



MCKENNA

May 25, 2023

Darwin McClary
Village Manager
Village of Lake Orion
21 E. Church St.
Lake Orion, MI 48362

Subject: PC 23-003 - Orion Villas Site Plan Review #2

Dear Mr. McClary:

Orion Villas is a site plan for an eight-unit townhome development located at 597 Flint Street. This Project is located on two parcels, one in the Village of Lake Orion (09-01-302-035) and the other in Orion Township (09-01-327-046). Due to a 2019 interlocal agreement, the entire development is subject to Village Ordinance review standards.

Summary of Compliance. A summary of the findings is shown in the table below. Further specifications, review, and recommendations regarding the site plan are detailed on the following pages.

Ordinance Standards	Compliance	Comments
Data Required	In Compliance	n/a
Use & Harmonious Design	In Compliance	n/a
Dimensional Standards	In Compliance	n/a
Natural Features / Landscaping	<u>Can Comply</u>	The Planning Commission must determine whether the planting diversity standard should be waived; screen wall details required; and additional environmentally sensitive designs are encouraged.
Access & Circulation	<u>Can Comply</u>	A garbage truck turning diagram is required; additional incidental signage details must be provided; and a reduction to the overall impervious surface of the site is warranted.
Parking & Loading	<u>Not in Compliance</u>	Parking spaces must be dimensioned. Parking spaces exceed the minimum by over 20% - the Planning Commission must approve the 3 extra spaces or remove them from the site plan.
Building Design & Architecture	<u>Can Comply</u>	Material samples and a colored rendering must be provided to the Planning Commission for approval.
Engineering / Stormwater Management	TBD	Subject to Village/Township Engineering review.
Lighting	In Compliance	n/a

HEADQUARTERS
235 East Main Street
Suite 105
Northville, Michigan 48167

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F 248.596.0930
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Site Plan Review

Standards for Site Plan Approval are set forth by [Article 19: Administrative Procedures and Standards](#). This project is reviewed against the Village's [Zoning Ordinance](#), Master Plan, existing site conditions, and sound planning and design principles. We offer the following comments for your consideration:

1. USE & HARMONIOUS DESIGN

Zoning Ordinance Standards: *All elements of the site must be harmoniously and efficiently designed in relation to the topography, size, and type of land, and the character of the adjacent properties and the proposed use. The site will be developed so as not to impede the normal and orderly development or improvement of surrounding properties for uses permitted on such property.*

Findings: The site is zoned the RM, Multiple Family Residential District where the residential uses are outlined and permitted in section 5.02. The Intent section of Article 5 reads:

... to address the varied housing needs of residents of different age and family groups by providing various types and sizes of residential dwellings for ownership or rental at a higher density than is permitted in any of the Single Family Residential Districts. Multiple family housing should be located near major thoroughfares and collector streets for good accessibility and must be designed so as not to overtax existing community facilities, utilities, or services.

The proposed townhouses are suitable housing typology for the RM, Multiple Family Residential District as they are a slightly denser residential product. The Project also adheres to the accessibility intent of the District as it is located near two major thoroughfares (Flint Street and Orion Road).

2. DIMENSIONAL STANDARDS

Zoning Ordinance Standards: *The site plan must comply with the district requirements for minimum floor area, height of building, lot size, yard space, density and all other requirements as set forth in the Schedule of Regulations.*

Findings: The Project complies with the dimensional standards of the RM, Multiple Family Residential District. The table below outlines the dimensional standards required and whether compliance has been met:

Dimensional Measurement	Required	Proposed	Comments
Min. Lot Area	8,000 sq. ft.	33,040 sq. ft.	In compliance.
Min. Lot Frontage	70'	261'	In compliance.
Front Yard Setback	25'	28'	In compliance.
Min. Side Yard Setback (both)	15'	33' (east); 38' (west)	In compliance.
Min. Rear Yard Setback	25'	34'	In compliance.
Min. Floor Area: 2-Bedroom Unit	800 sq. ft.	>900 sq. ft.	In compliance.



Dimensional Measurement	Required	Proposed	Comments
Max. Building Height	40'	36'-8 ½"	In compliance.
Max. Lot Coverage	35%	22.8%	In compliance.

