PLAN COMMISSION STAFF REPORT

To:	Members of the Plan Commission
From:	Rachel Christenson, AICP, On-call Planner for the Town of Munster
Meeting Date:	June 13, 2023
Agenda Item:	PC Docket No. 23-010
Application:	**Zoning Amendment – Planned Unit Development Amendment**
Hearing:	**PUBLIC HEARING**
Summary:	Maple Leaf Crossing LLC requesting approval of an amendment to the Maple Leaf Crossing Planned Unit Development to add parking spaces and modify Lots 2-7 and Outlots A and B.

Applicant:	Maple Leaf Crossing LLC
Property Address:	9410-9470 Calumet Avenue
Current Zoning:	Planned Unit Development
Adjacent Zoning:	North: SD-M South: SD-M/PUD East: CD-4.A West: SD-M
Action Requested:	Approval of PUD Amendment Request
Additional Actions Requested:	**Findings of Fact** Town Council Approval
Staff Recommendation:	Approve with conditions.

Attachments:

1. PUD Amendment Application
2. Maple Leaf Crossing Site Plan prepared by Torrenga Engineering dated 05.19.2023
3. Maple Leaf Crossing Storm Sewers & Grading Plan prepared by Torrenga Engineering dated 05.19.2023
4. Maple Leaf Crossing Drainage Calculations prepared by Torrenga Engineering dated 05.03.2023
5. Maple Leaf Crossing Photometric Site Plan prepared by KSA Lighting & Controls dated 05.17.2023
6. Maple Leaf Crossing Landscape Plan prepared by Planned Environment Associates dated 05.17.2023
7. Ordinance 1803 and Ordinance 1878

BACKGROUND

Figure 1: Maple Leaf Crossing PUD outlined in red.

Maple Leaf Crossing LLC has applied for an amendment to the Maple Leaf Crossing Planned Unit Development to modify the adopted development standards and site plans to add parking spaces and modify Lots 2-7 and Outlots A and B.

The PUD is currently governed by Ordinance 1803 which established the Maple Leaf Crossing Planned Unit Development at 9352-9482 Calumet Avenue, an approximately 6-acre parcel located at the northeast quadrant of the intersection of Calumet Avenue and the CN Railroad tracks. The ordinance was adopted in July 2020 by the Munster Town Council, on the recommendation of the Plan Commission. The approved PUD includes site engineering plans, a set of development standards, and a site-wide landscaping plan, which are attached to this memo.

An ordinance amending the Maple Leaf Crossing Planned Unit Development (Ordinance 1878) was adopted amendment to this PUD was adopted by the Munster Town Council in December of 2022, on recommendation of the Plan Commission. This amendment provided for the development of Lot 7 as a 6400 square foot cigar bar and restaurant. The revised engineering plans are attached to this memo.

The approved site plan (including the 2022 amendment) includes the following:

- Lot 1: A four-story, approximately 60,000 square foot professional office building
- Lot 2: A four-story, approximately 71,000 square foot Hyatt Place hotel
- Lot 3: A 4,623 square foot restaurant
- Lot 4: An area designated for at least 10 shipping container retail spaces
- Lots 5 and 6: Two 7,774 square foot, single-story office buildings
- Lot 7: A 6,400 square foot cigar bar and restaurant
- Internal parking spaces and a new public road, Maple Leaf Boulevard, along the north edge of the site that provides access to Calumet Avenue

The developers are seeking an amendment to the Maple Leaf Crossing PUD development standards and the approved development plan to add parking spaces and modify Lots 2 – 7 and Outlots A and B.

SITE PLAN MODIFICATIONS

Here is a summary chart of the proposed changes by the petitioner:

Lot Number	Proposed
1	• No changes proposed.
2	• Slight reduction in the square footage of the lot. • Modifications to the site plan.
3	• Increase in the size of Lot 3. • Modifications to the site plan. • Increase the size of the restaurant to 4,765 square feet.
4	• Decrease in the size of Lot 4.
5	• Decrease in the size of the office building to 7,054 square feet. • Slight reduction in the square footage of the lot.
6	• Modification in the shape of Lot 6. • Decrease in the size of the office building to 7,182 square feet.
7	• Modification to the shape of Lot 7.
Parking	• An increase in the size of Outlot A due to property line modifications to Lot 2. • An increase in the size of Outlot B due to property line modifications to Lot 5. • Changes to the site plan, including addition of parking spaces, removal of bike path in Outlot A, addition of a trash enclosure in Outlot B, and modifications to landscape plan. • An increase in the number of parking spaces in Outlots A and B from 351 to 385.

The proposed modifications to Lots 2 – 7 and Outlots A and B require modifications in the landscape plan, lighting plan, and drainage plan.

On Lot 7, the proposed plans indicate a change in the building square footage of the cigar bar and restaurant. An email dated 5/31/2023 from Jay Lieser indicates that the square footage on the drawings indicates the square footage of the first floor of the structure. This is not consistent with the way other structures are labeled on the site plan, as the square footage indicated on the other structures is the total square footage of the structure, not just the first-floor square footage.

ANALYSIS

DEVELOPMENT PLAN MODIFICATIONS

The proposed PUD amendment is seeking to supersede the previously adopted Development Plan for the Maple Leaf Crossing Planned Unit Development (Exhibit A of Ordinance 1803 and Exhibit D of Ordinance 1879).

Code/Ordinance	Section	Standard	Proposed	Meets Code
Ord. 1803	6.	**Off-Street Parking Facilities** Off-street parking shall include approximately 358 parking spaces as set forth in the Approved Development Plan.	Requested number of parking spaces has increased to 385.	Needs Plan Commission Determination*
	7.	**Lot Coverage** Green space shall exceed 7.5% of the total area as set forth in the Approved Development Plan	The proposed greenspace exceeds 7.5% of the total area (13.62%, or 0.96 acres out of 7.049 acres).	Yes
	8.	**Pedestrian and Bicycle Access** Sidewalks and bicycle paths shall be located within and upon Maple Leaf Crossing as set forth in the Approved Development Plan	The bicycle path through the Maple Leaf Crossing PUD has been removed. A bicycle path remains in the Maple Leaf Boulevard right-of-way.	Needs Plan Commission Determination
	V.	**Landscape Design Criteria** Landscaping for Maple Leaf Crossing shall generally be in accordance with the Landscaping Plan attached hereto as Exhibit C and incorporated herein.	Landscaping has been decreased to accommodate additional hardscape for parking.	Needs Plan Commission Determination**

*Parking

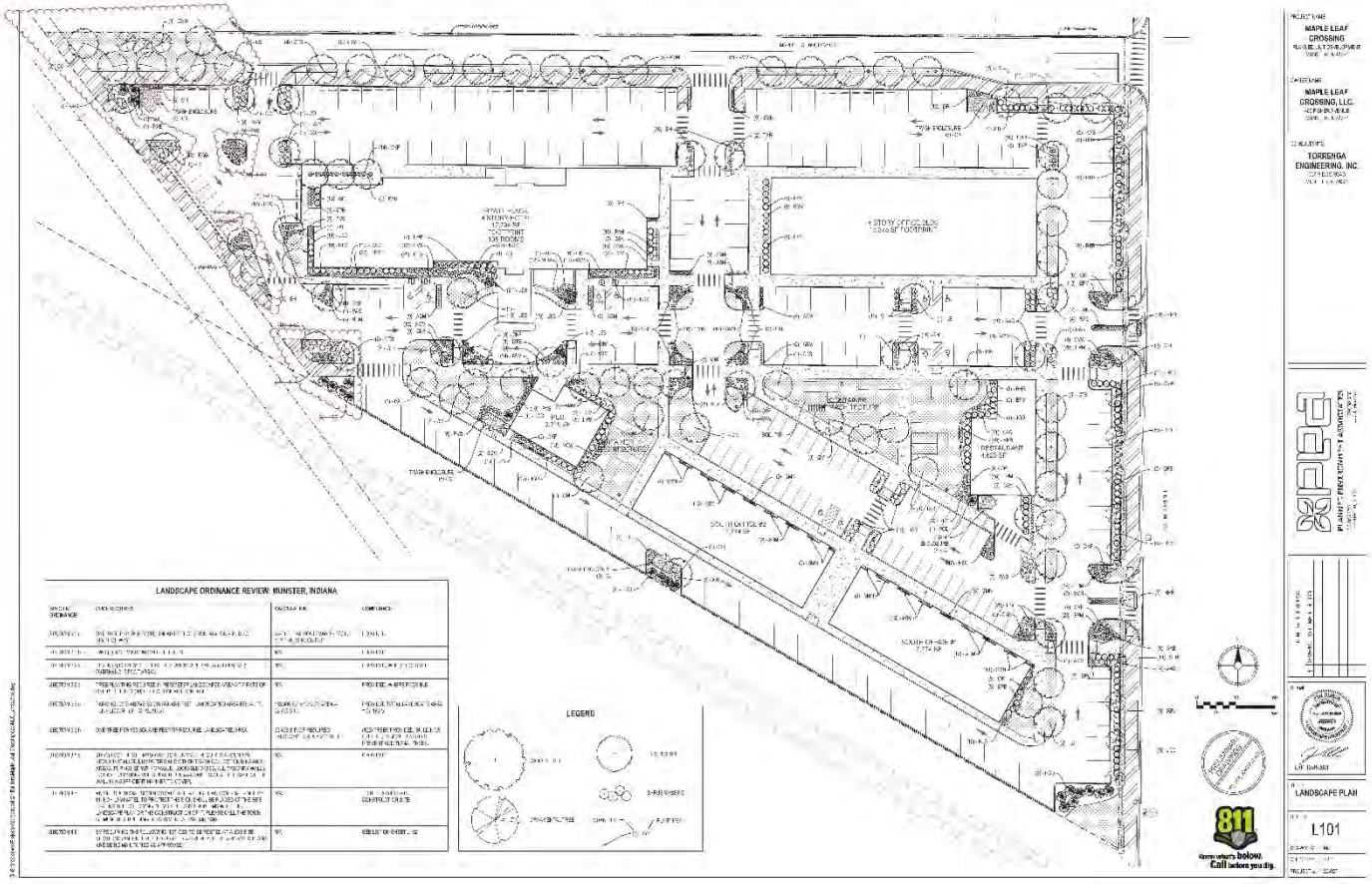
The original 358 parking spaces within the Maple Leaf Crossing PUD were intended to be shared among all users. At the time of approval of the PUD, a parking study was submitted which calculated that 350 total shared spaces were required for the development.

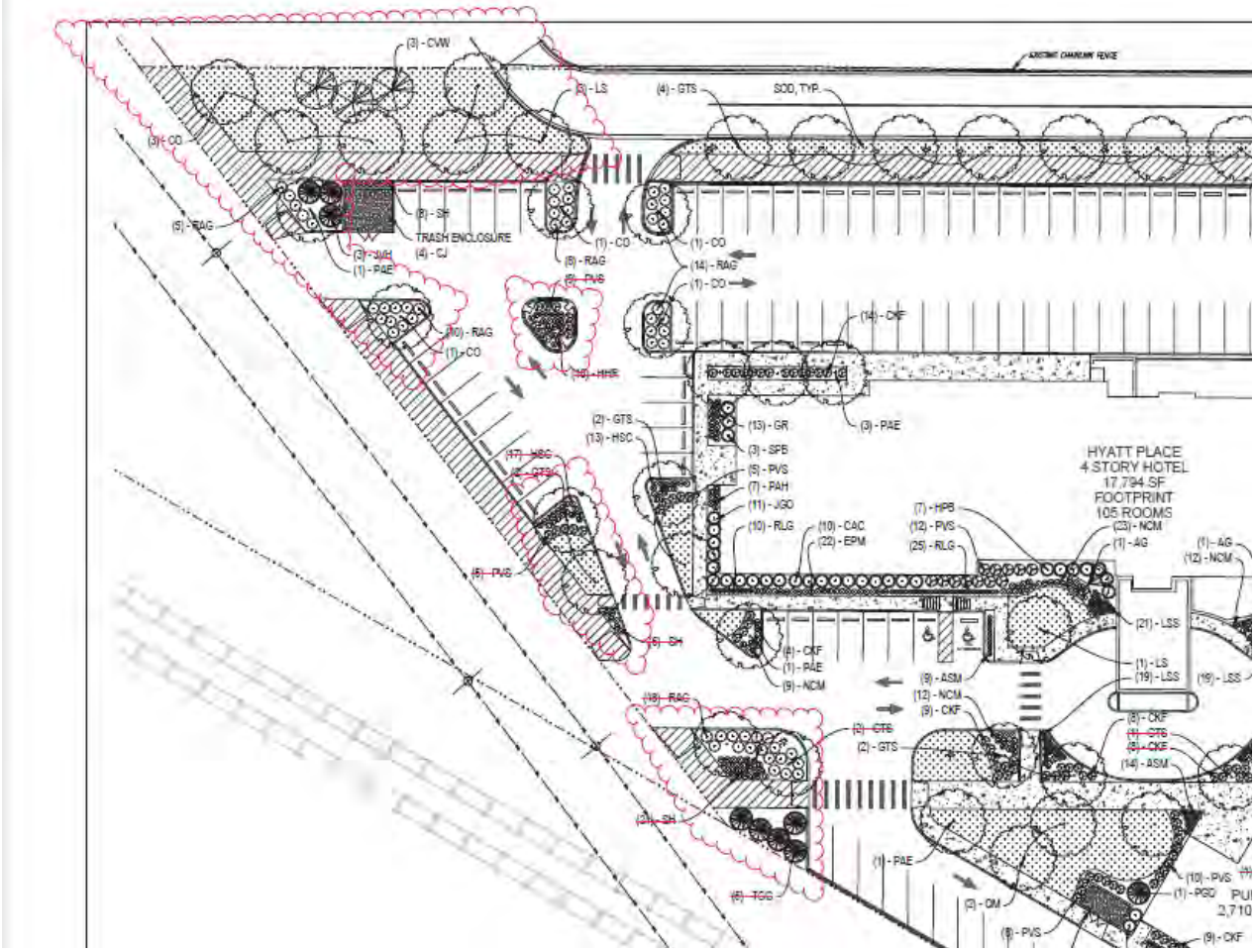
A revised study was provided in connection with the PUD amendment to permit the cigar bar. The study indicated that 52 spaces (12 additional) would be required for the proposed cigar bar and

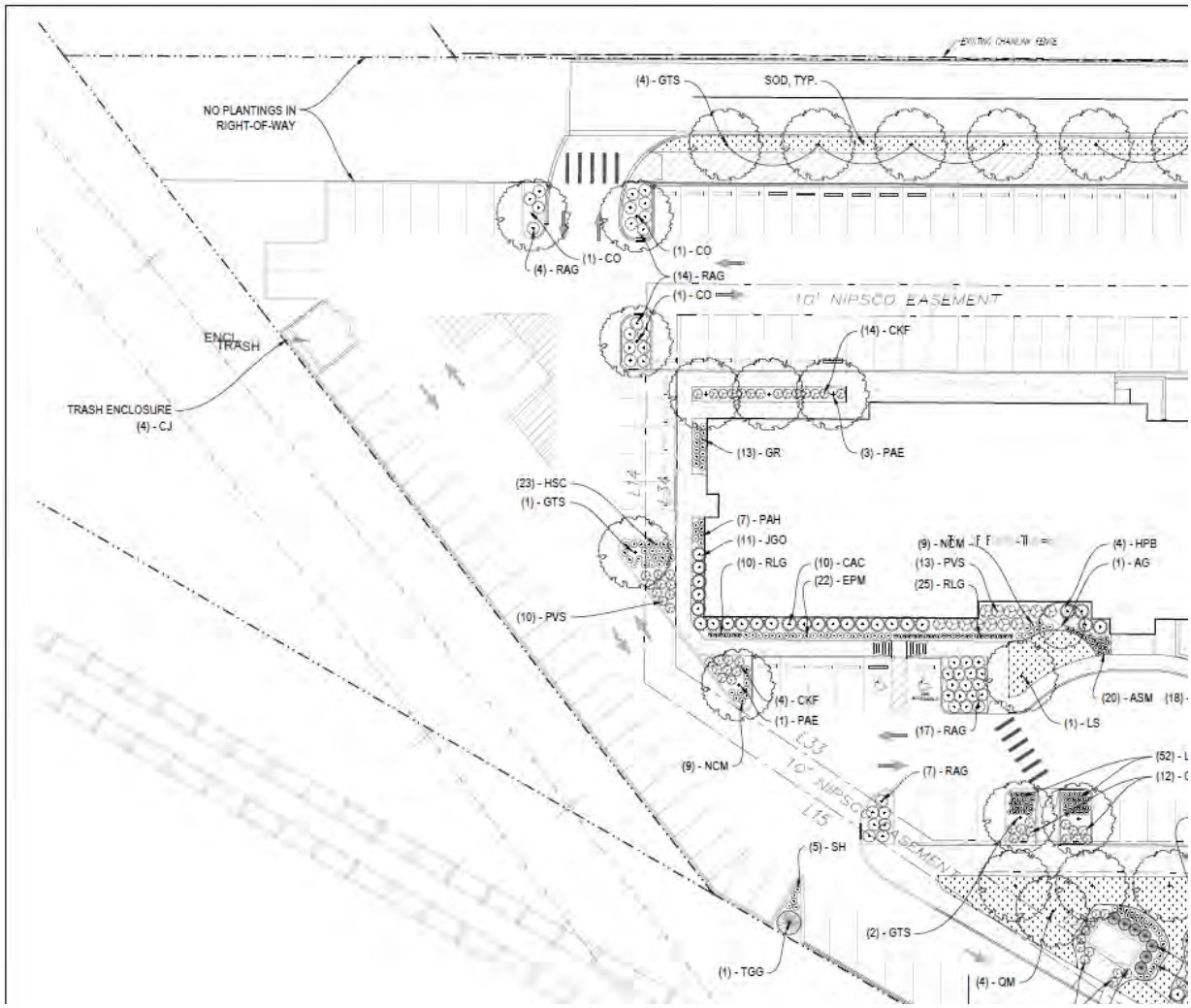
restaurant. The study also reduced the number of spaces required for the hotel from 86 to 75 and the number of spaces required for the proposed restaurant from 56 to 32. With these modifications, the number of parking spaces required for the entire development was calculated to be 364. An additional analysis based on anticipated weekday peak parking demand by time of day indicates that the largest overlap between users occurs between 12:00 PM and 2:00 PM during which 295 spaces would be required. Based on this analysis, staff had determined the 358 spaces within the Maple Leaf Crossing PUD were sufficient. The site plan that was approved as part of the amendment shows 352 parking spaces, six spaces less that the number indicated in the Developmental Standards in Ordinance 1803. The proposed Site Development Plan indicates that parking will increase by 9.4% to from 352 parking spaces to 385 parking spaces.

**Landscaping

The proposed changes to the landscaping are mostly occurring in the northwest corner of the site. The first and second images below show the approved landscaping plan with areas with proposed changes highlighted in red. The third image below shows the proposed landscaping plan for the northwest corner.




