TOWN OF SHADY SHORES
PLANNING AND ZONING COMMISSION
REGULAR SESSION
SEPTEMBER 8, 2022; 7:00 PM
SHADY SHORES COMMUNITY CENTER
101 S. SHADY SHORES ROAD
SHADY SHORES, TX 76208

AGENDA

TO VIEW THE MEETING LIVE: https://shadyshorestx.civicclerk.com/

1. CALL TO ORDER

2. ROLL CALL
   Establish a quorum

3. REGULAR BUSINESS
   1. Consider and act on approval of the July 14, 2022 meeting minutes.

4. WORKSESSION
   1. Dark Sky Lighting- Conduct a worksession relative to the incorporation of dark sky principles into the Town Code of Ordinances.
   2. Tree Care and Preservation Ordinance- Conduct a worksession relative to the development of a tree care and tree preservation ordinance.

5. FUTURE AGENDA ITEMS

6. ADJOURN

I, _____, _____ of the Town of Shady Shores do hereby certify that the above notice of the Planning and Zoning Commission was posted on the bulletin board at the Community Center, 101 S. Shady Shores Road, Shady Shores, Texas on _____ Day of _____, _____, at _____ _____.M.

IN ADDITION, A QUORUM OF CITY COUNCIL MEMBERS MAY CHOOSE TO ATTEND THE PLANNING AND ZONING MEETING POSTED ABOVE. THEREFORE, THIS IS NOTICE OF A CITY COUNCIL MEETING AT THE SAME TIME AND PLACE, WITH THE SAME AGENDA AS THE P&Z MEETING. IN THE EVENT A QUORUM OF COUNCIL IS PRESENT AT THE MEETING, NO ACTION OF THE COUNCIL WILL BE TAKEN. THIS NOTICE IS POSTED AT THE TIME STATED ABOVE.

_____
Amber Schuler, Deputy Town Secretary

SHADY SHORES PLANNING AND ZONING COMMISSION
JULY 14, 2022; 7:00 PM
SHADY SHORES COMMUNITY CENTER
101 S. SHADY SHORES ROAD
SHADY SHORES, TX 76208

MINUTES

Josh Juve	**Chair**	**Present**
Rebecca Morgan	**Vice-Chair**	**Present**
Paul Brown	**Commissioner**	**Present**
Nathan Abato	**Commissioner**	**Absent**
Frank Graham	**Commissioner**	**Present**
Michael Young	**Commissioner- Alternate**	**Present**
Randal DuPape	**Commissioner- Alternate**	**Absent**

STAFF PRESENT: Wendy Withers, Town Administrator, Amber Schuler, Deputy Town Secretary, Katie Klein, Community Relations Administrator, Jim Shepherd, Town Attorney

1. CALL TO ORDER

   Chairman Josh Juve called the meeting to order at 7:09 pm.

2. ROLL CALL

   Establish a quorum

   Chairman Juve called the roll and a quorum was established for the record.

3. REGULAR BUSINESS

   1. Minutes- Consider and act on approval of the June 9th Planning and Zoning Commission meeting minutes.

      Rebecca Morgan made a motion to approve the minutes of the June 9, 2022 meeting. Frank Graham seconded and the motion was approved unanimously.

4. WORKSESSION

   1. Strategic Planning Committee Recommended Discussion Items- Conduct a discussion relative to recommendations for review that were made by the Strategic Planning Committee. Items for discussion may include: Green Space in Developments, Walking Trails/Bicycle Paths/Sidewalks, Dark Sky Lighting Requirements, Home Occupation Regulations and setting a time frame for a future agenda discussion of items.

      The commissioners held a worksession relating to Dark Sky Lighting requirements and also discussed

uses of flood plain areas for green space.

5. FUTURE AGENDA ITEMS

Future agenda items topics:
1. Home Occupations
2. Dark Sky Requirements
3. Green Spaces and amenities

6. ADJOURN

The meeting adjourned at 8:16 PM.

PASSED AND APPROVED THIS THE _____ DAY OF _____, 2022.

APPROVED:

_____
Josh Juve, Chairman

ATTEST:

_____
Amber Schuler, Deputy Town Secretary

AGENDA MEMORANDUM

DATE: September 8, 2022

TO: Planning and Zoning Commission

FROM: Wendy withers, Town Administrator

SUBJECT: **Dark Sky Lighting- Conduct a worksession relative to the incorporation of dark sky principles into the Town Code of Ordinances.**

BACKGROUND/INFORMATION:

The Shady Shores Town Council has expressed interest in adopting lighting regulations that reduce light glare and follow the Dark Sky standards. The attached report was submitted by the Town Engineer to assist in developing these regulations.

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

1. 2022.02.09 - Shady Shores Street Lighting Design Report

REVIEWED BY:

Date: February 9, 2022

To: Cindy Aughinbaugh, Mayor – Town of Shady Shores

From: Derek Sweeney, PE, PTOE

Re: Design Report – Shady Shores Street Lighting Project – Shady Shores, TX

INTRODUCTION

The Town of Shady Shores engaged Binkley & Barfield to coordinate with Oncor to install street lighting at the following locations:

- Fritz Lane at W. Shady Shores Road
- Garza Road at W. Shady Shores Road (School intersection)
- W. Shady Shores Road/Lakeshore Road/Cielo Lane/S. Shady Shores Road
- Smokey Lane at Garza Road

As part of this project, we coordinated with Oncor to better understand their design and construction process as well as what the Town would need to provide to achieve the desired lighting outcomes. The Town has also expressed their desire to reduce light glare by following Dark Sky standards. As such, we researched Dark Sky criteria and specifications to better understand how this can be achieved.

This design report summarizes our work efforts related to this coordination and research

ONCOR DESIGN PROCESS

Our office met with Kym Teeters, Sr. Utility Designer with Oncor, on January 25, 2022, to go over Oncor's street light design and installation process. Oncor has two standard ways of supporting street lighting. The first is by providing electric service to light fixtures installed and maintained by the Town. The second is by installing, operating, and maintaining light fixtures for a fixed monthly cost per fixture that is billed to the Town. The second option is what the Town has expressed interest in.

Oncor has several LED light fixture options available that are suitable to roadway and neighborhood lighting. For the purposes of this project, the fixtures looked at were cobra head and rectangular. Ms. Teeters mentioned that they install the rectangular type more often than cobra head. Oncor's standard illumination design includes underground conduit/wiring and rectangular metal poles installed on concrete foundations. Standard mounting height is 30 feet. While Oncor will install the full lighting system, it caps their cost at a specific allowable cost per fixture. Anything above that will be the responsibility of the Town to fund. This is in addition to the monthly usage fees. The Town does have the option to use wood poles and overhead wiring to save installation cost, if needed.

Based on Oncor's provided documentation, it is expected that the monthly usage fees will range between $25-30 per fixture.

The design process is fairly simple – Binkley & Barfield will provide an illumination concept plan showing proposed pole locations and photometrics based on Oncor provided fixtures. Once the pole locations have been approved by the Town, Binkley & Barfield will provide this to Oncor to begin the electrical design. The design usually takes a few weeks and once complete Oncor will provide information on the additional costs for which the Town would be responsible, which are the costs above the Oncor allowed

Binkley & Barfield, Inc. • **TxEng F-257** • 1801 Gateway Boulevard, Suite 101 - Richardson, Texas 75080 • Tel: 972.644.2800 | Fax: 972.644.2817 • www.binkleybarfield.com

installation costs per fixture. Once the Town agrees to the project and executes the necessary documents, construction will likely occur within 4-6 weeks.

Dark Sky Community Standards

The international Dark-Sky Association sets various guidelines for outdoor lighting with the ultimate goal of protecting the night from light pollution. In order to minimize light pollution, the organization believes that lighting should:

- Only be on when needed.
- Only light the area that needs it.
- Be no brighter than necessary.
- Minimize blue light emissions.
- Be fully shielded (pointing downward).

The Fixture Seal of Approval Program developed by the International Dark-Sky Association certifies a range of specific light fixtures as dark sky friendly. According to Oncor on their website, the Evolve Cobra Head and Evolve LED Area Light Rectangular fixtures supplied by Oncor are certified as dark sky compliant fixtures.

Optimal LED Color Temperature

According to the Internal Dark-Sky Association, an LED color temperature of 3000 K or less is recommended for outdoor lighting applications. This color leans more towards the warmer end of the lighting spectrum (yellow) and helps minimize potentially harmful blue light. Use of blue light could result in increased light pollution, increased glare, decreased road safety, and negative impacts to wildlife behavior and reproduction.

Minimum Illumination Design Factors

The Town of Shady Shores does not currently have established lighting standards; therefore, research was conducted to determine reasonable lighting standards. Minimum illumination design factors were determined using guidance from the AASHTO *Roadway Lighting Design Guide* and the City of Dallas lighting standards discussed in the City's *Street Design Manual*. Based on the research, an average of 1.5 foot-candles and a maximum uniformity ratio (average/min) of 3.0 was sought at all intersections. It is believed that these design values will provide adequate brightness and distribution to each of the intersections.