3. NATURAL FEATURES, SCREENING & LANDSCAPING

Zoning Ordinance Standards: *The existing natural landscape shall be preserved in its natural state as much as possible, by minimizing tree and soil removal and by topographic modifications that result in maximum harmony with adjacent properties.*

There must be reasonable visual and sound privacy. Fences, walks, barriers, and landscaping must be used, as appropriate, for the protection and enhancement of property and the safety and privacy of occupants and users.

Findings:

Landscaping and Plant Material. Per our previous recommendation, additional landscaping is now provided along the northern screening wall which has also been modified to step down to a height of 2.5 feet at the Schorn Road terminus, allowing for clear vision for oncoming traffic. All landscaping walls and screening walls must match the brick exterior and must be detailed on the plan with elevation drawings and dimensions.

Per section 15.02, no single species shall consist of more than 20% of any particular type of plant material provided on a site, therefore, total plantings of a given type should be a multiple of five. The landscape plan on Sheet LP-1 notes several species comprising 20% or more of a given plant type. For instance, nine deciduous trees are proposed, with five as red maples. To reach the variety requirement, the applicant must propose an additional tree and limit each species to two on the site. We recommend increases to both the number and variety of tree plantings to meet this standard; however, the Planning Commission may waive this requirement if it finds the landscaping to be sufficient.

Environmentally Sensitive Design. It is encouraged that the Project incorporates environmentally sensitive design treatment; this includes reducing impervious surfaces to the minimum amount necessary, replacing interior concrete walkways with permeable pavers, and installing rain gardens within lawn areas to mitigate stormwater and pollution. One significant improvement would be to remove the sidewalk along the west side of the building and replace it with additional landscaping (there is sufficient pedestrian access around the building to the east and through the garages of each unit).

The Applicant must also note the total amount of impervious surface amount on the site plan.

4. ACCESS & CIRCULATION

Zoning Ordinance Standards: *All buildings or groups of buildings shall be so arranged as to permit convenient and direct emergency vehicle access.*

The arrangement of public or common ways for vehicular and pedestrian circulation shall respect the pattern of existing or planned streets or pedestrian or bicycle pathways in the vicinity of the site. Streets and drives that are a part of an existing or planned street system serving adjacent developments shall be of an



appropriate width to the volume of traffic they are planned to carry and shall have a dedicated right-of-way equal to that specified in a recognized source of reference.

There shall be a pedestrian circulation system that is insulated as completely as possible from the vehicular circulation system.

Where the Planning Commission determines, after expert consultation, that public safety would be substantially promoted in a particular location by reducing the number of points of ingress and egress between private property and an adjoining highway, cross-access may be required. Shared drive approaches between adjoining parcels may also be permitted under this Section.

Findings:

Vehicular Access. Access to the site is provided at two locations. The primary access point is a two-way driveway via Schorn Road on the eastern side of the Project. Per our previous recommendation regarding the paving of Schorn Road, the Applicant proposes paving with asphalt up to the north property line.

We previously recommended reducing the width of this drive from 28 to 26 feet; and the Applicant reduced it to a width of 27 feet with the entrance at 26 feet. The Applicant justifies this by stating the width is to allow for garage access; however, we maintain our recommendation to further reduce the width of the drive, ideally to 24 feet. For reference, the Village's Zoning Ordinance (section 14.04) only requires 22 feet maneuvering lanes in lots with 90-degree parking. If fire and service truck access are not impacted, the less impervious surface area, the better for the environment, and the project site is still being constructed per the uniform application of the Village's Ordinance.

The secondary access point is a one-way ingress point on the southern side of the Project that allows traffic into the site from the roundabout intersection of Flint Street/Miller Road and Orion Road. This configuration adds another curb cut to the roundabout; however, as the driveway is a one-way exit point from the roundabout, it is not anticipated that traffic will be negatively impacted. The driveway widens as it enters the site and should be as narrow as possible to discourage wrong-way traffic. We maintain our recommendation to reduce the width of the one-way drive to 20 feet, which is the minimum necessary for emergency and service access. While a truck-turning diagram for emergency vehicles was submitted; a truck-turning diagram for garbage trucks is also necessary.

