

**PRELIMINARY DRAINAGE REPORT**  
**FOR**  
**STERLING AT SILVERLEAF**

September 12, 2016  
LDT# 16THNC102

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78-DR-05 #3

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Date	12/6/16

Approved



EXPIRES 12-31-2016

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## 1.0 INTRODUCTION

### 1.1 General Background

Sterling at Silverleaf is a proposed condominium development located within the DC Ranch Master Planned Community. It is located within the City of Scottsdale's jurisdiction, City of Scottsdale Quarter Section map numbers 39-51 and 39- 52.

All roadways surrounding the subject parcel are developed with full pavement section and utility infrastructure.

### 1.2 Location and Topography

Sterling at Silverleaf, herein referred to as the Site, is located within a portion of the South half of Section 29, Township 4 North, Range 5 East, of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The parcel is bounded by 101st Street to the east, Desert Sage to the north, a development known as the "The Village" to the west, and a vacant land to the south. It is physically located just east of the intersection of Thompson Peak Parkway and Legacy Boulevard (Union Hills Drive). **Plate 1** provides a Vicinity Map for Sterling at Silverleaf.

The general terrain of the subject parcel slopes from north to south at an average rate of 5 percent. The subject parcel is currently graded.

### 1.3 Drainage Background

#### 1.3.1 Off-site Flows

The offsite hydrologic analysis affecting the subject parcel has been prepared by Wood- Patel in the report "*Final Drainage Report for DC Ranch, Parcel T4B*, and dated March 2006" (Ref. 2). Plate 4 of the referenced Wood-Patel drainage report indicates that all offsite flow potentially affecting the site is captured by the Beardsley Wash located to the east of Sterling at Silverleaf and therefore there are no offsite flows affecting Sterling at Silverleaf. Plate 4 of the referenced Wood, Patel drainage report is included in Appendix B.





### 1.3.2 On-Site Flows

The Wood-Patel final drainage report for DC Ranch, Parcel T4B, dated 2006 delineated sub-watershed areas 3, 10, 11, and 14 as onsite flow generating areas. The onsite generated flows from these 4 sub-watershed areas are to be captured and conveyed to Beardsley Wash, located to the east of Parcel T4B (see Appendix B of this report). These onsite generated flows were calculated for the 2-year, 10-year, and 100-year frequency events as tabulated below (see Appendix B of this report).

Sub area designation	Area (SF)	Area (Acre)	Runoff Coefficient	Time of conc. (min)	I (2) In/hr	Q (2) cfs	I (10) In/hr	Q (10) cfs	I (100) In/hr	Q (100) cfs
3	71075	1.63	0.76	5.0	3.7	4.6	6.1	7.6	9.2	11.4
10	52188	1.20	0.76	5.0	3.7	3.4	6.1	5.6	9.2	8.4
11	44034	1.01	0.76	5.0	3.7	2.8	6.1	4.7	9.2	7.1
14	37444	0.86	0.76	5.0	3.7	2.4	6.1	4.0	9.2	6.0

This report presents a drainage solution that will be consistent with the aforementioned referenced Wood-Patel drainage report relative to management of the onsite drainage flow. Consistency with the Wood-Patel report is important as it was the basis of the drainage management system for the entire DC Ranch master planned community drainage.

### 1.4 FEMA Regulated Flood Zones

The site is located within the Flood Insurance Rate Maps (FIRM) for Maricopa County, Arizona and Incorporated Areas, Map Number 04013C1340L, dated October 16, 2013, as published by FEMA. The flood zone identified, specific to the East District Residential Phase 1 is *Zone X (shaded)*, which is defined by FEMA as:

*Zone X - "Areas determined to be outside the 0.2% annual chance floodplain; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1*



*square mile; and areas protected by levees from 1% annual chance flood.”*

**Plate 2** depicts the FEMA flood zones for the project site.

### **1.5 Purpose of Report**

The purpose of this report is to provide a Drainage Study for the Sterling at Silverleaf. The proposed drainage facility requirements for Sterling at Silverleaf will be based on the post-development condition hydrologic analysis which will quantify the offsite flow affecting the subject parcel as well as the onsite drainage flow generated by 100-year storm frequency event. It will further define the proposed onsite storm-water management system and establish minimum floor elevations for each condominium unit within the development. The methods for the detailed drainage design are presented in Section 2.0. This Preliminary Drainage Report accompanies the Development Review Board submittal package for Sterling at Silverleaf. The methods for the proposed drainage design are presented in Section 2.0.



## 2.0 HYDROLOGIC AND HYDRAULIC ANALYSIS

### 2.1 Rational Method

The Rational method was used to compute peak discharges for all watersheds since they are less than or equal to 160 acres. Parameters necessary for this procedure are measurement of drainage sub-basin areas, estimation of runoff coefficient (“C” values), and calculation of rainfall intensity. Rainfall intensity will be determined from the NOAA Atlas 14 published data as attached in **Appendix A**. Weighted “C” values for the 100-year storm event will be calculated using the base values in “Runoff Coefficients for Rational Formula” as published by the City of Scottsdale. The “C” value calculations are also attached in **Appendix A**. The Rational Method calculations have been completed for ultimate build out conditions. A spreadsheet was used to determine the weighted “C” values and compute peak discharges by the Rational method. See **Appendix A** for the results of these calculations for ultimate conditions.

**Table 2.1 On-Site Rational Flows**

Basin ID or Concentration Point	Q10 (cfs)	Q100 (cfs)	Basin ID or Concentration Point	Q10 (cfs)	Q100 (cfs)
A1	1.53	2.72	A15	0.39	0.75
A2	0.67	1.30	B1	0.81	1.26
A3	1.07	1.77	B2	0.81	1.26
A4	0.60	1.07	B3	1.66	2.57
A5	0.54	0.88	B4	0.81	1.26
A6	0.23	0.43	B5	0.81	1.26
A7	1.08	1.76	B6	1.66	2.57
A8	1.14	1.84	B7	1.66	2.57
A9a	0.40	0.75	B8	1.66	2.57
A10	0.35	0.69	A16	0.49	0.85
A11	0.27	0.50	A17	0.95	1.66
A12	0.44	0.84	A18	1.47	2.82
A13	0.92	1.67	A9b	0.72	1.39
A14	0.53	0.94			

### 2.2 Storm Water Storage

Based on the report entitled “DC Ranch Planning Unit III, V, and VI Part 4 Drainage Plan Study” dated 12/15/2001, storm water storage is not required for this subject site.





### 3.0 PROPOSED DRAINAGE PLAN

#### 3.1 General Description of Proposed Grading and Drainage System

The grading design concept will follow the general land terrain. Due to the steepness of the terrain through the site (approximately 5% slope), each condominium building will have a different floor elevation. The elevation difference between condominium buildings will be mitigated by retaining walls. The grading design concept will allow each condominium building to capture its runoff from the roof to the proposed underground storm-drain system via down-spout drain-system to be installed along 101st Street and between some condominium buildings. Runoff from the surface around the buildings is captured by means of area drains (MAG F 535 or 537 catch basins) which will also connect to the storm drain system. The proposed storm drain system will ultimately connect into an existing manhole located at the southerly end of 101st Street cul-de-sac and existing storm drain north and west of the site. (See storm drain system layout in **Plate 4**). The downstream collection points were designed to convey this captured flow into Beardsley Wash.

#### 3.2 Storm Water Storage Requirements

Based on the report entitled “*DC Ranch Planning Unit III, V, and VI Part 4 Drainage Plan Study*” dated 12/15/2001, storm water storage is not required for this subject site.

#### 3.3 Storm Water Quality Requirements

Per City Ordinance adopted this year all developments must provide water quality mitigation measures; such as first flush storage or other acceptable water quality measures. Considering the topography and land use constraints first flush storage is feasible so other water quality measures will be researched and presented to the City prior to implementation within the Improvement Plans for the project.





### 3.4 Proposed Drainage Structures

#### 3.4.1 On-Site Roadway Drainage Structures

##### 3.4.1.1 Onsite Hydrology

The Rational Method was used to calculate the storm water runoff generated by the buildings, roadways and open space areas. Rational Method sub-basins were determined based on the proposed grading for the site. Ultimate flow conditions have been calculated and are attached in **Appendix A – Rational Method Results for On-Site Drainage Sub-Basins**. **Plate 3 – Drainage Areas** provides the locations of the sub-basins for the interim condition. **Plate 4 – Drainage Infrastructure Exhibit** provides the locations of the sub-basins, and proposed drainage infrastructure.

##### 3.4.1.2 Street Capacity Hydraulics

The Final Drainage Report will quantify the roadway capacities for only the entry street connecting Legacy Boulevard to 101<sup>st</sup> Street. The calculation will be based on either 4-inch roll curb and gutter or 6-inch vertical curb and gutter, whichever is utilized for the final design. The drainage for the local roadway will be designed consistent with City of Scottsdale requirements, as follows:

- 10-year capacity is limited to the top-of-curb;
- 100-year capacity is contains runoff below the building's finished floor. Runoff to be contained to road right of way or to drainage easements.  $D_{\max} = 8$  inches above the street.

The final street capacity calculations will be made with a spreadsheet that accurately calculates street capacities and considers the ultimate flows. Section geometry is based upon either normal crown with 2% cross-slopes or cross-sloped roadways with 2% cross-slope roll or vertical curb and gutter and an attached 5 foot sidewalk at 1.5% cross slope. The calculations use a Manning's n of 0.015 for asphalt and 0.013



for concrete (C&G). Drainage sub-basins A7 and A8 are the only sub-basins that utilize the proposed access roadway for conveyance and the flows for these sub-basins are 1.78 cfs and 1.84 cfs for the 100-year flow event. The actual flow depth for the 100-year in this roadway should be well below the top of curb. Once the final curb profile and type has been designed the Final Drainage Report will provide the flow depth calculations.

#### **3.4.1.3 Catch Basin/Scupper Sizing**

Catch basins/scuppers will be designed to capture the ultimate gutter flow from the internal street and convey the 100-year flow to the storm drain system. At sag locations the weir flow calculation will be utilized because the depth of ponding at the lip of the curb opening is less than 1.4 times the curb height. The Bentley FlowMaster computer program will be utilized for all of the catch basin calculations

#### **3.4.1.4 Storm Drain System**

Storm drain system sizing will be based on conveyance of the 10-year storm water flows and will maintain at least one (1) foot of freeboard to all catch basin grate elevations for the 10-year event. Adequate capacity will also be available in the storm drain systems for the 100-year storm water flows. Detailed calculations for the storm drain systems will be provided with the Final Drainage Report for Sterling at Silverleaf. **Plate 4 - Drainage Infrastructure Exhibit** provides a plan view of the proposed storm drain systems.

#### **3.4.1.5 Inlet Calculations**

Inlet calculations for area drains and MAG 535 catch basins will be provided in the Final Drainage Report.



### **3.5 Project Phasing**

The condominium buildings at Sterling at Silverleaf may be developed in phases. The first phase will include all grading, retaining walls, roadways and utility infrastructure for the entire site.



## 4.0 CONCLUSIONS

### 4.1 Sterling at Silverleaf

1. The Site is located within FEMA Zone “X”, as shown on **Plate 2**.
2. Drainage from Sterling at Silverleaf will not be retained as outlined earlier in this report as stated earlier in this report.
3. The design of hydraulic structures; catch basins and storm drains or scuppers will be designed to generally accepted engineering practices and in accordance with FCDMC and City of Scottsdale requirements.
4. The drainage for the local residential roadways has been designed consistent with FCDMC and City of Scottsdale requirements for the allowable depth of water on the street when the street is being utilized as a water carrier.
5. Finished floor elevations will be a minimum of 14 inches above the low site outfall and one foot above the 100-year water surface elevation.
6. On-going maintenance will be required for all drainage systems in order to assure design performance.





## 5.0 REFERENCES

1. FEMA FIRM Maps, Map Service Center,  
<http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=39098187&IFIT=1>
2. Wood-Patel & Associates, Inc., " *Final Drainage Report for DC Ranch, Parcel. T4B*", dated March 2, 2006, WP #052474, by John M. Bulka.
3. Wood-Patel & Associates, Inc., " *DC Ranch Planning Unit III, V, and VI Part 4 Drainage Plan Study*", date 12/25/2011.
4. City of Scottsdale, *Drainage Design Standards and Policies Manual, General Construction Plan Requirements, Design Standards and Policies.*



## **APPENDIX A**

### **Rational Method Calculations for On-Site Sub-Basins**





**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Scottsdale, Arizona, US\***  
**Latitude: 33.6574°, Longitude: -111.8661°**  
**Elevation: 1721 ft\***  
 \* source: Google Maps



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Uhrh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerals](#)

**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.52 (2.09-3.10)	3.29 (2.75-4.06)	4.44 (3.66-5.45)	5.32 (4.36-6.49)	6.47 (5.23-7.87)	7.36 (5.87-8.89)	8.24 (6.47-9.95)	9.13 (7.06-11.0)	10.3 (7.78-12.5)	11.2 (8.29-13.6)
10-min	1.91 (1.59-2.36)	2.51 (2.09-3.08)	3.38 (2.79-4.14)	4.04 (3.32-4.94)	4.92 (3.98-5.99)	5.59 (4.47-6.77)	6.28 (4.93-7.57)	6.95 (5.37-8.38)	7.85 (5.92-9.49)	8.56 (6.31-10.4)
15-min	1.58 (1.32-1.95)	2.07 (1.73-2.55)	2.79 (2.30-3.42)	3.34 (2.74-4.08)	4.07 (3.29-4.96)	4.62 (3.69-5.59)	5.18 (4.07-6.26)	5.74 (4.44-6.92)	6.50 (4.89-7.84)	7.07 (5.22-8.56)
30-min	1.07 (0.886-1.31)	1.39 (1.16-1.72)	1.88 (1.55-2.30)	2.25 (1.84-2.75)	2.74 (2.21-3.34)	3.11 (2.49-3.76)	3.49 (2.74-4.21)	3.87 (2.99-4.66)	4.37 (3.29-5.28)	4.76 (3.51-5.76)
60-min	0.660 (0.548-0.812)	0.863 (0.720-1.06)	1.16 (0.960-1.43)	1.39 (1.14-1.70)	1.70 (1.37-2.06)	1.93 (1.54-2.33)	2.16 (1.70-2.61)	2.39 (1.85-2.88)	2.71 (2.04-3.27)	2.95 (2.17-3.57)
2-hr	0.384 (0.323-0.462)	0.498 (0.419-0.600)	0.662 (0.554-0.794)	0.786 (0.650-0.943)	0.956 (0.783-1.14)	1.08 (0.876-1.29)	1.21 (0.966-1.44)	1.35 (1.05-1.59)	1.52 (1.16-1.80)	1.66 (1.24-1.97)
3-hr	0.279 (0.234-0.342)	0.357 (0.301-0.440)	0.466 (0.390-0.571)	0.553 (0.458-0.674)	0.673 (0.549-0.815)	0.768 (0.619-0.926)	0.866 (0.686-1.04)	0.969 (0.755-1.16)	1.11 (0.838-1.33)	1.22 (0.902-1.47)
6-hr	0.168 (0.144-0.200)	0.212 (0.182-0.253)	0.270 (0.231-0.320)	0.316 (0.267-0.374)	0.380 (0.317-0.446)	0.429 (0.352-0.502)	0.479 (0.388-0.561)	0.531 (0.423-0.622)	0.601 (0.466-0.703)	0.655 (0.496-0.767)
12-hr	0.097 (0.084-0.114)	0.122 (0.105-0.143)	0.154 (0.132-0.180)	0.179 (0.153-0.209)	0.213 (0.180-0.248)	0.239 (0.199-0.277)	0.266 (0.218-0.308)	0.292 (0.238-0.339)	0.328 (0.260-0.382)	0.356 (0.277-0.417)
24-hr	0.058 (0.051-0.067)	0.074 (0.065-0.085)	0.095 (0.084-0.110)	0.113 (0.099-0.130)	0.138 (0.119-0.158)	0.157 (0.135-0.180)	0.178 (0.151-0.204)	0.199 (0.167-0.229)	0.229 (0.188-0.265)	0.253 (0.205-0.295)
2-day	0.032 (0.028-0.037)	0.041 (0.036-0.047)	0.054 (0.047-0.062)	0.065 (0.056-0.074)	0.079 (0.068-0.091)	0.091 (0.078-0.104)	0.103 (0.087-0.119)	0.117 (0.097-0.134)	0.135 (0.111-0.156)	0.150 (0.121-0.175)
3-day	0.023 (0.020-0.026)	0.030 (0.026-0.034)	0.039 (0.034-0.045)	0.047 (0.041-0.054)	0.058 (0.050-0.066)	0.067 (0.058-0.077)	0.077 (0.065-0.088)	0.087 (0.073-0.100)	0.102 (0.084-0.117)	0.114 (0.093-0.132)
4-day	0.019 (0.016-0.021)	0.024 (0.021-0.027)	0.032 (0.028-0.036)	0.038 (0.034-0.044)	0.048 (0.042-0.054)	0.055 (0.048-0.063)	0.064 (0.054-0.073)	0.073 (0.061-0.083)	0.085 (0.071-0.098)	0.096 (0.078-0.111)
7-day	0.012 (0.011-0.014)	0.016 (0.014-0.018)	0.021 (0.018-0.024)	0.025 (0.022-0.029)	0.031 (0.027-0.036)	0.036 (0.031-0.042)	0.042 (0.036-0.048)	0.048 (0.040-0.055)	0.056 (0.046-0.065)	0.063 (0.051-0.074)
10-day	0.009 (0.008-0.011)	0.012 (0.010-0.014)	0.016 (0.014-0.018)	0.019 (0.017-0.022)	0.024 (0.021-0.027)	0.028 (0.024-0.031)	0.032 (0.027-0.036)	0.036 (0.030-0.041)	0.042 (0.035-0.049)	0.047 (0.039-0.055)
20-day	0.006 (0.005-0.007)	0.007 (0.007-0.009)	0.010 (0.009-0.011)	0.012 (0.010-0.013)	0.014 (0.013-0.016)	0.016 (0.014-0.019)	0.019 (0.016-0.021)	0.021 (0.018-0.024)	0.024 (0.020-0.027)	0.026 (0.022-0.030)
30-day	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.010-0.013)	0.013 (0.011-0.015)	0.015 (0.013-0.016)	0.016 (0.014-0.018)	0.019 (0.016-0.021)	0.020 (0.017-0.023)
45-day	0.004 (0.003-0.004)	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.013 (0.011-0.014)	0.014 (0.012-0.017)	0.016 (0.013-0.018)
60-day	0.003 (0.003-0.003)	0.004 (0.003-0.004)	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.011-0.015)

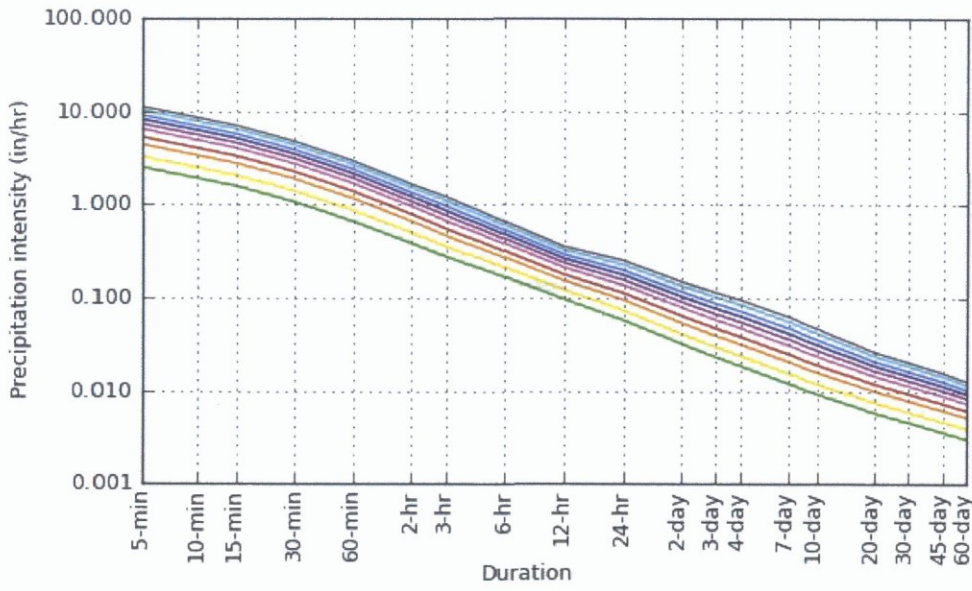
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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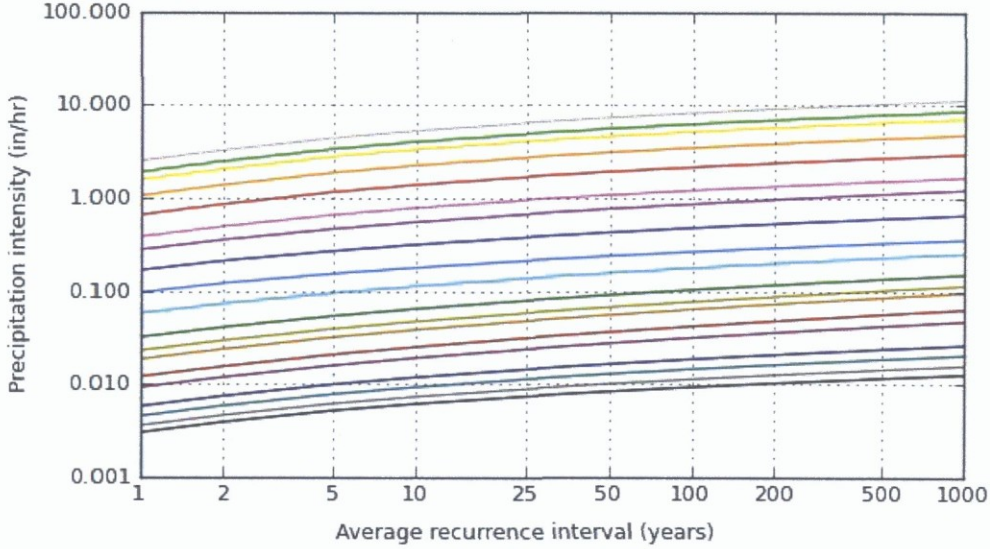
**PF graphical**