The lighting layout designs established analysis areas that focused on the critical areas of the intersections, including stop bars, crosswalks, conflict points and decision points while minimizing spillover lighting on adjacent properties. The uniformity ratio, which is the ratio of the average illumination level to the minimum illumination level, describes how consistent the resultant lighting appears throughout the analysis area.

Fixture Type Recommendations

After coordinating with Oncor, it was determined that the GE Evolve Cobra Head (ERLC, ERL1, ERLH, ERL2) and GE Evolve LED Area Light Rectangular fixture (EACL) are supplied by the agency for intersection lighting applications. The manufacturer, GE, offers a variety of options for both fixtures such as shielding, distribution type, color temperature, voltage, and typical lumens, among others. Based on the photometric analysis, the following fixture types are recommended:

- GE Evolve LED Area Light Rectangular - EACL010C3AW730
    - Specifications
        - Typical lumens: 7,400

        - Color temperature: 3000K
        - IES Distribution Type: Type III
        - Fixture housing color: Dark Bronze (Oncor Standard)
    - Proposed Locations
        - Shady Shores Road at Cielo Lane
- GE Evolve LED Area Light Rectangular - EACL010E4AF730
    - Specifications
        - Typical lumens: 12,200
        - Color temperature: 3000K
        - IES Distribution Type: Type IV
        - Fixture housing color: Dark Bronze (Oncor Standard)
    - Proposed Locations
        - W Shady Shores Road at Fritz Lane
        - Garza Road at Smokey Lane
        - Garza Road at W Shady Shores Road

The placement of these fixtures (as shown on **Exhibits 1-4**) will ensure adequate lighting is provided at each of the intersections based on the design requirements discussed above. Additionally, these fixtures will meet Dark Sky community standards.

Continued coordination with Oncor is still necessary to confirm availability of the desired light fixtures and poles. As mentioned previously, Oncor offers rectangular metal poles or wood poles but did not provide specific cut sheets for review.

ATTACHMENTS

- Light Fixture Specification Cut Sheet
- Exhibit 1 – Garza Road at Smokey Lane
- Exhibit 2 – Garza Road at W Shady Shores Road
- Exhibit 3 – W Shady Shores Road at Fritz Lane
- Exhibit 4 – Shady Shores Road at Cielo Lane

Evolve® LED Area Light
Compact Low Wattage (EACL)

Project Name _____

Date _____ Type _____

Notes _____

Current's EAL Series of Area Light Luminaires offer a wide range of optical patterns, color temperatures, lumen packages, and mounting configurations to optimize area light applications, as well as provide versatility in lighting design within the same form factor.

CONSTRUCTION

Housing:	Die-cast aluminum housing with integral heat sink for maximum heat transfer
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze Gray, White (RAL & custom colors available) Optional coastal finish available.
Weight:	18 lbs (8.16 kg) Max depending on configuration

OPTICAL SYSTEM

Lumens:	2,900 - 20,400
Distribution:	Asymmetric Forward Type IV Asymmetric Wide Type III Asymmetric Narrow/Auto Type II
Efficacy:	123 - 143 LPW
CCT:	3000K, 4000K, 5000K
CRI:	≥70

ELECTRICAL

Input Voltage:	120-277V & 347-480V
Input Frequency:	50/60Hz
Power Factor:	> 90% at rated watts
Total Harmonic Distortion:	< 20% at rated watts

SURGE PROTECTION*

Typcial (120 Strikes)	Enhanced (40 Strikes)	Extreme (40 Strikes)
☐ 6kV/3kA*	☐ 10kV/5kA*	☐ 20kV/10kA*

*Per ANSI C136.2-2015

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Lumen Codes	LXX(10K) @ Hours		
	25,000 HR	50,000 HR	60,000 HR
A2, A3, A4, B2, B3, B4, C2, C3, C4D2, D3, D4, E2, E3, E4, F2, F3, F4	L94	L90	L88
H2,H3, H4	L97	L96	L96

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted Industry tolerances apply to initial luminous flux and lumen maintenance measurements.

LUMINAIRE AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40°C to 50°C
Vibration:	3G vibration per ANSI C136.31-2018
LM-79:	Testing in accordance with IESNA Standards

CONTROLS

Dimming:	Standard - 0-10V ☐ Optional - DALI (Option U) ☐
Sensors:	Photo Electric Sensors (PE) available LightGrid and Daintree Compatiable

WARRANTY

☐ **5 Year (Standard)**

GE current
a Daintree company

UL 1598 for WET LOCATIONS · IP66 · IK08

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Evolve® LED Area Light
Compact Low Wattage (EACL)

Project Name _____

Date _____ Type _____

Notes _____

Catalog Logic

EACL 01 7

_ _

PROD. ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION	CRI (min)	CCT	DIMMING[2]	CONTROLS	MOUNTING ARM	COLOR	OPTIONS
E = Evolve	01	0 = 120-277[1]	Ax=3000	AF = Asymmetric Forward	7 = 70	30 = 3000K[11]	N = Dimming thru PE receptacle[12]	1 = None	C1 = Integral Slip-fitter for 1.25"- 2" Pipe (1.66in. OD - 2.378 in. OD)[4]	GRAY = Gray	F = Fusing
AC = Compact Area Light		H = 347-480[1]	Bx=5000	AW = Asymmetric Wide		40 = 4000K	D = External Dimming 18/2-3ft cable[12]	A = ANSI 7-pin PE receptacle (no control)	D1 = Universal Mounting Arm, fitted for round or square pole mounting[5]	BLCK = Black	H = Motion Sensor (Sensor Switch)[8]
L = Low Voltage			Cx=7500	AN = Asymmetric Narrow/Auto		50 = 5000K	X = No PE receptacle, no external dimming leads[13]	D = ANSI 7-pin PE receptacle with shorting cap provided	K1 = Knuckle Slipfitter for 1.9 in - 2.3in. OD Tenon[5,6]	DKBZ = Dark Bronze	H1 = Motion Sensor w/LightGrid
		1 = 120	Dx=10000					E = ANSI C136.41 7-pin with Non-Dimming PE Control[3]	S1 = Knuckle Slipfitter for 2.3in. - 3.0in OD Tenon[5,6]	WHTE = White	H2 = Motion Sensor (Daintree)[8]
		2 = 208	Dx=10000						V1 = Knuckle Wall Mount[5,6]		H4 = Motion Sensor (Wattstopper)
		3 = 240	Ex=12500								J = cUL/Canada
		4 = 277	Fx=15000								L = Tool-Less Entry
		5 = 480	Hx=20000								R= Enhanced Surge Protection (10kV/ 5kA)
		D = 347									U = DALI dimming[7]
											V0 = 3-Position Terminal Block
											V1 = Variable output via Field Adjustable Module
											Y = Coastal Finish[10]
											XXX = Special Options

[1] Not Available with Fusing, Must Choose a Discrete Voltage with "F" Option Code
[2] Note Standard Dimming is 0-10V
[3] PE Control only available for 120-277V, 347V or 480V Discrete Voltage.
[4] Supplied with 3ft leads
[5] Supplied with 16/3 ft Cable
[6] Restricted Aiming Angle of 0-45°
[7] Compatible with LightGrid Wireless Control Nodes, Not Compatible with Motion Sensor Control
[8] Not available in 347V, 480V or 347-480V
[10] Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
[11] Select 3000K CCT for IDA approved fixtures.
[12] Can only be ordered with Controls A, D or E
[13] Can on be used with controls option 1

GE current
a Daintree company

Evolve® LED Area Light
Compact Low Wattage (EACL)

Spec Tables

Project Name _____

Date _____ Type _____

Notes _____

OPTICAL CODE	DIST CODE	CLASSIFICATION	TYPICAL LUMENS		TYPICAL SYSTEM WATTAGE		BUG RATING	
			3000K	4000K &5000K	120-277V	347-480V	3000K	4000K &5000K
A4	AF	TYPE IV	2900	2900	21	23	B1-UO-G1	B1-UO-G1
B4			4900	4900	36	38	B1-UO-G1	B1-UO-G1
C4			7300	7300	55		B1-UO-G2	B1-UO-G2
D4			9800	9800	73		B2-UO-G2	B2-UO-G2
E4			12200	12200	95		B2-UO-G2	B2-UO-G2
F4			14700	14700	122		B2-UO-G2	B2-UO-G2
H4			19000	19000	153		B3-UO-G3	B3-UO-G3
A3			2900	3000	21	23	B1-UO-G1	B1-UO-G1
B3			4900	5100	36	38	B1-UO-G1	B1-UO-G1
C3			7400	7600	55		B1-UO-G2	B1-UO-G2
D3	AW	TYPE III	9900	10200	73		B2-UO-G2	B2-UO-G2
E3			12400	12700	95		B2-UO-G2	B2-UO-G2
F3			14900	15300	122		B2-UO-G2	B2-UO-G2
H3			19300	20400	153		B3-UO-G2	B3-UO-G2
A2	AN	TYPE II	2900	3000	21	23	B1-UO-G1	B1-UO-G1
B2			4900	5000	36	38	B1-UO-G1	B1-UO-G1
C2			7300	7500	55		B2-UO-G1	B2-UO-G2
D2			9800	10100	73		B2-UO-G2	B2-UO-G2
E2			12300	12600	95		B2-UO-G2	B2-UO-G2
F2			14700	15100	122		B3-UO-G2	B3-UO-G3
H2			19100	20200	153		B3-UO-G3	B3-UO-G3

