Planning Commission Regular Meeting

September 20, 2023 6:30PM

Big Rapids City Hall 226 N Michigan Ave

- 1. Call to Order
- 2. Pledge of Allegiance
- 3. Roll Call
- 4. Approval of Minutes
 - a. August 3, 2023
- 5. Public Comment Unrelated to Items on the Agenda
- 6. Public Hearing
 - a. Special Use Request to allow a drive thru facility at 900 Water Tower Road for a new Credit Union
 - b. Site Plan Review for a new Credit Union at 900 Water Tower Road
 - c. Site Plan Review for MOISD Agricultural Education Site Development at 504 & 602 S Bronson
- 7. General Business
 - a. Update on previously approved projects
 - b. City Commission actions related to PC Recommendations
 - c. Short Term Rentals
 - d. Housing Education
- 8. Unscheduled Business
- 9. Adjourn

CITY OF BIG RAPIDS PLANNING COMMISSION MINUTES August 3, 2023 Unapproved

Chair Montgomery called the August 3, 2023 Special Meeting of the Planning Commission, to order at 6:30 p.m.

PLEDGE OF ALLEGIANCE

- **PRESENT** Time Vogel, Rory Ruddick, Kate McLeod, and Jacob Buse
- **EXCUSED** Sarah Montgomery
- ABSENT None
- <u>ALSO PRESENT</u> Michelle Stenger, Community Development Director Joey Walker, Planning & Zoning Technician

There were no members of the public in attendance.

APPROVAL OF MINUTES

Motion was made by Tim Vogel seconded by Rory Ruddick, to approve the minutes of the July 19, 2023 meeting of the planning commission as presented and approve the minutes of the June 21, 2023, meeting of the Planning Commission as amended.

Motion was passed with all in favor.

PUBLIC COMMENT NOT RELATED TO ITEMS ON THE AGENDA

PUBLIC HEARINGS

Request to determine if there is any existing or intended future public purposes and use of City owned property at 606 Rust Ave, 610 Rust Ave and 614 Rust Ave.

The Public Hearing was opened at 6:31 p.m.

Those Who Spoke in Favor of the Request: None

Those Who Spoke in Opposition of the Request: None

Telephonic or Written Correspondence Received by Staff: None

Acting Chair Buse closed the Public Hearing at 6:34 p.m. and the Commission entered into Fact Finding

Community Development Director Stenger explained the need to designate the properties so that they could be sold to a developer as intended in the previously approved Rust Avenue extension project.

The conversation ensued over the following topics:

The board agreed that this was more of an oversight that the properties hadn't been designated at the time of discussion of the extension project.

Motion was made by McLeod, second by Ruddick that the properties at 606 Rust Ave (PIN 17-15-200-012), 610 Rust Ave (PIN 17-15-200-013) and 614 Rust Ave (PIN 17-15-200-014) are considered surplus and available for sale be recommended to the City Commission for approval, because it meets the Standards set in Section 34.54 of the City Code or Ordinance.

The motion passed with all in favor.

GENERAL BUSINESS

UNSCHEDULED BUSINESS

There being no further business, Acting Chair Buse adjourned the meeting at 6:35 p.m. with all in favor.

Respectfully submitted,

Joey Walker Planning & Zoning Technician and Planning Commission Secretary



City of Big Rapids

Department of Neighborhood Services Application to Planning Commission for Zoning Request Phone: (231) 592-4035 Website: www.ci.big-rapids.mi.us

The City of Big Rapids Planning Commission meets in a regular session on the third Wednesday of each month at 6:30 p.m. at City Hall, 226 N. Michigan Avenue, Big Rapids MI.

Materials related to requests for Commission action, including any required fees, must be filed with the Neighborhood Services Department.

Filing requests which are not complete or which are not filed by the meeting deadline, as determined by the Neighborhood Services Department, will not be placed on the agenda of the respective Commission meeting, nor will they be considered at the respective Commission meeting.

Applicant attendance is required at the public hearing, be prepared to speak on your behalf. Please note: The Planning Commission makes a decision based on your application and information you have supplied based on criteria in the Big Rapids Zoning Ordinance.

Filing Deadlines are established at **21 calendar days** prior to the Commission meetings:

Filing Deadline

December	29, 2022
January	26, 2023
February	23, 2023
March	30, 2023
April	27, 2023
May	31, 2023
June	29, 2023
July	27, 2023
August	31, 2023
September	28, 2023
October	26, 2023
November	30, 2023
December	28, 2023

Meeting Date

January	18, 2023
February	15, 2023
March	15, 2023
April	19, 2023
May	17, 2023
June	21, 2023
July	19, 2023
August	16, 2023
September	20, 2023
October	18, 2023
November	15, 2023
December	20, 2023
January	17, 2024
the second se	



City of Big Rapids

Department of Neighborhood Services Application to the Planning Commission for Zoning Request

Application Date: August 28, 2023

Applicant Information:	
Name: Bosch Architecture on behalf of Consumers Credit Union	
Address: 8065 Vineyard Parkway, Kalamazoo, MI 49009	
Phone Number: ²⁶⁹²⁰⁷¹⁷⁴⁴	Property Zoning:
Request Property Address: 900 Water Tower Road	C S CART COM CONTRACT
Explanation of Request:	
Special Land Use for Drive Thru tellers in C-1 Zoning	

Please check one of the following:

Conditional Use Permit, Please include the following information

- 1. A legal description of the property.
- Twelve (12) copies of a site plan meeting the requirements of Section 9.4 of the Big Rapid Zoning Ordinance as amended.
- 3. A written description of the use.
- 4. Address use standards set forth in Section 10.3:8.
- 5. \$200.00 Application Fee

Zoning Amendment Review, Please include the following information:
Rezoning

- 1. A legal description of the property.
- 2. A written description of reasons for rezoning and proposed new zoning classification.
- 3. Address the requirements set forth in Section 14.2:4. (posting of notification)
- 4. A location map.
- 5. \$200.00 Application Fee

□ Text or Map Amendment

- 1. A written description of proposed changes and reasons why.
- 2. In the case of a text amendment, proposed new text shall be submitted.
- 3. In the case of a map amendment, proposed new map shall be submitted.
- 4. Address the requirements set forth in Section 14.2:2
- 5. \$200.00 Application Fee

Micholas Loeks

08-28-2023

Signature of appricant or property owner

(Date)

STAFF REPORT TO THE PLANNING COMMISSION

TO:	Planning Commission
FROM:	Michelle Stenger, Community Development Director
SUBJECT:	Special Land Use Permit Application for a new drive thru
DATE:	September 20, 2023

Introduction

Applicant, Vertical Bridge, is applying for a Special Land Use Permit for a new drive thru facility at 900 Water Tower Road (PIN 17-15-300-030). The property is currently zoned C-1, Commercial. Drive thru facilities are required to get a special use permit under the standards of Section 11.1:20.

This property is located on the west side of the City. See the attachments for maps and images of the property. The applicant is proposing to tear down the existing structure from the property and build a new 4,506 square foot structure. The site is 1.80 acres and has a significant number of improvements. The applicant will be maintaining the existing retaining wall on the property and using the existing drive.

Special Land Use Process and Procedure

The Special Land Use Permit Application was received by the Community Development Department. The Applicant is also applying for a Site Plan Review, as the project includes new construction.

All Special Use Permit Applications require a Public Hearing. Notice was posted in the Big Rapids Pioneer on September 2, 2023, and sent to all property owners within 300 feet of 900 Water Tower Road. Staff received 0 calls from neighboring property owners in advance of the hearing.

Standards for this Special Land Use

Section 10.3:8 of the Zoning Ordinance clearly lays out a series of standards for Special Land Uses, stating as follows:

Standards. No special land use shall be recommended by the Planning Commission unless such Board shall find:

(1) That the establishment, maintenance, or operation of the special land use will not be detrimental to or endanger the public health, safety or general welfare.

Pro Response: The drive thru facility is	Negative Response: N/A
located away from the pedestrian area	
decreasing the likeliness of vehicular-	
pedestrian traffic.	

(2) That the special land use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor shall it substantially diminish and impair property values within its neighborhoods.

Pro Response: The drive thru will	Negative Response: The location of the
operate during banking hours with	ATM could cause more nighttime traffic
presumably an ATM anytime. The	than other office/commercial uses.
traffic impact from the drive thru	
should be minimum to surrounding	
properties.	

(3) That the establishment of the special land use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

Pro Response: The surrounding	Negative Response: N/A
properties should still be able to enjoy	
and operate as they currently do. The	
applicant has provided ample	
landscaping to help deter any negative	
impacts	

(4) That adequate utilities, access roads, drainage and necessary facilities have been or are being provided,

Pro Response: The sewer system in the	Negative Response: Public Works has
area is near capacity, however, the	not reviewed the plans at time of Staff
addition of a drive thru shall have no	Report.
impact. The property sits high enough	
from Perry Ave that it will be accessed	
from a side road which will decrease	
accident potential.	

(5) That adequate measures have been or will be taken to provide ingress or egress so designed as to minimize traffic congestion in the public streets.

Pro Response: There is only one drive cut and then traffic is handled internally	Negative Response: N/A
within the site.	

(6) That the special land use shall, in all other respects conform to the applicable regulations of the district in which it is located, any specific requirements established for that use in Article 11 and to any additional conditions or procedures as specified in Section 10.4.

Pro Response: The special use meets the	Negative Response:
requirements of the ordinance.	

Section 11.1:20 of the Zoning Ordinance lists the following requirements for drive thru facilities:

- 1. All points of vehicular ingress and egress are clearly defined.
- 2. All pedestrian areas on the site are clearly defined.

Planning Commissioners are encouraged to review the Application against the Standards in Section 10.3:8 and Section 11.1:20 to decide if they find it meets or fails to meet them and make their decision on this case in accordance.

Recommendation

Staff recommends **approval** of the Special Land Use Permit Application for a new drive thru facility at 900 Water Tower Road (PIN 17-15-300-030), as it meets the Standards set in Section 10.3:8 and Section 11.1:20 of the Zoning Ordinance.

Action

Three options lay before the Planning Commission regarding Special Land Use Permit Applications: Approval, Denial, or Table. Explanations and sample motions are included below.

Approval

An approval motion is appropriate when the Application meets the Standards of the Zoning Ordinance and sends the Application to the next step in the process where City Commission has final say in approving or denying the request.

"I move that the Special Land Use Permit Application for a new drive thru facility at 900 Water Tower Road (PIN 17-15-300-030) be recommended to the City Commission for approval, because it meets the Standards set in Section 10.3:8 and Section 11.1:7 of the Zoning Ordinance. [*If any conditions on approval, list them here.*]"

<u>Denial</u>

A denial motion is appropriate when the Application fails to meet the Standards of the Zoning Ordinance and ends the application process.

"I move to deny the Special Land Use Permit Application for an new drive thru facility at 900 Water Tower Road (PIN 17-15-300-030), because it does not meet Standard 10.3:X of the Zoning Ordinance. (*Fill in the X with which number Standard the application does not meet.*)"

Table

A Table motion is appropriate when more information is needed before reaching a decision regarding the Application and pauses the process until a later date.

"I move to table a decision on the Special Land Use Permit Application for a new drive thru facility at 900 Water Tower Road (PIN 17-15-300-030) until the October 18, 2023

meeting of the Planning Commission, because (list your reason for tabling the decision here)."



CITY OF BIG RAPIDS DEPARTMENT OF COMMUNITY DEVELOPMENT

SITE PLAN REVIEW APPLICATION

APPLICANT NAME: Bosch Architecture, Inc - Nick Loeks		
APPLICANT ADDRESS: 8065 Vineyard Parkway, Kalamazoo, MI 49009		
APPLICANT PHONE NUMBER: 269-207-1744 Email	nloeks@boscharch.com	
PROJECT TITLE: Consumers Credit Union		
PROJECT ADDRESS/LOCATION: 900 Water Tower Road		
SUBJECT PROPERTY OWNER: Eaves Lake LLC		
LEGAL DESCRIPTION OF PROPERTY (attach separate sheet)		
SUBJECT PROPERTY ZONNG: <u>C-1</u>	SITE SIZE (ACRES): <u>1.80</u>	

LIST ALL REQUIRED STATE AND FEDERAL PERMITS ON SEPARATE SHEET

In compliance with Section 9.4 of the City of Big Rapids Zoning Ordinance, twelve copies of a complete proposed site plan must be submitted to the Department of Community Development, a minimum of twenty one days prior to the Planning Commission hearing date. Failure to submit complete plans, a completed application form and filing fee may result in the site plan review hearing being delayed.

SITE PLAN INFORMATION REQUIREMENTS

TWELVE COPIES (12) of the proposed site plan, drawn on 24" x 36" paper

SCALE OF 1" = 20' for sites up to three acres and 1" = 100' for sites over three acres

LEGEND including north arrow, scale, date of preparation and name, address and telephone number of individual or firm preparing the plan

SEAL of professional architect, engineer or surveyor preparing the plan

LOCATION MAP indicating relationship of the site to surrounding land use

LOT LINES together with dimensions, angles and size correlated with the legal description, which is tied to existing monumentation

TOPOGRAPHY of the site in two foot contour intervals

NATURAL FEATURES such as wood lots, streams, rivers, lakes, wetlands, unstable soils and similar items

MAN MADE FEATURES within 100 feet of the site

BUILDING SIZE, height, finish floor and grade line elevations, yard setbacks and square footage. Front, side and rear elevations drawings of proposed structures.

FLOOR PLAN of structures showing existing and proposed uses (used to verify gross vs. usable floor areas and principal vs. accessory uses).

STREETS, driveways, sidewalks and other vehicle or pedestrian circulation features upon and adjacent to the site shall be shown

PARKING SPACES, location, size and number, service lanes, delivery and loading areas

CROSS SECTIONS illustrating construction of drives and parking areas

LANDSCAPING, together with open spaces, screening, fences, walls and proposed alterations of topography or other natural features.

SERVICE DEMANDS from the community to support proposed operations on the site

EARTH CHANGE plans required by State law

SITE LIGHTING including location, intensity and orientation

SURFACE WATER DRAINAGE

UTILITY LOCATION and size for sanitary sewer, water, storm sewer, natural gas, electricity, telephone, coaxial cable, fiber optic, etc.

FIRE LANES

OUTDOOR STORAGE

TRASH RECEPTACLES

HAZARDOUS MATERIAL storage facilities, including type, quantity, location and secondary containment provisions

OTHER INFORMATION as required by the Plan Board

DIGITAL COPY submitted in anAutoCAD compatible format

SITE PLAN REVIEW FEE \$200

I have read the requirements of submittal and review of a site plan by the City of Big Rapids Planning Commission and attest that the provided site plan is complete:

Micholas Loeks

08-28-2023	
Date	a a construction of the second second

STAFF REPORT TO THE PLANNING COMMISSION

Planning Commission
Michelle Stenger, Community Development Director
Site Plan Review for a new financial institute at 900 Water Tower Road
September 20, 2023

Introduction

Applicant, Consumers Credit Union, is applying for a Site Plan Review for a new financial institution and training facility/meeting area at 900 Water Tower Road (PIN 17-15-300-030). The property is currently zoned C-1, Commercial. Financial institutions are considered a permitted use within the C-1 district. The applicant was required to file for a special use for the drive thru portion of the development.

This property is located on the west side of the City. See the attachments for maps and images of the property. The applicant is proposing to tear down the existing structure from the property and build a new 4,506 square foot structure. The site is 1.80 acres and has a significant number of improvements. The applicant will be maintaining the existing retaining wall on the property and using the existing drive.

Site Plan Review Process and Procedure

The Site Plan Review Application was received by the Community Development Department and was deemed in compliance with Section 9.4. of the Zoning Ordinance which stipulates required Site Plan Review application materials. As required by Ordinance, Site Plan Reviews must go through a public hearing process. Notice was posted in the Big Rapids Pioneer on September 2, 2023, and sent to all property owners within 300 ft of the site.

The Site Plans were shared with the Fire Marshal, Public Works Department's Engineering staff, and the Zoning Administrator for their review.

<u>Public Safety</u> – Fire Marshal Jeff Hull reviewed the site plans and found no issues with the Site Plans and preliminary drawings.

Public Works -

<u>Zoning</u> – Plans were reviewed by the Community Development Director as to their standings as regards the Zoning Ordinance. This review found that the plans are following the Ordinances regarding setbacks, drive lanes, and landscaping.

The lighting aspect of the review showed that the original lighting plan provided did not meet the footcandles requirement set forth in Section 4.1:24. Upon discussion with the applicant a new plan was provided, showing a 30% decrease in the lighting. The applicant also stated that the lights are motion censored, so when there is activity on the property the lights will brighten to the number on the original plan, but when there is no motion detected they will dim to the 30% plan.

Staff feels that this meets the intent of the ordinance while still providing safety and security for the bank, employees, and patrons.

The parking is in conformance with the ordinance, except for the size of each parking space. The City's ordinance requires spaces to be either 10×18 or 9×20 . The applicant has provided 10×20 spaces. Staff is unaware of any variation to these requirements being allowed, unless the applicant were to go through a variance process.

Criteria for Review of Site Plan Review Applications

Section 9.6 of the Zoning Ordinance sets criteria for reviewing Site Plan Review applications:

9.6:1 That there is a proper relationship between the existing streets and highways within the vicinity and proposed deceleration lanes, service drives, entrance and exit driveways and parking areas to ensure the safety and convenience of pedestrian and vehicular movement. With respect to vehicular and pedestrian circulation, including walkways, interior drives, and parking, the site shall be developed so that access points, general interior traffic circulation, pedestrian circulation, and parking areas are safe and convenient and, insofar as practicable, do not detract from the design of the proposed buildings and existing structures on neighboring properties.

Staff Response: The site is designed in a way to keep pedestrian and vehicular movement mostly separate except for the parking area. The applicant has placed the drive thru in a location on the back side of the building where customers will unlikely be parking and walking. The applicant has also provided a direct sidewalk from Perry Street to the building for easier access for pedestrians.

9.6:2 All elements of the site plan shall be harmoniously and efficiently organized in relation to the topography, the size and type of the lot, the character of adjoining property, and the type and size of buildings. The site shall be developed so as not to impede the normal and orderly development or improvement of surrounding property for uses permitted in this Ordinance.

Staff Response: The surrounding properties are used for multi-family residential purposes and commercial purposes. An office operation with only daytime hours is a good fit to be around multi-family residential as the traffic won't be impacted and the use should not impeded on any of the neighboring properties.

9.6:3 That as many natural features of the landscape shall be retained as possible where they furnish a barrier or buffer between the project and adjoining properties used for dissimilar purposes and where they assist in preserving the general appearance of the neighborhood. The landscape shall be preserved in its natural state, insofar as practical, by minimizing tree and soil removal, and by topographic modifications which will result in maximum harmony with adjacent areas.

Staff Response: A lot of the landscaping is brush, but the developer is maintaining some of the larger trees on the property to help buffer the multi-family residential uses.

9.6:4 That any adverse effects of the proposed development and activities emanating there from which affect adjoining residents or owners shall be minimized by appropriate screening, fencing, landscaping, setback and location of buildings, structures and entryways. All loading and unloading areas and outside storage areas, including areas for the storage of refuse, which face or are visible from residential districts or public thoroughfares, shall be screened by a vertical screen consisting of structural or plant materials no less than six (6) feet in height.

Staff Response: The type of business has minimal impact on surrounding uses, plus the site is larger, which decreases the impact on neighbors. There should not be any outdoor storage and the applicant has provided significant landscaping throughout the entire development.

9.6:5 That the layout of buildings and improvements will minimize any harmful or adverse effect which the development might otherwise have upon the surrounding neighborhood. Physical improvements including sidewalks, drives and parking areas shall be built to adequate standards to minimize premature deterioration. Sites at which hazardous substances are stored, used or generated shall be designed to prevent spill or discharges to the air, surface of the ground, groundwater, streams, drains or wetlands. Secondary containment for above ground storage of hazardous material shall be provided.

Staff Response: The layout does minimize the impact of the development. The structure will be closer to Perry Street, with parking in the rear. At the same time the parking is also located a good distant from the multi-family residents.

9.6:6 That all provisions of all local ordinances, including the City Zoning Ordinance, are complied with unless an appropriate variance therefrom has been granted by the Zoning Board of Appeals.

Staff Response: Staff had pointed out earlier in the report the issue with the size of the parking spaces and the lighting. Staff feels that the dimming of the lighting plan does meet the intent of the ordinance and will meet the technical ordinance most of the time.

Planning Commissioners are encouraged to review the Application against the Criteria in Section 9.6 to decide if they find it meets or fails to meet them. These Criteria shall be used to decide the Action taken by the Planning Commission.

Recommendation

The applicant needs to address the size of the parking spaces, either through a variance or changing the size. With that and the lighting for the Board's consideration Staff recommends **approval** of the Site Plan Review Application for a financial institution and training facility at 900 Water Tower Road, as it meets the Criteria for Review found in Section 9.6.6 of the Zoning Ordinance.

Action

Three options lay before the Planning Commission regarding Site Plan Review Applications: Approval, Denial, or Approval with Conditions. Explanations and sample motions are below.

Approval

An approval motion is appropriate when the Application meets the Standards of the Zoning Ordinance and approves the Application. Sample motion:

"I move that the Site Plan Review Application for a new financial institution and training facility/meeting area at 900 Water Tower Road (PIN 17-15-300-030), be approved, because it meets all of the Criteria for Review set in Section 9.6 of the Zoning Ordinance."

Approval with Conditions

An approval with conditions motion is appropriate when the Application meets the Standards of the Zoning Ordinance, but the Planning Commissioners believe a few minor conditions or alterations are required. This motion approves the Application contingent upon the listed conditions. Sample motion:

"I move that the Site Plan Review Application a new financial institution and training facility/meeting area at 900 Water Tower Road (PIN 17-15-300-030), be approved with conditions. The Application meets the Criteria for Review set in Section 9.6 of the Zoning Ordinance, but conditions are required to (*select from the relevant reasons below*)

- (1) Ensure that public services and facilities affected by the proposed land use or activity will be capable of accommodating increased service and facility loads caused by the land use or activity.
- (2) Protect the natural environment and conserve natural resources and energy.
- (3) Ensure compatibility with adjacent uses of land.
- (4) Promote the use of land in a socially and economically desirable manner.

The following conditions are required to address this need: (*list conditions [such as requiring additional permits, revising plans to show needed changes, demonstrating adequacy of the stormwater detention facilities, among others] here*).

A revised, dated site plan and documents addressing the above shall be submitted for staff approval within 60 days."