PDS-based intensity-duration-frequency (IDF) curves  
 Latitude: 33.6574°, Longitude: -111.8661°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-day
20-day
30-day
45-day
60-day

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Maps & aerials

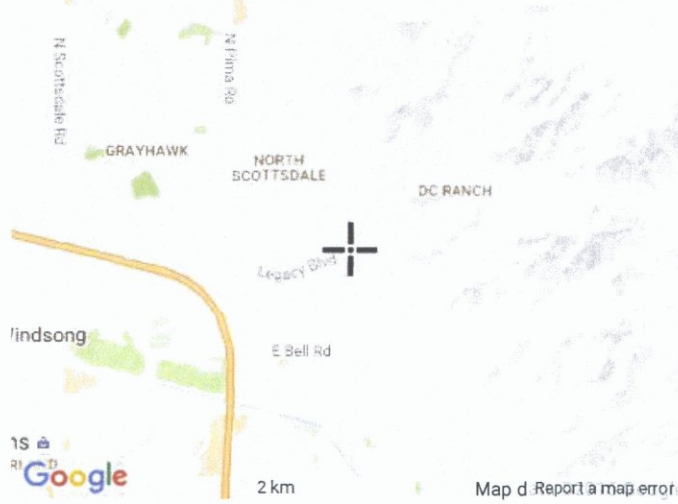
Small scale terrain



### Large scale terrain



### Large scale map



### Large scale aerial



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**Runoff Coefficients for use with Rational Method**



**Project: Sterling at Silverleaf "C" Value Summary**

Basin ID	Basin Area		Streets		Open Space			Sub-Basin Weighted "C" Values for Peak Flow		Flows to Next Basin ID	Combined Basins Weighted "C" Values for Peak Flow			
			Area (sf)	"C" Value	Area (sf)	"C" Value								
	10 & 100 Year	10 Year		100 Year										
	0.950	0.425		0.550		10 Year	100 Year							
Area (ac)	Area (sf)									Area (sf)	Area (ac)	10 Year	100 Year	
A1	0.49	21296	6691	0.950	14606	0.425	0.550	0.590	0.676	0.000	21296	0.49	0.590	0.676
A2	0.27	11931	811	0.950	11120	0.425	0.550	0.461	0.577	Grate A2	11931	0.27	0.461	0.577
A3	0.27	11766	7227	0.950	4538	0.425	0.550	0.748	0.796	Grate A3	11766	0.27	0.748	0.796
A4	0.19	8451	2536	0.950	5915	0.425	0.550	0.583	0.670	Grate A4	8451	0.19	0.583	0.670
A5	0.13	5785	3736	0.950	2049	0.425	0.550	0.764	0.808	Grate A3	5785	0.13	0.764	0.808
A6	0.08	3611	739	0.950	2873	0.425	0.550	0.532	0.632	0.000	3611	0.08	0.532	0.632
A7	0.26	11430	7564	0.950	3866	0.425	0.550	0.772	0.815	CBA7	11430	0.26	0.772	0.815
A8	0.27	11670	8269	0.950	3401	0.425	0.550	0.797	0.833	CBA8	11670	0.27	0.797	0.833
A9a	0.15	6351	1158	0.950	5193	0.425	0.550	0.521	0.623	Grate A9a	6351	0.15	0.521	0.623
A10	0.15	6464	197	0.950	6268	0.425	0.550	0.441	0.562	Grate A10	6464	0.15	0.441	0.562
A11	0.10	4326	703	0.950	3623	0.425	0.550	0.510	0.615	Grate A11	4326	0.10	0.510	0.615
A12	0.17	7471	802	0.950	6669	0.425	0.550	0.481	0.593	Grate A12	7471	0.17	0.481	0.593
A13	0.32	13848	3072	0.950	10776	0.425	0.550	0.541	0.639	Grate A13	13848	0.32	0.541	0.639
A14	0.17	7192	2489	0.950	4703	0.425	0.550	0.607	0.688	Grate A14	7192	0.17	0.607	0.688
A15	0.15	6660	754	0.950	5906	0.425	0.550	0.484	0.595	Grate A15	6660	0.15	0.484	0.595
B1	0.16	7009	7009	0.950	0	0.425	0.550	0.950	0.950	MH A16	7009	0.16	0.950	0.950
B2	0.16	7009	7009	0.950	0	0.425	0.550	0.950	0.950	MH A17	7009	0.16	0.950	0.950
B3	0.33	14275	14275	0.950	0	0.425	0.550	0.950	0.950	MH A1	14275	0.33	0.950	0.950
B4	0.16	7009	7009	0.950	0	0.425	0.550	0.950	0.950	Grate A4	7009	0.16	0.950	0.950
B5	0.16	7009	7009	0.950	0	0.425	0.550	0.950	0.950	MHA9	7009	0.16	0.950	0.950
B6	0.33	14275	14275	0.950	0	0.425	0.550	0.950	0.950	MHB6	14275	0.33	0.950	0.950
B7	0.33	14275	14275	0.950	0	0.425	0.550	0.950	0.950	MHA13	14275	0.33	0.950	0.950
B8	0.33	14275	14275	0.950	0	0.425	0.550	0.950	0.950	Grate A15	14275	0.33	0.950	0.950
A16	0.15	6456	2384	0.950	4072	0.425	0.550	0.619	0.698	0.000	6456	0.15	0.619	0.698
A17	0.29	12650	4573	0.950	8077	0.425	0.550	0.615	0.695	0.000	12650	0.29	0.615	0.695
A18	0.58	25395	2318	0.950	23077	0.425	0.550	0.473	0.587	CBA18	25395	0.58	0.473	0.587
A9b	0.29	12476	1155	0.950	11320	0.425	0.550	0.474	0.587	Grate A9b	12476	0.29	0.474	0.587





**Project: Sterling at Silverleaf "C" Value Summary**

Basin ID	Basin Area		Streets		Open Space			Sub-Basin Weighted "C" Values for Peak Flow		Flows to Next Basin ID	Combined Basins Weighted "C" Values for Peak Flow			
			Area (sf)	"C" Value	Area (sf)	"C" Value								
	10 & 100 Year	10 Year		100 Year										
	0.950	0.425		0.550		10 Year	100 Year							
Area (ac)	Area (sf)								Area (sf)	Area (ac)	10 Year	100 Year		
CBA7	0.00	0	0	0.950	0	0.425	0.550	--	--	CBA8	11430	0.26	0.772	0.815
CBA8	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A10	23100	0.53	0.785	0.824
Grate A10	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A11	29564	0.68	0.710	0.767
MHB6	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A11	43094	0.99	0.815	0.847
Grate A11	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A13	76984	1.77	0.757	0.803
Grate A12	0.00	0	0	0.950	0	0.425	0.550	--	--	MHA13	7471	0.17	0.481	0.593
MHA13	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A13	21745	0.50	0.789	0.827
Grate A13	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A14	112576	2.58	0.737	0.788
Grate A14	0.00	0	0	0.950	0	0.425	0.550	--	--	EXMH1	119768	2.75	0.729	0.782
Grate A15	0.00	0	0	0.950	0	0.425	0.550	--	--	EXMH1	20935	0.48	0.802	0.837
Grate A2	0.00	0	0	0.950	0	0.425	0.550	--	--	MHA3	11931	0.27	0.461	0.577
MHA3	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A3	11931	0.27	0.461	0.577
Grate A3	0.00	0	0	0.950	0	0.425	0.550	--	--	MH A17	29481	0.68	0.635	0.710
MH A17	0.00	0	0	0.950	0	0.425	0.550	--	--	Ex. Stub 2	36490	0.84	0.695	0.756
CBA18	0.00	0	0	0.950	0	0.425	0.550	--	--	MHA18	25395	0.58	0.473	0.587
Grate A4	0.00	0	0	0.950	0	0.425	0.550	--	--	Grate A9a	15459	0.35	0.749	0.797
Grate A9a	0.00	0	0	0.950	0	0.425	0.550	--	--	MHA9	21810	0.50	0.683	0.746
MHA9	0.00	0	0	0.950	0	0.425	0.550	--	--	MHB6	28819	0.66	0.748	0.796
Grate A9b	0.00	0	0	0.950	0	0.425	0.550	--	--	Exist. Stub 1	12476	0.29	0.474	0.587
MH A1	0.00	0	0	0.950	0	0.425	0.550	--	--	Ex. CB Stub	14275	0.33	0.950	0.950
MH A16	0.00	0	0	0.950	0	0.425	0.550	--	--	Exist. Stub 3	7009	0.16	0.950	0.950







# Project: Sterling at Silverleaf

# Drainage Basin Summary

Basin ID or Concentration Point	Area (acres)	Length (feet)	USGE	DSGE	Slope (ft/mi)	Kb		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year							
A7	0.26	314.00	1727.40	1713.40	0.0446	0.044	Q (cfs)	0.7	0.9	1.1	1.4	1.6	1.8							
							Primary Calculation: Curb Inlet	C	0.772	0.772	0.772	0.811	0.850	0.815						
							Secondary Calculation: 0	CA (ac)	0.52	0.70	0.83	1.12	1.39	1.44						
							Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0						
							Flows to Next Basin ID: CBA7	I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240						
							A8	0.27	329.12	1727.40	1712.60	0.0450	0.044	Q (cfs)	0.7	0.9	1.1	1.5	1.7	1.8
														Primary Calculation: Curb Inlet	C	0.797	0.797	0.797	0.837	0.877
Secondary Calculation: 0	CA (ac)	0.56	0.76	0.91	1.21	1.52								1.53						
Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0								5.0						
Flows to Next Basin ID: CBA8	I (in/hr)	3.290	4.440	5.320	6.470	7.360								8.240						
A9a	0.15	140.04	1728.90	1719.00	0.0707	0.045								Q (cfs)	0.2	0.3	0.4	0.5	0.6	0.7
														Primary Calculation: 0	C	0.521	0.521	0.521	0.547	0.573
							Secondary Calculation: 0	CA (ac)	0.13	0.18	0.21	0.28	0.35	0.47						
							Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0						
							Flows to Next Basin ID: Grate A9a	I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240						
							A10	0.15	119.29	1717.00	1711.00	0.0503	0.045	Q (cfs)	0.2	0.3	0.3	0.4	0.5	0.7
														Primary Calculation: 0	C	0.441	0.441	0.441	0.463	0.485
Secondary Calculation: 0	CA (ac)	0.09	0.13	0.15	0.21	0.26								0.39						
Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0								5.0						
Flows to Next Basin ID: Grate A10	I (in/hr)	3.290	4.440	5.320	6.470	7.360								8.240						
A11	0.10	97.43	1717.00	1715.00	0.0205	0.046								Q (cfs)	0.2	0.2	0.3	0.3	0.4	0.5
														Primary Calculation: 0	C	0.510	0.510	0.510	0.536	0.561
							Secondary Calculation: 0	CA (ac)	0.09	0.11	0.14	0.18	0.23	0.31						
							Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0						
							Flows to Next Basin ID: Grate A11	I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240						
							A12	0.17	246.10	1712.00	1705.80	0.0252	0.045	Q (cfs)	0.3	0.4	0.4	0.6	0.7	0.8
														Primary Calculation: 0	C	0.481	0.481	0.481	0.505	0.529
Secondary Calculation: 0	CA (ac)	0.13	0.18	0.21	0.28	0.35								0.50						
Storage: 0	Tc (min)	5.0	5.0	5.0	5.0	5.0								5.0						
Flows to Next Basin ID: Grate A12	I (in/hr)	3.290	4.440	5.320	6.470	7.360								8.240						







# Project: Sterling at Silverleaf

# Drainage Basin Summary

Basin ID or Concentration Point	Area (acres)	Length (feet)	USGE	DSGE	Slope (ft/mi)	Kb		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
A17	0.29	65.10	1728.90	1718.80	0.1551	0.043	Q (cfs)	0.6	0.8	0.9	1.2	1.4	1.7
			Primary Calculation:	0			C	0.615	0.615	0.615	0.646	0.676	0.695
			Secondary Calculation:	0			CA (ac)	0.36	0.49	0.58	0.78	0.98	1.15
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	0			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
A18	0.58	79.22	1729.00	1728.00	0.0126	0.041	Q (cfs)	0.9	1.2	1.5	1.9	2.2	2.8
			Primary Calculation:	0			C	0.473	0.473	0.473	0.497	0.520	0.587
			Secondary Calculation:	0			CA (ac)	0.43	0.58	0.69	0.93	1.16	1.65
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	CBA18			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
A9b	0.29	91.07	1723.00	1721.00	0.0220	0.043	Q (cfs)	0.4	0.6	0.7	0.9	1.1	1.4
			Primary Calculation:	0			C	0.474	0.474	0.474	0.497	0.521	0.587
			Secondary Calculation:	0			CA (ac)	0.21	0.29	0.34	0.46	0.57	0.81
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	Grate A9b			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
CBA7	0.26	314.00	1727.40	1713.40	0.0446	0.044	Q (cfs)	0.7	0.9	1.1	1.4	1.6	1.8
			Primary Calculation:	0			C	0.772	0.772	0.772	0.811	0.850	0.815
			Secondary Calculation:	0			CA (ac)	0.52	0.70	0.83	1.12	1.39	1.44
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	CBA8			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
CBA8	0.53	329.12	1727.40	1712.60	0.0450	0.042	Q (cfs)	1.4	1.8	2.2	2.8	3.4	3.6
			Primary Calculation:	0			C	0.785	0.785	0.785	0.824	0.863	0.824
			Secondary Calculation:	0			CA (ac)	1.07	1.45	1.74	2.33	2.91	2.97
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	Grate A10			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
Grate A10	0.68	329.12	1727.40	1711.00	0.0498	0.041	Q (cfs)	1.6	2.1	2.6	3.3	3.9	4.3
			Primary Calculation:	0			C	0.710	0.710	0.710	0.745	0.781	0.767
			Secondary Calculation:	0			CA (ac)	1.12	1.52	1.82	2.44	3.04	3.29
			Storage:	0			Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID:	Grate A11			I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240

# Project: Sterling at Silverleaf

# Drainage Basin Summary

Basin ID or Concentration Point	Area (acres)	Length (feet)	USGE	DSGE	Slope (ft/mi)	Kb		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
MHB6	0.99	190.41	1728.90	1728.00	0.0047	0.040	Q (cfs)	2.6	3.6	4.3	5.5	6.5	6.9
			Primary Calculation: 0				C	0.815	0.815	0.815	0.855	0.896	0.847
			Secondary Calculation: 0				CA (ac)	2.09	2.90	3.49	4.68	5.85	5.85
			Storage: 0				Tc (min)	5.8	5.1	5.0	5.0	5.0	5.0
			Flows to Next Basin ID: Grate A11				I (in/hr)	3.178	4.419	5.320	6.470	7.360	8.240
Grate A11	1.77	329.12	1728.90	1715.00	0.0422	0.038	Q (cfs)	4.4	5.9	7.1	9.1	10.8	11.7
			Primary Calculation: 0				C	0.757	0.757	0.757	0.795	0.833	0.803
			Secondary Calculation: 0				CA (ac)	3.33	4.50	5.39	7.23	9.03	9.39
			Storage: 0				Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID: Grate A13				I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
Grate A12	0.17	246.10	1712.00	1705.80	0.0252	0.045	Q (cfs)	0.3	0.4	0.4	0.6	0.7	0.8
			Primary Calculation: 0				C	0.481	0.481	0.481	0.505	0.529	0.593
			Secondary Calculation: 0				CA (ac)	0.13	0.18	0.21	0.28	0.35	0.50
			Storage: 0				Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID: MHA13				I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
MHA13	0.50	246.10	1728.90	1728.00	0.0037	0.042	Q (cfs)	1.2	1.6	2.0	2.6	3.1	3.4
			Primary Calculation: 0				C	0.789	0.789	0.789	0.828	0.868	0.827
			Secondary Calculation: 0				CA (ac)	0.92	1.29	1.57	2.16	2.73	2.80
			Storage: 0				Tc (min)	7.5	6.6	6.1	5.6	5.3	5.1
			Flows to Next Basin ID: Grate A13				I (in/hr)	2.946	4.137	5.063	6.293	7.252	8.207
Grate A13	2.58	329.12	1728.90	1705.00	0.0726	0.037	Q (cfs)	6.3	8.5	10.1	12.9	15.4	16.8
			Primary Calculation: 0				C	0.737	0.737	0.737	0.774	0.811	0.788
			Secondary Calculation: 0				CA (ac)	4.62	6.23	7.46	10.01	12.50	13.21
			Storage: 0				Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID: Grate A14				I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240
Grate A14	2.75	329.12	1728.90	1699.00	0.0908	0.037	Q (cfs)	6.6	8.9	10.7	13.6	16.2	17.7
			Primary Calculation: 0				C	0.729	0.729	0.729	0.765	0.802	0.782
			Secondary Calculation: 0				CA (ac)	4.81	6.49	7.77	10.42	13.01	13.84
			Storage: 0				Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
			Flows to Next Basin ID: EXMH1				I (in/hr)	3.290	4.440	5.320	6.470	7.360	8.240



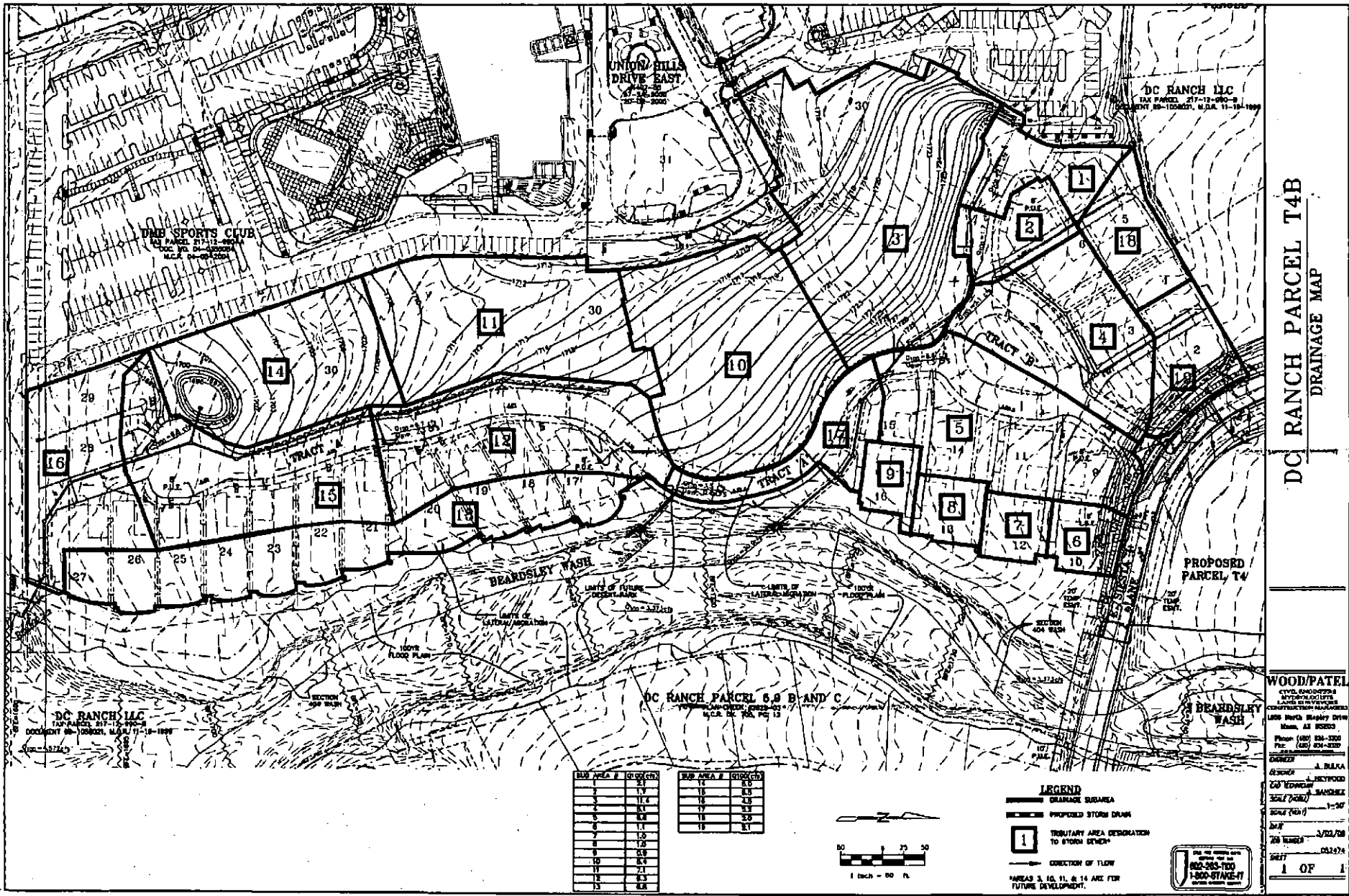






## **APPENDIX B**

### **Background Data**



DC RANCH PARCEL T4B  
DRAINAGE MAP

DC RANCH LLC  
TAX PARCEL 27-12-000-8  
DOCUMENT NO-1000007, M.D.A. 11-19-1999

DC RANCH PARCEL 5, B AND C  
TAX PARCEL 27-12-000-8  
DOCUMENT NO-1000007, M.D.A. 11-19-1999

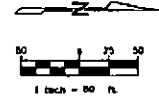
DC RANCH LLC  
TAX PARCEL 27-12-000-8  
DOCUMENT NO-1000007, M.D.A. 11-19-1999

PROPOSED  
PARCEL T4

SUB AREA #	AREA (SQ. FT.)
1	2.1
2	1.7
3	11.4
4	0.1
5	0.8
6	1.1
7	1.5
8	0.8
9	1.1
10	0.7
11	0.3
12	0.3
13	0.8

SUB AREA #	AREA (SQ. FT.)
14	0.8
15	0.3
16	2.9
17	0.3
18	2.0
19	0.1

**LEGEND**  
 [Symbol] DRAINAGE BASIN  
 [Symbol] PROPOSED STORM DRAIN  
 [Symbol] TRIBUTARY AREA DESIGNATION TO STORM DETENTION  
 [Symbol] DIRECTION OF FLOW  
 AREAS 3, 10, 11, & 14 ARE FOR FUTURE DEVELOPMENT.



