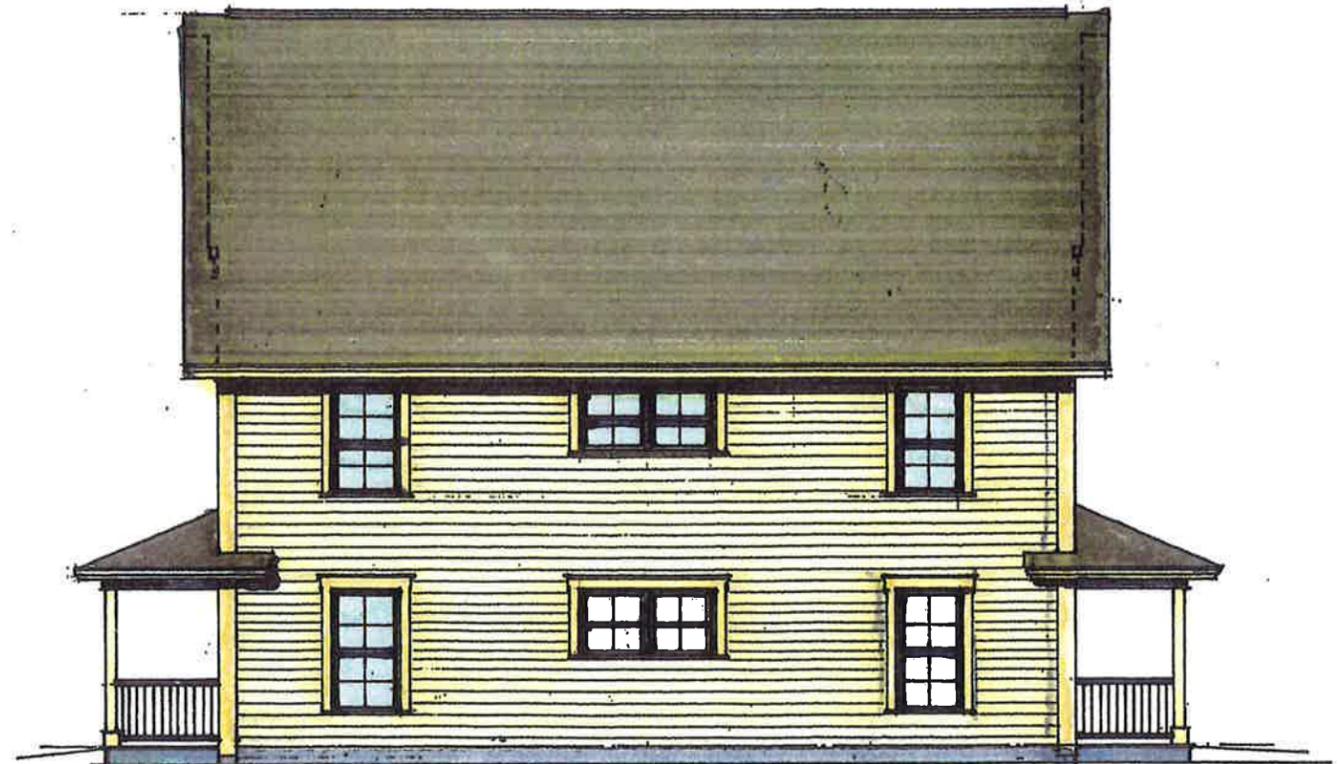




**FRONT ELEVATION**



**SIDE ELEVATION**

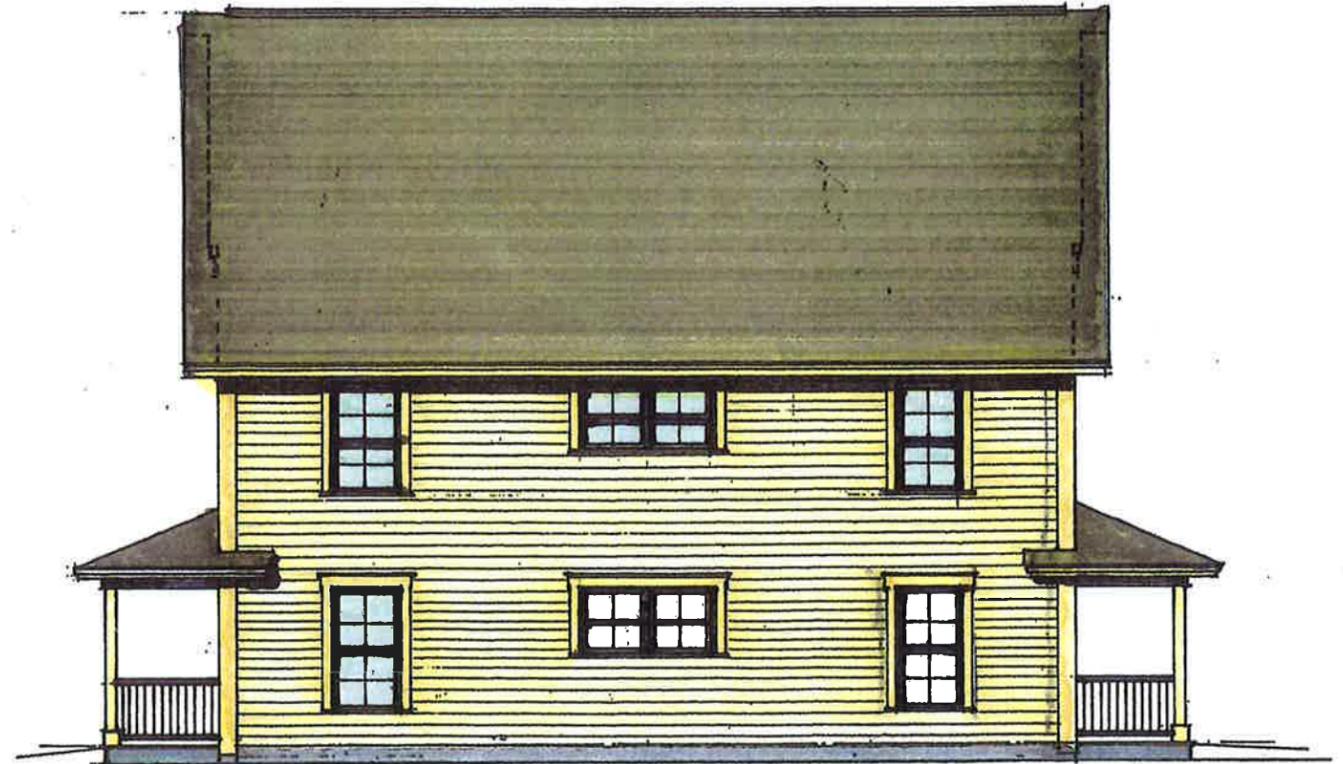
# GROVE STREET APARTMENTS TYPICAL DUPLEX UNIT