For additional information on EACL IES files, please click one of the following links:

Non-Shielded Shielded

Evolve® LED Area Light

Compact Low Wattage (EACL)

Photometric Plots

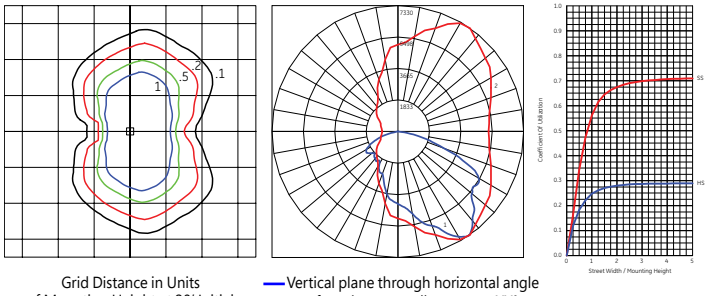
Project Name _____

Date _____ Type _____

Notes _____

EACL - Type II - Very Short

15,100 lumens
EACL01_F2AN750___.IES



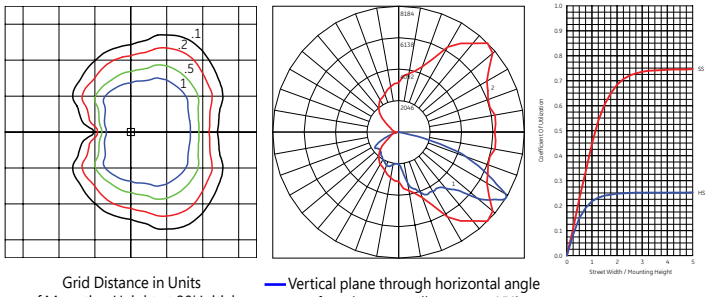
Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

Vertical plane through horizontal angle of maximum candlepower at XX°

Vertical plane through horizontal angle of XX°

EACL - Type III - Short

15,300 lumens
EACL01_F3AW750___.IES



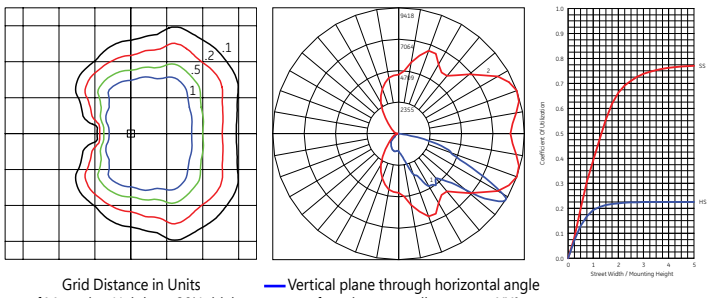
Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

Vertical plane through horizontal angle of maximum candlepower at XX°

Vertical plane through horizontal angle of XX°

EACL - Type III - Very Short

15,000 lumens
EACL01_F4AF750___.IES



Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

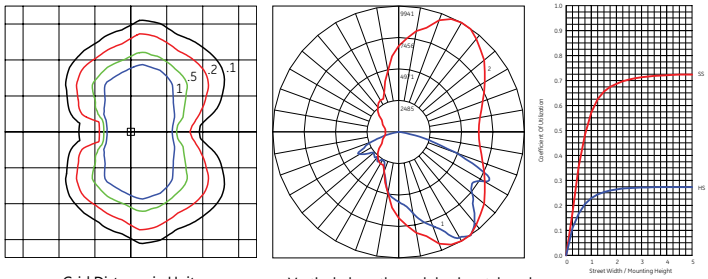
Vertical plane through horizontal angle of maximum candlepower at XX°

Vertical plane through horizontal angle of XX°

GE current
a Daintree company

EACL - Type II- Very Short

20,200 lumens
EACL01_H2AN750___.IES

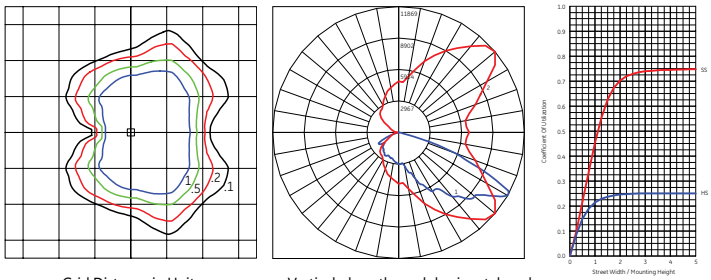


Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at XX°
— Vertical plane through horizontal angle of XX°

EACL - Type III - Short

20,400 lumens
EACL01_H3AW750___.IES

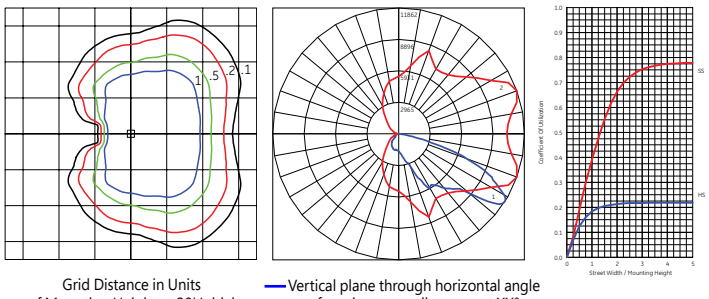


Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at XX°
— Vertical plane through horizontal angle of XX°

EACL - Type IV - Very Short

20,000 lumens
EACL01_H4AF750___.IES



Grid Distance in Units of Mounting Height at 20' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at XX°
— Vertical plane through horizontal angle of XX°

Evolve® LED Area Light

Compact Low Wattage (EACL)

Motion Sensing

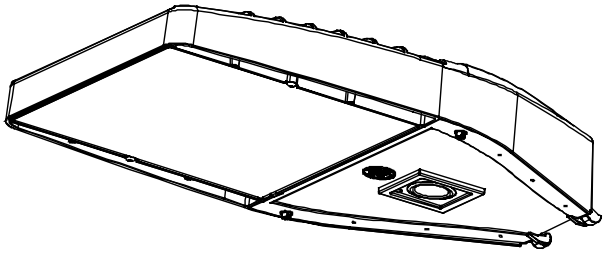
Project Name _____

Date _____ Type _____

Notes _____

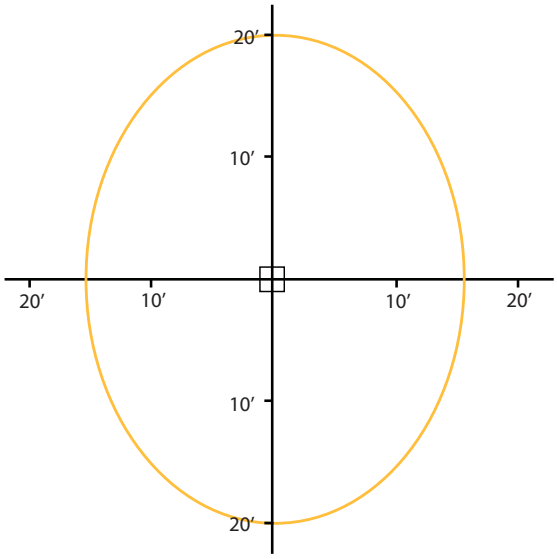
H-MOTION SENSING OPTION

- Recommended Mounting Height: 15-30′ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Coverage Radius: 15-20′ (4.6-6.1 m).
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output: Occupied - 100%/Unoccupied - 50%
  – Integral PE Sensor.
  – 5 minute post-occupancy time delay, 5 minute dimming ramp-down.
- Fixture power increase of 1W expected with sensor use.