**WOOD/PATEL**  
 CIVIL ENGINEERING  
 1000 NORTH BRADLEY DRIVE  
 SUITE 200  
 WASHINGTON, DC 20005  
 Phone (202) 834-2200  
 Fax (202) 834-2200  
 PROJECT NO. 03-2474  
 SHEET NO. 1 OF 1



**PLATE 1**

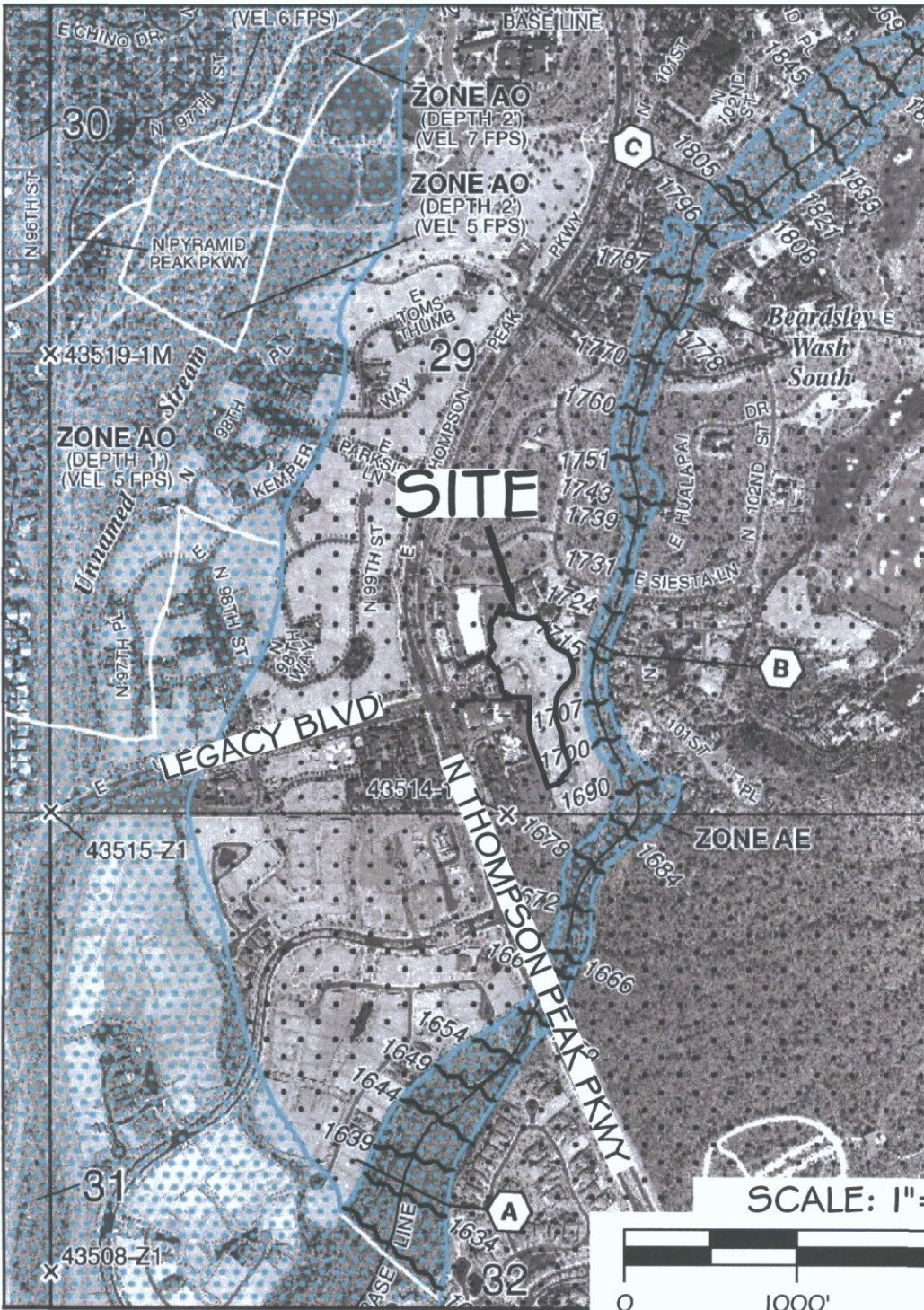
**Vicinity Map**



**PLATE 2**

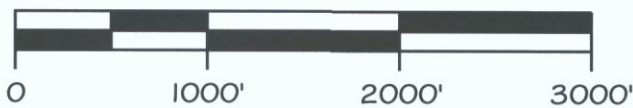
**Effective FIRM Panel**





North

SCALE: 1" = 1000'



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MARICOPA COUNTY,**  
**ARIZONA**  
**AND INCORPORATED AREAS**

**PANEL 1340 OF 4425**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)  
**CONTAINS:**  
**COMMUNITY**                    **NUMBER**    **PANEL**    **SUFFIX**  
 SCOTTSDALE, CITY OF            045012    1340        L

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
**04013C1340L**  
**MAP REVISED**  
**OCTOBER 16, 2013**

Federal Emergency Management Agency

**STERLING AT**  
**SILVERLEAF**  
 SCOTTSDALE, ARIZONA  
**PLATE 2 - FEMA MAP**



3420 E. Shea Boulevard, Suit 156 · Phoenix, Arizona 85028  
 Ph 602-396-5700 · Fax 602-396-5701 · www.LD-Team.com

**PROJECT No:** 16TNHIO2  
**DATE:** 09/12/2016





**PLATE 3**  
**Drainage Areas**



**PLATE 4**  
**Drainage Infrastructure Exhibit**

**Exterior Building Color & Material Samples**  
**Color Drawdowns**  
**Archaeological Resources**  
**Airport Vicinity Development Checklist**  
**Parking Study**  
**Trip Generation Comparison**  
**Parking Master Plan**





# STERLING AT SILVERLEAF SCOTTSDALE, ARIZONA

Lighting Fixture Specification Manual  
November 15, 2016

Project #103990-13



**STERLING AT SILVERLEAF  
GENERAL NOTES**

01. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A LIGHTING SYSTEM WHICH IS COMPLETE AND OPERATIONAL. ALL MATERIALS AND EQUIPMENT NECESSARY TO ACCOMPLISH THIS INTENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SUBSTITUTIONS TO SPECIFIED LIGHTING AND CONTROL EQUIPMENT SHALL NOT BE PERMITTED WITHOUT PRIOR REVIEW AND WRITTEN APPROVAL OF CREATIVE DESIGNS IN LIGHTING.
02. APPLICABLE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE (NEC) AND STATE AND LOCAL CODES SHALL GOVERN AND DETERMINE THE MINIMUM STANDARD OF WORK. IN THE EVENT OF CONFLICT BETWEEN THIS DRAWING AND THE APPLICABLE CODE, THE CODE SHALL PREVAIL AND THE INSTALLATION SHALL BE MADE IN CONFORMANCE WITH THE CODE.
03. EXCEPT WHERE SPECIFICALLY NOTED, CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
04. ALL WIRE SHALL BE COPPER.
05. ELECTRICAL CONTRACTOR SHALL PROVIDE PRIMARY AND SECONDARY OVERCURRENT PROTECTION FOR ALL 12-VOLT AND 24-VOLT REMOTE TRANSFORMERS AND LED DRIVERS. ELECTRICAL CONTRACTOR TO SIZE ALL SECONDARY WIRING FOR REMOTE TRANSFORMERS / DRIVERS TO PREVENT A VOLTAGE DROP OF MORE THAN 1 VOLT. FINAL LOCATION OF ALL REMOTE TRANSFORMERS / DRIVERS TO BE VERIFIED IN THE FIELD BY GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE.
06. ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL LIGHTING EQUIPMENT WITH THE GENERAL CONTRACTOR AND ANY APPLICABLE SUB-CONTRACTOR (I.E. FRAMING, MECHANICAL, CABINETRY, ETC.) PRIOR TO ROUGH-IN.
07. ALL FIXTURE LOCATIONS TO BE VERIFIED AFTER ROUGH-IN INSTALLATION, **PRIOR TO DRYWALL**, BY LIGHTING DESIGNER. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE THIS EFFORT. THE ELECTRICAL CONTRACTOR MAY BE HELD RESPONSIBLE FOR MOVING FIXTURES DURING FINAL LIGHTING INSPECTIONS IF THIS PROCESS DOES NOT TAKE PLACE.
08. ALL TYPE 'Z' DECORATIVE FIXTURES TO BE SUPPLIED BY OWNER, ASSEMBLED AND INSTALLED BY ELECTRICAL CONTRACTOR. VERIFY FINAL LOCATIONS AND MOUNTING HEIGHTS WITH OWNER AND/OR INTERIOR DESIGNER.
09. **ALL RECESSED TRIMS AND/OR TRIM RINGS SHALL BE PAINTED TO MATCH COLOR OF CEILING (INTERIOR AND EXTERIOR).**
10. ALL LAMPS SHALL BE **GENERAL ELECTRIC**, UNLESS OTHERWISE SPECIFIED. ALL LED MR16 LAMPS SHALL BE **SORAA VIVID 3 2700K SERIES** OR **BRILLIANCE LED** IN SEALED OUTDOOR RATED FIXTURES, UNLESS OTHERWISE SPECIFIED. IMPROPER LAMPS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
11. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH 100 PERCENT SOLID STATE ELECTRONIC BALLASTS, UNLESS OTHERWISE SPECIFIED. FIXTURES WITH MAGNETIC OR HYBRID ELECTRONIC BALLASTS WILL BE REJECTED AND REPLACED AT CONTRACTOR'S EXPENSE.
12. ELECTRICAL CONTRACTOR SHALL ALLOW TWO (2) EVENINGS (4 HOUR MINIMUM EACH) AND PROVIDE ALL NECESSARY LADDERS TO ASSIST LIGHTING DESIGNER DURING FINAL AIM AND FOCUS OF ALL ADJUSTABLE LIGHTING FIXTURES.
13. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL COLORED LENSES AND ACCESSORIES DURING LAMP INSTALLATION. MR16 LAMP DESIGN GUIDE TO BE ISSUED TO FIELD BY LIGHTING DESIGNER AFTER ELECTRICAL ROUGH-IN AND PRIOR TO ELECTRICAL TRIM. VERIFY LENS COLOR OR ACCESSORY WITH **LIGHTING PLAN AND/OR LIGHTING FIXTURE SCHEDULE**.
14. FOR SPECIFIC WIRING INFORMATION AND CIRCUITING REFER TO THE ELECTRICAL PLANS.
15. THE GENERAL CONTRACTOR AND THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR REVIEWING THE INFORMATION ON ALL OF THESE PLANS. IF THERE ARE ERRORS OR OMISSIONS OR QUESTIONS CONCERNING THESE PLANS PLEASE CALL CREATIVE DESIGNS IN LIGHTING FOR CLARIFICATION.
16. ALL SUBMERSIBLE LIGHTING FIXTURES FOR POOLS, SPAS, AND FOUNTAINS SHALL BE AS SPECIFIED BY THE POOL CONSULTANT. THESE FIXTURES ARE TO BE PROVIDED BY THE POOL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR PER NEC REQUIREMENTS. THE SCOPE FOR EACH TRADE SHALL BE COORDINATED BY THE GENERAL CONTRACTOR FOR A COMPLETE AND OPERATIONAL SYSTEM.



STERLING AT SILVERLEAF  
LIGHTING FIXTURE SCHEDULE

Type	Manufacturer	Description	Finish	Dimming	Watts	Volts	Lamp
BL	AAL	PROB-Y5-3030-DB-DSC-RD	Bronze	0-10v	43 w	120-277 v	LED: 3000K INTEGRAL TO FIXTURE
C	LITON	LH99IC-A [LH99-A=non-ic] / LREBLD402-CW-T30-SQG4-MED fixed led downlight with 4" wet location rated cone trim	Clear Paintable Ring	MLV	11 w	120 v	LED: 3000K I 85+CRI INTEGRAL TO FIXTURE
D	HALO	H5ICAT [H5T=Non-IC] / ML5612930 / 592H 6" recessed ic airtight lensed downlight with led module	Haze Paintable Ring	MLV	13 w	120 v	LED: 3000K I 90+CRI INTEGRAL TO FIXTURE
P	NERI / AMERON	DC ranch standard pedestrian pole to match existing: refer to cutsheet for complete specification. Neri 800-PMMA-GHIT-42WPLT (luminaire) with 4215-100MOD (hanging bracket), and SEQ-4 (tapered direct burial square Ameron pole in natural grey). Center of lens at 10'2" above grade. 13' pedestrian pole with cast aluminum lantern with custom honey swirl translucent glass lenses	Grey Luminaire Grey Pole	Fluorescent	42 w	120-277 v	F42TBX/830/A/ECO GE # 97634
SL	WE-EF	615-1421-277V-RAL8019 / 615-9325 9.8" x 3.6" horizontal orientation recessed steplight with louvered faceplate	Bronze	NON-DIM	8 w	277 v	LED: 3000K INTEGRAL TO FIXTURE
TD	B-K LIGHTING	RM-MR-0-BZW-12-11 suspended downlight with mounting ring, glare louver, and led flood lamp	Bronze	MLV	4 w	12vAC	Brilliance LED# MR16-4W-3000-60 (flood)
TX	B-K LIGHTING	TR300-277 300 watt low voltage magnetic transformer for 12vAC fixtures	Stainless Steel	---	300 w	277 v	---
WP	LITHONIA	WSTM LED-2A-30K-120-DDBXD 4 foot 2-lamp fluorescent striplight with wireguard and 36" chain hanger	Bronze	NON-DIM	22 w	120 v	LED: 3000K I 80+CRI INTEGRAL TO FIXTURE
ZW	---	DECORATIVE WALL LIGHT FIXTURES AND LAMPS TO BE FURNISHED BY OWNER (refer to plans for locations) fixtures to be assembled and installed by electrical contractor	---	---	---	---	---

NOTES:

- Electrical Contractor to determine fixture housing rating (IC, Non-IC, Remodel or Shallow) unless otherwise noted.
- LED specifications provided for bidding purposes only. Electrical Contractor shall contact Creative Designs in Lighting for updated LED specifications prior to order.
- No substitutions permitted without prior approval from Creative Designs in Lighting.



# Providence® LED™ – Bollard PROB

TYPE **BL**

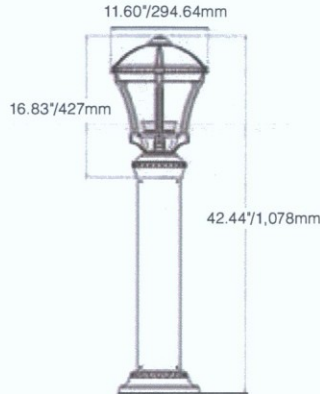
**PROB-Y5-3030-DB-DSC-RD**



## FEATURES

- Reliable uniform illumination
- Types II, III, IV and V distributions
- 3000K, 4000K, 5000K CCT
- 0-10V dimmable
- 20KV/10kA surge suppression
- Thermal Protection
- 13 standard powder coat finishes
- Die-Cast housing
- Full Cutoff optical system

## SPECIFICATIONS

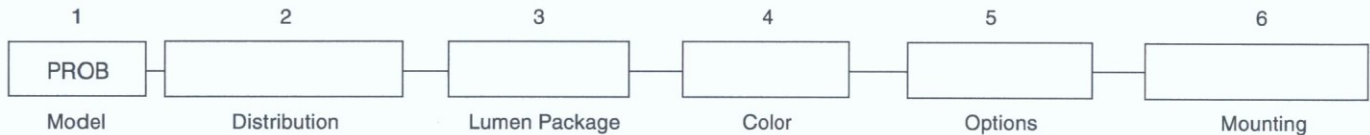


- Diameter: 11.60" / 294.64 mm
- Height: 42.44" / 1,078 mm
- Weight: 27 lbs / 12kg
- IP Rating: 66

BOTTOM VIEW



## ORDERING INFORMATION



### 1. MODEL

PROB Providence Bollard LED

### 2. DISTRIBUTION

Y2 Type 2  
Y3 Type 3  
Y4 Type 4  
Y5 Type 5

### 3. LUMEN PACKAGE

3050 5000K CCT, 43 watts  
3040 4000K CCT, 43 watts  
3030 3000K CCT, 43 watts  
2050 5000K CCT, 25 watts  
2040 4000K CCT, 25 watts  
2030 3000K CCT, 25 watts

### 4. COLOR

WH Arctic White  
BL Black  
BLT Matte Black  
DB Dark Bronze  
DGN Dark Green  
TT Titanium  
WDB Weathered Bronze  
MDB Bronze Metallic  
VBU Verde Blue  
CRT Corten  
MAL Matte Aluminum  
MG Medium Grey  
AGN Antique Green  
LG Light Grey  
RAL Premium Color  
CUSTOM \*\* Contact Factory

### 5. OPTIONS

FS1 Fusing  
DSC Dark Sky Cap  
PFC Brass Painted Finial  
BPS Brass Painted Struts  
LDL Lightly Diffused Lens

### 6. MOUNTING

FI Fluted Shaft 5" DIA.  
RD Round Shaft 5" DIA.  
PM Pier Mount



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JOB \_\_\_\_\_  
TYPE \_\_\_\_\_  
NOTES \_\_\_\_\_

LUMINAIRE PERFORMANCE

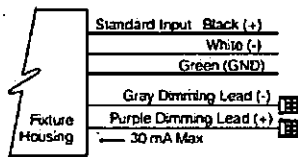
Light Engine	Lensing	Distribution	Ordering Code	Ordering Code												Average System Watts			
				5000K CCT					4000K CCT					3000K CCT					
				Delivered Lumens	Efficacy (Lm/W)	BUG Rating			Delivered Lumens	Efficacy (Lm/W)	BUG Rating			Delivered Lumens	Efficacy (Lm/W)		BUG Rating		
				3050					3040					3030					
3000 Series	Clear Lens (Standard)	TYPE 2	Y2	3238	75	1	0	1	3247	76	1	0	1	2975	69	1	0	1	43
		TYPE 3	Y3	3261	75	1	0	1	3270	76	1	0	1	3038	70	1	1	1	
		TYPE 4	Y4	3253	75	1	0	1	3262	76	1	0	1	2988	69	1	0	1	
	TYPE 5	Y5	3148	73	2	0	1	3157	73	2	0	1	2892	67	2	0	1		
	Lightly Diffused Lens	TYPE 2	Y2...LDL	2386	56	1	1	1	2342	54	1	1	1	2092	49	1	1	1	
		TYPE 3	Y3...LDL	2385	57	1	1	1	2341	56	1	1	1	2091	50	1	1	1	
TYPE 4		Y4...LDL	2295	53	1	2	1	2252	52	1	2	1	2012	47	1	2	1		
TYPE 5	Y5...LDL	2234	52	1	1	1	2193	51	1	1	1	1959	46	1	1	1			
				2050					2040					2030					
2000 Series	Clear Lens (Standard)	TYPE 2	Y2	1951	78	1	0	1	1957	78	1	0	1	1792	71	1	0	1	25
		TYPE 3	Y3	1958	78	1	0	1	1970	78	1	0	1	1830	73	1	0	1	
		TYPE 4	Y4	1960	78	1	0	1	1957	78	1	0	1	1793	71	1	0	1	
	TYPE 5	Y5	1889	76	1	0	1	1894	76	1	0	1	1735	69	1	0	1		
	Lightly Diffused Lens	TYPE 2	Y2...LDL	1387	56	1	1	1	1361	54	1	1	1	1216	49	1	1	1	
		TYPE 3	Y3...LDL	1386	57	1	1	1	1361	56	1	1	1	1216	50	1	1	1	
TYPE 4		Y4...LDL	1334	53	1	2	1	1309	52	1	2	1	1170	47	1	2	1		
TYPE 5	Y5...LDL	1299	52	1	1	1	1275	51	1	1	1	1139	46	1	1	1			

ELECTRICAL CHARACTERISTICS

Configuration	LED Drive mA	System Watts	Driver							Inrush Current				Dimming	
			Line Voltage		Amps AC		Min. Power Factor	Max THD (%)	Operating Temp. Range	120V		277V		Dimming Range	Source/Sink Current
			VAC	HZ	120	277				I <sub>peak</sub> (A)	I <sub>peak</sub> (A)				
3050	3000 series	42	120-277	50/60	0.35	0.15	≥9	20	-40°C To +55°C	21	160 μS	49	160 μS	10% TO 100%	1mA
3040															
3020															
2050	2000 series	25	120-277	50/60	0.21	0.09	≥9	20	-40°C To +55°C	21	160 μS	49	160 μS	10% TO 100%	1mA
2040															
2020															

WIRING LEADS

Luminaires shall be provided with 0-10 pulse and gray dimming leads.