JANUARY 21, 2014





FRONT ELEVATION



SIDE ELEVATION

# GROVE STREET APARTMENTS TYPICAL DUPLEX UNIT

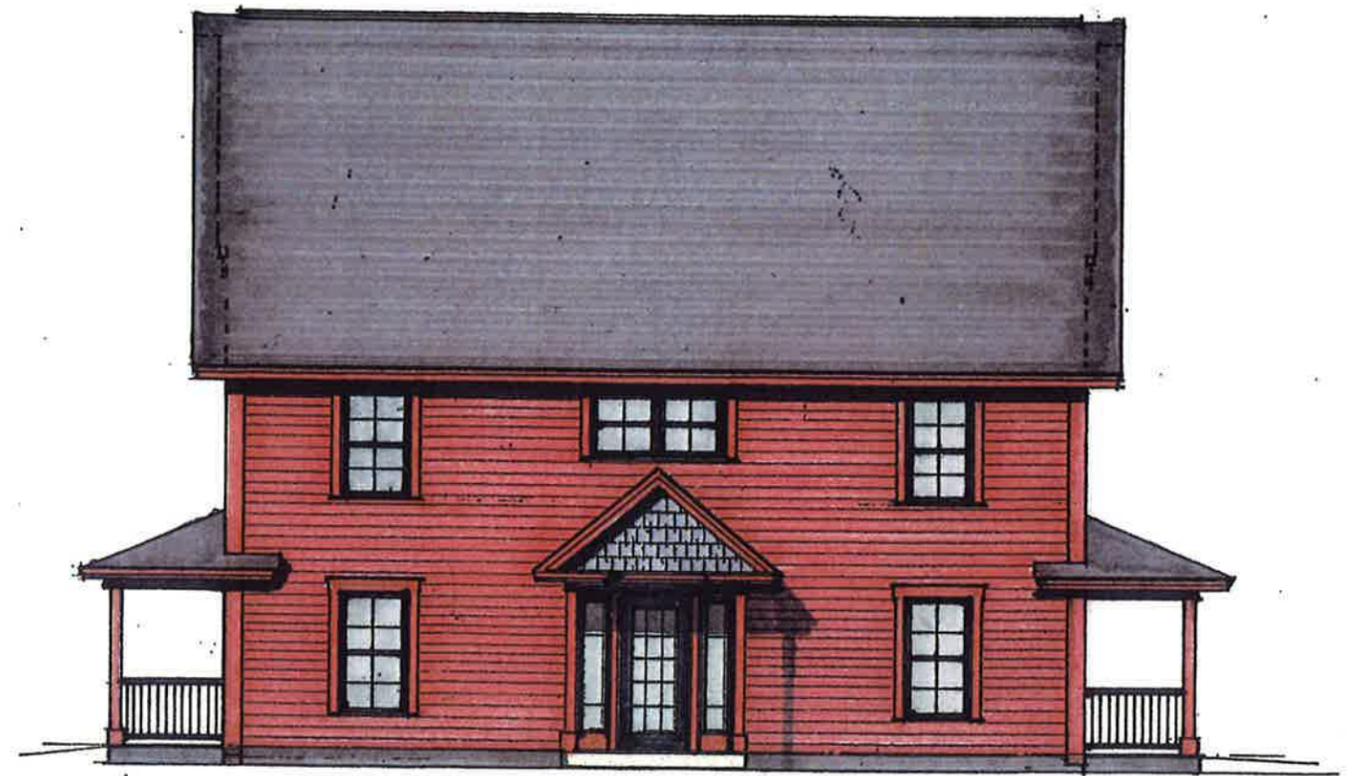
JANUARY 21, 2014





FRONT ELEVATION

MD  
2/14



GROVE STREET ELEVATION

MD  
2/14

# GROVE STREET APARTMENTS TYPICAL DUPLEX UNIT

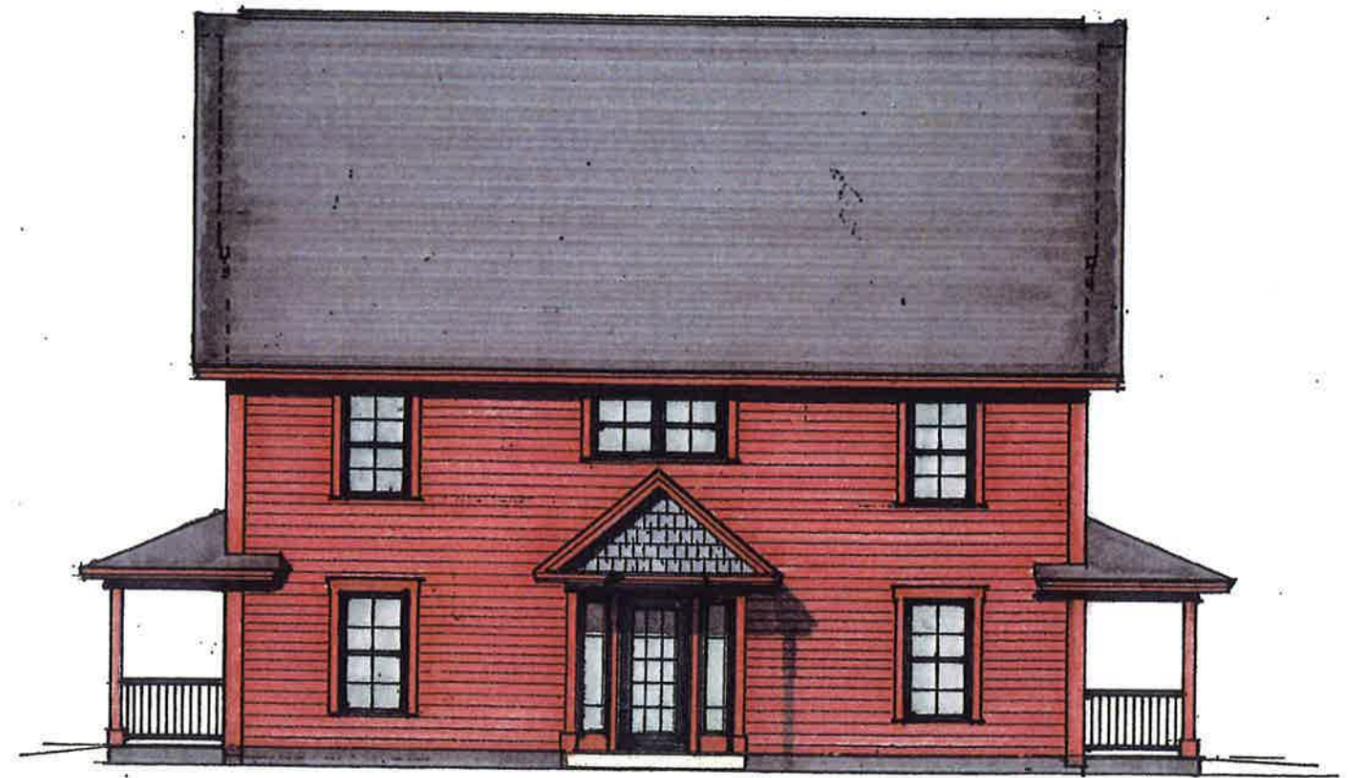
JANUARY 21, 2014





FRONT ELEVATION

MP  
2014



GROVE STREET ELEVATION

MP  
2014

# GROVE STREET APARTMENTS TYPICAL DUPLEX UNIT

JANUARY 21, 2014





FRONT ELEVATION



SIDE ELEVATION

**GROVE STREET APARTMENTS  
TYPICAL DUPLEX UNIT**

JANUARY 21, 2014





FRONT ELEVATION



SIDE ELEVATION

# GROVE STREET APARTMENTS TYPICAL DUPLEX UNIT

JANUARY 21, 2014

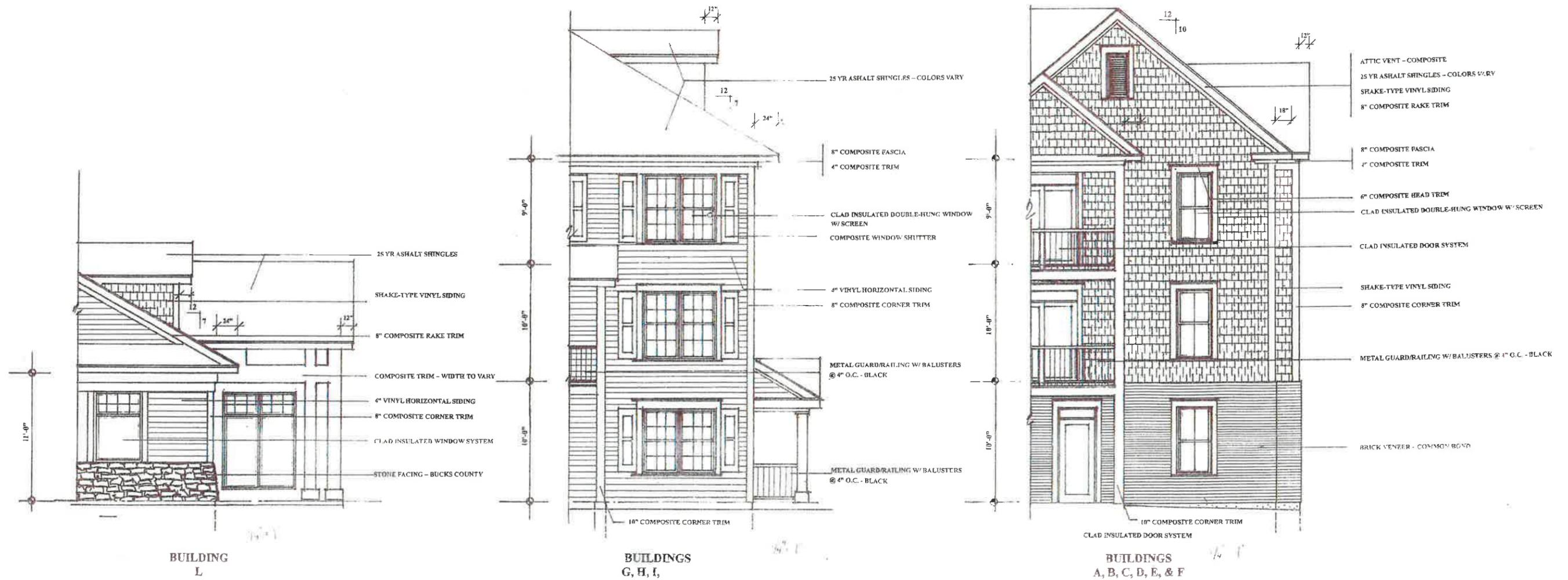




FRONT ELEVATION

BUILDINGS  
A, B, C, D, E, & F

# GROVE STREET APARTMENTS



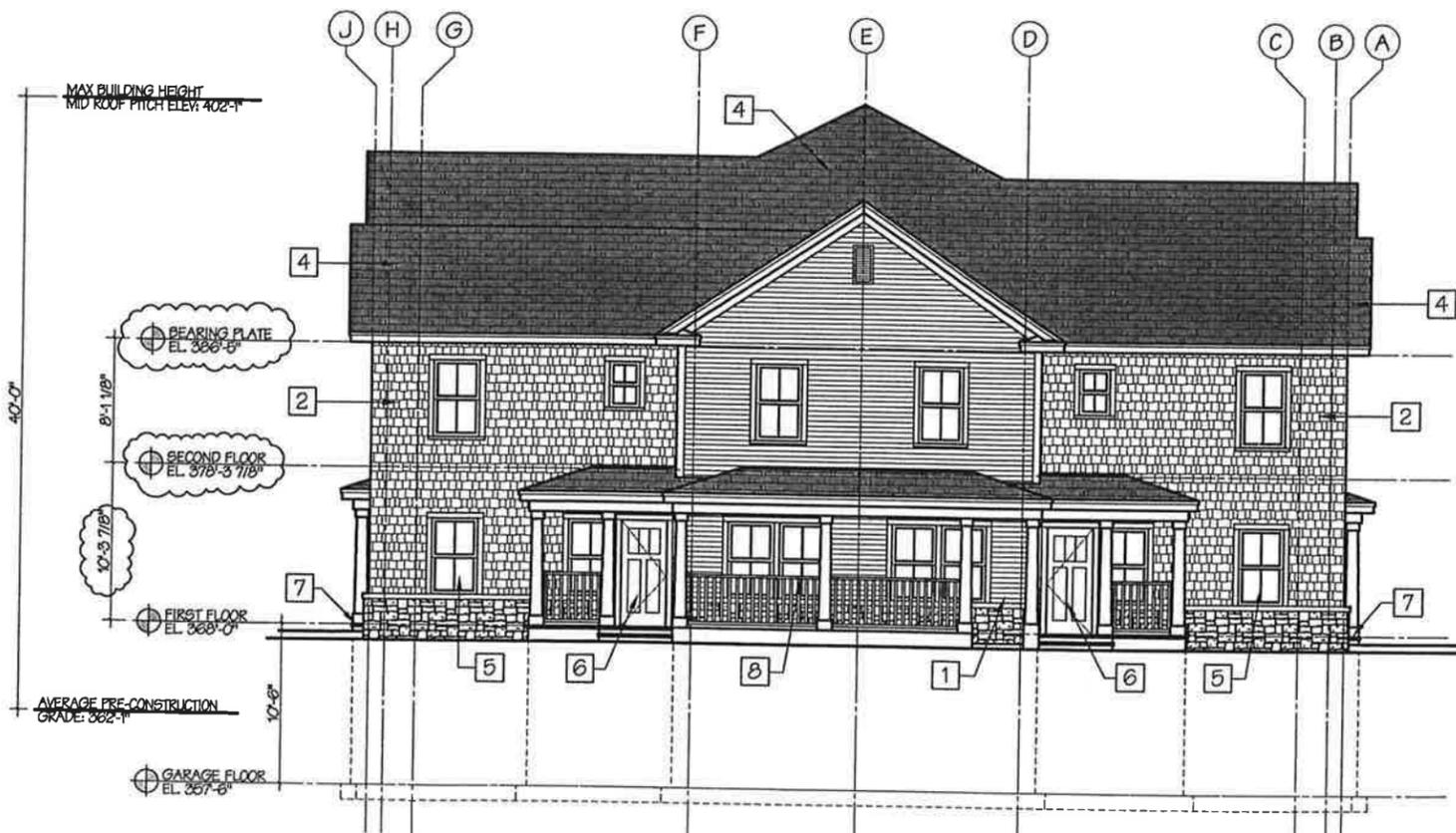
EXTERIOR FINISH INFORMATION

GROVE STREET APARTMENTS



① SOUTH ELEVATION - BUILDING 'C'  
