS	MOUNTING & CONFIGURATION	POLE	FINISH
Z40	100 MH	5	120	SFZ4	PH7	MSO-1A	APR4-14	BKTX

ASSEMBLY EXAMPLES



A photograph of a blue street lamp on a pier. The lamp is the central focus, with a tall, slender pole and a lantern-style top. The pier has a metal railing and a paved walkway. A person is walking away from the camera in the distance. The sky is clear and blue. On the left side of the image, there are white line drawings overlaid on a semi-transparent blue background, showing the profile of a person's head and shoulders. The text is located in the middle of the image, pointing to the lamp.

>>
LUMINAIRE > Z41-AC
POLE > P604



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Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled "Contains Mercury" and/or with the symbol "Hg." Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org



The choice to not print paper brochures anymore but to make them available on-line is an example of the positive environmental actions that Philips Lumec has decided to undertake. This not only considerably reduces our paper consumption but also guarantees the exactitude of the information our clients receive.

ALCOTT PEDESTRIAN LIGHT

Product Data Sheet



The Alcott pedestrian light is a contemporary interpretation of a traditional lamppost. Its gently curved posts are topped by a domed energy-efficient LED luminaire sealed with thermoformed lens. Proprietary AWEN™ optics combined with multiple aiming angles provide directional lighting, reducing light pollution and wasted energy.

Lighting Facts®

Landscape Forms is committed to the development of energy efficient lighting. We participate in the Department of Energy Lighting Facts® label program. This activity is voluntary but helps consumers evaluate the multitude of products on the market today. The Lighting Facts® label provides a quick but comprehensive summary of luminaire performance as measured by the IESNA LM-79 photometric test standard for solid state lighting.

Electrical

100V-277V 50/60 Hz dimmable, Class 2 LED driver and surge protection is standard; mounted within integrated cast aluminum base cabinet. Alcott ships prewired, fully assembled and ready for installation.

Alcott Spacing

Alcott meets or exceeds the IESNA DG-5 standard for Park walkways, Class I bikeways, and Residential sidewalks at 80' pole spacing, Intermediate sidewalks at 60' pole spacing, and Commercial sidewalks at 50' pole spacing. Alcott, at 50' pole spacing, also meets the "Special Conditions" criteria where increased vertical illuminance levels are needed for safety by improving facial recognition.

Alcott Type 3

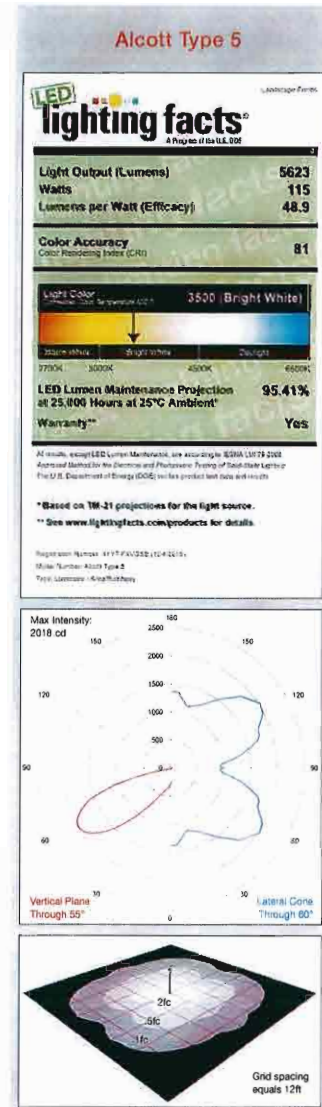
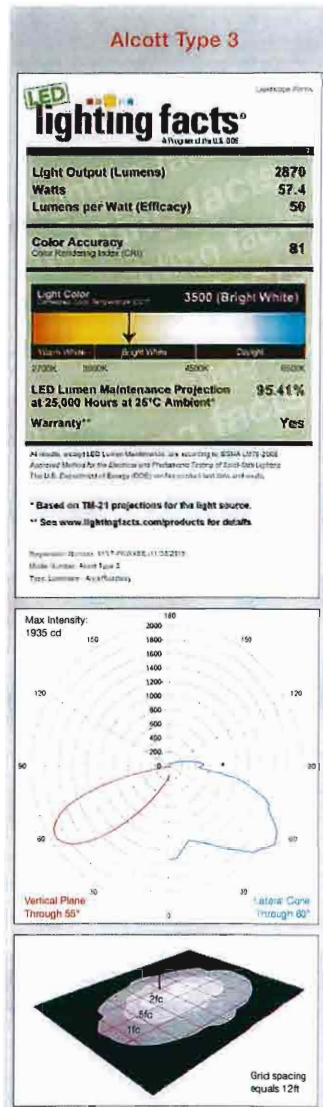
Type 3 Distribution

Structure: Housing, LED cartridge and cabinet are cast aluminum, pole is aluminum extrusion.
 Lamp: 48 Cree XP-E2 LEDs
 CCT: 3000K, 3500K, 4000K
 L70: >100,000 hrs
 Drive Current: 350mA
 Optic: Proprietary AWEN™ Optic
 Lens: Diffused Acrylite®
 Power Supply: 100V-277V
 LED Driver: TRP PLED-75W
 Dimmable: 0-10V
 BUG Rating: B3 U0 G1
 IP Rating: IP66 for LED cartridge
 Weight: 170lbs (complete assembly)

Alcott Type 5

Type 5 Distribution

Structure: Housing, LED cartridge and cabinet are cast aluminum, pole is aluminum extrusion.
 Lamp: 96 Cree XP-E2 LEDs
 CCT: 3000K, 3500K, 4000K
 L70: >100,000 hrs
 Drive Current: 350mA
 Optic: Proprietary AWEN™ Optic
 Lens: Diffused Acrylite®
 Power Supply: 100V-277V
 LED Driver: 2 TRP PLED-75W
 Dimmable: 0-10V
 BUG Rating: B3 U0 G1
 IP Rating: IP66 for LED cartridge
 Weight: 170lbs (complete assembly)



ALCOTT PEDESTRIAN LIGHT

Product Data Sheet



Finish

Pangard II[®], offered exclusively by Landscape Forms, is a 19 step program of cleaning, priming, and powdercoating that produces the finest metal finish available for site furniture. In addition, Pangard II[®] contains no heavy metals and is free of Hazardous Air Pollutants.

To Order

Specify in order: Product, Lamp, Drive Current, Color Temperature, Input Voltage, Height and Powdercoat Color.