LED COLOR

	Ordering Code		
	3K	4K	5K
CCT Average	3000K	4000K	5000K
CRI Minimum	70	70	70
S/P Ratio	1.2	1.5	1.8

Consult factory for Amber, Turtle Friendly, Gulf Coast and Observatory applications.

TM-21 LIFETIME CALCULATION

Optical System	Ordering Code	Ambient Environment °C	Projected Lumen Maintenance (% vs. Khrs)						Reported L70
			15	25	50	TM-21* 60	100		
MicroCore	32LED	15	100%	99%	99%	98%	97%	>96Khrs	
		25	99%	99%	98%	95%			
		40	98%	97%	94%	89%			



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JOB \_\_\_\_\_  
 TYPE \_\_\_\_\_  
 NOTES \_\_\_\_\_



**SPECIFICATIONS**

**HOUSING**

- Luminaire shall have discrete optical and gear compartments that do not share any physical housings.
- All housing components shall be die-cast aluminum, sealed with continuous silicone rubber gaskets.
- Standard configurations shall have a clear flat tempered glass lens
- All internal and external hardware shall be stainless steel.
- Optical bezel finish shall match the luminaire housing.

**OPTICAL**

- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features.
- LED optics shall be clear injection molded PMMA acrylic.
- MCPCB and optic shall be sealed to a die-cast anodized aluminum heat sink with an injection molded silicone rubber gasket. IP66.

**ELECTRICAL**

- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J.
- Drivers shall be U.L. recognized with an inrush current maximum of <20.0 Amps maximum at 230VAC.
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems, approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV.

**SERVICING**

- Luminaire shall have tool-less service access to the gear compartment. Driver and surge suppressor shall be mounted to a prewired tray with quick disconnects that may be removed from the gear compartment.

**MOUNTING**

- Fixture shall slip over two ½" x 10" x 2" anchor bolts supported by hex nuts and washers to level fixture. Provision for water drainage at footing is recommended.
- One-piece cast aluminum arms accept the standard 3" slip fitter on the Providence fixture.
- Arms are prewired with quick disconnects.
- Wall mounted arms do not include wall mounting hardware.
- Pole mounted arms use 3/8-16 hardware bolts for attaching to the pole.

**FINISH**

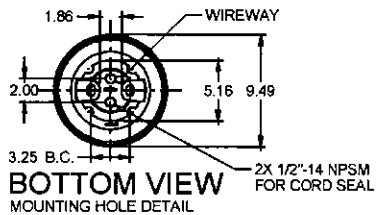
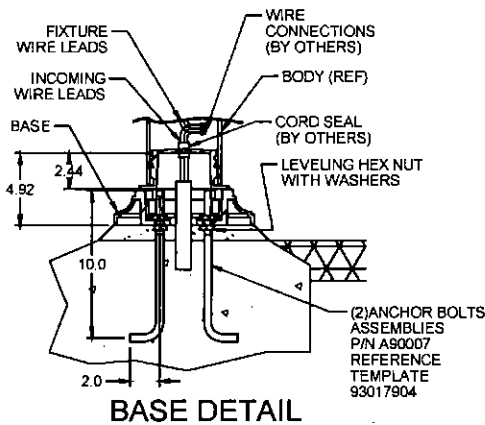
- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

**CERTIFICATION**

- Luminaire shall be listed with ETL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250.

**WARRANTY / TERMS AND CONDITIONS OF SALE**

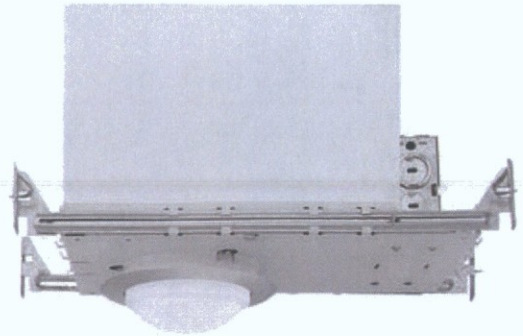
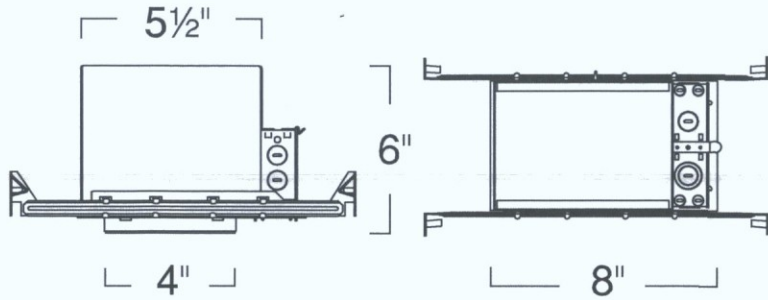
Download: <http://www.hubbellighting.com/resources/warranty/>



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JOB	_____
TYPE	_____
NOTES	_____

## LH99IC - IC DOUBLE WALL HOUSING 4" LINE VOLTAGE HOUSINGS



### SPECIFICATION

120V 50W Max PAR20/PAR30 MED E26  
 40W A19

**Application:** General purpose recessed downlight housing for low to medium height ceilings for residential and light commercial applications. A variety of trims, compatible styles and finishes are available to achieve the desired décor and illumination.

**Housing:** Pre-wired housing adjusts up to a 1 1/4" ceiling thickness. Integral thermal protector to guard against improper lamping and installation. Housing provides an adjustable socket plate which allows for use of different lamp types. Trim is secured with torsion wing springs.

**Mounting:** Housing suitable for new construction installations only, supplied with (2) 24" adjustable hanger bars with 90 degrees repositioning ability. Hanger bars equipped with nail-less install 3/4" serrated barbed studs and with captive nails, for faster and easier secure mounting in wood joists. Set-screws lock into position and prevent shifting after installation. Earthquake structural cable compatible for drop panel ceiling or any other mounting that requires direct support from structural ceilings.

**Socket:** Standard porcelain medium screw base socket with high temperature leads.

**Junction Box :** 16 gauge pre-wired galvanized steel Junction Box, 32 cubic-inch for a maximum of (8) #12 AWG wires. Furnished with (7) 3/4" and (4) Romex knock-outs. Strain clamps to install or remove covers for easy access and ground wire. Equipped with safety standard fitting for flex-conduit.

**Insulation Contact:** IC rated housing rated for direct contact with low to medium density loosefill blown and rolled insulation. For use with high density loosefill blown insulation, reduce rated lamp wattage accordingly (roughly %15-%20).

**Airflow:** Airtight option is designed to restrict air flow from room into plenums in compliance to the WSEC - Washington State Energy Code, (Less than 2.0 CFM -Cubic Feet per Minute). Complies to Title24 air flow requirements (Air-tight).

**Safety Labels:** UL/CUL listed for through-branch wiring (8) No.12 AWG 90°C and suitable for damp locations. NYC approved: Calendar #41937.

Label: UL Listed, cETL Listed

### COMPATIBILITY

 <b>LRELD400</b> 4" ECONOMY LED LENSED RETROFIT (DIMMABLE)	 <b>LR946</b> DECO GLASS-SHIELD (DOME)	 <b>LR994</b> DEEP PHENOLIC BAFFLE
 <b>LR999</b> SHALLOW REFLECTOR	 <b>LRLD4</b> 4" LED REFLECTOR	 <b>LRLD442</b> 4" 120V DECO DOME RETROFIT (NON-DIMMING)
 <b>LRELD443</b> BAFFLE DOME LENS (DIMMABLE)	 <b>LRLD400</b> 4" 12V LED RETROFIT LOW PROFILE TRIM	 <b>LRELD403</b> BAFFLE FLAT LENS (DIMMABLE)
 <b>LRELD442</b> REFLECTOR DOME LENS (DIMMABLE)	 <b>LRLD402</b> 4" 120V BASIC REFLECTOR RETROFIT (NON-DIMMING)	 <b>LRM985</b> ADJUSTABLE METAL BAFFLE
 <b>LR998</b> EYEBALL	 <b>LRELD402</b> REFLECTOR FLAT LENS (DIMMABLE)	 <b>LRLD400</b> 4" 120V LOW PROFILE LED TRIM RETROFIT

Please see website for more compatible items.

### FEATURE:



ORDERING EXAMPLE : LH99IC

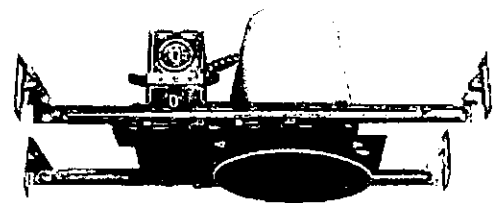
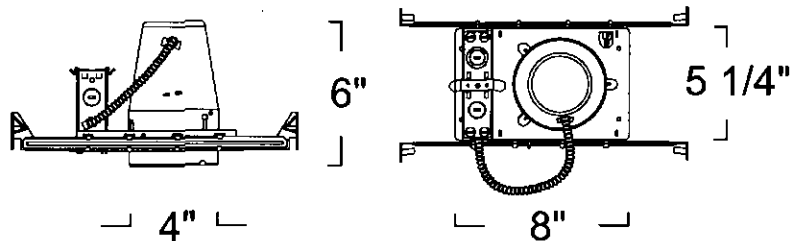
LH99IC	RATING
LH99IC	A :IC-Airtight

ID#: 101

Note: Wattage limitations on compatible items must be met.

## LH99 - STANDARD HOUSING

### 4" LINE VOLTAGE HOUSINGS



### SPECIFICATION

120V 75W Max PAR30/PAR20 MED E26  
40W A19

**Application:** General purpose recessed downlight housing for low to medium height ceilings for residential and light commercial applications. A variety of trims, compatible styles and finishes are available to achieve the desired décor and illumination.

**Housing:** Pre-wired housing adjusts up to a 1 1/4" ceiling thickness. Integral thermal protector to guard against improper lamping and installation. Housing provides an adjustable socket plate which allows for use of different lamp types. Trim is secured with torsion wing springs.

**Mounting:** Housing suitable for new construction installations only, supplied with (2) 24" adjustable hanger bars with 90 degrees repositioning ability. Hanger bars equipped with nail-less install 3/4" serrated barbed studs and with captive nails, for faster and easier secure mounting in wood joists. Set-screws lock into position and prevent shifting after installation. Earthquake structural cable compatible for drop panel ceiling or any other mounting that requires direct support from structural ceilings.

**Socket:** Standard porcelain medium screw base socket with high temperature leads.

**Junction Box :** 16 gauge pre-wired galvanized steel Junction Box, 32 cubic-inch for a maximum of (8) #12 AWG wires. Furnished with (7) 3/4" and (4) Romex knock-outs. Strain clamps to install or remove covers for easy access and ground wire. Equipped with safety standard fitting for flex-conduit.

**Insulation Contact:** Non-IC rated housing must be kept 3" from insulation.

**Airflow:** Airtight option is designed to restrict air flow from room into plenums in compliance to the WSEC - Washington State Energy Code, (Less than 2.0 CFM -Cubic Feet per Minute). Complies to Title24 air flow requirements (Air-tight).

**Safety Labels:** UL/CUL listed for through-branch wiring (8) No.12 AWG 90°C and suitable for damp locations. NYC approved: Calendar #41937.

Label: UL Listed, cETL Listed

### COMPATIBILITY

 <b>LR946</b> DECO GLASS-SHIELD (DOME)	 <b>LR994</b> DEEP PHENOLIC BAFFLE	 <b>LR999</b> SHALLOW REFLECTOR
 <b>LRLD4</b> 4" LED REFLECTOR	 <b>LRELD443</b> BAFFLE DOME LENS (DIMMABLE)	 <b>LRLD400</b> 4" 12V LED RETROFIT LOW PROFILE TRIM
 <b>LRLD442</b> 4" 120V DECO DOME RETROFIT (NON-DIMMING)	 <b>LR934</b> PINHOLE W/ BAFFLE	 <b>LR993</b> PHENOLIC BAFFLE
 <b>LFB2012</b> FIRE BARRIER	 <b>LR43</b> PAR30 WET LOCATION TRIM	 <b>LRELD400</b> 4" ECONOMY LED LENSED RETROFIT (DIMMABLE)
 <b>LRELD403</b> BAFFLE FLAT LENS (DIMMABLE)	 <b>LRELD442</b> REFLECTOR DOME LENS (DIMMABLE)	 <b>LRLD402</b> 4" 120V BASIC REFLECTOR RETROFIT (NON-DIMMING)

Please see website for more compatible items.

### FEATURE:



ORDERING EXAMPLE : LH99A

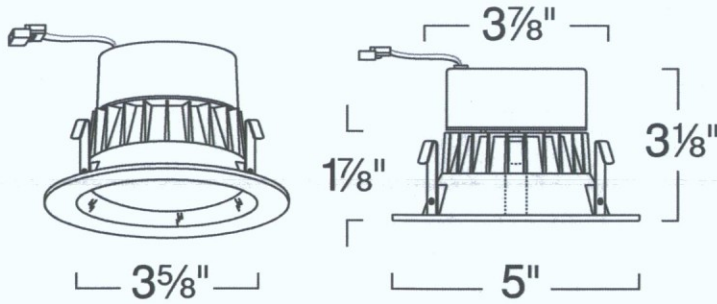
**LH99 | RATING**  
LH99 A :Airtight

ID#: 100

Note: Wattage limitations on compatible items must be met.



## LREBLD402 - REFLECTOR FLAT LENS (DIMMABLE)



### SPECIFICATION

LED/GU24

**Application:** 4" General Purpose LED Trim with GU24 Base is perfect for Retrofit, New Construction and Remodel Applications in low to medium height ceilings. Available Med Base Adapter.

**Mounting:** Mounts into standard 4" General Purpose Recessed housing cans with steel pressure springs mounted on trim to ensure positive retention inside housing. Alternate mounting methods available, consult factory.

**Power Connection:** Comes standard with GU24 socket mounted to top of fixture. Meets CA Title 24 Requirements and other standards restricting the use of Medium base or Bi-Pin Sockets.

**Lumen Maintenance:** Minimum 50,000 hours L70 life based on ANSI TM-21 calculations from LM80 standardized test results.

**Thermal Management:** Effective thermal dissipation facilitated by integral cast-aluminum, finned heat sink design for maximum heat rejection to provide long LED life.

**Driver:** Electronic Direct Current driver mounted on fixture. Comes standard with Incandescent dimming. Smoothly dims down to 5% with standard Incandescent and Low Voltage dimmers.

**Safety Labels:** ETL/CETL listed. UL listed for wet location. NYC approved: Calendar#41937."

**Wet Location:** Suitable for Wet Location Installations.

**Warranty:** Covered by a 5 Year Warranty to be free of defects in materials and craftsmanship. Recommended for applications where ambient temperatures do not exceed 35°C, installations exceeding this temperature will result in reduced LED lamp life and a voided warranty.

**Color Temp:** Available in 2700K, 3000K, 3500K\* and 4000K. Binned according to ANSIC78 377A for color temperature and chromaticity ranges. Consult factory as extended lead times and minimum order quantities apply.

**Adapter:** Only available in Med Base.

**Label:** UL Listed, cETL Listed

### COMPATIBILITY



**LH99ICA-LLF-GU24**  
 NEW CONSTRUCTION HOUSING



**LH99RICA-LLF-GU24**  
 REMODEL HOUSING

Note: Wattage limitations on compatible items must be met.

#### LED Details:

11W 650 Lumen Package  
 Color Temperature: 3,000K  
 Lamp Equivalent: 65W BR30/50 A19

#### Benefit:

- Fully die-cast for long lasting beauty
- Trims are UL listed for wet locations
- Quick Ship Item - Readily Available

2016.4.29

### FEATURE:



ORDERING EXAMPLE : LREBLD402W-T27-SQG4-MED

LREBLD402	FINISH	VOLTAGE	COLOR TEMP	ADAPTER
LREBLD402	<b>W</b> :White Reflector/ White Ring <b>CW</b> :Clear Reflector/ White Ring	<b>Blank</b> :120V <b>UE</b> :120V/277V	<b>-T27</b> :2700K, 85 CRI <b>-T30</b> :3000K, 85 CRI <b>-T35</b> :3500K*, 85 CRI <b>-T40</b> :4000K, 85 CRI <b>-T27-C90</b> :2700K, 90+ CRI	<b>-SQG4-MED</b> :Med Base

\* Special Order Item, Consult factory for stock.



**Description**

The H5ICAT recessed housing is designed for residential and light commercial applications. H5ICAT features full-frame robust construction, feed through listing, Got Nail! bar hangers, and may support the use of higher wattage lamps. The wide variety of trims available allows a number of different lighting effects to be created with one basic housing. The H5ICAT is designed for use in insulated ceilings and may be in direct contact with insulation\*. May be retrofit with compatible Halo LED lighting systems.

Catalog #	<b>H5ICAT [H5T=non-ic] / ML5612930 / 592H</b>	Type	<b>D</b>
Project		Date	
Comments			
Prepared by			

**Specification Features**

**Housing**

- Single wall aluminum housing
- Sealed and gasketed for Air-Tite™ ready installation
- Designed for insulated ceilings in direct contact with insulation\* (May also be installed in non-insulated ceilings)
- Housing adjusts in plaster frame to accommodate up to 1-3/8" ceiling thickness

**Socket Plate**

- Rigid socket plate adjusts and locks without tools for various lamp sizes
- Socket plate and bracket may be removed when using socket supporting trims

**Plaster Frame**

- Galvanized steel construction
- The housing can be removed from plaster frame to provide access to the junction box
- Plaster frame features include:
  - Regressed locking screw positioned for securing hanger bars from below the ceiling
  - Cutouts for easily crimping hanger bars in position
  - Halo name embossed on plaster frame
  - Pre-installed Air-Tite ready ceiling contact gasket

**Got Nail!™ Bar Hanger Bracket**

Bar Hanger Features include:

- Pre-installed nail easily installs installs in regular lumber, engineered lumber and laminated beams
- Safety and guidance system prevents snagging, ensures smooth straight nail penetration and allows bar hangers to be easily removed if necessary
- Automatic leveling flange aligns the housing and lets you hold the housing in place with one hand while driving nails

- Five additional mounting points
- Mounting point on top for hanger wire connection
- Integral T-bar clips snaps onto T-bars - no additional clips required

**q-Channel bars with Pass-N-Thru™**

- q-Channel bars feature an unique inverted "q" interlocking channel for rigidity and stability
- Pass-N-Thru™ feature allows bars to cross-over for tool-less shortening in tight spaces less than 12" without removing from the plaster frame. Push bars together and flex at score hole break points
- Housing can be positioned at any point within 24" joist span
- Bar hangers may be repositioned 90° on the frame

**Slide-N-Side™ Junction Box**

Junction box features include:

- Slide-N-Side™ connectors allow non-metallic sheathed cable for both U.S. and Canada to be installed without tools and without removing knockouts
- Allows wiring connections to be made outside the junction box
- Simply insert the cable directly into the trap after connections are made
- accommodates the following standard non-metallic sheathed cable types: (US) #14/2, #14/3, #12/2, #12/3 (Canada) #14/2, #14/3, #12/2
- Positioned to accommodate straight conduit runs
- Seven 1/2" trade size conduit knockouts with true pry-out slots
- cULus Listed 26 in3 box volume
- Listed for through branch (8) No. 12 AWG branch circuit 90° C conductors through the box

**Quick Connect™**

- Three 4-port push-in "Quick

- Connect" wire nuts included in junction box
- Speed installation and increase reliability
- No additional wire nuts required
- Simply strip and insert supply wires

**Socket**

- Porcelain socket with nickel plated brass screw shell
- Snap-in springs secure socket to socket plate, and may be detached when using socket supporting trims
- Overspray protector included

**Thermal Protector:**

Self resetting thermal protector deactivates fixture if overheating occurs due to improper lamping or misapplied insulation

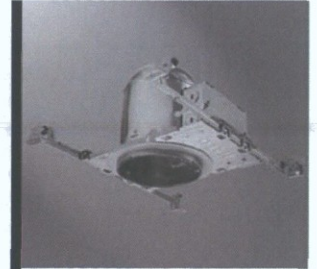
**Trims:**

Halo Fit-All concept offers multiple trim options in a variety of design styles, and functional beam distributions to control beam angle and lumen delivery in accommodating various lamp types including Halogen, CFL and LED

**Compliance**

- cULus Listed 1598 luminaire
- cULus Listed damp location
- cULus Listed for wet location, covered ceiling, with select trims
- cULus Listed for feed through
- cULus Listed for direct contact with insulation and combustible material\*
- Air-Tite code compliant. Certified under ASTM E283; not exceeding 2.0 cfm (0.944 L/s) air leakage rate tested at a 1.57 psf (75 Pa) pressure differential
- RoHS compliant

\*Not to be used in direct contact with spray foam insulation (Consult NEMA LSD57-2013)



**H5ICAT**

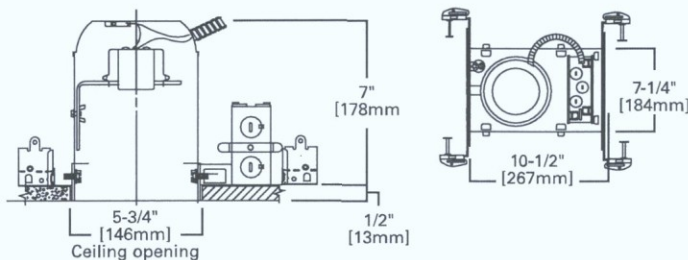
**5" IC, New Construction Housing, 120V**

**FOR USE IN INSULATED CEILINGS**

**FOR DIRECT CONTACT WITH INSULATION\***



**Dimensions**



**Special Features**

- Got Nail!™ bar hangers
- q-Channel bars with Pass-N-Thru™
- Slide-N-Side™ junction box
- Quick Connect™ push wire nuts
- Air-Tite™ code compliant



**Description**

The H5T recessed housing is designed for residential and light commercial applications. H5T features full-frame robust construction, feed through listing, Got Nail! bar hangers, and may support the use of higher wattage lamps. The wide variety of trims available allows a number of different lighting effects to be created with one basic housing. The H5T is designed for use non-insulated ceilings. If insulation is present it must be kept 3" from all sides of the housing. May be retrofit with compatible Halo LED lighting systems.