Denial

A denial motion is appropriate when the Application fails to meet the Standards of the Zoning Ordinance and ends the application process. Sample motion:

"I move to deny the Site Plan Review Application for a new financial institution and training facility/meeting area at 900 Water Tower Road (PIN 17-15-300-030), because it does not meet Criteria 9.6:X of the Zoning Ordinance. (*Fill in the X with which number Criteria the application does not meet.*)"









SCHEDULE "A" LEGAL DESCRIPTION FROM: SUN TITLE AGENCY OF MICHIGAN, LLC COMMITMENT NO .: 222007 (EFFECTIVE DATE: MAY 15, 2023)

THE LAND REFERRED TO IN THIS COMMITMENT IS DESCRIBED AS FOLLOWS: LAND SITUATED IN THE CITY OF BIG RAPIDS, MECOSTA COUNTY, MICHIGAN:

A PARCEL OF LAND LOCATED IN THE SOUTHWEST 1/4 OF SECTION 15, TOWN 15 NORTH, RANGE 10 WEST, DESCRIBED AS COMMENCING AT THE WEST 1/4 CORNER OF SECTION 15; THENCE SOUTH 88 DEGREES 35 MINUTES 33 SECONDS EAST ALONG THE EAST-WEST 1/4 LINE 1951.35 FEET; THENCE SOUTH OO DEGREES II MINUTES 43 SECONDS WEST ALONG THE WEST RIGHT OF WAY OF WATER TOWER ROAD 988.02 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH OO DEGREES II MINUTES 43 SECONDS WEST ALONG THE WEST RIGHT OF WAY OF WATER TOWER ROAD 286.86 FEET TO THE NORTH RIGHT OF WAY OF PERRY AVENUE AND A CURVE TO THE RIGHT; SAID CURVE HAS A RADIUS OF 7564.44 FEET, A LONG CHORD BEARING AND DISTANCE OF SOUTH 88 DEGREES 40 MINUTES OB SECONDS WEST 269.99 FEET, THENCE WESTERLY ALONG THE NORTH LINE OF PERRY AVENUE ON THE ARC OF SAID CURVE 270.00 FEET; THENCE NORTH OO DEGREES II MINUTES 43 SECONDS EAST PARALLEL WITH THE WEST LINE OF WATER TOWER ROAD 294.05 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 17 SECONDS EAST 269.89 FEET TO THE POINT OF BEGINNING.

Big Rapids M Buffalo Wild Wings ty Fellowship 📦 I Big Rapids 🖤 Quality Car & 😜 Truck Repair Ferris State University SITE LOCATION LOCATION MAP

NOT TO SCALE





SITE INFORMATION

I. PARCEL ADDRESS:

2. OWNER:

3. ARCHITECT:

BIG RAPIDS, MI 49307

PIN: 54-17-15-300-030

KALAMAZOO, MI 49009

BOSCH ARCHITECTURE

(269) 321-5151

C-I ZONING

8065 VINEYARD PKWY

KALAMAZOO, MI. 49009

DRIESENGA & ASSOCIATES

CREDIT UNION

78,608.95 SF

OPEN: 61.0%

BUILD: 5.1%

4,506 SF

CREDIT UNION/

PAVEMENT: 33.9%

TRAINING CENTER

- 7. BUILDING TYPE(S):
- 8. MAXIMUM BUILDING HEIGHT: 40' MAXIMUM 23' ACTUAL REQUIRED PARKING: 9.

BANK: (1) STALL REQUIRED PER 200 GFA PLUS (5) VEHICLE STACKING SPACES AT ATM AND EACH DRIVE UP WINDOW, PUBLIC ASSEMBLY: (1) STALL REQUIRED FOR EACH 3 PERSONS ALLOWED WITHIN MAX. OCCUPANCY LOAD *NO MORE THAN 115% OF MAX, PARKING PERMITTED

BANK PORTION: 3386 SF / 200 = 17 SPACES REQUIRED. TRAINING FACILITY: 48 ATTENDEES MAX / 3 = 16 SPACES REQUIRED. 33 SPACES REQUIRED

33 x 1.15 = 38 SPACES MAXIMUM ALLOWED 38 SPACES PROVIDED

- IO. REQUIRED BIKE PARKING: I BIKE PARKING SPACE PER 10 PARKING SPACES 38 SPACES / 10 = 4 REQUIRED BIKE PARKING 4 BIKE SPACES PROVIDED
- II. LANDSCAPING: SEE L*OO*I
- 12. LEGAL DESCRIPTION: SEE THIS SHEET
- 13. OCC. CLASSIFICATION: B BUSINESS
- 14. CONSTRUCTION TYPE: 5B
- 15. ALL SITE PARKING STRIPING, ARROWS, CROSSWALKS AND LINES TO BE YELLOW PAINT. ALL BARRIER FREE MARKINGS, LINES AND SYMBOLS TO BE BLUE.

GENERAL NOTES (SITE WORK)

I. SITE PREPARATION: a. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PERFORMED BY THE CONTRACTOR IN COMPLIANCE WITH PART 91 OF PUBLIC ACT 451 OF 1994. b. ORGANIC TOPSOIL SHALL BE STRIPPED FROM THE CONSTRUCTION AREA AND STOCKPILED AS

INSTRUCTED BY THE G.C. FOR LATER USE. 2. EARTHWORK:

a. CALL MISS DIG AT I-800-482-7171 BEFORE BEGINNING EXCAVATION. b. EXCAVATION SHALL BE LEVEL TO EXACT

DEPTHS AND DIMENSIONS INDICATED ON DRAWINGS. c. CONSTRUCTION OF FOUNDATIONS AND SLABS-ON-GRADE WILL BE ON COMPACTED FILL IN MOST AREAS, LAYERED COMPACTION SHALL BE PERFORMED TO A MINIMUM DENSITY OF 95 MAXIMUM DRY DENSITY AS DETERMINED BY ASTM DESIGNATION D-1557 VALUES

d. PLACE A MIN. 6 INCHES OF BANK RUN SAND COMPACTED TO 95% OF MAXIMUM DENSITY UNDER ALL FLOOR SLABS ON GRADE. e. SOIL TESTING WILL BE CONTRACTED AND PAID

FOR BY THE GENERAL CONTRACTOR. F. SITE SHALL BE FINE GRADED BEFORE PLACING TOP SOIL OR GRANULAR BASE MATERIAL. q. EXTERIOR SURFACE DRAINAGE SHALL BE AWAY FROM BUILDINGS, 5% 10'-0" OUT FROM BLDG. h. ALL TOPOGRAPHICAL INFORMATION WAS

FURNISHED BY EXXEL AND ASSUMED CORRECT. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND NEW GRADES PRIOR TO COMMENCEMENT OF ANY WORK. THIS OFFICE SHALL NOT BE HELD RESPONSIBLE FOR ANY MISSING OR ERRONEOUS INFORMATION.

GEN CONTR WILL PROVIDE NECESSARY SOIL BORINGS AS DIRECTED BY THE CITY OF BIG RAPIDS

GEN CONTR WILL ALSO PROVIDE PERMEABILITY TESTS IF REQUIRED. WHICH WILL INCLUDE GROUNDWATER INFORMATION.

ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS MUST CONFORM TO THE STANDARDS SET FORTH IN THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

REQUIRED LANDSCAPE IS SHOWN ON LANDSCAPE PLAN. SEE LOOI FOR PLANTING DETAILS.

APPROPRIATE PERMITS TO BE OBTAINED FROM THE CITY OF BIG RAPIDS.

AN EMERGENCY KNOX BOX FOR FIRE DEPARTMENT ACCESS WILL BE PROVIDED IF REQUIRED, KNOX BOX LOCATION TO BE DETERMINED UPON SUBMITTAL OF BUILDING PLANS, IF REQUIRED.

A FIREFIGHTER RIGHT-TO-KNOW AND HAZARDOUS MATERIALS RIGHT TO KNOW FORMS TO BE SUBMITTED PRIOR TO ISSUANCE OF A BUILDING PERMIT. IF REQUIRED.



OF MIC

16.	Mo
7	
ji	
50	
MI 4	
C apids.	4
Big Re	
S Wer B	
er To	
) Wat	
	aeur is aeur 1
	iction of this docu
	ure, Inc. Reprodu
*	bosch Architect
AN REVIE	ervice, is owned to
8 SITE PL	n instrument of s express authoriz
2023-08-2	his drawing, as a
ISSUED	, , , ⊢ <u>ē</u>
	R Esign
	L C T U TERIOR D
S	
	A R C INGINEER
	Parkwa 149009 n
Ď	
: 23045 Name: 15Coo1.dwg	5 Vineyard 1mazoo, M) 351-5151 charch.con



Name of Dev	/elopment				Consumer	s Credit Union	
Weighted C	Value					0.508	
Maximum Al	lowable Dischar	ge	0.362				
Developmer	nt Area					1.81	Acres
Storm Recur	rance Interval		25 Years		1	- 	
Time (Hour)	Painfall (in/hr)	1*0	Outlat (of clas)	toflow	Storago	Paald Storage	
		2 7507	0 262	2 2077	n 2021		
0.00	5.8	2 9/6/	0.302	7 58//	0.2031	0.04033288	
0.17	<u> </u>	7 3876	0.302	2,0044	0.21007	0.000200323	
0.25	<u> </u>	2 12344	0.302	1 76144	0.1000	0.087675676	
0.33	3.65	1.8547	0.302	1 4977	0.12435	0.09453087	
	3 25	1.651	0.362	1.789	0.107417	0.097212083	
0.58	2.95	1.4986	0.362	1.1366	0.094717	0.099433557	
0.67	2.77	1.40716	0.362	1.04516	0.087097	0.105622128	
0.75	2.6	1,3208	0.362	0,9588	0.0799	0.10846425	
0.83	2.48	1.25984	0.362	0.89784	0.07482	0.112402086	<max< td=""></max<>
0.92	2.3	1.1684	0.362	0.8064	0.0672	0.11190144	
1	2.12	1.07696	0.362	0.71496	0.05958	0.1078398	
1.25	1.78	0.90424	0.362	0.54224	0.045187	0.102234833	
1.5	1.55	0.7874	0.362	0.4254	0.03545	0.09624675	
2	1.25	0.635	0.362	0.273	0.02275	0.082355	
2.5	1.06	0.53848	0.362	0.17648	0.014707	0.066547667	
3	0.88	0.44704	0.362	0.08504	0.007087	0.0384806	
3.5	0.78	0.39624	0.362	0.03424	0.002853	0.018075867	
4	0.7	0.3556	0.362	-0.0064	-0.00053	-0.003861333	

4896.234866 CF

- X0F –

Detention Volume Required

TYPICAL MATERIALS, SYMBO	OLS A	ND INDICATIONS
(m) MANHOLE	-¦-	EXIST SPOT GRADE
(57) STORM SEWER MANHOLE	+	FINISH GRADE
SANITARY SEWER MANHOLE	٢	FIRE HYDRANT
T PHONE CO MANHOLE	\otimes	WATER VALVE
E ELEC CO MANHOLE	M	WATER METER
WATER MANHOLE	~	GAS VALVE
M CATCH BASIN/CURB INLET	Ø	UNDERGROUND GAS MARKER
	ē	GAS METER
	Ċ	BASKETBALL NET
OUTILITY POLE	P	MAIL BOX
	æ	PARKING METER
¢ LIGHT POLE	-0	SIGN
\sim	Φ	SOIL BORING
O FLAG POLE		CONGRETE BOLLARD
⊷Q YARD LAMP + POLE	(T)	
PHONE BOOTH	\vee	EXIST TREE TO REMAIN
(M) MONITOR WELL	£~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
$\stackrel{-}{\boxtimes}$ ELECTRIC BOX / TRANSFORMER	1 South	
AIR CONDITIONING UNIT	1	
	- (2)	IKEE TO BE REMOVED

ΣΥ	ARD LAMP +	POLE		()		
P	HONE BOOTH			\vee) EXIST TRE	:⊏
)) м	IONITOR WELL			, since		
3 E	LECTRIC BOX	/ TRANSFO	RMER	A Gard	INEN IREE	
] A	IR CONDITION	IING UNIT				
) UI	NDERGROUND	TELEPHONE	EMARKE	R	; IREE 101 '	DE
] UI	NDERGROUND	TELEPHONE	E MARKE	R		
		0	E			<i>0</i> v
		——————————————————————————————————————				UNE
		——————————————————————————————————————	<u>مى</u>			6A WA
~	· · · ·	· ·	· ·	~	v	







SOIL EROSION CONTROL NOTES I. ALL SITE INFRASTRUCTURE WILL BE

CONSTRUCTED AT ONCE, PHASING OF THE OF THE OVERALL DEVELOPMENT WILL NOT OCCUR DURING THIS APPROVAL. NO TEMPORARY RETENTION AREAS WILL BE USED ON THIS SITE. DURING CONSTRUCTION, RUNOFF WILL INFILTRATE THROUGH THE GROUND SURFACE.

2. PERMANENT SPOIL PILES WILL NOT BE NEEDED FOR THIS PROJECT, CONTRACTOR TO VERIFY CUT/FILL WITH EXCAVATOR. ALL CUT TO BE TAKEN OFF SITE AT THE TIME OF EXCAVATION, IF REQUIRED.

2. EXIST CATCH BASINS AS NOTED ON THIS PLAN WILL BE PROTECTED WITH WOVEN GEOTEXTILE FILTER FABRIC DURING CONSTRUCTION, SEE PLAN FOR CATCH BASIN LOCATIONS, REFER TO DTL 16/C501.

3. A SILT FENCE WILL BE USED WHERE ELEVATIONS WITHIN THE PROPERTY LINE WILL TEMPORARILY BE HIGHER OR LOWER THAN NEIGHBORING PROPERTIES IN ORDER TO CONTAIN SOIL APPROPRIATELY. SEE PLAN FOR APPROXIMATE LOCATIONS. SILT FENCE LOCATIONS TO BE VERIFIED BY ON SITE CONTRACTOR, REFER TO DETAIL 17/C501 FOR SILT FENCE DETAILS.

4. A CONSTRUCTION ACCESS DRIVE SHOULD BE USED TO ACCESS THE SITE FROM THE EXISTING DRIVEWAY AS TO HELP RETAIN SOIL ON SITE AND REDUCE AMOUNT OF SOIL TRACKED OFF SITE BY CONSTRUCTION VEHICLES, REFER TO DETAILS 14 & 15/6501.

STORM CB #I	I SEWER STRUCTURES RIM = 1042.20' N INV 24" SOLID PIPE = 1032.23' W INV 8" SOLID PIPE = 1036.30'
CB #2	RIM = 1039.60' N INV 24" SOLID PIPE = 1031.38' S NV 24" SOLID PIPE = 1031.38'
CB #3	RIM = 1037.50' W INV 24" SOLID PIPE = 1030.50' NE INV 24" SOLID PIPE = 1030.50' S INV 24" SOLID PIPE = 1030.50'
CB #4	'RIM = 1039.60' E INV 24" SOLID PIPE = 1031.67' SW INV 6" SOLID PIPE = 1035.75'
CB #5	'RIM = 1039.70' E INV 24" SOLID PIPE = 1032.00'
CB #6	'RIM = 1034.90' W INV 24" SOLID PIPE = 1030.50' SE INV 24" SOLID PIPE = 1030.50'
CB #7	'RIM = 1031.30' SW INV 12" SOLID PIPE = 1028.30'
YB #I	RIM = 1042.20' 4" PERIMETER DRAIN = 1039.00' +/- 6" ROOF DRAIN = 1041.00' NE INV 6" SOLID PIPE = 1038.00'
YB #2	RIM = 1042.50' 4" PERIMETER DRAIN = 1039.00' +/- 6" ROOF DRAIN = 1040.50' SE INV 8" SOLID PIPE = 1038.00'
YB #3	OVERFLOW BASIN TO CITY 'RIM = 1034.00' N INV 12" = 1027.50' E INV 12' = 1027.00' W/ 2.5" PLATE ORIFICE
DHMH	RIM = MATCH EXISTING 1030.90' +/- W INV 12" = 1026.0'
I. SITE R STORAGE 2. BUILD 3. SITE 9 4. STOR WITH OVE	1 WATER DESIGN ISK ZONE DESIGNATION - COMMON DING RISK DESIGNATION - "LOW RISK". SIZE - LESS THAN 5 ACRES. M WATER STRATEGY - DETENTIN ON SITE RFLOW TO CITY STORM SYSTEM
5. Site l Ove Buil IMPI LAV	JSE: FRALL DRAINAGE AREA 78,609 SF DINGS 4,756 SF ERVIOUS PAVING 26,648 SF IN/LANDSCAPE AREA 47,205 SF

<u>10 YR STORM (4.27"/HR - 10 min tc)</u> C VALUES

ROOF - 0.90 IMPERVIOUS AREAS - 0.90 LAWN (SLOPE >7%) - 0.175

<u>WEIGHTED C</u> 0.9(26648) + 0.90(<u>4156</u>) + 0.175(<u>41205</u>) = 0.508 0.508 * (4.27)/12 * 78609 = 14,210 CF

CITY RELEASE RATE = 0.2 cfs X ACREAGE = 0.2 x

1.81 = .362 cfs DETENTION REQUIREMENT (SEE SPREADSHEET) = 4896 CF

DETENTION PROVIDED 400 FT OF 24" STORM PIPE + BASINS TO 1034.0'= 1256 CF

POND CAPACITY = 3675 CF TOTAL DETENTION PROVIDED = 4931 CF > 4896 CF

ALL WORK IN PUBLIC RIGHT-OF-WAYS WILL REQUIRE PERMITS FROM MOOT OR CITY OF BIG RAPIDS





Schedule											
Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	AA		2	Lithonia Lighting	DSX1 LED P3 40K 70CRI TFTM	D-Series Size 1 Area Luminaire P3 Performance Package 4000K CCT 70 CRI Forward Throw	1	14065	1	102.17	Max: 12672cd
	BB		1	Lithonia Lighting	DSX1 LED P3 40K 70CRI TFTM	D-Series Size 1 Area Luminaire P3 Performance Package 4000K CCT 70 CRI Forward Throw	1	14065	1	204.34	Max: 12672cd
•	сс		5	Lithonia Lighting	DSX1 LED P2 40K 70CRI T2M	D-Series Size 1 Area Luminaire P2 Performance Package 4000K CCT 70 CRI Type 2 Medium	1	9651	1	67.79	Max: 8788cd
	DD		2	Lithonia Lighting	ARC1 LED P1 40K	ARC1 LED WITH P1 - PERFORMANCE PACKAGE, 4000K		1454	1	10.8751	Max: 949cd





		ļ
Input Power Polar Plot 102.17	"STOP"	
204.34	$\begin{bmatrix} -1 & -1 & -1 & -1 & -1 & -1 & -1 & -1 $	
Max: 12672cd	$\begin{bmatrix} 0.0 & 0.0 & 0.1 & 0.1 & 0.1 & 0.2 & 0.3 & 0.5 & 0.5 & 0.6 & 0.6 & 0.7 & 0.8 & 1.2 & 1.0 & 1.0 & 0.7 & 0.6 & 0.6 & 0.6 & 0.7 & 0.7 & 0.7 & 0.7 & 0.7 & 0.6 & 0.5 & 0.5 & 0.5 & 0.5 & 0.5 & 0.7 & 0.$	
	CB #7 -0.1 0.2 0.3 0.5 0.9 1.3 1.6 1.8 2.0 2.1 2.1 2.4 2.4 2.4 2.4 2.2 2.2 2.2 2.2 2.2 2.2	
Max: 8788cd	$\begin{bmatrix} -1 & 0.1 & 0.2 & 0.3 & 0.4 & 0.7 & 1.4 & 1.1 \\ 0.2 & 0.2 & 0.3 & 0.4 & 0.7 & 1.4 & 1.1 \\ 0.2 & 0.2 & 0.3 & 0.4 & 0.8 & 1.4 & 1.8 & 2.1 & 2.7 & 2.2 & 2.1 & 2.2 & 2.3 & 2.4 & 2.3 & 2.4 & 2.3 & 2.4 & 2.3 & 2.4 & 2.8 & 2.9 & 2.9 & 2.8 & 2.5 & 2.3 & 2.0 & 1.7 & 1.4 & 1.1 \\ 0.9 & 0.7 & 2.2 & 2.3 & 2.5 & 2.6 & 2.7 & 2.5 & 2.4 & 2.3 & 2.4 & 2.8 & 2.9 & 2.9 & 2.8 & 2.5 & 2.3 & 2.0 & 1.7 & 1.4 & 1.1 \\ 0.9 & 0.7 & 0.9$	
	$\begin{bmatrix} - & - & - & - & - & - & - & - & - & - $	
Max: shaca	$\begin{bmatrix} -1 & -1 & -1 & -1 & -1 & -1 & -1 & -1 $	
	$\begin{bmatrix} -0.2 & 0.2 & 0.3 & 0.3 & 0.3 & 0.3 & 0.3 & 0.3 & 0.3 & 0.4 & 0.5 & 0.7 & 0.9 & 1.7 & 2.3 & 2.4 & 2.0 & 1.5 & 1.0 & 0.8 & 0.7 & 0.6 & 0.8 & 0.7 & 0.9 & 1.0 & 18 & 2.3 & 2.3 & 2.4 & 2.1 & 1.9 & 1.4 & 1.0 & 0.8 & 0.4 & 0.8 & 0.2 & 0.2 & 0.4 & 0.8 & 0.4 & 0.$	
	$\begin{bmatrix} + 0.2 & + 0.3 & + 0.3 & + 0.5 & + 0.6 & + 1.1 & + 1.4 & + 2.6 & + $	
	$\begin{bmatrix} -0.2 \\ 0.2633 \\ -0.2 \\ 0.3 \\ 0.4 \\ 0.6 \\ 0.8 \\ 0.4 \\ 0.6 \\ 0.8 \\ 0.4 \\ 0.6 \\ 0.8 \\ 1.0 \\ 1.2$	
	$\begin{bmatrix} - & - & - & - & - & - & - & - & - & - $	
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	$\begin{bmatrix} -2 & -2.5 & -2.6 & -2.5 & -2.4 & -2.3 & -2.6 & -2.5 & -2.4 & -2.3 & -2.5 & -2.4 & -2.5 & -2.4 & -2.3 & -2.5 & -2.4 & -2.5 & $	
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	$\begin{bmatrix} - & - & - & - & - & - & - & - & - & - $	
	$\begin{bmatrix} 0.1 & 0.1 & 0.2 & 0.4 & 0.6 & 0.9 & 1.4 & 2.8 & 4.5 & 4.5 & 4.5 & 3.8 & 2.9 & 0.7 & 5.8 & 4.7 & 3.9 & 3.3 & 3.1 & 3.1 & 3.0 & 2.7 & 2 & 2 & 3.0 & 0.7 & 0.5 & 0.3 & 0.2 & 0.1 & 0.1 & 0.2 & 0.1 & 0.7 & 0.5 & 0.3 & 0.2 & 0.1 & 0.1 & 0.1 & 0.2 & 0.1 & 0.1 & 0.1 & 0.1 & 0.1 & 0.1 & 0.1 & 0.1 & 0.1 & $	
	$\begin{array}{c} + & + & + & + & + & + & + & + & + & + $	
	$\begin{bmatrix} - + 0.0 & + 0.1 & + 0.1 & + 0.2 & + 0.0 & $	
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
	$ \begin{bmatrix} + & + & + & + & + & + & + & + & + & +$	
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	$= ^{+}0.0 ^{$	
	$ \begin{bmatrix} - 0.0 &$	-
	EASEMENT GRANTED TO + CONSUMERS POWER - $0.0 - 0.0 + 0.0 $	
	$ \begin{array}{c} \begin{array}{c} + & + & + & + & + & + & + & + & + & + $	
Мн-А	3" PL	 ////
MH#2	APPROXIMATE LOCATION OF ROUTE 17 GRANTED TO CONSUMERS POWER STM	
	XSTMXSTMCOMPANY REC. IN L. 333, PG. 643	3
I 		
==		
	0	









OF







LANDSCAPING NOTES

. COMPLY WITH ALL CITY OF BIG RAPIDS STANDARDS. 2. ALL LANDSCAPING TO BE INSTALLED BY A QUALIFIED LANDSCAPE CONTRACTOR. 3. ALL PLANTINGS , INCLUDING TREES IN LAWN AREAS, SHALL BE MULCHED WITH 3" DEPTH SHREDDED HARDWOOD MULCH. 4. 6" MINIMUM TOPSOIL DEPTH IN ALL SEEDED AREAS AND 10-12" DEPTH IN PLANTING BEDS. AMEND EXISTING SITE TOP SOIL WITH ORGANICS FOR STANDARD PLANTING MIX. 5. SEED MIX TO BE 60% BLUEGRASS, 30% PERENNIAL RYE AND 10% FESCUE. 6. WHERE NEW SOD IS ABUTTING EXISTING LAWN, CUT EXISTING SOD IN STRAIGHT LINE AND LAY NEW SOD TIGHT TO EXISTING. 7. ONE YEAR WARRANTY ON LAWN AND PLANTS/TREES.