HYATT PLACE
4 STORY HOTEL
17,794 SF
FOOTPRINT
105 ROOMS
SOD, TYP.
TRASH ENCLOSURE



STAFF RECOMMENDATION – PUD DEVELOPMENT PLAN

Staff understands that the petitioner's goal is to make better use of the site by removing the bicycle path and repurposing that area for additional parking spaces. Bicycle connectivity is still available to the Maple Leaf Crossing with the proposed bicycle path indicated along Maple Leaf Boulevard and Calumet Avenue, so staff finds it appropriate for the site to be modified to remove the bicycle path that cuts through Outlot A.

However, staff is concerned with the increase in hardscape and the decrease in landscaped areas in the petitioner's proposed plans. Since the petitioner has not provided new evidence or data that additional parking spaces are needed for the approved uses at Maple Leaf Crossing, the need to replace landscaping with parking spaces is not clear. According to the Munster Zoning Ordinance, landscaping for parking lots should follow Section 26-6.405.O.1.h.vii.I. Key parts of this section of the code include the following:

> 1) Parking Areas and Parking Lots shall contain at least one landscape island for every ten (10) parking spaces. Parking Lots with more than one landscape island shall have such islands distributed throughout the Parking Lot.

5) Rows of parking fronting on drive aisles including alleys shall be provided with a minimum five feet (5') (excluding curbs) landscaped buffer.

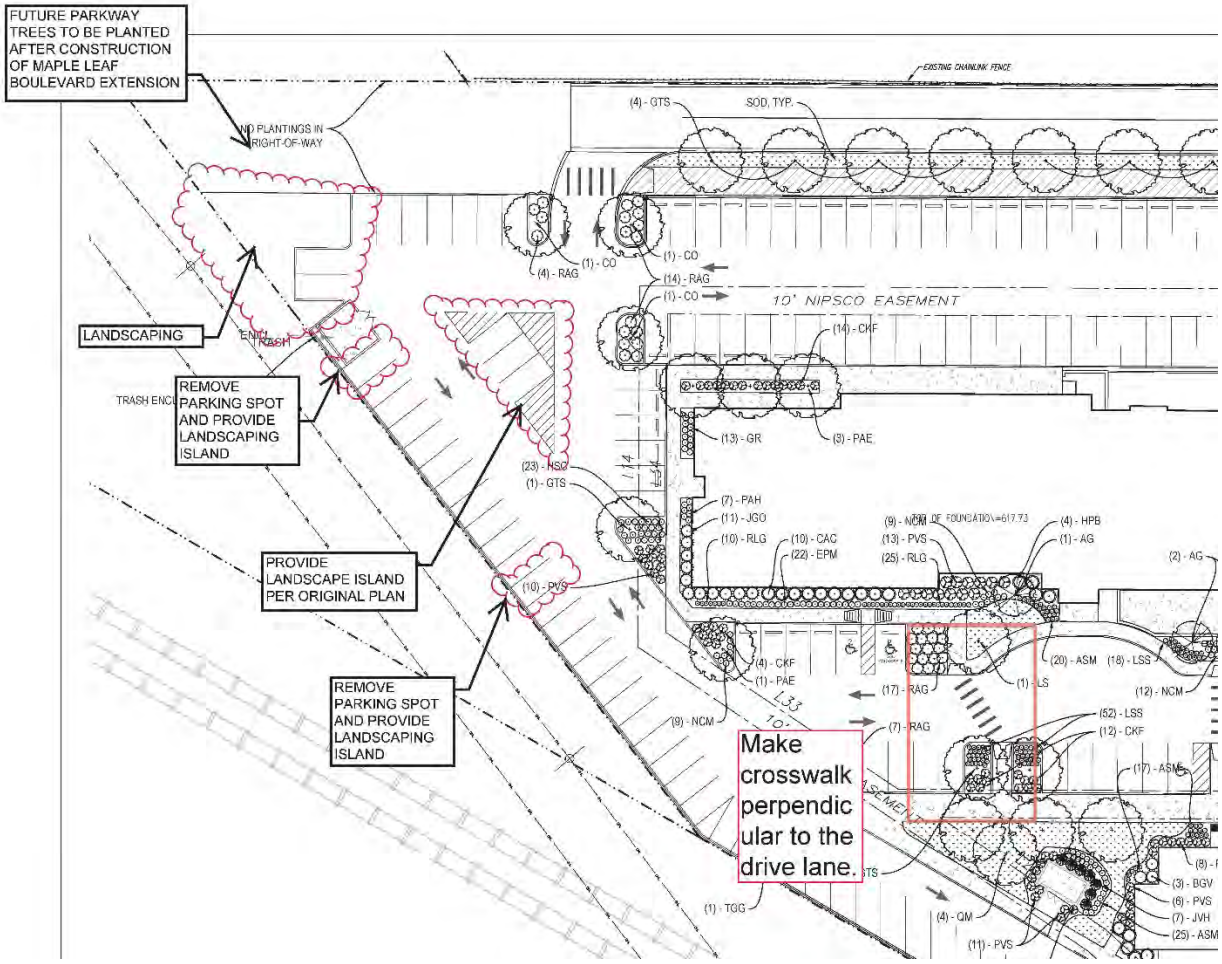
7) For every 2,000 square feet of Parking Area or Parking Lot, at least one Tree shall be installed or preserved within the Parking Area or Parking Lot except to the extent that Trees outside of the Lot containing the Parking Area or Parking Lot are allowed to satisfy this requirement as set forth below.

With these standards in mind, staff has proposed the following modifications to the landscape plan in order to be closer to compliance with the Zoning Ordinance:

- A commitment to plant future parkway trees after construction of the Maple Leaf Boulevard Extension in the right-of-way labeled "No Plantings in Right-of-Way."
- The removal of 3 proposed parking spaces to be replaced with landscaping in the far northwest corner of the site.
- The removal of 1 parking space southeast of the trash enclosure to be replaced with a landscape island in the northwest corner of the site.
- The removal of 3 parking spaces just west of the NIPSCO easement in the northwest corner of the site to be replaced with a landscape island per approved development plan (see Section 26-6.405.O.1.h.vii.I.5).
- The removal of 1 parking space west of the NIPSCO easement in the northwest corner of the site to be replaced with a landscape island (see Section 26-6.405.O.1.h.vii.I.1).

With these modifications, the proposed parking of the site would be decreased by eight (8) spaces, for a total of 377 parking spaces, which is still a 7.1% increase in parking from the approved development plan per Ordinance 1879. See image on next page for more details.

Staff also recommends the crosswalk in Outlot A between Lot 2 (Hyatt) and Lot 7 (cigar bar and restaurant) be redesigned to be perpendicular with the drive lane. Crosswalks that are perpendicular to cross the street (or drive lane in this case) are shorter and help to move pedestrians through a street or drive lane more quickly. See image on next page for more details.



Staff recommends that on the Development Plan, the square footage of the structure proposed for Lot 7 to be updated to reflect the total square footage of the structure (6,400 square feet), rather than the square footage of the first floor of the structure (4,175 square feet). The square footage of the other structures on the site are labeled by total square footage of the structure, so this change will ensure the information displayed on the plan is consistent between structures.

STAFF RECOMMENDATION – PUD DEVELOPMENTAL STANDARDS

Staff is also recommending the language of the PUD Developmental Standards to be updated for clarity and consistency. The following text amendment is proposed to the adopted Developmental Standards for the Maple Leaf Crossing Development:

Code/Ordinance	Section	Adopted Language	Proposed Language	Purpose of Change
Ord. 1803	1. A.	Development of Lot 7 as 6400 square foot cigar bar and restaurant in accordance with Exhibit D.	Development of Lot 7 as a cigar bar and restaurant in accordance with the approved development plan.	Keep the square footage of the structure out of the Developmental Standards but indicate the square footage in the approved Development Plan. Removes potential for conflict between the two documents.
Ord. 1803	6.	Off-street parking shall include approximately 358 parking spaces.	Off-street parking shall include no more than 377 parking spaces.	Removal of the word "approximately" clarifies the maximum number of parking spaces allowed, and if a reduction in parking is requested in the future, only the Development Plan will need amended, not the Developmental Standards.

MOTION

The Plan Commission may wish to consider the following motion:

Motion to recommend approval of PC Docket No. 23-010 to consider an amendment to the Maple Leaf Crossing Planned Unit Development to add parking spaces and modify Lots 2-7 and Outlots A and B, with the following conditions:

- *A commitment to plant future parkway trees per Munster Zoning Ordinance after construction of the Maple Leaf Boulevard Extension in the right-of-way labeled "No Plantings in Right-of-Way."*
- *Modifications to the parking areas on the Development Plan that reflect no more than 377 parking spaces in Outlots A and B. These modifications include the following:*
    - *The removal of 3 proposed parking spaces to be replaced with landscaping in the far northwest corner of the site.*
    - *The removal of 1 parking space southeast of the trash enclosure to be replaced with a landscape island in the northwest corner of the site.*
    - *The removal of 3 parking spaces just west of the NIPSCO easement in the northwest corner of the site to be replaced with a landscape island as originally approved.*
    - *The removal of 1 parking space west of the NIPSCO easement in the northwest corner of the site to be replaced with a landscape island.*
- *A modification to the Development Plan to show the crosswalk in Outlot A between Lot 2 and Lot 7 to be redesigned to be perpendicular to the drive lane.*
- *A modification to the Development Plan to show the square footage of Lot 7 to be updated to the total square footage of the structure (6,400 SF) to be consistent with the square footage labeling of other structures on the Development Plan.*

- *A modification of the PUD Developmental Standards with the following language:*
    - *Section 1.A shall be amended to read "*Development of Lot 7 as a cigar bar and restaurant in accordance with the approved development plan."
    - *Section 6 shall be amended to read "Off-street parking shall include no more than 377 parking spaces."*

Petition PC 23 - 010
Date: 4/20/23
Application Fee: $ 305.00 (pd)
Sign Fee: $

Town of Munster Plan Commission Petition Application

OWNER INFORMATION:

MAPLE LEAF CROSSING LLC — Name of Owner
219-746-0753 — Phone Number
9410-9470 CALUMET AVE — Street address, City, ST, ZIP Code
MUNSTER, IN 46321
JACKCLIESER@AOL.COM — Email address

APPLICANT OR PETITIONER INFORMATION (if different than above):

JAY LIESER — Name of Applicant/Petitioner
219-746-0753 — Phone Number
400 FISHER ST, SUITE J — Street address, City, ST, ZIP Code
MUNSTER, IN 46321
Email address

PROPERTY INFORMATION:

Business or Development Name (if applicable)
MAPLE LEAF CROSSING LLC
Address of Property or Legal Description
9410-9470 CALUMET AVE
Current Zoning PUD

APPLICATION INFORMATION:

Please select what this Application is for:

☐ **Subdivision** If yes, select one of the following: ☐ **Preliminary Plat** ☐ **Final Plat**

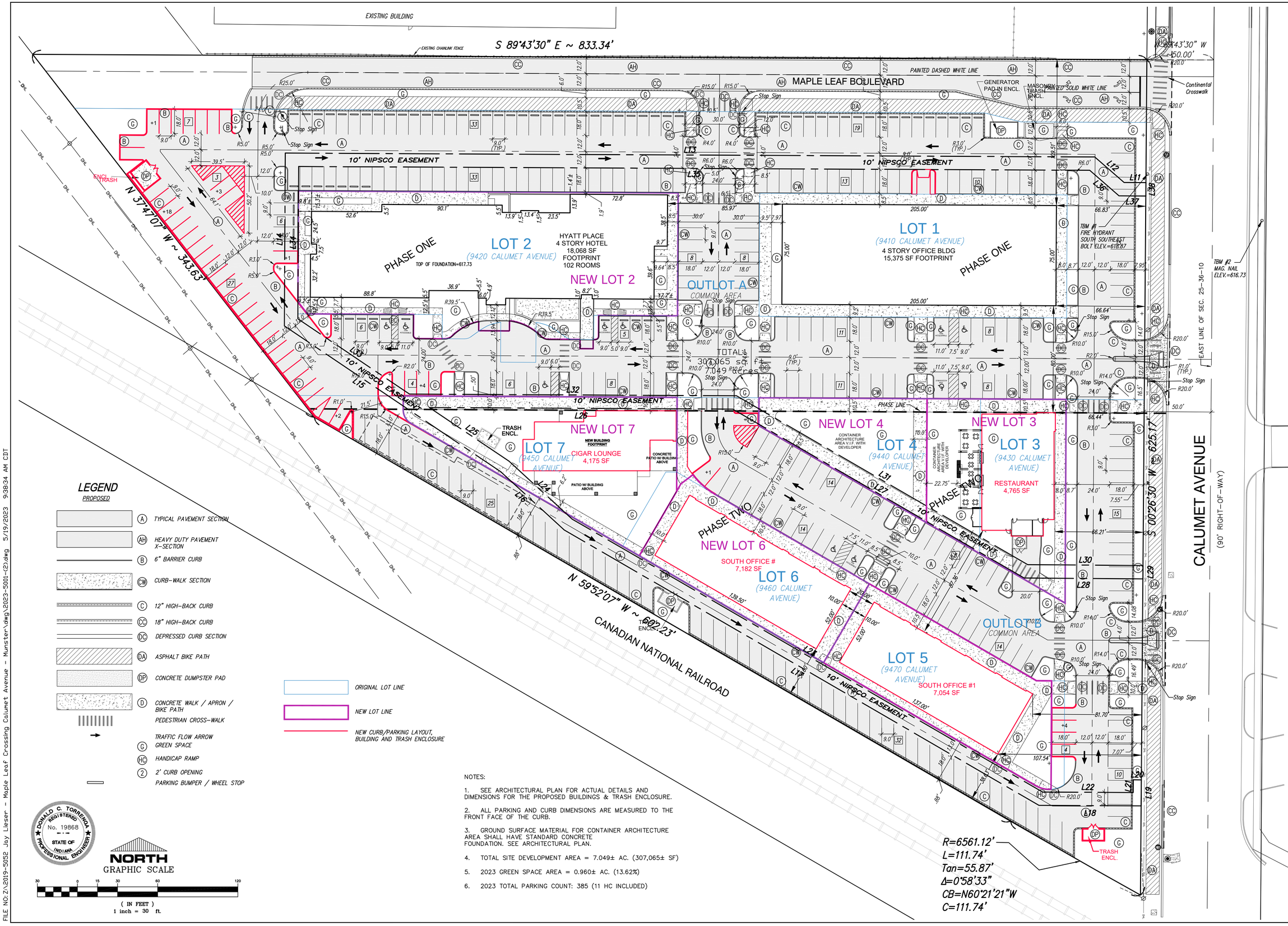
☐ **Development Plan Review**

☒ **Rezoning (including Planned Unit Development) – Proposed Zoning District**

Brief Description of Project: PUD AMENDMENT

TOMENGA ENGINEERING — Name of Registered Engineer, Architect or Land Surveyor
219-836-8918 — Phone Number
907 RIDGE RD, MUNSTER — Street address, City, ST, ZIP Code
Email address

RECEIVED
APR 20 2023
MUNSTER BUILDING DEPARTMENT



LEGEND

PROPOSED

- (A) TYPICAL PAVEMENT SECTION
- (AH) HEAVY DUTY PAVEMENT X-SECTION
- (B) 6" BARRIER CURB
- (CW) CURB-WALK SECTION
- (C) 12" HIGH-BACK CURB
- (CC) 18" HIGH-BACK CURB
- (DC) DEPRESSED CURB SECTION
- (DA) ASPHALT BIKE PATH
- (DP) CONCRETE DUMPSTER PAD
- (D) CONCRETE WALK / APRON / BIKE PATH
- PEDESTRIAN CROSS-WALK
- TRAFFIC FLOW ARROW
- (G) GREEN SPACE
- (HC) HANDICAP RAMP
- (2) 2' CURB OPENING
- PARKING BUMPER / WHEEL STOP

- ORIGINAL LOT LINE
- NEW LOT LINE
- NEW CURB/PARKING LAYOUT, BUILDING AND TRASH ENCLOSURE

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

NORTH
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NOTES:

1. SEE ARCHITECTURAL PLAN FOR ACTUAL DETAILS AND DIMENSIONS FOR THE PROPOSED BUILDINGS & TRASH ENCLOSURE.
2. ALL PARKING AND CURB DIMENSIONS ARE MEASURED TO THE FRONT FACE OF THE CURB.
3. GROUND SURFACE MATERIAL FOR CONTAINER ARCHITECTURE AREA SHALL HAVE STANDARD CONCRETE FOUNDATION. SEE ARCHITECTURAL PLAN.
4. TOTAL SITE DEVELOPMENT AREA = 7.049± AC. (307,065± SF)
5. 2023 GREEN SPACE AREA = 0.960± AC. (13.62%)
6. 2023 TOTAL PARKING COUNT: 385 (11 HC INCLUDED)

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918
website: www.torrenga.com

MAPLE LEAF CROSSING
A PLANNED UNIT DEVELOPMENT TO THE TOWN OF MUNSTER, LAKE CO., INDIANA
SITE PLAN

REVISIONS:	DATE: 05-11-2020
05-19-2023	
05-15-2023	
05-04-2023	
04-20-2023	
03-30-2023	
03-01-2022	
05-28-2021	
06-26-2020	
06-05-2020	

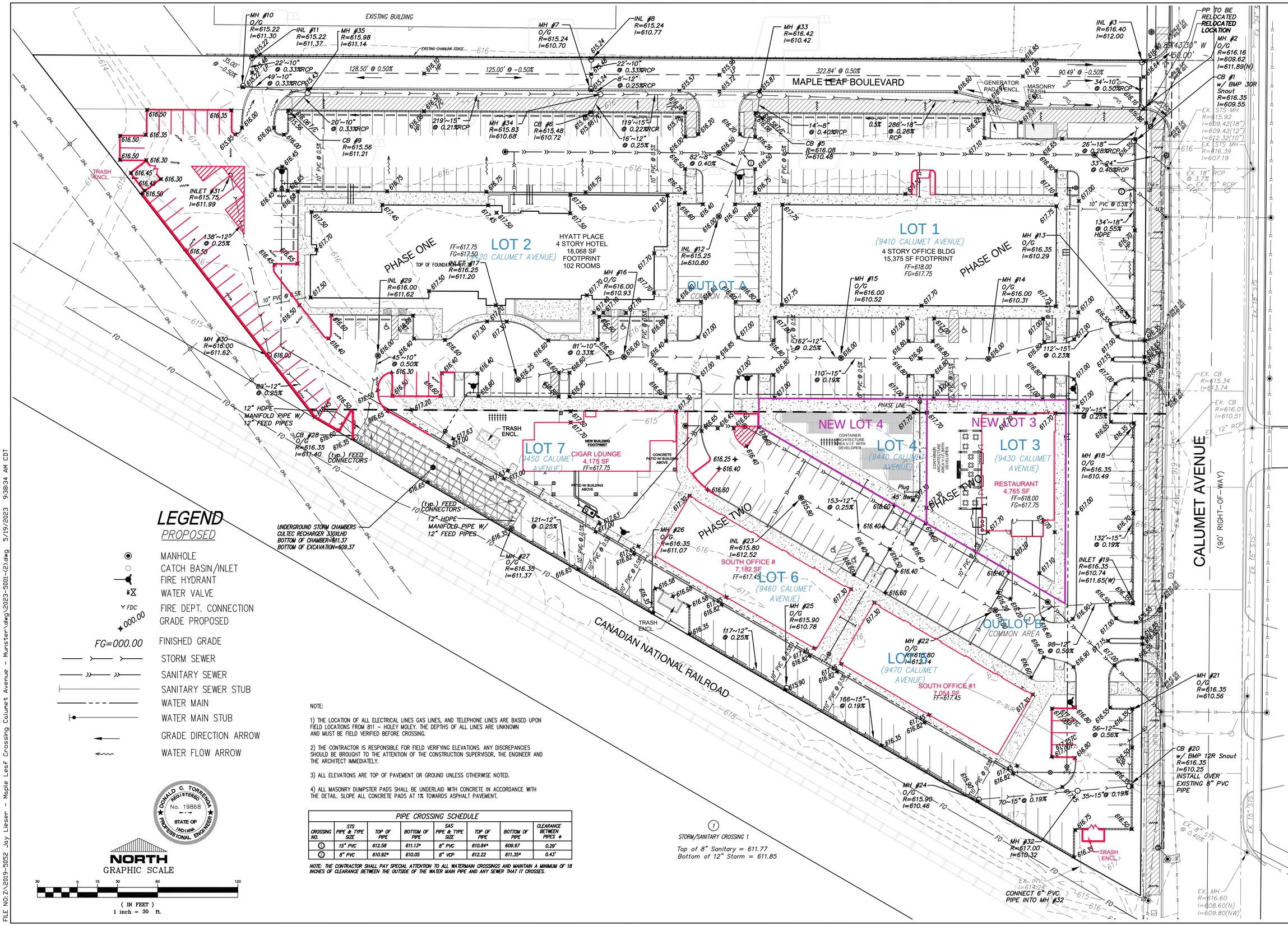
CLIENT: Maple Leaf Crossing, LLC
400 Fisher Avenue
Munster, Indiana 46321

JOB NO: 2019-5052

SCALE: 1" = 30'

SHEET
C-2.0

FILE NO: Z:\2019-5052 Joy Lieser - Maple Leaf Crossing Calumet Avenue - Munster\dwg\2023-5001-C2\.dwg 5/19/2023 9:38:34 AM CDT



LEGEND

PROPOSED

- MANHOLE
- CATCH BASIN/INLET
- FIRE HYDRANT
- WATER VALVE
- FDC — FIRE DEPT. CONNECTION
- 000.00 — GRADE PROPOSED
- FG=000.00 — FINISHED GRADE
- STORM SEWER
- SANITARY SEWER
- SANITARY SEWER STUB
- WATER MAIN
- WATER MAIN STUB
- GRADE DIRECTION ARROW
- WATER FLOW ARROW

NOTE:

1) THE LOCATION OF ALL ELECTRICAL LINES GAS LINES, AND TELEPHONE LINES ARE BASED UPON FIELD LOCATIONS FROM 811 – HOLEY MOLEY. THE DEPTHS OF ALL LINES ARE UNKNOWN AND MUST BE FIELD VERIFIED BEFORE CROSSING.

2) THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ELEVATIONS. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION SUPERVISOR, THE ENGINEER AND THE ARCHITECT IMMEDIATELY.

3) ALL ELEVATIONS ARE TOP OF PAVEMENT OR GROUND UNLESS OTHERWISE NOTED.

4) ALL MASONRY DUMPSTER PADS SHALL BE UNDERLAID WITH CONCRETE IN ACCORDANCE WITH THE DETAIL. SLOPE ALL CONCRETE PADS AT 1% TOWARDS ASPHALT PAVEMENT.

PIPE CROSSING SCHEDULE

CROSSING NO.	STS PIPE & TYPE SIZE	TOP OF PIPE	BOTTOM OF PIPE	SAS PIPE & TYPE SIZE	TOP OF PIPE	BOTTOM OF PIPE	CLEARANCE BETWEEN PIPES *
1	15" PVC	612.58	611.13*	8" PVC	610.84*	609.97	0.29'
2	8" PVC	610.92*	610.05	8" VCP	612.22	611.35*	0.43'

NOTE: THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO ALL WATERMAIN CROSSINGS AND MAINTAIN A MINIMUM OF 18 INCHES OF CLEARANCE BETWEEN THE OUTSIDE OF THE WATER MAIN PIPE AND ANY SEWER THAT IT CROSSES.

1 STORM/SANITARY CROSSING 1

Top of 8" Sanitary = 611.77
Bottom of 12" Storm = 611.85

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

NORTH
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918
website: www.torrenga.com

MAPLE LEAF CROSSING
A PLANNED UNIT DEVELOPMENT TO THE TOWN OF MUNSTER, LAKE CO., INDIANA
STORM SEWERS & GRADING PLAN

REVISIONS:	DATE: 05-11-2020
05-19-2023	
05-04-2023	
03-01-2022	
06-17-2021	
11-30-2020	
06-26-2020	
06-05-2020	

CLIENT:
Maple Leaf Crossing, LLC
400 Fisher Avenue
Munster, Indiana 46321

JOB NO: 2019-5052
SCALE: 1" = 30'

SHEET
C-4.0

FILE NO: Z:\2019-5052 Joy Lieser - Maple Leaf Crossing Calumet Avenue - Munster\dwg\2023-5001-C2.dwg 5/19/2023 9:38:34 AM CDT

Torrenga Engineering Inc.

DRAINAGE CALCULATIONS

PROJECT: **Maple Leaf Crossing**

Planned Unit Development

Munster, Indiana

FOR:

First Metropolitan Builders
400 Fisher Avenue
Munster, Indiana 46321

BY:

Torrenga Engineering Inc.
907 Ridge Road
Munster, IN 46321
(219) 836-8918

DATE: May 11, 2020
REVISIONS:
June 5, 2020
June 23, 2020
May 3, 2023

Maple Leaf Crossing is a proposed Planned Unit Development consisting of a Hotel, three Office Buildings, one Restaurant, one Pub and a series of Railroad Container Construction design modules. The site was formerly the Munster Business Complex. The entire site has been demolished and currently consists of broken asphalt and stone. There was a significant amount of infrastructure onsite that cannot be utilized to service the new buildings. The infrastructure that cannot be reused will be removed with new infrastructure installed to service all buildings, roadways, etc. Along the northern side of the proposed development, the Pepsi Bottling Company has agreed to utilize a Public Roadway that will be installed with the development for their entrance onto Calumet Avenue. This new intersection will be controlled by traffic signals and make the entrance onto Calumet Avenue much safer and less intrusive for the general public. Private ingress-egress easements within the development will direct all interior traffic throughout the site. A new 10 foot wide bike path will be installed within the Public right of way and also a second path will be directed towards the middle of the development to promote pedestrian access. Sidewalks within the development have been widened with expanses of green area. Handicap access will be provided at all intersections. The entire site has been designed to provide the Town of Munster with a pedestrian friendly area for business and entertainment.

Drainage Areas:

Drainage Area: 307,066 = 7.05 Ac. of which 6.07 Ac. is the old Munster Business Complex (MBC) and 0.98 Ac. is the additional property acquired from the Town of Munster (TOM).

The eastern portion of the property (MBC) is 6.07 acres in size. The Munster Business Complex had an approximated runoff coefficient equal to the following:

Runoff Coefficient, C_e – Existing:

Total Existing Drainage Area = 264,409 SF = 6.07 Ac.

Impervious Area	: 262,142 SF	@ C = 0.90
Pervious Area	: 2,267 SF	@ C = 0.45

$$C_e = \frac{(262{,}142 \times 0.90) + (2{,}267 \times 0.45)}{264{,}409} = 0.896$$

C_e =0.90

Note: C_e is the coefficient of runoff for the existing site

This area drained directly into the Town of Munster storm sewer system undetained.

The proposed development requiring detention (TOM) has a coefficient of runoff equal to:

Runoff Coefficient, C_d – Developed:

Total Design Drainage Area = 42,689 SF = 0.98 Ac.

Impervious Area	: 38,304SF	@ C = 0.90
Pervious Area	: 4,385SF	@ C = 0.45

$$C_d = \frac{(38{,}304 \times 0.90) + (4{,}385 \times 0.45)}{42{,}689} = 0.85$$

C_d =0.85

Note: C_d is the coefficient of runoff for the developed site

Required detention (TOM) = 0.19 ac-ft (see spread sheet)

Estimated Water and Wastewater Demand:

All water estimated flows are taken from 327 Indiana Administration Code 3-6-11.

Domestic water usage:

Hotel – 100 gpd per room * 105 rooms = 10,500 gpd

North Office Building – 20 gpd per employee
4 units per floor * 4 floors * 8 employees per unit
20*16*8 = 2,560 gpd

South Office Building – 20 gpd per employee
20 employees * 2 buildings * 20 gpd = 800 gpd

Restaurant – Food service not open 24 hours per day – 50 gpd per seat
50 seats * 50 = 2,500 gpd

Pub – 10 gpd per seat
40 seats * 10 = 400 gpd

Container Shopping District – 10 gpd per customer
200 customers * 10 = 2,000 gpd

Total = 18,760 gpd

Wastewater usage:

Hotel 100 gpd per room * 105 rooms = 10,500 gpd

North Office Building 0.10 gpd / sf = 61,500 sf * 0.1 = 6,150 gpd

South Office Building 0.10 gpd/ sf = 15,200 sf * 0.1 = 1,520 gpd

Restaurant 50 gpd / seat = 50 * 50 = 2,500 gpd

Pub 35 gpd / seat – 35 * 40 = 1,400 gpd

Container Shopping District 10 gpd per customer
200 customers * 10 = 2,000 gpd
Total = 24,070 gpd

REQUIRED DETENTION

Project Title: Maple Leaf Crossing, Munster, IN
Project Number: 2019-5052
Proposed detention

Given: 100 Year Frequency Developed Inflow
2 Year Frequency Undeveloped Outflow

High Elevation:	618.07	
Low Elevation:	614.55	
Distance:	72.00	Feet
Acreage:	0.980	Acres
C Developed:	0.85	
C Undeveloped:	0.15	
Percent Slope =	4.89	%
Tc In Minutes =	8.55	Minutes
Intensity:	3.80	In/Hr
Q Allowed =	0.56	CFS
Q Assigned:	0.28	CFS

The Q is half of the allowable

Duration In Hours	Duration In Minutes	Intensity * (100 Year) In/Hr	Inflow In CFS	Outflow In CFS	Stored Rate In CFS	Reservoir Size In Acre-Feet
0.17	10.00	7.60	6.33	0.28	6.05	0.08
0.33	20.00	5.50	4.58	0.28	4.30	0.12
0.50	30.00	4.40	3.67	0.28	3.39	0.14
0.67	40.00	3.70	3.08	0.28	2.80	0.16
0.83	50.00	3.20	2.67	0.28	2.39	0.17
1.00	60.00	2.80	2.33	0.28	2.05	0.17
1.50	90.00	2.10	1.75	0.28	1.47	0.18
2.00	120.00	1.70	1.42	0.28	1.14	0.19
3.00	180.00	1.20	1.00	0.28	0.72	0.18
4.00	240.00	1.00	0.83	0.28	0.55	0.18
5.00	300.00	0.84	0.70	0.28	0.42	0.17
6.00	360.00	0.73	0.61	0.28	0.33	0.16
7.00	420.00	0.65	0.54	0.28	0.26	0.15
8.00	480.00	0.58	0.48	0.28	0.20	0.14
9.00	540.00	0.53	0.44	0.28	0.16	0.12
10.00	600.00	0.49	0.41	0.28	0.13	0.11
12.00	720.00	0.43	0.36	0.28	0.08	0.08
18.00	1080.00	0.31	0.26	0.28	-0.02	-0.03
24.00	1440.00	0.25	0.21	0.28	-0.07	-0.14

Maximum Required Detention = 0.19 Acre-Feet

PROJECT: **Maple Leaf Crossing**
Town of Munster, Lake County, Indiana

JOB NO.: **2019-5052**

STORM WATER RUNOFF CALCULATIONS AND STORM SEWER DESIGN
PROJECT DESIGN STANDARDS:

LOCATION				AREA		Cc	FLOW TIME			i	Q	DESIGN						PROFILE					REMARKS
ST. OR ROAD	LINE	FROM	TO	INCREMENT (ACRES)	TOTAL (ACRES)		TO INLET	IN PIPE	TIME OF CONC.		(CFS)	PIPE SIZE (INCHES)	% SLOPE	n	CAPACITY (CFS)	VELOCITY (FPS)	DEPTH FLOW	LENGTH (FEET)	FALL	OTHER LOSSES	INV.EL. UP END	INV.EL. LOW END	
		3	2	0.03	0.03	0.75	10		10	3.7	0.08	10	0.33	0.010	1.64	3.0	100	34.00	0.11		612.00	611.89	
															#DIV/0!	#DIV/0!							
		West	12									12	0.25	0.010	2.32	3.0	100	65.00	0.16		611.13	610.97	
		12	9	0.4	0.4	0.72	10		10	3.7	1.07	12	0.25	0.010	2.32	3.0	100	64.00	0.16		610.97	610.81	
															#DIV/0!	#DIV/0!							
		11	10	0.05	0.05	0.75	10		10	37	1.39	10	0.33	0.010	1.64	3.0	100	22.00	0.07		611.01	610.94	
		10	9	0.13	0.18	0.75	10		10	3.7	0.50	10	0.33	0.010	1.64	3.0	100	40.00	0.13		610.94	610.81	
															#DIV/0!	#DIV/0!							
		9	6	0.21	0.79	0.73	10	0.50	10.5	3.65	2.10	15	0.19	0.010	3.67	3.0	100	225.00	0.43		610.81	610.38	
															#DIV/0!	#DIV/0!							
		8	7	0.13	0.13	0.75	10		10	3.7	0.36	10	0.33	0.010	1.64	3.0	100	22.00	0.07		610.50	610.43	
		7	6	0.31	0.44	0.75	10		10	3.7	1.22	12	0.25	0.010	2.32	3.0	100	18.00	0.05		610.43	610.38	
															#DIV/0!	#DIV/0!							
		6	5	0.45	1.68	0.74	10	2.00	12	3.5	4.35	15	0.27	0.010	4.38	3.6	100	125.00	0.34		610.38	610.04	
															#DIV/0!	#DIV/0!							
		13	5	0.28	0.28	0.75	10		10	3.7	0.78	8	0.43	0.010	1.03	3.0	100	82.00	0.35		610.37	610.04	
		5	2	0.4	2.36	0.72	10	2.50	12.5	3.5	5.95	24	0.17	0.013	9.35	3.0	100	287.00	0.49		610.04	609.55	
		2	1	0.07	2.43	0.75	10	3.50	13.5	3.35	6.11	24	0.17	0.013	9.35	3.0	100	26.00	0.04		609.55	609.51	
															#DIV/0!	#DIV/0!							
		19	18	0.37	0.37	0.65	10		10	3.7	0.89	10	0.33	0.010	1.64	3.0	100	106.00	0.35		611.82	612.42	
		18	17	0.24	0.61	0.65	10	0.50	10.5	3.65	1.45	12	0.25	0.010	2.32	3.0	100	81.00	0.20		612.42	612.12	
		17	16	0.31	0.92	0.65	10	1.00	11	3.6	2.15	15	0.19	0.010	3.67	3.0	100	162.00	0.31		612.12	611.81	
		16	15	0.35	1.27	0.67	10	2.00	12	3.5	2.98	15	0.19	0.010	3.67	3.0	100	110.00	0.21		611.81	611.60	
		15	14	0.39	1.66	0.67	10	2.50	12.5	3.45	3.84	15	0.21	0.010	3.86	3.1	100	112.00	0.24		611.60	611.36	
															#DIV/0!	#DIV/0!							
		21	20	0.13	0.13	0.72	10		10	3.7	0.35	10	0.33	0.010	1.64	3.0	100	132.00	0.44		612.00	611.56	
		20	14	0.18	0.31	0.72	10	0.50	10.5	3.65	0.81	12	0.25	0.010	2.32	3.0	100	79.00	0.20		611.56	611.36	
		14	1	0.12	2.09	0.72	10	3.00	13	3.4	5.12	15	0.37	0.010	5.12	4.2	100	134.00	0.50		611.36	610.86	
		1	Ex	0.24	4.76	0.73	10	4.00	14	3.3	11.47	24	0.26	0.013	11.57	3.7	100	33.00	0.09		609.51	609.42	
															#DIV/0!	#DIV/0!							
															#DIV/0!	#DIV/0!							
		29	28	0.18	0.18	0.65	10		10	3.7	0.43	12	0.25	0.010	2.32	3.0	100	130.00	0.33		611.49	611.16	
		28	27	0.2	0.38	0.65	10	0.50	10.5	3.65	0.90	12	0.25	0.010	2.32	3.0	100	179.00	0.45		611.16	610.71	
		27	26	0.14	0.52	0.65	10	1.00	11	3.6	1.22	12	0.25	0.010	2.32	3.0	100	166.00	0.42		610.71	610.29	
		26	CH	0.21	0.73	0.65	10	1.50	11.5	3.55	1.68	12	0.25	0.010	2.32	3.0	100	16.00	0.04		610.29	610.25	

PROJECT: **Maple Leaf Crossing**
Town of Munster, Lake County, Indiana

JOB NO.: **2019-5052**

STORM WATER RUNOFF CALCULATIONS AND STORM SEWER DESIGN
PROJECT DESIGN STANDARDS:

LOCATION				AREA		Cc	FLOW TIME			i	Q (CFS)	DESIGN						PROFILE					REMARKS
ST. OR ROAD	LINE	FROM	TO	INCREMENT (ACRES)	TOTAL (ACRES)		TO INLET	IN PIPE	TIME OF CONC.			PIPE SIZE (INCHES)	% SLOPE	n	CAPACITY (CFS)	VELOCITY (FPS)	DEPTH FLOW	LENGTH (FEET)	FALL	OTHER LOSSES	INV.EL. UP END	INV.EL. LOW END	
															#DIV/0!	#DIV/0!							
		24	23	0.55	0.55	0.65	10		10	3.7	1.32	12	0.25	0.010	2.32	3.0	100	153.00	0.38		611.25	610.87	
		23	22	0.51	1.06	0.65	10	1.00	11	3.6	2.48	12	0.30	0.010	2.54	3.2	100	140.00	0.42		610.87	610.45	
		22	25	0.09	1.15	0.67	10	2.00	12	3.5	2.70	12	0.35	0.010	2.75	3.5	100	56.00	0.20		610.45	610.25	
															#DIV/0!	#DIV/0!							
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															#DIV/0!	#DIV/0!							