Catalog #		Type
Project		
Comments		Date
Prepared by		

**Specification Features**

**Housing**

- Single wall die-stamped CRS with white powder coat finish
- Housing adjusts in plaster frame to accommodate up to 1-3/8" ceiling thickness

**Plaster Frame**

- Galvanized steel construction
- The housing can be removed from plaster frame to provide access to the junction box
- Plaster frame features include:
  - Patented regressed locking screw positioned for securing hanger bars from below the ceiling
  - Cutouts for easily crimping hanger bars in position
  - Halo name embossed on plaster frame

**Socket Plate**

- Rigid socket plate adjusts and locks without tools for various lamp sizes
- Socket plate and bracket may be removed when using socket supporting trims
- Overspray protector included

**Got Nail!™ Bar Hanger Bracket**

Bar Hanger Features include:

- Pre-installed nail easily installs into regular lumber, engineered lumber and laminated beams
- Safety and guidance system prevents snagging, ensures smooth straight nail penetration and allows bar hangers to be easily removed if necessary
- Automatic leveling flange aligns the housing and lets you hold the housing in place with one hand while driving nails
- Five additional mounting points
- Mounting point on top for hanger

wire connection

- Integral T-bar clips snaps onto T-bars - no additional clips required

**q-Channel bars with Pass-N-Thru™**

- q-Channel bars feature a unique inverted "q" interlocking channel for rigidity and stability
- Pass-N-Thru™ feature allows bars to cross-over for tool-less shortening in tight spaces less than 12" without removing from the plaster frame. Push bars together and flex at score hole break points
- Housing can be positioned at any point within 24" joist span
- Bar hangers may be repositioned 90° on the frame

**Slide-N-Side™ Junction Box**

Junction box features include:

- Slide-N-Side™ connectors allow non-metallic sheathed cable for both U.S. and Canada to be installed without tools and without removing knockouts
  - Allows wiring connections to be made outside the junction box
  - Simply insert the cable directly into the trap after connections are made
  - accommodates the following standard non-metallic sheathed cable types:
    - (US) #14/2, #14/3, #12/2, #12/3
    - (Canada) #14/2, #14/3, #12/2
  - Positioned to accommodate straight conduit runs
  - Seven 1/2" trade size conduit knockouts with true pry-out slots
  - cULus Listed 26 in3 box volume
  - Listed for through branch (B) No. 12 AWG branch circuit 90° C conductors through the box

**Quick Connect™**

- Three 4-port push-in "Quick Connect" wire nuts included in junction box
- Speed installation and increase reliability
- No additional wire nuts required
- Simply strip and insert supply wires

**Socket**

- Porcelain socket with nickel plated brass screw shell
- Snaps into trim for consistent lamp positioning
- Shipping insert protects socket from overspray

**Thermal Protector**

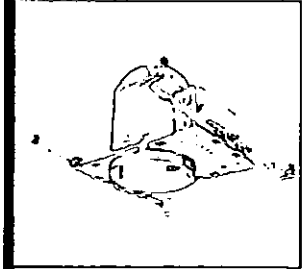
Self resetting thermal protector deactivates fixture if overheating occurs due to improper lamping or misapplied insulation

**Trims**

Halo Fit-All concept offers multiple trim options in a variety of design styles, and functional beam distributions to control beam angle and lumen delivery in accommodating various lamp types including Halogen, CFL and LED

**Compliance**

- cULus Listed 1598 luminaire
- cULus Listed for feed through
- cULus Listed for damp location
- cULus Listed for wet location, covered ceiling, with select trims
- IP rated (improper Lamp)
- RoHS compliant

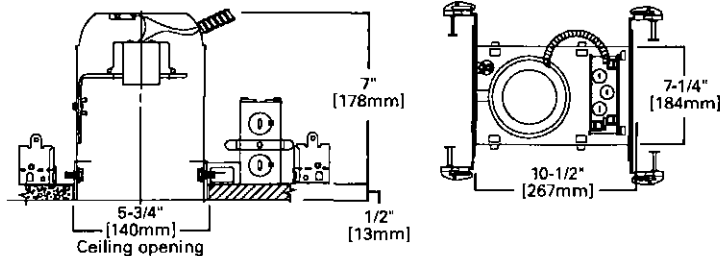


**H5T**

**5" Non-IC, New Construction Housing, 120V**



**Dimensions**



**Special Features**

- Got Nail!™ bar hangers
- q-Channel bars with Pass-N-Thru™
- Slide-N-Side™ junction box
- Quick Connect™ push wire nuts

**Description**

The ML56 LED downlight system is a flexible solution for your recessed lighting needs. High color fidelity 90 CRI modules are available in three lumen outputs and four color temperatures and because they are compatible with Halo LED housing and many other existing screw based housings, the ML56 LED system can be used in remodel, retrofit and new construction installations. An optional dim-to-warm (D2W™) feature creates an additional lighting solution as it provides a smooth warm transition from 3000K to 1850K when dimmed.

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**

- 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 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
- Dim-to-warm (D2W) Option: 3000K, shifts to 1850K as it dims CRI>90 throughout dimming range

- CRI: 90, R9>50

- L70 at 50,000 hours, projected in accordance with IES TM-21

**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.
- High color performance which maintains 90CRI and R9>50 throughout dimming range.
- Every Halo LED 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
- ML56 LED Modules include lumen, CRI, and CCT in the model number
- Example: **ML5612930**  
**56** = 5" / 6" aperture series  
**12** = 1200 lumen series  
**9** = >90 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 provides a (5) five year limited warranty on the Halo ML56 LED Module.

**LED Module in New or Retrofit Existing Construction – Housings other than Halo**

- If used in recessed housings other than Halo the Eaton 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 90 CRI**

- ML5612927**
- ML5612930**
- ML5612D2W930**
- ML5612935**
- ML5612940**

**5-Inch and 6-Inch 1200 Lumen LED 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**



**ML5612927**  
5" or 6" LED 1200 Series



**ML5612930**  
5" or 6" LED 1200 Series



**ML5612D2W930**  
5" or 6" LED 1200 Series, dim-to-warm



**ML5612935**  
5" or 6" LED 1200 Series



**ML5612940**  
5" or 6" LED 1200 Series

**Compliance**

- cULus listed 1598 Luminaire (Halo 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 for California Title 24 compliance / Title 20 certified
- 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 Européene" 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.

**Energy Data**

**ML56 1200/90 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)

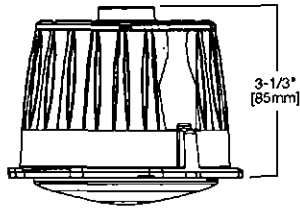
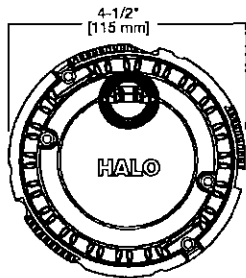


Refer to ENERGY STAR® Certified Products List.  
 Can be used to comply with California Title 24 High Efficacy requirements.  
 Certified to California Title 20 Appliance Efficiency Database.

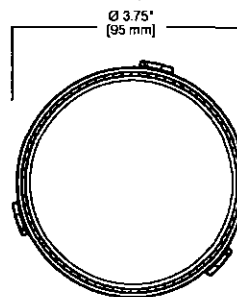


**Dimensions**

**ML56 LED Module**



**Beam Forming Optic (Accessories)**





**Ordering Information**

Sample Number: **ML5612930 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 Modules  
1200 Series / 90 CRI**

- ML5612927**= 5"/6" LED module, 1200 lumen, 90CRI, 2700K
- ML5612930**= 5"/6" LED module, 1200 lumen, 90CRI, 3000K
- ML5612935**= 5"/6" LED module, 1200 lumen, 90CRI, 3500K
- ML5612940**= 5"/6" LED module, 1200 lumen, 90CRI, 4000K
- ML5612D2W930\*\***= 5"/6" dim-to-warm LED module, 1200 lumen, 90CRI, 3000K to 1850K

**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 & L345SF, order separately.)
- L345SF**=3.45" diameter soft focus lens. Requires (BFR56NFL and BFR56MH, order separately.)

\*\*Beam forming optics/media not recommended for use with ML5612D2W930 LED module.

**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**

**ML5612927**

PRODUCT SPECIFICATIONS	
Lumens (Light Output)	1141
Watts	17.5
Lumens Per Watt (Efficacy)	65.2
Color Accuracy (CRI)	94
Light Color (CCT) Correlated Color Temperature (CCT)	2700K
<small>MODEL# ML5612927      ADV141858.LL</small>	

**ML5612930**

PRODUCT SPECIFICATIONS	
Lumens (Light Output)	1180
Watts	17.5
Lumens Per Watt (Efficacy)	67.4
Color Accuracy (CRI)	94
Light Color (CCT) Correlated Color Temperature (CCT)	3000K
<small>MODEL# ML5612930      ADV141857.LL</small>	

**ML5612D2W930**

PRODUCT SPECIFICATIONS	
Lumens (Light Output)	1180
Watts	17.5
Lumens Per Watt (Efficacy)	67.4
Color Accuracy (CRI)	94
Light Color (CCT) Correlated Color Temperature (CCT)	3000K
<small>MODEL# ML5612D2W930      ADV141857.LL</small>	

**ML5612935**

PRODUCT SPECIFICATIONS	
Lumens (Light Output)	1241
Watts	17.5
Lumens Per Watt (Efficacy)	70.9
Color Accuracy (CRI)	94
Light Color (CCT) Correlated Color Temperature (CCT)	3500K
<small>MODEL# ML5612935      ADV141858.LL</small>	

**ML5612940**

PRODUCT SPECIFICATIONS	
Lumens (Light Output)	1374
Watts	17
Lumens Per Watt (Efficacy)	78.5
Color Accuracy (CRI)	93
Light Color (CCT) Correlated Color Temperature (CCT)	4000K
<small>MODEL# ML5612940      ADV141858.LL</small>	

### Housing – Trim Compatibility

Housing compatibility in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 69xx 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 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 in<sup>3</sup> in addition to those noted below.

### Housing 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
Halo	Shallow Housings	H2750ICAT	6" LED, Shallow, Insulated Ceiling, Air-Tite, New Constr. (use with 694X trims only)

### HALO - Incandescent E26 Screwbase Housings

Brand	Housing Type	Catalog Number	Description		
Halo	Standard Housings	H71CAT	6" Insulated Ceiling, Air-Tite New Construction Housing		
		H71RICAT	6" Insulated Ceiling, Air-Tite Remodel Housing		
		H71CT	6" Insulated Ceiling, New Construction Housing		
		H71RICT	6" Insulated Ceiling, Remodel Housing		
		H71CATNB	6" Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket		
		H71CTNB	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)		
		Halo	Shallow Housings	H271CAT	6" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 694X trims only)
				H271RICAT	6" Shallow, Insulated Ceiling, Air-Tite Remodel Housing (use with 694X trims only)
H271CT	6" Shallow, Insulated Ceiling, New Construction Housing (use with 694X trims only)				
H271RICT	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)		
		ET2700	6" Shallow, Non-IC, New Construction Housing (use with 694X trims only)		
		ET2700R	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 - 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)
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	11D4ICx †, 11D4IC †

† 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**

90 CRI LED Modules with ML56 Trims

	ML5612927	ML5612930	ML5612D2W930	ML5612935	ML5612940
593BB	IECC	IECC	IECC	ES, T24, IECC	ES, T24, IECC
693BB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
593TBZB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
693TBZB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
593SNB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
693SNB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
592H	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
593WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
592SC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
592W	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
595WW	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
695WW	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
692H	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
692W	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
692SC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
693WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
596WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
694TBZB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
696WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
594TBZB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
694SNB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
594SNB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
694WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
594WB	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
594WB-30	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC
694WB-30	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC	ES, T24, IECC

**Code Descriptions:**

ES = ENERGY STAR® Certified Luminaire

T24 = Can be used to comply with California Title 24 High Efficacy requirements. Certified to California Title 20 Appliance Efficiency Database.

IECC = International Energy Conservation Code "High Efficacy"

**ML56 1200 Series Lumen Table**

90 CRI LED Modules with ML56 trims

	Trim Catalog #	ML5612927		ML5612930		ML5612D2W930		ML5612935		ML5612940	
		Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
0° Tilt Angle	593BB	747.0	42.7	772.5	44.1	866.7	49.1	812.5	46.4	899.5	51.4
	693BB	836.0	47.8	864.6	49.4	959.3	54.3	909.3	52.0	1006.7	57.5
	593TBZB	844.0	48.2	872.8	49.9	972.5	55.1	918.0	52.5	1016.4	58.1
	693TBZB	869.0	49.7	898.7	51.4	1007.8	57.1	945.2	54.0	1046.5	59.8
	593SNB	925.0	52.9	956.6	54.7	1078.4	61.1	1006.1	57.5	1113.9	63.7
	693SNB	964.0	55.1	997.0	57.0	1113.7	63.1	1048.5	59.9	1160.9	66.3
	592H	1066.0	60.9	1102.4	63.0	1215.1	68.8	1159.4	66.3	1283.7	73.4
	593WB	1087.0	62.1	1124.2	64.2	1252.6	70.9	1182.3	67.6	1309.0	74.8
	592SC	1101.0	62.9	1138.6	65.1	1274.6	72.2	1197.5	68.4	1325.8	75.8
	592W	1104.0	63.1	1141.7	65.2	1283.5	72.7	1200.8	68.6	1329.4	76.0
	595WW	1108.0	63.3	1145.9	65.5	1287.9	72.9	1205.1	68.9	1334.3	76.2
	695WW	1109.0	63.4	1146.9	65.5	1292.3	73.2	1206.2	68.9	1335.5	76.3
	692H	1113.0	63.6	1151.0	65.8	1294.5	73.3	1210.5	69.2	1340.3	76.6
	692W	1131.0	64.6	1169.7	66.8	1314.3	74.4	1230.1	70.3	1362.0	77.8
	692SC	1135.0	64.9	1173.8	67.1	1314.3	74.4	1234.5	70.5	1366.8	78.1
	693WB	1141.0	65.2	1180.0	67.4	1318.7	74.7	1241.0	70.9	1374.0	78.5
	596WB	1145.0	65.4	1184.1	67.7	1343.0	76.0	1245.4	71.2	1378.8	78.8
	694TBZB	1149.0	65.7	1188.3	67.9	1354.0	76.7	1249.7	71.4	1383.6	79.1
	696WB	1170.0	66.9	1210.0	69.1	1356.2	76.8	1272.5	72.7	1408.9	80.5
	594TBZB	1171.0	66.9	1211.0	69.2	1365.1	77.3	1273.6	72.8	1410.1	80.6
694SNB	1182.0	67.5	1222.4	69.9	1382.7	78.3	1285.6	73.5	1423.4	81.3	
594SNB	1200.0	68.6	1241.0	70.9	1397.1	78.5	1305.2	74.6	1445.0	82.6	
694WB	1218.0	69.6	1259.6	72.0	1429.0	80.9	1324.7	75.7	1466.7	83.8	
594WB	1225.0	70.0	1266.9	72.4	1433.4	81.2	1332.4	76.1	1475.2	84.3	
30° Tilt Angle	594WB-30	1158.0	66.2	1197.6	68.4	1389.3	78.7	1259.5	72.0	1394.5	79.7
	694WB-30	1140.0	65.1	1179.0	67.4	1327.6	75.2	1239.9	70.9	1372.8	78.4

## DESCRIPTION

592 Series LED Trims - 5-inch Aperture Reflectors - are integral elements in the Halo ML56 LED Downlighting System. ML56 LED System is a series of modular LED Light Modules for use with dedicated 5" or 6" ML56 LED trims. The ML56 LED trims in 5" and 6" aperture sizes are designed to fit Halo, All-Pro and others 5" or 6" recessed housings. The ML56 system is suitable for new construction, remodel or retrofit installation.

Catalog #		Type
Project		
Comments		Date
Prepared by		

## SPECIFICATION FEATURES

592 Series LED trims are 5-inch aperture reflectors offered in Specular Clear, Haze (Semi-Specular Clear), and White (Matte White). 592 Series Reflectors also feature matte white finish flange. The precision spun aluminum reflector provides excellent optical performance. The 592 reflectors may be used in most standard height 5-inch aperture recessed housings; Halo, All-Pro, and more (refer to ML56 LED Light Module specifications for details).

- For use with ML56 Series LED light modules
- For use in standard housings
- Reflectors with self-flange
- Wet location shower listed with ML56 LED Light Modules
- Torsion springs pull trim and light module tight to ceiling
- ML56 reflector trims and modules make any housing AIR-TITE™ (ASTM E283)

### Compatible with ML56 LED System of LED Downlight Light Modules

#### 600 Series - 80CRI, 600lm

##### 5"/6" LED Retrofit Downlight Engine

ML5606827 - 2700K  
ML5606830 - 3000K  
ML5606835 - 3500K  
ML5606840 - 4000K

#### 600 Series - 90CRI, 600lm

##### 5"/6" LED Retrofit Downlight Engine

ML5606927 - 2700K  
ML5606930 - 3000K  
ML5606935 - 3500K  
ML5606940 - 4000K

#### 900 Series - 80CRI, 900lm

##### 5"/6" LED Retrofit Downlight Engine

ML5609827 - 2700K  
ML5609830 - 3000K  
ML5609835 - 3500K  
ML5609840 - 4000K

#### 900 Series - 90CRI, 900lm

##### 5"/6" LED Retrofit Downlight Engine

ML5609927 - 2700K  
ML5609930 - 3000K  
ML5609935 - 3500K  
ML5609940 - 4000K

#### 1200 Series - 80CRI, 1200lm

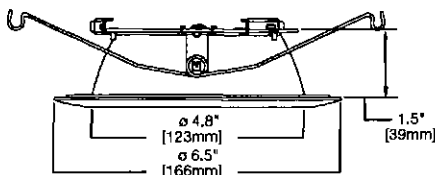
##### 5"/6" LED Retrofit Downlight Engine

ML5612827 - 2700K  
ML5612830 - 3000K  
ML5612835 - 3500K  
ML5612840 - 4000K

#### 1200 Series - 90CRI, 1200lm

##### 5"/6" LED Retrofit Downlight Engine

ML5612927 - 2700K  
ML5612930 - 3000K  
ML5612935 - 3500K  
ML5612940 - 4000K



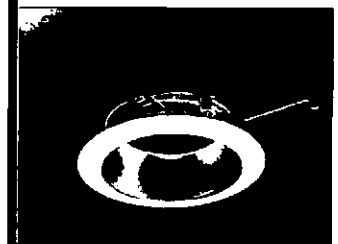
## ORDERING INFORMATION

SAMPLE NUMBER: 592SC

Trim	Finish	Accessory
592= 5" Reflector	SC=Specular Clear, White Flange H=Haze (Semi-Specular), White Flange W=White (Matte White), White Flange	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