H1/4 - MOTION SENSING OPTION (WATTSTOPPER)

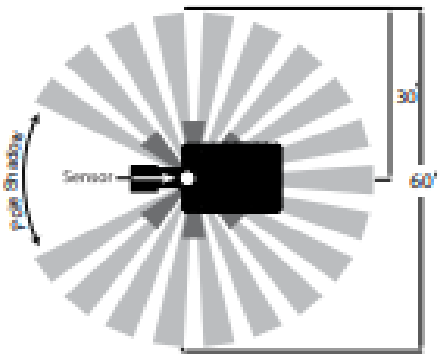
- Recommended Mounting Height: 15-30′ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Coverage Radius: 15-20′ (4.6-6.1 m).
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output: Occupied - 100%/Unoccupied - 50%
  – PE Sensor: Enabled
  – Ramp/Fade: 5 Minutes/5 Minutes
- Adds < 1W to fixture power rating
- Field programmable using FSIR-100 hand held programmer



Sensing Pattern Area Fixture
Up to 30 ft. Mounting Height

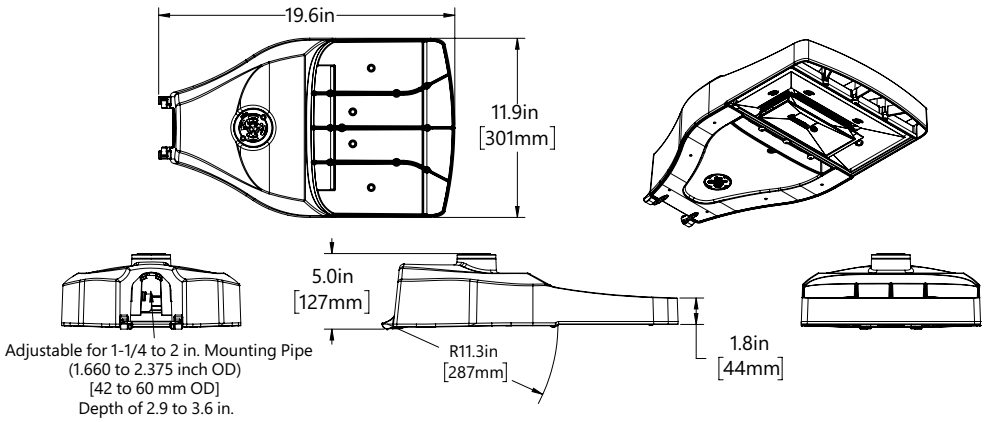
H2 - MOTION SENSING OPTION (DAINTREE)

- Recommended Mounting Height: 15-30′ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Provides a coverage area radius for walking motion of 15-20 ft. (4.57-6.10m)
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output: Occupied - 100%/Unoccupied - 50%
  – PE Sensor: None
  – Ramp/Fade: 5 Minutes/5 Minutes
- Adds < 1W to fixture power rating
- Requires Daintree Enterprise and wide area control (WAC)

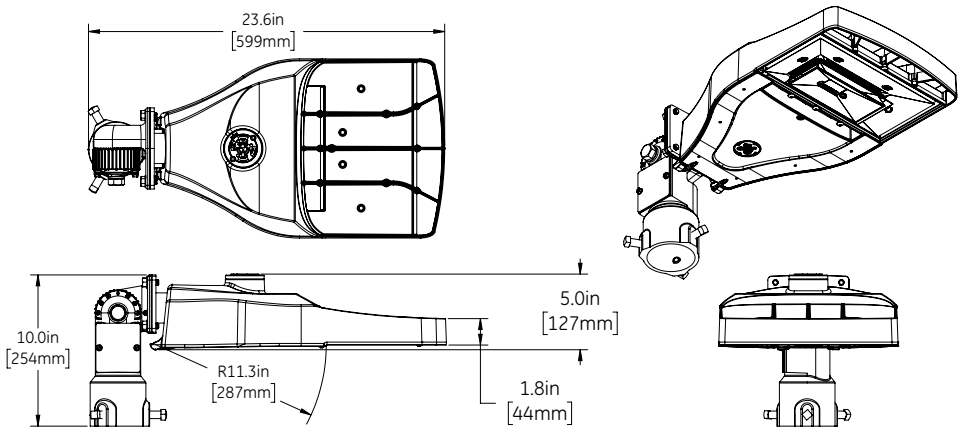


GE current
a Daintree company

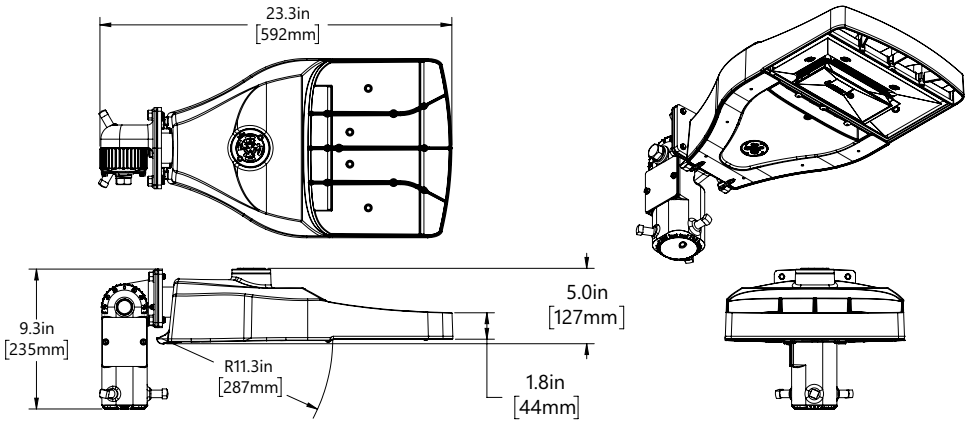
Integral Slipfitter: C1



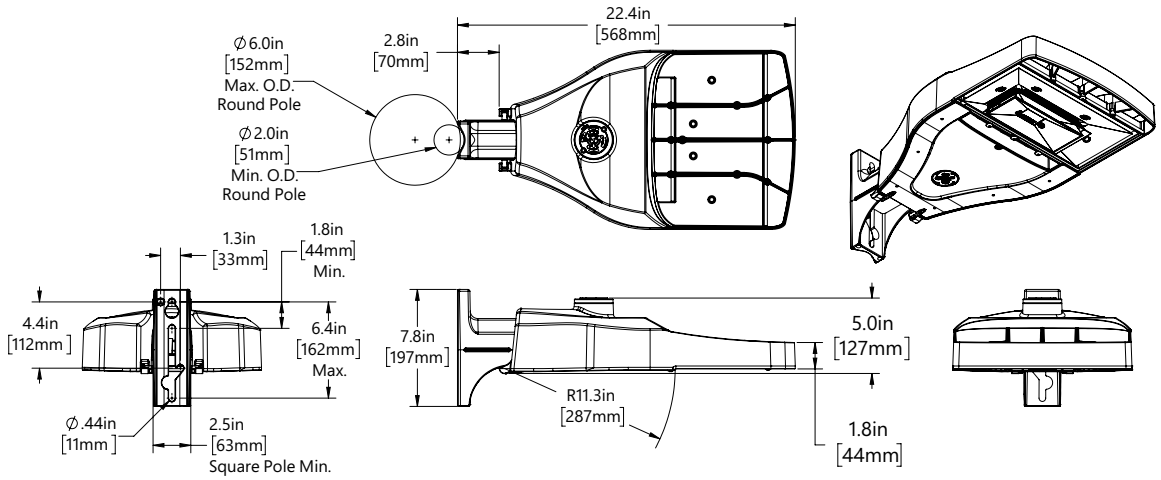
Knuckle Slipfitter: S1



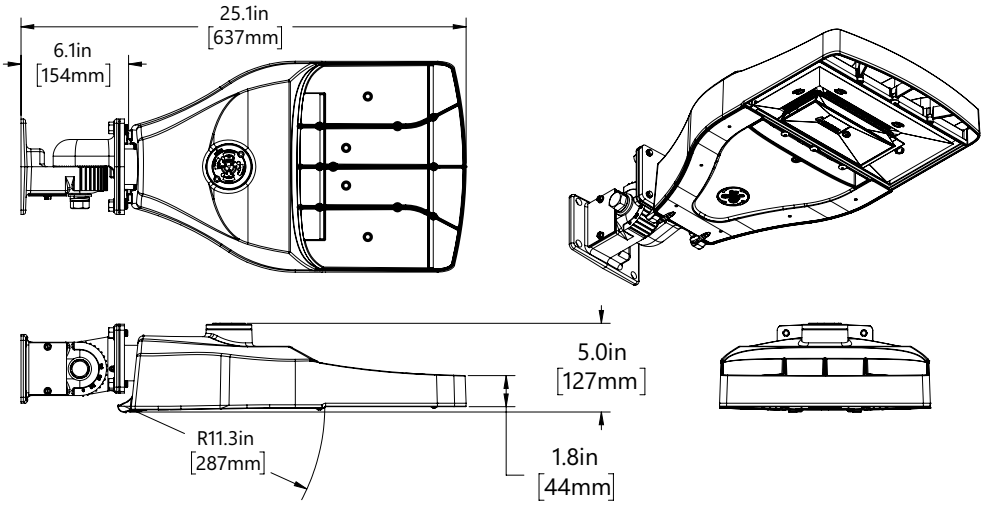
Knuckle Slipfitter: K1



Universal Mounting Arm: D1



Knuckle Wall Mount: V1



WEIGHT

- 18 lbs (8.16 kg) Max depending on configuration

EFFECTIVE PROJECTED AREA

- Integral Slipfitter C1, EPA = 0.31 Min/0.37 Max
- Universal Arm Mount D1, EPA = 0.31 Min / 0.52 Max
- Knuckle Slipfitter S1, K1 downward aim, EPA = 0.46 Min / 0.56 Max
- Knuckle Slipfitter S1, K1 45° aim, EPA = 0.56 Min / 1.03 Max