CULTEC Stormwater Design Calculator

Date:	May 03, 2023

Project Number:	2019-5052

Project Information:

Maple Leaf Crossings
9450 Calumet Avenue
Munster
Indiana
United States

Calculations Performed By:

Ryan Torrenga
Torrenga Engineering
907 Ridge Road
Munster Indiana
46321
United States
(219) 836-8918
Ryan.Torrenga@Torrenga.com

RECHARGER 330XLHD

Recharger 330XLHD Chamber Specifications

Height	30.5	inches
Width	52.0	inches
Length	8.50	feet
Installed Length	7.00	feet
Bare Chamber Volume	52.21	cu. feet
Installed Chamber Volume	99.56	cu. feet

Breakdown of Storage Provided by Recharger 330XLHD Stormwater System

Within Chambers	4,221.79	cu. feet
Within Feed Connectors	-	cu. feet
Within Stone	4,340.28	cu. feet
Total Storage Provided	**8,562.1**	**cu. feet**
Total Storage Required	8276.00	cu. feet

Materials List

Recharger 330XLHD

Total Number of Chambers Required	**80**	**pieces**
Separator Row Chambers	20	pieces
Starter Chambers	4	pieces
Intermediate Chambers	72	pieces
End Chambers	4	pieces
HVLV FC-24 Feed Connectors	0	pieces
CULTEC No. 410 Non-Woven Geotextile	1061	sq. yards
CULTEC No. 4800 Woven Geotextile	142	feet
Stone	402	cu. yards

Separator Row Qty Included in Total

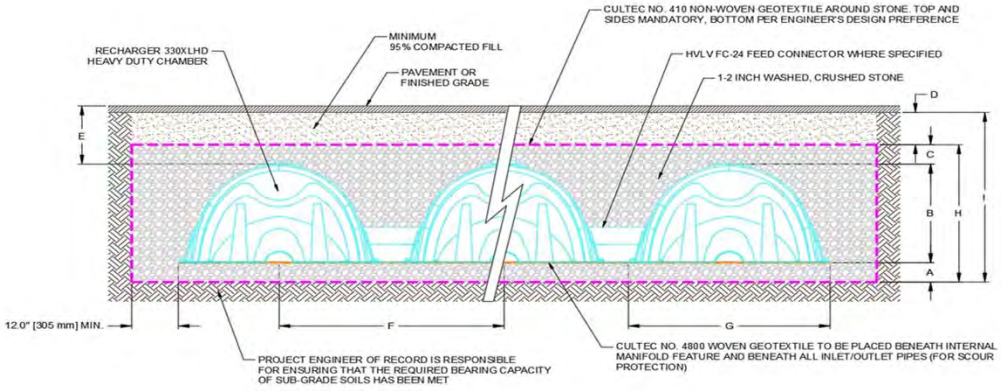
Based on External Pipe Manifold

Bed Detail

Bed detail for reference only. Not project specific. Not to scale.

Bed Layout Information

Number of Rows Wide	4	pieces
Number of Chambers Long	20	pieces
Chamber Row Width	18.83	feet
Chamber Row Length	141.50	feet
Bed Width	20.83	feet
Bed Length	143.50	feet
Bed Area Required	2989.58	sq. feet
Length of Separator Row	141.50	feet



Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	24.0	inches
B	Chamber Height	30.5	inches
C	Depth of Stone Above Units	6.0	inches
D	Depth of 95% Compacted Fill	10.0	inches
E	Max. Depth Allowed Above the Chamber	12.00	feet
F	Chamber Width	52.0	inches
G	Center to Center Spacing	4.83	feet
H	Effective Depth	5.04	feet
I	Bed Depth	5.88	feet

CULTEC Stage-Storage Calculations

Date:	May 3, 2023

Project Information:
Maple Leaf Crossings
9450 Calumet Avenue
Munster
Indiana 46321
United Sta

Project Number:
2019-5052

	Recharger 330XLHD	
Chamber Model -		
Number of Rows-	4	units
Total Number of Chambers -	80	units
HVLV FC-24 Feed Connectors-	0	units
Stone Void -	40	%
Stone Base -	24	inches
Stone Above Units -	6	inches
Area -	2989.58	ft2
Base of Stone Elevation -	609.37	

Recharger 330XLHD Incremental Storage Volumes

Height of System		Chamber Volume		HVLV Feed Connector Volume		Stone Volume		Cumulative Storage Volume		Total Cumulative Storage Volume		Elevation		
in	mm	ft³	m³	ft3	m3	ft³	m³	ft³	m³	ft³	m³	ft	m	
60.5	1537	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8562.10	242.45	614.410	610.91	Top of Stone Elevation
59.5	1511	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8462.45	239.63	614.330	610.88	
58.5	1486	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8362.80	236.81	614.250	610.86	
57.5	1461	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8263.15	233.99	614.160	610.83	
56.5	1435	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8163.49	231.16	614.080	610.81	
55.5	1410	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	8063.84	228.34	614.000	610.78	
54.5	1384	0.1	0.0	0.0	0.0	49.8	1.4	49.860	1.4	7964.19	225.52	613.910	610.75	Top of Chamber Elevation
54.0	1372	10.8	0.3	0.0	0.0	95.4	2.7	106.105	3.0	7914.33	224.11	613.870	610.74	
53.0	1346	28.9	0.8	0.0	0.0	88.1	2.5	116.972	3.3	7808.22	221.10	613.790	610.72	
52.0	1321	47.5	1.3	0.0	0.0	80.6	2.3	128.179	3.6	7691.25	217.79	613.700	610.69	
51.0	1295	70.2	2.0	0.0	0.0	71.6	2.0	141.763	4.0	7563.07	214.16	613.620	610.67	
50.0	1270	84.9	2.4	0.0	0.0	65.7	1.9	150.593	4.3	7421.31	210.15	613.540	610.64	
49.0	1245	97.9	2.8	0.0	0.0	60.5	1.7	158.404	4.5	7270.71	205.88	613.450	610.61	
48.0	1219	108.1	3.1	0.0	0.0	56.4	1.6	164.516	4.7	7112.31	201.40	613.370	610.59	
47.0	1194	117.2	3.3	0.0	0.0	52.8	1.5	169.950	4.8	6947.79	196.74	613.290	610.56	
46.0	1168	125.1	3.5	0.0	0.0	49.6	1.4	174.704	4.9	6777.84	191.93	613.200	610.54	
45.0	1143	131.9	3.7	0.0	0.0	46.9	1.3	178.780	5.1	6603.14	186.98	613.120	610.51	
44.0	1118	138.1	3.9	0.0	0.0	44.4	1.3	182.515	5.2	6424.36	181.92	613.040	610.49	
43.0	1092	143.8	4.1	0.0	0.0	42.1	1.2	185.911	5.3	6241.84	176.75	612.950	610.46	
42.0	1067	149.4	4.2	0.0	0.0	39.9	1.1	189.307	5.4	6055.93	171.48	612.870	610.44	
41.0	1041	153.4	4.3	0.0	0.0	38.3	1.1	191.684	5.4	5866.63	166.12	612.790	610.41	
40.0	1016	160.2	4.5	0.0	0.0	35.6	1.0	195.760	5.5	5674.94	160.70	612.700	610.39	
39.0	991	166.4	4.7	0.0	0.0	33.1	0.9	199.495	5.6	5479.18	155.15	612.620	610.36	
38.0	965	167.5	4.7	0.0	0.0	32.6	0.9	200.174	5.7	5279.69	149.50	612.540	610.34	
37.0	940	169.2	4.8	0.0	0.0	32.0	0.9	201.193	5.7	5079.51	143.84	612.450	610.31	
36.0	914	170.4	4.8	0.0	0.0	31.5	0.9	201.872	5.7	4878.32	138.14	612.370	610.28	
35.0	889	171.5	4.9	0.0	0.0	31.1	0.9	202.552	5.7	4676.45	132.42	612.290	610.26	
34.0	864	172.1	4.9	0.0	0.0	30.8	0.9	202.891	5.7	4473.90	126.69	612.200	610.23	
33.0	838	173.2	4.9	0.0	0.0	30.4	0.9	203.570	5.8	4271.00	120.94	612.120	610.21	
32.0	813	177.2	5.0	0.0	0.0	28.8	0.8	205.948	5.8	4067.43	115.18	612.040	610.18	
31.0	787	181.7	5.1	0.0	0.0	27.0	0.8	208.664	5.9	3861.49	109.34	611.950	610.16	
30.0	762	182.3	5.2	0.0	0.0	26.8	0.8	209.004	5.9	3652.82	103.44	611.870	610.13	
29.0	737	182.8	5.2	0.0	0.0	26.5	0.8	209.344	5.9	3443.82	97.52	611.790	610.11	
28.0	711	183.4	5.2	0.0	0.0	26.3	0.7	209.683	5.9	3234.47	91.59	611.700	610.08	
27.0	686	184.0	5.2	0.0	0.0	26.1	0.7	210.023	5.9	3024.79	85.65	611.620	610.06	
26.0	660	185.1	5.2	0.0	0.0	25.6	0.7	210.702	6.0	2814.77	79.71	611.540	610.03	
25.0	635	187.9	5.3	0.0	0.0	24.5	0.7	212.400	6.0	2604.07	73.74	611.450	610.01	
24.0	610	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	2391.67	67.72	611.370	609.98	Bottom of Chamber Elevation
23.0	584	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	2292.01	64.90	611.290	609.95	
22.0	559	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	2192.36	62.08	611.200	609.93	
21.0	533	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	2092.71	59.26	611.120	609.90	
20.0	508	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1993.06	56.44	611.040	609.88	
19.0	483	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1893.40	53.62	610.950	609.85	
18.0	457	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1793.75	50.79	610.870	609.83	
17.0	432	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1694.10	47.97	610.790	609.80	
16.0	406	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1594.44	45.15	610.700	609.78	
15.0	381	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1494.79	42.33	610.620	609.75	
14.0	356	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1395.14	39.51	610.540	609.73	
13.0	330	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1295.49	36.68	610.450	609.70	
12.0	305	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1195.83	33.86	610.370	609.67	
11.0	279	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	1096.18	31.04	610.290	609.65	
10.0	254	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	996.53	28.22	610.200	609.62	
9.0	229	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	896.88	25.40	610.120	609.60	
8.0	203	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	797.22	22.57	610.040	609.57	
7.0	178	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	697.57	19.75	609.950	609.55	
6.0	152	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	597.92	16.93	609.870	609.52	
5.0	127	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	498.26	14.11	609.790	609.50	
4.0	102	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	398.61	11.29	609.700	609.47	
3.0	76	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	298.96	8.47	609.620	609.45	
2.0	51	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	199.31	5.64	609.540	609.42	
1.0	25	0.0	0.0	0.0	0.0	99.7	2.8	99.653	2.8	99.65	2.82	609.450	609.40	
0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.00	0.00	609.370	609.37	Bottom of Stone Elevation
-1.0														
-2.0														
-3.0														
-4.0														
-5.0														
-6.0														
-7.0														
-8.0														
-9.0														
-10.0														
-11.0														
-12.0														
-13.0														
-14.0														
-15.0														
-16.0														
-17.0														
-18.0														
-19.0														
-20.0														
-21.0														
-22.0														

MH #10 O/G R=615.22 I=611.29
INL #11 R=615.22 I=611.36
MH #9 O/G R=615.56 I=611.16
EXISTING BUILDING
EXISTING CHAINLINK FENCE
MH #6 O/G R=615.48 I=610.73
MH #7 O/G R=615.24 I=610.78
INL #8 R=615.24 I=610.85
MH #5 O/G R=616.08 I=610.45
INL #3 R=616.40 I=612.00
NEW CHAINLINK FENCE
PP TO BE RELOCATED
MH #2 O/G R=616.16 I=609.62 I=611.89(N)
CB #1 w/ BMP 30R Snout R=616.35 I=609.55 I=607.19
EX. STS MH R=615.92 I=609.42(18") I=609.42(12") I=612.32(10") EX. STS MH R=616.39 I=607.19
EX. 18" RCP @ 3.7%
EX. 10" RCP
EX. 24" STS
EX. 18" STS
EX. 10" STS
EX. 6" PVC
EX. 15" STS
22'~10" @ 0.33%
40'~10" @ 0.33%
0.05 acres
0.13 acres
22'~10" @ 0.33%
18'~12" @ 0.25%
0.13 acres
0.31 acres
0.03 acres
34'~10" @ 0.50%
0.07 acres
MAPLE LEAF BOULEVARD
Continental Crosswalk
TRASH ENCL.
225'~15" @ 0.19%
125'~15" @ 0.22%
287'~18" @ 0.28% HDPE
MASONRY TRASH ENCL.
0.40 acres
26'~18" @ 0.28% HDPE 33'~24" @ 0.40%
82'~8" @ 0.43%
0.21 acres
0.45 acres
0.24 acres
INLET #31 R=615.25 I=611.99
I=611.13
0.40 acres
138'~12" @ 0.25%
HYATT PLACE
4 STORY HOTEL
17,794 SF FOOTPRINT
105 ROOMS
FF=617.75
FG=617.50
INLET #17 R=616.25 I=611.20
INL #12 R=615.25 I=610.80
0.28 acres
4 STORY OFFICE BLDG
15,375 SF FOOTPRINT
FF=618.00
FG=617.75
MH #13 O/G R=616.35 I=610.29
134'~18" @ 0.55% HDPE
0.12 acres
PHASE ONE
PHASE ONE
INL #29 R=616.00 I=611.62
MH #16 O/G R=616.00 I=610.93
MH #15 O/G R=616.00 I=610.52
MH #14 O/G R=616.00 I=610.31
MH #30 R=616.70 I=611.62
0.37 acres
63'~10" @ 0.33%
0.24 acres
81'~10" @ 0.33%
162'~12" @ 0.25%
0.35 acres
112'~15" @ 0.23%
0.31 acres
110'~15" @ 0.19%
0.39 acres
89'~12" @ 0.25%
PHASE LINE
72'~18" @ 0.25%
CONTAINER ARCHITECTURE
CB #28 O/G R=616.35 I=611.40
0.09 acres
TRASH ENCL.
PUB
2,740 SF
FF=617.85
CONTAINER ARCHITECTURE
0.18 acres
MH #18 O/G R=616.35 I=610.49
EX. CB R=615.34 I=613.74
EX. CB R=616.01 I=610.51
EX. 12" RCP
12" HDPE MANIFOLD PIPE W/ 12" FEED PIPES
UNDERGROUND STORM CHAMBERS CULTEC RECHARGER 330XLHD BOTTOM OF CHAMBER=610.25 BOTTOM OF EXCAVATION=609.25
12" HDPE MANIFOLD PIPE W/ 12" FEED PIPES
0.19 acres
121'~12" @ 0.25%
0.20 acres
0.10 acres
MH #27 O/G R=616.35 I=611.37
MH #26 O/G R=616.35 I=611.07
INL #23 R=615.80 I=612.52
SOUTH OFFICE #2
7,774 SF
FF=617.45
0.55 acres
153'~12" @ 0.25%
PHASE TWO
PHASE TWO
RESTAURANT
4,623 SF
FF=618.00
FG=617.75
MASONRY TRASH ENCL.
CALUMET AVENUE
(90' RIGHT-OF-WAY)
132'~15" @ 0.19%
0.13 acres
INLET #19 R=616.35 I=610.74 I=611.65(W)
0.51 acres
MH #25 O/G R=615.90 I=610.78
TRASH ENCL.
117'~12" @ 0.25%
0.28 acres
MH #22 O/G R=615.80 I=612.14
98'~12" @ 0.50%
SOUTH OFFICE #1
7,774 SF
FF=617.45
MH #21 O/G R=616.35 I=610.56
166'~15" @ 0.19%
0.09 acres
56'~12" @ 0.56%
CB #20 w/ BMP 12R Snout R=616.35 I=610.25 INSTALL OVER EXISTING 8" PVC PIPE
0.21 acres
MH #24 O/G R=615.90 I=610.46
133'~15" @ 0.19%
0.12 acres
EX. 15" STS @ 0.40%
CANADIAN NATIONAL RAILROAD
EX. INV. I=614.24 CONNECT 6" PVC PIPE INTO THE 15" PIPE
EX. MH R=616.60 I=608.60(N) I=609.80(NW)
STORM/SANITARY CROSSING 1
Top of 8" Sanitary = 611.77
Bottom of 12" Storm = 611.85
NORTH
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8818
website: www.torrenga.com

MAPLE LEAF CROSSINGS
A PLANNED UNIT DEVELOPMENT TO THE TOWN OF MUNSTER, LAKE CO., INDIANA
AREAS

REVISIONS:
DATE: 05-11-2020

CLIENT:
Maple Leaf Crossing, LLC
400 Fisher Avenue
Munster, Indiana 46321

JOB NO: 2019-5052
SCALE: 1" = 30'

SHEET
C-4.0

A840-VCOB OLD TOWN SERIES

LED

EPA 1.06 (ft²)
WEIGHT 22 LBS

7 YEAR WARRANTY

LUMEN RANGE 3,930 to 7,710

LIFE SPAN L70 MINIMUM 100,000 HOURS

UL LISTED

CLICK FOR FAQ's

JOB NAME

FIXTURE TYPE

MEMO

BUILD A PART NUMBER

ORDERING EXAMPLE: PT-A840-5P-VCOB-4L40TS-MDL03-A-PEC-FHD/4212FP4-188/BKT

Mounting Config.	Fixture	Fitter	LED	CCT	Distribution Type	Driver	Lens	Option Control Receptacle	Option Control	Option Fuse	Option Decorative Ring	Option GFI	Option Terminal Block	Option House Side Shield	Arm See Arm Spec Sheets	Pole See Pole Spec Sheets	Finish

Mounting Configuration

(Click here to link to mounting configuration specification page)

- W
- 2A
- 3A90
- 1AM
- PT
- 2A90
- 3APT
- 2AM
- 1A
- 2APT
- 4A
- 450PB
- 1APT
- 3A
- 4APT

W - Wall Mount PT - Post Top A - Arm Mount AM - Arm Mid-Mount PB - Pier Base

Fixture

- A840
- A840SR

Fitter

- 5P[1]
- 99[1]
- 995[1]
- OL3
- 73
- 992[1]
- BD4
- OL4
- 74
- 993[1]
- BD5
- 588
- 990[1]
- 994[1]
- BD7
- C2097[1,2]

[1] Add "T" after fitter designation for optional "Twist-lock" fitter.
[2] Consult factory for use on concrete poles.

LED

- VCOB-4L

CCT - Color Temperature (K)

- 27(00)
- 30(00)
- 40(00)
- 50(00)

Distribution Type

- **TS** (Symmetric)
- **TA** (Asymmetric)

Driver

- **MDL02** (120V-277V, 250mA)
- **MDL03** (120V-277V, 350mA)
- **MDL05** (120V-277V, 500mA)
- **MDH02** (347V-480V, 250mA)
- **MDH03** (347V-480V, 350mA)
- **MDH05** (347V-480V, 500mA)

Lens

- **A** (Textured Acrylic)
- **P** (Textured Poly)
- **WA** (White Textured Acrylic)
- **WP** (White Textured Poly)

Options (Click here to view accessories sheet)

- **R**[3] 3-Pin control receptacle only
- **R5**[3] 5-Pin control receptacle only
- **R7**[3] 7-Pin control receptacle only
- **PE**[4] Twist-Lock Photocontrol (120v-277v)
- **PE3**[4] Twist-Lock Photocontrol (347v)
- **PE4**[4] Twist-Lock Photocontrol (480v)
- **SC**[4] Shorting Cap
- **PEC** Electronic Button Photocontrol (120v-277v)
- **PEC4** Electronic Button Photocontrol (480v)
- **FHD**[5] Double Fuse and Holder
- **PBDR**[6] Perforated Brass Decorative Ring
- **GFI**[3] 15A Duplex GFI for Utility Fitter
- **TB**[3] Terminal Block
- **HSS** 120° House Side Shield

[3] For 900 series utility fitter only.
[4] Requires control receptacle.
[5] Ships loose for installation in base.
[6] Standard is polished, for painted ring specify PBDR-P.
[7] For use with "TA" distribution type only.

Arm (Click here to link to arm specification page)

See Arms & Wall Brackets specification sheets.