592SC



592H



592W

## 592 Series LED Trim

### 5-Inch Reflector

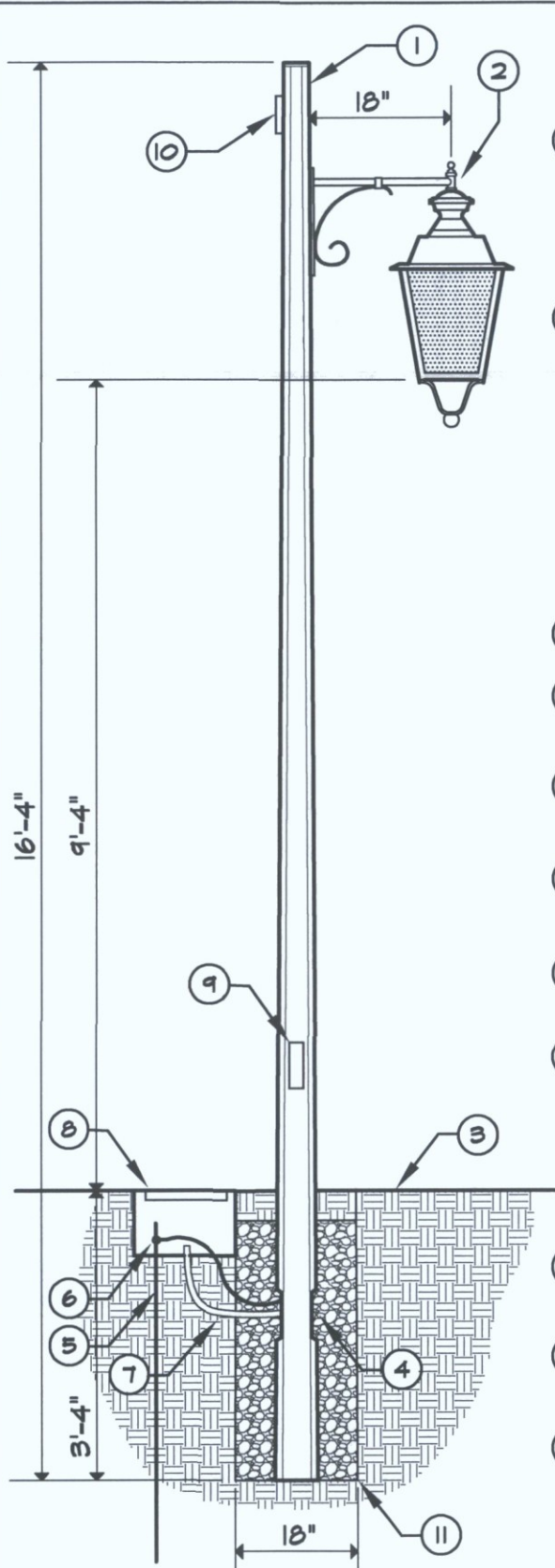
For use with  
Halo ML56  
LED System



TYPE: P

KEYED NOTES

DC RANCH STANDARD  
TO MATCH EXISTING



- ① Tapered, square, reinforced concrete pole with natural gray concrete, sandblasted mold finish and concrete sealer, 3" at top, 5-1/3" at bottom. Pole weight is approximately 400 lbs. As manufactured by AMERON, # SEQ-4.
- ② Arm mounted luminaire with four (4) Honeyswirl glass lens, gray finish and 42 watt, 4-pin, triple blax compact fluorescent lamp - GENERAL ELECTRIC #F42TBX/SPX30/A/4P/EOL GE#36313 lamp, NERI Series 800-PMMA GHIT with Honey Iridescent lens, solid top, #0002 internal reflector, 120 volt. Provide luminaire with custom arm Neri# 4215-100MOD and top mounting as indicated. Paint arm to match luminaire.
- ③ Finished grade.
- ④ 2.5" x 5" aperture 24" below grade one on each side at pole.
- ⑤ 5/8" x 8' long ground rod. Run #8 bare copper conductor to luminaire assembly.
- ⑥ Attach ground wire to ground rod with brass mechanical clamp per Article 250-115 of N.E.C.
- ⑦ Provide 3/4" flexible ENT from junction box to base of handhole.
- ⑧ Provide ground mounted concrete junction box with engraved concrete "ELECTRICAL" label. Size as indicated on Lighting Plans. All conductor splices and taps in this box shall be made with UL listed waterproof connections. Install box on the side opposite the luminaire.
- ⑨ Install handhole on the side opposite the luminaire.
- ⑩ Provide recessed duplex outlet with weatherproof cover painted to match luminaire.
- ⑪ After plumbing pole, backfill hole with a dry mixture of 50% sand/gravel and 50% cement to within 4" of top of drilled hole. Fill remaining 4" with water and backfill with adjacent soil after water has been absorbed.



APPROVED BY: \_\_\_\_\_  
DATE \_\_\_\_\_

**PEDESTRIAN POLE  
LIGHTING  
TYPE "P2"**

DETAIL NO.  
E-201

# STL259 LED

615-1421

1/3

TYPE: SL

615-1421-277V-RAL8019 / 615-9325

**we-ef**



## Description

IP55. Recessed LED step light for orientation. Shielded light source. Suitable for installation in cavity wall construction or concrete pour construction using optional installation blackout.

**Beam Type** diffused distribution

**Lamp Type** 6 LED 6W (3000K)

**Gear Type** electronic gear

## Nominal Luminous Flux (lm)

LED Lumens 134.5 lm

LEDs 6

Total Lumens 807 lm

Tj 85 °C

## Rated Luminous Flux (lm)

LED Lumens 4.2 lm

Total Lumens 25.3 lm

Ta 25 °C

**Rated Input Power** 7.7 W





# STL259 LED

615-1421

3/3



## Mounting Accessories

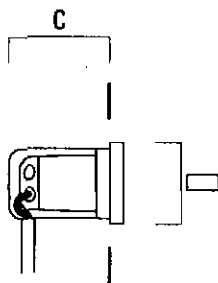
### Installation blackout

Optional mounting accessories for concrete pour installations. Installation blackout. Suitable for installing recesses wall luminaire in concrete pour installations. Serve as rough-in housing prior to installation of luminaire. Includes hardware necessary for attachment to formwork.

C1

615-9325 Installation blackout BST25-I

130.00



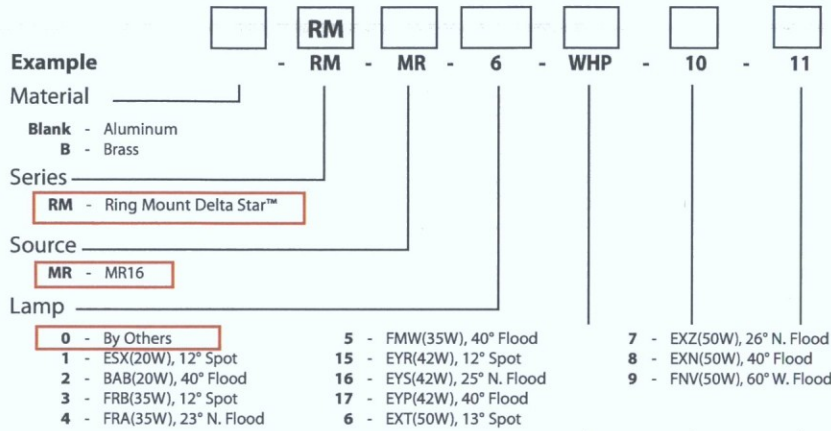


MR-16 Halogen

# RING MOUNT DELTA STAR™

PROJECT:	
TYPE:	TD
CATALOG NUMBER:	RM-MR-0-BZW-12-11
LAMP(S):	
NOTES:	

## CATALOG NUMBER LOGIC



Finish

Aluminum & Brass Finish			Brass	
Powder Coat Color	Satin	Wrinkle	Machined	MAC
Bronze	BZP	<b>BZW</b>	Polished	POL
Black	BLP	BLW	Mitique™	MIT
White (Gloss)	WHP	WHW		
Aluminum	SAP	—		
Verde	—	VER		

*Also available in Premium Finishes  
See submittal SUB-1439-00 for Premium Finishes*

Lens Type

- 9 - Clear (Standard)
- 10 - Spread\*
- 12 - Soft Focus\*
- 13 - Rectilinear\*

Shielding

- 11 - Honeycomb Baffle\*

\* Accommodates up to 2 Lens/Shielding media

## LAMP DATA

BK No.	Lamp Watts	Description	Rated Life (hrs.)	Center Beam Candlepower	Beam Angle	Beam Type
1	20	ESX	4,000	4,000	12°	Spot
2	20	BAB	4,000	500	40°	Flood
3	35	FRB	5,000	7,600	12°	Spot
4	35	FRA	5,000	2,300	23°	Narrow Flood
5	35	FMW	5,000	1,100	40°	Flood
15	42	EYR	5,000	7,500	12°	Spot
16	42	EYS	5,000	2,600	25°	Narrow Flood
17	42	EYP	5,000	1,100	40°	Flood
6	50	EXT	5,000	9,800	13°	Spot
7	50	EXZ	5,000	3,200	26°	Narrow Flood
8	50	EXN	5,000	1,600	40°	Flood
9	50	FNV	5,000	700	60°	Wide Flood

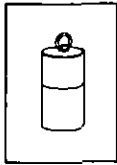
# B-K LIGHTING

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

SUBMITTAL DATE  
10-19-10

DRAWING NUMBER  
SUB-1146-00

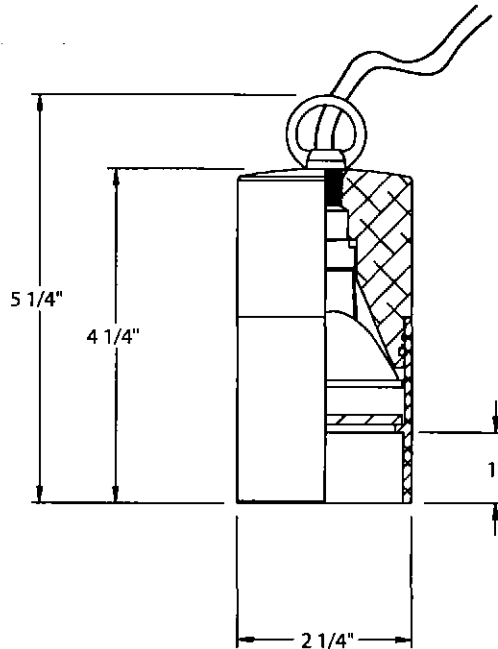
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MR-16 Halogen

# RING MOUNT DELTA STAR™

PROJECT:	
TYPE:	



## SPECIFICATIONS

### GreenSource Initiative™

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

### Materials

Furnished in Copper-Free Aluminum (Type 6061-T6), or Brass (Type 360).

### Body

Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and heat sink to maximize lamp life. 1" diameter Brass Mounting Ring allows for cable or hook mounting. High temperature, silicone 'O' Ring provides water-tight seal.

### Cap

Fully machined. 1" deep cutoff with flush mounted lens. Accommodates up to (2) lens or louver media.

### Lens

Shock resistant, tempered, clear glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment.

### Lamp

For use with 50 watt maximum, MR-16 lamp.\* Not for use with IR technology lamps.

\*Except GE Light Q42MR16/CANSP9 (EZY).

### Transformer

For use with 12 VAC remote transformer.

### Socket

Specification grade, ceramic body lamp holder. GU5.3 base. Nickel allow contacts and heat resistant, spring loaded, stainless steel lamp retaining clips.

### Wiring

Teflon® coated wire, 18AWG, 600V, 250° C rated and certified to UL 1659 standard. Leads extended 12" beyond brass mounting ring.

### Hardware

Tamper-resistant, stainless steel hardware.

### Finish

StarGuard® (Pat. Pend.), a RoHS compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish.

### Warranty

5 year limited warranty.

### Listings

ETL Listed to ANSI/UL Standard 1838. Certified to CAN/CSA Standard C22.2 No. 9 and CAN/CSA TIL B-58B. RoHS compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. Suitable for installation within 4' of the ground. Made in USA.



\*Teflon is a registered trademark of DuPont Corporation.

# B-K LIGHTING

40429 Brickyard Drive • Madera, CA 93636 • USA  
559.438.5800 • FAX 559.438.5900  
[www.bklighting.com](http://www.bklighting.com) • [info@bklighting.com](mailto:info@bklighting.com)

SUBMITTAL DATE  
10-19-10

DRAWING NUMBER  
SUB-1146-00

# MR-16 SERIES

## 4-Watt, 5-Watt, or 7-Watt (Redesigned for 2014)

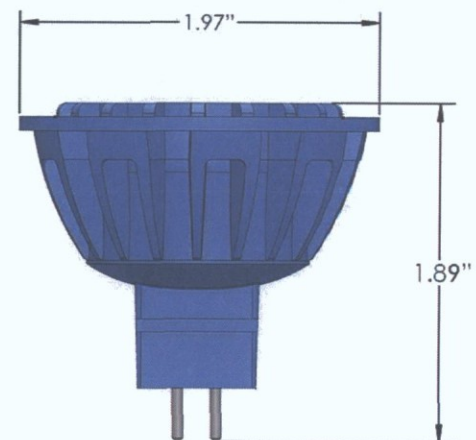


### Description:

The Brilliance LED MR-16 LED lamp has been redesigned to better fit into standard, low voltage, fixtures and is **thermally engineered to operate in enclosed fixtures.**

### Specifications/Features:

- UL Listed & FCC Compliant
- Available in 2200, 2700, 3000, & 5700 Kelvin Temperatures, as well as Red, Green, Blue, & Amber (Colors available in 4-Watt & 5-Watt only)
- Available in 15°, 30°, & 60° Beam Angles
- Available in 4 Watts, 5 Watts, & 7 Watts
- 8-24VAC
- Maximum Current - 4W: 0.6A; 5W: 0.8A; 7W: 1.2A
- CRI: 85
- CREE Chipset
- 50,000 Hours Lamp Life
- Fully Potted PC Board
- Dimmable with most magnetic transformers
- 5-Year Warranty
- Patent Pending



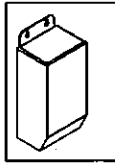
Lumens Output		
	2700K	5700K
<b>4W</b>	230lm	320lm
<b>5W</b>	320lm	420lm
<b>7W</b>	420lm	560lm

PART NUMBER: MR16 XX XXXX XX	
4 5 7	WATTAGE
2200 2700 3000 5700	KELVIN TEMPERATURE
RED = Red GREEN = Green BLUE = Blue AMBER = Amber	COLOR
15 = 15 degree 30 = 30 degree 60 = 60 degree	BEAMSPREAD

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Actual product may vary slightly from description. All products, product specifications and data are subject to change without notice in order to improve reliability, function, design or otherwise.

800 . 867. 2108 • [www.brillianceled.com](http://www.brillianceled.com)

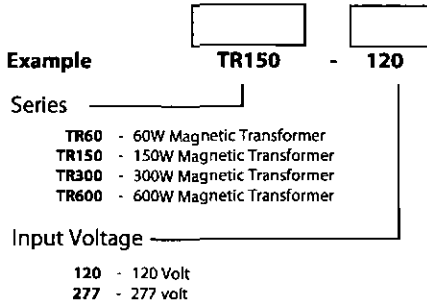


# Magnetic Transformer

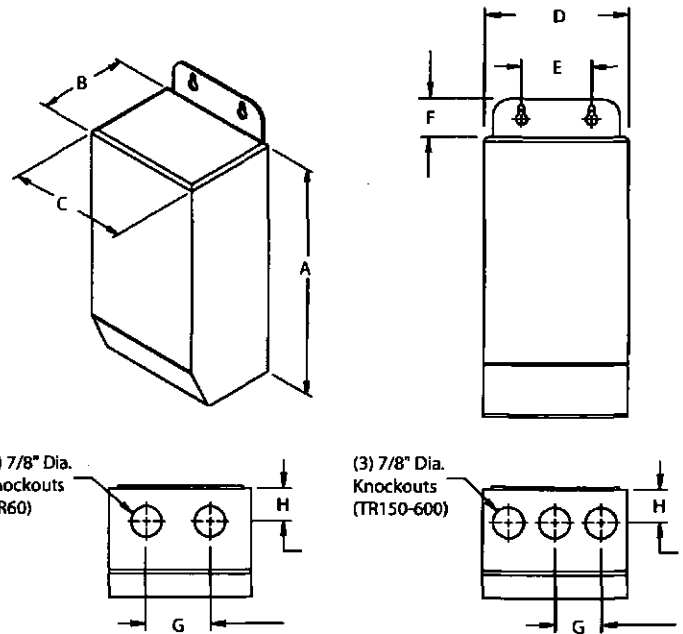
# TR SERIES

PROJECT:	
TYPE:	
CATALOG NUMBER:	
SOURCE:	
NOTES:	

## CATALOG NUMBER LOGIC



## DIMENSIONS



## TRANSFORMER DATA

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

Series	Input Voltage	Max. Load	Circuit Breaker	Weight	Height A	Depth B	C	D	E	F	G	H
TR60	120V	60W	8A	3.7 lbs.	7-1/2"	2-15/16"	3"	3-7/64"	1-1/2"	1-1/16"	1-1/2"	3/4"
TR150	120V	150W	25A	6 lbs.	8"	3-3/32"	4-3/32"	5-1/2"	4-1/8"	1-1/8"	1-5/16"	15/16"
TR300	120V	300W	25A	7.13 lbs.	8"	3-3/32"	4-3/32"	5-1/2"	4-1/8"	1-1/8"	1-5/16"	15/16"
TR600	120V	600W	25A	14.9 lbs.	9-13/32"	4-3/32"	4-19/32"	5-3/4"	4-5/8"	1-1/16"	1-1/2"	1-1/4"
TR60	277V	60W	8A	3.7 lbs.	7-1/2"	2-15/16"	3"	3-7/64"	1-1/2"	1-1/16"	1-1/2"	3/4"
TR150	277V	150W	25A	6 lbs.	8"	3-3/32"	4-3/32"	5-1/2"	4-1/8"	1-1/8"	1-5/16"	15/16"
TR300	277V	300W	25A	7.13 lbs.	8"	3-3/32"	4-3/32"	5-1/2"	4-1/8"	1-1/8"	1-5/16"	15/16"
TR600	277V	600W	25A	14.9 lbs.	9-13/32"	4-3/32"	4-19/32"	5-3/4"	4-5/8"	1-1/16"	1-1/2"	1-1/4"

## SPECIFICATIONS

**Housing**  
 Stainless steel, NEMA Outdoor 3R rated enclosure. [2] (TR60) or [3] (TR150-600) bottom entry 7/8" knockouts provide access to wiring compartment. Riveted, hinged cover opens vertically from bottom to top for service access.

**Transformer**  
 Fully encapsulated, Class B insulated, low voltage magnetic transformer. 120VAC or 277VAC input. 12VAC output (fully loaded). 0.6A (120VAC) or 0.3A (277VAC) maximum no load input current. Manual thermal reset. Secondary circuit breaker. Enclosure temperature <65° C when fully loaded (in 40° C ambient).

For use with halogen and **OSRAM** products. Fully dimmable utilizing magnetic low voltage dimmers. Consult fixture specification for dimming capability.

**Output Wiring**  
 See B-K Lighting Low Voltage Design Guide on reverse.

**Warranty**  
 Limited five year warranty.

**Certification and Listings**  
 Nema Type 3R Enclosure. Suitable for indoor and outdoor use. UL Listed to ANSI/UL Standard 1012.



<b>B-K LIGHTING</b>	40429 Brickyard Drive • Madera, CA 93636 • USA 559.438.5800 • FAX 559.438.5900 www.bklighting.com • info@bklighting.com	SUBMITTAL DATE	SUBMITTAL NUMBER
		7-30-13	TR-SERIES

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# Low Voltage Guide

Many B-K LIGHTING fixtures operate on 12 volts. Taking advantage of these energy-saving fixtures requires appropriate care in planning the electrical wiring system. To maintain expected lamp performance, we recommend the following procedures in sizing your low-voltage wiring system.

## SIZING OF LOW VOLTAGE WIRING

1. Locate and plot fixtures on plan. Choose the lighting equipment necessary to create the desired lighting effects. Mark lamp wattage for each fixture location.
2. Identify potential transformer locations. The ideal locations are those which provide for the shortest possible low voltage distances (inconspicuous areas, behind rocks, shrubbery, etc., within the landscape). UPM, Power Pipe™, Power Pipe II™, or, if available, transformers integral in the fixture are good ways to hide the transformer and reduce voltage drop problems.
3. Add the total wattage for the proposed low voltage run. Measure the wire lengths from the transformer to the fixture locations. Find the distance to the "CENTER OF LOAD" of the low voltage run.

$$\text{CENTER OF LOAD} = \frac{\text{Distance from first to last fixture}}{(2) \text{ Two}} + \text{Distance from transformer to first fixture}$$

4. Using the B-K LIGHTING Wire Selection Table, select the wattage column which applies. Look down the column stopping at a distance, in feet, that is equal or greater than the "CENTER OF LOAD" distance. Look across to find the proper wire size for your layout.

*Note: In the event of multiple runs from a given transformer, treat each run separately.*

**12-VOLT WIRE SELECTION TABLE**

WIRE SIZE	TOTAL WATTAGE																
	12	20	24	35	40	50	60	70	80	100	105	120	140	150	160	200	250
12	178	106	89	60	53	42	35	30	26	21	20	17	15	13	—	—	—
10	283	169	141	96	85	67	56	48	42	33	32	28	24	22	19	17	13
8	450	269	225	154	135	107	90	77	67	54	51	45	38	36	31	27	21
6	715	428	357	245	214	171	143	122	107	85	81	71	61	57	49	42	34

**CENTER OF LOAD WIRING DISTANCES IN FEET**

The Wire Selection Table provided is based on a maximum allowable voltage drop of 5%. Electrical designs which allow greater than 5% voltage drop, reduce rated light output beyond acceptable levels.

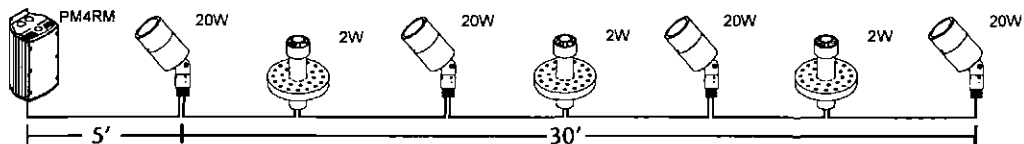
The importance of the proper wire selection is demonstrated below. Both examples have the same total watts and identical overall lengths of wire run, yet require different wire sizes, or multiple wire runs, to operate within the 5% maximum voltage drop B-K LIGHTING criteria.