SCALE: 3/16" = 1'-0"

DESCRIPTION OF EXTERIOR MATERIALS:	
1	SIDING TYPE - 1: VINYL LAP SIDING WITH 4 INCH EXPOSURE. TEXTURE AND COLOR AS SELECTED BY ARCHITECT.
2	SIDING TYPE - 2: VINYL 'SHINGLE' SIDING WITH 4 INCH EXPOSURE. TEXTURE AND COLOR AS SELECTED BY ARCHITECT.
3	STANDING AND RUNNING TRIM: TRIM BOARDS. "AZEK" TRIM BOARDS OR APPROVED EQUAL (FACTORY PRIMED AND 1ST COAT FINISH) COLOR AS SELECTED BY ARCHITECT SIZES AS FOLLOWS: WINDOW TRIM: 1x4 DOOR TRIM: 1x4 CORNER TRIM: 1x6 WATERTABLE TRIM: 1x6 HORIZONTAL BAND TRIM: 1x8 CORNICE: 1x8 FASCIA WITH 1/4" THICK SOFFIT
4	ROOFING: ASPHALT THREE-DIMENSIONAL STYLE SHINGLES (IKO 80 OR EQUAL). COLOR AS SELECTED BY ARCHITECT.
5	WINDOWS: EXTRUDED VINYL WINDOWS W/ LOW-E COATED, ARGON FILLED INSULATED GLAZING. MAXIMUM U-FACTOR OF 0.26. SEE TABLE 502.3 OF 2011 THE VERMONT COMMERCIAL BUILDING ENERGY STANDARDS FOR ADDITIONAL REQUIREMENTS. COLOR AS SELECTED BY ARCHITECT. (SEE WINDOW SCHEDULE, SHEET A620)