8. 4" X $\frac{1}{8}$ " MILL FINISH ALUMINUM EDGING AT ALL PLANTING BEDS AND TREE RINGS. UNLESS OTHERWISE NOTED, USE 5 STAKES PER 16' SECTION. 9. ALL LAWN (INCLUDING RIGHT-OF-WAY) AND SHRUB AREAS SHALL BE IRRIGATED. IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE LANDSCAPE CONTRACTOR IN ACCORDANCE WITH CITY ORDINANCES AND THE MICHIGAN PLUMBING CODE. SHRUB AREAS SHALL HAVE DRIP IRRIGATION. TIE TO PLUMBER SUPPLIED WATER METER IN THE BUILDING IO. PLANT MATERIALS SHALL BE CHOSEN AND INSTALLED IN ACCORDANCE WITH STANDARDS RECOMMENDED BY THE AMERICAN NURSERY ASSOCIATION.

II. ALL DISEASED, DAMAGED OR DEAD PLANT MATERIAL SHALL BE REPLACED PER CITY OF BIG RAPIDS ZONING ORDINANCE.

LANDSCAPING REQUIREMENTS

BUFFER ZONES REQ'D WHEN ABUTTING A RESIDENTIAL ZONE I TREE PER 30' + CONTINUOUS HEDGE ROW

WEST PROPERTY LINE 294.05 LF / 30' = 10 TREES REQUIRED 5 EXISTING SPRUCE TREES + 5 NEW TREES, CONTINUOUS HEDGE PROVIDED EXCEPT AT EXISTING SPRUCE TREES

NORTH PROPERTY LINE 269.89 LF / 30' = 9 TREES REQUIRED 9 TREES PROVIDED + CONTINUOUS HEDGE ROW PROVIDED

PARKING SCREENING MUST BE SCREENED FROM VIEW OF PUBLIC/PRIVATE STREETS W/ CONTINUOUS HEDGE ROW

CONTINUOUS HEDGE ROW PROVIDED AT EAST AND SOUTH SIDES OF PARKING LOT.

PARKING ISLANDS

I CANOPY TREE PER EACH 7 SPACES

38 SPACES / 7 = 6 TREES REQUIRED 6 PARKING ISLAND TREES PROVIDED

<u>GREENBELTS</u> REQUIRED ALONG PUBLIC RIGHT-OF-WAYS I DECIDUOUS TREE PER 30' FRONTAGE, INCLUDING OPENINGS

WATER TOWER ROAD FRONTAGE: 288.86 LF / 30' = 10 TREES REQUIRED IO TREES PROVIDED (UTILIZING I PARKING LOT TREE)

<u>PERRY AVENUE FRONTAGE:</u> 270 LF / 30' = 9 TREES REQUIRED 9 TREES PROVIDED (UTILIZING 2 PARKING LOT TREES)

PRINCIPAL STRUCTURE LANDSCAPING

REQUIRED ALONG THE FRONT/SIDES OF ANY BUILDING THAT FACES A PUBLIC ROAD AND/OR IS ADJACENT TO A PARKING LOT WHICH PROVIDED ACCESS TO THE BUILDING, BEDS SHALL BE A MINIMUM OF 6' WIDE AND BASED ON 75% OF LINEAL FEET FRONTAGE.

EAST FACADE $\overline{81'-4" - 19'-4"}$ (INORESS/EGRESS) = 62 LF x 6' WIDE BEDS = 372 SF LANDSCAPING REQUIRED, 500 SF PROVIDED

<u>SOUTH FACADE</u> 61'-8" x 6' WIDE BEDS = 370 SF LANDSCAPING REQUIRED/399 SF LANDSCAPING PROVIDED

<u>NORTH FACADE</u> 68'-8" x 6' WIDE BEDS = 412 SF LANDSCAPING REQUIRED/429 SF PROVIDED

	NICHOLAS J. LOEKS ENGINEER NO: 6201052606	
1/10	6/1	0

Consumers Big Rapids, MI 49307 900 Water Tower Road, Big Rapids, MI 49307	
2023-08-28 SITE PLAN REVIEW	This drawing, as an instrument of service, is owned by Bosch Architecture. Inc. Reproduction of this document is prohibited without express authorization from the Architect. © 2022 Bosch Architecture Inc
ARCHITECTURE	
A5 A6 Ldwg o, M149005	h.com



PN: 23 File Nam 23045L00

8065 Vir Kalama: (269) 351 Boschar



Provide a complete site lawn and planting bed irrigation system, consisting of valves, water lines, sprinkler heads, drip tubing, and controller to adequately cover all lawn and plant beds. Plant beds to be 'in-line' drip irrigation tubing, valved separately from the lawn zones. Controller to be installed on the exterior wall with the ability to be locked, with outlet supplied by electrician. Need to have the ability for all winterization to be done completely from the exterior of the building. The sustem into I" backflow prevention device supplied and installed by plumber. Poly pipe MAY be substituted for PVC pipe specified in details. Sleeves not in irrigation contract, sleeves installed by Elect contractor. Irrigation to be installed from back of curb to back of curb around entire site including right of way areas.

ELECTROMECHANICAL CONTROLLERS ESP Modular: ESP-4M, ESP-4Mi

The controller shall be of a hybrid type that combines electro-mechanical and microelectronic circuitry capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather resistant plastic cabinet with a key-locking cabinet door (outdoor models only) suitable for either indoor or outdoor installation.

The controller shall have a base unit with 4 stations as well as three expansion slots capable of receiving station modules of three stations each to create a controller of up to 13 stations. Station 13 shall be called an "auxiliary station" and shall have the capability of bypassing an active rain sensor or of functioning as a normal station output. Station timing shall be from O minutes to 6 hours. Run time resolution shall be in I-minute increments from 0 to 59 minutes and 10 minutes from 1 to 6 hours. The LCD shall display "No Run Times" or equivalent icon for 230 VAC models if no run time has been entered for any station in any program.

The controller shall have three separate and independent programs which can have different start times, station timing and watering days. Each program shall have up to 4 start times available. The controller shall stack multiple start times in sequence to prevent hydraulic overload. The LCD shall display "No Start Times" or the equivalent icon for 230VAC models if no start time has been entered for any program. The controller shall be capable of operating two 24 VAC solenoid valves per station plus a master valve or remote pump start relay. The controller shall operate on 120 VAC± 20% at 60Hz (230VAC ± 20% at 50Hz for international models). The controller shall have an electronic, diagnostic circuit breaker that shall sense a station with an electrical overload or short circuit and shall bypass that station and continue operating all other stations.

The controller shall have a 365-day calendar with a permanent day off feature that allows a day(s) of the week to be turned OFF on any cycle (odd/even/I-31day cycle). A day set to "Permanent Off" shall override the normal repeating schedule and shall display the words "Day Always Off/Day Off" in the LCD screen.

The controller shall have a seasonal adjust feature adjustable from 0% to 200% in increments of 10%. Seasonal adjust shall effect all programs simultaneously. If seasonal adjust is set to 0% the LCD shall display "SEASONAL ADJ" (equivalent icon for 230 VAC models).

The controller shall have a 12-hour AM/PM or 24 hour military (for 230VAC models) clock with a midnight day change over. The controller shall have a sensor circuit for connection to a rain sensor or to an underground moisture sensor system that will interrupt a scheduled watering under "wet" or "moist" conditions. The controller shall have an indicator on the LCD screen and one LED light to indicate that a sensor is connected and active and that watering has been temporarily disabled.

The controller shall have access to a variety of "hidden features" by turning the dial to a specific location on the dial and pushing the ON OFF buttons simultaneously. These features shall include: 1) save a custom default program 2) retrieve a custom default program 3) bupass an active rain sensor on the Auxiliary Station 4) allow the Auxiliary Station to be interrupted by an active rain sensor 5) Clear memory 6) Set a day as "Permanently Off" 7) Set master valve/pump start circuit by station 8) Set programmable delay between station.

The controller shall have the following manual operations and manual advances for semiautomatic control:

- I. Run a single valve
- 2. Run multiple manually stacked valves
- 3. Run a semi-automatic program
- 4. Run a test on all valves (all stations with any time assigned regardless of the program) from 1 to 10 minutes

The controller shall have a removable, battery programmable front panel (uses a 9 volt battery [not included]) for conveniently programming the controller away from the installation site or for teaching irrigation scheduling.

The controller shall have the capacity for the program to be erased allowing the user to start programming with a blank controller. The controller shall have multiple knockouts sizes and locations, including the back of the cabinet, to facilitate installation and provide a clean professional look. The controller shall

have a factory default program that runs 10 minutes every day beginning 8 hours after power

The controller shall have a reset button to reset the controller in the case of micro-controller Olock-up^{Δ} due to power surges or frequent interruption to the power supply.

The controller shall be as manufactured by Rain Bird Corporation, Azusa, California.

5000 Plus Series Full and Reversing Full/Part Circle Sprinkler Specifications The full and/or part circle sprinkler shall be a single stream, water lubricated, gear drive type The sprinkler shall have a flow shut-off device that is integrated into the flow path of the rotor as well as adjustable arc coverage of 40 to 360 degrees. Arc adjustment can be performed

with or without the sprinkler in operation and shall require only a flat-blade screwdriver.

The sprinkler shall have a smoothed flow path entrance to enhance the flow characteristics of the rotor. In addition, the sprinkler shall feature a flow path to nozzle bore transition radius to minimize pressure loss and assure peak nozzle radius is achieved.

The sprinkler shall have a pressure activated multi-function wiper seal that positively seals against the pop-up stem to keep debris out of the rotor and to clean debris from the pop-up stem as it retracts. This wiper seal shall prevent sprinkler from sticking up, and be capable of sealing the sprinkler cap to sprinkler body under normal operating pressures.

The sprinkler shall have a screen installed in the pop-up stem to filter inlet water, protect the drive from clogging and simplify its removal for cleaning and flushing of the system. It shall have a 3/4" (FNPT) bottom inlet.

The sprinkler shall have a standard green rubber cover and a strong stainless steel retract spring for positive pop down. Pop-up height as measured from the top of the cap at normal installation to the middle of the nozzle orifice shall be 4".

The sprinkler shall have 12 interchangeable nozzles: 8 Rain Curtain nozzles for superior coverage and 4 Low Angle nozzles for reduced radius of throw and superior wind resistance with all nozzles containing Micro-Rampt for superior close-in watering. The angle of trajectory shall be 25 degrees for the Rain Curtain nozzles and 10 degrees for the low angle nozzles. The sprinkler shall come with a stainless steel adjusting screw capable of reducing the radius up to

The sprinkler shall be as manufactured by Rain Bird Corporation, Azusa, California.

<u>SPRAY HEADS</u>

1802, 1803, 1804, 1806, and 1812 Pop-up Full or Part Circle Spray Sprinkler

The sprinkler body, stem, nozzle, and screen shall be constructed of heavy-duty, ultra-violet resistant plastic. It shall have a heavy-duty stainless steel retract spring for positive pop-down and a ratcheting system for easy alignment of the pattern. The sprinkler shall have a soft elastomer pressure activated co-molded wiper seal for cleaning debris from the pop-up stem as it retracts into the case to prevent the sprinkler from sticking up and to minimize "flow-by".

The sprinkler shall have a matched precipitation rate (MPR) plastic or brass nozzle with an adjusting screw capable of regulating the radius and flow. The sprinkler shall be capable of housing protective, non-clogging filter screens or pressure compensating screens (PCS) under the nozzles. The screen shall be used in conjunction with the adjusting screw for regulating. The 6" (15 cm) and 12" (30 cm) models shall have both a side and bottom 1/2" (15/21) Female National Pipe Thread inlet (FNPT) for ease of installation.

The sprinkler shall have a Pop-Top (TM) Flush Plug pre-installed. The plug shall prevent debris from clogging the sprinkler during installation and allow for system to be flushed before nozzling. The plug shall be bright orange in color and constructed of polypropylene material.

The sprinkler shall be as manufactured by Rain Bird Corporation, Azusa, California

ELECTRIC REMOTE CONTROL VALVES

100-PGA 150-PGA 200-PGA Electric Remote Control Plastic Globe/Angle Valve With Optional PRS-D Pressure Regulating Feature

The electric remote control valve shall be a normally closed 24 VAC 50/60 Hz (cycles/second) solenoid actuated globe/angle pattern design.

The valve pressure rating shall not be less than 150 PSI (10,35) Bars.

The valve body and bonnet shall be constructed of high impact, weather resistant PVC with stainless steel screws.

The valve shall have manual open/close control (internal bleed) for manually opening and closing the valve without electrically energizing the solenoid. The valve's internal bleed shall prevent flooding of the value box.

The valve shall house a fully-encapsulated, one-piece solenoid. The solenoid shall have a captured plunger with a removable retainer for easy servicing, and a leverage handle for easy turning. This 24 VAC 50/60 Hz solenoid shall open with 19.6 VAC minimum at 150 psi (10,35 bar). At 24 VAC, average inrush current shall not exceed 0.41 amps. Average holding current shall not exceed 0.28 amps.

The valve shall have a flow control stem for accurate manual regulation and/or shut off of outlet flow. The valve must open or close in less than 1 minute at 150 PSI (10,35 bar), and less than 30 seconds at 20 PSI (1,38 bar).

The valve construction shall provide for all internal parts to be removable from the top of the valve without disturbing the valve installation. The body shall have a removable O-ringed plug for installation in either globe or angle configuration.

The value shall be as manufactured by Rain Bird Corporation, Azusa, California.

DRIP TRRIGATION COMPONENTS

- A. Rain Bird Control Zone Kits
- I. General Information
- a. Provide control zone kits manufactured by Rain Bird as indicated on construction drawings.
- filtration, and pressure regulation components sized to meet the hydraulic demands and flow requirements of the zones that they service.
- 2. Rain Bird Low Flow Control Zone Kit for dripline zones with flows from 0.2 to 5.0 GPM (0.8 to 18.9 lpm), including low flow valve (LFV) and pressure regulating filter (PRF). a. Available model numbers:
- I) XCZ-075-PRF $[\frac{3}{4}]$ " (19 mm) Low Flow value and $\frac{3}{4}$ " (19 mm) PR filter] 2) XCZ-LF-100-PRF [1" (25 mm) Low Flow value and $\frac{3}{4}$ " (19 mm) PR filter] 3) XACZ-075-PRF [3/4" (19 mm) Low Flow Anti-siphon value and 3/4" (19 mm) PR filter]
- b. Low Flow Valve (LFV) component specifications include: 1) Valve body and bonnet constructed of high impact, weather-resistant plastic,
- stainless steel and other chemical/UV resistant materials 2) Diaphragm with a double-knife seal, constructed of durable Buna-N rubber with a clog-resistant metering orifice
- 3) Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh (200 micron) solenoid filter
- 4) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations 5) Inlet pressure rating: 20 to 120 PSI (1,4 to 8,3 bar)
- 6) Female threaded inlet and outlet connections
- 7) Anti-siphon valve configuration includes listed features and incorporates atmospheric vacuum breaker with I.A.P.M.O and A.S.S.E. listing approval
- c. Pressure Regulating Filter (PRF) combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. PRF component specifications include:
- I) Compact "Y" filter body and cap configuration constructed of glass-filled, UV-resistant polypropylene, with 120 PSI (8,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 4 1/2" (11,4 cm), Length: 5 1/2" (14 cm), Width: 2" (5,1 cm)
- 2) Standard 200 mesh (75 micron) filter screen constructed of durable polyester fabric attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
- approximately 30 PSI (2,1 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure
- 4) Male threaded $\frac{3}{4}$ " (19 mm) inlet and outlet connections.
- 3. Rain Bird Medium Flow Control Zone Kit for dripline zones with flows from 3.0 to 15.0 GPM (11.4 to 56.8 lpm), including Rain Bird DV or ASVF valve and pressure regulating filter (PRF).
- a. Available model numbers:
- I) XCZ-100-PRF [I" (25 mm) DV valve and I" (25 mm) PR filter] 2) XACZ-100-PRF [1" (25 mm) Anti-siphon Valve and 1" (25 mm) PR Filter]
- b. DV Valve component specifications include: I) Valve body and bonnet constructed of high impact, weather-resistant plastic, stainless steel and other chemical/UV resistant materials 2) Diaphragm with a double-knife seal, constructed of durable Buna-N rubber with a
- clog-resistant metering orifice
- 3) Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh (200 micron) solenoid filter
- 4) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations
- 5) Inlet pressure rating: 20 to 120 PSI (1.4 to 8.3 bar)
- 6) Female threaded inlet and outlet connections 7) Anti-siphon valve configuration includes listed features and incorporates atmospheric vacuum breaker with I.A.P.M.O and A.S.S.E. listing approval
- c. Pressure Regulating Filter (PRF) combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system.
- PRF component specifications include: I) Compact "Y" filter body and cap configuration constructed of glass-filled, UV-resistant polypropylene, with 120 PSI (8,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 4 1/2" (11,4 cm), Length: 5 1/2" (14 cm),
- Width: 2" (5,1 cm) 2) Standard 200 mesh (75 micron) filter screen constructed of durable polyester fabric attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element. 3) Normally-open pressure regulating device with preset outlet pressure of
- approximately 40 PSI (2,8 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure. 4) Male threaded I" (25 mm) inlet and outlet connections.

- 4. Rain Bird Medium Flow Commercial Control Zone Kit for dripline zones with flows from 3.0 to 20.0 GPM (II.4 to 75.7 lpm), including PVC ball valve, Rain Bird PESB valve, and Rain Bird pressure regulating quick-check basket filter.
- a. Available model numbers: I) XCZ-100-B-COM [1" (25 mm) PVC ball valve, 1" (25 mm) Rain Bird PESB valve, and I" (25 mm) PRB-QKCHK pressure regulating basket filter]
- b. PESB valve assembly component specifications include:
- 1) I" (25 mm) PVC full-port ball valve with female threaded inlet and outlet connections 2) PESB valve body and bonnet constructed of durable glass-filled nylon, stainless
- steel and other chemical/UV resistant materials 3) Diaphragm constructed of a durable Buna-N rubber material reinforced with
- 4) One-piece solenoid with captured plunger and 90 mesh (200 micron) solenoid
- 5) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations
- 6) Inlet pressure rating: 20 to 200 PSI (1,4 to 13,8 bar) 7) Female threaded inlet and outlet connections
- c. Pressure Regulating Quick Check Basket Filter combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. Pressure regulating basket filter component specifications include:

- b. Control zone kit assemblies for dripline irrigation zones must include control valve,
- 3) Normally-open pressure regulating device with preset outlet pressure of

- I) Basket style body and jar-top cap constructed of heavy-duty glass-filled, UV-resistant polypropylene, with 150 PSI (10,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 6 1/2" (16,5 cm), Length: 6 1/2" (16,5 cm), Width: 3 1/2" (8,9 cm)
- 2) Indicator incorporated into filter cap that changes color from green to red during operation when the filter element requires cleaning.
- 3) Standard 200 mesh (75 micron) filter screen constructed of stainless steel attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
- 4) Normally-open in-line pressure regulating device, constructed of durable, UV resistant non-corrosive material able to accommodate an inlet pressure rating of not less than 150 PSI (10,3 bar), with preset outlet pressure of approximately 40 PSI (2,8 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure.
- 5) Male threaded I" (25 mm) inlet and outlet connections.
- B. Rain Bird XF Series Dripline Components I. General Information
- a. Provide flexible dual-layered pressure-compensating inline XF Series Dripline manufactured by Rain Bird, with emitter spacing and dripline row spacing as indicated on construction drawings.
- Provide insert or compression fittings manufactured by Rain Bird that are compatible with inline emitter tubing as indicated on construction drawings.
- 2. Rain Bird XFD On-Surface Dripline with pressure-compensating inline emitters. a. Available Rain Bird XFD On-Surface Dripline model numbers for POTABLE water systems; brown colored dripline tubing with emitter flow rates and spacing as shown:
 - I) Rain Bird XFD-06-12; 0.6 GPH (2,3 lph) emitters spaced 12" (30,5 cm) on-center 2) Rain Bird XFD-06-18; 0.6 GPH (2,3 lph) emitters spaced 18" (45,7 cm) on-center
 - 3) Rain Bird XFD-06-24; 0.6 GPH (2,3 lph) emitters spaced 24" (61 cm) on-center 4) Rain Bird XFD-09-12; 0.9 GPH (3,4 lph) emitters spaced 12" (30,5 cm) on-center 5) 'Rain Bird XFD-09-18; 0.9 GPH (3,4 lph) emitters spaced 18" (45,7 cm) on-center
 - 6) Rain Bird XFD-09-24; 0.9 GPH (3,4 lph) emitters spaced 24" (61 cm) on-center Available Rain Bird XFDP On-Surface Dripline model numbers for NON-POTABLE water
- systems; purple colored dripline tubing with emitter flow rates and spacing as shown: I) Rain Bird XFDP-06-12; 0.6 GPH (2,3 lph) emitters spaced 12" (30,5 cm) on-center
 - 2) Rain Bird XFDP-06-18; 0.6 GPH (2,3 lph) emitters spaced 18" (45,7 cm) on-center
 - 3) Rain Bird XFDP-06-24; 0.6 GPH (2,3 lph) emitters spaced 24" (61 cm) on-center 4) Rain Bird XFDP-09-12; 0.9 GPH (3,4 lph) emitters spaced 12" (30,5 cm) on-center
 - 5) Rain Bird XFDP-09-18; 0.9 GPH (3,4 lph) emitters spaced 18" (45,7 cm) on-center 6) Rain Bird XFDP-09-24; 0.9 GPH (3,4 lph) emitters spaced 24" (61 cm) on-center
 - c. Dripline tubing material specifications and features include: I) XFD tubing; brown in color, conforming to an outside diameter (O.D.) of 0.634 inches (16 mm) and an inside diameter (1.D.) of 0.536 inches (13,6 mm) and wall thickness of 0.049 inches (1,2 mm)
 - 2) XFDP tubing; purple in color, conforming to an outside diameter (O.D.) of 0.634 inches (16 mm) and an inside diameter (1.D.) of 0.536 inches (13,6 mm) and wall thickness of 0.049 inches (1,2 mm)
 - 3) Factory installed, pressure-compensating, inline emitters welded to the inner circumference of the polyethylene tubing at spacing specified by model number 4) Inline emitters designed to pressure-compensate by lengthening the emitter's turbulent flow path (Rain Bird patent pending)
 - 5) Consistent flow rate from each installed inline emitter when emitter inlet pressure is supplied between recommended operating range of 8.5 to 60 PSI (0.7 to 4.1 bar)
 - 6) Required filtration for XF Series dripline tubing and emitters is 120 mesh (125

PART 3 - EXECUTION

3.01 INSPECTIONS AND REVIEWS A. Pre-construction Site Inspection

- I. Verify construction site conditions and note irregularities affecting work of this section. Report irregularities in writing to Owner's Representative prior to beginning work. Commencement of work implies acceptance of existing site conditions.
- B. Utility Locates ("Call Before You Diq")
- I. Arrange and coordinate Utility Locates with local authorities prior to construction.
- 2. Repair underground utilities that are damaged during construction. Make repairs at no additional cost to contract price.
- 3.02DRIPLINE LAYOUT OF WORK
- A. Stake out dripline irrigation system. Items staked include manifold/header pipe and tubing, sleeves, control zone assemblies, flush valves, air relief valves, and check valves.
- B. Dripline Irrigation System Layout Review: Dripline irrigation system layout review will occur after staking has been completed. Notify Owner's Representative one week in advance of review. Modifications will be identified by Owner's Representative at this review. 3.03DRIPLINE EXCAVATION, TRENCHING, AND BACKFILL
- A. Excavate and install pipes at minimum cover indicated in drawings or specifications. Excavate trenches at appropriate width for connections and fittings.
- Minimum cover for dripline components (distance from top of pipe to finish grade): I. Buried PVC manifold and supply header pipe to dripline grid layouts: 12" (30,5 cm) to top of pipe.
- 2. Buried dripline lateral pipe downstream PVC manifold and supply header pipe: 4" (10 cm) to top of pipe
- On-grade dripline lateral pipe downstream PVC manifold and supply header pipe: Secure to finish grade with approved tubing stakes. Install and test prior to installation of landscape fabric and mulch.
- C. Backfill only after buried lines have been reviewed, tested, and approved.
- D. Excavated material is generally satisfactory for backfill. Use backfill free from rubbish, vegetable matter, frozen materials, and stones larger than 2" (50 mm) in maximum diameter. Remove material not suitable for backfill. Use backfill free of sharp objects next to pipe. E. Dress backfilled areas to original grade. Incorporate excess backfill into existing site
- grades. Dispose of excess backfill off site Contact Owner's Representative for trench depth adjustments where utilities conflict with irrigation trenching and pipe work.