Product	Lamp	Drive Current	Color Temp.	Input Voltage	Height
AC Alcott	048L3 (48 LED Type 3)	035F (350 mA)	40K (4000K)	UV1 (100-277VAC)	12 (144in)
	096L5 (96 LED Type 5)		35K (3500K)		14 (168in)
			30K (3000K)		16 (192in)

EXAMPLE: AC - 048L3 - 035F - 35K / UV1 - 12 - Powdercoat Color

Warranty

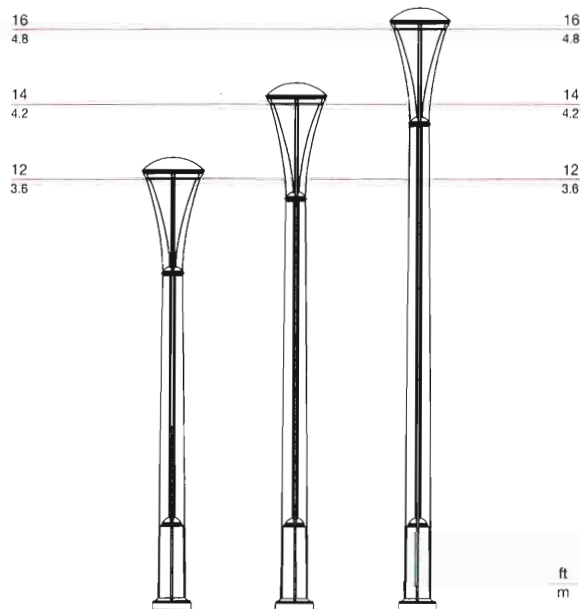
LED lighting products are warranted for six years.

Other

UL Listed, RoHS
Patent #: US Pat D652,977



Designed by Robert A.M. Stern Architects



Visit our landscapeforms.com for more information. Specifications are subject to change without notice. Landscape Forms supports the Landscape Architecture Foundation at the Second Century level. ©2015 Landscape Forms, Inc. Printed in U.S.A.

HAWTHORNE PATH LIGHT

Product Data Sheet



The three-foot-tall Hawthorne pathway light echoes the design of its taller companion. Its multiple posts spread as they rise from their base to house a LED luminaire with sealed thermoformed lens. Hawthorne is made of cast aluminum and comes with a durable stainless steel base plate. Mounting template and anchor hardware included for ease of installation.

Lighting Facts®

Landscape Forms is committed to the development of energy efficient lighting. We participate in the Department of Energy Lighting Facts® label program. This activity is voluntary but helps consumers evaluate the multitude of products on the market today. The Lighting Facts® label provides a quick but comprehensive summary of luminaire performance as measured by the IESNA LM-79 photometric test standard for solid state lighting.

Electrical

100V-277V 50/60 Hz, Class 2 LED driver is standard and mounted within integrated cast aluminum base cabinet. Hawthorne ships prewired and fully assembled.

Hawthorne Type 4

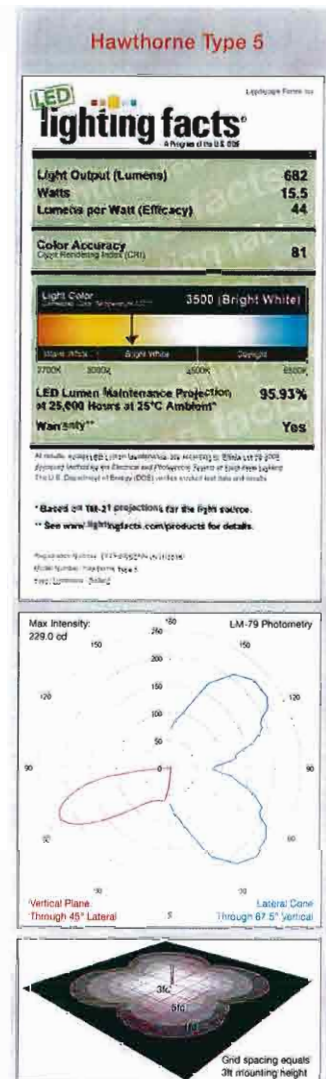
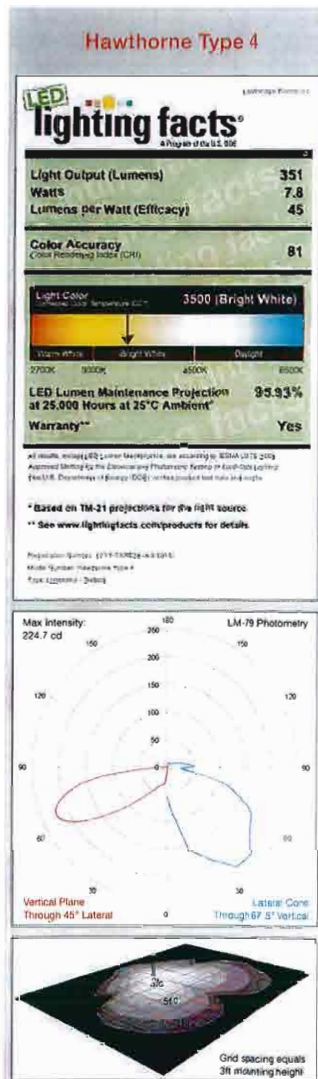
Type 4 Distribution

Lamp: 6 Cree XP-E2 LEDs
 CCT: 3000K, 3500K, 4000K
 L70: >100,000 hrs
 Drive Current: 350mA
 Optic: 6 Khatod Collimators
 Lens: Diffused Acrylite®
 Power Supply: 100V-277V
 LED Driver: TRP LED-12W
 BUG Rating: B0 U0 G1
 IP Rating: IP66 for LED cartridge
 Weight: 50 lbs

Hawthorne Type 5

Type 5 Distribution

Lamp: 12 Cree XP-E2 LEDs
 CCT: 3000K, 3500K, 4000K
 L70: >100,000 hrs
 Drive Current: 350mA
 Optic: 12 Khatod Collimators
 Lens: Diffused Acrylite®
 Power Supply: 100V-277V
 LED Driver: 2 TRP LED-12W
 BUG Rating: B1 U0 G1
 IP Rating: IP66 for LED cartridge
 Weight: 50 lbs



HAWTHORNE PATH LIGHT

Product Data Sheet



Finish

Pangard II[®], offered exclusively by Landscape Forms, is a 19 step program of cleaning, priming, and powdercoating that produces the finest metal finish available for site furniture. In addition, Pangard II[®] contains no heavy metals and is free of Hazardous Air Pollutants.

To Order

Specify in order: Product, Lamp, Drive Current, Color Temperature, Input Voltage, Mounting Option and Powdercoat Color.

Product	Lamp	Drive Current	Color Temp.	Input Voltage	Mounting
HW Hawthorne	006L4 (6 LED Type 4) 012L5 (12 LED Type 5)	035F (350 mA)	40K (4000K) 35K (3500K) 30K (3000K)	UV1 (100-277VAC)	SM (Surface Mount)

EXAMPLE: HW - 006L4 - 035F - 35K / UV1 - SM - Powdercoat Color

Warranty

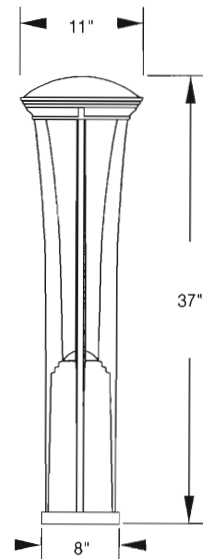
LED lighting products are warranted for six years.