6	EXTERIOR DOORS: INSULATED FIBERGLASS DOOR W/ INSULATED GLAZING. MAXIMUM U-FACTOR OF 0.37 FOR OPAQUE PORTION OF DOORS AND MAXIMUM U-FACTOR OF 0.35 FOR GLAZING. SEE TABLES 502.1(1) AND 502.3 OF THE 2011 VERMONT COMMERCIAL BUILDING ENERGY STANDARDS FOR ADDITIONAL REQUIREMENTS. (SEE WINDOW SCHEDULE, SHEET A620) COLOR AS SELECTED BY ARCHITECT.
7	DECKING: DECKING SHALL CONSIST OF COMPOSITE MATERIAL. COLOR AS SELECTED BY ARCHITECT
8	PORCH RAILINGS: FIBERGLASS GUARDRAIL SYSTEM. COLOR AS SELECTED BY ARCHITECT
9	SIDING TYPE - 3: NATURAL STONE. COLOR AND STYLE AS SELECTED BY ARCHITECT.



② WEST ELEVATION - BUILDING 'C'  
SCALE: 3/16" = 1'-0"

DATE:	REVISIONS:
08/06/13	SUBMITTAL DRAWINGS
08/13/13	SUBMITTAL DRAWINGS
08/20/13	REVISED FOR DRB MEETING
10/07/13	CONSTRUCTION PERMIT APPLICATION
10/23/13	REVISED PER OWNER'S COMMENTS
11/04/13	REVISED FLOOR TO FLOOR HEIGHT - REVISED UNIT PLANS