Evolve® LED Area Light

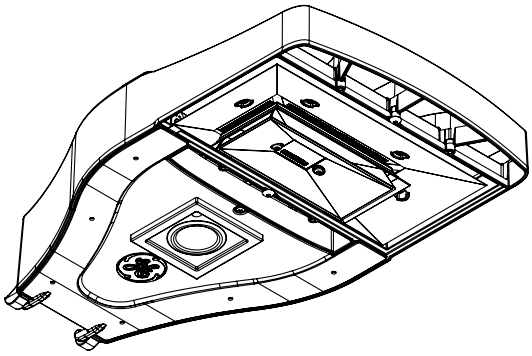
Compact Low Wattage (EACL)

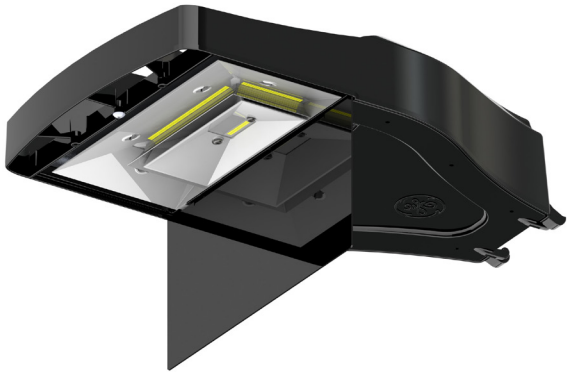
Mounting & Accessories

Project Name _____

Date _____ Type _____

Notes _____





PE Accessories (to be ordered separately)

SAP Number	Part Number	Description
93123552	WANSI - 277	ANSI 136.41 Dimming PE Daintree Enable, 105-305V
93123553	WANSI - 480	ANSI 136.41 Dimming PE Daintree Enable, 312-530V
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V

SAP Number	Part Number	Description
28299	PEC0TL	Standard 120-277V
28294	PEC5TL	Standard 480V
80436	PECDTL	Standard 347V
93147530	PECHTL	Long Life Standard PE 347-480V
73251	SCCL-PECTL	Shorting cap

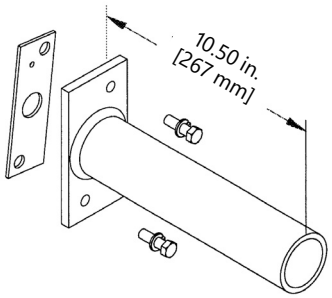
EACL Shields

Shield Orientations	Cutoff Distance	Shield Order Logic
Back	Long	ELS-EACL-RBL-BLCK
Front	1.5	ELS-EACL-RF3-BLCK
Front	2	ELS-EACL-RF4-BLCK
Side	1	ELS-EACL-RS2-BLCK

MOUNTING ARMS FOR SLIPFITTER Order separately with Mounting Option C1 (Slipfitter)

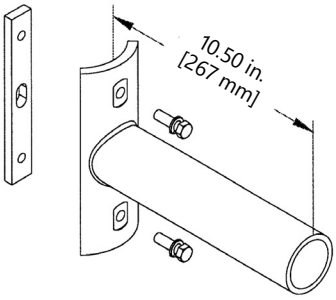
SQUARE POLE MOUNTING ARM

- 3.5 TO 4.5-inch (89 to 114mm) SQUARE (WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
- SPA-EAMT10BLCK "Black"
- SPA-EAMT10DKBZ "Dark Bronze"
- SPA-EAMT10WHTE "White"
- SPA-EAMT10GRAY "Gray"

- 3.5 TO 4.5-inch (89 to 114mm) OD (WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



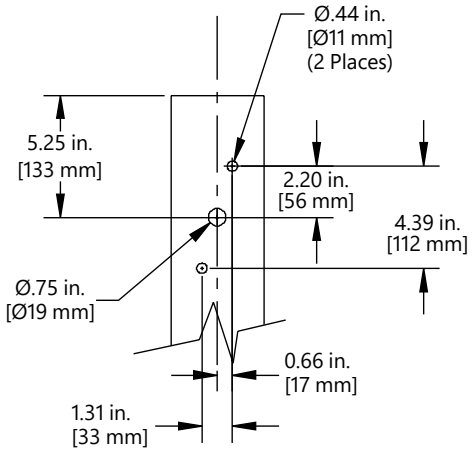
ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
- RPA-EAMT10BLCK "Black"
- RPA-EAMT10DKBZ "Dark Bronze"
- RPA-EAMT10WHTE "White"
- RPA-EAMT10GRAY "Gray"

Wall Mounting Bracket Adapter Plate

ORDER SEPERATELY FROM FIXTURE AS CATALOG NUMBER
WMB-EAMT06
**NOTE: For Wall Mounting, order luminaire with mounting arm: C1 = Slipfitter 2" Pipe (2.378 in. OD) supplied with leads.*

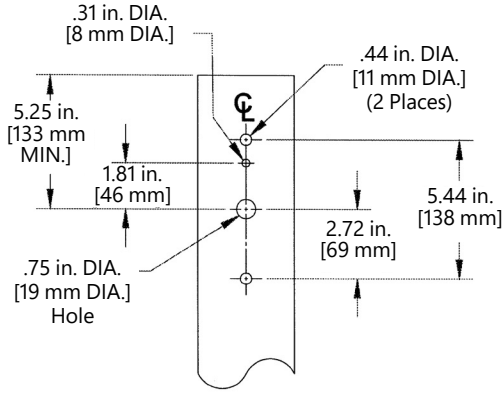
Other mounting patterns are available for retrofit installations. Contact manufacturing for other available mounting patterns.