Other

UL Listed, RoHS
Patent #: US Pat D652,976



Designed by Robert A.M. Stern Architects



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Description

The Halo ML56 LED Downlighting System is a series of modular LED Light Modules for use with designated 5" or 6" ML56 LED trims in new construction, remodel and retrofit installation. Compatible with Halo 5" H550 and 6" H750, H2750 Series LED housings. And in retrofit of existing housings the ML56 Series fits 5" or 6" Halo, All-Pro, and others. ML56 system offers shallow trims for installation in Halo, All-Pro and others shallow housings. ML56 Light Modules are offered in 600 Series, 900 Series, and 1200 Series, 80CRI or 90CRI, and four color temperatures 2700K, 3000K, 3500K, 4000K. ML56 Light Modules are universal voltage 120V – 277V and dimmable at 120V. The ML56 lens provides uniform diffuse illumination standard. ML56 - 1200 Series offers narrow flood (NFL) beam forming reflector as an optional accessory. Wet location listed with reflector and baffle trims (directional eyeball trims are damp listed). Halo ML56 Series offers high performance LED downlighting in a flexible modular selection.

Catalog #		Type
Project		
Comments		Date
Prepared by		

Specification Features

Mechanical

Light Module

- Module includes LED package, LED driver, heat sink, and lens
- Durable die-cast aluminum construction.
- Heat sink designed to conduct heat away from the LED keeping the junction temperatures below specified maximums, including insulated ceiling environments

Optics

- Diffuse lens is standard on all 1200 Series LED light modules
 - Impact-resistant polycarbonate
 - Convex form for lamp-like appearance
 - High lumen transmission
- Optional beam forming optic replaces diffuse lens and provide narrow flood (NFL) 25° nominal distribution. Beam forming optic is field installed. Order separately (accessories).

Mounting

- Light Modules attach to reflector and baffle trims via locking tabs, and attach to eyeballs via keyed twist-to-lock mating bosses
- The complete light module and trim assembly installs into housings with precision formed torsion springs located on the trim
- Use retrofit adapter band (ML7RAB) accessory when housing does not have receivers for torsion springs.

Housing Compatibility

A complete ML56 system includes a LED Light Module, LED trim, and a compatible housing (new construction, remodel, or existing retrofit). Housing compatibility in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to Housing – Trim Section in this document.

LED

- 1200 Series = 1200 design lumens typical. Delivered lumens vary upon 5" or 6" trim, color temperature, and trim finish.
- Color Temperature options: 2700K, 3000K, 3500K, 4000K

- CRI: 80
- L70 at 50,000 hours, projected in accordance with IES TM-21
- LED is a chip on board design consisting of a multiple LED package with proximity phosphor coating to create one virtual white light source for a productive "cone of light"

Color Specification & Quality Standards

- A tight chromaticity specification ensures LED color uniformity, sustainable Color Rendering Index (CRI) and Correlated Color Temperature (CCT) over the useful life of the LED
- LED color uniformity of 3 SDCM exceeds ENERGY STAR® color standards per ANSI C78.377- 2008.
- Every Halo LED Light Module is quality tested and performance measured, and then serialized in a permanent record to register lumens, wattage, CRI and CCT.
- Halo LED serialized testing and measurement process ensures color and lumen consistency on a per-unit basis, and validates long-term product consistency over time
- Halo ML56 LED Light Modules include lumen, CRI, and CCT designations in the model number
- Example: **ML5612830**
56 = 5" / 6" aperture series
12 = 1200 lumen series
8 = >80 CRI
30 = 3000K nominal CCT

Electrical Power Connections

- LED connector is a non-screw base luminaire disconnect offering easy installation in Halo 5" H550 Series and 6" H750 and H2750 Series housings (per LED trim 5" or 6").
- LED Connector meets high-efficacy luminaire requirements as a non-screw base, and where required.
- The included E26 medium screw-base Edison adapter provides easy retrofit of incandescent housings (see Housing Section).

Ground Connection

- Separate grounding cable included on the module for attachment to the housing during installation.

LED Driver

- Driver is universal voltage 120V-277V, and may be controlled from a switch in Halo LED housings at 120V, 220V, 230V, 240V, and 277V.
- Driver is dimmable at 120V operation when connected to a compatible dimmer.
- Driver is a high efficiency, electronic power supply providing DC power to the LED.
- Driver meets FCC EMI/RFI Consumer Level limits on 120V main inputs, and is compliant for use in residential and commercial installations.
- Driver features high power factor, low THD, and has integral thermal protection in the event of over temperature or internal failure.
- Driver is replaceable, if replacement should be required.

Dimming

Designed for dimming capability to nominal 5% in normal operation with standard 120V Leading Edge (LE) and Trailing Edge (TE) phase control dimmers. (Consult dimmer manufacturer for dimmer compatibility and details. Note, some dimmers require a neutral in the wallbox.)

Warranty

Eaton's Cooper Lighting provides a (5) five year limited warranty on the Halo ML56 LED Light Module.

LED Module in New or Retrofit Existing Construction – Housings other than Halo or All-Pro

- If used in recessed housings other than Halo or All-Pro the Cooper Lighting 5-year limited warranty applies to the LED Light Module and Trim only.
- As with any electrical installation, a qualified electrician must ensure compatibility of use with a particular housing; this includes all applicable national and local electrical and building codes. Installer is responsible to properly and securely retain the LED Module and LED Trim in the housing at time of installation.



ML56 LED System

1200 Series with Beam Forming Reflector Option 80 CRI

- ML5612827**
- ML5612830**
- ML5612835**
- ML5612840**

5-Inch and 6-Inch 1200 Lumen LED Light Module for New Construction, Remodel and Retrofit

For use with 59x and 69x Series 5" and 6" Trims

FOR USE IN INSULATED CEILING AND NON-INSULATED CEILING RATED HOUSINGS

HIGH EFFICACY LED WITH INTEGRAL DRIVER - DIMMABLE

Energy Data

ML56 1200/60 Series
(Values at non-dimming line voltage)
Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 15, (Consumer)
Sound Rating: Class A
Input Voltage: UNV 120V-277V
Power Factor: >0.95 @ 120V and >0.9 @ 277V
Input Frequency: 50/60Hz
THD: <20%
Input Power: 17.5W
Input Current at 120V: 0.14A
Input Current at 277V: 0.07A
Driver Compliance: UL8750, Class II rated
Maximum IC (Insulated Ceiling) Ambient Continuous Operating Temperature: 25°C (77°F)
Maximum Non-IC Ambient Continuous Operating Temperature: 40°C (104°F)