3.04ASSEMBLING PIPE AND FITTINGS

A. General:

- I. Keep pipe free from dirt and debris. Cut pipe ends square, debur and clean as recommended by pipe manufacturer. Keep ends of assembled pipe capped. Remove caps only when necessary to continue
- assembly.
- B. PVC Pipe and Fittings:
- I. Use only strap-type friction wrenches for threaded plastic pipe.
- 2. PVC Solvent Weld Pipe and Fittings:
- a. Use appropriate primer and solvent cement. Join pipe in manner recommended by pipe and fitting manufacturers and in accordance with accepted industry practices. b. Cure for thirty (30) minutes before handling and twenty-four (24) hours before pressurizing or installing with vibratory plow.
- Snake pipe from side to side within trench.
- 3. PVC Threaded Connections:
- a. Use only factory-formed threads. Field-cut threads are not permitted.
- b. Apply thread sealant in manner recommended by component, pipe and sealant manufacturers and in accordance with accepted industry practices.
- C. Dripline Tubing and Fittings:
- Use only Rain Bird XF-Series Insert Fittings or Rain Bird Easy Fit Compression Fittings for Rain Bird XF-Series dripline tubing connections or transitions as recommended by the Manufacturer's representative for the specific site and system conditions. 2. Dripline Insert Fittings:
- a. Install dripline tubing and fittings in manner recommended by manufacturer and in accordance with accepted industry practices.
- 3. Dripline Compression Fittings:
- a. Install dripline tubing and fittings in manner recommended by manufacturer and in accordance with accepted industry practices. 3.05 INSTALLATION OF DRIPLINE IRRIGATION COMPONENTS

A. Control Zone Kit Assembly:

installation.

personnel.

3.09CLEANUP

soils.

Valve Box Specifications

3.08 MAINTENANCE

- I. Flush mainline pipe before installing Control Zone Kit assembly.
- 2. Locate where shown on drawings. Connect control wires to remote control valve wires using specified wire connectors and waterproof sealant. Provide connectors and sealant per manufacturer's recommendations.
- Install a maximum of four (4) Low Flow or Medium Flow Control Zone Kits per standard rectangular valve box. Install a maximum of one (1) Medium Flow Commercial Control Zone Kits per standard rectangular valve box. Install a maximum of one High Flow Commercial Control Zone Kits per jumbo rectangular valve box.
 - a. Locate valve boxes at least I" (30,5 cm) from, and align with, nearby walls or edges of paved areas.
 - b. Group Control Zone Kit assemblies together where practical. Align grouped valve
- boxes in uniform patterns. Allow at least 12" (30,5 cm) between valve boxes. c. Brand controller letter and station numbers on valve box lid in 2" (50 mm) high letters. B. Lateral Piping and Dripline Tubing:
- I. Install lateral piping and dripline tubing at locations and in grid patterns as indicated on drawings and installation details, and in strict accordance with manufacturer recommendations 2. Thoroughly flush PVC lateral piping, supply headers, and dripline tubing immediately upon

directed on drawings and installation details.

with adjacent walls or edges of paved areas.

3.06PROJECT RECORD (AS-BUILT) DRAWINGS

components enclosed within valve box.

3.07 WINTERIZATION AND SPRING START-UP

damage after landscape maintenance operation.

The body shall have two openings molded into the sides.

VB-6RND SERIES 6" Round Valve Boxes

The value box shall have corrugated sides.

VB-IORND IOA Round Valve Boxes

chemical action of soils.

valve box.

deep installation.

or other means of identification.

The locking bolt, washer, and clip shall be made of stainless steel.

NOT TO SCALE

accurate "record drawings" information is recorded.







ALTA / NSPS LAND TITLE SURVEY

CENTER OF SEC 15, T15N



- 10. ADJOINING DEEDS OF RECORD WERE NOT PROVIDED TO SURVEYOR BY CLIENT AS SPECIFIED IN SEC. 4(C)(i) OF THE 2021 ALTA/NSPS LAND TITLE SURVEY REQUIREMENTS.
- 11. NOTE TO THE CLIENT, INSURER, AND LENDER WITH REGARD TO TABLE A, ITEM 11, SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.IV. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAYBE NECESSARY.
- 12. BASIS OF BEARING: WEST 1/4 CORNER TO EAST 1/4 CORNER = S88°35'33"E PER TITLE DESCRIPTION.
- 13. MONUMENTATION FOR SUBJECT PARCEL AND RECORDS FOR ADJACENT PARCEL / RIGHT OF WAYS SUPPORT A HISTORICAL EAST-WEST 1/4 LINE BEING LOCATED ALONG A STRAIGHT LINE INTERSECTION OF THE EAST AND WEST 1/4 CORNERS OF SECTION 15. MONUMENTED AND RECORDED CENTER OF SECTION 15 IS LOCATED 10.8'± NORTH OF THE HISTORICAL 1/4 LINE. FURTHER RESEARCH RECOMMENDED.



23045- Consumers CU Big Rapids

Rendering



23045- Consumers CU Big Rapids

Rendering



23045- Consumers CU Big Rapids

Rendering









naz 321 hard

A201





				118'-0"



22068- Consumers Remote Teller









+0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0. +0.0 +0. +0.0 +0.0 +0.0 +0.0 ⁺0.0 ⁺0.⁻ +0.0 +0.4 +0,1 +0.4 +0.1 +0.4 +0. +0.1 +0,1 +0.1 +0.1 +0,1 + +0,0 ⁺ø.0 +0.0 +0.0 +0 to,o to +0.0 +0 0.0 0.0 +0.0 +0.0 ⁺0.0 ⁺0.0 +0.0 +0.0 ⁺0,0 ⁺0.0 +0.0 +0.0 ⁺0.0 ⁺0.0 +0.0 +0.0 +0,0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0

MH-A

	\sim	
\sim	()	
0	/5	

Schedul	е										
Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	ΑΑ		2	Lithonia Lighting	DSX1 LED P3 40K 70CRI TFTM	D-Series Size 1 Area Luminaire P3 Performance Package 4000K CCT 70 CRI Forward Throw	1	14065	1	102.17	Max: 12672cd
• □	BB		1	Lithonia Lighting	DSX1 LED P3 40K 70CRI TFTM	D-Series Size 1 Area Luminaire P3 Performance Package 4000K CCT 70 CRI Forward Throw	1	14065	1	204.34	Max: 12672cd
	CC		5	Lithonia Lighting	DSX1 LED P2 40K 70CRI T2M	D-Series Size 1 Area Luminaire P2 Performance Package 4000K CCT 70 CRI Type 2 Medium	1	9651	1	67.79	Max: 8788cd
	DD		2	Lithonia Lighting	ARC1 LED P1 40K	ARC1 LED WITH P1 - PERFORMANCE PACKAGE, 4000K	1	1454	1	10.8751	Max: 949cd

																															"s
	<u> </u>	\frown	~~~		\sim	\sim	\frown			~~~~					\frown	~~~	\checkmark	~~~		~~~				<u> </u>	<u> </u>		ф				
⁺ 0.0	+0.0	⁺ 0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.1	+0.1 0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	+0.1	+0.2	+0.2 0.25	+0.2	+0.2	⁺ 0.1	+0.1	+ 0.1	0.10.1	⁺ 0.1	⁺ 0.1	+0.1	+0.1	10:1	+0.1	⁺ 0.1	+0.1	⁺ 0.1	⁺ 0.0	⁺ 0.0	+0.0
⁺ 0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.1	[†] 0.1	+0.2	⁺ 0.2	+ <mark>0.2</mark>	+0.2 25	0.2	+0.4	+0.3	0.25 +0.3	+0.2	+0.2	+0.2 0.25	+0.2	0.2 0.25	+0.2	+0.2		+0.2	+0.2	+0.1	⁺ 0.1	⁺ 0.1	-0.1 0.1	- [±] 0.1	+0.1
⁺ 0.0	+0.0	+0.0	+0.0	+0.1	+0.1	+0.2	⁺ 0.2	0.25 ⁺ 0.3	+0.3	+0. 68 %5	+0.4	+0.4 0.5	+0.6	⁻ ⁺ 0.7	0.5 ⁺ 0.6	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	0.25 ⁺ 0.3	+0.3	⁺ 0.3 0.	25+0.2	+0.2	+0.2	+0.1
+0.0	⁺ 0.0	+0.0	+0.1	+0.1	+0.2	⊕_25 0.3	^{\$} 0.4	+0.5	+0.5	+0.6	+0.6	⁺ 0.6	⁺ 0.7	+0.7	+0.7	+0.6	+0.7	+0.6	+0.6	+0.7	+0.7	+0.7	+0.7	0.6	.5 ⁺ 0.5	+0.5	+0.4	+0.4	+0.3	0.25 0.3	+0.2
⁺ 0.0	+0.0	+0.1	+0.1	0.1 0.1	+0.2	+0.4	+0.5	0.5 ⁺ 0.6	+0.6	+0.7	+0.7	+0.8	+0.8	+0.8	+0.8	+0.8	+0.7	+0.7	+0.7	⁺ 0.8	⁺ 0.9	+0.9	⁺ 0.9	⁺ 0.8	⁺ 0.8	+0.7	+0.6	[†] 0.5	+0.4	+0.3	+0.3
+0.0	eus0.1	+0.1	[†] 0.1	+0.1	+ <mark>0.2</mark> 0.25	+0.4	⁺ 0.6	⁺ 0.6	+0.7	+0.7	⁺ 0.6	⁺ 0.7	⁺ 0.7	+0.7	+0.7	+0.7	⁺ 0.7	°0.7	+0.8	+0.9	⁺ 1.0	+1.0	+1.0	+0.9	+0.8	⁺ 0.8	+0.7	+0.5	⁺ 0.4	⁺ 0.3	+0.3
+ 0.0	+0.1	+0.1	0.1 ⁺ 0.1)_+	⁺ 0.3	0.5 +0.5	+0.6	⁺ 0.7	0.7	+0.6	⁺ 0.50.5	+0.5	+0.5	0 [!] ð.5	+0.5	+0.5 0.5	+0.5	+0.6	+0.7	⁺ 0.9	1.0	⁺ 1.0	+0.9	+0.9	+0.8	+0.7	+ 0.5	⁺ 0.5	+0.4	+0.3	0.25
⁺ 0.1	⁺ 0.1	+0.1	+0.1	+0.2	+0.3	+0.6	⁺ 0.7	⁺ 0.7	⁺ 0.6	+0.5	⁺ 0.4	⁺ 0.3	⁺ 0.3	⁺ 0.3	+0.3	⁺ 0.3	+0.4	+0.4	.5 ⁺ 0.6	⁺ 0.8	⁺ 0.9	⁺ 0.8	+0,7	+0.8	+0.7	*0.5	⁺ 0.3	+0.3	0.7652	+0.2	+0.1
⁺ 0.1	⁺ 0.1	+0.1) ⁺ 0.1	+0.2	0.25 ⁺ 0.3	€0.5	+0.7	⁺ 0.7	+0.6	0.5 0.4	+0.3	+0.2	+0.2	0.25 ⁺ 0.2	+0.2	+ 0.25	+0.3	+0.3	+0.5	+0.7	⁺ 0.8	+0.7	+0.6	+0.6	0.5 ⁺ 0.4	+0.3 0	.250.2	+0.1	⁺ 0.1	+0.1	J.1 ⁺ 0.1
⁺ 0.1	+0.1	/0.1 +0.1	+0.2	+0.3	+0.4	+0.6	⁺ 0.8	⁺ 0.8	⁺ 0.6	+0.4	+0.3).25 ⁺ 0.2	⁺ 0.2	+0.2	+0.2	+0.2	[†] 0.2	+0.3	0.5 ⁺ 0.6	+0.7	⁺ 0.8	⁺ 0.7	+0.6	⁺ 0.4	+0.3	+0.2	⁺ 0.1	0. ⁺ 0.1	1 ⁺ 0.1	⁺ 0.1	⁺ 0.0
⁺ 0.1	+0.1	+0.1	+0.2	0.25	+0/4	+ <mark>0.8</mark>	+0.8	⁺ 0.8	+0.7	+0.5	+0.3	+0.2	+0.2	+0.2	+0.2	+0.2	+0.3	+0.4	+0.8	+0.8	+0.9	+0.7	+0.5		0.25 ⁺ 0.2	+0.1	0.1 ⁺ 0.1	⁺ 0.1	⁺ 0.1	+0.0	+0.0
+0.1	0.1 +0.1	+0.2	+0.2	+0.4	+0.5	+0.8	+0.8	⁺ 0.8	+0.7	0.5 +0.5	+0.4	+0.3	25 +0.2	+0.2	+0.2	+0.2	25 +0.3	+0.5	□ +0.8	⁺ 0.8	⁺ 0.9	+0.7	+0.5	+0.3	+0.2	[†] 0.1	\ ⁺ 0.1	⁺ 0.1	+0.0	+0.0	+0.0
+0/1	+0.1	+0.2	+0.2	+0.3	+04	+0.6	+08	⁺ 0.8	+0.7	+0.6	105	+0.4	+0.3	CB #4	0.25	+0.3	+0.4	0.5 +0.4	+0.7	⁺ 0.9	⁺ 0.9	⁺ 0.7	+0.5	+0.3 0	or ⁺ 0.2	¹ 0 1	to 1	⁺ 0 1	+0.0	+0.0	+0.0
+00.11	+0.1	+0.2	0.25	+0.3	+0.4	.5	+0.8	+ 0.8	+	•••••	0.5	+0.5	+0.4	+0.3	+0.3	+0.4	+	+	+07	+0.0	+0 Q	+ 0 7	+0.5	+0.3	+	0.1 B #3 ⁺ 0 1	+0.1	+0.1	+0.0	+0.0	+0.0
+0.4	+0.1	+0.2	+0.5	0.3	+0.4	+0.7	+0.0	+0.0	+0.0	0.0		+0.0	0.4	+0.4	+0.4	0.4	+05	.5	+0.0	+4.0	+0.9	+0.0	+0.0	+0.4		+0.4		+0.1	+0.4	+0.0	+0.0
+	0.2 +	0.2	+	+	+/	0.7	0.8	0.8 +	+	+	+	U.0 +	+	+	0.4	+	¢.0	+	0.9 +	1.0	0.9 +	0.8 +	0.6	0.4	0.25	0.1 +	0.1	0.1 +	+	+	+
0.1 0.1 +	+	+ 0.3	0.3 +	+	0.5 +	0.7	+	0.8	0.8	+	0.7 +	0.6 +	0.6 +	+	0.5 +	0.6 +	0. <i>1</i> +	+	0.9	1.0	1.0	0.8	0.6	0.4	+	+	0.1	0.1 +	0.1 +	0.0	0.0
0.1 +	0.2	0.3	+	0.4	0.5	0.7	0.8	0.9	0.9	0.8	0.8	0.8 +	0.7	0.7	0.7	0.8	0.9	1.0 1	1.1	1.1	+	0.9		0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.0
'0.1 +	0.2	0.250.3	'0.4 +	0.5	`0.6	0.8	0.9	0.9	0.9	'0.9 +	0.9	0.8	'0.8	0.8 P	0.9	1.1 P	1.2	7.1	1.2	'1.1 +	1.0 1	'0.9 +	0.7	0.5	0.3	0.25'0.2	0.10.1	'0.1 +	`0.1 ⊥	'0.0 ±	'0.0 ±
0011	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.1	1.0	0.9	0.9	0.9	0.9	'1.0	1.1	1.4	1.5	'1.4	×.3	1.2	1.1	0.9	0.7	0.6	0.4	0.2	0.1	'0.1	'0.1	0.0	0.0
0.1	⁹ ⁺ 0.2	⁺ 0.3 0.25	0.4	0.5	⁺ 0.8	1.1	1.3	⁺ 1.3	⁺ 1.1	11.0	⁺ 0.9	⁺ 0.9	1.0	⁺ 1.2	+1. 4	⁺ 1.9	⁺ 1.9	⁺ 1.6	⁻ 1.4	⁺ 1.2	⁺ 1.1	⁺ 0.9	⁺ 0.8	⁺ 0.6	+0.4 0.5	+0.2 0.25	0.1	⁺ 0.1 0.1	⁺ 0.1	⁺ 0.0	⁺ 0.0
+0.1 0	⁺ 0.2	+0.3	+0.4	⁴ 0,5	⁺ 0.7	+1.1	1.3	+1.4	⁺ 1.2	71.0	+0.9	⁺ 0.9	10.9	+1.3	⁺ 1.8	2.2	2.1	⁺ 1.7	1.4	⁺ 1.2	+1.1	1.0	-*0.9	⁺ 0.7	⁺ 0\5	⁺ 0.3	0.2	⁺ 0.1	⁺ 0.1	⁺ 0.0	⁺ 0.0
+0.0	⁺ 0.1	0.1	+0.2 0.1	+0.3	+0.4	0.8	⁺ 1.3	⁺ 1.5	-+1.2	0.9	0.2	+ 0.5 0.2	+0.5	+0.7	+1.4		- +1.7	⁺ 1.4	⁺ 1.2	11.0	⁺ 0.9	+0.9	⁺ 0.9	+0.8	+0.6	⁺ 0.3 \ B #2	0.2	+0.1	⁺ 0.1	⁺ 0.1	+0.0
⁺ 0.0	+0.0) ⁺ 0.0	+0.1	+0.1	⁺ 0.2 0.25	+0.5	+1.1	+1.9	⁺ 1.9	+1.2	0 !' 8 50	⁺ 0.0	⁺ 0.0 [[]			1 [±] 1.3	+1.5	+1.2	⁺ 1.1	⁺ 1.0	⁺ 0.9	+1.0 1	1.0	+0.9	+0.7	0.5 ⁺ 0.4	0.3	+0.2	0.1	+0.0	+0.0
⁺ 0.0	+0.0	+0.0	+0.1	+0.1 0.1	+0.2	+0.3	+0.7	+1.2	+1.3	1+ 0.5	0. ⁰ .0	+0.0	+0.0		Q.5	+0.9	+1.2	+1.1	+1.0 1	⁺ 1.0	+1.0	. + 1.1	+1.1	+1.1	+0.9	+0.5	+0.4	0.2	+0.1	+0.1	+0.0
⁺ 0.0	+0.0	+0.0	+0.1	+0.1	t0.1	0.0	+0.0	⁺ 0.0	0.1 ⁺ 0.0	0.0	+0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	(a) ⁺ 0.3 0	.5 ⁺ 0.7	+1.0	⁺ 1.0	⁺ 1.0	⁺ 1.0	+1.0	+1.1	+1.1	⁺ 1.0	⁺ 0.9 □	0.4 0.5	+0.4	0.2052	⁺ 0.1 0.1	+0.1	+0.0
⁺ 0.0	+0.0	0:0 ⁺	+0.0	+0.0	⁺ 0.0 ⊑	t .o	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0	0.3	+0.7	0.9	+0.9	+0.9	⁺ 0.9	⁺ 1.0 \	+1.0	* 1.1	+1.1	+0.9	+0.6	+0.4	0.2	+0.1	+0.1	+0.0
⁺ 0.0	+0.0	+0.0) ⁺ 0.0	+0.0	⁺ 0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.3	+0.7	1.0	+1.0	⁺ 0.9	+0.9	+0.9	+1.0	±1.0	1 +1.0	+0.7	+0.4 0.5	0.3 0.25	⁺ 0.2	⁺ 0.1	⁺ 0.1	+0.0
⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0.1	0.4 0.25	+ <mark>0.9</mark>	+1.2	+1.0	⁺ 1.0	⁺ 0.8	⁺ 0.8	⁺ 0.8	+0.9	+0.8	+0.7	+0.4	+0.2	0.1	0.1 0.1	+0.1	+0.0
⁺ 0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	0.5	1.2	+1.2	+1.1	+0.9	⁺ 0.8	⁺ 0.7	+0.7	+0.8	+0.7	+0.6	+0.4	0.2	0.1	⁺ 0.1	+0.0	+0.0
⁺ 0.0	⁺ 0.0	+0,0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0,0	9. 6	+1.1	+1.1	+1.0	+0.9	+0.7	⁺ 0.6	+0.6	+0.6	+0.6	+0.5 CI	+0.2 +0.3 B#1	5 0.1	δ σι 1	⁺ 0.1	+0.0	+0.0
+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	t 0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0	0.25 -+0.\$ 0.\$	+ <mark>0.7</mark>	*0.9	+0.8	*0.7	+0.6	⁺ 0.6	+0.5	+ 0.5 0.5	+ 0.5	+ 4	+0.2	⁺ 0.1	⁺ 0.1	+0.1	⁺ 0.0	+0.0
+0.0	⁺ 0.0	0.0	⁺ 0.0	+0.0	+0.0	+0.0	+	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.2	0.40.5	+0.6	* 0. 6	+0.6	+0.5	+ 0.5 0.5	+0.5	+0.5	+0.4	+0.3	0.25 ⁺ 0.2	⁺ 0.1 0.1	⁺ 0.1	+0.0	⁺ 0.0	+0.0
*0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	0.0	+0.0	0.1	0.25.3	+0.5	+0.5	0.5	+0.5	⁺ 0.4	+0.4	+0.4	+0.3	+0.3	+0.2	0.1	0.1	⁺ 0.0	⁺ 0.0	+0.0
+0.0	+0.0	+0.0	+0.0	+0.0	+ 0.0	+ 0.0	+ 0.0	0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.1	0.2	+03	+0.4	+0.4	+0.4	⁺ 0.4	+0.3	+0.3	⁺ 0.3	+0.2	+0.2	+0.1	+0.1	⁺ 0.0	⁺ 0.0	+0.0
⁺ 0.0	+0.0) ⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	⁺ 0.0	+0.1	0.1	0.25	+ 0.3	+0.3 ().25 ^{0.3}	+0.3	+ 0.35	+0.2	+0.2	+0.2	⁺ 0.1	0.1 ₊ 0.1	⁺ 0.1	+0.0	+0.0	+0.0
⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	⁺ 0.0	+0.0	0.1	+0.1	+0.2	+0.2	+0.2	t0.2	+0.2	+0.2	⁺ 0.1	+0.1	⁺ 0.1	+0.1	+0.0	+0.0	+0.0	+0.0
+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+		+ 0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.1	0.1 ⁺ 0.1	+0.1	+ _{0.} q.1	⁺ 0.1	+0.1	+0.1	+0.1	0.1 ⁺ 0.1	+0.1	+0.1	+0.0	⁺ 0.0	⁺ 0.0	+0.0
\sim	5				<u> </u>	BM *	▲ Î																								
							3" PL																								
	Polar	Plot																													
		- K																I													
	4																	0													
Ma	x: 1267	<u>44</u> '2cd																"55 MPH"													
		BX	1																												
	4																														
		<u> <u> </u></u>	5																												
Ma	x: 1267	200	_																												

"50

MPH"





CITY OF BIG RAPIDS DEPARTMENT OF COMMUNITY DEVELOPMENT

SITE PLAN REVIEW APPLICATION

APPLICANT NAME: Matt Heidloff LLA GMBae for Mark Klumpp, Special Project Coordinator with

APPLICANT ADDRESS: Mecosta Osceola ISD 15760 190th Ave, Big Rapids, MI 49307

APPLICANT PHONE NUMBER: 231.598.9919 I Email

Spcklumpp@moisd.org

PROJECT TITLE:<u>New Greenhouse</u>

PROJECT ADDRESS/LOCATION: 504 S. Bronson Ave, Big Rapids, MI 49307

SUBJECT PROPERTY OWNER: Mecosta Osceola Intermediate School District

LEGAL DESCRIPTION OF PROPERTY (attach separate sheet)

SUBJECT PROPERTY ZONNG: <u>R-1</u>______SITE SIZE (ACRES): <u>4.75 Acres</u>

LIST ALL REQUIRED STATE AND FEDERAL PERMITS ON SEPARATE SHEET

In compliance with Section 9.4 of the City of Big Rapids Zoning Ordinance, twelve copies of a complete proposed site plan must be submitted to the Department of Community Development, a minimum of twenty one days prior to the Planning Commission hearing date. Failure to submit complete plans, a completed application form and filing fee may result in the site plan review hearing being delayed.