SQUARE POLE MOUNTING DRILLING TEMPLATE

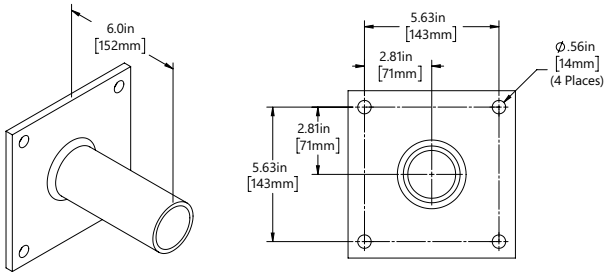


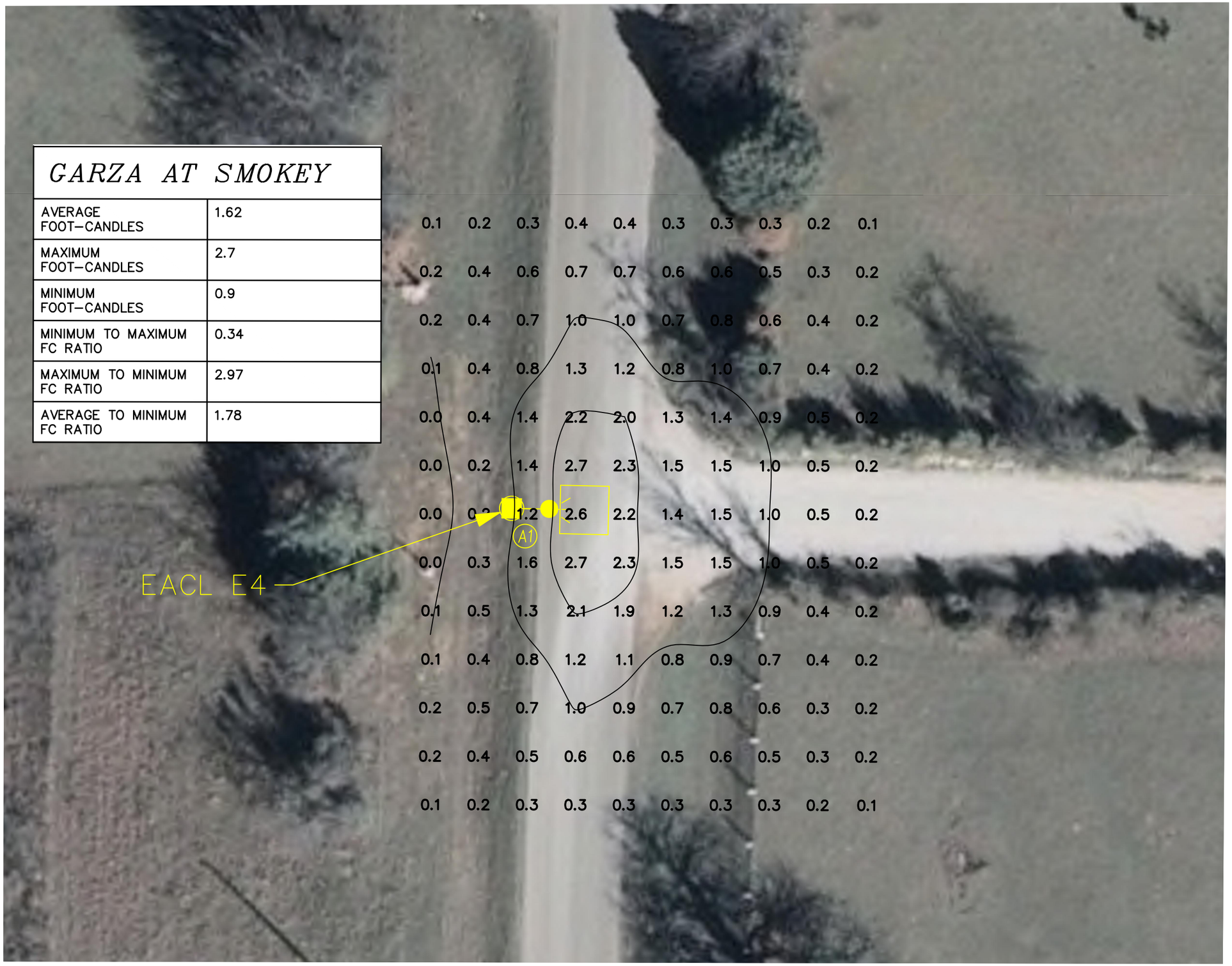
ROUND POLE MOUNTING DRILLING TEMPLATE

- 3.5 TO 4.5-inch (89 to 114mm) OD round pole mounting arm



WALL MOUNTING BRACKET HOLE PATTERN





GARZA AT SMOKEY	
AVERAGE FOOT–CANDLES	1.62
MAXIMUM FOOT–CANDLES	2.7
MINIMUM FOOT–CANDLES	0.9
MINIMUM TO MAXIMUM FC RATIO	0.34
MAXIMUM TO MINIMUM FC RATIO	2.97
AVERAGE TO MINIMUM FC RATIO	1.78

0 10 20
SCALE: 1"=20'

NO.	REVISIONS	DATE

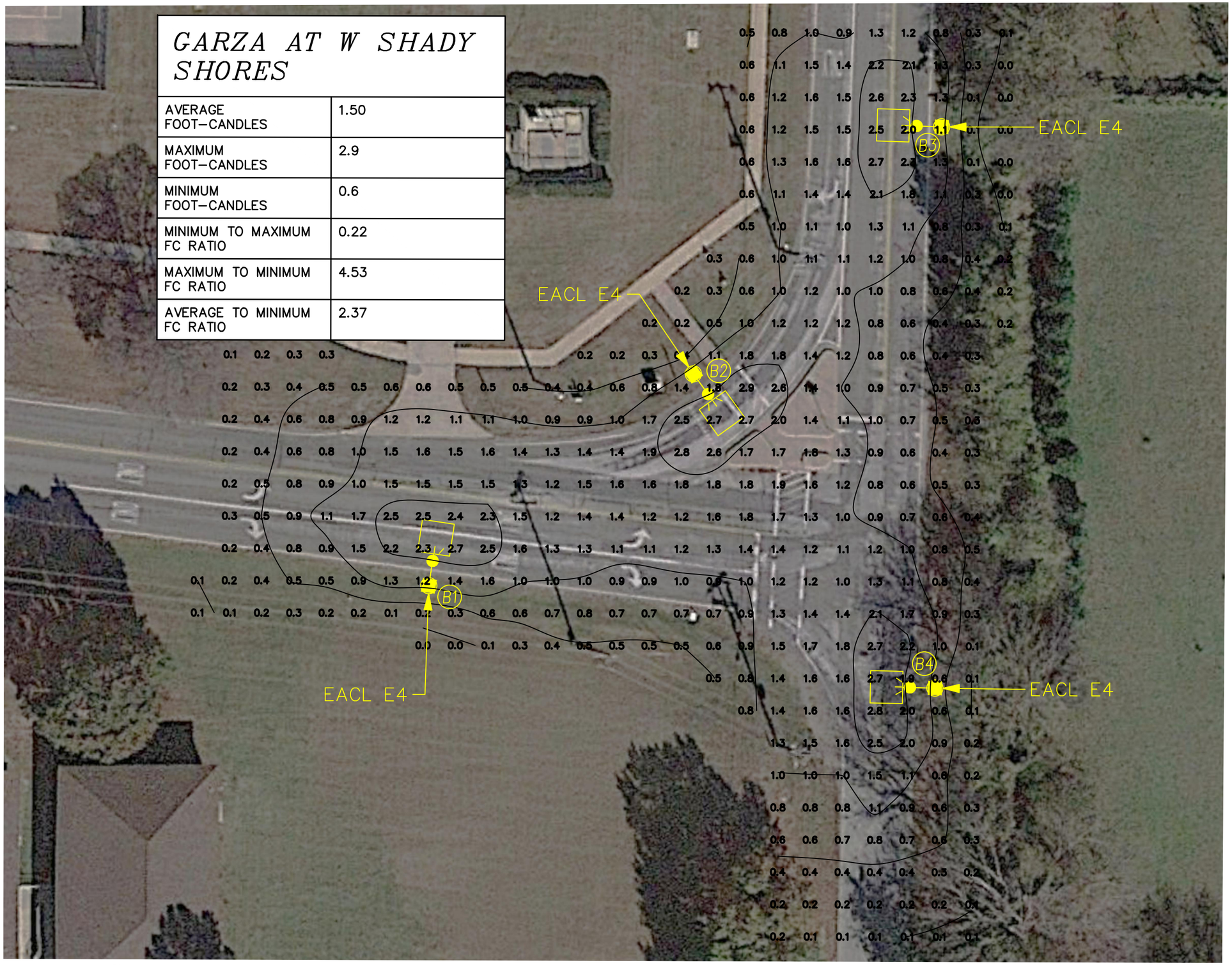
ILLUMINATION PLAN
GARZA RD AT SMOKEY LN
STREET LIGHTING PROJECT
TOWN OF SHADY SHORES, TEXAS

Binkley & Barfield, Inc.
consulting engineers
Texas Registration Number F-257
1801 Gateway Blvd. Suite 101 Richardson, Texas 75080 www.binkleybarfield.com
Phone (972) 644-2800 Fax (972) 644-2817

DRAWN BY:	DATE:	SCALE:	JOB NUMBER:	SHEET:
BBI	FEB. 2022	1" = 20'	0160012012	1

GARZA AT W SHADY SHORES

AVERAGE FOOT-CANDLES	1.50
MAXIMUM FOOT-CANDLES	2.9
MINIMUM FOOT-CANDLES	0.6
MINIMUM TO MAXIMUM FC RATIO	0.22
MAXIMUM TO MINIMUM FC RATIO	4.53
AVERAGE TO MINIMUM FC RATIO	2.37



0 15 30
SCALE: 1"=30'