ML5612827
5" or 6" LED 1200 Series



ML5612830
5" or 6" LED 1200 Series



ML5612835
5" or 6" LED 1200 Series



ML5612840
5" or 6" LED 1200 Series

Compliance

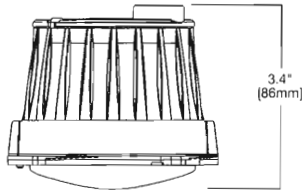
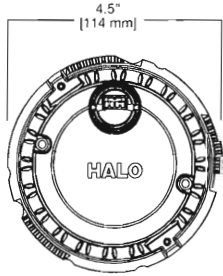
- cULus listed 1598 Luminaire (Halo and All-Pro housings)
 - UL Classified when used in retrofit (refer to housing section)
 - cULus listed for damp locations
 - cULus Wet location listed with baffle and reflector trims only
 - Airtight certified per ASTM E283 (not exceeding 2.0 CFM under 57 Pascals pressure difference)
 - IP56 ingress protection rated with baffle and reflector trims only
 - RoHS compliant
 - May be used in IC (insulated ceiling) housings in direct contact with insulation* and combustible material
 - Can be used as a California Title 24 compliant Non-Residential LED Luminaire (Non-IC)
 - Can be used for International Energy Conservation Code (IECC) high efficiency luminaire compliance.
 - Can be used for Washington State Energy Code compliance
 - ENERGY STAR® certified luminaire - consult ENERGY STAR® certified product list
 - EMI/RFI per FCC 47CFR Part 15 Class B Consumer limits (commercial and residential compliant)
 - Photometric testing in accordance with IES LM-79
 - Lumen maintenance projections in accordance with IES LM-80 and TM-21
 - CE Mark - "Conformité Européenne" conformity with the Council of European Communities Directives, meeting internationally recognized compliance when used with Halo H550, H750, and H2750 Series LED housings only
- * Not for use with housings in direct contact with spray foam insulation.



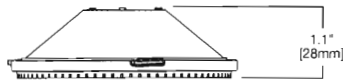
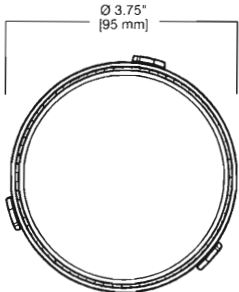
Refer to ENERGY STAR® Certified Products List.
Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire

Dimensions

ML56 LED Module



Beam Forming Optic (Accessories)



Ordering Information

Sample Number: **ML5612830 593WB**

Order LED Module and trim separately

A complete system also includes a compatible housing (new construction, remodel, or existing retrofit). Housing aperture size in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to Housing Section in this document.

ML56 LED Light Modules 1200 Series / 80 CRI

ML5612827= 5"/6" LED light module, 1200 lumen, 80CRI, 2700K
ML5612830= 5"/6" LED light module, 1200 lumen, 80CRI, 3000K
ML5612835= 5"/6" LED light module, 1200 lumen, 80CRI, 3500K
ML5612840= 5"/6" LED light module, 1200 lumen, 80CRI, 4000K

ML56 LED 5" and 6" Trims

590 Series - 5" LED Trims

592SC=5" LED trim, specular reflector & white flange
592H=5" LED trim, haze reflector & white flange
592W=5" LED trim, white reflector & flange
593WB=5" LED trim, white micro-step baffle & flange
593BB=5" LED trim, black micro-step baffle & white flange
594WB=5" LED directional trim, white eyeball, baffle & flange – shallow and standard housings
595WW=5" LED trim, wall wash - specular reflector, repositionable specular kick reflector, white flange
596WB=5" LED trim, white shallow baffle & flange – shallow and standard housings

690 Series - 6" LED Trims

692SC=6" LED trim, specular reflector & white flange
692H=6" LED trim, haze reflector & white flange
692W=6" LED trim, white reflector & flange
693WB=6" LED trim, white micro-step baffle & flange
693BB=6" LED trim, black micro-step baffle & white flange
693TBZB=6" LED trim, tuscan bronze micro-step baffle & flange
693SNB=6" LED trim, satin nickel micro-step baffle & satin nickel flange
694WB=6" LED directional trim, white eyeball, baffle & flange – shallow and standard housings
694TBZB=6" LED directional trim, tuscan bronze eyeball, baffle & flange – shallow and standard housings
694SNB=6" LED directional trim, satin nickel eyeball, baffle & flange – shallow and standard housings
695WW=6" LED trim, wall wash - specular reflector, repositionable specular kick reflector, white flange
696WB=6" LED trim, white shallow baffle & flange – for use with shallow and standard housings

ML56 Beam Forming Optic / Media 1200 Series Accessories

BFR56NFL=Beam forming reflector kit, narrow flood, 25° nominal
BFR56MH=Media holder, accepts one 3.45" lens. Requires BFR56NFL and L345SF, order separately.
L345SF=3.45" diameter soft focus lens. Requires BFR56NFL and BFR56MH, order separately.

ML56 System Accessories

ML7RAB=Retrofit adapter band for housings without torsion spring receivers. The ML7RAB kit supplies parts to retrofit four housings; the kit includes:
 4 – Retrofit adapter bands with screws and locking wire nuts
WW595SC=5" Wall wash Insert - kick reflector for 595WW (1-included with trim) double or corner wall wash**
WW695SC=6" Wall wash Insert - kick reflector for 695WW (1-included with trim) Double or Corner Wall Wash**
TRM590WH=5" LED oversize trim ring for use with 59" series trims, white 6.3" I.D., 7.5" O.D. Ring slips over LED trim. Inset design allows 5" trim to fit into oversize ring for an even trim surface
TRM690WH=6" LED oversize trim ring for use with 69" series trims, White 6.9" I.D., 9.5" O.D. Ring slips over LED trim. Inset design allows 6" trim to fit into oversize ring for an even trim surface

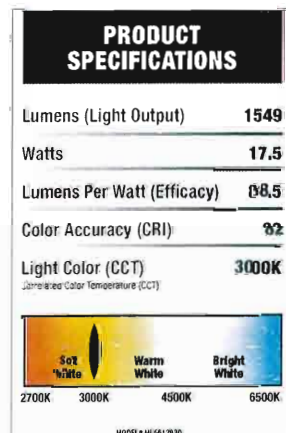
**Wall Wash Trims 595WW and 695WW Feature an exclusive Repositionable Kick Reflector for fine-tuning adjustment of the wall wash effect. The WW595SC and WW695SC are Repositionable Kick Reflectors sold separately for addition to the Wall Wash Trim when a double or corner wall wash is needed, or for replacement of original kick reflector included with the trim.