SITE PLAN INFORMATION REQUIREMENTS

TWELVE COPIES (12) of the proposed site plan, drawn on 24" x 36" paper

SCALE OF 1" = 20' for sites up to three acres and 1" = 100' for sites over three acres

LEGEND including north arrow, scale, date of preparation and name, address and telephone number of individual or firm preparing the plan

SEAL of professional architect, engineer or surveyor preparing the plan

LOCATION MAP indicating relationship of the site to surrounding land use

LOT LINES together with dimensions, angles and size correlated with the legal description, which is tied to existing monumentation

TOPOGRAPHY of the site in two foot contour intervals

NATURAL FEATURES such as wood lots, streams, rivers, lakes, wetlands, unstable soils and similar items
MAN MADE FEATURES within 100 feet of the site

BUILDING SIZE, height, finish floor and grade line elevations, yard setbacks and square footage. Front, side and rear elevations drawings of proposed structures.

FLOOR PLAN of structures showing existing and proposed uses (used to verify gross vs. usable floor areas and principal vs. accessory uses).

STREETS, driveways, sidewalks and other vehicle or pedestrian circulation features upon and adjacent to the site shall be shown

PARKING SPACES, location, size and number, service lanes, delivery and loading areas

CROSS SECTIONS illustrating construction of drives and parking areas

LANDSCAPING, together with open spaces, screening, fences, walls and proposed alterations of topography or other natural features.

SERVICE DEMANDS from the community to support proposed operations on the site

EARTH CHANGE plans required by State law

SITE LIGHTING including location, intensity and orientation

SURFACE WATER DRAINAGE

UTILITY LOCATION and size for sanitary sewer, water, storm sewer, natural gas, electricity, telephone, coaxial cable, fiber optic, etc.

FIRE LANES

OUTDOOR STORAGE

TRASH RECEPTACLES

HAZARDOUS MATERIAL storage facilities, including type, quantity, location and secondary containment provisions

OTHER INFORMATION as required by the Plan Board

DIGITAL COPY submitted in anAutoCAD compatible format

SITE PLAN REVIEW FEE \$200

I have read the requirements of submittal and review of a site plan by the City of Big Rapids Planning Commission and attest that the provided site plan is complete:

	eSigne	d via SeamlessI	Docs.com		
0	Matthe	v Evan	<u> Aleid</u>	off	
	Key: 97bcd	liant 0ec233e03494cc	Cian 53d2c7bb54	ature	

08-30-2023	
Date	and a state of the

STAFF REPORT TO THE PLANNING COMMISSION

Planning Commission
Michelle Stenger, Community Development Director
Site Plan Review for MOISD expansion at 504 S Bronson Ave
September 20, 2023

Introduction

Applicant, MOISD, is applying for a Site Plan Review for a two-phase Agricultural Education Center at 504 S Bronson Avenue (PIN 17-14-200-014, 17-14-200-019). The property is currently zoned R-1, Single Family Residential. The first phase of the development will be for the construction of the greenhouse, detention pond and parking area. The second phase of the development (which should happen shortly after phase one) is a barn, classroom, orchard, drives, garden area, pastures, and bee farm. Public Schools are listed as permitted uses within the R-1 district with the requirement that all such uses occupy a site of at least one acre and be located at least 30 feet from all property lines. The City recently changed the Code of Ordinances to allow for the school to have animals on the property.

This property is located on the far east side of the City and is located across Bronson from the MOISD's current campus. See the attachments for maps and images of the property. There are technically two different pieces of property that will be utilized for the development of the program. The southern piece, which is where the bus garage is located is 6.57 acres. The northern piece is 4.86 acres, making the project just over 11 acres. During the

Site Plan Review Process and Procedure

The Site Plan Review Application was received by the Community Development Department on August 30, 2023, and was deemed in compliance with Section 9.4. of the Zoning Ordinance which stipulates required Site Plan Review application materials. As required by Ordinance, Site Plan Reviews must go through a public hearing process. Notice was posted in the Big Rapids Pioneer on September 2, 2023, and sent to all property owners within 300 feet of the site.

The Site Plans were shared with the Fire Marshal, the Public Works Department's Engineering staff, and the Zoning Administrator for their review.

<u>Public Safety</u> – Fire Marshal Jeff Hull reviewed the site plans and found no issues with the Site Plans and preliminary drawings.

Public Works -

<u>Zoning</u> – Plans were reviewed by the Community Development Director as to their standings as regards the Zoning Ordinance. This review found that the plans are in compliance with the Ordinance as regards setbacks, parking spaces. A lighting schematic was not provided, although the electrical plan does show some outside light locations. The zoning of the property does not require much landscaping; however Section 8.6 of the ordinance would still apply for the public right of way and there is currently no landscaping indicated.

Criteria for Review of Site Plan Review Applications

Section 9.6 of the Zoning Ordinance sets criteria for reviewing Site Plan Review applications:

9.6:1 That there is a proper relationship between the existing streets and highways within the vicinity and proposed deceleration lanes, service drives, entrance and exit driveways and parking areas to ensure the safety and convenience of pedestrian and vehicular movement. With respect to vehicular and pedestrian circulation, including walkways, interior drives, and parking, the site shall be developed so that access points, general interior traffic circulation, pedestrian circulation, and parking areas are safe and convenient and, insofar as practicable, do not detract from the design of the proposed buildings and existing structures on neighboring properties.

Staff Response: The site is laid out a manner that will allow for safe vehicular and pedestrian traffic. The applicant is also adding a sidewalk to the road that will then allow safe connection with the existing school. The applicant is also showing a connection to the existing gravel area around the bus garage that will allow for larger farm equipment to be moved throughout the site without using the main parking and pedestrian area. The applicant is also showing a connection to the City's ballfield access on the north end of the property but have not yet approached the City about the use or installation of a gate. This would also allow another entrance for the site that is not mixed with the parking and pedestrian entrance.

9.6:2 All elements of the site plan shall be harmoniously and efficiently organized in relation to the topography, the size and type of the lot, the character of adjoining property, and the type and size of buildings. The site shall be developed so as not to impede the normal and orderly development or improvement of surrounding property for uses permitted in this Ordinance.

Staff Response: The applicant has organized the property in such a way that the existing neighboring properties will have little impact to their houses. The applicant is planting trees along the north side and adding a 6-foot fence. Along the south property line there is little change to the existing bus garage area except for the addition of a pasture.

9.6:3 That as many natural features of the landscape shall be retained as possible where they furnish a barrier or buffer between the project and adjoining properties used for dissimilar purposes and where they assist in preserving the general appearance of the neighborhood. The landscape shall be preserved in its natural state, insofar as practical, by minimizing tree and soil removal, and by topographic modifications which will result in maximum harmony with adjacent areas.

Staff Response: From the review of the site plan there is little to no existing tree coverage to remain in the interior sections of the property; however, the trees located along the west property line (along the trail) and the south property line (near the existing residence) will remain. The applicant is seeking to add sugar and fruit trees along the north property line.

9.6:4 That any adverse effects of the proposed development and activities emanating there from which affect adjoining residents or owners shall be minimized by appropriate screening, fencing, landscaping, setback and location of buildings, structures and entryways. All loading and unloading areas and outside storage areas, including areas for the storage of refuse, which face or are visible from residential districts or public thoroughfares, shall be screened by a vertical screen consisting of structural or plant materials no less than six (6) feet in height.

Staff Response: The applicant is placing trees and fencing strategically along the areas that will abut neighboring properties to decrease the impact. They are also putting fencing along the White Pine Trail to encourage that separation, along with the trees that are existing. There is no vegetation or screening along the thoroughfare or structure. As the property is zoned R-1 and also abuts R-1 property there is no buffer landscaping required. Landscaping is required along the right of way under Section 8.6.

9.6:5 That the layout of buildings and improvements will minimize any harmful or adverse effect which the development might otherwise have upon the surrounding neighborhood. Physical improvements including sidewalks, drives and parking areas shall be built to adequate standards to minimize premature deterioration. Sites at which hazardous substances are stored, used or generated shall be designed to prevent spill or discharges to the air, surface of the ground, groundwater, streams, drains or wetlands. Secondary containment for above ground storage of hazardous material shall be provided.

Staff Response: The residential property to the north is the property most likely to have a negative impact. The applicant has provided a chain link fence to separate the properties and then will also be planning maple and fruit trees along the property. During the winter months the trees will not provide much buffering nor will the fence. Otherwise, the design and layout of the property will be cohesive with the surrounding properties and uses.

9.6:6 That all provisions of all local ordinances, including the City Zoning Ordinance, are complied with unless an appropriate variance therefrom has been granted by the Zoning Board of Appeals.

Staff Response: The applicant has met all the ordinance requirements except for Section 8.6, greenbelts along public right away.

Planning Commissioners are encouraged to review the Application against the Criteria in Section 9.6 to decide if they find it meets or fails to meet them. These Criteria shall be used to decide the Action taken by the Planning Commission.

Recommendation

Staff wants to clarify that the approval of the site plan is for both phases of development as the current plan is to have everything done within approximately a year. Phase 1 is going to happen in the fall Staff's biggest concern is the location of the tower on the site. Some consideration should be given to the landscaping for the greenbelt. Staff has passed along comments concerning landscaping from the applicant. With that for the Board's consideration Staff recommends **approval** of the Site Plan Review Application for a Agricultural Education Center at 504 S Bronson, as it meets the Criteria for Review found in Section 9.6.6 of the Zoning Ordinance.

Action

Three options lay before the Planning Commission regarding Site Plan Review Applications: Approval, Denial, or Approval with Conditions. Explanations and sample motions are below.

Approval

An approval motion is appropriate when the Application meets the Standards of the Zoning Ordinance and approves the Application. Sample motion:

"I move that the Site Plan Review Application for both phases of 504 S Bronson Avenue (PIN 17-14-200-014, 17-14-200-019) for an agricultural education center, be approved, because it meets all of the Criteria for Review set in Section 9.6 of the Zoning Ordinance."

Approval with Conditions

An approval with conditions motion is appropriate when the Application meets the Standards of the Zoning Ordinance, but the Planning Commissioners believe a few minor conditions or alterations are required. This motion approves the Application contingent upon the listed conditions. Sample motion:

"I move that the Site Plan Review Application for an agricultural education center at 504 S Bronson Avenue (PIN 17-14-200-014, 17-14-200-019), be approved with conditions. The Application meets the Criteria for Review set in Section 9.6 of the Zoning Ordinance, but conditions are required to (*select from the relevant reasons below*)

- (1) Ensure that public services and facilities affected by the proposed land use or activity will be capable of accommodating increased service and facility loads caused by the land use or activity.
- (2) Protect the natural environment and conserve natural resources and energy.
- (3) Ensure compatibility with adjacent uses of land.
- (4) Promote the use of land in a socially and economically desirable manner.

The following conditions are required to address this need: (*list conditions [such as requiring additional permits, revising plans to show needed changes, demonstrating adequacy of the stormwater detention facilities, among others] here*).

A revised, dated site plan and documents addressing the above shall be submitted for staff approval within 60 days."

<u>Denial</u>

A denial motion is appropriate when the Application fails to meet the Standards of the Zoning Ordinance and ends the application process. Sample motion:

"I move to deny the Site Plan Review Application for an agricultural education center at 504 S Bronson Avenue (PIN 17-14-200-014, 17-14-200-019), because it does not meet Criteria 9.6:X of the Zoning Ordinance. (*Fill in the X with which number Criteria the application does not meet.*)"

Michelle Stenger

From:	Matt Heidloff <matth@gmb.com></matth@gmb.com>
Sent:	Thursday, September 7, 2023 2:33 PM
То:	Michelle Stenger
Cc:	Mark Klumpp; Lisa Maycroft; Nick Frank; Jorge Benitez
Subject:	[External Sender] RE: [External Sender] 5-6155 MOISD Greenhouse Site Plan Submittal

Follow Up Flag:Follow upFlag Status:Flagged

Michelle,

See comments below in RED.

Matt

MATT HEIDLOFF, LLA, LEED AP Landscape Architecture



From: Michelle Stenger <mstenger@cityofbr.org>
Sent: Thursday, September 7, 2023 11:56 AM
To: Matt Heidloff <matth@gmb.com>
Subject: RE: [External Sender] 5-6155 MOISD Greenhouse Site Plan Submittal

Hi Matt,

I'm starting to review the plans and have the following questions (I numbered them for ease of addressing):

- 1. I noticed that in the R-1 District you have a 25-foot setback listed, but Section 11.1:5 which regulates public schools requires a 30-foot setback from all property lines, this could be addressed at the final set after the meeting. Currently the greenhouse building is 168.00' from the road ROW and it is 48.00' from the house property to the north. The future buildings are much further away.
- 2. The site plans don't show how far the structures are located from the property lines, which I need to know to ensure they are adequate. See above.
- 3. There is not a lighting schematic or any indication of where lighting will be at on the property. The last sheet in the set ES2.01 shows the four proposed light poles. We can get a cut sheet and photometric drawing PDF's emailed to you.
- 4. Section 8.6 of the ordinance still applies for landscaping.
 - a. No greenbelt landscaping (trees) were required for the bus garage project to the south and there really is no street tree "character" per se along this street to match.
 - b. Same with the school property across the street which we were being consistent with aesthetic -wise which is more parklike.
 - c. In the future, the orchard and maple sap farm trees will be planted and add a more rural/parklike character to the farm.

- d. As for screening parking, cars are parked on the outside and headlights are facing in, away from the road and any residential. We could plant a hedge opposite of the cars to hide them/break lights, but it would look a little odd and is not consistent with parking areas at the facility across the street.
- e. Being a school facility we do want to be careful and keep safety and security in mind. Keeping site lines open for law enforcement is a priority for the district especially with the neighbors to the west that sometimes find their way onto our site. This does sometimes conflict with the "beauty and character" priorities of ordinances
- f. Lastly, the district really wanted the site to be visible from the road to showcase the program and what was happening on the site.

Any which way, we will take direction from you and the commission moving forward.

Please let me know if you have any questions, comments or concerns.

Thanks,

Michelle

From: Matt Heidloff <<u>matth@gmb.com</u>>
Sent: Wednesday, August 30, 2023 12:57 PM
To: Michelle Stenger <<u>mstenger@cityofbr.org</u>>
Cc: Lisa Maycroft <<u>lisam@gmb.com</u>>; Mark Klumpp <<u>spcklumpp@moisd.org</u>>
Subject: [External Sender] 5-6155 MOISD Greenhouse Site Plan Submittal

Michelle,

I have uploaded the documents, filled out the application and paid the feed via online portal for the project.

For the twelve hardcopies that need to be signed and sealed, is a digital seal acceptable, or does each set need a "wet" seal that is hand signed and stamped/crimped?

Thanks!

Matt

MATT HEIDLOFF, LLA, LEED AP Landscape Architecture



HOLLAND LAB 85 EAST EIGHTH STREET, SUITE 200 HOLLAND, MICHIGAN 49423

HOLLAND | GRAND RAPIDS | ROYAL OAK | INDIANAPOLIS P 616.796.0200

www.gmb.com | Facebook | Twitter | LinkedIn

This message is intended solely for the recipient and should not be opened, read, or utilized by any other party. This message shall not be construed as official project information or as a direction except as expressly provided in the contract documents.





Front of Existing House from NE



Rear of Existing House from NW Corner



NEW GREENHOUSE

MECOSTA-OSCEOLA ISD

504 S BRONSON AVE BIG RAPIDS, MICHIGAN

GENERAL INFORMATION G0.01 GENERAL NOTES DIMENSIONS AND LEGENDS

CIVIL Sheet Title C1.01 DEMOLITION PLAN OVERALL SITE PLAN C2.00 C2.01 SITE PLAN C3.01 GRADING AND UTILITY PLAN C7.00 OVERALL S.E.S.C. PLAN C8.01 SITE DETAILS

ELECTRICAL **ELECTRICAL SYMBOL LEGENDS & GENERAL NOTES** E0.01 E1.11 GREENHOUSE ELECTRICAL PLAN ES2.01 SITE ELECTRICAL PLAN

M2.01

STRUCTURAL GREENHOUSE FOUNDATION PLAN S2.01



MECHANICAL MECHANICAL & PLUMBING PLAN

OWNER

MECOSTA - OSCEOLA PUBLIC SCHOOLS 15760 190TH AVE BIG RAPIDS, MI 49307 (231) 796-3543 WWW.MOISD.ORG



GMB PROJECT # 5-6155



ARCHITECT + ENGINEER

GMB ARCHITECTURE + ENGINEERING 85 EAST EIGHTH STREET, SUITE 200 HOLLAND, MI 49423 P. 616.796.0200 WWW.GMB.COM





			LEGEND		
0	DRAINAGE MANHOLE	<u>∧</u> CP #1000	CONTROL POINT	Ø	BOLLARD
	CATCH BASIN	<u>∧</u> BM #1	BENCHMARK		MAILBOX
\triangleright	CULVERT END SECTION		FLAG POLE	贫	DECIDUOUS TREE
6	SANITARY SEWER MANHOLE	С	UTILITY POLE	*	CONIFEROUS TREE
0 ^{C.0.}	SANITARY SEWER CLEANOUT	(GUY ANCHOR	9	BUSH OR SHRUB
\odot	FORCE MAIN CLEANOUT	E	ELECTRICAL TRANSFORMER	R	STUMP
<u> </u>	SIGN - SINGLE POST	Ē	ELECTRIC METER	ST	STORM SEWER
-0-0-	SIGN - DOUBLE POST	(L)	ELECTRICAL MANHOLE	SAN	SANITARY SEWER
ЪС.	FIRE HYDRANT	Æ	ELECTRICAL VAULT	ОНЖ	OVERHEAD WIRE
\otimes	WATER VALVE	Do	PEDESTRIAN SIGNAL	G	GAS LINE
*So	CURB STOP	¢	LIGHT POLE	E E	ELECTRIC LINE
W	WATER METER	4	FLOOD LIGHT	P	PHONE LINE
\odot	WATER WELL		A.C. COMPRESSOR	TV	CABLE TV LINE
8	WATER MANHOLE	×	ELECTRICAL PANEL	w	WATER LINE
œ	YARD HYDRANT	\bigcirc	MONITORING WELL	xx	FENCE LINE
	IRRIGATION VALVE	×	GAS VALVE		TREELINE
☆	IRRIGATION SPRINKLER HEAD	G	GAS METER		EXISTING ASPHALT
-	GOVERNMENT CORNER	F	TELEPHONE VAULT		EXISTING CONCRETE
•	FOUND PROPERTY CORNER	Θ	TELEPHONE MANHOLE	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	EXISTING GRAVEL
	FOUND CONCRETE MONUMENT	\Leftrightarrow	PEDESTAL		EXISTING STONES
	FOUND PK OR MAG NAIL		CABLE VAULT		EXISTING RIPRAP
Ο	SET CAPPED IRON #46677	Ð	HANDHOLE	(M)	MEASURED
Δ	SET MAG NAIL	8	POST	(R)	RECORDED

ZONING REQUIREMENTS					
PARCEL ZONING R-1					
HEIGHTS, YARD AND AREA RESTRICTIONS IN THE R-1 DISTRICT:					
MINIMUM LOT AREA	11,250 SQ. FT.				
MINIMUM LOT WIDTH	75 FEET				
DEPTH OF LOT	100 FEET				
MAXIMUM HEIGHT OF STRUCTURES	2 1/2 STORIES OR 35 FEET				
MINIMUM FRONT YARD SETBACK	20 FEET				
MINIMUM SIDE YARD SETBACK (EACH)	10 FEET				
MINIMUM SIDE YARD SETBACK (SUM OF BOTH)	25 FEET				
MINIMUM REAR YARD SETBACK	35 FEET				
MINIMUM SIDE STREET YARD SETBACK	20 FEET				
MAXIMUM LOT COVERAGE	25%				

	SHEET INDEX
SHEET NUMBER	SHEET TITLE
C1	COVER SHEET
C2	TOPOGRAPHIC SURVEY
C3	SITEPLAN
C4	SANITARY SEWER PLAN & PROFILE
C5	GRADING & STORM WATER MANAGEMENT
C6	SOIL EROSION CONTRON PLAN
C7	DETAILS

3E	NC	ΉМ	IAR	KS

BM #1

SET CHISELED "X" ON NW. HYDRANT FLANGE BOLT ELEV. = 915.00'

BM #2 FOUND RAILROAD SPIKE IN WEST FACE OF UTILITY POLE ELEV. = 916.13'

DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

PROPERTY INFORMATION

ADDRESS:

602 S. Bronson Avenue Big Rapids, MI 49307

PARCEL NUMBER

17-14-200-014:

211,558 Sq. Ft. or 4.86 acres 17-14-200-019: 302,210 Sq. Ft. or 6.94 acres

PREPARED FOR

Mecosta-Osceola Intermediate School District Mr. Mark Klump - Assistant Superintendent 15760 190th Avenue Big Rapids, MI 49307 Phone: (213) 796-3543

NOTES

1. SHOWN UNDERGROUND UTILITY LOCATIONS REFLECT INFORMATION COLLECTED FROM UTILITY OWNERS AND VISIBLE MARKERS FOUND AT THE TIME OF SURVEY. SHOWN LOCATIONS ARE NOT INTENDED TO BE EXACT AND CONTRACTORS MUST VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO EXCAVATION.