BUILDING ELEVATIONS  
 6 ROVE STREET - 1 2-PLEX - BUILDING &  
 S.D. IRELAND CORP.  
 SOUTH BURLINGTON, VERMONT



PROJECT # 1303  
SHEET NUMBER

A-11





SOUTH ELEVATION

BUILDING  
L

A13

MICHAEL DUGAN  
ARCHITECT





NORTH ELEVATION

# A14

MICHAEL DUGAN  
ARCHITECT



46 PARK STREET  
BRAND JUNCTION, VT 05643  
Tel: 802-878-0878  
Fax: 802-878-0630  
www.michaeldugan.com



EAST ELEVATION  
WEST ELEVATION SIMILAR BUT REVERSED

# A15

MICHAEL DUGAN  
ARCHITECT



46 PARK STREET  
BRIDGE JUNCTION, VT 05413  
TEL: 878-8973  
FAX: 878-8980  
michael@mdugan.com



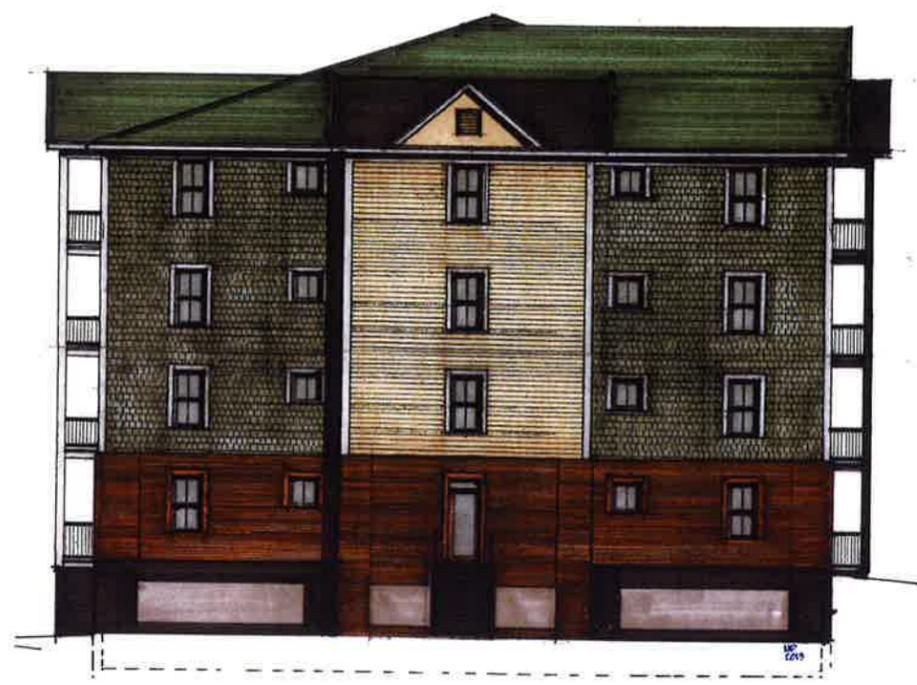
SOUTH ELEVATION

BUILDING M

# GROVE STREET APARTMENTS



EAST ELEVATION



WEST ELEVATION



NORTH ELEVATION

BUILDING M

# GROVE STREET APARTMENTS



FRONT ELEVATION



SIDE ELEVATION



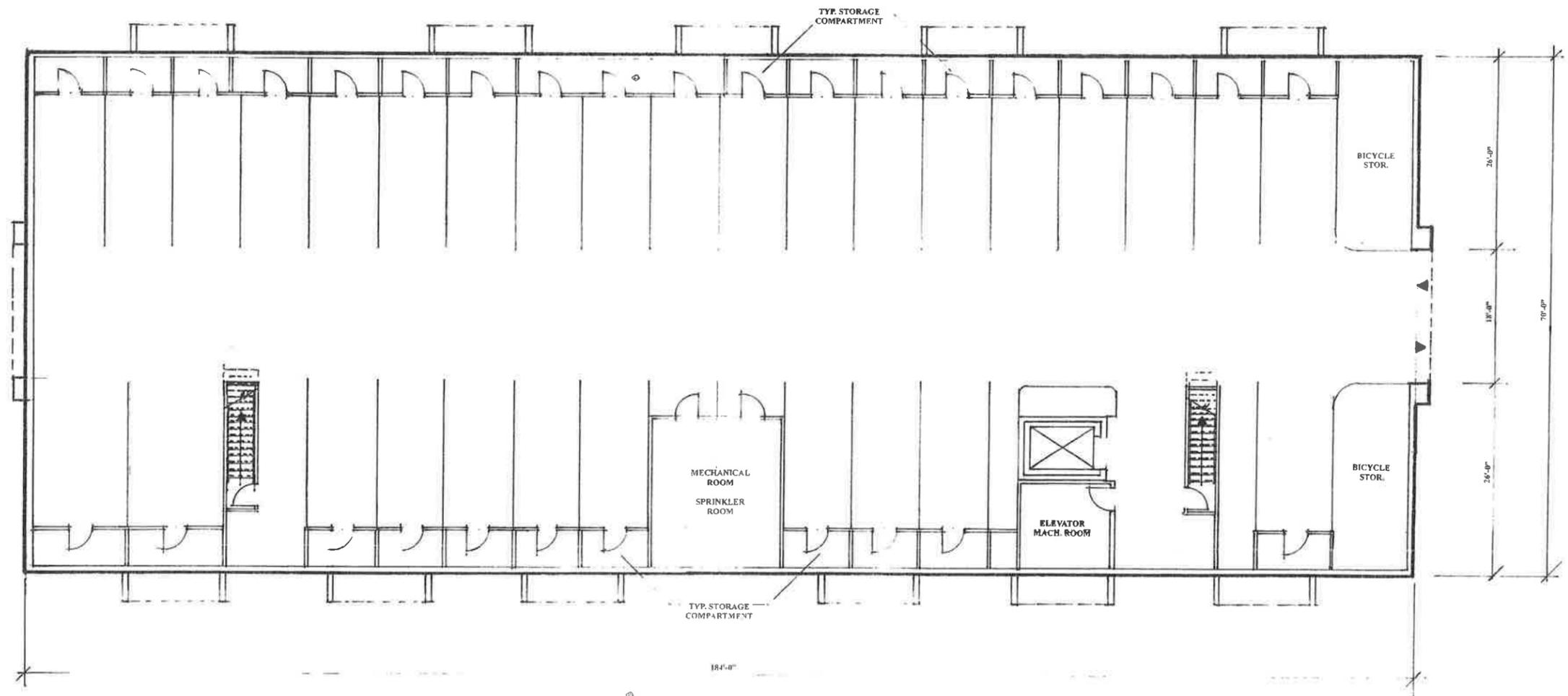
REAR ELEVATION

BUILDINGS  
A, B, C, D, E, & F

# GROVE STREET APARTMENTS

A2





GARAGE PLAN

TYPICAL GARAGE PARKING  
31 SPACES

# GROVE STREET APARTMENTS



GROVE STREET ELEVATION

NO 2015

6 UNIT BUILDING  
BUILDINGS  
I & K

A4

MICHAEL DUGAN  
ARCHITECT



44 PARK STREET  
DORSET JUNCTION, VT 05442  
TEL: 874-5876  
FAX: 874-5824  
EMAIL: MD@MICHAELDUGAN.COM



REAR ELEVATION

6 UNIT BUILDING

A5

MICHAEL DUGAN  
ARCHITECT





SIDE ELEVATION  
OPPOSITE SIDE SIMILAR BUT REVERSED

**6 UNIT BUILDING**



GROVE STREET ELEVATION

6 UNIT BUILDING

A7

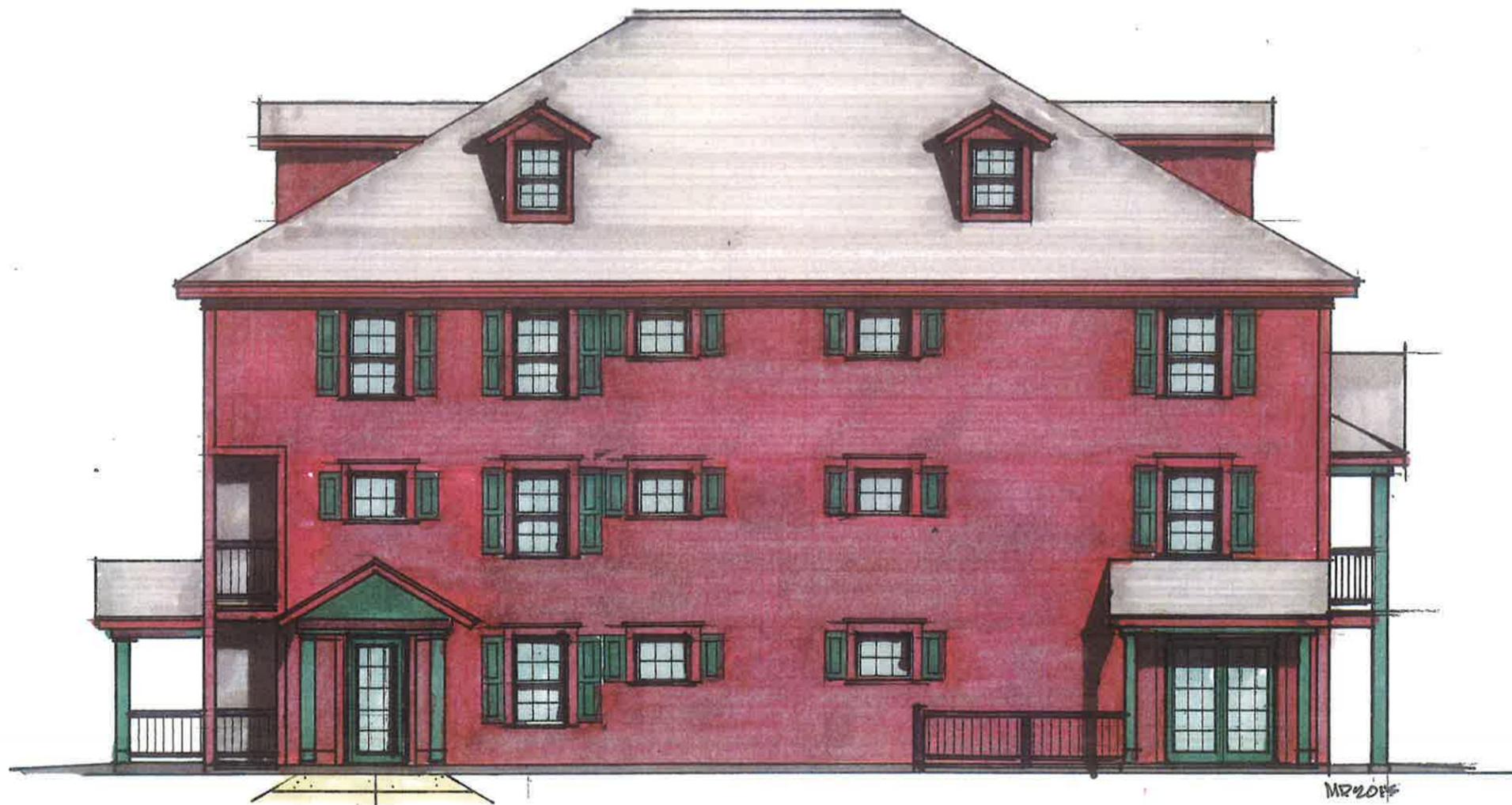
MICHAEL DUGAN  
ARCHITECT





REAR ELEVATION

6 UNIT BUILDING  
BUILDING  
J



SIDE ELEVATION  
OPPOSITE SIDE SIMILAR BUT REVERSED

6 UNIT BUILDING

A9

<b>VERNAL EQUINOX - MARCH 20, 2014</b>	
LONGITUDE: -73.22 / LATITUDE: 44.48	
<b>Time</b>	<b>1200 Noon</b>
GMT Time Zone	-5:00
Day Light Savings	Yes
Zero Azimuth	South
<b>Sun Altitude Angle</b>	<b>43.53</b>
Sun Azimuth Angle	-21.03
Tangent	0.949960179
<b>Object Height in Feet</b>	<b>Shadow Length</b>
10	10.53
12	12.63
14	14.74
16	16.84
18	18.95
20	21.05