### EXAMPLE:

Total wattage:  
(20w x 4) + (2w x 3) = 86 watts

CENTER OF LOAD:  
 $(\frac{30}{2}) + 5' = 20'$

SINGLE WIRE RUN:  
12 gauge

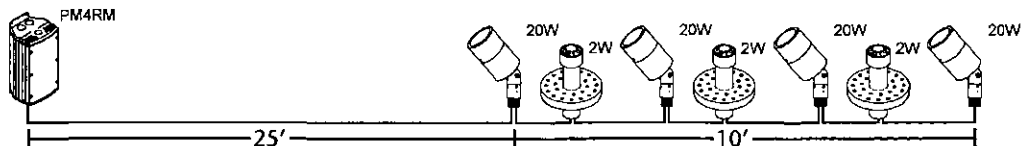


### EXAMPLE:

Total wattage:  
(20w x 4) + (2w x 3) = 86 watts

CENTER OF LOAD:  
 $(\frac{10}{2}) + 25' = 30'$

SINGLE WIRE RUN:  
10 gauge



## TRANSFORMERS

For areas which are far reaching from fixtures, running 120 volt power to each fixture location with individual transformers, such as TRSS75 or TRSS150, provides an excellent economic solution to voltage drop. These transformers can also be specified in the UPM, Power Pipe™, and Power Pipe II™ transformer housings.

*Note: Installations should be in accordance with the National Electric Code and applicable local codes.*



# WSTM LED

## LED Mini Wall Sconce



Catalog Number **WSTM LED-2A-30K-120-DDBXD**

Notes

Type **WP**

Hit the Tab key or mouse over the page to see all interactive elements.

### Introduction

The Architectural WSTM Mini-Wall Sconce is now available with the latest in LED technology. The result is a long-life, maintenance-free product with typical energy savings of 87% over metal halide versions. The diffuse lens eliminates harsh glare while producing comfortable illumination.

The WSTM LED is ideal for replacing existing 50-100W metal halide or 26-42W compact fluorescent wall-mounted products and can be mounted in either lens up or lens down orientation. The expected service life is over 10 years of nighttime use.

### Specifications

#### Luminaire

**Height:** 5-3/4"  
(14.6 cm)

**Width:** 12-1/2"  
(31.8 cm)

**Depth:** 7-1/2"  
(19.1 cm)

**Weight:** 6 lbs.  
(2.7 kg)



### Ordering Information

**EXAMPLE: WSTM LED 2A 40K 120 DDBTXD**

WSTM LED	Series	LEDs	Color temperature	Voltage	Mounting	Control options	Other options	Finish (required)
WSTM LED	1A	One engine	30K 3000K	120	Shipped included	Shipped installed	Shipped installed	DDBXD Dark bronze
	2A	Two engines	40K 4000K	277 <sup>1</sup>	(blank) Surface mount Shipped separately <sup>2</sup> UTS Uptilt 5 degrees	PE Photoelectric cell, button type	(blank) Diffusing glass lens CGL Clear glass lens Shipped separately <sup>2</sup> WG Wire guard <sup>3</sup>	DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

Stock configurations are offered for shorter lead times:

Stock Part Number
WSTM LED 1A 40K 120 DDBTXD
WSTM LED 2A 40K 120 DDBTXD

### Accessories

Ordered and shipped separately.

WSTMUTS DDBXD U	5 degree uptilt accessory (specify finish)
WSTMWG U	Wire guard accessory

### NOTES

1. Includes step-down transformer; see page 2 for more information.
2. Also available as a separate accessory; see Accessories information at left.
3. Not for inverted mounting.



## Performance Data

### Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

LEDs	Performance Package	System Watts <sup>1</sup>	30K (3000K, 80 CRI)					40K (4000K, 80 CRI)				
			Nominal Lumens	B	U	G	LPW	Nominal Lumens	B	U	G	LPW
1A	1A-K	9	673	0	0	0	75	733	0	0	1	81
2A	2A-K	17	1,308	1	0	0	77	1,277	1	0	0	75

1 See electrical load chart for 277V system watts.

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	0.99
40°C	104°F	0.97

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the WSTM LED platform in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.85	0.74	0.54

### Electrical Load

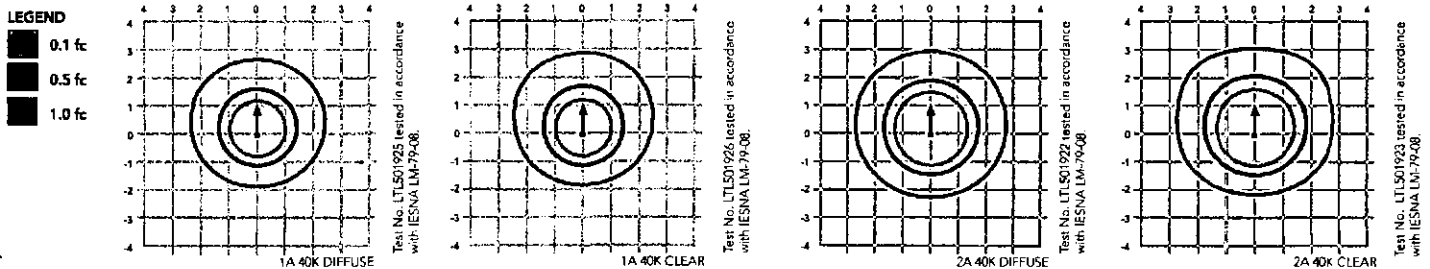
LEDs	System Watts	Current (A)	
		120	277
1A	9W	0.08	—
	13W <sup>1</sup>	—	0.06
2A	17W	0.15	—
	22W <sup>1</sup>	—	0.09

1 Higher wattage is due to electrical losses from step-down transformer.

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's WSTM LED homepage.

Isocandela plots for the WSTM LED 40K. Distances are in units of mounting height (8').



## FEATURES & SPECIFICATIONS

### INTENDED USE

The classic architectural shape of the WSTM LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long-life LEDs make this luminaire nearly maintenance-free.

### CONSTRUCTION

The single-piece die-cast aluminum housing integrates a heat sink to optimize thermal transfer from the internal light engine and promote long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

### FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder-coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

### OPTICS

Light engines are 3000K (>80 CRI) or 4000K (>80 CRI). The WSTM LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

### ELECTRICAL

Light engine(s) consist of 42 high-efficiency LEDs mounted to a circuit board and integral aluminum heat sink to maximize heat dissipation and promote long life (50,000 hrs at 25°C, L74).

### INSTALLATION

Easily installed using provided mounting strap. Mount to any non-combustible vertical surface, over a 4" round or square recessed outlet box (by others). Back access through slotted gasket.

### LISTINGS

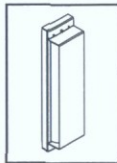
CSA certified to U.S. standards. Luminaire is IP65 rated and suitable for wet locations when mounted with the lens down. Rated for -30°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org](http://www.designlights.org) to confirm which versions are qualified.

### WARRANTY

Five-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomResources/Terms_and_conditions.aspx). Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. **Note:** Specifications subject to change without notice.





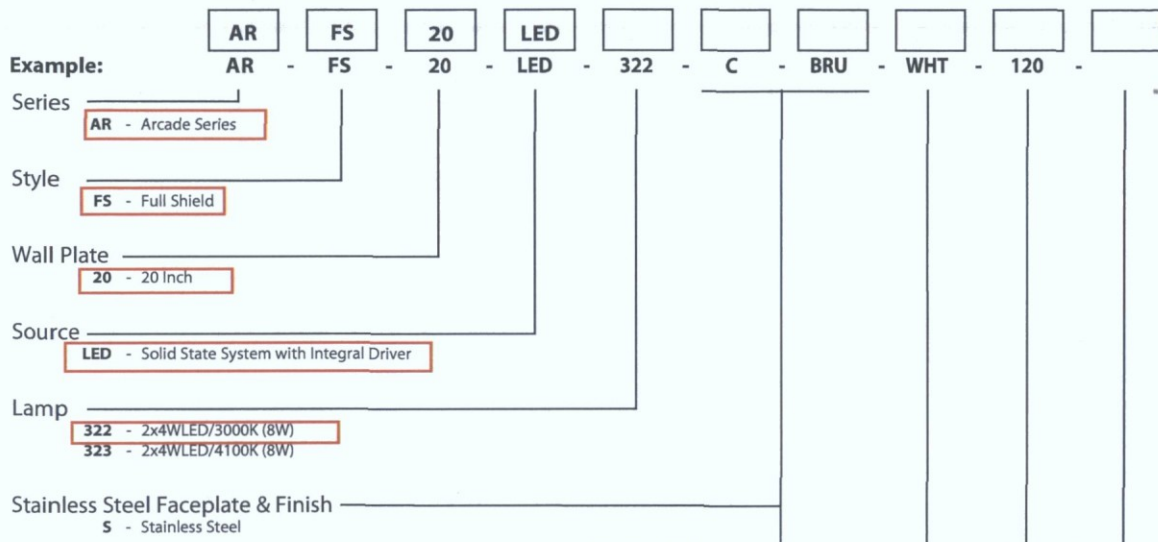
THE ARCADE SERIES



# 20" ARCADE FULL SHIELD (FS)

PROJECT:	
TYPE:	ZW
CATALOG NUMBER:	AR-FS-20-LED-322-BZW-WHT-120
SOURCE:	
NOTES:	

## CATALOG NUMBER LOGIC



- Standard Finish**
- NAT - Natural
  - POL - Polished
  - BRU - Brushed
  - BZW - Bronze Wrinkle Powder Coat\***
- \* (See Powder Coat Finish Chart for Available Choices)

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

**Premium Finish**

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

- Copper Faceplate & Finish**
- C - Copper
  - NAT - Natural
  - BP - Brown Patina
  - NIC - Nickel Plate
  - POL - Polished

- Diffuser**
- WHT - Translucent White**
  - ALB - White Alabaster
  - ROS - Rose Alabaster
  - HRN - Natural Horn
  - CAR - Carmel

**Voltage**  
120 - 120V

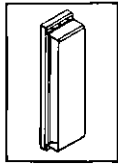
- Option**
- ART - Laser Engraved Faceplate Art  
Customize your AFS with laser engraved artwork.
  - CLR - Clear Coat Protection

## SOLID STATE DATA

Lamp #	Watts	Description	Rated Life (Hrs) 70% of initial lumens (L70)	Design Lumens	CCT(K)
322	8	2x4WLED/3000K	50,000	352	3,000
323	8	2x4WLED/4100K	50,000	416	4,100

<b>TEKA ILLUMINATION</b>	40429 Brickyard Drive • Madera, CA 93636 • USA 559.438.5800 • FAX 559.438.5900 www.tekaillumination.com • info@tekaillumination.com	SUBMITTAL DATE	DRAWING NUMBER
		02-19-15	S001042.2

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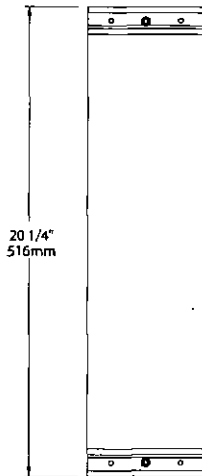
THE  
**ARCADE**  
SERIES

**BKSSL**  
SOLID STATE LIGHTING

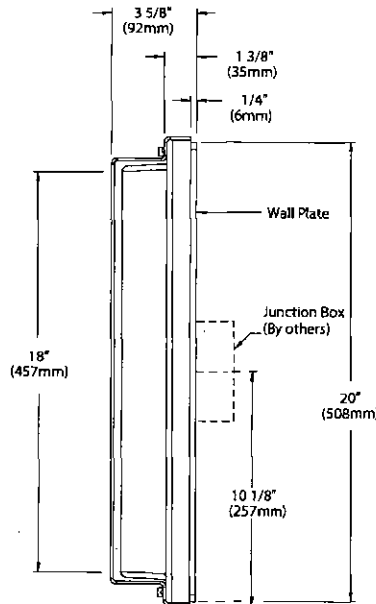
# 20" ARCADE FULL SHIELD (FS)

PROJECT:	
TYPE:	

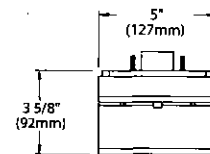
**FRONT VIEW**



**SIDE VIEW**



**TOP VIEW**



## SPECIFICATIONS

### GreenSource Initiative™

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

### Enduring Metals

Constructed from pure copper or stainless steel. These lifetime materials are inherently corrosion resistant. Factory-applied finishes are also available.

### Wall Plate

Cast from solid, copper-free aluminum. Fully gasketed, and mounts to a recessed 4" octagonal junction box.

### Faceplate

Made from heavy, pure copper with stainless steel fasteners.

### Source

LED feature BKSSL™ technology (50,000 Hr. Life), and include an integral driver with primary overload and short circuit protection. 120V input. Sixteen (16) 0.5W LEDs for a total of 8W. Available in 3000K and 4100K.

### Transformer

Includes a 12 VAC **BKSSL** transformer.

### Diffuser

One of 5 standard molded, etched acrylic translucent diffusers for high transmittance and long life.

### Wiring

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

### Hardware

Tamper-resistant, stainless steel hardware.

### Finish

Natural (NAT): Copper components are sand blasted to expose the porous metal surface. Over time, and with exposure to the elements, the metal will naturally 'weather' resulting in a unique patina.

Factory Applied: Hand-crafted metal finishes include brown patina (BP), polish (POL), and nickel plate (NIC).

Powder Coat: Class 'A' TGIC polyester powder coating. RoHS compliant.

### Clear Coat Protection

Optional ceramic clear coating seals and protects underlying metals and protects against discoloration, fading, and wear. Highly impervious to chemicals, solvents, and graffiti. For use with natural (NAT) and polish (POL) finishes.

### Warranty

5 year limited warranty.

### Listings

ETL Listed to ANSI/UL Standard 1598 and Certified to CAN/CSA Standard C22.2 No. 250. Made in USA.



\*Teflon is a registered trademark of DuPont Corporation.

**TEKA** ILLUMINATION

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SUBMITTAL DATE  
02-19-15

DRAWING NUMBER  
S001042.2



	<b>THIS FORMAL COLOR SUBMITTAL WAS          DONE BY SHE /IN WILLIAMS AT 8710 E.          SHEA BLVD. FOR COLOR FORMULA AND          INFORMATION PLEASE CALL          480.443.1737CUS</b>	<b>STORE</b>
		<b>8122</b>
Customer: Trevor Barger	Color: SW 7675	Sealskin
Project:		Matte
General Contractor:	<b>Completed By: SW 8122</b>	
Color Approval:	Date	09/15/16

**78-DR-2005 #3**  
**09/14/2016**





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 Obstruction Evaluation Group  
 2601 Meacham Boulevard  
 Fort Worth, TX 76193

Aeronautical Study No.  
 2013-AWP-5544-OE

Issued Date: 12/19/2013

Trevor Barger  
 Sterling Collection LLC  
 6625 N Scottsdale Rd  
 Antibes Building Suite E  
 Scottsdale, AZ 85251

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Building - Sterling Condos  
 Location: Scottsdale, AZ  
 Latitude: 33-39-23.72N NAD 83  
 Longitude: 111-51-55.51W  
 Heights: 1721 feet site elevation (SE)  
 95 feet above ground level (AGL)  
 1816 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)
- Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 06/19/2015 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (425) 227-2791. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AWP-5544-OE.

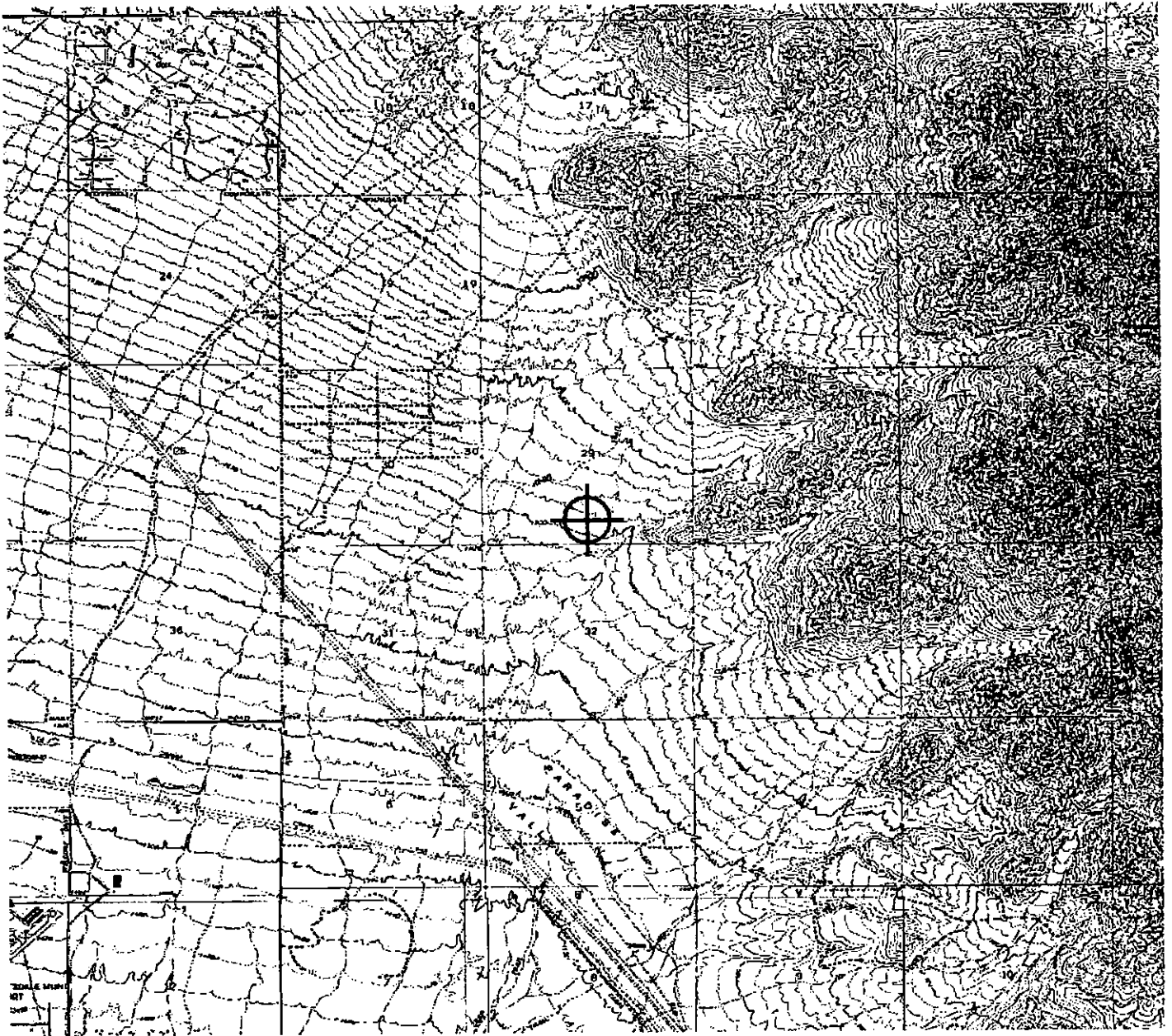
**Signature Control No: 197486112-204100086**

( DNE )

Daniel Shoemaker  
Specialist

Attachment(s)  
Map(s)

TOPO Map for ASN 2013-AWP-5544-OE











Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-AWP-5544-OE

Issued Date: 07/30/2015

Trevor Barger  
Sterling Collection LLC  
6625 N Scottsdale Rd  
Antibes Building Suite E  
Scottsdale, AZ 85251

**\*\* Extension \*\***

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure:	Building - Sterling Condos
Location:	Scottsdale, AZ
Latitude:	33-39-23.72N NAD 83
Longitude:	111-51-55.51W
Heights:	1721 feet site elevation (SE) 95 feet above ground level (AGL) 1816 feet above mean sea level (AMSL)

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 01/30/2017 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (425) 227-2791. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AWP-5544-OE.

**Signature Control No: 197486112-259210956**  
Daniel Shoemaker  
Specialist

(EXT)



# SCOTTSDALE AIRPORT VICINITY DEVELOPMENT SHORT FORM

For development projects within 20,000 feet of Scottsdale Airport NOT located on an Airpark taxilane or adjacent to airport property

The owner of developments within the Airport Influence Area shall complete forms required by the City and Scottsdale Airport to comply with the Scottsdale Revised Code, Chapter 5 – Aviation and the Airpark Rules and Regulations; and submit the completed forms with final plans to the assigned city project manager.

Project Name: Sterling at Silverleaf	Pre-App: 575- PA- 2016
Site Address: 10068 E. Legacy Boulevard	
Contact name: Kurt Jones	Phone: 602-452-2729

## **1. HEIGHT ANALYSIS, CH. 5, SEC. 5-354. GENERAL REQUIREMENTS**

- Applicants must conduct a height analysis for all projects located within 20,000 feet of Scottsdale Airport.
    1. Complete a height analysis for all structures, appurtenances or construction equipment through the FAA at: <https://oeaaa.faa.gov/oeaaa/external/portal/jsp>, click on the Notice Criteria Tool (left side). If you do not exceed criteria, submit this FAA response from the website with your packet or you must complete step 2.
- IF required by FAA, complete Step 2**
2. Submit an FAA form 7460-1 Notice of Proposed Construction or Alteration for review and determination. Please allow about 45 days for this process. A copy of the FAA's response will be required prior to final plan approval.