Lighting Facts

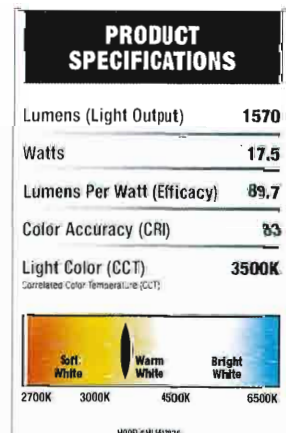
ML5612827



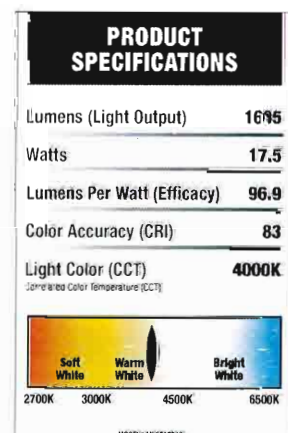
ML5612830



ML5612835



ML5612840



Housing – Trim Compatibility

Housing aperture size in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to ML56 TRIMS in this document. (Note "X" in the trim model number denotes finish code.)

Housing – Compatibility

The ML56 LED light module - trim combination is cULus Listed or UL Classified for use with any 5" or 6" diameter recessed housing constructed of steel or aluminum with an internal volume that exceeds 115 in³ in addition to those noted below.

Halo and All-Pro UL Listed Compatibility

6" Trims: 692X, 693X, 694X, 695X, 696X

(Note shallow housings for use with 694X trims only)

HALO - LED Housings with LED luminaire connector - high-efficacy compliant

Brand	Housing Type	Catalog Number	Description
Halo	Standard Housings	H750ICAT	6" LED, Insulated Ceiling, Air-Tite, New Construction Housing
		H750RICAT	6" LED, Insulated Ceiling, Air-Tite, Remodel Housing
		H750T	6" LED, Non-IC, Air-Tite, New Construction Housing
		H750TCP	6" LED, Non-IC, New Construction/Remodel Chicago Plenum Housing
		H750RINTD010	6" LED, Non-IC, Air-Tite, Remodel Housing (International CE Mark and UL/cUL Listed)
Halo	Shallow Housings	H2750ICAT	6" LED, Shallow, Insulated Ceiling, Air-Tite, New Constr. (use with 694X trims only)

HALO and All-Pro - Incandescent E26 Screwbase Housings

Brand	Housing Type	Catalog Number	Description
Halo	Standard Housings	H7ICAT	6" Insulated Ceiling, Air-Tite New Construction Housing
		H7RICAT	6" Insulated Ceiling, Air-Tite Remodel Housing
		H7ICT	6" Insulated Ceiling, New Construction Housing
		H7RICT	6" Insulated Ceiling, Remodel Housing
		H7ICATNB	6" Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket
		H7ICTNB	6" Insulated Ceiling, New Construction Housing, No Socket Bracket
		H7T	6" Non-IC, New Construction Housing
		H7RT	6" Non-IC, Remodel Housing
		H7TNB	6" Non-IC, New Construction Housing, No Socket Bracket
		H7TCP	6" Non-IC, Chicago Plenum, New Construction/Remodel Housing
		H7UICAT	6" Insulated Ceiling, Universal New Construction Housing (use with 694X and 696X trims only)
		H7UICAT	6" Insulated Ceiling, Universal, Air-Tite, New Construction Housing (use with 694X and 696X trims only)
All-Pro	Standard Housings	E1700AT	6" Insulated Ceiling, Air-Tite New Construction Housing
		E1700RAT	6" Insulated Ceiling, Air-Tite Remodel Housing
		E1700	6" Insulated Ceiling, New Construction Housing
		E1700R	6" Insulated Ceiling, Remodel Housing
		E1700ATNB	6" Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket
		E1700NB	6" Insulated Ceiling, New Construction Housing, No Socket Bracket
		E1700U	6" Insulated Ceiling, Universal New Construction Housing
		E1700UAT	6" Insulated Ceiling, Universal, Air-Tite, New Construction Housing
		E1700	6" Non-IC, New Construction Housing
		E1700R	6" Non-IC, Remodel Housing
Halo	Shallow Housings	H27ICAT	6" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 694X trims only)
		H27RICAT	6" Shallow, Insulated Ceiling, Air-Tite Remodel Housing (use with 694X trims only)
		H27ICT	6" Shallow, Insulated Ceiling, New Construction Housing (use with 694X trims only)
		H27RICT	6" Shallow, Insulated Ceiling, Remodel Housing (use with 694X trims only)
		H27T	6" Shallow, Non-IC, New Construction Housing (use with 694X trims only)
		H27RT	6" Shallow, Non-IC, Remodel Housing (use with 694X trims only)
All-Pro	Shallow Housings	E12700AT	6" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 694X trims only)
		E12700	6" Shallow, Insulated Ceiling, New Construction Housing (use with 694X trims only)
		E12700R	6" Shallow, Insulated Ceiling, Air-Tite Remodel Housing (use with 694X trims only)
		E12700	6" Shallow, Non-IC, New Construction Housing (use with 694X trims only)
		E12700R	6" Shallow, Non-IC, Remodel Housing (use with 694X trims only)

Halo LED Retrofit Enclosures

Brand	Type	Catalog Number	Description
Halo	Retrofit	ML7BXRFK	6" Retrofit Enclosure, Non-IC, BX Whip
		ML7E26RFK	6" Retrofit Enclosure, Non-IC, E26 Screw base Interface

Housing – Compatibility Continued

5" Trims: 592X, 593X, 594X, 595X, 596X (ML56 1200 Series not for use with 593TBZB, 593SNB, 594TBZB, 594SNB models.)
(Note shallow housings for use with 594X trims only)

HALO - LED Housings with LED luminaire connector - high-efficacy compliant

Brand	Housing Type	Catalog Number	Description
Halo	Standard Housings	H550ICAT	5" LED, Insulated Ceiling, Air-Tite, New Construction Housing
		H550RICAT	5" LED, Insulated Ceiling, Air-Tite, Remodel Housing

HALO and All-Pro - Incandescent E26 Screwbase Housings

Brand	Housing Type	Catalog Number	Description
Halo	Standard Housings	H5ICAT	5" Insulated Ceiling, Air-Tite New Construction Housing
		H5RICAT	5" Insulated Ceiling, Air-Tite Remodel Housing
		H5T	5" Non-IC, New Construction Housing
		H5RT	5" Non-IC, Remodel Housing
		H5TM	5" Non-IC, New Construction Housing (Canada)
All-Pro	Standard Housings	E1500AT	5" Insulated Ceiling, Air-Tite New Construction Housing
		E1500RAT	5" Insulated Ceiling, Air-Tite Remodel Housing
		ET500	5" Non-IC, New Construction Housing
		ET500R	5" Non-IC, Remodel Housing
Halo	Shallow Housings	H25ICAT	5" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 594X trims only)

HOUSINGS - UL Classified for Retrofit Compatibility

6" Trims: 692X, 693X, 694X, 695X, 696X	
Juno	IC22, IC22R, IC22W, IC22S, IC23, IC23W, TC2, TC2R, IC2
Capri	CR1, PR1, QL1
Elco	HL7ICA (EL7ICA)
Lithonia	LC6, L7X
Thomas	PS1
Commercial Electric	C7ICA, H3
Progress	P87-AT †
Lightolier	1104ICx †, 1104IC †

† Requires ML7RAB retrofit adapter band (ordered separately); for use in housings without torsion springs.