In our previous review, we noted that incidental signage ("do not enter", "one-way", etc.) were missing from the proposed plans. Two "Do Not Enter" signs at the beginning of the one-way drive are now provided; however, signage details are not provided in the plans aside from their proposed locations and must be included. Further, extra measures should be taken to prevent drivers from driving down the wrong way of the one-way. We recommend the applicant move the existing painted one-way arrow northward and place an additional one-way arrow to the south. Additionally, we recommend the applicant reduce the one-way drive to 20 feet to deter potential wrong-way traffic, provided the truck turning diagrams support this modification.

Pedestrian Connectivity. A 5-foot walkway is proposed in front of the townhomes, connecting the front doors of the townhomes to a shared sidewalk that connects to the existing public sidewalk along Flint Street/Miller Road. Additionally, the proposed sidewalk extends along Schorn Road and to the western side of the townhomes. The proposed sidewalk adequately allows for pedestrian connection within the site and with respect to existing pedestrian infrastructure. We recommend the applicant reduce all interior walkways to 4 feet wide and remove the interior walkway along the west side of the townhomes and replace it with additional landscaping. Vehicular and pedestrian access is subject to further review by the Village/Township Engineer.



5. PARKING & LOADING

Zoning Ordinance Standards: *Off-street parking, loading, and unloading areas and outside refuse storage areas, or other storage areas that face or are visible from adjacent homes, or from public thoroughfares, shall be screened by walls, fencing or landscaping of effective height.*

Findings: Off-street parking is located within the site. Each townhouse includes a two-car garage. Additionally, six parking spaces are proposed along the rear (north) of the Project site, one of these parking spaces is barrier free, as required by section 14.02.

Per section 14.02, two parking spaces are required for each unit which results in a total of 16 required parking spaces (with 8 units). A total of 22 parking spaces are proposed, including 1 barrier free parking space, exceeding this requirement by six parking spaces.

Per section 14.02(B.2), the minimum parking requirement cannot exceed 20% to minimize excessive areas of pavement, unless otherwise approved by the Planning Commission. 20% of 16 is 3.2, therefore the additional 3 spaces must be approved by the Planning Commission or removed from the site plan.

Off-street parking space and aisleway dimensions must also be dimensioned.

6. BUILDING DESIGN & ARCHITECTURE

Zoning Ordinance Standards: *Building design and architecture shall relate to and be harmonious with the surrounding neighborhood in terms of texture, scale, mass, proportion, materials, and color. Buildings should be designed with stylistic harmony and aim to serve people of all ages and abilities.*

Findings:

Building Design: The proposed townhomes have slightly varied front setbacks and façade elements, providing relief to the large building. Three pitched, hipped roof segments help ground the design and provide vertical interest. Per our previous recommendation, the Applicant has provided dormer-style windows in the space between the hipped segments to give greater visual interest.

Our previous recommendation discouraged blank walls, which the applicant addressed with additional windows, bay windows, dormers, and extended the proposed brick upward. However, as previously recommended the brick should be extended to just above the garage doors so that they are entirely encased in brick.

Building Materials. The front façade of the townhomes is to be comprised mainly of white brick accented with iron-ore colored smart side siding. An accent of metal flashing above the doors and embossed windows will be applied. Material samples and color renderings must be provided to the Planning Commission.

As previously mentioned, all landscaping walls and screening walls must match the brick exterior and must be detailed on the plan with elevation drawings and dimensions.

7. ENGINEERING / STORMWATER MANAGEMENT

Zoning Ordinance Standards: *Appropriate measures shall be taken to ensure that the removal of stormwater will not adversely affect adjoining properties or the capacity of the public storm drainage system and shall comply with State and Federal standards. Provisions shall be made for the construction of*



stormwater facilities, and the prevention of erosion and dust. Surface water on all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicles or pedestrian traffic and will not create nuisance ponding in paved areas.

Adequate services and utilities and improvements shall be available or provided, located and constructed with sufficient capacity and durability to properly serve the development. All utilities shall be located underground unless modified by the Planning Commission based on persuasive evidence provided by the applicant indicating it is not feasible to locate utilities underground. Where possible and practical, drainage design shall recognize existing natural drainage patterns.

Findings: Stormwater pre-treatment infrastructure is not proposed for this Project. All stormwater and utility requirements must be addressed to the satisfaction of the Village Engineer.