## **2. AIRCRAFT NOISE AND OVERFLIGHT DISCLOSURE, CH. 5, SEC. 5-356 & SECT. 5-357**

- Incorporate the Airport Disclosure for Development around Scottsdale Airport language into the CC&Rs or other procedural documents and provide a copy. *Exhibit A*
- An aviation easement will need to be granted to the city. If not already recorded for property, submit a notarized Aviation Easement form with packet to your project manager. *Exhibit B*

**3. APPLICANT'S SIGNATURE**

---

Signature:

Date:

Aviation Approval:

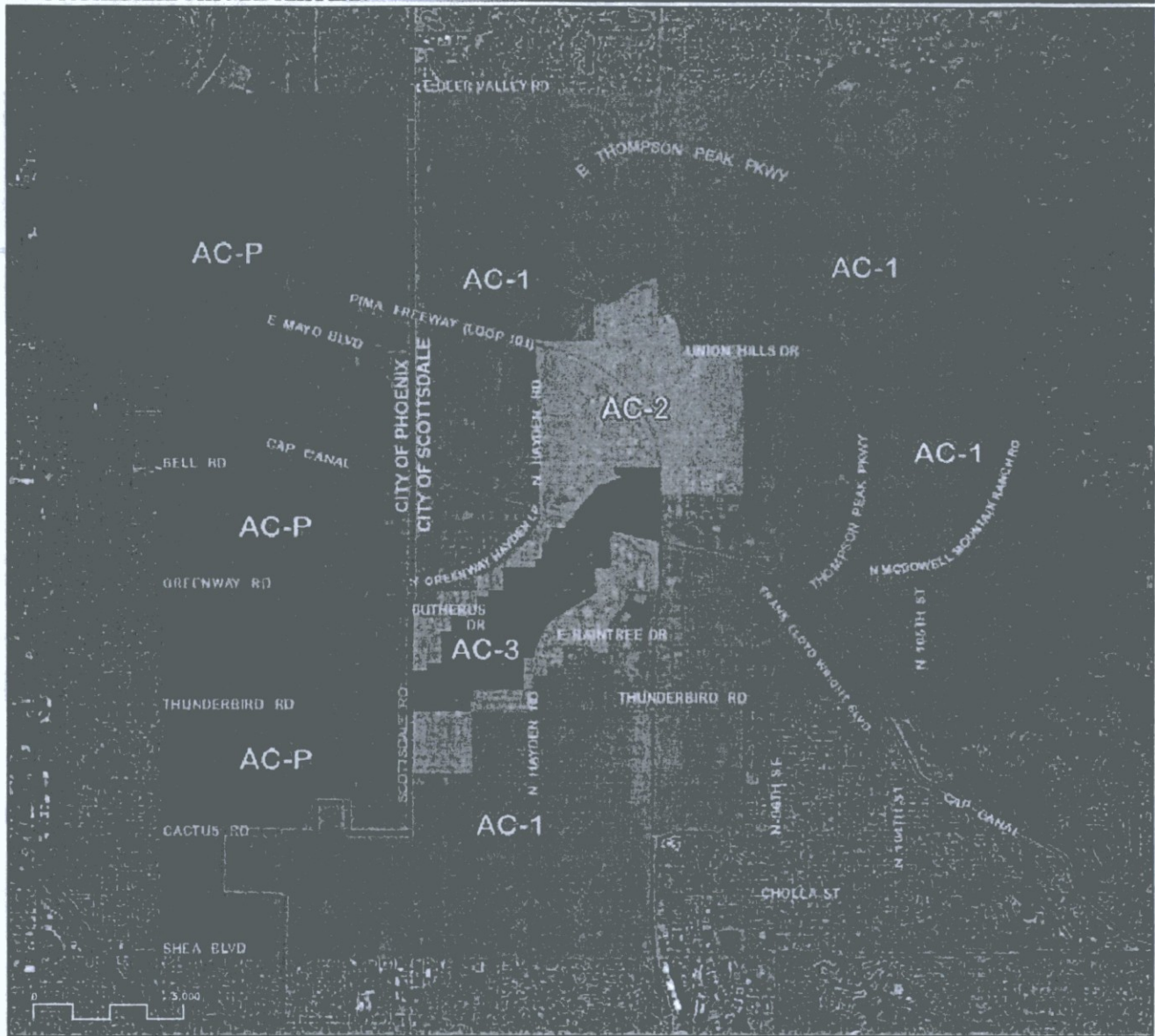
Date:

Comments:

For questions regarding this form or aviation-related requirements, contact Scottsdale Airport at 480-312-2321.



**SCOTTSDALE AIRPORT MASTER PLAN**



**LEGEND AND TABLE KEY**

----- Municipal Boundary

**Airport Influence Areas**

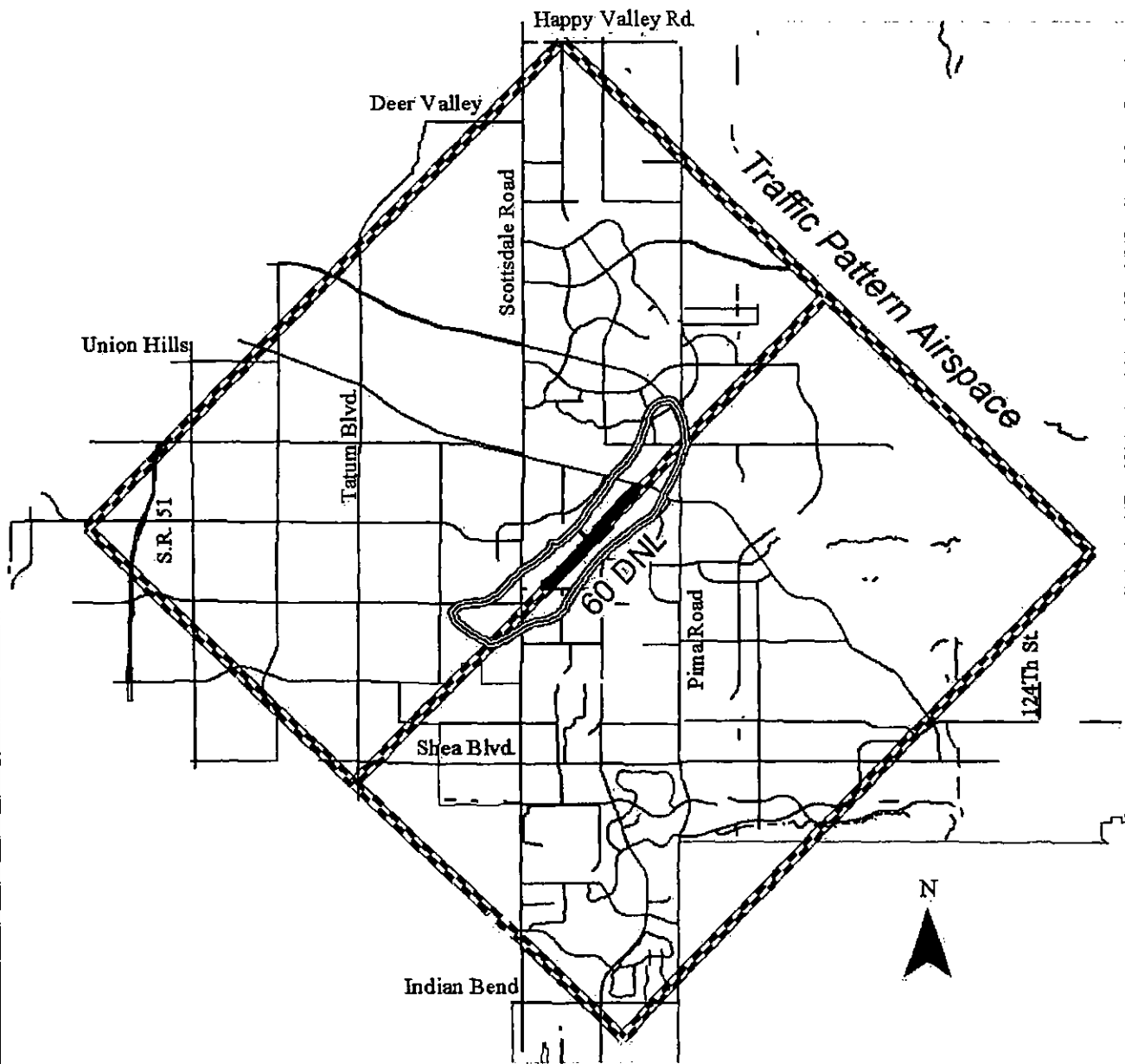
AC-1      AC-3  
 AC-2      AC-P

NP - Not Permitted  
 P - Permitted with Use Limitations  
 (1) - Aviation easement required under Sec. 5-357  
 (2) - Noise attenuation required under Sec. 5-358

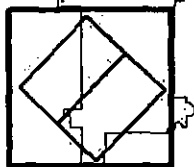
Noise Sensitive Uses	AC-3	AC-2	AC-1
Dwelling unit*	NP	P (1) (2)	P (1)
Manufactured home*	NP	P (1) (2)	P (1)
Elementary and secondary school*	NP	P (1) (2)	P (1)
Hospital*	NP	P (1) (2)	P
Travel accommodation*	NP	P (1) (2)	P
Place of worship	NP	P (1) (2)	P (1)
Cultural, civic, and social organization	NP	P (1) (2)	P (1)

\* The terms dwelling unit, manufactured home, elementary and secondary school, hospital and travel accommodation defined in the Basic Zoning Ordinance.  
 † AC - Airport Compatibility District

# Scottsdale Airport Traffic Pattern Airspace



SCOTTSDALE



Area of Map  
Detail



Map Date: October 18, 2001



**EXHIBIT A**

**SAMPLE FAIR DISCLOSURE FOR DEVELOPMENT AROUND SCOTTSDALE**

**AIRPORT NOTICE TO PURCHASERS**

**OF PROXIMITY TO THE SCOTTSDALE AIRPORT**

To include in CC&R's or disclosure notice:

**Proximity to Airport.**

Each Owner of a Lot in the Airport Influence Area identified in Chapter 5 of the Scottsdale Revised Code acknowledges that, as of the date of this notice:

(a) The Lot is close to the Scottsdale Airport (the "Airport"), located generally between Frank Lloyd Wright Boulevard on the north, Pima Road on the east, Thunderbird Road on the south and Scottsdale Road on the west.

(b) The Airport is operated as a general aviation reliever/commercial service airport for Scottsdale and North Phoenix, and used generally for airplanes, jets and helicopters.

(c) Aircraft using the Airport may fly over the Lot and adjacent properties at altitudes that vary for several reasons, including weather conditions, aircraft type, aircraft performance and pilot proficiency.

(d) The majority of takeoffs and landings occur between 6:00 a.m. and 11:00 p.m., but the Airport is open 24 hours each day, so takeoffs and landings may occur at any time.

(e) The number of takeoffs and landings at the Airport average approximately 400 each day, but that number varies and may increase.

(f) Aircraft using the Airport will generate noise, the volume, pitch, amount and frequency of which will vary for several reasons, including weather conditions, aircraft type, aircraft altitude and aircraft number.

(g) Airport management attempts to minimize aircraft noise and its influence on Lots in the Airport Influence Zone, but there is no guarantee that such attempts will be effective or remain in place.

The Owner accepts and assumes any and all risks, burdens and inconvenience caused by or associated with the Airport and its operations (including noise), and agrees not to assert or make any claim arising out of the Airport and its operations against the City of Scottsdale, its elected and appointed officials, officers, directors, commissioners, representatives, employees, and agents.

Any questions regarding the operation of the Airport can be directed to the Airport Administration office at 480-312-2321.

Exhibit B

**WHEN RECORDED, RETURN TO:**

CITY OF SCOTTSDALE  
ONE STOP SHOP/RECORDS

( \_\_\_\_\_ )  
7447 E. Indian School Road, Suite 100  
Scottsdale, AZ 85251

Exempt from Affidavit of Value  
under A.R.S. § 11-1134(A)(2, 3)



**CITY OF SCOTTSDALE  
AVIGATION EASEMENT**

Project No. \_\_\_\_\_

Q.S. \_\_\_\_\_

FOR ONE DOLLAR (\$1.00) and other good and valuable consideration received  
\_\_\_\_\_ (collectively "Grantor") does hereby grant to the City of Scottsdale, an Arizona municipal corporation ("Grantee"), a perpetual, non-exclusive easement upon, over, under and across the parcel of land (the "Property") described on the legal description and the sketch attached hereto as Exhibits "A" and "B". The purpose of the easement is for a right of flight for the passage of aircraft in the airspace above the surface of the Property as follows:

1. "Aircraft" means any manned or unmanned contrivance or device now known or hereafter invented, used or designed to navigate or fly in the air.
2. Without limitation, the right of flight shall include the right to operate aircraft over and near the Property and to cause within or without said airspace any noise, vibration, fumes, light, exhaust, odors, fuel vapor particles, electronic interference, dust, annoyances, nuisances, emissions, or other effects of any description relating to the operation, use or function of any aircraft in or near the said airspace (collectively the "Aircraft Effects").
3. All Aircraft Effects are included within the scope of the easement, including without limitation those that reach or affect the surface of the Property or improvements to the Property, those that interfere with other uses of the Property, those that annoy users of the Property, and those that are caused or made worse by any of the following:
  - 3.1. Any and all temporary and permanent increases and other changes and variations in the size, number, method of propulsion, weight, noisiness, design, fuel, category, type or other characteristics of aircraft and any permanent, temporary, seasonal, time-of-day or other practices, laws, rules, policies, circumstances, customs, protocols or procedures related thereto.
  - 3.2. Any and all temporary and permanent changes and variations in airport size, orientation, configuration, layout, location, runway length, boundaries, improvements or other characteristics and any permanent, temporary,

seasonal, time-of-day or other practices, laws, rules, policies, circumstances, customs, protocols or procedures related thereto.

- 3.3. Any and all temporary and permanent changes and variations in flight paths, flight frequency, flight timing, airport operations, climbing and descending, altitudes, takeoff and landing, air traffic control and any permanent, temporary, seasonal, time-of-day or other practices, laws, rules, policies, circumstances, customs, protocols or procedures related thereto.
- 3.4. Changes in Grantor's or others' personal perceptions of Aircraft Effects or sensitivity to Aircraft Effects.
4. Grantor shall not cause or allow the Property to be used in a way that causes a discharge of fumes, smoke, dust, electronic emissions, light emissions, or other land use of any description that obstructs visibility or adversely affects or interferes with the operation of aircraft or any navigational facilities used for aircraft operation. No building, mast or other thing upon the Property shall exceed \_\_\_\_\_ feet in height.
5. Grantor has been advised and is of the opinion that:
  - 5.1. All or a portion of the Property is located in a noise-influence area.
  - 5.2. Aircraft Effects might be annoying to users of the Property and might interfere with the unrestricted use and enjoyment of the Property.
  - 5.3. Aircraft Effects will likely increase over time.
6. Grantor waives, remises and releases any right, cause of action, or other claim that Grantor has now or may have in the future against, and covenants not to sue, Grantee regarding Aircraft Effects. Grantor makes all of such covenants waivers, remises, and releases on behalf of itself and its successors and assigns in favor of Grantee and its past, present, or future officers, officials, directors, employees, agents, lessees, sublessees, permittees, invitees, successors and assigns.

Grantor hereby warrants and covenants to Grantee and its successors and assigns that Grantor is lawfully seized and possessed of the Property; that Grantor has a good and lawful right to make the conveyance described herein; and that Grantee shall have title and quiet possession against the claims of all persons.

The person executing this document on behalf of a corporation, trust or other organization warrants his or her authority to do so and that all persons necessary to bind Grantor have joined in this document. This document runs with the land in favor of Grantee's successors and assigns.

DATED this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

GRANTOR: \_\_\_\_\_

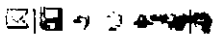
for \_\_\_\_\_

\_\_\_\_\_

for \_\_\_\_\_







Message Adobe PDF

Ignore Delete Reply Reply All Forward More Meeting DCCC To Manager Done Create New Rules OneNote Actions Move Mark Unread Categorize Follow Up Translate Find Search Archive Related Select Zoom Barracuda Networks

From: noreply@faa.gov  
 To: Kurt A. Jones; Kurt A. Jones  
 Cc:  
 Subject: Status of FAA Filing

Sent: Wed 8/10/2016 6:22 AM

Your filing is assigned Aeronautical Study Number 2016-AWP-7701-OE.

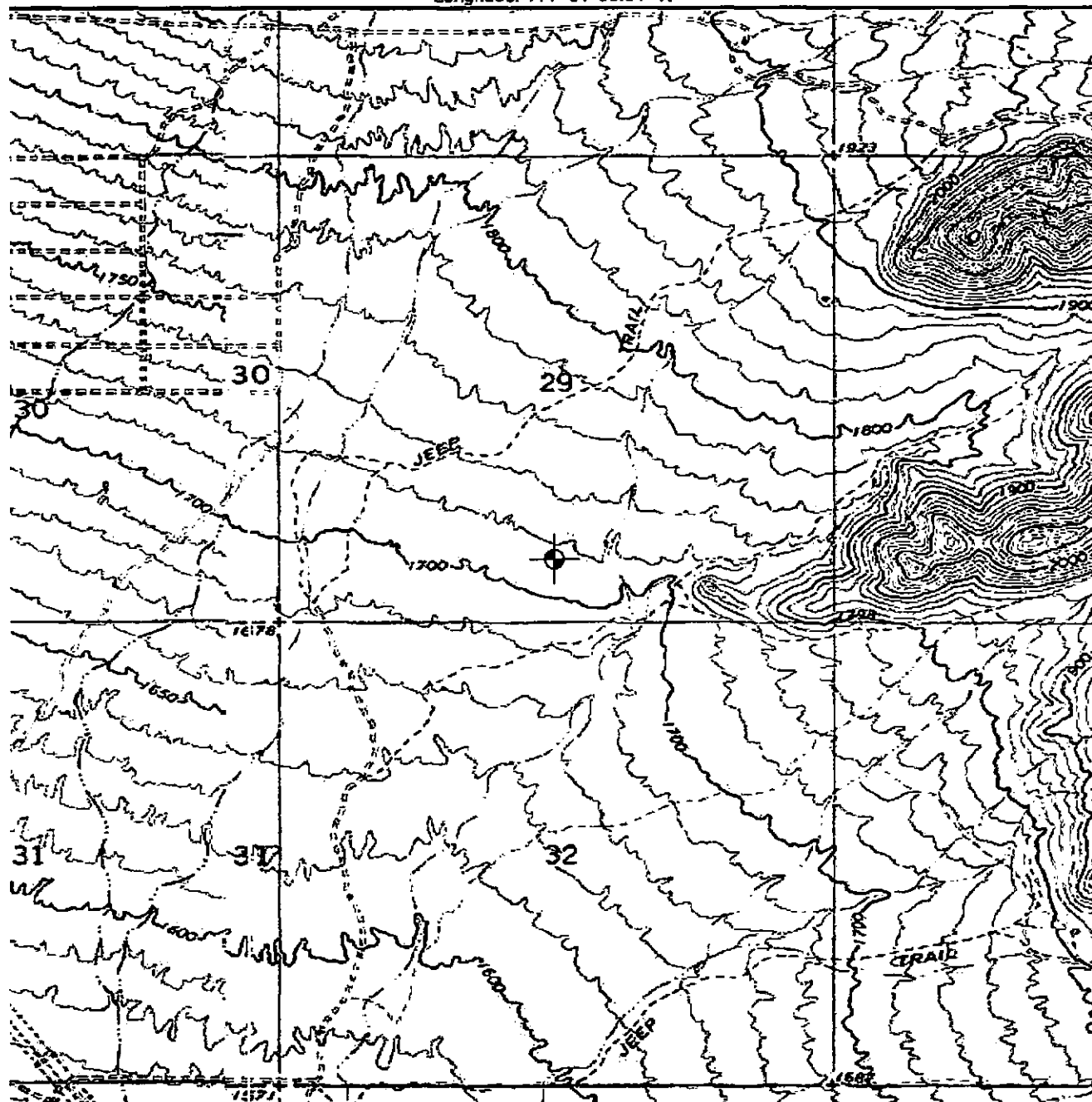
The FAA posted a letter in your registered e-filing account requesting additional information regarding your filing. A response is required from you within 30 days or the case will be terminated. Please review the request and fax scan or upload your response through your registered e-filing account. If you require additional information please contact David Maddox via phone: (202) 267-4525 or email: [david.maddox@faa.gov](mailto:david.maddox@faa.gov). Please refer to the assigned ASN on all future inquiries regarding this filing.

*To ensure e-mail notifications are delivered to your inbox please add [noreply@faa.gov](mailto:noreply@faa.gov) to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review. Each system generated e-mail will contain specific FAA contact information in the text of the message.*

Structure Name: Sterling at Silverleaf

Latitude: 33° 39' 23.72" N

Longitude: 111° 51' 55.51" W



By verifying the coordinates represented on the map, you agree that the location of the case you have entered is correct to the best of your knowledge.

**Project KURT -000379817-16 has been submitted successfully to the FAA.**

**Your filing is assigned Aeronautical Study Number (ASN):  
2016-AWP-7701-OE**

**Please refer to the assigned ASN on all future inquiries regarding this filing.**

**Please return to the system at a later date for status updates.**

**It is the responsibility of each e-filer to exercise due diligence to determine if coordination of the proposed construction or alteration is necessary with their state aviation department. Please use the link below to contact your state aviation department to determine their requirements:  
State Aviation Contacts**

***ok. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or in the text of the message.***

**Return to Portal**