MISS DIG/UNDERGROUND UTILITY NOTIFICATION

FOR THE PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CONTACT MISS DIG SYSTEM, INC. BY PHONE AT 811 OR 800-482-7171 OR VIA THE WEB AT EITHER ELOCATE.MISSDIG.ORG FOR SINGLE ADDRESS OR RTE.MISSDIG.ORG, A MINIMUM OF 3 BUSINESS DAYS PRIOR TO EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.

Parcel "A" - A parcel of land located in the Northeast 1/4 of Section 14, Town 15 North, Range 10 West, City of Big Rapids, Mecosta County, Michigan, described as commencing at the Northeast Section Corner of Section 14; thence South 02 Degrees 28' 48" West along the East Section Line 660.00 feet; thence North 89 degrees 13' 10" West parallel with the North Section Line 330 feet to the Point of Beginning; thence South 02 degrees 28' 48" West parallel with the East Section Line 264.00 feet; thence North 89 degrees 13" 10" West parallel with the North Section Line 555.43 feet; thence North 29 degrees 36' 25" West along the Easterly R/W Line of the Michigan Northern Railroad 305.90 feet; thence South 89 degrees 13' 10" East parallel with the North Section Line 718.00 feet to the Point of Beginning.

Parcel "B" - A parcel of land located in the Northeast 1/4 of Section 14, Town 15 North, Range 10 West, City of Big Rapids, Mecosta County, Michigan, described as commencing at the Northeast Section Corner of Section 14; thence South 02 degrees 28' 48" West along the East Section Line 792.00 feet to the Point of Beginning; thence continuing South 02 degrees 28' 48" West along the East Section Line 132.00 feet; thence North 89 degrees 13' 10" West parallel with the North Section Line 330.00 feet; thence North 02 degrees 28' 48" East parallel with the East Section Line 132.00 feet; thence South 89 degrees 13" 10'* East parallel with the North Section Line 330.00 feet to the Point of Beginning.

WARRANTY DEED, LIBER 878, PAGE 2334

PARCEL 1: Beginning on the Section line between Sections 13 and 14, Township 15 North, Range 10 West, City of Big Rapids, Mecosta County, Michigan, at a point 18 chains South from the Northeast comer of said Section 14; running thence South on said Section line 2 chains; thence West and parallel with the North line of said Section 14 to the Easterly line of the Grand Rapids and Indiana Railroad right-of-way; thence Northwesterly to a point which is 18 chains South of the North line of said Section 14 and 18 chains therefrom; thence East and parallel with the North line of said Section 14 to the place of beginning; being a part of Government Lot 1 of Section 14, Township 15 North, Range 10 West, Michigan.

PROPERTY DESCRIPTIONS

WARRANTY DEED, LIBER 868, PAGE 1126

PARCEL 2: A parcel of land in the Northeast 1/4 of Section 14, Township 15 North, Range 10 West, City of Big Rapids, Mecosta County, Michigan, described as commencing at the Northeast Section corner of Section 14; thence South 02°28'48" West along the East Section line 924.00 feet to the point of beginning; thence continuing South 02°28'48" West along the East Section line, 264.00 feet; thence North 89°13'10" West parallel with the North Section line 722.86 feet to the East right-of-way of the Michigan Northern Railroad right-of-way; thence North 29°36'25" West along the Easterly right-of-way line of the Michigan Northern Railroad 305.90 feet: thence South 89°13'10" East parallel with the North Section line, 885.43 feet to the point of beginning.

REVISIONS DESCRIPTION NO. DATE DESCRIP PERMIT ISSUE - TO CITY FOR SITE PLAN NO. DATE DESCRIP SUBMITTAL. SAN SEWER REVISIONS CONSTRUCTION ISSUE SET CONSTRUCTION ISSUE SET CONSTRUCTION ISSUE SET NO DESIGN CHANGES MADE TO PERMIT ISSUE SET ISSUE SET ISSUE SET ISSUE SET	PL	AN IS			ST	R	JC	TI	10	N	
REVISIONS DESCRIPTION NO. DATE PERMIT ISSUE - TO CITY FOR SITE PLAN NO. DATE SUBMITTAL. SAN SEWER REVISIONS NO. DATE CONSTRUCTION ISSUE SET NO DATE NO DESIGN CHANGES MADE TO PERMIT NO NO ISSUE SET NO NO		DESCRIF									
REVISIONS DESCRIPTION PERMIT ISSUE - TO CITY FOR SITE PLAN SUBMITTAL. SAN SEWER REVISIONS CONSTRUCTION ISSUE SET NO DESIGN CHANGES MADE TO PERMIT ISSUE SET		DATE									
REV DESCRIPTION PERMIT ISSUE - TO CITY FOR SITE PLAN SUBMITTAL. SAN SEWER REVISIONS CONSTRUCTION ISSUE SET NO DESIGN CHANGES MADE TO PERMIT ISSUE SET	SNOIS	.ON									
	REV	DESCRIPTION	PERMIT ISSUE - TO CITY FOR SITE PLAN	SUBMITTAL. SAN SEWER REVISIONS	CONSTRUCTION ISSUE SET	NO DESIGN CHANGES MADE TO PERMIT	ISSUE SET				
DATE 04/27/22 05/19/22		DATE	00120140	7717170		05/19/22					
2 J 10.		NO.	,	-		2					

COVER SHEET	OJECT NAME: MECOSTA-OSCEOLA INTERMEDIATE	SCHOOL DISTRICT	Section 14. T15N R10W. City of Big Rapids.	Mecosta County. Michigan
D D D D D D D D D D D D D D D D D D D	SURVEYING & ENGINEERING, INC.	3229 W. Beal City Road Phone: (989) 644-5953	Weidman, Michigan 48893 Fax: (989) 644-8659	pete@lorenzse.com
JOB NO.	2200	03		
	NON	E		
	TPL	-		

DATE:

SHEET NO.

March 6, 2022

C1



Know what's **belo**W. Call before you 00-482-7171 or 811





BM #1 SET CHISELED "X" ON NW. HYDRANT FLANGE BOLT ELEV. = 915.00'

BM #2 FOUND RAILROAD SPIKE IN WEST FACE OF UTILITY POLE ELEV. = 916.13'

DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)



SANITARY SEWER STRUCTURE SCHEDULE

25' 50' SCALE: 1"=50'

STR. #395 4' DIA. SAN. MH RIM = 914.98' INV. 15" PVC NW. = 899.68' INV. 12" PVC SE. = 899.67' INV. 15" PVC SW = 899.46'

STR. #422 4' DIA. SAN. MH RIM = 910.47' INV. 15" PVC NW. = 902.00' INV. 15" PVC SE. = 901.92'

STR. #443 4' DIA. SAN. MH RIM = 911.98' INV. 12" PVC. NW = 902.22' INV. 15" PVC SE. = 901.80' INV. 8" PVC E. = 902.10' STR. #1420 4' DIA. SAN. MH RIM = 923.20' INV. 8" PVC E. = 909.24' INV. 8" PVC W. = 909.12'

STR. #1479 4' DIA. SAN MH RIM = 921.09' INV. 8" PVC E. = 907.61' INV. 8" PVC W. = 907.57'







GMB 616.796.0200 www.gmb.com

optimular hoton





DRAWN ACB REVIEWED MEH 5**-**6155 PROJECT NO. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATABASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF

ISSUANCES

08.22.2023 BIDS & CONSTRUCTION

GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED

DEMOLITION PLAN

C1.01





PREIMMART PUCT





08.22.2023 BIDS & CONSTRUCTION

ISSUANCES

ACB/NRE DRAWN REVIEWED MEH 5-6155 PROJECT NO.

NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATABASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED

OVERALL SITE PLAN





= MATCH EXISTING	
LAYOUT LEGEND	
SYMBOL	DESCRIPTION
	STANDARD CURB & GUTTER
	ROLLED CURB & GUTTER
	CONCRETE SIDEWALK
	CONCRETE PAVEMENT
	HEAVY DUTY PAVEMENT
	STANDARD DUTY PAVEMENT
\rightarrow	SIGN & POST

	SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
4.	ALL TREES TO REMAIN SHALL BE CAREFULLY PROTECTED. D EQUIPMENT WITHIN 12 FT OF TREE TRUNKS. BRANCHES WHI DEMOLITION OF STRUCTURES AND/OR SURFACES SHALL BE ARCHITECT/ENGINEER. ANY ROOTS OF TREES BEING SAVED DEMOLITION/REMOVAL SHALL BE COVERED WITHIN 6 HOURS MAY BE REPLACED AT THE DISCRETION OF THE ARCHITECT/I THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
5.	CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NEC ROW AND ON ANY UTILITY CONNECTIONS OR ABANDONMENT CONSTRUCTION.
6.	CONTRACTORS TO REVIEW ALL SHEETS FOR RELATED INFO
7.	LIST OF STANDARD ABBREVIATIONS -

- "A.F.F." = ABOVE FINISHED FLOOR "C/L" "F.F.E" "U.N.O" "M.E."

GENERAL NOTES:

- ABOVE FINISHED FLOOR
 CENTER LINE
 FINISH FLOOR ELEVATION
 UNLESS NOTED OTHERWISE
 MATCH EXISTING

- SCALE IN FEET

- SITE PLAN SCALE:1" = 20'-0"

1. DO NOT BURY ANY DEBRIS, ROOTS, TOPSOIL OR OTHER MATERIALS. 2. ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OR THE LOCAL CODE. ORDINANCES AND ACCIDENT/FIRE PREVENTION REGULATIONS.

3. PROTECT THE SITE, ADJACENT PROPERTY AND UTILITY SERVICES FROM DAMAGE OR DISRUPTION OF SERVICE/ACCESS. DAMAGE TO EXISTING STRUCTURE, SITE OR UTILITIES

). DO NOT DRIVE HEAVY /HICH ARE DAMAGED DURING BE CUT OUT AS DIRECTED BY THE E COTOUT AS DIRECTED BY THE ED WHICH ARE EXPOSED DUE TO RS WITH SOIL. DAMAGED TREES T/ENGINEER AT THE EXPENSE OF

CESSARY PERMITS FOR WORK IN NT PRIOR TO THE START OF ORMATION.



LAYOUT LEGEND		
SYMBOL	DESCRIPTION	
	STANDARD CURB & GUTTER	
	ROLLED CURB & GUTTER	
	CONCRETE SIDEWALK	
	CONCRETE PAVEMENT	
	HEAVY DUTY PAVEMENT	
	STANDARD DUTY PAVEMENT	
	SIGN & POST	
xx	CHAIN LINK FENCE	







ISSUANCES 08.22.2023 BIDS & CONSTRUCTION DRAWN ACB REVIEWED MEH 5-6155 PROJECT NO. _____ NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATABASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED

SITE PLAN







GRADING NOTES:

- ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OR THE LOCAL CODE, ORDINANCES AND ACCIDENT/FIRE PREVENTION REGULATIONS.
 2 PROTECT THE SITE AD IACENIT PROPERTY AND UTULITY SERVICES FROM DAMAGE OR
- PROTECT THE SITE, ADJACENT PROPERTY AND UTILITY SERVICES FROM DAMAGE OR DISRUPTION OF SERVICE/ACCESS. DAMAGE TO EXISTING STRUCTURES, SITE OR UTILITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- 3. ALL TREES TO REMAIN SHALL BE CAREFULLY PROTECTED. REFER TO GENERAL LANDSCAPING PLAN AND NOTES FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
- 4. CONTRACTOR SHALL OBTAIN SOIL EROSION PERMIT(S) INCLUDING SUBMITTING NOTICE OF COVERAGE TO MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (IF REQUIRED) PRIOR TO DISTURBING ANY SOIL. CONTRACTOR SHALL HAVE TEMPORARY EROSION CONTROLS IN PLACE PRIOR TO STARTING CONSTRUCTION.
- REFER TO PROJECT SPECIFICATIONS FOR REQUIREMENTS AND RECOMMENDATION RELATED TO SOIL PLACEMENT.
- CONTRACTOR SHALL BE REQUIRED TO CHECK LINES AND GRADES AGAINST PLANS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
- CURB AT DRIVE ENTRANCE TO DUB DOWN 2' BEFORE TERMINATION AT CONNECTION TO
- EXISTING GRADE 8. DO NOT BURY ANY DEBRIS, ROOTS, TOPSOIL OR OTHER DELETERIOUS/UNSUITABLE FILL
- MATERIALS.

9. LIST O	F STA	NDARD ABBREVIATIONS -
"BIT"	=	PROPOSED BITUMINOUS GRAD
"BOW"	=	BOTTOM OF WALL GRADE
"BOS"	=	BOTTOM OF STAIR
"BW"	=	BACK OF WALK GRADE
"CON"	=	PROPOSED CONCRETE GRADE
"F.F./FFE"	=	FINISHED FLOOR ELEVATION
"FG"	=	FINISHED GRADE
"FW"	=	FRONT OF WALK GRADE
"G"	=	GUTTER GRADE
"MX"	=	MATCH EXISTING

GRADING LEGEND			
SYMBOL	DESCRIPTION		
• XXX.XX	PROPOSED SPOT ELEVATION		
< <u>X.X%</u>	SURFACE FLOW DIRECTION		
ty	PROPOSED CONTOUR		
ty	EX. CONTOUR		
	GRADING LIMITS		

UTILITY NOTES:

- 1. ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OR THE LOCAL CODE, ORDINANCES AND ACCIDENT/FIRE PREVENTION REGULATIONS.
- 2. PROTECT THE SITE, ADJACENT PROPERTY AND UTILITY SERVICES FROM DAMAGE OR DISRUPTION OF SERVICE/ACCESS. DAMAGE TO EXISTING STRUCTURES, SITE OR UTILITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- 3. UTILITIES SHOWN (IF ANY) ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THIS MAP IS NOT TO BE INTERPRETED AS SHOWING EXACT LOCATIONS OR SHOWING ALL UTILITIES IN THE AREA. SIZE AND INVERTS OF EXISTING PIPE TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO COMMENCING WORK ON NEW UTILITY CONNECTIONS.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FOR WORK IN ROW AND ON ANY UTILITY CONNECTIONS OR ABANDONMENT PRIOR TO START OF CONSTRUCTION.
- 5. CONTRACTOR SHALL COORDINATE ANY UTILITY/SERVICE INTERRUPTIONS WITH OWNER AT LEAST ONE WEEK IN ADVANCE. CONTRACTOR SHALL ALSO NOTIFY LOCAL UTILITY PROVIDER WHERE APPLICABLE FOR OPERATION/DISCONNECTION OF PUBLIC OWNED EQUIPMENT.
- 6. CONTRACTOR SHALL ADEQUATELY PROTECT/SHORE ALL OPEN TRENCHES AS REQUIRED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- 7. EXISTING SEWER AND WATERMAIN LINES SHALL BE PROTECTED FROM DEBRIS AND CONSTRUCTION.
- 8. WATERMAIN CONSTRUCTION IS TO BE INSPECTED BY UTILITY OWNER. PRESSURE TESTING AND CHLORINATION OF THE WATERMAIN TO BE PERFORMED BY THE CONTRACTOR. WITNESSING OF INSTALLATION, PRESSURIZATION, CHLORINATION AND GATHERING OF WATER SAMPLES WILL BE PERFORMED BY THE UTILITY OWNER.
- MAINTAIN A MINIMUM OF 5'-9" FROM FINISH GRADE TO CENTERLINE OF WATERMAIN PIPE. MAINTAIN A MINIMUM OF 10'-0" CLEARANCE OF SANITARY SEWER MAIN.
- HYDRANTS AND FITTINGS SHALL BE TIED AND BLOCKED. HYDRANTS AND VALVES SHALL BE COORDINATED WITH UTILITY OWNER TO OPEN PER UTILITY OWNERS DEVELOPMENT STANDARDS.
- CONTRACTOR SHALL BE REQUIRED TO CONTACT MISS DIG PRIOR TO STARTING ANY WORK. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FOR WORK IN ROW AS WELL AS NOTIFYING LOCAL UTILITY OWNERS OF WORK IF PERMITS ARE NOT REQUIRED.
- 12. LOCATION OF LATERALS TO BE DETERMINED IN THE FIELD AT THE DIRECTION OF THE OWNER. AVOID CONFLICT WITH PROPOSED AND/OR EXISTING FACILITIES.
- 13. QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL LINES, LEVELS AND DIMENSIONS.
- 14. CONTRACTOR IS TO VERIFY EXISTING UTILITY ELEVATIONS PRIOR TO STARTING CONSTRUCTION.
- 15. CONTRACTORS TO REVIEW ALL SHEETS FOR RELATED INFORMATION.
- 16. LIST OF STANDARD ABBREVIATIONS -

UTILITY LINETYPE LEGEND			
SYMBOL	DESCRIPTION		
	STORM SEWER		
	WATERMAIN		
	UNDERDRAIN		
G G	GAS SERVICE		
е Е Е	ELECTRIC SERVICE		
G	EX. GAS SERVICE		
STM	EX. STORM SEWER		
SAN	EX. SANITARY SEWER		
	EX. WATERMAIN		
———— E———— E————	EX. ELECTRICAL		

NORTH

DRAWN NRE REVIEWED MEH PROJECT NO. 5-6155 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATABASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED OVERALL S.E.S.C. PLAN

ISSUANCES

08.22.2023 BIDS &

CONSTRUCTION

OUTLET CONTROL STRUCTURE DETAIL NOT TO SCALE

	PAVEMENT SECTION					
	SAND BASE					
HEAVY DUTY 2" MDOT 36A 2.5" MDOT 3C 8" MDOT 21AA (LIMESTONE) MDOT C SUITABLE SOIL						
NOTES: 1. REFER TO ASPHALT PAVING SPECIFICATION SECTION 32 12 16 FOR ADDITIONAL PAVING INFORMATION 2. REFER TO PLANS FOR LOCATION OF UNDERDRAIN PLACEMENT. 3. REFER TO PLANS FOR PAVEMENT MARKINGS AND 32 17 23 FOR TRAFFIC MARKING SPEC.						

S **NOH** EE N Ľ (D ÍП 7

ISSUANCES 08.22.2023 BIDS & CONSTRUCTION DRAWN ACB REVIEWED MEH PROJECT NO. 5-6155 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATABASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED •

SITE DETAILS

GREENHOUSE FOUNDATION PLAN

1/8" = 1'-0"

OR ALI L REC	L WALLS NOT OTH EIVE A MINIMUM R	ERWISE NOTED) : EINFORCING OF R	1-5-48.
LL RE	CEIVE A MINIMUM	REINFORCING OF I	R1-5-48.

TOP OF FOUNDATION WALLS = EL 100-0" TOP OF CONCRETE PIERS = EL 99'-4" TOP OF EXTERIOR FOOTINGS = EL 97'-0" TOP OF INTERIOR FOOTINGS = EL 99'-4" GENERAL SLAB NOTES 1. FLOOR SLABS ON GRADE SHALL BE MINIMUM 4" THICK CONCRETE WITH

FOUNDATION ELEVATIONS

(UNLESS OTHERWISE NOTED ON PLANS)

- SYNTHETIC FIBER REINFORCEMENT PER SPECIFICATIONS. SEE PLANS FOR WHERE WWF IS REQUIRED. 2. ALL FLOOR SLABS ON GRADE SHALL BE PLACED ON 10 MIL VAPOR BARRIER OVER MINIMUM 8" COMPACTED CLEAN SAND FILL MEETING
- MDOT CLASS II STANDARDS PLACED ON COMPACTED SUITABLE SUB-GRADE (UNO IN GEOTECHNICAL REPORT FOR THE SPECIFIC PROJECT). 3. INSTALL CONSTRUCTION AND/OR CONTROL JOINTS FOR SLABS ON GRADE ON A MAXIMUM "3 X THICKNESS" SQUARE GRID (EG - 12'-0" FOR 4" SLAB) OR AS SHOWN ON THE FLOOR FINISH PLANS. REFERENCE TYP CONSTRUCTION AND CONTROL JOINT DETAILS. FLOOR SLABS AT GYMNASIUM, WEIGHT ROOM AND STAGE SHALL BE MONOLITHIC POURS
- WITHOUT ANY JOINTS. 4. SLAB EDGE DETAIL: PROVIDE BOND BREAKER AT ALL SLAB TO WALL LOCATIONS. SEE SPECIFICATION.

FOUNDATION LEGEND

TOW	DENOTES TOP OF WALL ELEVATION
TOP	DENOTES TOP OF PIER ELEVATION
TOL	DENOTES TOP OF LEDGE ELEVATION
TOF	DENOTES TOP OF FOOTING ELEVATION
FF	DENOTES TOP OF SLAB / FINISH FLOOR ELEVATION
SF	STEP FOOTING (SEE TYP DETAIL)
F3x3 (96'-0")	FOOTING MARK (TOF ELEV) - SEE SCHEDULE FOR SIZE & REINFORCING
P2 (99'-4")	PIER MARK (TOP ELEV) SEE SCHEDULE FOR SIZE & REINFORCING
	CONCRETE FOUNDATION WALL & FOOTING

XXXXX MASONRY WALL & CONCRETE FOOTING

MINIMUM MASONRY

	VERTICAL BARS IN TENSION- SINGLE BARS IN CORE		VERTICAL BA DOUBLE E	ARS IN TENSION- BARS IN CORE
BAR SIZE	8" CMU- SINGLE BAR	12" CMU- SINGLE BAR	8" CMU- DOUBLE BAR	12" CMU- DOUBLE BAR
#4	25"	25"	25"	25"
#5	25"	25"	25"	25"
#6	38"	25"	50"	28"
#7	54"	34"	72"	40"
#8	82"	52"	116"	64"

• MECHANICAL SPLICES MAY BE USED IN LIEU OF LAPPED SPLICES. MECH SPLICE MUST DEVELOP 125% OF BAR TENSION STRENGTH

CONCRETE REINFORCEMENT LAP SCHEDULE

VERTICAL BARS & HORIZONTAL BOTM. BARSHORIZONTAL TOP BARSBAR SIZEDEVELOPMENT LENGTHSPLICE LENGTHDEVELOPMENT LENGTHSPLICE LENGTH#315"19"19"25"#419"25"25"33"#524"31"31"41"#629"37"37"49"	CONCRETE REINI ORCEMENT EAF SCHEDOLE				
BAR SIZE DEVELOPMENT LENGTH SPLICE LENGTH DEVELOPMENT LENGTH SPLICE LENGTH #3 15" 19" 19" 25" #4 19" 25" 25" 33" #5 24" 31" 31" 41" #6 29" 37" 37" 49"		VERTICAL HORIZONTAL	. BARS & BOTM. BARS	HORIZONTAI	L TOP BARS
#3 15" 19" 19" 25" #4 19" 25" 25" 33" #5 24" 31" 31" 41" #6 29" 37" 37" 49"	BAR SIZE	DEVELOPMENT LENGTH	SPLICE LENGTH	DEVELOPMENT LENGTH	SPLICE LENGTH
#4 19" 25" 25" 33" #5 24" 31" 31" 41" #6 29" 37" 37" 49"	#3	15"	19"	19"	25"
#5 24" 31" 31" 41" #6 29" 37" 37" 49"	#4	19"	25"	25"	33"
#6 29" 37" 37" 49"	#5	24"	31"	31"	41"
	#6	29"	37"	37"	49"
#7 42" 54" 51" 71"	#7	42"	54"	54"	71"

HORIZONTAL BOTTOM BARS ARE THOSE PLACED WITH 12" OR LESS OF FRESH CONCRETE CAST BELOW THE BAR. HORIZONTAL TOP BARS ARE THOSE PLACED WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BAR.