25	26.32
30	31.58
<b>35</b>	<b>36.84</b>
40	42.11
45	47.37
50	52.63
55	57.90
60	63.16
65	68.42
70	73.69
TREE: <i>Gleditsia triacanthos</i> 'Shademaster'	
SIZE: 35' tall, 25' wide (approx. 10 years old)	



**DRAFT**

**GROVE STREET APARTMENTS**  
BURLINGTON, VT

**SHADE STUDY**  
**PARKING LOTS**

REVISIONS




# Beacon Products

Luminaire Schedule				
Symbol	Qty	Label	LLF	Description
	13	SL41	0.900	CAP-21-24NB-55-T4-5K
	33	SL31	0.900	CAP-21-24NB-55-T3-5K
	12	SL31V	0.900	VP-S-22NB-65-T3-5K

Calculation Summary					
Units	Avg	Max	Min	Avg/Min	Max/Min
Fc	1.24	3.5	0.2	6.20	17.50



**Urban Series LED - 16' Mtg**



**Viper Series LED - 20' Mtg**



15 Pleasant Hill Rd  
 P.O. Box 1597  
 Scarborough, Maine 04070  
 email: swaneylighting.com  
 ph: 207-883-7100  
 fax: 207-885-9605

#	Date	Comments

Revisions	

Drawn By: Dave Charron

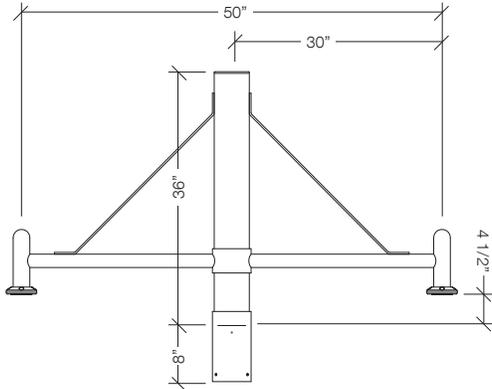
Not to Scale

**Grove Street**

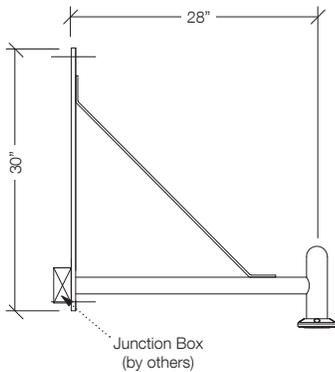
Type: \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
 Notes: \_\_\_\_\_

Sample AA-44 S 4 B P BBT  
 Ordering \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**A B C D E F**

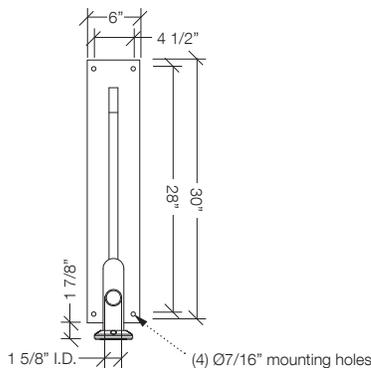
**DETAILS**



**WALL BRACKET DETAILS**



**WALL PLATE DETAILS**



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

**A. MODEL**

**AA-44** Strut

**B. POST SHAFT PROFILE**

**W** wall mount  
**S** smooth  
**F** fluted

**C. POST SHAFT DIAMETER**

**4** 4"  
**5** 5"  
**6** 6"

**OTHER** \_\_\_\_\_

**D. ARRANGEMENT**

\_\_\_\_\_ see arrangement table below

**E. LUMINAIRE MOUNTING**

**P** pendant

**F. COLOR**

**BBT** basic black textured  
**BMT** black matte textured  
**WHT** white textured  
**MBT** metallic bronze textured  
**BZT** bronze textured  
**GYS** gray smooth  
**DPS** dark platinum smooth  
**GNT** green textured  
**MST** metallic silver textured  
**MTT** metallic titanium textured  
**OWI** old world iron  
**RAL** \_\_\_\_\_