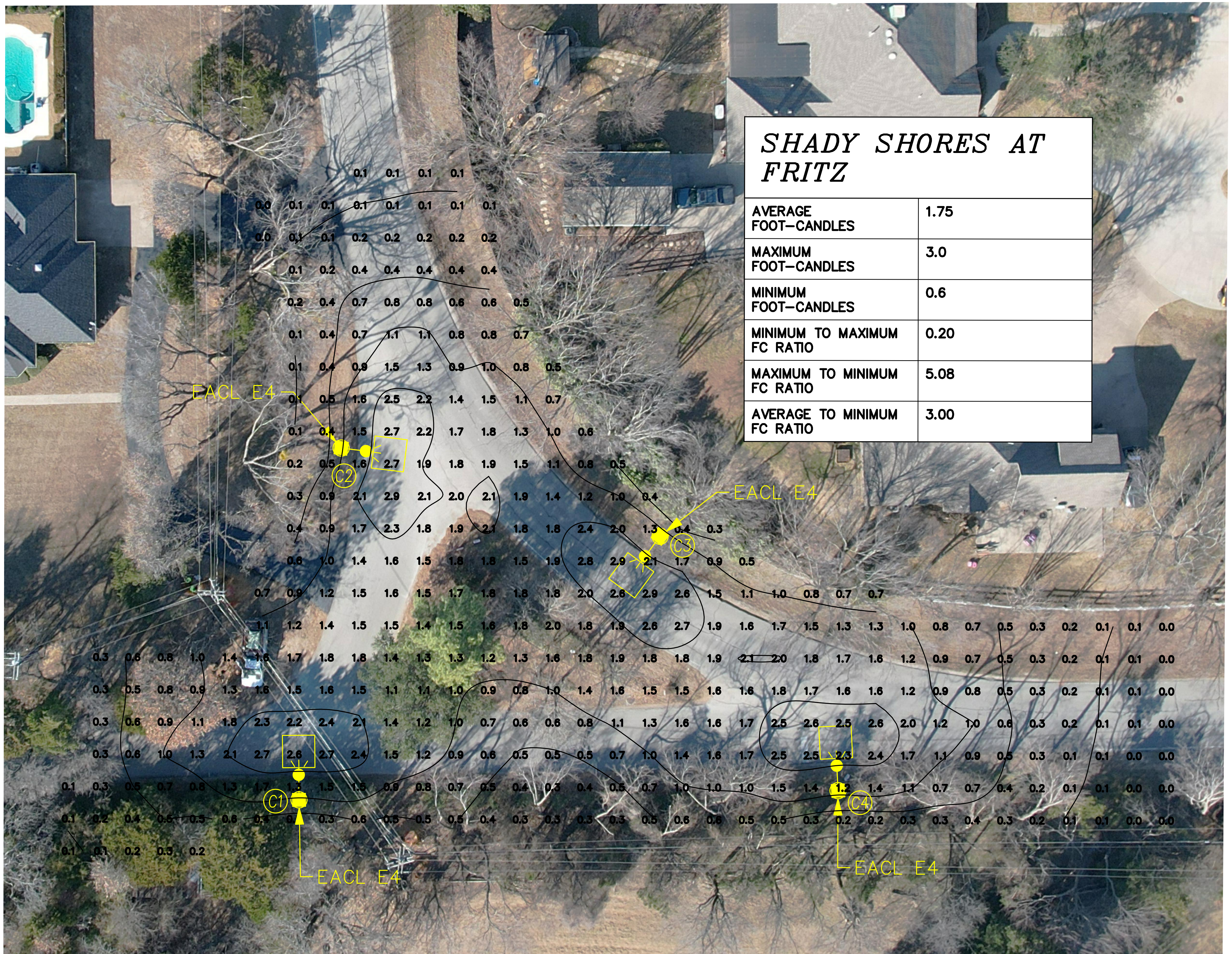
N

NO. REVISIONS DATE

ILLUMINATION PLAN
GARZA RD AT W SHADY SHORES RD
STREET LIGHTING PROJECT
TOWN OF SHADY SHORES, TEXAS

Binkley & Barfield, Inc.
consulting engineers
Texas Registration Number F-257
1801 Gateway Blvd. Suite 101 Richardson, Texas 75080 www.binkleybarfield.com
Phone (972) 644-2800 Fax (972) 644-2817

DRAWN BY:	DATE:	SCALE:	JOB NUMBER:	SHEET:
BBI	FEB. 2022	1" = 30'	0160012012	2



SHADY SHORES AT FRITZ

AVERAGE FOOT–CANDLES	1.75
MAXIMUM FOOT–CANDLES	3.0
MINIMUM FOOT–CANDLES	0.6
MINIMUM TO MAXIMUM FC RATIO	0.20
MAXIMUM TO MINIMUM FC RATIO	5.08
AVERAGE TO MINIMUM FC RATIO	3.00

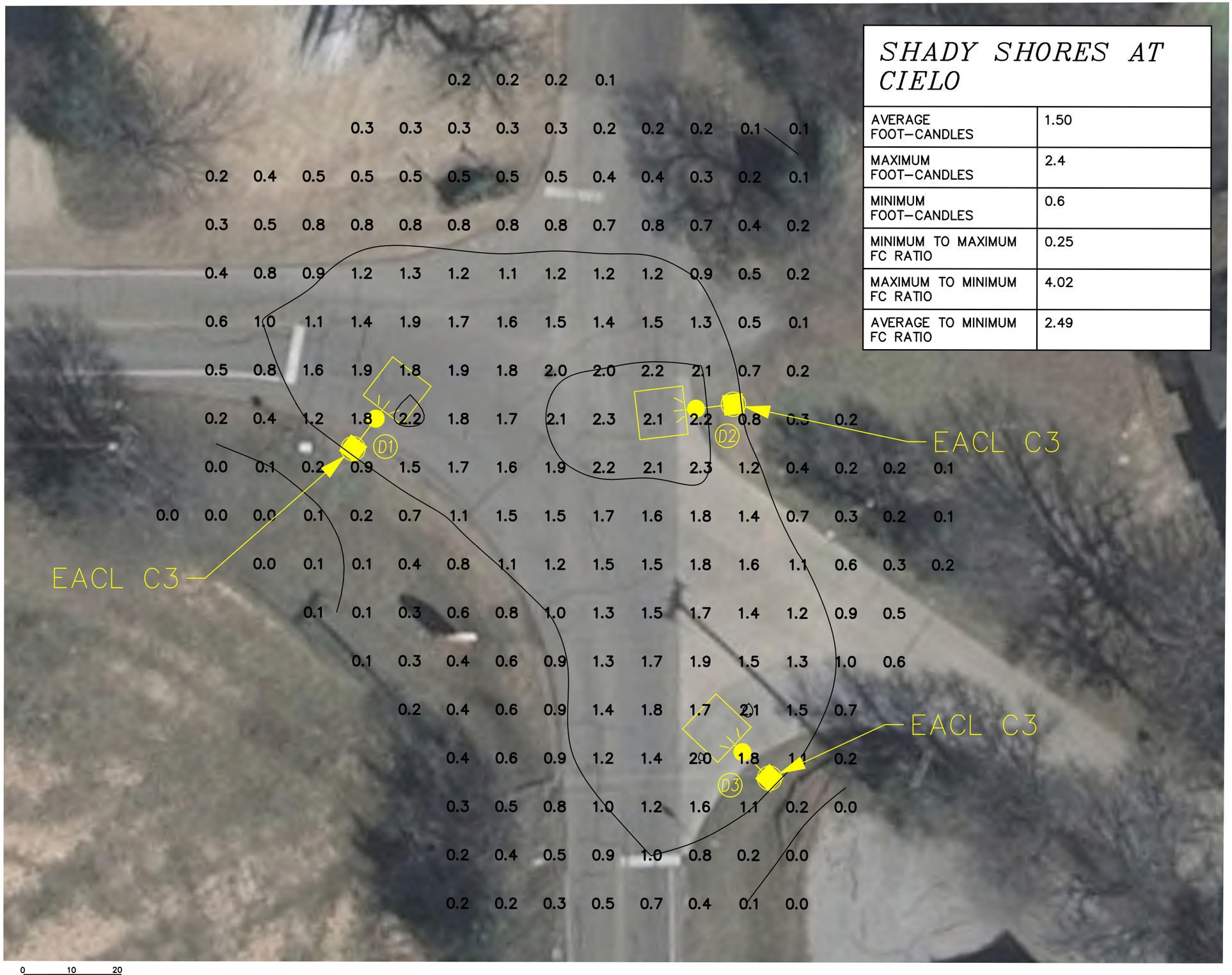
0 15 30
SCALE: 1"=30'

NO.	REVISIONS	DATE

ILLUMINATION PLAN
W SHADY SHORES RD AT FRITZ LN
STREET LIGHTING PROJECT
TOWN OF SHADY SHORES, TEXAS

Binkley & Barfield, Inc.
consulting engineers
Texas Registration Number F-257
1801 Gateway Blvd. Suite 101 Richardson, Texas 75080 www.binkleybarfield.com
Phone (972) 644-2800 Fax (972) 644-2817

DRAWN BY:	DATE:	SCALE:	JOB NUMBER:	SHEET:
BBI	FEB. 2022	1" = 30'	0160012012	3



SHADY SHORES AT CIELO	
AVERAGE FOOT–CANDLES	1.50
MAXIMUM FOOT–CANDLES	2.4
MINIMUM FOOT–CANDLES	0.6
MINIMUM TO MAXIMUM FC RATIO	0.25
MAXIMUM TO MINIMUM FC RATIO	4.02
AVERAGE TO MINIMUM FC RATIO	2.49

0 10 20
SCALE: 1"=20'

NO.	REVISIONS	DATE

ILLUMINATION PLAN
W SHADY SHORES RD AT CIELO LN
STREET LIGHTING PROJECT
TOWN OF SHADY SHORES, TEXAS

Binkley &Barfield, Inc.
consulting engineers
Texas Registration Number F-257
1801 Gateway Blvd. Suite 101 Richardson, Texas 75080 www.binkleybarfield.com
Phone (972) 644–2800 Fax (972) 644–2817

DRAWN BY:	DATE:	SCALE:	JOB NUMBER:	SHEET:
BBI	FEB. 2022	1" = 20'	0160012012	4

AGENDA MEMORANDUM

DATE: September 8, 2022

TO: Planning and Zoning Commission

FROM: Wendy withers, Town Administrator

SUBJECT: **Tree Care and Preservation Ordinance- Conduct a worksession relative to the development of a tree care and tree preservation ordinance.**

BACKGROUND/INFORMATION:

Attached is an ordinance which encourages tree preservation and native landscaping. Town Council and the Strategic Planning Committee have asked Planning and Zoning to look into adopting similar practices to our code of ordinances.

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

1. Tree+Ordinance+Hickory+Creek+part+one.OCR0001

REVIEWED BY:

ARTICLE 9.100 ENFORCEMENT OF SUBDIVISION REGULATIONS IN ETJ

(a) The extraterritorial limits of the Town of Hickory Creek be, and the same are extended to the legal limit in all directions from the boundary limits of the Town of Hickory Creek as provided in Article 970a of the Revised Civil Statutes of the State of Texas.