8. LIGHTING

Zoning Ordinance Standards: *Exterior lighting shall be so arranged so that it is deflected away from adjoining properties and so that it does not impede vision of drivers along adjacent streets.*

Findings: Building mounted lighting and light pole fixtures are proposed within the Project. Parking areas, driveways and pedestrian walkways within the site are adequately illuminated.

Standards	Required	Proposed Lighting	Comments
Max. Height of Light Fixtures	22' or the height of the building, whichever is less.	15' maximum	In compliance.
Max. Illumination at Any Given Point	10 fc.	6.1 fc.	In compliance.
Max. Illumination at the Property Line	0.5 fc.	0.5 fc.	In compliance.



Recommendation

We commend the Applicant for making significant improvements to the site plan based on our previous recommendations. While there remain several outstanding concerns (underlined throughout this report, and summarized below), we find these issues can be addressed administratively and during the final engineering review.

Therefore, *we recommend that the Planning Commission approve the site plan for the proposed Orion Villas Townhomes at 597 E. Flint Street (Parcel#: 09-01-302-035, 09-01-327-046), subject to the following conditions:*

- *The Planning Commission approves the proposed landscaping plan, including required waivers.*
- *Details for all incidental signage be provided.*
- *Details for all screening walls be provided.*
- *A truck turning diagram showing truck access to the dumpster be provided. Any driveway modifications recommended in this report must be reflected in truck turning diagrams.*
- *The west ingress drive be reduced to the minimum width necessary (no narrower than 20-feet) to deter wrong-way traffic while allowing emergency access to the site.*
- *The portion of the north access drive immediately behind the garages be reduced to the minimum width necessary (24 feet wide) to minimize impervious surface area.*
- *The Planning Commission approves the three excess parking spaces.*
- *The applicant provides, and the Planning Commission approves, the proposed material samples and color renderings for the façade.*

If you have any questions, please do not hesitate to contact us. Thank you.

Respectfully submitted,

McKENNA


Gage Belko, AICP
Associate Planner


Lauren Sayre
Assistant Planner


Ashley Amey
Assistant Planner

CC: **Village Manager**, Mr. Darwin McClary (mcclaryd@lakeorion.org)
Village Clerk, Ms. Susan Galeczka (galeczkas@lakeorion.org)

21 E. Church Street, Lake Orion, MI 48362



CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

May 22, 2023

Darwin McClary
Village Manager
Village of Lake Orion
21 E. Church St.
Lake Orion, MI 48362

Re: Orion Villas
Site Plan Review #2
NFE Job No. N569

Dear Mr. McClary:

We have reviewed the Site Plan for the above referenced site. Our review is consistent with the requirements of Article 19 of the Zoning Ordinance, Section D – Required Information and relevant sections of the Zoning Ordinance related to the zoning district. We have the following comments:

1. A fire suppression lead has been shown, but no Fire Department Connection (FDC, sometimes called a Siamese connection). These items must comply with the requirements of the Orion Township Fire Department.
2. Provide dimensions to show:
 - Depth of standard parking stalls (we note width is shown as required)
3. (Comment 10 on previous review) Show location of any on-site identifying signage for the development, or note that none is proposed. We note that signage is shown for fire lanes and traffic control, but there does not appear to be a site identification sign proposed on the site (i.e., the name of the development). If no sign is proposed, please clarify.
4. (Comment 13 on previous review) We remain concerned that the width of the one-way entrance drive from Flint Street (26' widening to 28') with a single "One Way Do Not Enter" sign located at a point only visible after a car has already made the wrong turn may not provide an adequate deterrent from people attempting to exit the site using this driveway. Doing so would put exiting traffic facing nearly head-on with west-bound traffic properly utilizing the roundabout. The design engineer has indicated in their response that the Fire Department is requiring this width, which does not correspond with the understanding from our internal review meeting of April 20 at which the Fire Marshall stated 20' would be adequate as long as vehicle maneuvering criteria are met.

If the drive cannot be narrowed, we recommend providing a physical discouragement of some type; perhaps a raised, mountable island or traffic hump from the end of the sidewalk NW of Unit A north to the curb next to the dumpster enclosure. Also, additional "One Way Do Not Enter" signage at either end of the physical impediment at this location.