**Construction:** All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

**EPA (effective projected area):** EPA is de-fined as (projected surface area X drag factor) and measured in ft<sup>2</sup>. Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the ap-propriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

**Fasteners:** All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

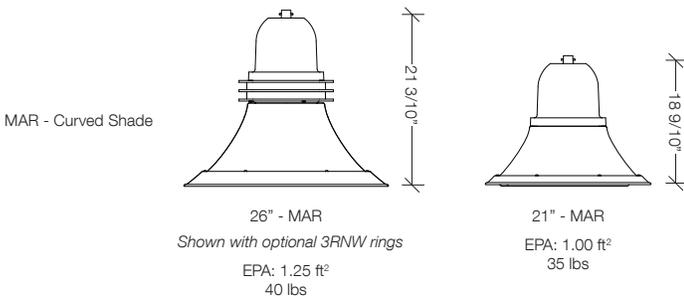
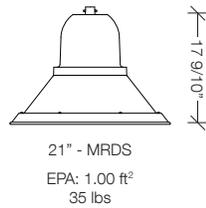
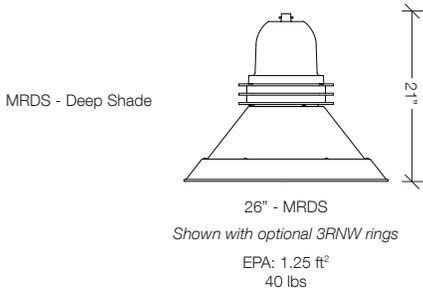
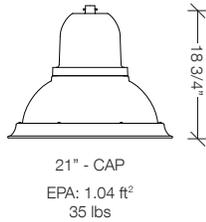
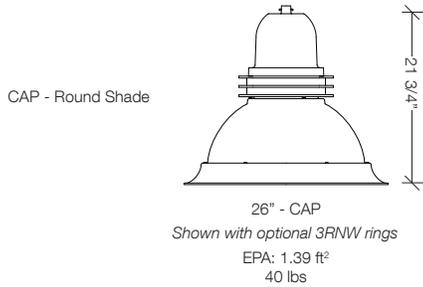
**Finish:** Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

**Limited Warranty:** Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

		arrangement (EPA index ft <sup>2</sup> / weight (lbs))									
shaft Ø		A	B	C	D	E	F	G	H	I	J
wall	weight	12	-	-	-	-	-	-	-	-	-
Ø4"	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	3.75	4.22	4.22
	weight	-	15	20	22	20	25	27	25	30	32
Ø5"	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55
	weight	-	18	23	25	23	28	30	28	33	35
Ø6"	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70
	weight	-	21	26	28	26	31	33	31	36	38

Sample	CAP-21	36NB-80	4K	T2	UNV	PEC	3RNW	BBT
Ordering	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

**DETAILS**



**A. MODEL**

<b>CAP-21</b>	21" Capitol
<b>MRDS-21</b>	21" Miramar deep shade
<b>MAR-21</b>	21" Maritas
<b>CAP-26</b>	26" Capitol
<b>MRSS-26</b>	26" Miramar shallow shade
<b>MRDS-26</b>	26" Miramar deep shade
<b>MAR-26</b>	26" Maritas

**B. ENGINE-WATTS**

<b>24NB-27</b>	27 Watts - LED array
<b>24NB-55</b>	55 Watts - LED array
<b>36NB-80</b>	80 Watts - LED array
<b>48NB-110</b>	110 Watts - LED array
<b>60NB-136</b>	136 Watts - LED array

**C. CCT - COLOR TEMP**

<b>3K</b>	3000K
<b>4K</b>	4000K
<b>5K</b>	5000K (std.)

**D. OPTICS**

<b>T2</b>	type II
<b>T3</b>	type III
<b>T4</b>	type IV
<b>T5R</b>	type V, rectangular
<b>T5QM</b>	type V, square medium
<b>T5W</b>	type V, round wide

**E. VOLTAGE**

<b>UNV</b>	120-277V
<b>347</b>	347V
<b>480</b>	480V

**F. ELECTRICAL OPTIONS**

<b>PEC</b>	photocell, button
<b>2PF</b>	dual power feed <sup>1,2</sup>

**G. STYLE OPTIONS**

<b>NRNW</b>	no rings
<b>3RNW</b>	three cast rings

**H. COLOR**

<b>BBT</b>	basic black textured
<b>BMT</b>	black matte textured
<b>WHT</b>	white textured
<b>MBT</b>	metallic bronze textured
<b>BZT</b>	bronze textured
<b>GYS</b>	gray smooth
<b>DPS</b>	dark platinum smooth
<b>GNT</b>	green textured
<b>MST</b>	metallic silver textured
<b>MTT</b>	metallic titanium textured
<b>OWI</b>	old world iron
<b>RAL</b>	_____

<sup>1</sup> not available on 24NB-27

<sup>2</sup> not available @ 347V or 480V input

**Housing & LED Thermal Management:** The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

**Bezel optical system:** Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

**Printed Circuit Board (PCB):** Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

**LifeShield™ Circuit:** Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components.

A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

**Electrical:** Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

**Surge Protector:** The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

**Fasteners:** All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

**Color Rendering Index (CRI):** Luminaire shall have a minimum CRI of 67 at 5000K.

**Operating Environment:** Shall be able to operate normally in ambient temperatures from -40°C to 40°C

**Finish:** Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

**Agency Certification:** The luminaire shall bear a CSA label and be marked suitable for wet locations.

**Warranty:** Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on [www.beaconproducts.com](http://www.beaconproducts.com) complete details and exclusions.