- 78
- 55
- 579
- 80
- 6236
- TASCR

Pole (Click here to link to pole specification page)

See Pole specification sheets.

Finish (Click here to view paint finish sheet)

Standard Finishes[8]

- **BKT** Black Textured
- **WHT** White Textured
- **PGT** Park Green Textured
- **ABZT** Architectural Medium Bronze Textured
- **DBT** Dark Bronze Textured

[8] Smooth finishes are available upon request

Custom Finishes[9]

- **OI** Old Iron
- **RT** Rust
- **WBR** Weathered Brown
- **CD** Cedar
- **WBK** Weathered Black
- **TT** Two Tone

[9] Custom colors require upcharge.

Sternberg Select Finishes

- **VG** Verde Green
- **SI** Swedish Iron
- **OWGT** Old World Gray Textured

Specifications

Fixture

The fixture shall be 14-1/4" in diameter and 37-3/4" tall. Acorn will be made of vandal resistant clear textured polycarbonate or dent resistant (DR) clear textured acrylic. White textured is also available. The fixture is available in a solid roof (A840SR) for added distinction and reduced up-light. The solid roof will be made of spun aluminum and securely affixed to the top of the acorn. The optional perforated brass decorative ring (PBDR) is available in polished brass or painted finish. The 2-1/4" wide brass filigree allows light transfer through the decorative openings. The Luminaire shall be UL listed in US and Canada.

Fitter - Standard

The fitter shall be heavy wall cast aluminum, 356 alloy for high tensile strength. It shall have an 8-1/2" inside diameter opening to attach to the 8" neck of the acorn globe. When ordered with a Sternberg aluminum pole, the fitter shall be welded to the pole top or tenon for safety and to ensure the fixture will be plumb, secure and level over the life of the installation. The fitter shall have a one-piece ring bug gasket to resist insect penetration into lamp assembly.

900 Series Utility Fitter Option

The fitter shall be heavy wall cast aluminum, 360 die cast alloy for high tensile strength. It shall have a 9- 1/4" inside diameter opening to attach to the 8" neck of the acorn globe. It shall have a hinged, tool-less entry door that provides open access to all of the components. The 990 shall have an optional terminal block for ease of wiring, an optional Twist-Lock Photocell receptacle, an optional single GFCI outlet for auxiliary power needs. The top mounted driver mounting plate shall be cast aluminum and provide tool-less removal from the housing using 2 finger latches. When ordered with a Sternberg aluminum pole, the fitter shall be set screwed to the pole top or tenon. The fitter shall have a one-piece ring bug gasket to resist insect penetration into lamp assembly. When supplied with GFI receptacle a hole will be provided for cord and plug installation with

See next page

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

A840-VCOB OLD TOWN SERIES

LED

the access door closed. When cord and plug is not in use a filler plug will be provided and shall be tethered to the fitter for easy recovery and installation.

Twist-Lock Fitter (Optional)

The TL (Twist-Lock) fitter shall have an aluminum die-cast twist-lock mechanism. The tool-less 1/4 turn action allows for easy globe removal and replacement. A die-cast ring assembly is mechanically attached to the globe and is removable if the globe is broken or replaced.

LED's

The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame mounted to vertical heat sinks. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K or 5000K option) color temperature with a minimum CRI of 70. Consult factory for custom color CCT. The luminaire shall have a minimum _____ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Optics

The luminaire shall be provided with individual, molded silicone refractor type optics applied to each COB (Chip On Board) LED assembly. The optic shall be at least 92% efficient while providing superior thermal, UV and impact resistance for the COB assembly. The optic helps efficiently shape and distribute the light while minimizing up-light. The luminaire shall provide Symmetric and Asymmetric light distribution. Testing shall be done in accordance with IESNA LM-79.

Electronic Drivers

The LED driver shall be U.L. Recognized. It shall be securely mounted inside the fixture, for optimized performance and longevity. It shall be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections and fixture installation. It shall have overload, overheat and short circuit protection, and have a DC voltage output, constant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It shall be a high efficiency driver with a THD less than 20% and a high power factor greater than .9. It shall be dimming capable using a 0-10v signal, consult factory for more information.

Photocontrols

Button Style: The photocontrol shall be mounted on the fixture and pre-wired to driver. The electronic button type photocontrol is instant on with a 5-10 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years. See pole spec sheet for pole mounted version.

Twist-Lock Style: The photocontrol shall be mounted in the utility fitter and pre-wired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years.

Warranty

Seven-year limited warranty. See product and finish warranty guide for details.

Finish

Refer to website for details.

Performance

LIGHT SOURCE	TS INITIAL LUMENS	EFFICACY (LPW)	TA INITIAL LUMENS	EFFICACY (LPW)	WATTAGE
4L40T_-MDL05	7710	102.8	7595	101.3	75
4L30T_-MDL05	7470	99.6	7355	98.1	75
4L27T_-MDL05	6790	90.5	6685	89.1	75
4L40T_-MDL03	6050	108.0	5980	106.8	56
4L30T_-MDL03	5860	104.6	5790	103.4	56
4L27T_-MDL03	5325	95.1	5265	94.0	56
4L40T_-MDL02	4465	111.6	4445	111.1	40
4L30T_-MDL02	4325	108.1	4305	107.6	40
4L27T_-MDL02	3930	98.3	3915	97.9	40

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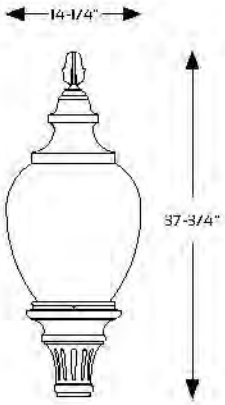
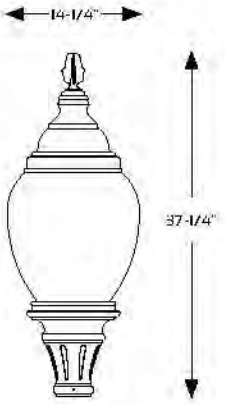
A840-VCOB OLD TOWN SERIES

LED

Fixtures



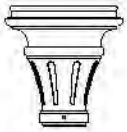
A840



A840SR

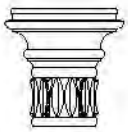
Fitters

10-1/8" W
10-3/8" H



5P or 5T^
Fits 3" OD
x 3" tall
tenon/pole

10-1/8" W
10-1/8" H

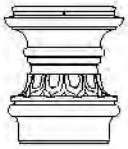


BD4
Fits 4" OD
x 5" tall
tenon/pole

10-1/8" W
10-1/4" H

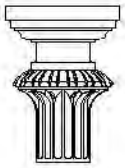
BD5
Fits 5" OD
x 6" tall
tenon/pole

10-1/8" W
11-3/4" H



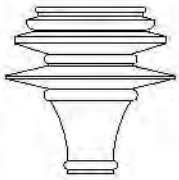
BD7
Fits 7" OD
x 1" tall
tenon/pole

9-3/4" W
13-1/4" H



73
Fits 3" OD
x 4" tall
tenon/pole
74
Fits 4" OD
x 4" tall
tenon/pole

14-1/2" W
14-1/4" H

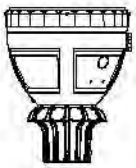


588
(Art Deco I)
Fits 3" OD
x 3" tall
tenon/pole

10-1/2" W
15-3/4" H

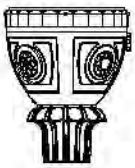
990 or 990T^
Fits 3" OD
x 3" tall
tenon/pole
994 or 994T^
Fits 4" OD
x 3" tall
tenon/pole

10-1/2" W
13-1/8" H



991 or 991T^
Fits 3" OD
x 3" tall
tenon/pole

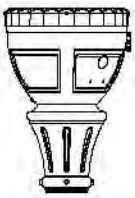
10-1/2" W
13-1/8" H



992 or 992T^
Fits 3" OD
x 3" tall
tenon/pole

^Twist Lock Acorn (Fitter TL)

10-1/2" W
15-3/4" H



993 or 993T^
Fits 3" OD
x 3" tall
tenon/pole
995 or 995T^
Fits 4" OD
x 3" tall
tenon/pole

10-1/2" W
11-3/8" H

OL3
Fits 3" OD
x 3" tall
tenon/pole
OL4
Fits 4" OD
x 3" tall
tenon/pole

10" W
3-1/4" H

C2097 or
C2097T^
Fits 7" OD
x 1" tall
tenon/pole

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

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NIGHTTIME FRIENDLY™

Consistent with LEED® goals
& Green Globes™ criteria
for light pollution reduction

Roadway Series 115

Roadway Lighting — Cutoff Style

50-400W HPS, 70-250W MH

PRODUCT OVERVIEW

Features:

Rugged die-cast aluminum housing is powder-coated for durability and corrosion resistance

Two-bolt mast arm mount provides easy, secure installation and adjustability for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. Optional four-bolt mounting provides extra security in high-vibration applications

Die-cast trigger latch on doorframe enables easy and secure one-hand opening for re-lamping and maintenance

Large surface area "breathing seal" gasket seals the optical chamber to prevent intrusion by insects and environmental contaminants. Heat-resistant gasket material remains effective over the life of the fixture

Wildlife shield is cast into the housing (not a separate piece) on the two-bolt unit and is easily adjustable for 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) mast arms.

Photocontrol receptacle is adjustable without tools

Anodized aluminum reflectors provide uniform lighting distribution with either flat or sag clear tempered glass

NEMA wattage label, terminal block, and NEMA photocontrol receptacle are standard

E39 mogul base socket standard

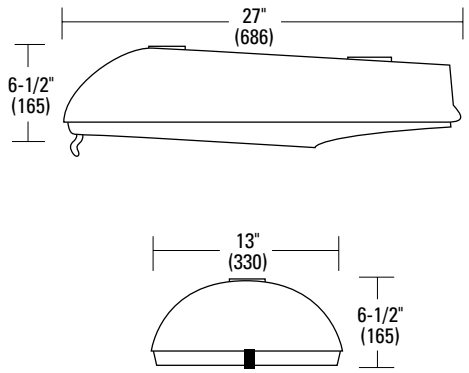
Suitable for -40°C

Complies with ANSI: C136.2, C136.10, C136.14, C136.15, C136.31

Applications:

- Roadways
- Residential streets
- Storage areas
- Parking lots
- Campuses
- Parks

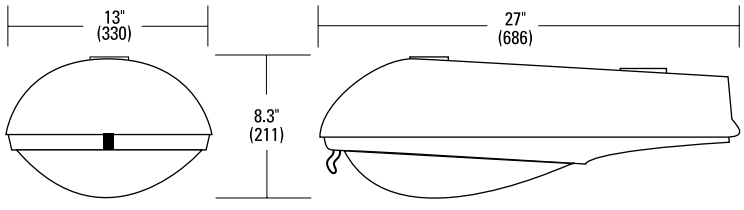
DIMENSIONS



Effective Projected Area (EPA)
The EPA for the Horizontal Luminaire Series 115 with cutoff is .74 sq. ft.
Approx. Wt. = 19 lbs.

PREFERRED SELECTION CATALOG NUMBERS

115 10S CA MT1 R2 FG EC



Effective Projected Area (EPA)
The EPA for the Horizontal Luminaire Series 115 with sag glass is .82 sq. ft.

Note: Specifications subject to change without notice.

AEL American Electric Lighting®

Roadway Series 115

Roadway Lighting — Cutoff Style

50-400W HPS, 70-250W MH

ORDERING INFORMATION

Example: 115 15S CA MT1 R3 FG LC PC HP

Series

115 Single Door Cobrahead

Wattage / Source

05	50W	**S**	HPS
07	70W	**M**	MH
10	100W		
13	100/150W Wired 100W		
14	100/150W Wired 150W		
15	150W		
17	175W		
20	200W		
25	250W		
40	400W		

Ballast

RN	Reactor Normal Power Factor
RH	Reactor High Power Factor
XN	High Reactance (Lag) Normal Power Factor
XH	High Reactance (Lag) High Power Factor
CA	CWA
CT	CWI
SC	SCWA
MR	Mag Reg (3 Coil)

Voltage

120	120V
208	208V
240	240V
277	277V
347	347V
480	480V
MT1	Multi-tap Wired 120V
MT2	Multi-tap Wired 240V
MT7	Multi-tap Wired 277V
TT3	Tri-tap Wired 347V
DT2	Dual Tap 120/240 Wired 240V
DT4	Dual Tap 240/480 Wired 480V

Distribution

R2	Roadway Type II
R3	Roadway Type III

Refer to optic distribution matrix below for compatibility.

Optics

FG	Flat Glass Clear Tempered [1]
SG	Sag Glass Clear Tempered

Options

Mounting

(blank)	2-bolt Internal
EF	External Fitter (2-bolt only)
4B	4-bolt Internal
M2	2-bolt Internal 2" Setting
E2	External Fitter 2" Mast Arm (2-bolt only)
F2	4-Bolt Internal 2" Setting

Paint [2]

(blank)	Gray (standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
WH	White
UP	Unpainted

Terminal Block

(blank)	Terminal Block (standard)
T2	Wired to L1 & L2 Positions
T3	3 Wire Operation (L1, N, L2 Position) [3]

Listing

UL	UL Listed
CS	CSA Certified

Fusing [4]

SF	Single Fuse (120, 277, 347V)
DF	Double Fuse (208, 220, 240, 480V)

Photocontrol Receptacle

(blank)	NEMA Photocontrol Receptacle (standard)
NR	No Photocontrol Receptacle [5]

Starter [6]

(blank)	Open Board (standard)
EC	Encapsulated Plug-in
OP	Open Plug-in

Misc.

PC	Photocontrol Included per Voltage Specified [5]
BF	3G Vibration [8]
BL	Bubble Level
SS	Stainless Steel Fasteners (external)
CF	Charcoal Filter
PL	Distribution Pattern Indicator Label
LA	Lightning Arrestor (Void UL/CSA Certified Options)
SH	Shorting Cap [5]
HK	Hinge Keeper
HP	High Performance [7]
RG	Rubber Silicone Optical Gasket

Notes:

1. Nighttime Friendly™ optic
2. Other colors available, please contact your local American Electric Lighting representative
3. T3 option only available with 240, 480, DT2, DT4, MT2
4. Not available in MT, TT, DT voltages
5. PC and SH not available with NR option
6. For HPS products only
7. FG optics only
8. Tested to withstand 3G vibration, 4B option required

Optic Distribution

	R2 SG	R3 SG	R2 FG	R3 FG	R2 FG HP	R3 FG HP
05S	▲	▲	▲	▲	▲	▲
07S	▲	▲	▲	▲	▲	▲
07M	▲	-	▲	-	▲	-
10S	▲	▲	▲	▲	▲	▲
10M	▲	-	▲	-	▲	-
15S	▲	▲	▲	▲	▲	▲
13S	▲	▲	▲	▲	▲	▲
14S	▲	▲	▲	▲	▲	▲
15M	▲	-	▲	-	▲	-
17M	▲	-	▲	▲	-	-
20S	▲	-	▲	-	-	-
25S	▲	-	▲	-	-	-
25M	▲	-	-	-	-	-
40S	▲	-	▲	-	-	-

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

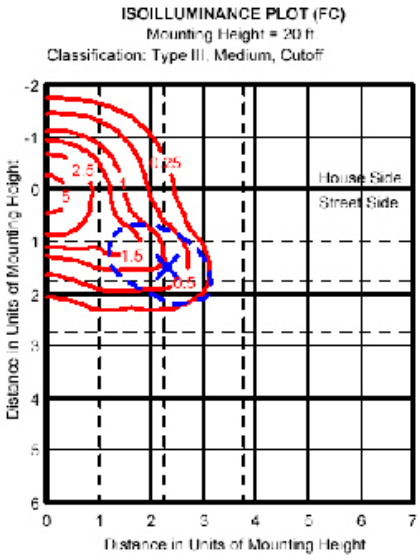
BALLAST MATRIX

Watts	120	208	240	277	347	480	DT2	DT4
05S	RH,RN	-	-	XN	-	-	-	-
07S	RH,RN	XN,XH	XN,XH	XN,XH	XH,XN	XN,XH	XN,XH	-
07M	XN,XH	XN,XH	XN,XH	XN,XH	-	-	-	-
10S	CA,CT,MR,RH,RN	CA,CT,XN,XH	CA,CT,MR,XH,XN	CA,XH,XN	CT	CA	CA,CT,MR,XH,XN	-
10M	XN,XH	XN,XH	XN,XH	XN,XH	-	XN,XH	-	-
15S	CA,CT,MR,RH,RN	CA,CT,XN,XH	CA,CT,MR,XH,XN	XN,XH,CA,CT	XH,XN,CT	CA,MR,XN,XH	CA,CT,MR,XH,XN	-
13S	RN,RH	-	-	-	-	-	-	-
14S	RN,RH	-	-	-	-	-	-	-
15M	XN,XH,SC	XN,XH,SC	XN,XH,SC	XN,XH,SC	-	XN,XH	-	-
17M	SC	SC	SC	SC	SC	SC	SC	-
20S	CA,CT,XN,XH	CA,CT	CA,CT,XN,XH	CA,CT	-	CA	CA,CT,XN,XH	MR
25S	CA,CT,XN,XH	CA,CT	CA,CT,RN,RH,XN,XH	CA,CT	-	CA	CA,CT,XN,XH	-
25M	SC	SC	SC	SC	SC	SC	SC	SC
40S	-	RN,RH	RN,RH	-	-	-	-	

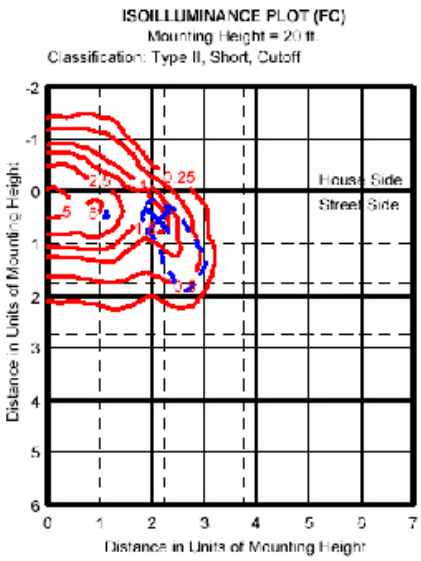
Watts	MT1	MT2	MT7	TT3	TT3	5T4
05S	XH,XN	XH,XN	XH,XN	-	-	-
07S	XH,XN	XH,XN	XH,XN	XH,XN		-
07M	XH,XN	XH,XN	XH,XN	-	-	-
10S	CA,CT,XH,XN	CA,CT,XH,XN	CA,CT,XN,XH	-	-	-
10M	XH,XN	XH,XN	XH,XN	-	-	-
15S	CA,CT,XH,XN	CA,CT,XH,XN	CA,CT,XH,XN	XH,XN	SC	SC
13S	-	-	-	-	-	-
14S	-	-	-	-	-	-
15M	XH,XN,SC	XH,XN,SC	XH,XN,SC	XH,XN	-	-
17M	SC	SC	SC	-	-	-
20S	CA,CT	CA,CT	CA,CT	-	-	SC
25S	CA,CT	CA,CT	CA,CT	CA		
25M	SC	SC	SC	SC		
40S	-	-	-	-		

PHOTOMETRICS

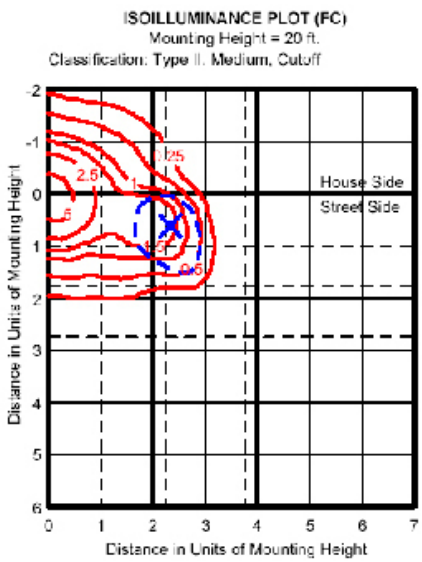
115 15S R3 FG



115 15S R3 FG HP



115 25S R3 SG



Maximum Intensity
1/2 Maximum Intensity

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

WDGE1 LED
Architectural Wall Sconce

Catalog Number

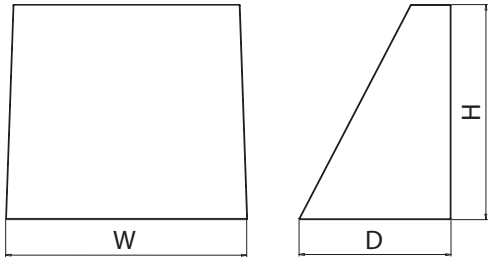
Notes

Type

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

Specifications

Depth: 5.5"
Height: 8"
Width: 9"
Weight: (without options) 9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT PE DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P1	27K 2700K	80CRI	VF Visual comfort forward throw	MVOLT	**Shipped included**
	P2	30K 3000K	90CRI	VW Visual comfort wide	347[2]	SRM Surface mounting bracket
		35K 3500K				**Shipped separately**
		40K 4000K				AWS 3/8inch Architectural wall spacer
		50K[1] 5000K				BBW Surface-mounted back box
						PBBW Premium surface-mounted back box (top, left, right conduit entry)

Options		Finish		Finish	
E4WH[3]	Emergency battery backup, CEC compliant (4W, 0°C min)	DDBXD	Dark bronze	DDBTXD	Textured dark bronze
PE[4]	Photocell, Button Type	DBLXD	Black	DBLBXD	Textured black
DS	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)	DNAXD	Natural aluminum	DNATXD	Textured natural aluminum
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)	DWHXD	White	DWHGXD	Textured white
BCE	Bottom conduit entry for premium back box (PBBW). Total of 4 entry points.	DSSXD	Sandstone	DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE1PBBW DDBXD U	WDGE1 Premium surface-mounted back box (specify finish)
WSBBW DDBXD U	Surface - mounted back box (specify finish)

NOTES

1. 50K not available in 90CRI.
2. 347V not available with E4WH, DS or PE.
3. E4WH not available with PE or DS.
4. PE not available with DS.