(b) The ordinances, rules and regulations of the Town of Hickory Creek now governing and controlling, and as they may be revised or amended, as well as all future ordinances, rules and regulations duly adopted by the Town of Hickory Creek which govern plats and the subdivision of land shall apply, govern and control plats and the subdivision of land within the extraterritorial jurisdiction of the Town of Hickory Creek, Texas.

(c) All ordinances of the Town of Hickory Creek in conflict with the provisions of this article be, and the same are hereby repealed, and all other ordinances of the Town of Hickory Creek not in conflict with the provisions of this ordinance shall remain in full force and effect.

(d) Should any sentence, paragraph, subdivision, clause, phrase or section of this ordinance be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of this ordinance as a whole, or any part of provisions thereof other than the part so decided to be invalid, illegal or unconstitutional and shall not affect the validity of the comprehensive zoning ordinance as a whole.

(e) Any person, firm or corporation violating any of the provisions or terms of this article shall be subject to the same penalty and remedies available to the Town of Hickory Creek under the provisions of Article 970a Revised Civil Statutes of the State of Texas.

(Ordinance 78-01-040 adopted 2/13/78)

~~ARTICLE 9.200~~ TREE PRESERVATION

~~Sec. 9.201 Compliance~~

(a) Developers and builders must make every reasonable effort to preserve trees 6”4” or more DBH (Diameter Breast Height).

(b) It is required that the developers and builders comply with this article when planning any type of development in the Town of Shady Shores ~~Hickory Creek~~, Texas.

(c) If for some reason, the developer can not follow the guidelines, it is required that they put in writing reasons why a variance is requested. This is to be presented with the preliminary plat plan.

~~Sec. 9.202~~ Guidelines for Landscaping in Shady Shores ~~Hickory Creek~~, Texas

(a) Objectives. To promote the immediate and long-term public health, safety, economic stability and general welfare by establishing and managing the town's urban tree canopy coverage by:

(1) Preservation, protection, and enhancement of the ecological and aesthetic attributes of the town.

(2) Ecological stabilization through urban forest management that contributes to the processes of air purification, oxygen regeneration, ground water recharge, storm water runoff retardation; and promotes energy efficiency and water conservation, thereby abating noise, heat and glare.

(3) Protection, preservation and advancement of the urban forest's appearance and value that includes all properties within the community, and that contributes to a strong sense of neighborhood, community, and quality of life.

(4) Protection and preservation of native and specimen vegetative species, their ecosystems and natural habitats and preventing damage to and unnecessary removal of vegetation during the land development and construction processes.

(5) Acknowledgment that trees and landscaping add value to property, protect public and private investment to the general benefit of the town and its residents.

(6) More specifically, to:

(A) Protect water resources, flood plains, environmental quality, and the natural and man-made physical and visual quality of the town.

(B) Mitigate the effects of impervious surface land coverage by structures and paving that tend to increase ambient air temperature and generate greater water runoff causing erosion, flooding and water pollution.

(C) Prevent clear-cutting and mass grading of land by encouraging the use of natural terrain for building sites, and by providing cluster development incentives.

(D) Promote native plant species preservation and replenishment, and encourage the use of drought tolerant and low water usage vegetation.

(E)Provide incentives for tree preservation.
(F)Protect and provide wildlife habitats.

(G) Require landscaping and screening to promote land use compatibility and improved aesthetic quality.

(H) Promote soil conservation by minimizing natural terrain disturbances, thereby reducing sedimentation, and air and surface water pollution.

(b) Definitions

(1) *Clearing*. Means an intentional act to cut down, remove all or a substantial part of the trees and other vegetation on a tract of land that will cause the tree or other vegetation to decline and/or die. Clearing is defined to include, but not limited to, chemical, physical, compaction, or grading damage.

(2) *Clear-cutting*. Means a clearing activity conducted over an entire lot.

(3) *Critical Root Zone*. Means a circular region measured outward from a tree trunk representing the essential area of the roots that must be maintained or protected for the tree's survival. A tree's critical root zone is measured as one foot of radial distance outward from the trunk for every inch of tree DBH, and may be no less than a radius of eight (8) feet.

(4) *DBH*. Means diameter-at-breast-height (DBH): is the tree trunk diameter measured in inches at a height of *4.5* feet above ground level. If a tree splits into multiple trunks below the 4 1/2 feet level, DBH will be defined as the sum of each individual trunk measured at 4 1/2 feet above ground level, or the single trunk at its most narrow dimension, whichever is greater.

(5) *Developer*. Means an individual, partnership, corporation, or governmental entity undertaking the subdivision or improvement of land and other activities covered by the subdivision ordinance, including the preparation of a subdivision plat showing the lay out of the land and the public improvements involved therein. The term "developer" is intended to include the term "subdivider" even though personnel in successive stages of a project may vary.

(6) *Dripline*. Means the area beneath the canopy of a tree defined by a vertical line extending from the outermost edges of the tree branches to the ground.

(7) *Erosion*. Means the detachment and movement of soil or rock fragments, or the wearing away of the land's surface by water, wind, ice, or gravity.

(8) *Grading*. Means the mechanical or physical act of disturbing, moving, removing, transferring, or redistributing soil or earthen surfaces.

(9) *Gross Lot Area*. Means an area under public or private property ownership, whose lot lines are described by plat or deed.

(1 0) *Ground Cover*. Means low growing plants, vines, or grasses that form dense, extensive growth, and have a positive effect against soil erosion and soil moisture loss.

(1 1) *impervious Surface*. Means a surface that has been compacted or covered with a layer ofmaterial so that it is highly resistant to infiltration by water.

(12) *Live Plant Materials*. Means "live" plant material, including grasses, perennials, bulbs, groundcover, shrubs, and trees are botanical plants that are nourished through the processes of air, water, and soil nutrients. Plant materials such as plastic, fibrous, silk or other non-live materials are not considered "live" plant materials.

(1 3) *Outdoor Storage Area*. Means any area that contains trash collection areas or dumpster refuse containers; outdoor loading and unloading spaces; docks or outdoor shipping and receiving areas; outdoor storage of bulk materials and/or parts; or areas regularly used for outdoor repair, outdoor storage areas of service stations, motor vehicle dealers, or inspection stations. Temporary construction and related activities are excluded from this definition.

(14) *Permanent Tree Protection Devices*. Means structural measures, such as retaining walls or aeration devices, that are designed to protect the tree and its root system throughout its lifetime.

(15) *Planting Area*. Means an outdoor area, the surface of which may not be covered by impervious surface materials such as asphalt or concrete, nor by structures, and devoted entirely to the planting or construction and maintenance of trees, shrubs, ground covers, fences, walls, and/or earthen berms.

(16) *Street Trees*. Means trees located within the right-of-way easement areas of the Town of Hickory Creek.

(17) *Subdivision*. Means any land, vacant or improved, which is divided into two (2) or more lots, block, parcels, sites, units, plots, or interests for the purpose

of offer, sale, lease, or development, either on the installment plan or upon any and all other plans, terms, and conditions, including re-subdivision.

(1 8) *Temporary Tree Protection Fences*. Means physical barriers, at least four (4) feet in height, installed prior to construction for the purpose of preventing damage to trees. Such devices include snow fencing, chain link fence, barbed wire fence, vinyl construction fencing or other similar temporary barrier, may be no less than four feet in height, and non-intrusive to the tree critical root zone.

(1 9) *Tree Inventory Plan*. Means a detailed description of property showing the location of existing structures (including driveways, water wells, etc.), location(s) and type of existing trees and the DBH of the trees.

(20) *Tree Topping*. Means the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree that removal of the top canopy disfigures and invites probable disease to the tree.

(2 1) ~~*K*~~*Vee**getation***. Means all plant life; however, for purposes of this section, it shall be restricted to mean trees, shrubs, ground cover, and vines with the exception of state and federally protected or endangered vegetative species which in all cases shall be preserved.

(22) *Vehicular Surface Area*. Means any outdoor off-street area used to store or drive motor vehicles that does not contain defined off-street parking spaces. Paved areas used for drive-through windows, parking lot access lanes, or gas station pump lanes are considered to be vehicular surface areas.

(c) Applicability. Any property being subdivided or developed within the city limits of the Town of Hickory Creek is subject to the provision of this article. Clearing and grading permits shall be required for all property prior to the commencement of clearing and grading activity. Tree inventory plans shall be required prior to preliminary plat approval. Landscape plans, which may also demonstrate satisfactory clearing and grading requirements shall be required prior to final plat approval. Approved plot plans shall be required prior to issuance of building permits, and inspected for compliance prior to final inspection and/or issuance of the certificate of occupancy.

Previously platted lots shall be subject to the provisions of this section when one of the following occurs:

(1) Remodeling or redevelopment is proposed that would expand existing gross floor area of the lot's structure or structures by twenty-five *(25)* percent or more; or