**Power/Lumens & Distributions**

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
24NB	27	2752-3014	105-115	96.19%
24NB	55	5138-5500	93-100	96.19%
36NB	80	6935-8215	93-103	94.87%
48NB	110	10240-10950	93-103	92.73%
60NB	136	12800-13700	93-103	85.79%

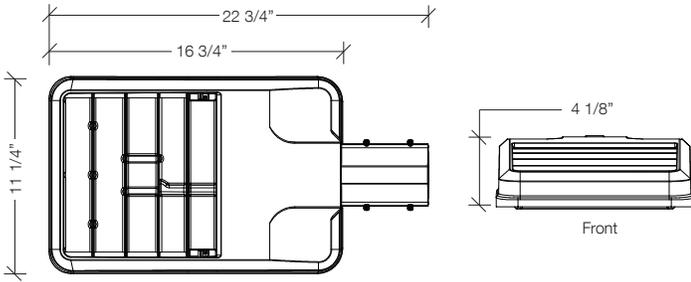
TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

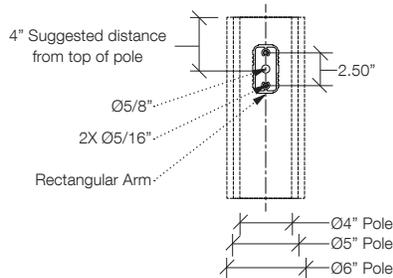
*Due to our continued efforts to improve our products, product specifications are subject to change without notice.*

Sample	VP-S	30NB-90	5K	T5R	UNV	PCR-TL	SF2	BBT
Ordering	<input type="checkbox"/>							
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

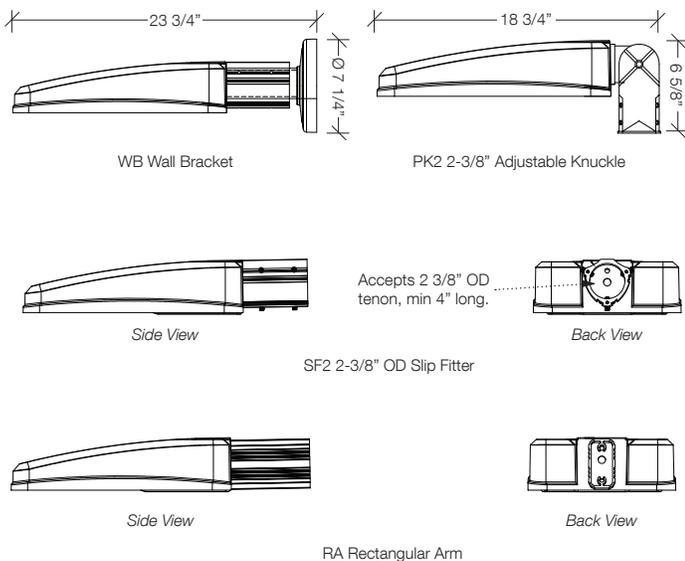
**DETAILS**



**DRILL PATTERN**



**MOUNTING OPTIONS**



**A. MODEL**

**VP-S** Viper - Small

**H. COLOR**

**BBT** basic black textured

**BMT** black matte textured

**WHT** white textured

**MBT** metallic bronze textured

**BZT** bronze textured

**GYS** gray smooth

**DPS** dark platinum smooth

**GNT** green textured

**MST** metallic silver textured

**MTT** metallic titanium textured

**OWI** old world iron

**RAL** \_\_\_\_\_

**B. ENGINE-WATTS**

**22NB-50** 50 Watts - LED array

**22NB-70** 70 Watts - LED array

**30NB-70** 70 Watts - LED array

**30NB-90** 90 Watts - LED array

**C. CCT - COLOR TEMP**

**3K** 3000K

**4K** 4000K

**5K** 5000K (std.)

**D. OPTICS**

**T2** type II

**T3** type III

**T4** type IV

**T5R** type V, rectangular

**T5QM** type V, square medium

**T5W** type V, round wide

**E. VOLTAGE**

**UNV** 120-277V

**347V** 347V

**480V** 480V

**F. ELECTRICAL OPTIONS**

**PCR-TL** photocell, twist-lock

**PCR-SC** photocell, shorting cap

**2PF** dual power feed <sup>1,2</sup>

**G. MOUNTING OPTIONS**

**RA** rectangular arm

**SF2** 2 3/8" OD slip-fitter

**PK2** 2 3/8" adjustable knuckle

**WB** wall bracket

<sup>1</sup> not available with 30NB-90

<sup>2</sup> not available @ 347V or 480V input



**VIPER - SMALL (LED)**

Small Viper Luminaire

**Max Weight:** 15.0 lbs

**Max EPA:** 0.67 sq ft

**General:** The Beacon Viper luminaire is available in two sizes with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 1000W MH or HPS and with 5 different mounting options for application in a wide variety of new and existing installations. Luminaires are suitable for wet locations.

**Bezel Optic System:** Each Viper luminaire is supplied with an one piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

The optical cartridge is secured to the die cast housing with fasteners. The optics are held in place without the use of adhesives. The cartridge assembly is available in various lighting distributions using TIR designed acrylic optical lenses over each LED.

**Lifesield™ Circuit:** Thermal circuit shall protect the luminaire from excessive temperature by interfacing with the 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range.

A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure or lumen depreciation. Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point. Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage. The device shall be located in an area of the luminaire that is protected from the elements. Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

**Printed Circuit Board (PCB):** Aluminum thermal clad board with 0.062" thick aluminum base layer, thermally conductive dielectric layer, 0.0014" thick copper circuit layer circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board will be mounted to the heat sink using minimum 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

**Housing and LED Thermal Management:** The Viper' monolithic housing design creates over 4.5 square feet (small Viper) or 7.7 square feet (large Viper) of heat-sinking surface area. Vertical fins, combined with flow-thru openings prevent sediment and moisture buildup on critical heat sinking surfaces without the need for grates, screens or other debris control tactics. The Viper housing, electrical compartment and fitter are made from die cast aluminum that is pre-treated and powder-coated to meet the most rugged industry standards. The finish is corrosion resistant to meet ASTM-B-117, resists cracking or loss of adhesion per ASTM D522, resists surface impacts of up to 160 inch-pound. All external hardware is corrosion resistant. The housing serves as a heat-sink for the LED bezel with a separate compartment for the drivers.

**Electrical Assembly:** The fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections. The housing is designed for an optional twist lock photo control receptacle.

**Accessibility:** Although the Viper luminaire is designed to operate for many years without maintenance, accessibility is a key component in its design. The Drivers are mounted on a removable door that is secured with keyslotted screws and hinges down for convenient access. The drivers are field replaceable using quick disconnects.

**Drivers:** Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL- 217F Notice 2. Dimming drivers are standard, with connections for external dimming equipment available upon request. Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.

**Surge Protector:** The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

**Fasteners:** All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

**Color Rendering Index (CRI):** Luminaire shall have a minimum CRI of 67 at 5000K.

**Operating Environment:** Shall be able to operate normally in ambient temperatures from -40°C to 40°C

**Finish:** Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pre-treatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

**Agency Certification:** The luminaire shall bear a CSA label and be marked suitable for wet locations.

**Warranty:** Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on [www.beaconproducts.com](http://www.beaconproducts.com) complete details and exclusions.

**Power/Lumens & Distributions**

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
22NB	50	4700-5020	93-103	96.19%
22NB	70	5780-6200	82-103	85.79%
30NB	70	6408-6850	91-103	95.02%
30NB	90	7700-8260	85-97	85.79%

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

*Due to our continued efforts to improve our products, product specifications are subject to change without notice.*