5. Continuing the concern with the Flint Street entrance drive, the three adjacent storm manholes and the County map of the Axford Drain referencing permit #09-107 appear to indicate the presence of an underground vault structure. The design engineer must show that the existing structure is rated for traffic loading if the entrance drive is located above or within a line of influence of the vault.
6. (Comment 17 on previous review) The proposed landscaping and lighting plan indicates strong potential for interference from the proposed light pole with the proposed storm sewer near the Flint Street entrance. We recommend providing 10' clearance between utilities light poles.
7. (Comment 18 on previous review) A portion of existing 24" storm sewer that conveys drainage from Miller Road and Flint Street is located on-site along the west property line. No easement is shown on the plans. If there is not an easement over this area, we recommend the Village require a drainage easement to facilitate maintenance.
8. (Comment 19 on previous review) The architectural plans do not indicate the total proposed height of the building. The height indicated on the revised architectural plans does not appear to reach the peak of the roof. Show total height and verify that it does not exceed the maximum allowable.

The following items are required, but can be addressed during the engineering phase of the project:

1. (Remaining from previous review) Show the location of the Axford Drain and any associated easements on the site plans. We note that the proposed storm sewer has been adjusted to eliminate the previously proposed removal of the 12" existing Axford Drain section; however, that section is no longer shown on any of the plans. The proposed on-site storm sewer may cross or interfere with this existing branch of the drain. This issue must be shown clearly on the engineering design plans.
2. Connection to the Axford Drain will require a permit from the County. The County will also review the proposed detention and will expect it to meet the latest design criteria. We note that the preliminary information shown on sheet 5 appears to use outdated methodology.
3. We note that the proposed outlet from the underground detention is indicated as a 3" pipe when an orifice of just over 1.5" diameter was calculated. For the engineering

submittal, provide the proper size orifice to meet OCWRC requirements for detention volume and time.

4. We note that sanitary sewer leads are now shown to each individual unit. Design of sanitary sewer must meet the requirements of Orion Township.
5. Water service leads have been shown to each individual unit. We note that the Township may require a single service to the building, located in a separate meter room with Knox box accessibility. All water main and fire suppression design must meet the requirements of Orion Township.
6. We note that the 10' dimension shown on sheets 3 and 4 along the NE property line appears to mark the distance from the property line to the proposed water main, meaning that the proposed 6' high concrete screen wall will be located closer than 10' to the water main and within the proposed water main easement. Additionally, landscape planting have been added along the face of the wall as well. Easement width and accessibility must meet the requirements of Orion Township.

We recommend that the plan be revised and resubmitted subject to the above comments. If you have any questions, please do not hesitate to call.

Sincerely,

Nowak & Fraus Engineers



Wendy E. Spence, PE
Senior Project Manager

CC: Laura Haw, McKenna
Gage Belko, McKenna
Wesley Sanchez, DPW Director
Harold Rossman, Chief of Police, Lake Orion
John Pender, Assistant Chief, Orion Township Fire Department
Jeffrey Williams, Fire Marshall, Orion Township Fire Department
David Goodloe, Building Official, Orion Township
Mark Landis, Township Engineer (OHM)
Susan Galeczka, Clerk, Lake Orion

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Charter Township of Orion

3365 Gregory Rd., Lake Orion MI 48359
www.oriontownship.org

Fire Department

Phone: (248) 391-0304, ext. 2000

Fax: (248) 309-6993

To: Planning Commission/Planning & Zoning Director
From: Jeff Williams, Fire Marshal
Re: Orion Villas Site Plan Review 2nd Submittal
Date: May 26, 2023

The Orion Township Fire Department has completed its review of the Application for Orion Villas for the limited purpose of compliance with Charter Township of Orion and Village of Lake Orion Ordinance's, Michigan Building Code, and all applicable Fire Codes.