Juno®, Capri, Lightolier®, Lithonia Lighting®, Thomas® Lighting, Elco Lighting®, Progress® Lighting and Commercial Electric™ and their product brand names, where identified above, are tradenames or trademarks of each respective company and Cooper makes no representations on these trademarks.

ML56 1200 Series Compliance Table

80 CRI LED Modules with ML56 Trims

	ML5612827	ML5612830	ML5612835	ML5612840
593BB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
693BB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
593TBZB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
693TBZB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
593SNB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
693SNB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
592H	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
593WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
592SC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
592W	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
595WW	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
695WW	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
692H	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
692W	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
692SC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
693WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
596WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
694TBZB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
696WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
594TBZB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
694SNB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
594SNB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
694WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
594WB	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
594WB-30	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC
694WB-30	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC	ES, T24NR, WSEC, IECC

Code Descriptions:

ES = ENERGY STAR® Certified Luminaire

T24NR = May be used for California Title 24 Non-Residential LED luminaire

IECC = International Energy Conservation Code "High Efficacy"

WSEC = Washington State Energy Code - "High Efficacy" Luminaire

ML56 1200 Series Lumen Table

80 CRI LED Modules with ML56 trims		ML5612827		ML5612830		ML5612835		ML5612840	
	Trim Catalog #	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
0° Tilt Angle	593BB	900.9	51.5	1014.1	57.9	1027.9	58.7	1109.7	63.4
	693BB	1008.2	57.6	1134.9	64.9	1150.3	65.7	1241.9	71.0
	593TBZB	1017.8	58.2	1145.8	65.5	1161.3	66.4	1253.8	71.6
	693TBZB	1048.0	59.9	1179.7	67.4	1195.7	68.3	1290.9	73.8
	593SNB	1115.5	63.7	1255.8	71.8	1272.8	72.7	1374.1	78.5
	693SNB	1162.5	66.4	1308.7	74.8	1326.5	75.8	1432.1	81.8
	592H	1285.6	73.5	1447.2	82.7	1466.8	83.8	1583.6	90.5
	593WB	1310.9	74.9	1475.7	84.3	1495.7	85.5	1614.8	92.3
	592SC	1327.8	75.9	1494.7	85.4	1515.0	86.6	1635.6	93.5
	592W	1331.4	76.1	1498.8	85.6	1519.1	86.8	1640.0	93.7
	595WW	1336.2	76.4	1504.2	86.0	1524.6	87.1	1646.0	94.1
	695WW	1337.4	76.4	1505.6	86.0	1526.0	87.2	1647.5	94.1
	692H	1342.2	76.7	1511.0	86.3	1531.5	87.5	1653.4	94.5
	692W	1363.9	77.9	1535.4	87.7	1556.2	88.9	1680.1	96.0
	692SC	1368.8	78.2	1540.9	88.0	1561.7	89.2	1686.1	96.3
	693WB	1376.0	78.6	1549.0	88.5	1570.0	89.7	1695.0	96.9
	596WB	1380.8	78.9	1554.4	88.8	1575.5	90.0	1700.9	97.2
	694TBZB	1385.6	79.2	1559.9	89.1	1581.0	90.3	1706.9	97.5
	696WB	1411.0	80.6	1588.4	90.8	1609.9	92.0	1738.1	99.3
	594TBZB	1412.2	80.7	1589.7	90.8	1611.3	92.1	1739.6	99.4
694SNB	1425.4	81.5	1604.7	91.7	1626.4	92.9	1755.9	100.3	
594SNB	1447.2	82.7	1629.1	93.1	1651.2	94.4	1782.6	101.9	
694WB	1468.9	83.9	1653.5	94.5	1676.0	95.8	1809.4	103.4	
594WB	1477.3	84.4	1663.0	95.0	1685.6	96.3	1819.8	104.0	
30° Tilt Angle	594WB-30	1396.5	79.8	1572.1	89.8	1593.4	91.1	1720.3	98.3
	694WB-30	1374.8	78.6	1547.6	88.4	1568.6	89.6	1693.5	96.8

Photometry 5" Trims • 1200 Series • 80 CRI

Multiplier Table

CCT Option	2700 K	3000 K	3500 K	4000 K
CCT Multiplier	0.888	1.000	1.014	1.094

Table based upon testing with 3000°K color temperature, 80CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

ML5612830-594WB

Test Number	P129820
Light Module	1200 Series, 80CRI
Trim	5" Aperture, Directional Eyeball
Lumens	1663
Efficacy	96.1 Lm/W
SC	1.18

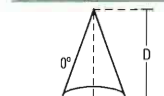


ML5612830-592SC

Test Number	P129764
Light Module	1200 Series, 80CRI
Trim	5" Aperture, Specular Clear Trim
Lumens	1495 Lm
Efficacy	86.4 Lm/W
SC	0.98

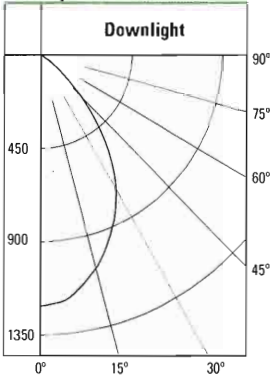


Cone of Light



D	FC	L	W
5.5'	40	5.2	5.2
7'	24.7	6.8	6.8
8'	18.9	7.8	7.8
9'	15	8.8	8.8
10'	12.1	9.8	9.8
12'	8.4	11.6	11.6

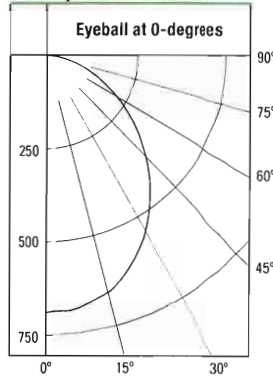
Candlepower Distribution



Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	805	53.9
0-40	1176	78.6
0-60	1477	98.8
0-90	1495	100
90-180	0	0
0-180	1495	100

Candlepower Distribution



Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	521	31.3
0-40	829	49.9
0-60	1371	82.4
0-90	1663	100
90-180	0	0
0-180	1663	100

30° Horizontal Plane

D	FC	L	W	CB
5.5'	19.8	6.3	6.4	3.2
7'	12.2	8.1	8.2	4
8'	9.4	9.3	9.4	4.6
9'	7.4	10.5	10.6	5.2
10'	6	11.6	11.8	5.8
12'	4.2	14	14.2	6.9