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. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)		30K (3000K, 80 CRI)		35K (3500K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P1	10W	VF	1,120	112	1,161	116	1,194	119	1,227	123	1,235	123
		VW	1,122	112	1,163	116	1,196	120	1,229	123	1,237	124
P2	15W	VF	1,806	120	1,872	125	1,925	128	1,978	132	1,992	133
		VW	1,809	120	1,876	125	1,929	128	1,982	132	1,996	133

Electrical Load

Performance Package	System Watts	Current (A)				
		120V	208V	240V	277V	347V
P1	10W	0.082	0.049	0.043	0.038	--
	13W	--	--	--	--	0.046
P2	15W	0.132	0.081	0.072	0.064	--
	18W	--	--	--	--	0.056

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

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	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted 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	>0.96	>0.95	>0.91

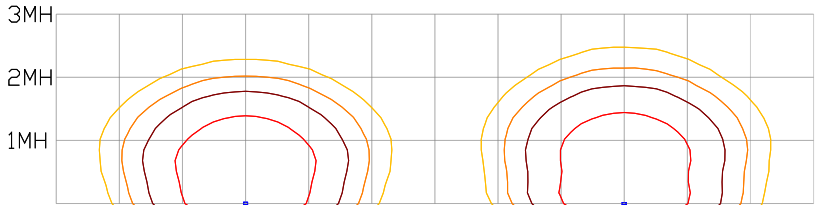
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND

- 0.25 fc
- 0.5 fc
- 1.0 fc
- 3.0 fc

MH = 8ft
Grid = 8ft x 8ft



WDGE1 LED P2 40K 80CRI VW

WDGE1 LED P2 40K 80CRI VF

Emergency Egress Options

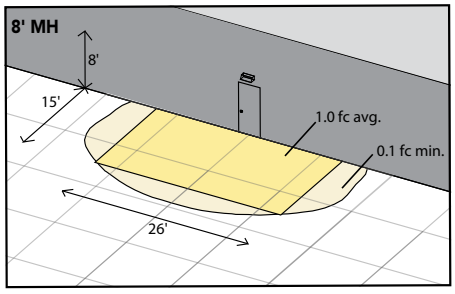
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The example below shows illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E4WH and VF distribution.

Grid = 10ft x 10ft

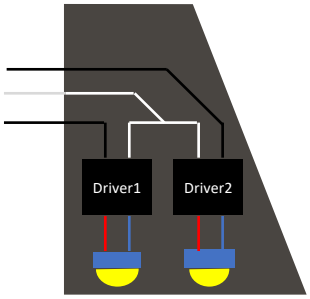


WDGE1 LED xx 40K 80CRI VF MVOLT E4WH

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Mounting, Options & Accessories

E4WH – 4W Emergency Battery Backup

D = 5.5″

H = 8″

W = 9″

PBBW – Premium Back Box

D = 1.75″

H = 8″

W = 9″

BBW – Standard Back Box

D = 1.5″

H = 4″

W = 5.5″

AWS – 3/8inch Architectural Wall Spacer

D = 0.38″

H = 4.4″

W = 7.5″

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and 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 IP66 rating for the luminaire.

FINISH
Exterior painted 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 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
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE 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.

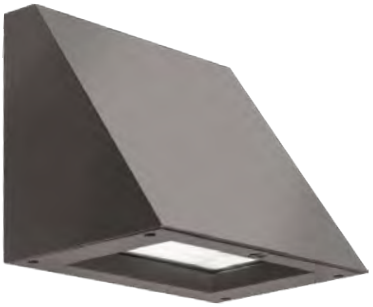
ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8″ Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: 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. Specifications subject to change without notice.



WDGE2 LED
Architectural Wall Sconce

Catalog Number

Notes

Type

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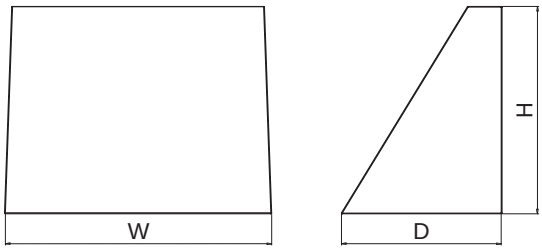
Specifications

Depth: 7″
Height: 9″
Width: 11.5″
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P1SW	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	**Shipped separately**
	P2[1]	P2SW	30K	3000K	90CRI	VW	Visual comfort wide	347[3]	SRM Surface mounting bracket	AWS 3/8inch Architectural wall spacer
	P3[1]	P3SW	35K	3500K				480[3]		BBW Surface-mounted back box
	P4[1]	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.	40K	4000K						PBBW Premium surface-mounted back box (top, left, right conduit entry)
	P5[1]		50K[2]	5000K						

Options

E4WH	Emergency battery backup, CEC compliant (4W, 0°C min)
E10WH	Emergency battery backup, CEC compliant (10W, 5°C min)
E20WC	Emergency battery backup, CEC compliant (18W, -20°C min)
PE[4]	Photocell, Button Type
DS[5]	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG[6]	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for premium back box (PBBW). Total of 4 entry points.

Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)

NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights.
NLTAIR2 PIRH	nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

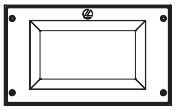
Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 Premium surface-mounted back box (specify finish)
WSBBW DDBXD U	Surface - mounted back box (specify finish)

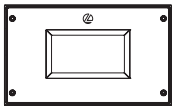
NOTES

1 P1-P5 not available with sensors/controls. Sensors/controls only available with P1SW, P2SW and P3SW.
2 50K not available in 90CRI
3 347V and 480V not available with E4WH, E10WH, E20WC or DS.
4 PE not available in 480V or with sensors/controls
5 DS option not available with E4WH, E10WH, E20WC or sensors/controls.
6 DMG option not available with sensors/controls



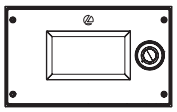
Default configuration with no sensors/controls.

Power Packages: P1, P2, P3, P4, P5



Small Window (SW) configuration

Power Packages: P1SW, P2SW, P3SW



Configuration with sensors/controls

Power Packages: P1SW, P2SW, P3SW

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. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)		30K (3000K, 80 CRI)		35K (3500K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P1 / P1SW	10W	VF	1,166	119	1,209	123	1,251	128	1,256	128	1,254	128
		VW	1,197	122	1,241	126	1,284	131	1,289	131	1,286	131
P2 / P2SW	15W	VF	1,878	129	1,947	134	2,015	139	2,023	139	2,019	139
		VW	1,927	133	1,997	137	2,067	142	2,075	143	2,071	143
P3 / P3SW	23W	VF	2,908	129	3,015	134	3,119	138	3,132	139	3,126	139
		VW	2,983	132	3,093	137	3,200	142	3,213	143	3,206	142
P4	35W	VF	4,096	117	4,247	121	4,394	126	4,412	126	4,403	126
		VW	4,202	120	4,357	125	4,508	129	4,526	129	4,517	129
P5	48W	VF	5,567	115	5,772	119	5,972	123	5,996	124	5,984	124
		VW	5,711	118	5,921	122	6,127	126	6,151	127	6,139	127

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1 / P1SW	10W	0.082	0.049	0.043	0.038	--	--
	13W	--	--	--	--	0.046	0.033
P2 / P2SW	15W	0.132	0.081	0.072	0.064	--	--
	18W	--	--	--	--	0.056	0.041
P3 / P3SW	23W	0.195	0.114	0.100	0.088	--	--
	26W	--	--	--	--	0.079	0.058
P4	35W	0.302	0.175	0.152	0.134	--	--
	38W	--	--	--	--	0.115	0.086
P5	48W	0.434	0.241	0.211	0.184	--	--
	52W	--	--	--	--	0.157	0.119

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

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	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted 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	>0.96	>0.95	>0.91

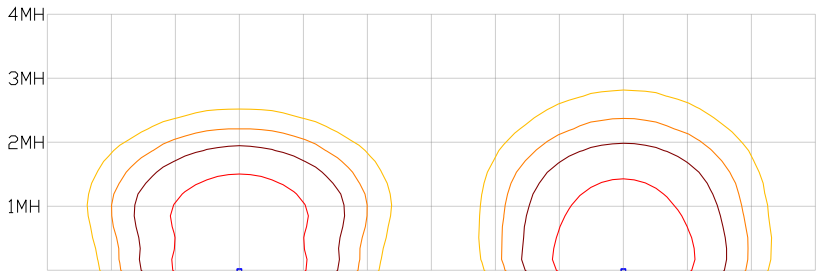
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND

- 0.25 fc
- 0.5 fc
- 1.0 fc
- 3.0 fc

MH = 10ft
Grid = 10ft x 10ft



WDGE2 LED P3 40K 80CRI VW

WDGE2 LED P3 40K 80CRI VF

Emergency Egress Options

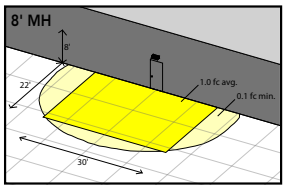
Emergency Battery Backup

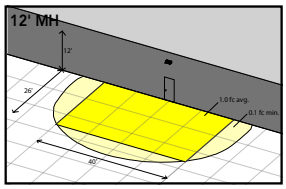
The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

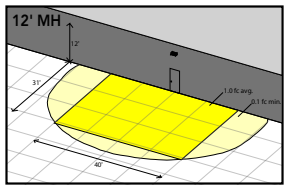
The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E10WH or E20WC and VF distribution.

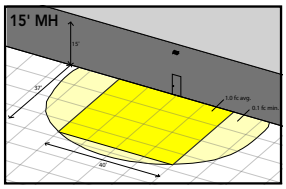
Grid = 10ft x 10ft





WDGE2 LED xx 40K 80CRI VF MVOLT E10WH



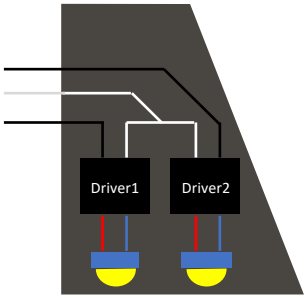


WDGE2 LED xx 40K 80CRI VF MVOLT E20WC

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Control / Sensor Options

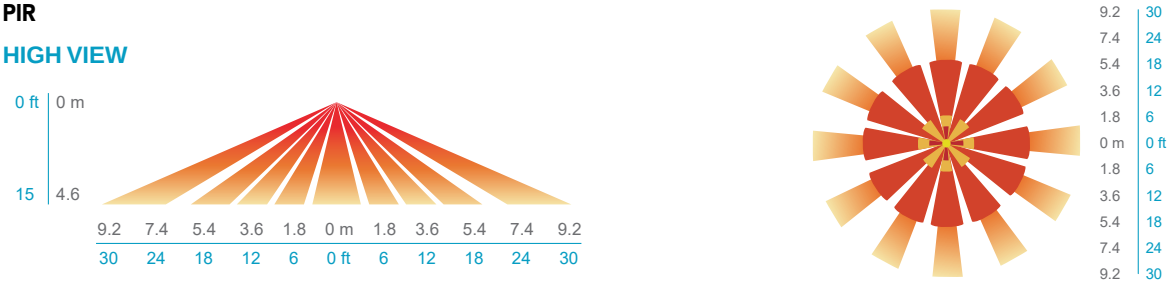
Motion/Ambient Sensor (PIR_, PIRH_)

Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

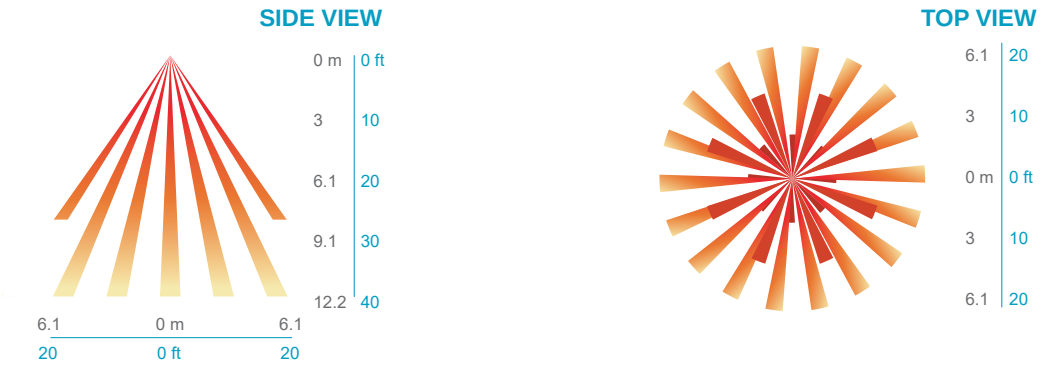
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR



PIRH



Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

Mounting, Options & Accessories

NLTAIR2 PIR – nLight AIR Motion/Ambient Sensor

D = 7″

H = 11″

W = 11.5″

PBBW – Premium Back Box

D = 1.75″

H = 9″

W = 11.5″

BBW – Standard Back Box

D = 1.5″

H = 4″

W = 5.5″

AWS – 3/8inch Architectural Wall Spacer

D = 0.38″

H = 4.4″

W = 7.5″

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and 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 IP66 rating for the luminaire.

FINISH
Exterior painted 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 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
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE 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 consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8″ Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: 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. Specifications subject to change without notice.

Schedule

Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Symbol	Light Loss Factor	Wattage	Efficiency	Distribution	Plot
B	18	Sternberg Lighting	A840-VCOB-4L40TS-MDL05	A840 Series with Vertical COB tower, Old Town Series Acorn, new LEDil optic, TS	Citizen COB	1	A840-VCOB-4L40TS-MDL05.IES	7728	○	0.95	74.2	100%		Max: 2336cd
B2	11	Sternberg Lighting	A840-VCOB-4L40TS-MDL05	A840 Series with Vertical COB tower, Old Town Series Acorn, new LEDil optic, TS	Citizen COB	1	A840-VCOB-4L40TS-MDL05.IES	7728	○○	0.95	148.4	100%		Max: 2336cd
D	29	Lithonia Lighting	DSX1 LED P5 40K T3M MVOLT	DSX1 LED P5 40K T3M MVOLT	LED	1	DSX1_LED_P5_40K_T3M_MVOLT.ies	15377	☐	0.95	138	100%	TYPE III, MEDIUM, BUG RATING: B3 - U0 - G3	Max: 10567cd
E	9	American Electric Lighting	ATBL A XXXXX R3	ATBL A PERFORMANCE PACKAGE, 4000K COLOR TEMPERATURE, ROADWAY TYPE III DISTRIBUTION	LED	1	ATBL_A_XXXXX_R3.ies	18660	○	0.8	170	100%	TYPE III, MEDIUM, BUG RATING: B3 - U0 - G4	Max: 16917cd

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone Entire Site	+	2.2 fc	8.2 fc	0.0 fc	N/A	N/A
Calc Zone Parking Area	🟩	2.6 fc	8.2 fc	0.1 fc	82.0:1	26.0:1
Calc Zone Road	+	2.9 fc	5.8 fc	0.5 fc	11.6:1	5.8:1