Based upon the application and documentation provided, the Fire Department has the following recommendation:

Approved
X Approved with Requirements (See below)
Not approved

Requirements:

- The turning radius for the emergency apparatus road shall be in accordance with the Orion Township Fire Department turning performance analysis template. Overlays of the template shall be shown on the plans. It is believed at this time that the template used is not the correct template for Orion Township.
- Fire department access roads 20 to 26 feet wide shall be posted with NO PARKING FIRE LANE signage on both sides of the fire apparatus access road. Fire department access roads greater than 26 feet shall only require posting on one side of the roadway. The access drive leading into the site from the South shall have "No Parking Fire Lane Signage".
- The Fire Department will require the building to be equipped with a Riser Room that is accessible from the outside of the building. Per IFC 509.2 requires all fire suppression equipment / control valves to be readily accessible in the event of an emergency. This room shall be equipped with a Knox Box to ensure the Fire Department has full access in the event of an emergency. All information listed above shall be shown on the revised site plans.

This approval is limited to the application and materials reviewed which at this time do not raise a specific concern with regard to location and/or impact on health and safety. However, the approval is conditioned upon the applicant providing sufficient additional information at time of building permit application that includes data or documents, confirming full compliance with all applicable building codes, fire codes and Township Ordinances.

If there are any questions, the Fire Department may be reached at 248-391-0304 ext. 2004.

Sincerely,

Jeffrey Williams

Jeff Williams, Fire Marshal
Orion Township Fire Department



May 26, 2023

Tammy Girling, Director of Planning & Zoning
CHARTER TOWNSHIP OF ORION
2323 Joslyn Road
Lake Orion, MI 48360

RE: Orion Villas
Site Plan Review #1

Received: May 24, 2023 by Orion Township

Dear Ms. Girling:

We have completed our review of Orion Villas plan set. The plans were prepared by Kieft Engineering, Inc. and were reviewed with respect to the Township's Engineering Standards. Per the Intergovernmental Agreement, our review was limited to the proposed watermain, sanitary sewer and retaining/screen walls.

EXISTING SITE CONDITIONS:

The site is located on the north side of the roundabout at E. Flint St, Miller Rd, and Orion Rd. partially within the southeast ¼ of section 1 of Orion Township and partially within the Village of Lake Orion. The site is zoned Multiplate Family Residential (RM), and is bounded by parcels to the west zoned Village Single Family Residential (RV), parcels to the north zoned Multiple Family Residential (RM) and Single Family Residential (R-3), and parcels to the east zoned Single Family Residential (R-3).

The existing site is comprised of two parcels, totaling approximately 0.76 acres in size with a portion of that attributed to a varying highway easement located along the site frontage. The site is mostly undeveloped with no apparent existing drive approach. There is existing sidewalk along road frontage on the south side of the site.

The applicant is proposing an 8-unit building, with an approach on to the roundabout and another on Schorn Rd. The applicant also appears to be paving a small portion of Schorn Rd.

WATER MAIN AND SANITARY SEWER:

There is an existing Township 12-inch water main located along the east side of Schorn Rd. as well as a Township 12-inch water main along the north side of Miller Rd. The applicant is proposing to extend a single 8-inch main into the site from Schorn Rd. along the north side of the site. In lieu of the individual services for each unit, the Township is requesting a single service into a meter room with exterior access via a Knox box.

A single 4-inch fire service and FDC are shown at the northwest corner of Unit A and appear acceptable. The proposed hydrant is an acceptable distance from the curb and gutter and appears to provide adequate coverage. We defer further comment on hydrant and FDC access to the Fire Marshal.



There is an existing Township 8-inch sanitary sewer located along the east side of Schorn Rd as well as a Township 21-inch sewer along the south side of Miller Rd. The applicant is proposing to extend 8-inch sanitary sewer along the south side of the proposed building with individual services for each unit. Cleanouts should be included on the leads at engineering. The proposed manhole over the existing main in Schorn Rd will need to be 5-foot in diameter due to the interior drop connection.

No water main or sanitary sewer easements were included in the plans and are required. A 12-foot-wide easement is required for the water main and a 20-foot-wide easement is required for the sanitary sewer.

Franchise utility locations were not included in the plans. Please add a note to the plans that franchise utility design is to be provided to the Township Engineer for review and approval prior to construction. Franchise utility easements shall not overlap water or sewer easements, and a minimum 18" clearance is required at utility crossings.

Township models indicate that there is sufficient water main and sanitary sewer capacity to serve the development.