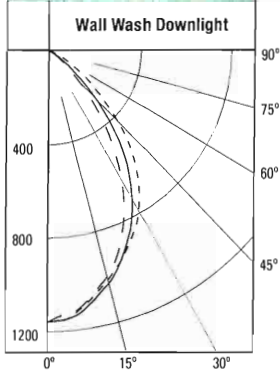
30° Vertical Plane

D	FC	L	W	CB
1'	368.1	1.1	1.2	1.7
2'	92	2.2	2.6	3.5
3'	40.9	3.5	3.8	5.2
4'	23	4.6	5.2	6.9
5'	14.7	5.7	6.4	8.7
6'	10.2	6.9	7.8	10.4

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

Photometry 5" Trims • 1200 Series • 80 CRI

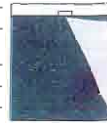
Candlepower Distribution



Legend
0-deg: --- Wall
90-deg: --- Side
180-deg: --- Room

ML5612830-595WW

Test Number	P129844
Light Module	1200 Series, 80CRI
Trim	5" Aperture, Wall Wash with Specular Clear Trim and Specular Clear Kick Reflector
Lumens	1504
Efficacy	86.9 Lm/W
SC	0.98



Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	774	51.5
0-40	1139	75.7
0-60	1469	97.7
0-90	1504	100
90-180	0	0
0-180	1504	100

Single Unit Footcandles

2.5' From Wall (Distance From Fixture Along Wall)

DD	1'	2'	3'	4'	5'	6'
1'	5.1	3.4	1.4	0.4	0.1	0
2'	19.6	13.9	5.9	1.8	0.5	0.2
3'	23.9	19.2	10.2	4.1	1.5	0.5
4'	17.8	15.6	10.7	5.6	2.5	1.1
5'	12.1	11.1	8.6	5.6	3.2	1.5
6'	8.3	7.7	6.5	4.7	3.2	1.9
7'	5.8	5.5	4.8	3.8	2.8	1.9
8'	4.2	4	3.6	3	2.4	1.7
9'	3.1	3	2.7	2.3	2	1.5
10'	2.3	2.3	2.1	1.8	1.6	1.3

Multiple Unit Footcandles

2.5' From Wall (Distance From Fixture Along Wall)

DD	--3'--			--4'--		
1'	5.6	4.5	5.6	5.3	2.7	5.3
2'	21.4	18.9	21.4	20.1	11.8	20.1
3'	28	29.4	28	25.4	20.5	25.4
4'	23.4	26.4	23.4	20.3	21.5	20.3
5'	17.7	19.8	17.7	15.3	17.2	15.3
6'	13	14.2	13	11.4	13	11.4
7'	9.5	10.2	9.5	8.6	9.6	8.6
8'	7.1	7.5	7.1	6.5	7.2	6.5
9'	5.4	5.7	5.4	5	5.5	5
10'	4.2	4.4	4.2	3.9	4.2	3.9

Photometry 5" Trims • 1200 Series • 80 CRI • NFL Lens

Multiplier Table

CCT Option	2700 K	3000 K	3500 K	4000 K
CCT Multiplier	0.888	1.000	1.014	1.094

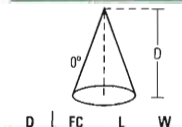
Table based upon testing with 3000°K color temperature, 80CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

ML5612830-BFR56NFL-592H

Test Number	P130378
Light Module	1200 Series, 80CRI, NFL optic
Trim	5" Aperture, Haze Trim
Lumens	1478
Efficacy	85.4 Lm/W
SC	0.41

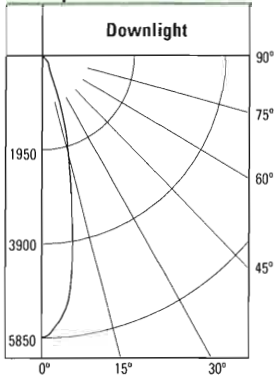


Cone of Light



D	FC	L	W
5.5'	193.1	2.2	2.2
7'	119.2	2.8	2.8
8'	91.3	3.2	3.2
9'	72.1	3.6	3.6
10'	58.4	4	4
12'	40.6	4.8	4.8

Candlepower Distribution



Zonal Lumen Summary

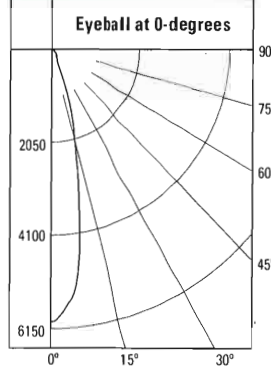
Zone	Lumens	%Fixture
0-30	1289	87.2
0-40	1428	96.6
0-60	1475	99.8
0-90	1478	100
90-180	0	0
0-180	1478	100

ML5612830-BFR56NFL-594WB

Test Number	P130442
Light Module	1200 Series, 80CRI, NFL optic
Trim	5" Aperture, Directional Eyeball
Lumens	1698
Efficacy	98.2 Lm/W
SC	0.4

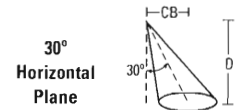


Candlepower Distribution

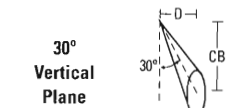


Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	1291	76.1
0-40	1428	84.1
0-60	1638	96.5
0-90	1698	100
90-180	0	0
0-180	1698	100



D	FC	L	W	CB
5.5'	135.8	2.8	2.4	3.2
7'	83.8	3.6	3	4
8'	64.2	4.1	3.6	4.6
9'	50.7	4.6	4	5.2
10'	41.1	5.1	4.4	5.8
12'	28.5	6.1	5.4	6.9



D	FC	L	W	CB
1'	1098	1	0.6	1.7
2'	274.5	2.1	1.2	3.5
3'	122	3.2	1.8	5.2
4'	68.6	4.3	2.6	6.9
5'	43.9	5.4	3.2	8.7
6'	30.5	6.5	3.8	10.4

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

Photometry 6" Trims • 1200 Series • 80 CRI

Multiplier Table

CCT Option	2700 K	3000 K	3500 K	4000 K
CCT Multiplier	0.8883	1.0000	1.0136	1.0943

Table based upon testing with 3000°K color temperature, 80CRI.

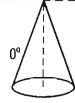
Multipliers may be used to determine relative lumen values with other color temperatures.