FOOTING SCHEDULE						
MADIC	SI	ZE		REINFORCING		
ΜΑκκ	WIDTH	LENGTH	THK.	REINFORGING		
F24 24" CONT. 12" (2) #5 BARS CONT						
UNLESS NOTED OTHERWISE, SEE TYPICAL WALL FOOTING AND TYPICAL COLUMN FOOTING DETAILS FOR ADDITIONAL INFORMATION. THICKENED SLAB REQUIRED UNDER ALL NEW NON-BEARING CMU WALLS (8" OR LARGER BLOCK).						

ST	RUCTURAL DESIGN DATA	
BUI	LDING CODE: MICHIGAN BUILDING CODE 2015 & AS	SCE 7-10
1.	RISK CATEGORY	П
2.	FLOOR LIVE LOAD:	
	CLASSROOMS & LABS LOBBIES, STAIRS & EXITS CORRIDORS	40 psf 100 psf 100 psf
3.	ROOF SNOW LOAD:	
	GROUND SNOW LOAD (Pg) FLAT ROOF SNOW LOAD (Pf) SNOW EXPOSURE FACTOR (Ce) SNOW LOAD IMPORTANCE FACTOR (Is) THERMAL FACTOR (Ct)	40 psf 31 psf 1.0 1.0 1.0
4.	WIND LOAD:	
	ULTIMATE WIND SPEED (3 SEC. GUST) WIND EXPOSURE INTERNAL PRESSURE COEFFICIENT (Gcpi)	106 mph C 0.18
	COMPONENTS & CLADDING PRESSURE (asd):	
	FLAT ROOFS (BASED ON 20 SF) UPLIFT WITHIN 16' OF CORNER UPLIFT WITHIN 16' OF EDGE UPLIFT INTERIOR	44 psf 37 psf 30 psf
	WALLS	20 psf
	COMPONENTS & CLADDING PRESSURE (ult):	
	FLAT ROOFS (BASED ON 20 SF) UPLIFT WITHIN 16' OF CORNER UPLIFT WITHIN 16' OF EDGE UPLIFT INTERIOR	72 psf 61 psf 49 psf
	WALLS	33 psf
5.	SEISMIC DESIGN:	
	SEISMIC IMPORTANCE FACTOR (Ie) SPECTRAL RESPONSE: Ss S1 Sds Sd1 SITE CLASS SEISMIC DESIGN CATEGORY SEISMIC FORCE RESISTING SYSTEM: LIGHT-FRAME WALLS WITH SHEAR PANE MATERIALS SEISMIC RESPONSE COEFFICIENT (Cs) RESPONSE MODIFICATION FACTOR (R)	1.00 0.062 0.040 0.066 0.063 D A ELS OF ALL OTHI 0.026 2.5
	ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE	
	GREENHOUSE = 2 KIPS	
5.	DESIGN SOIL BEARING CAPACITY (ASSUMED):	
	COLUMN FOOTINGS WALL FOOTINGS	2000 psf 2000 psf
7.	DESIGN STRESSES:	
	CONCRETE FOOTINGS & FOUNDATIONS SLABS-ON-GRADE ELEVATED SLABS & TOPPINGS PRECAST REINF. STEEL	fc = 4000 psi fc = 4000 psi fc = 4000 psi fc = 5000 psi Fy = 60,000 psi
	STEEL W SHAPES RECT HSS SHAPES ROUND HSS & PIPE SHAPES ALL OTHER SHAPES WELDING ELECTRODE METAL DECK (FLOOR & ROOF)	Fy = 50,000 psi Fy = 50,000 psi Fy = 46,000 psi Fy = 36,000 psi E70XX Fy = 50,000 psi
	MASONRY CMU	2500 psi units fm = 2200 psi
	GROUT	ťc = 2200 psi
	LUMBER DIMENSIONAL (SPF#2 OR BETTER) ENGINEERED (LVL)	Fb = 850 psi Fv = 135 psi Fb = 2600 psi Fv = 285 psi E = 1900 ksi

GENERAL FOUNDATION NOTES

- 1. PLAN ELEVATION 100'-0" = SITE DATUM PER CIVIL 2. FOUNDATIONS WILL BE PLACED IN BOTH THE NATIVE SOIL AND NEW SAND FILL. PRIOR TO PLACING CONCRETE THE BEARING SURFACE SHALL BE COMPACTED TO A DENSITY OF 95.0 PERCENT OF ITS MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. REFERENCE THE SOILS REPORT FOUND IN THE SPECIFICATIONS FOR ADDITIONAL RECOMMENDATIONS.
- 3. ON SITE EXCAVATED SOILS MAY BE USED FOR BACKFILLING OF FOUNDATIONS EXCEPT AT RETAINING WALLS WHERE CLEAN SAND MEETING MDOT CLASS II STANDARDS SHALL BE USED. THE WATER CONTENT OF ALL CLAY MATERIALS BEING PLACED SHALL BE 15.0 PERCENT OR LESS. FOLLOW THE RECOMMENDED INSTALLATION AND COMPACTION PROCEDURES FOR FILL AS OUTLINED IN THE
- 4. STEP FOOTINGS AT A MINIMUM 3 UNITS HORIZONTAL TO ONE (1) UNIT VERTICAL, WITH MAXIMUM 24" VERTICAL STEP. SEE TYP STEPPED FOOTING DETAIL.

SPECIFICATIONS AND SOILS REPORT.

- 5. LAP CONTINUOUS REINFORCING PER SCHEDULE. PROVIDE CORNER BARS FOR HORIZONTAL REINFORCING OF SAME SIZE.
- 6. SET FOUNDATION SLEEVES ON TOP OF FOOTING UNLESS NOTED OTHERWISE.
- 7. INSTALL UNDERGROUND DRAINAGE AROUND PERIMETER FOUNDATIONS AS SHOWN IN TYPICAL FOUNDATION DRAIN DETAIL. PROVIDE POSITIVE DRAINAGE OUTLET TO SITE STORM SYSTEM.
- 8. ON SITE WITH CLAY SOIL CONDITIONS, PROVIDE PVC WEEP HOLE SLEEVES THRU BOTTOM OF FOUNDATION WALL AT APPROXIMATELY 50 FOOT CENTERS TO DRAIN INTERIOR FILL.

ABBREVIATIONS

S OF ALL OTHER

= 50,000 psi y = 50,000 psi y = 46,000 psi y = 36,000 psi

INSIDE DIAMETER INSIDE FACE

MBC MICHIGAN BUILDING CODE NIC NOT IN CONTRACT OUT-TO-OUT OD OUTSIDE DIAMETER OUTSIDE FACE METAL BUILDING

STEP FOOTING

OTHERWISE

WWF WELDED WIRE FABRIC

Ш Ш П NEV \Box S Ο Ш \mathbf{O} ()

08.22.2023 BIDS & CONSTRUCTION

ISSUANCES

DRAWN MCR REVIEWED PMB 5-6155 PROJECT NO.

NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED

GREENHOUSE FOUNDATION PLAN

S2.01

3 NORTH ELEVATION A0.01 1/8" = 1'-0"

4 SOUTH ELEVATION A0.01 1/8" = 1'-0"

ELECTRICAL ABBREVI		
AFF	ABOVE FINISHED FLOOR	INTLK
ACC	ACCESSORY	JCT
ADO	AUTOMATIC DOOR OPERATOR	JB
AHU	AIR HANDLING UNIT	KW
ATS	AUTOMATIC TRANSFER SWITCH	KWH
BKR	BREAKER	KO
BOB	BOTTOM OF BOX	LBL
BOD	BOTTOM OF DECK	LT
BOS	BOTTOM OF STRUCTURE	LC
BP	BREAKER PANEL	LCM
BLDG	BUILDING	LCP
CAP	CAPACITY	LTG
CIN	LIGHTING CONTROL INTENT NARRATIVE	MAX
CLG	CEILING	MBJ
CKT	CIRCUIT	MCC
СВ	CIRCUIT BREAKER	MIN
С	CONDUIT	MTS
COMM	COMMUNICATIONS	NEC
CONN	CONNECTION	NEG
CONST	CONSTRUCTION	NC
CONTR	CONTRACT (OR)	NO
CLL	CONTRACT LIMIT LINE	N/A
СТ	CURRENT TRANSFORMER	NIC
E.C.	ELECTRICAL CONTRACTOR	
EGC	EQUIPMENT GROUNDING CONDUCTOR	PC
EHD	ELECTRIC HAND DRYER	POS
ELEC	ELECTRIC (AL)	PWR
EWC		P&L
EM	EMERGENCY	S
ENI	ENTRANCE	SBJ
EQ		S.B.O.
EQUIP		SP
ESI		SPD
		SPKR
		SPEC
	EXISTING	SSBJ
		SUB
FA		SWBD
		TEL
		T'STAT
FLIOR	FLUORESCENT	XFMR
GEC	GROUNDING ELECTRODE CONDUCTOR	UG
GEN	GENERATOR	UL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UH
GRD	GROUND	UNO
HORIZ	HORIZONTAL	VERT
HTR	HEATER	W/
HTG	HEATING	W/O
HV	HEATING / VENTILATING	WG
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WL
HOA	HAND - OFF - AUTOMATIC	WP
HP	HEAT PUMP	

	MAXIMUM CONDUCTOR LENGTHS FOR TYPICAL BRANCH CIRCUITS											
ONE-WAY LENGTH (FEET) BASED ON SINGLE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP ONE-WAY LENGTH (FEET) BASED ON SINGLE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., II STEEL CONDUIT, 3% VOLTAGE DROP												
CIRCUIT		CO	NDUCTOR S	IZE			CIRCUIT		CONDUC	FOR SIZE		
VOLTAGE	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG		VOLTAGE	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
120	60	100	150	245	385		120	60	100	150	245	
208	100	170	265	425	670		208	100	170	265	425	
277	135	230	355	565	890		277	135	230	355	565	
480	240	400	615	980			480	240	400	615	980	
ONI PHA	ONE-WAY LENGTH (FEET) BASED ON THREE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP ONE-WAY LENGTH (FEET) BASED ON THREE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP									I THREE % P.F., IN ROP		
CIRCUIT		CON	NDUCTOR S	IZE			CIRCUIT		CONDUC	FOR SIZE		
VOLTAGE	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG		VOLTAGE	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
208	120	200	305	490	775		208	120	200	305	490	
480	275	460	710	1,130			480	275	460	710	1,130	

٧S	POWER SYMBOL LEGEND	LIGHTING SYMBOL LEGEND
INTERLOCK	SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	
JUNCTION	SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE	
	COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	LPA-X CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
KILOWATT HOUR		
KNOCK OUT	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
LABEL	MOTOR STARTER	
LIGHT LIGHTING CONTROL LIGHTING CONTROL MODULE	\$ _F BOX-COVER FUSIBLE DISCONNECT SWITCH	A SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
LIGHTING CONTROL PANEL	\$M MANUAL MOTOR CONTROLLER	SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED,
	\$ POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES	SHADING INDICATES FACE ORIENTATION
	DIRECT ELECTRICAL CONNECTION	DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
MANUAL TRANSFER SWITCH	φ SINGLE NEMA 5-20R RECEPTACLE	WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
NEGATIVE (-)	SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	EMERGENCY LIGHT FIXTURE DESIGNATION
	SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	
	DUPLEX NEMA 5-20R RECEPTACLE	
	P E "E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX	
POSITIVE (+)	$igoplus_{GFCI}$ "GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE	
POWER & LIGHTING	S "S" NOTATION: SURFACE-MOUNTED	
	WL "WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER	PC CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	PS WALL-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
SURGE PROTECTION DEVICE SPEAKER	DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	PS CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
SUPPLY-SIDE BONDING JUMPER	DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT	POLE-MOUNTED SITE/AREA FIXTURE
SUITCHBOARD	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED	
THERMOSTAT	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE	NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	
	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	COMMUNICATIONS SYMBOL LEGEND
VERTICAL	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	
WITH	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED	
WIRE GUARD WET LOCATION		
WEATHER PROOF	ATS AUTOMATIC TRANSFER SWITCH	
	SWITCHBOARD / SWITCHGEAR	
	PANELBOARD	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 2-POST
	T TRANSFORMER	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 4-POST
		COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
L BRANCH CIRCUITS	EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.	CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED AND/OR SMOKE BARRIER WALLS, REFER TO SPECIFICATIONS FOR ACCEPTABLE FIRESTOP AND SMOKE SEAL PRODUCTS.
WAY LENGTH (FEET) BASED ON SINGLE	D AUTOMATIC DOOR OPERATOR PUSH BUTTON	(S1) LOUDSPEAKER, CEILING-MOUNTED, TYPE 1
SE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP	ON/OFF PUSH BUTTON	S1 LOUDSPEAKER, WALL-MOUNTED, TYPE 1
T CONDUCTOR SIZE	THREE-FUNCTION PUSH BUTTON	CS INTERCOM SYSTEM CALL STATION BUTTON
#10 AVG #0 AVG #0 AVG #4 AVG 60 100 150 245	FB1 FLOORBOX, TYPE 1	VC VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LOUDSPEAKERS
100 170 265 425 135 230 355 565	J JUNCTION BOX	C1 SECONDARY CLOCK, CEILING-MOUNTED, TYPE 1
240 400 615 980	M METER	C1 SECONDARY CLOCK, WALL-MOUNTED, TYPE 1
-WAY LENGTH (FEET) BASED ON THREE	T THERMOSTAT ROUGH-IN	I SIGNALING BELL
GE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP	R RELAY	NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
	C ENCLOSED CONTROL CONTACTOR	
UE #10 AWG #8 AWG #6 AWG #4 AWG 0 120 200 205 100	NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED	
JUJ 200 JUJ 490		

- ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.
- 2. ALL "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING MAY BE INSTALLED WITHOUT CONDUIT, RACEWAY, OR CABLE TRAY ONLY WHERE CONCEALED ABOVE A SUSPENDED CEILING SYSTEM AND ACCESSIBLE FOR FUTURE MAINTENANCE. OTHERWISE, ALL CABLING (INCLUDING BUT NOT LIMITED TO CABLES ASSOCIATED WITH SYSTEMS SUCH AS ARCHITECTURAL EQUIPMENT, BUILDING ENERGY MANAGEMENT, TEMPERATURE CONTROLS, LIGHTING CONTROLS, COMMUNICATIONS NETWORKS,
- TELEPHONE, AUDIO-VIDEO, INTERCOM, PAGING, CLOCK, SURVEILLANCE, ACCESS CONTROL, FIRE ALARM, ETC.) SHALL BE INSTALLED IN AN APPROVED CONDUIT, RACEWAY SYSTEM, AND/OR CABLE TRAY UNLESS OTHERWISE NOTED. IN EXPOSED STRUCTURE CEILING AREAS, CONCEALED INSTALLATION OF CABLES IN RACEWAYS SHALL BE REQUIRED FOR AESTHETIC REASONS; REFER TO REFLECTED CEILING PLANS FOR LOCATION(S). THIS APPLIES TO ALL TRADES AND WORK CATEGORIES. EXCEPTIONS: A. DEDICATED MECHANICAL AND/OR ELECTRICAL ROOMS ABOVE 8'-0" AFF
- B. DEDICATED TELECOMMUNICATIONS ROOMS 3. ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, ETC. SHALL NOT BE
- CONSIDERED AN ACCEPTABLE GROUND. 4. CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EXCEPT AS NECESSARY TO SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUTED VERTICALLY TO SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDUCED TO 1 1/2" WHERE SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BETWEEN THE ROOF DECK

AND ANY CONDUIT/CABLING.

- 5. SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS OF ALL ITEMS LOCATED BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISIBLE STRUCTURE CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS THE TOP CHORD OR FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AESTHETIC PURPOSES. SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITECT/ENGINEER.
- 6. CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIMUM SIZE. 7. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES. CONDUITS INSTALLED ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING STEEL AND/OR ARCHITECTURAL LINES.
- CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACEPLATES, SURFACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECT/ENGINEER IF NOT EXPLICITLY SPECIFIED. 9. PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTROL DEVICES, AT LEAST

TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.

ONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 3/4" CONDUIT RACEWAY FROM BOX TO

MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH MECHANICAL /

	FIRE DETECTION & ALARM SYMBOL LEGEND
Ą	AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
∑ ∑	VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
A	AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
V	VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
AV	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
F	FIRE PROTECTION OR ALARM BELL
F	MANUAL PULL STATION
S	SMOKE DETECTOR
H	HEAT DETECTOR
D	DUCT SMOKE DETECTOR
C	CARBON MONOXIDE DETECTOR
\$ _{RTS}	KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
ES	FIRE PROTECTION FLOW SWITCH; PROVIDE SUPERVISED INPUT TO FIRE ALARM SYSTEM
23	PRESSURE SWITCH; PROVIDE SUPERVISED INPUT TO FIRE ALARM SYSTEM
TS	FIRE PROTECTION TAMPER SWITCH; PROVIDE SUPERVISED INPUT TO FIRE ALARM SYSTEM
M	ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
R	ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
IAC	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
AA	FIRE ALARM REMOTE ANNUNCIATOR
ACP	FIRE ALARM CONTROL PANEL
G/PC	WHERE "WG/PC" IS NOTED, PROVIDE LISTED WIRE GUARD OR PROTECTIVE POLYCARBONATE COVER FOR DAMAGE RESISTANCE OF ASSOCIATED DEVICE
WL	WHERE "WL" IS NOTED, PROVIDE LISTED WET-LOCATION VERSION OF ASSOCIATED DEVICE, SUITABLE FOR INDOOR OR OUTDOOR USE

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

	EL	ECTRONIC SAFETY / SECURITY SYMBOL LEGEND
	DC	DOOR CONTACT
	EL	ELECTRONIC LATCH
	ES	ELECTRONIC STRIKE
	К	INTRUSION DETECTION KEYPAD
YP.	IC	INTERCOM STATION
R	sc	WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
	sc	CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
	SC1	WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
	SC1	CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
		WALL-MOUNTED INFRARED MOTION DETECTOR
		CEILING-MOUNTED INFRARED MOTION DETECTOR
	UD	WALL-MOUNTED ULTRASONIC MOTION DETECTOR
		CEILING-MOUNTED ULTRASONIC MOTION DETECTOR
	CR	CARD READER
	CR _M	CARD READER, MULLION-MOUNTED
	XXXXX	ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND/OR SECTION 28 10 00 FOR FURTHER DETAILED REQUIREMENTS
	ACS	ACCESS CONTROL SYSTEM EQUIPMENT
	IDS	INTRUSION DETECTION SYSTEM EQUIPMENT
	PSU	POWER SUPPLY UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

GMB

616.796.0200

08.28.2023 OWNER WIP

PERMISSION OF

Р	ANELBOARD: PA	NEL '	'GH'										
	LOCATION: GREE	NHOUSE			DISTRIBUTI		: 120/240V 1F	PH 3W			MA	AINS TYPE: MAIN CIRCUIT BREAKER	
	MOUNTING: SURF				SCCR:	10KA				MAINS RATING: 100 A			
	ENCLOSURE: TYPE 1					PPLY FROM	BUS GARAG	GE PANEL		MCB RATING: 60 A			
I	PROVIDE WITH THE FOLLOWING:												
CIRCUIT	CIRCUIT DESCRIPTION	TRIP	POLES		A		В	c	;	POLES	TRIP	CIRCUIT DESCRIPTION	CIRCUIT
GH-1	LIGHTING	20 A	1	336	960					1	20 A	FANS	GH-2
GH-3	UNIT HEATER	20 A	1			240	1,200			1	20 A	CTRL PANEL	GH-4
GH-5	RECEP.	20 A	1	360	648					1	20 A	VENTS	GH-6
GH-7	SPARE	20 A	1			0	186			2	20.4	SITE LIGHTING	GH-8
GH-9	SPARE	20 A	1	0	186					2	20 A		GH-10
GH-11	SPARE	20 A	1			0	0			1	20 A	SPARE	GH-12
GH-13	SPARE	20 A	1	0	0					1	20 A	SPARE	GH-14
GH-15	SPARE	20 A	1			0	0			1	20 A	SPARE	GH-16
GH-17	SPARE	20 A	1	0	0					1	20 A	SPARE	GH-18
		PHAS	SE LOAD:	2,4	90 VA	1,62	26 VA	0 V	/A				
												TOTAL CONNECTED LOAD	: 4.1 kVA
												TOTAL CONNECTED CURRENT	: 17 A
NOTES:													

	LIGHTING FIXTURE SCHEDULE											
		APPROVED MANUFACTUR	ERS & CATALOG NUMBERS				LIGHT SO	URCE		INPUT	INPUT	
TYPE /							MIN. DELIVERED		DRIVER /	VOLTAGE	POWER	
TAG	DESCRIPTION	BASIS			FINISH	MOUNTING	LUMENS	TYPE	BALLAST TYPE	(V)	(W)	NOTE
L1	ENCLOSED AND GASKETED INDUSTRIAL STRIP, CLEAR LENS, 4' LENGTH,	LITHONIA:	OR APPROVED EQUAL	WHITE		SURFACE MOUNTED TO GREENHOUSE STRUCTURE, PROVID	E 4000	4000K	STANDARD	120 V	24	
	INTEGRAL OCCUPANCY SENSOR WITH BILEVEL CONTROL	FEM-L48-4000LM-IMACD-WD-MVOLT-GZ10-40K-80CRI-SBOR10HL	3V			ADDITIONAL UNISTRUT STRUCTURE AS REQUIRED						
S3	ARCHITECTURAL AREA LED FIXTURE, SINGLE HEAD, TYPE THREE	LITHONIA:	OR APPROVED EQUAL	BLACK		20' SQUARE ALUMINUM POLE	4000	4000K	STANDARD	240 V	93	
	DISTRIBUTION, DIE CAST ALUMINUM HOUSING, OUTDOOR WET LOCATION,	DSX0-P4-40K-80CRI-T3M-MVOLT-SPA-DBLXD-DLL127F1.5JU										
											i	

GROUNDING ELECTRODE SYSTEM DETAIL

BUS GARAGE EX. PANEL 208Y/120V 3PH 4W (3) #6 AWG + (1) #8 AWG GRD IN 1" CONDUIT PANEL 'GH' 120/240V 1PH 3W

PARTIAL ONE-LINE DIAGRAM NOT TO SCALE

GH-6

GREENHOUSE ELECTRICAL PLAN

utodesk Docs://5-6155 Mecosta-Osceola ISD Site Master Plan/5-6155E 2022.rvt

ELECTRICAL SITE GENERAL NOTES
1. REFER TO SITE/CIVIL PLANS FOR ADDITIONAL INFORMATION.
2. LOCATIONS SHOWN FOR EXISTING UTILITIES (IF ANY) ARE APPROXIMATE AND DERIVED FROM GENERAL OBSERVATION AND/OR AVAILABLE RECORDS. THIS PLAN SHALL NOT BE INTERPRETED AS SHOWING EXACT LOCATIONS OR SHOWING ALL UTILITIES IN THE AREA.