Luminaire Locations

		Location				
No.	Label	X	Y	MH	Orientation	Tilt
1	B	622.10	220.90	12.50	210.00	0.00
2	B	650.80	158.50	12.50	30.00	0.00
3	B	347.75	254.60	12.50	30.00	0.00
4	B	427.05	338.35	12.50	210.00	0.00
5	B	653.05	203.00	12.50	180.00	0.00
6	B	516.05	237.25	12.50	30.00	0.00
7	B	536.30	273.25	12.50	210.00	0.00
8	B	532.30	227.75	12.50	30.00	0.00
9	B	552.80	262.75	12.50	210.00	0.00
10	B	79.30	527.45	12.50	0.00	0.00
11	B	392.05	525.45	12.50	0.00	0.00
12	B	422.05	524.70	12.50	0.00	0.00
13	B	671.30	523.70	12.50	0.00	0.00
14	B	385.59	316.47	12.50	48.44	0.00
15	B	650.05	83.50	12.50	90.00	0.00
16	B	367.50	288.10	12.50	30.00	0.00
17	B	113.20	414.95	12.50	180.00	0.00
18	B	83.47	457.88	12.50	236.63	0.00
1	B2	653.80	369.65	12.50	0.00	0.00
2	B2	382.20	414.95	12.50	0.00	0.00
3	B2	427.90	414.70	12.50	0.00	0.00
4	B2	550.30	414.65	12.50	0.00	0.00
5	B2	653.05	413.20	12.50	0.00	0.00
6	B2	427.95	371.55	12.50	0.00	0.00
7	B2	381.95	371.30	12.50	0.00	0.00
8	B2	290.75	371.55	12.50	0.00	0.00
9	B2	220.35	371.65	12.50	0.00	0.00
10	B2	158.05	373.70	12.50	0.00	0.00
11	B2	550.20	370.90	12.50	0.00	0.00
1	D	719.90	344.05	20.00	270.00	0.00
2	D	719.30	209.70	20.00	270.00	0.00
3	D	721.30	526.75	20.00	270.00	0.00
4	D	721.30	437.05	20.00	270.00	0.00
5	D	718.60	58.15	20.00	270.00	0.00
6	D	718.15	132.05	20.00	270.00	0.00
7	D	720.90	280.25	20.00	270.00	0.00
8	D	607.05	52.35	20.00	30.00	0.00
9	D	481.15	125.00	20.00	30.00	0.00
10	D	357.95	197.25	20.00	30.00	0.00
11	D	130.80	328.40	20.00	30.00	0.00
12	D	293.00	234.65	20.00	30.00	0.00
13	D	230.05	272.25	20.00	30.00	0.00
14	D	418.65	162.25	20.00	30.00	0.00
15	D	543.75	89.15	20.00	30.00	0.00
16	D	651.55	26.05	20.00	30.00	0.00
17	D	-12.49	490.24	20.00	53.09	0.00
18	D	31.41	433.54	20.00	53.09	0.00
19	D	184.80	296.75	20.00	30.00	0.00
20	D	671.85	561.75	20.00	180.00	0.00
21	D	156.35	580.75	20.00	180.00	0.00
22	D	264.10	580.75	20.00	180.00	0.00
23	D	386.10	580.75	20.00	180.00	0.00
24	D	478.85	580.75	20.00	180.00	0.00
25	D	586.85	580.75	20.00	180.00	0.00
26	D	82.91	371.12	20.00	53.43	0.00
27	D	84.35	580.75	20.00	180.00	0.00
28	D	-35.99	535.99	20.00	53.09	0.00
29	D	45.60	580.75	20.00	180.00	0.00
1	E	99.00	591.00	28.00	0.00	0.00
2	E	239.00	590.00	28.00	0.00	0.00
3	E	379.00	590.00	28.00	0.00	0.00
4	E	529.00	589.00	28.00	0.00	0.00
5	E	689.00	575.00	28.00	0.00	0.00
6	E	580.25	589.00	28.00	0.00	0.00
7	E	443.75	590.25	28.00	0.00	0.00
8	E	309.25	589.25	28.00	0.00	0.00
9	E	175.25	590.00	28.00	0.00	0.00

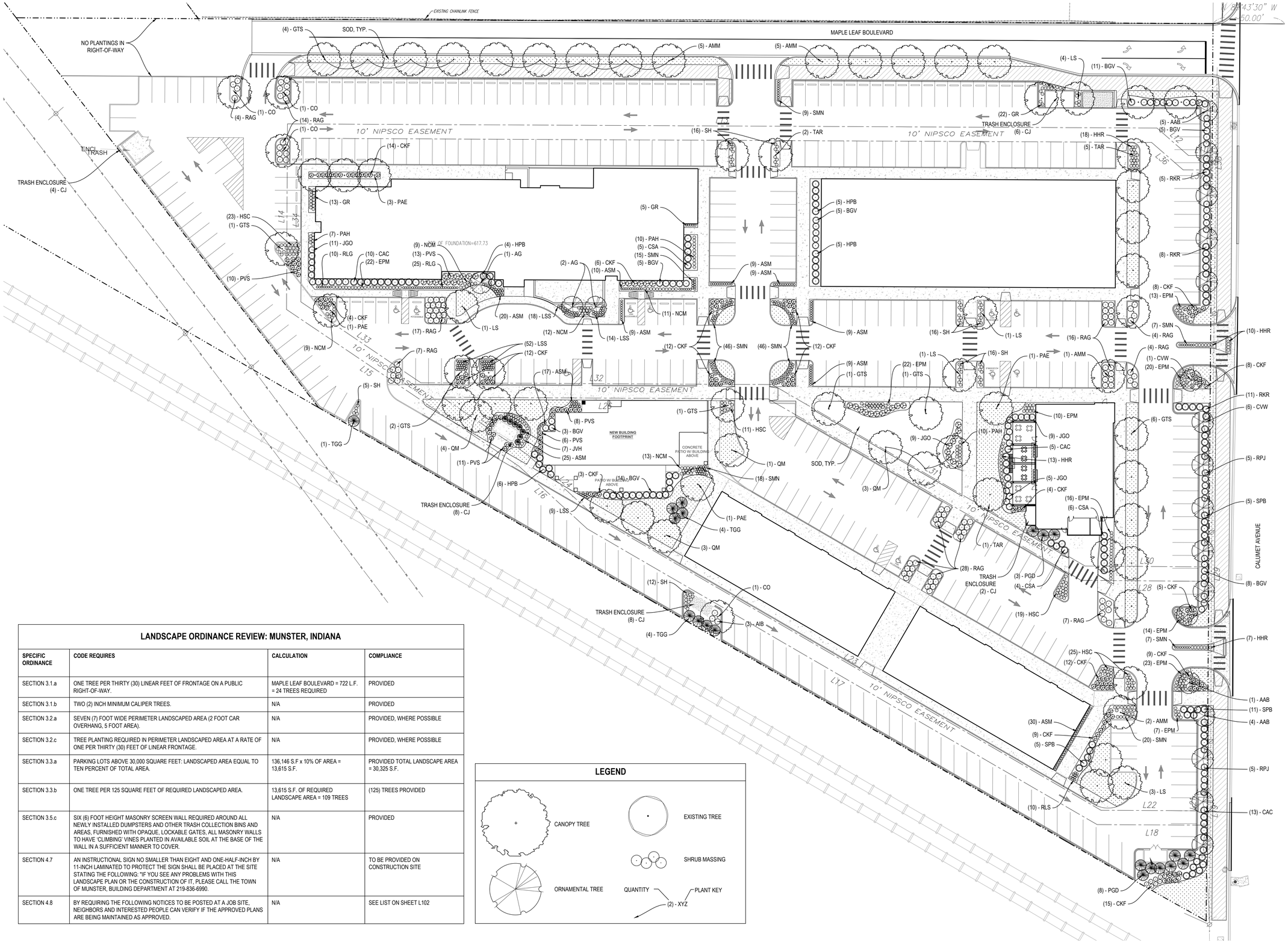
Plan View
Scale - 1" = 30ft

KSA
LIGHTING & CONTROLS

MAPLE LEAF CROSSING
A PLANNED UNIT DEVELOPMENT TO THE
TOWN OF MUNSTER, LAKE CO., INDIANA
SITE PLAN

Designer
D. MIROW
Date
05/17/2023
Scale
Scale as shown
Drawing No.

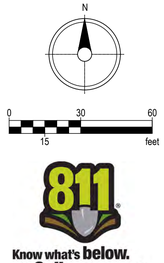
Summary



LANDSCAPE ORDINANCE REVIEW: MUNSTER, INDIANA

SPECIFIC ORDINANCE	CODE REQUIRES	CALCULATION	COMPLIANCE
SECTION 3.1.a	ONE TREE PER THIRTY (30) LINEAR FEET OF FRONTAGE ON A PUBLIC RIGHT-OF-WAY.	MAPLE LEAF BOULEVARD = 722 L.F. = 24 TREES REQUIRED	PROVIDED
SECTION 3.1.b	TWO (2) INCH MINIMUM CALIPER TREES.	N/A	PROVIDED
SECTION 3.2.a	SEVEN (7) FOOT WIDE PERIMETER LANDSCAPED AREA (2 FOOT CAR OVERHANG, 5 FOOT AREA).	N/A	PROVIDED, WHERE POSSIBLE
SECTION 3.2.c	TREE PLANTING REQUIRED IN PERIMETER LANDSCAPED AREA AT A RATE OF ONE PER THIRTY (30) FEET OF LINEAR FRONTAGE.	N/A	PROVIDED, WHERE POSSIBLE
SECTION 3.3.a	PARKING LOTS ABOVE 30,000 SQUARE FEET: LANDSCAPED AREA EQUAL TO TEN PERCENT OF TOTAL AREA.	136,146 S.F.x 10% OF AREA = 13,615 S.F.	PROVIDED TOTAL LANDSCAPE AREA = 30,325 S.F.
SECTION 3.3.b	ONE TREE PER 125 SQUARE FEET OF REQUIRED LANDSCAPED AREA.	13,615 S.F. OF REQUIRED LANDSCAPE AREA = 109 TREES	(125) TREES PROVIDED
SECTION 3.5.c	SIX (6) FOOT HEIGHT MASONRY SCREEN WALL REQUIRED AROUND ALL NEWLY INSTALLED DUMPSTERS AND OTHER TRASH COLLECTION BINS AND AREAS, FURNISHED WITH OPAQUE, LOCKABLE GATES, ALL MASONRY WALLS TO HAVE 'CLIMBING' VINES PLANTED IN AVAILABLE SOIL AT THE BASE OF THE WALL IN A SUFFICIENT MANNER TO COVER.	N/A	PROVIDED
SECTION 4.7	AN INSTRUCTIONAL SIGN NO SMALLER THAN EIGHT AND ONE-HALF-INCH BY 11-INCH LAMINATED TO PROTECT THE SIGN SHALL BE PLACED AT THE SITE STATING THE FOLLOWING: "IF YOU SEE ANY PROBLEMS WITH THIS LANDSCAPE PLAN OR THE CONSTRUCTION OF IT, PLEASE CALL THE TOWN OF MUNSTER, BUILDING DEPARTMENT AT 219-836-6990.	N/A	TO BE PROVIDED ON CONSTRUCTION SITE
SECTION 4.8	BY REQUIRING THE FOLLOWING NOTICES TO BE POSTED AT A JOB SITE, NEIGHBORS AND INTERESTED PEOPLE CAN VERIFY IF THE APPROVED PLANS ARE BEING MAINTAINED AS APPROVED.	N/A	SEE LIST ON SHEET L102

LEGEND



Know what's below. Call before you dig.

PROJECT NAME:
MAPLE LEAF CROSSING
PLANNED UNIT DEVELOPMENT
MUNSTER, IN 46321

OWNER NAME:
MAPLE LEAF CROSSING, LLC.
400 FISHER AVENUE
MUNSTER, IN 46321

CONSULTANTS:
TORRENGA ENGINEERING, INC.
907 RIDGE ROAD
MUNSTER, IN 46321

PLANNED ENVIRONMENT ASSOCIATES
(219) 299.3383
www.plannvron.com
P.O. BOX 2255
CHESTERTON, IN 46304

	SUBMITTAL & REVISIONS
1	06/29/2020 SCHEMATIC DESIGN
2	07/15/2020 CONSTRUCTION DOCUMENTS
3	06/28/2022 REVISED LOT 7
4	05/05/2023 REVISED SITE PLAN
5	05/16/2023 REVISED PLAN
6	05/17/2023 REVISED PLAN

STAMP:
JON RUBI
REGISTERED
No. LA21200029
STATE OF INDIANA
LANDSCAPE ARCHITECT
EXP: 12/31/2023

TITLE:
LANDSCAPE PLAN

SHEET:
L101

DRAWN BY: MD
CHECK BY: JR
PROJECT #: 20-027

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PLANTING NOTES

1. SEE SHEET L101 FOR PLANTING PLAN. SEE SHEET L201 FOR PLANTING DETAILS.
2. THE LANDSCAPE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND FEES THAT MAY BE REQUIRED FOR HIS PORTION OF WORK.
3. ESTIMATED SCHEDULE FOR PLANTING IS FALL 2021.
4. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE GRAPHIC SYMBOLS SHOWN ON THE PLAN SHALL DICTATE.
5. PLANT MATERIALS:
   - 5.1. ALL PLANT MATERIALS SHALL MEET OR EXCEED THE AMERICAN STANDARDS FOR NURSERY STOCK, 1986 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
   - 5.2. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, AND FREE FROM INSECT PESTS, PLANT DISEASES, AND INJURIES. PLANTS SHALL BE EQUAL TO OR EXCEED THE MEASUREMENTS SPECIFIED IN THE PLANT LIST.
   - 5.3. TREES SHALL HAVE STRAIGHT TRUNK WITH LEADER INTACT, UNDAMAGED AND UNCUT. BRANCHING MUST BE WELL DEVELOPED.
   - 5.4. ALL PLANT MATERIAL AND SEED SHALL BE PROVIDED FROM A NURSERY (WITHIN 200 MILES) WITH A SIMILAR PLANT HARDINESS ZONE AS PROJECT LOCATION.
   - 5.5. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO BID IN WRITING. ALL PLANTS SHALL BE INSPECTED AND TAGGED WITH PROJECT I.D. AT NURSERY OR CONTRACTORS OPERATIONS PRIOR TO MOVING TO JOB SITE. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE BY LANDSCAPE ARCHITECT.
   - 5.6. LANDSCAPE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IN WRITING PRIOR TO BID DATE OF ANY PLANTS HE/SHE FEELS MAY NOT SURVIVE IN LOCATIONS NOTED ON PLANS
6. IRRIGATION:
   - 6.1. CONTRACTOR SHALL PROVIDE BID ALTERNATE FOR IRRIGATION SHALL BE PROVIDED PER IRRIGATION PERFORMANCE DRAWING AND NOTES.
   - 6.2. IF BID ALTERNATE OF IRRIGATION SYSTEM IS NOT SELECTED BY OWNER, CONTRACTOR RESPONSIBLE FOR ESTABLISHMENT WATERING THROUGH TEMPORARY FACILITIES, WATERING BAGS, ETC., AS APPROVED BY OWNER FOR PLANT WARRANTY.
7. TOPSOIL & PLANTING MIXTURES:
   - 7.1. CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL AREAS
   - 7.2. SALVAGE TOPSOIL FROM THE EARTHWORK AREAS AS APPROPRIATE AND/OR AS DIRECTED BY LANDSCAPE ARCHITECT AND STOCKPILE FOR REUSE IN LOCATION APPROVED BY OWNER.
   - 7.3. TOPSOIL SHALL BE MATERIALS CONSISTING OF FERTILE, FRIABLE, FIND SANDY LOAM, UNIFORM IN COMPOSITION AND FREE OF SUBSOIL, STONES, LUMPS, CLODS OF HARD EARTH, PLANTS, PLANT ROOTS, STICKS, NOXIOUS WEEDS, SLAG, CINDERS, DEMOLITION DEBRIS OR OTHER EXTRANEOUS MATTER OVER 1" IN LARGEST DIMENSION.
   - 7.4. EXISTING TOPSOIL SHALL BE PREPARED BY THOROUGHLY MIXING IN ORGANIC MATTER AT THE RATE OF 1/3 VOLUME OF SOIL REPLACED.
     - 7.4.1. ADJUST SOIL TO A pH OF 6.0 TO 6.5.
     - 7.4.2. ORGANIC MATTER: 4% MIN, 10% MAX
     - 7.4.3. AVAILABLE PHOSPHORUS: 25 PPM, MIN
     - 7.4.4. EXCHANGEABLE POTASSIUM: 125 PPM, MIN
   - 7.5. PEATMOSS TO BE USED ON PROJECT SHALL BE DOMESTIC OR IMPORTED MATERIAL, CHOCOLATE BROWN IN COLOR AND COMPOSED OF PARTIALLY DECOMPOSED VEGETABLE MATERIAL. PEAT MOSS TO BE MILDLY ACIDIC IN CHARACTER AND SHALL BE APPROVED BY LANDSCAPE ARCHITECT.
   - 7.6. SEED & SOD AREAS SHALL RECEIVE A MINIMUM OF 4" DEPTH OF TOPSOIL.
   - 7.7. PLANTING BEDS SHALL RECEIVE MINIMUM 6" DEPTH OF AMENDED TOPSOIL.
8. MULCH MATERIALS:
   - 8.1. ALL MULCH MATERIALS SHALL BE PROCESSED DOUBLE SHREDDED HARDWOOD BARK MULCH OF UNIFORM SIZE. NO UTILITY MULCH OR PROCESSED TREE TRIMMINGS WILL BE ALLOWED. SUBMIT SAMPLE TO ARCHITECT.
   - 8.2. MULCH SHALL BE 2-INCH THICKNESS MINIMUM COVERAGE IN ALL AREAS OF TREE PITS OR PLANTING BEDS, UNLESS OTHERWISE NOTED.
   - 8.3. MULCH SHALL BE HELD 1" BELOW SURFACE ELEVATION OF DOWNHILL SIDE OF WALK, SLAB, CURB, LAWN, ETC.
9. LANDSCAPE BED EDGING:
   - 9.1. ALL LANDSCAPE BED EDGING SHALL BE SHOVEL-CUT SPADE EDGE BETWEEN LAWN AREAS, UNLESS OTHERWISE NOTED.
10. STORAGE, INSTALLATION, MAINTENANCE & WARRANTY:
    - 10.1. CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
    - 10.2. EXISTING TREES FOUND ON SITE SHALL BE PROTECTED AND SAVED UNLESS NOTED TO BE REMOVED OR ARE LOCATED IN AN AREA TO BE GRADED. NO VEHICLES OR EQUIPMENT ARE ALLOWED WITHIN THE DRIP LINE OF TREES TO BE PROTECTED. QUESTIONS REGARDING EXISTING PLANT MATERIAL SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO REMOVAL.
    - 10.3. PRUNING AND REMOVAL OF BRANCHES ON EXISTING TREES SHALL BE DIRECTED IN THE FIELD BY OWNER OR LANDSCAPE ARCHITECT.
    - 10.4. EQUIPMENT, PLANTS AND ALL OTHER MATERIALS TO BE STORED ON SITE WILL BE STORED OUTSIDE OF THE DRIPLINE OF TREES TO BE PROTECTED AND PLACED WHERE THEY WILL NOT CONFLICT W/ CONSTRUCTION OPERATIONS.
    - 10.5. NEW PLANTING AREAS ARE TO BE TREATED WITH HERBICIDE TO KILL ALL EXISTING GROUNDCOVER. THERE SHALL BE A MINIMUM OF TWO (2) APPLICATIONS SEPARATED BY 10 DAYS. IF ALL EXISTING GROUNDCOVER VEGETATION IS NOT KILLED WITHIN 10 DAYS OF 2ND APPLICATION, A 3RD APPLICATION IS REQUIRED.
    - 10.6. WHERE PROPOSED PLANTING ARE INDICATED IN EXISTING PAVING AREAS, CONTRACTOR SHALL EXCAVATE A MINIMUM OF 2'-0" BELOW PAVING SURFACE.
    - 10.7. FINAL PLACEMENT OF PLANT MATERIALS, ETC., SHALL BE APPROVED BY LANDSCAPE ARCHITECT BEFORE PLANTING OPERATIONS ARE TO PROCEED. ALL TREE LOCATIONS SHALL BE MARKED WITH A WOOD STAKE INDICATING VARIETY AND SIZE OF TREE. ALL GROUND COVER AND PLANTING BED LINES SHALL BE MARKED W/ HIGHLY VISIBLE PAINT LINES W/ OCCASIONAL WOOD STAKES FOR REFERENCE. ALL STAKES SHALL BE REMOVED FOLLOWING PLANTING OPERATIONS. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANT LOCATIONS ON SITE.
    - 10.8. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
    - 10.9. PRIOR TO FINAL PAYMENT, CONTRACTOR SHALL COORDINATE A FINAL INSPECTION WALK-THROUGH WITH OWNER AND LANDSCAPE ARCHITECT FOR OWNER ACCEPTANCE. THE LANDSCAPE ARCHITECT WILL PROVIDE A PUNCHLIST OF ANY DEFICIENCIES AND PROVIDE TO OWNER AND CONTRACTOR FOR REVIEW.
    - 10.10. INCLUDE PRICING WITH THE BID FOR A 60-DAY MAINTENANCE PERIOD OF ALL LANDSCAPE PLANTINGS FOLLOWING COMPLETE INSTALLATION AND FINAL INSPECTION BY LANDSCAPE ARCHITECT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, CULTIVATING, MULCHING, MOWING, AND ALL OTHER NECESSARY OPERATIONS REQUIRED FOR PROPER ESTABLISHMENT OF LAWNS AND PLANTINGS.
    - 10.11. ALL LANDSCAPE PLANTINGS SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FOLLOWING FINAL INSPECTION BY LANDSCAPE ARCHITECT. AT THE END OF THIS PERIOD, PLANT MATERIAL TERMED DEAD OR UNSATISFACTORY BY LANDSCAPE ARCHITECT SHALL BE REPLACED AT NO ADDITIONAL CHARGE BY THE LANDSCAPE CONTRACTOR. THE REPLACEMENTS SHALL ALSO BE WARRANTED FOR 1 YEAR.