ML5612830-692SC

Test Number	P129860
Light Module	1200 Series, 80CRI
Trim	6" Aperture, Specular Clear Trim
Lumens	1541
Efficacy	89.1 Lm/W
SC	0.74

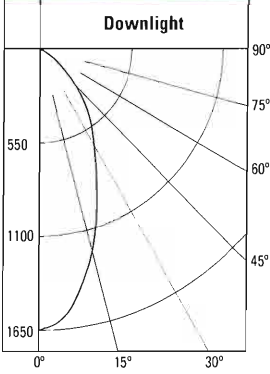


Cone of Light



D	FC	L	W
5.5'	54.5	4	4
7'	33.7	5	5
8'	25.8	5.8	5.8
9'	20.4	6.6	6.6
10'	16.5	7.2	7.2
12'	11.5	8.8	8.8

Candlepower Distribution



Zonal Lumen Summary

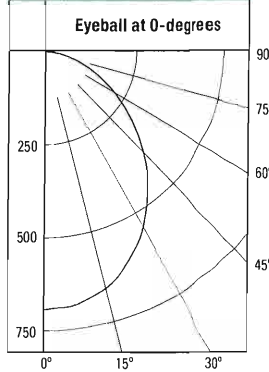
Zone	Lumens	%Fixture
0-30	860	55.8
0-40	1194	77.5
0-60	1521	98.7
0-90	1541	100
90-180	0	0
0-180	1541	100

ML5612830-694WB

Test Number	P129916
Light Module	1200 Series, 80CRI
Trim	6" Aperture, Directional Eyeball
Lumens	1654
Efficacy	95.6 Lm/W
SC	1.17

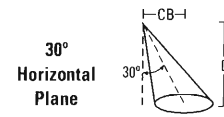


Candlepower Distribution

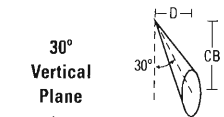


Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	521	31.5
0-40	828	50.1
0-60	1366	82.6
0-90	1654	100
90-180	0	0
0-180	1654	100

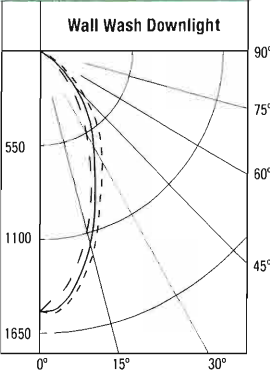


D	FC	L	W	CB
5.5'	19.8	6.3	6.4	3.2
7'	12.2	8.1	8.2	4
8'	9.4	9.2	9.4	4.6
9'	7.4	10.5	10.6	5.2
10'	6	11.6	11.8	5.8
12'	4.2	13.9	14.2	6.9



D	FC	L	W	CB
1'	367.1	1.1	1.2	1.7
2'	91.8	2.2	2.6	3.5
3'	40.8	3.5	3.8	5.2
4'	22.9	4.7	5.2	6.9
5'	14.7	5.7	6.4	8.7
6'	10.2	6.9	7.8	10.4

Candlepower Distribution



ML5612830-695WW

Test Number	P129940
Light Module	1200 Series, 80CRI
Trim	6" Aperture, Wall Wash with Specular Clear Trim and Specular Clear Kick Reflector
Lumens	1506
Efficacy	87 Lm/W
SC	0.76



Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	821	54.5
0-40	1147	76.2
0-60	1473	97.8
0-90	1506	100
90-180	0	0
0-180	1506	100

Single Unit Footcandles

2.5' From Wall (Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	4.2	2.5	0.9	0.3	0.1	0	0
2'	18.3	13.1	5.6	1.7	0.5	0.1	0
3'	21.6	17	9.5	4.1	1.5	0.5	0.2
4'	16.6	14.2	9.6	5.3	2.5	1.1	0.5
5'	11.9	10.6	7.8	5.1	3	1.5	0.8
6'	8.5	7.7	6	4.3	2.9	1.7	1
7'	6.4	5.8	4.7	3.5	2.5	1.7	1.1
8'	4.8	4.4	3.7	2.9	2.1	1.5	1.1
9'	3.7	3.5	2.9	2.3	1.8	1.3	1
10'	2.9	2.7	2.4	1.9	1.5	1.2	0.9

Multiple Unit Footcandles

2.5' From Wall (Distance From Fixture Along Wall)

DD	--3'--	--4'--
1'	4.5	3.1
2'	20	17.7
3'	25.7	26.2
4'	21.9	23.8
5'	16.9	18.3
6'	12.8	13.8
7'	9.9	10.5
8'	7.7	8.1
9'	6	6.4
10'	4.8	5.1

Legend

- 0-deg: --- Wall
- 90-deg: --- Side
- 180-deg: --- Room

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

Photometry 6" Trims • 1200 Series • 80 CRI • NFL Lens

Multiplier Table

CCT Option	2700 K	3000 K	3500 K	4000 K
CCT Multiplier	0.888	1.000	1.014	1.094

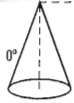
Table based upon testing with 3000°K color temperature, 80CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

ML5612830-BFR56NFL-692H

Test Number	P130474
Light Module	1200 Series, 80CRI, NFL optic
Trim	6" Aperture, Haze Trim
Lumens	1543
Efficacy	89.2 Lm/W
SC	0.41

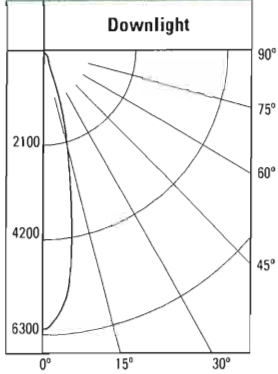


Cone of Light



D	FC	L	W
5.5'	204.4	2.2	2.2
7'	126.2	2.8	2.8
8'	96.6	3.2	3.2
9'	76.3	3.6	3.6
10'	61.8	4	4
12'	42.9	4.8	4.8

Candlepower Distribution



Zonal Lumen Summary

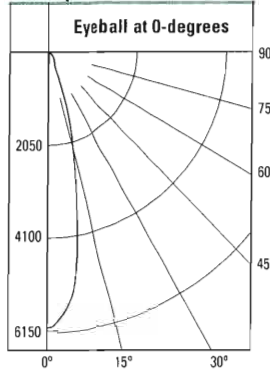
Zone	Lumens	%Fixture
0-30	1319	85.5
0-40	1457	94.4
0-60	1541	99.9
0-90	1543	100
90-180	0	0
0-180	1543	100

ML5612830-BFR56NFL-694WB

Test Number	P130538
Light Module	1200 Series, 80CRI, NFL optic
Trim	6" Aperture, Directional Eyeball
Lumens	1688
Efficacy	97.6 Lm/W
SC	0.41



Candlepower Distribution



30° Horizontal Plane

D	FC	L	W	CB
5.5'	138.1	2.8	2.4	3.2
7'	85.2	3.6	3.2	4
8'	65.3	4.1	3.6	4.6
9'	51.6	4.7	4	5.2
10'	41.8	5.2	4.6	5.8
12'	29	6.2	5.4	6.9

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	1315	77.9
0-40	1456	86.2
0-60	1661	98.4
0-90	1688	100
90-180	0	0
0-180	1688	100

30° Vertical Plane

D	FC	L	W	CB
1'	1120.1	1	0.6	1.7
2'	280	2	1.2	3.5
3'	124.5	3.1	2	5.2
4'	70	4.2	2.6	6.9
5'	44.8	5.3	3.2	8.7
6'	31.1	6.3	4	10.4

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.