- CONTRACTOR SHALL FIELD-VERIFY LOCATIONS, SIZES, AND TYPES OF ALL EXISTING UNDERGROUND UTILITIES, CONDUITS, AND CABLES PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES TO IDENTIFY PUBLIC UTILITIES. VERIFY ALL PRIVATE UTILITIES WITH OWNER RECORDS AND MAINTENANCE PERSONNEL.
- PROTECT THE SITE, ADJACENT PROPERTY, AND UTILITY SERVICES FROM DAMAGE OR DISRUPTION OF SERVICE/ACCESS. DAMAGE TO EXISTING STRUCTURES, SITE, OR UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ALL UNDERGROUND CONDUIT SHALL BE RIGID NONMETALLIC (RNC) TYPE. ALL UNDERGROUND BENDS/ELBOWS SHALL BE GALVANIZED RIGID METALLIC (RMC) TYPE, PROTECTED FROM CORROSION PER CONDUIT SPECIFICATION REQUIREMENTS.
 INISTALL DEFECTABLE LINDERGROUND WARNING TARE ABOVE ALL
- INSTALL DETECTABLE UNDERGROUND WARNING TAPE ABOVE ALL UNDERGROUND CONDUITS AND CABLES, COLOR PER APWA UNIFORM COLOR CODE (RED FOR ELECTRIC POWER/LIGHTING, ORANGE FOR COMMUNICATIONS/ALARM/SIGNAL). REFER TO SPECIFICATIONS.
 ALL EXISTING TREES TO REMAIN SHALL BE CAREFULLY PROTECTED. DO NOT
- DRIVE HEAVY EQUIPMENT WITHIN 12 FEET OF TREE TRUNKS. BRANCHES WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE CUT OUT AS DIRECTED BY THE ARCHITECT/ENGINEER. ANY ROOTS OF EXISTING TREES TO REMAIN WHICH ARE EXPOSED DUE TO DEMOLITION SHALL BE COVERED WITHIN 6 HOURS WITH SOIL. DAMAGED TREES SHALL BE REPLACED AT THE DISCRETION OF THE ARCHITECT/ENGINEER AT THE EXPENSE OF THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
- PATCH AND REPAIR GRASS AND/OR OTHER IMPROVED PLANTINGS AS REQUIRED WHERE NEW UNDERGROUND CONDUITS, CABLES, AND/OR DUCTBANKS ARE INSTALLED. CONTRACTOR SHALL BACKFILL TRENCHES, LEVEL OUT SOIL FLUSH WITH GRADE, AND REMOVE ANY EXCESS MATERIAL PRIOR TO SEEDING REPAIR.
- CONTRACTOR SHALL BE RESPONSIBLE TO PATCH AND REPAIR ANY EXISTING SURFACE FINISHES AND OTHER ITEMS THAT ARE DISTURBED DURING THE COURSE OF DEMOLITION AND CONSTRUCTION, INCLUDING GRASS, CONCRETE, ASPHALT, LANDSCAPING, FENCING, STRUCTURES, IRRIGATION, UNDERGROUND UTILITIES, ETC.

Catalog Number

Notes

Туре

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

Introduction

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

d"series

0.44 ft²

(0.04 m²)

26.18"

14.06"

(35.7 cm)

2.26"

(5.7 cm)

7.46"

(18.9 cm)

23 lbs

(10.4 kg)

(66.5 cm)

Specifications

EPA:

Length:

Width:

Height H1:

Height H2:

Weight:

DSX0 LED						
Series	LEDs	Color temperature ²	Color Rendering Index ²	Distribution	Voltage	Mounting
DSX0 LED	Forward optics P1 P5 P2 P6 P3 P7 P4 Fotated optics P10 ¹ P12 ¹ P11 ¹ P13 ¹	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFRAutomotive front rowT5MType V mediumT1SType I shortT5LGType V low glareT2MType II mediumT5WType V wideT3MType III mediumBLC3Type III backlight control 3T4MType IV mediumBLC4Type IV backlight control 3T4LGType IV low glare 3LCC0Left corner cutoff 3TFTMForward throw mediumRCC0Right corner cutoff 3	MVOLT (120V-277V) ⁴ HVOLT (347V-480V) ^{5,6} XVOLT (277V-480V) ^{7,8} 120 ^{16,24} 208 ^{16,24} 240 ^{16,24} 347 ^{16,24} 347 ^{16,24} 480 ^{16,24}	Shipped included SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole)? RPA5 Round pole mounting (#5 drilling, 3" min. RND pole)? SPA5 Square narrow pole mounting (#5 drilling, 3" min. SQ pole)? SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole)? WBA Wall bracket ¹⁰ MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

H2

Control options		Other	options	Finish (required)		
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. 11, 12, 18, 19 PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc 13, 18, 19 PER NEMA twist-lock receptacle only (controls ordered separate) ¹⁴ PER5 Five-pin receptacle only (controls ordered separate) ^{14, 19}	PER7 FAO BL30 BL50 DMG	Seven-pin receptacle only (controls ordered separate) ^{14,19} Field adjustable output ^{15,19} Bi-level switched dimming, 30% ^{16,19} Bi-level switched dimming, 50% ^{16,19} O-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷	Shipp HS L90 R90 CCE HA BAA SF DF Shipp EGSR	hed installed Houseside shield (black finish standard) ²⁰ Left rotated optics ¹ Right rotated optics ¹ Coastal Construction ²¹ 50°C ambient operation ²² Buy America(n) Act Compliant Single fuse (120, 277, 347V) ²⁴ Double fuse (208, 240, 480V) ²⁴ Hed separately External Glare Shield (reversible, field install required, matches housing finish)	DDBXD DBLXD DNAXD DWHXD DDBTXD DBLBXD DNATXD DWHGXD	Dark Bronze Black Natural Aluminum White Textured dark bronze Textured black Textured natural aluminum Textured white

BSDB Bird Spikes (field install required)

Accessories

Ordered and shipped separately.								
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²³							
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) 23							
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) 23							
DSHORT SBK	Shorting cap ²³							
DSXOHS P#	House-side shield (enter package number P1-7, P10-13 in place of #)							
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)							
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)							
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)							
DSX0EGSR (FINISH)	External glare shield (specify finish)							
DSXOBSDB (FINISH)	Bird spike deterrent bracket (specify finish)							

NOTES

- NOTES
 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 33K only available with 80CRI. Contact Technical Support for other possible combinations.
 T1LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
 HVOLT not available with avoltage from 347-480V (50/60 Hz).
 HVOLT not available in packages P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
 WOLT not available in packages P1, P2 or P10. XVOLT not available with option NLTAIR2 PIRHN or option PIR.
 XVOLT not available in packages P1, P2 or P10. XVOLT not available with f15 drilling only (Not for use with #8 drilling).
 WBA cannot be combined with Tybe 5 distributions plus photocell (PER).
 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
 NLTAIR2 PIRHN not available with other controls including PIR, PER, PERS, PER, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1. y2 and P10 using HVOLT. NITAIR2 PIRHN not available with P1 using MVOLT.
 PIR not available with NLTAIR2, PIRH N available with P1 y2 and P10 using XVOLT. NITAIR2 PIRHN not available with P1 using MVOLT.
 PER/PERS/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PERS, PER7, FAO and DMG. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
 DMG not available with NLTAIR2 PIRHN, PIR, PERS, PER7, FAO and DMG. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
 DMG not available with NLTAIR2 PIRHN

Shield Accessories

External Glare Shield (EGSR)

Drilling

HANDHOLE ORIENTATION (from top of pole)

Handhole

House Side Shield (HS)

Tenon Mounting Slipfitter

	-	-					
Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

		-8		T.	₽ ┸ ₽	¥	₽ <u></u> 1₽
Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM29AS DM39AS		DM49AS
			М	inimum Acceptable	Outside Pole Dimen	sion	
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2@180DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type	-	■■	┖╸	₽ ┸₽	¥	■╂■
DSX0 with SPA	0.44	0.88	0.96	1.18		1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26		1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').

Lumen Ambient Temperature (LAT) Multipliers

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

Ambi	ent	Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	77°C	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

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	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

DSX0-LED
Rev. 09/05/23
Page 4 of 9

Electrical	Performance Package LED Count Drive Current (mA) Watt P1 20 530 3 P2 20 700 4 P3 20 1050 6 P4 20 1400 9 P5 40 700 8 P6 40 1050 13 P7 40 3300 530						Curre	nt (A)		
	Performance Package	LED Count	Drive Current (mA)	Wattage	120V	208V	240V	277V	347V	480V
	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	P3 20		69	0.57	0.57 0.33		0.25	0.20	0.14
Forward Optics (Non-Rotated)	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
Rotated Optics	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
R90)	P12	30	1050	103	0.86	0.50	0.43	0.37	(A) 277V 347V 0.12 0.10 0.16 0.13 0.25 0.20 0.34 0.27 0.33 0.26 0.44 0.39 0.62 0.49 0.18 0.15 0.25 0.20 0.37 0.30 0.46 0.37	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80	OCRI	90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Op	tics	Forward Optics																		
							30K			1		40K			50K					
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type		(30	00K, 70	CRI)			(40	00K, 70	CRI)			(50	00K, 70	CRI)		
				Tac	Lumens	B	U	G	LPW	Lumens	В	U	G	LPW	Lumens	B	U	G	LPW	
				115	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	15/	
				T2M	4,545	1	0	2	137	4,730	1	0	2	145	4,029	1	0	2	145	
				T3LG	4,107	1	0	1	130	4,280	1	0	1	129	4,363	1	0	1	131	
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149	
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136	
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150	
P1	33W	20	530	T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154	
				15W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156	
				RIC3	3 3 1 1	2	0	1	145	3,010	2	0	1	101	3,113	2	0	1	104	
				BIC4	3,454	0	0	2	101	3,599	0	0	2	105	3,670	0	0	2	107	
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108	
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108	
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157	
				T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149	
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138	
				13M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140	
				T AM	5,29/	1	0	2	11/	6 272	1	0	2	122	5,628	1	0	2	142	
				T4IG	5 474	1	0	1	121	5 705	1	0	1	139	5 816	1	0	1	142	
				TFTM	6.060	1	0	3	134	6.316	1	0	3	140	6.439	1	0	3	143	
P2	45W	20	700	T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146	
				T5W	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148	
				T5LG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146	
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102	
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105	
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102	
				AER	4,352	1	0	2 1	90	4,530	1	0	2 1	100	4,024	1	0	2 1	102	
				TIS	9.006	1	0	2	140	9.386	1	0	2	136	9.569	1	0	2	139	
				T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129	
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130	
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116	
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132	
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120	
02	(0)	20	1050	IFIM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133	
P3	09W	20	1050	T2M	0,012	3	0	2	128	9,184	4	0	2	133	9,303	4	0	2	130	
				T516	8,838	3	0	1	128	9,333	3	0	1	135	9,390	3	0	1	136	
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6.522	0	0	2	95	
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98	
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95	
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95	
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139	
				115	11,396	1	0	2	122	11,8//	1	0	2	128	12,109	2	0	2	130	
				T2M T3M	10,557	2	0	3	115	11 130	2	0	3	118	11,21/	2	0	3	121	
				T3LG	9,540	1	0	2	103	9,942	1	0	2	120	10.136	1	0	2	109	
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124	
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113	
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125	
P4	93W	20	1400	T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127	
				T5W	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129	
				15LG	7 7 6	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128	
				BLC3	8 022	0	0	2	85	8,096	0	0	2	٥/ ٥٥	8,254	0	0	2	89 07	
				R(CO	7,838	1	0	2	84	8,169	1	0	2	88	8,324	1	0	2	90	
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90	
				AER	11 306	1	0	2	122	11 877	1	0	2	178	12 100	2	0	2	120	

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Op	tics																		
							30K			ĺ		40K					50K		
Performance	System Watts	LED Count	Drive	Distribution Type		(30	00K, 70	CRI)			(40	00K, 70	CRI)			(50	00K, 70	CRI)	
Раскаде			Current (IIIA)		Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW
			Ì	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
P5	90W	40	700	T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				TSLG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,8/4	1	0	2	98	9,047	1	0	2	100
					8,515	2	0	2	94	8,8/4		0	2	98	9,04/	2	0	2	100
				AFK T1C	17,580	2	0	2	13/	12,902	2	0	2	143	13,154	2	0	2	140
				115	16 252	2	0	2	120	16,200	2	0	2	100	10,042	2	0	2	130
				12M	16,442	<u>ן</u>	0	4	119	17 135	2	0	4	124	17,209	3	0	4	120
				TRIG	14 687	2	0	7	120	15 306	2	0	2	112	15 605	2	0	2	11/
				TAM	16 687	2	0	4	107	17 391	2	0	5	172	17 730	2	0	5	179
				T4IG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	118		
		40	1050	TETM	16.802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
P6	137W			T5M	17,168	4	0	2	125	17.893	5	0	3	131	18,241	5	0	3	133
				T5W	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				T5LG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	DK, 70 (RI) G IPW 0 2 146 0 3 135 0 4 137 0 2 122 0 4 137 0 2 122 0 4 139 0 2 122 0 4 139 0 2 123 0 2 143 0 2 143 0 2 143 0 2 100 0 2 100 0 2 100 0 2 100 0 2 100 0 2 114 0 5 129 0 2 114 0 5 130 0 3 135 0 2 134 0 3 132 <t< td=""><td>112</td></t<>	112
				IFIM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
P7	171W	40	1300	15M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				15W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				1516	20,418	4	0	2	120	21,2/9	4	0	2	125	21,694	4	0	2	12/
				BLC3	14,182	0	0	5	85 96	14,/80	0	0	5	<u>۲</u>	15,008	0	0	5	01
					14,04/	1	0	4	00	13,203	1	0	4	07 97	15,002	1	0	4	20
					14,309	1	0	د د	04 8/	14,913	1	0	2	0/ 97	15,204	1	0	د 2	07 80
				AFR	20 806	2	0	3	122	21.683	2	0	3	127	22.106	2	0	3	129

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Rotated Optics																				
							30K					40K			50K					
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type		(30	00K, 70	CRI)			(40	DOK, 70	CRI)			(50	00K, 70	CRI)		
. acturge			cancere (mit)		Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	
				TIS	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154	
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143	
				T316	6.194	2	0	2	130	6 4 5 5	2	0	2	142	6.581	2	0	2	145	
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147	
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134	
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148	
P10	51W	30	530	T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151	
				15W	7,357	3	0	2	145	7,667	3	0	2 1	151	7,816	4	0	2	154	
				BLC3	5.043	3	0	3	99	5,256	3	0	3	103	5.358	3	0	3	105	
				BLC4	5,208	3	0	3	102	5,428	3	0	3	105	5,534	3	0	3	109	
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106	
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106	
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154	
					9,358	3	0	3	138	9,/53	3	0	3	143	9,943	3	0	3	140	
				T3M	8,009	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135	
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122	
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139	
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126	
			700	TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140	
P11	68W	30		T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143	
				15W	9,304	4	0	2	13/	9,696	4	0	2	143	9,885	4	0	2	145	
				BIG	6.378	3	0	3	137 9,696 135 9,569 94 6,647 97 6,865 95 6,707 95 6,707 138 9,753	3	0	3	98	6,777	3	0	3	100		
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103	
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101	
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101	
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146	
				115 T2M	13,24/	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	130	
				T3M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	120	
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114	
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129	
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118	
		20	4050	TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130	
P12	103W	30	1050	15M	12,960	4	0	2	125	13,50/	4	0	2	131	13,//0	4	0	2	133	
				15W	12,998	4	0	2	127	13,720	4	0	2	135	13,994	4	0	2	135	
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93	
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96	
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94	
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94	
				AFK T1C	15,24/	3	0	3	128	16,800	3	0	3	134	14,075	3	0	3	130	
				T15	14 547	4	0	4	122	15 161	4	0	4	127	15 457	4	0	4	120	
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	120	
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108	
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123	
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112	
013	12014	20	1200	IFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124	
P13	129W	30	1300	TSM	15,364	4	0	2	119	16,013	4	0	2	124	16,525	4	0	2	12/	
				T5LG	15,015	3	0	2	121	16.059	3	0	2	120	16,372	4	0	2	129	
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88	
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91	
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89	
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89	

DSX0 with RPA, RPA5, SPA5, SPA8N mount Weight: 25 lbs

DSX0 with WBA mount Weight: 27 lb

DSX0 with MA mount Weight: 28 lbs

SPA8N

2.41

nLight Control - Sensor Coverage and Settings

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

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

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly[™] product, meaning it is consistent with the LEED[®] and Green Globes[™] criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metalcore circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-touse CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. 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.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN ACT

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/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.

- 11.1:31 Short Term Rentals are permitted by right in all residential and the C-2 zoning district, provided the following standards are met
 - (1) All occupancy standards within the zoning district shall be met.
 - (2) Options for occupancy maximums
 - a. There shall be a maximum of 12 people (not including children 2 and under)
 - b. A maximum of two adults per bedroom (no limitation on children 17 and under)
 - (3) Maximum length of stay is 28 days
 - (4) In the R-1 District the house must be owner occupied

We need to clarify if we want it to be owner occupied at the time of the rental i.e. owner must be present or just that it has to be considered an owner occupied dwelling that could be rented when owner is on vacation/not there.

I spoke with the City of Houghton; they require the homeowner to be present during the rental period – They were trying to deter the influx of snowmobile traffic in town when residents are going to Florida for a month or two.

(5) All short-term rentals must adhere to Chapter 151: Housing Regulations of the City Code of Ordinances.

Definitions:

Short-term rental – the rental or subletting of any dwelling for a term of 28 days or less, but does not include the use of campgrounds, hotel rooms, transitional housing operated by a nonprofit entity, group homes such as nursing homes and adult foster care homes, hospitals, or housing provided by a substance abuse rehabilitation clinic, mental health facility, or other healthcare related clinic.

Additional Changes

- Each residential zoning district and the C-2 district will have Short Term Rentals listed under permitted use.

Houghton's Definition:

Owner-Occupied Rental means one or more Owner(s) of record of the dwelling unit are living in the dwelling unit, the dwelling unit qualifies for a personal residence exemption, and the owner is allowing one or more persons to rent a portion of the dwelling unit for a period of time.

Sec. 14-149. Owner-Occupied Rental. A dwelling that meets the definition of an Owner-Occupied Rental as defined in this Article is not required to obtain a license for the rental property which would otherwise be required by Section 14-148 above as long as the dwelling continues to meet the Owner-Occupied definition contained in 14-147. However, Owner-Occupied Rentals are required to: A. Submit an application to the Code Enforcement Officer that includes the following: 1. Name(s) of all owners of record of the property; 2. Address of the property; 3. Zoning Designation; 4. Floor plans and site plans, which must include parking area; 5. Copy of the lease6. Initial application fee of \$100. B. Comply with Sections 14-150, 14-151, and 14-152. C. Comply with the zoning ordinance in regard to the number of tenants allowed. D. Comply with any other City of Houghton, Michigan, or Federal law, code, ordinance, rule or regulation. 1. Provide off-street parking in compliance with the property review standards in Section14-148 (2)(a)(1). E. Submit to an annual inspection by the Code Enforcement Officer. F. Pay an annual administrative fee of \$50 and upon submission of the annual administration fee, provide a copy of the then existing lease. G. Appeals of any decision in this Section follow the process in Section 14-148 (M). The Code Enforcement Officer will keep records of all Owner-Occupied rentals in the City. An Owner-Occupied rental's exemption from licensing ends when it fails to meet the Code definition of Owner Occupied, or when the property changes ownership
Local Power and The Housing Crisis

PLANNING COMMISSION

City of Big Rapids

Framing the Problem

The Nation

Housing is a basic human need. It is also a commodity so its availability is affected by the basic market forces of supply and demand. Since the 2008 financial crisis, nationwide rates of new housing stock construction have not recovered.

Big Rapids

Big Rapids has little in terms of housing choice. Many of the rental options in the city are geared towards students, and this is also eating into the amount of single family homes available. Much of the current housing stock is aging out of its lifespan.

Michigan

A 2019 study determined that despite Michigan's relatively slow population growth, the number of households is increasing by almost twice the rate of its population. This is due in part to a trend of smaller family units and more people living alone.

What Changed?

Construction costs, strict land use regulations, and changes in demand have all contributed to the current shortage. Localities can't change the demand, so we have to address the supply.



Federal Reserve Bank of St. Louis

Housing Price Index and Real Median Housing Income in Michigan



20XX

Federal Reserve Bank of St. Louis, Housing Price Index for Michigan (blue) and Real Median Household Income in Michigan, Adjusted (red)

Big Rapids Assessing Data



Average Sale Price of SFH 2013 \$71,072

Average Sale Price of SFH 2018 \$110,903

Average Sale Price of SFH 2023

\$177,292 (Increase ~150%)

Limiting Factors

LABOR	Shortages of labor in the skilled trades have a great effect on housing. New builds require plumbers, electricians, carpenters, drywallers, etc.	
LUMBER	The cost of construction materials has risen steadily for decades which is not abnormal. However these prices skyrocketed 33% between the start of the pandemic and March of 2022.	
LAND	The availability and viability of land is often determined by forces outside of anyone control. Soil, surrounding environment, proximity to needed services and goods, all affect the viability of land. But land use regulations and public input also effect this.	
LAWS	This is the primary lever of power that government holds whe effecting housing availability. While other factors can be affect natural factors, federal and state policy, or the economy at la local governments have control of their land use and zoning regulations.	en cted by ırge;
	Pitch Deck	5







\$713/Month

\$612/Month

This is the **minimum annual salary** required to afford rent in Mecosta County



For every 4 people who live and work in Big Rapids





30 people live elsewhere and commute to the city to work.





2015 2021

Housing Study Cont.

Conservative Market Potential | 2020 New Builds Only | Big Rapids City



 Households are looking for both detached and attached housing units, whether associated with the university segment or not



 Renters in **both** the university segment and the rest of the community segments are active looking for units – a total of at least 630 new rental units could be captured

Incentives

"Homeowners are the dominant faction in local government politics. Owneroccupied homes provide both consumer services (housing) and an undiversified, durable investment (house and land) that is sensitive to what local governments do. As a result, homeowners monitor local government activities and discipline local officials whose actions jeopardize home values." - William Fischel, Dartmouth Economist specializing in housing issues

Fears

- It is only rational that a homeowner would oppose things they might see as threats to their investment, or simply as a change in their environment or way of life.
- Some of these fears should be weighed and addressed by the board, some should be heard but not weigh on decision making.
- No matter where new development comes, there will be those with concerns about its location and use. (Not In My Back Yard)

Addressing Both

Recent studies have begun to show that perception is not the same as reality when it comes to the effect of new development on home values. In fact, there is no discernable difference in the rate of appreciation between homes located near higher-density development and those that are not, nor does it create more congestion or crime.

Pitch Deck

POLITICS OF HOUSING (MAP Zoning Reform Toolkit, 2022)

8

WHAT LOCAL POWER CAN CHANGE

Zoning

Zoning is the mechanism that dictates land development decisions and, ultimately, determines the patterns of our built environment. Minimum lot dimensions, maximum densities, use districts, and other regulations have shaped how - and where - we live, work, and play. Zoning influences:

- Where businesses can grow;
- If the workforce can find housing at a price point that fits their paycheck;
- How much time and resources must be dedicated to a commute;
- If a family's school-age children can attend a good school district;
- Whether aging adults can stay in their neighborhood; and even
- What an individual's life expectancy is likely to be simply simply by knowing their zip code

The Master Plan

- The new Big Rapids Master Plan will be both our roadmap and justification for change going forward.
- Establishing a narrative that embraces housing supply and choice with a greater variety of housing types and policy to ease administrative burden should start with the public's input.
- Public engagement should give people a space to express issues with the status quo, and we need to communicate how it can change.

Big Rapids Housing Report (2020)

https://www.cityofbr.org/government/community_development/hou sing_report.php

MAP Zoning Reform Toolkit (2022)

https://www.planningmi.org/assets/images/ZoningReformToolkit/M AP_ZoningReformToolkit_2022%2008%2002_Gradient.pdf

Resources to Review