IRRIGATION NOTES:

1. CONTRACTOR SHALL PROVIDE DESIGN/BUILD IRRIGATION SYSTEM PER THE IRRIGATION NOTES BELOW:
   - 1.1. DESIGN GUIDELINES: CONTRACTOR TO VERIFY PRESSURE AND AVAILABLE WATER SERVICE SIZE
   - 1.2. EMISSION (LAWNS): HUNTER I-40 SPRAY ROTARS (OR APPROVED EQUAL)
   - 1.3. DRIP (BEDS): HUNTER HDL-CV (OR APPROVED EQUAL)
   - 1.4. QUICK COUPLER: HUNTER QCV - 3RC
   - 1.5. CONTROLLER: HUNTER HCC (OR APPROVED EQUAL)
   - 1.6. SENSOR: HUNTER SOLAR-SYNC & HC FLOW METER (OR APPROVED EQUAL)
   - 1.7. PIPING: PVC OR APPROVED EQUAL
2. CONTRACTOR SHALL PROVIDE A QUALIFIED IRRIGATION DESIGNER OR IRRIGATION CONSULTANT TO DESIGN THE SYSTEM FOR EFFICIENT AND UNIFORM DISTRIBUTION OF WATER. "QUALIFIED" MEANS CERTIFIED BY ONE THE FOLLOWING AGENCIES BELOW:
   - 2.1. CERTIFIED IRRIGATION CONTRACTOR (CIC)
   - 2.2. CERTIFIED LANDSCAPE IRRIGATION AUDITOR (CLIA)
   - 2.3. CERTIFIED LANDSCAPE IRRIGATION MANAGER (CLIM)
   - 2.4. CERTIFIED IRRIGATION DESIGNER (CID)
   - 2.5. CERTIFIED WATER CONSERVATION MANAGER-LANDSCAPE (CWCM)
3. SYSTEM DESIGN:
   - 3.1. THE SYSTEM SHALL BE COMPRISED OF EITHER:
     - 3.1.1. DRIP/MICRO-IRRIGATION COMPONENTS THAT ALLOW FOR HIGHER DISTRIBUTION UNIFORMITY AND LOWER EVAPORATION AND RUNOFF.
     - 3.1.2. THE DESIGN AND LAYOUT OF THE EMISSION DEVICES PROVIDES FOR ZERO OVERSPRAY ACROSS OR ONTO A STREET, PUBLIC DRIVEWAY OR SIDEWALK, PARKING AREA, BUILDING, FENCE OR ADJOINING PROPERTY. OVERSPRAY MAY OCCUR DURING THE OPERATION OF THE IRRIGATION SYSTEM DUE TO THE ACTUAL WIND CONDITION THAT DIFFER FROM THE DESIGN CRITERIA.
4. SYSTEM CONTROLLER:
   - 4.1. THE SYSTEM SHOULD USE A CONTROLLER THAT HAS MULTI-PROGRAM CAPABILITY WITH AT LEAST FOUR START TIMES(FOR MULTIPLE REPEAT SOAK CYCLES) AND RUN TIME ADJUSTMENT IN ONE MINUTE INCREMENTS. THE CONTROLLER PROGRAMMING (SCHEDULING) SHOULD BE MANAGED TO RESPOND TO THE CHANGING NEED FOR WATER IN THE LANDSCAPE.
5. DESIGN FEATURES:
   - 5.1. FOLLOW ALL ORDINANCES RELATING TO IRRIGATION SYSTEMS INCLUDING THE INSTALLATION OF BACKFLOW DEVICES.
   - 5.2. INSTALL A MASTER VALVE TO STOP UNSCHEDULED FLOW OF IRRIGATION WATER
   - 5.3. A DESIGN THAT RESULTS IN UNIFORM AND EFFICIENT COVERAGE. SPRINKLER HEAD SPACING SHOULD BE A MINIMUM OF "HEAD-TO-HEAD" (MINIMUM 50% OF DIAMETER) UNLESS THE COVERAGE IS DESIGNED FOR WIND DE-RATING. WIND DE-RATING SHOULD BE BASED ON AVERAGE NIGHTTIME WIND SPEED.
   - 5.4. A MINIMUM OF "HEAD-TO-HEAD" (MINIMUM OF 50% OF DIAMETER) UNLESS THE COVERAGE IS DESIGNED FOR WIND DE-RATING. WIND DE-RATING SHOULD BE BASED ON AVERAGE NIGHTTIME WIND SPEED. DESIGN TO AVOID OVERSPRAY ONTO HARDSCAPES, FENCES, BUILDINGS AND ADJOINING PROPERTY.
   - 5.5. HAVE SEPARATE STATIONS/ZONES (HYDROZONES) FOR AREAS WITH DISSIMILAR WATER OR SCHEDULING REQUIREMENTS
   - 5.6. PROVIDE SENSOR TO SUSPEND IRRIGATION DURING WET WEATHER CONDITIONS.
   - 5.7. PROVIDE FLOW METER FOR MONITORING FLOW CONDITIONS AND SAVING WATER.
   - 5.8. PROVIDE OWNER WITH WALKTHROUGH FOR SYSTEM OPERATIONS, PRIOR TO FINAL ACCEPTANCE. INCLUDE PROCEDURES FOR CONTROLLER PROGRAMMING, MAINTENANCE AND WINTERIZATION.

FOLLOWING TO BE POSTED ON-SITE PER SECTION 4.8

1. A COPY OF THE APPROVED LANDSCAPE PLAN:
   - 1.1. NO SMALLER THAN 11 INCHES BY 17 INCHES
   - 1.2. LAMINATED TO PROTECT THE PLAN
   - 1.3. SHOWING ALL PLANT TYPES, SIZES, AND LOCATIONS
2. AN INSTRUCTIONAL SIGN:
   - 2.1. NO SMALLER THAN 11 INCHES BY 17 INCHES
   - 2.2. LAMINATED TO PROTECT THE SIGN
   - 2.3. STATING THE FOLLOWING:
     - 2.3.1. "THE OWNER OF THIS SITE HAS AGREED TO INSTALL AND MAINTAIN THE REQUIRED LANDSCAPING ON THIS SITE IN ACCORDANCE WITH THE TOWN OF MUNSTER LANDSCAPE ORDINANCE. COMPLIANCE REQUIRES THE FOLLOWING:
     - 2.3.2. NEW TREES AND SHRUBS WILL BE WATERED FOR THE FIRST TWO YEARS UNTIL FIRMLY ESTABLISHED.
     - 2.3.3. NEW TREES AND SHRUBS WILL BE PRUNED TO REMOVE DEAD OR DAMAGED WOOD.
     - 2.3.4. MULCH IN PLANTING BEDS WILL BE MAINTAINED AT A DEPTH OF THREE INCHES.
     - 2.3.5. ALL PLANTING BEDS AND TREE MULCH CIRCLES WILL BE WEEDED REGULARLY.
     - 2.3.6. PERENNIALS AND HERBACEOUS SHRUBS WILL BE PRUNED BEFORE THE ONSET OF NEW SPRING GROWTH.
     - 2.3.7. ALL GRASS WILL BE MOWED REGULARLY (I.E. ONCE PER WEEK) DURING THE GROWING SEASON.
3. THE SIGN SHALL ALSO STATE: "IF YOU SEE ANY PROBLEMS WITH THE LANDSCAPING OF THIS SITE OR THE MAINTENANCE OF IT, PLEASE CALL THE TOWN OF MUNSTER, BUILDING DEPARTMENT AT 219-836-6990".

SWORN STATEMENT BY OWNER:

THE UNDERSIGNED ACKNOWLEDGES THAT THE LANDSCAPE PLANTING PLAN SHOWN ON THE ATTACHED LANDSCAPE PLAN(S) FOR THE MAPLE LEAF CROSSING PLANNED UNIT DEVELOPMENT, TOWN OF MUNSTER, INDIANA HAS TO THE BEST OF THE UNDERSIGNED APPLICANT'S KNOWLEDGE, BEEN DESIGNED AND WILL BE INSTALLED, MAINTAINED AND REPLACED AS REQUIRED BY CURRENT AND SUBSEQUENT OWNERS IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF MUNSTER MUNICIPAL CODE, THE LANDSCAPING STANDARDS OF THE TOWN OF MUNSTER ZONING ORDINANCE, AND THE GUIDE TO THE TOWN OF MUNSTER LANDSCAPE ORDINANCE.

EXISTING PARKWAY AND ON-SITE INTERIOR TREES ARE TO BE PROTECTED WHILE PROJECT IS UNDER CONSTRUCTION AND WILL BE REPLACED BY CURRENT AND SUBSEQUENT OWNER IF DAMAGED.

SWORN STATEMENT BY REGISTERED LANDSCAPE ARCHITECT:

THE UNDERSIGNED LANDSCAPE ARCHITECT, REGISTERED IN THE STATE OF INDIANA, ACKNOWLEDGES THAT THE LANDSCAPE PLANTING PLAN AND CONSTRUCTION DETAILS SHOWN ON THE ATTACHED LANDSCAPE PLAN(S) FOR THE MAPLE LEAF CROSSING PLANNED UNIT DEVELOPMENT, TOWN OF MUNSTER, INDIANA HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF MUNSTER MUNICIPAL CODE, THE LANDSCAPING STANDARDS OF THE TOWN OF MUNSTER ZONING ORDINANCE, AND THE GUIDE TO THE TOWN OF MUNSTER LANDSCAPE ORDINANCES.

PLANTING SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
DECIDUOUS TREES						
AMM	13	ACER MIYABEI 'MORTON'	STATE STREET MAPLE	2.5" CAL.		B&B SPECIMEN
CO	4	CELTIS OCCIDENTALIS	COMMON HACKBERRY	2.5" CAL.		B&B SPECIMEN
GTS	16	GLEDITSIA TRIACANTHOS 'SKYCOLE'	SKYLINE HONEYLOCUST	2.5" CAL.		B&B SPECIMEN
LS	10	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	2.5" CAL.		B&B SPECIMEN
PAE	5	PLATANUS X ACERFOLIA 'MORTON CIRCLE'	EXCLAMATION LONDON PLANE TREE	2.5" CAL.		B&B SPECIMEN
QM	12	QUERCUS MACROCARPA	BUR OAK	2.5" CAL.		B&B SPECIMEN
TAR	8	TILIA AMERICANA 'REDMOND'	REDMOND AMERICAN LINDEN	2.5" CAL.		B&B SPECIMEN
EVERGREEN TREES						
JVH	7	JUNIPERUS VIRGINIANA 'CUPRESSIFOLIA'	HILLSPIRE EASTERN REDCEDAR	6'-8' HT.	6' O.C.	B&B SPECIMEN
PGD	11	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	8'-10' HT.		B&B SPECIMEN
TGG	9	THUJA PLICATA x STANDISHII 'GREEN GIANT'	GREEN GIANT CEDAR	8'-10' HT.		B&B SPECIMEN
ORNAMENTAL TREES						
AG	3	ACER GRISEUM	PAPERBARK MAPLE	8' HT.		SINGLE-TRUNK SPECIMEN
AAB	10	AMELANCHIER 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	8' HT.		MULTI-STEM SPECIMEN
CVW	7	CRATAEGUS VIRIDIS 'WINTER KING'	THORNLESS COCKSPUR HAWTHORN	8' HT.		MULTI-STEM SPECIMEN
DECIDUOUS SHRUBS						
AIB	3	ARONIA MELANOCARPA 'MORTON'	IROQUOIS BEAUTY CHOKEBERRY	#3 CONT.	36" O.C.	
CAC	28	CLETHRA ALNIFOLIA 'CALEB'	VANILLA SPICE SUMMERSWEET	#3 CONT.	48" O.C.	
CSA	15	CORNUS SERICEA 'FARROW'	ARCTIC FIRE DOGWOOD	#3 CONT.	48" O.C.	
HPB	20	HYDRANGEA PANICULATA 'BOBO'	BOBO HYDRANGEA	#3 CONT.	48" O.C.	
RAG	101	RHUS AROMATICA 'GRO LOW'	GRO-LOW SUMAC	#3 CONT.	48" O.C.	
RKR	24	ROSA 'RADRAZZ'	RADRAZZ KNOCKOUT ROSE	#3 CONT.	48" O.C.	
SPB	21	SYRINGA PENDA 'BLOOMERANG'	BLOOMERANG DWARF LILAC	#3 CONT.	36" O.C.	
EVERGREEN SHRUBS						
BGV	51	BUXUS 'GREEN VELVET'	GREEN VELVET BOXWOOD	#3 CONT.	48" O.C.	
JGO	34	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL COMPACT JUNIPER	#3 CONT.	48" O.C.	
RPJ	10	RHODODENDRON 'PJM'	PJM RHODODENDRON	#3 CONT.	48" O.C.	
ORNAMENTAL GRASSES						
CKF	133	CALAMOGROSTIS X 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#3 CONT.	36" O.C.	
PVS	46	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#3 CONT.	36" O.C.	
PAH	27	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN DWARF FOUNTAIN GRASS	#1 CONT.	24" O.C.	
SH	65	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	#1 CONT.	24" O.C.	
PERENNIALS & GROUNDCOVERS						
ASM	147	ALLIUM 'MILLENIUM'	MILLENIUM ALLIUM	#1 CONT.	18" O.C.	
CJ	28	CLEMATIS 'JACKMANII'	JACKMAN'S CLEMATIS	#1 CONT.	48" O.C.	TRAIN AS VINE
EPM	147	ECHINACEA 'CBG CONE2'	PIXIE MEADOWBRITE CONEFLOWER	#1 CONT.	24" O.C.	
GR	40	GERANIUM 'ROZANNE'	ROZANNE GERANIUM	#1 CONT.	24" O.C.	
HHR	48	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#1 CONT.	24" O.C.	
HSC	78	HEMEROCALLIS 'STRAWBERRY CANDY'	STRAWBERRY CANDY DAYLILY	#1 CONT.	24" O.C.	
LSS	93	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SNOWCAP SHASTA DAISY	#1 CONT.	18" O.C.	
NCM	54	NEPETA 'CATS MEOW'	CAT'S MEOW NEPETA	#1 CONT.	24" O.C.	
RLG	45	RUDBECKIA 'LITTLE GOLDSTAR'	LITTLE GOLDSTAR BLACK-EYED SUSAN	#1 CONT.	18" O.C.	
SMN	162	SALVIA 'MAY NIGHT'	MAY NIGHT SALVIA	#1 CONT.	18" O.C.	

Know what's below. Call before you dig.

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PLANNED UNIT DEVELOPMENT
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EXP: 12/31/2023

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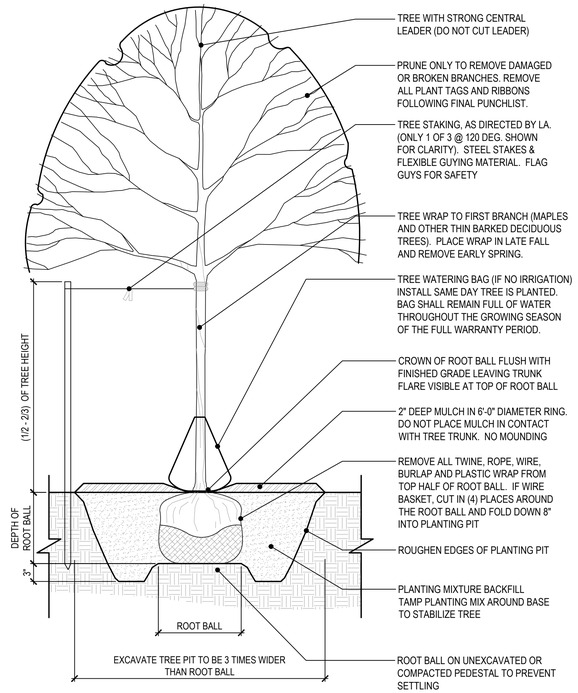
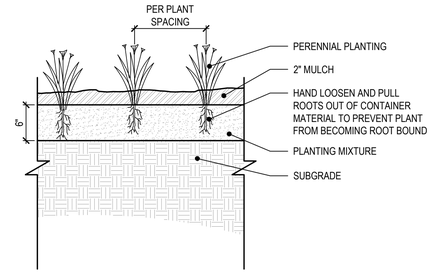
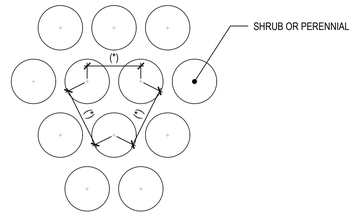


1 TREE PLANTING
SCALE: 1/2" = 1'-0"

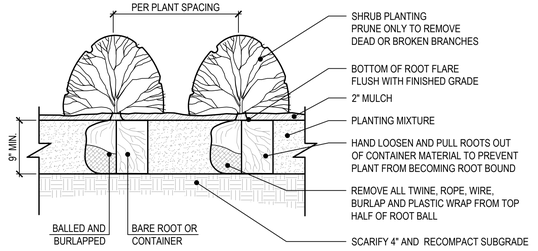


3 PERENNIAL PLANTING
SCALE: 1" = 1'-0"



(*) = SPECIFIED PLANT SPACING IN PLANT SCHEDULE

4 PLANT SPACING
NOT TO SCALE



2 SHRUB PLANTING
SCALE: 1" = 1'-0"

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6	05/17/2023	REVISED PLAN

STAMP:
JON RUBLE REGISTERED No. LA21200029 STATE OF INDIANA LANDSCAPE ARCHITECT
EXP: 12/31/2023

TITLE:
PLANTING DETAILS

SHEET:
L103

DRAWN BY: MD
CHECK BY: JR
PROJECT #: 20-027

811 Know what's below. Call before you dig.

G:\Shared drives\Archive Projects\1221st Metropolitan Builders\Maple Leaf Crossing\cad\MLC_landscape2.dwg