GRADING:

A 6-foot-high screen wall is proposed along the northeastern property line. The wall is proposed to be poured in place with a brick pattern on both sides. No color of the wall is mentioned. Due to sight distance restrictions, the wall is proposed to be lowered as it approaches Schorn Rd. Due to the proximity to the property line, temporary grading easements will likely be required prior to construction. At engineering, design details, elevations and computations, signed and sealed, will be required for review and approval for all walls over 3 feet in height.

CONCLUSION:

In our opinion, the site plan as submitted is in substantial compliance with the Township's ordinances and engineering standards. We ask that any approval include the following:

1. In lieu of the individual services for each unit, the Township is requesting a single service into a meter room with exterior access via a Knox box.
2. Water (12-foot-wide) and sewer (20-foot-wide) easements shall be provided on the plans.
3. Add a note to the plans that franchise utility design is to be provided to the Township Engineer for review and approval prior to construction. Franchise utility easements shall not overlap water or sewer easements, and a minimum 18" clearance is required at utility crossings.
4. The engineering plan, designed in accordance with Zoning Ordinance No. 78, Stormwater Management and Soil Erosion & Sedimentation Control Ordinance No. 139, and the Township's Engineering Standards shall be submitted to the Township for review and approval prior to construction. A detailed cost estimate for the improvements shall be submitted with the plans signed and sealed by the design engineer.

The applicant should note the Township may require performance bonds, fees, and/or escrows for a preconstruction meeting and necessary inspections. Please feel free to contact us with any questions at (248) 751-3100 or mark.landis@ohm-advisors.com.



Sincerely,
OHM Advisors

Joe Lehman, P.E.
Project Engineer

Mark Landis, P.E.
Project Manager

cc: Chris Barnett, Township Supervisor
 David Goodloe, Township Building Official
 Bill Basigkow, Township Director of Public Services
 Vince Sinacola, Township Water and Sewer Superintendent
 Tammy Girling, Township Director of Planning and Zoning
 Lynn Harrison, Township Planning and Zoning Coordinator
 Jeff Williams, Township Fire Marshal
 John Pender, Interim Fire Chief
 File

 Darwin McClary, Village Manager
 Tiffany Sanders, Village Planning and Zoning Specialist
 Laura Haw, Village Planner
 Gage Belko, Village Planning and Zoning Coordinator
 Carol Thurber, Village Engineer
 Mary Kucharek, Village Attorney
 Patrick McWilliams, Kieft Engineering Inc.
 Robby Gjokaj, Justini Co.

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Village of Lake Orion

21 E. Church Street
Lake Orion, Michigan 48362
Tel 248.693.8391
Fax 248.693.5874
www.lakeorion.org

SITE PLAN and / or SPECIAL LAND USE APPLICATION

PROPERTY INFORMATION

Site Address: 597 E. Flint Street

Parcel ID # (Refer to Tax Bill): 09-01-302-035 & 09-01-327-046 Zoning District: RM - Multiple Family Residential

PROPERTY OWNER INFORMATION

Name: Robert/Justini Co. Address, City, Zip: 969 N. Conklin Road

Phone #: (248) 421-7566 Owner E-Mail robbygjokaj@yahoo.com

APPLICANT INFORMATION (If applicant is NOT property owner)

Name: _____ Address, City, Zip: _____

Phone #: _____ Applicant E-Mail _____

Applicant is: (i.e. contractor or business owner or architect, etc.) _____

APPLICANT REQUEST

Site Plan Approval: YES

Use Permitted After Special Approval: _____

Use Type Requiring Special Approval: _____

REQUIRED INFORMATION

Please place your initials below to acknowledge that all applicable items are included with your application.

RG 1) Final Site Plan. Two (2) Copies not less than 24 inches by 36 inches in size that meet the requirements of Section 19.02.D. Including, but not limited to:

a. Dimensioned floor plans and building elevations

b. Hard surface plan identifying parking areas with dimensions and number of spaces provided

c. General landscape and lighting plan

d. Location of trash receptacle and method of screening

_____ 2) Project Narrative. A Narrative must accompany Special Land Use applications that identifies the detailed use of the property under review.

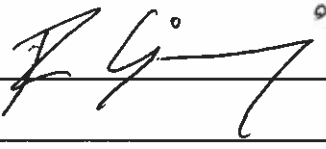
RG 3) Property Owner Verification.

RG 4) Digital copies of all documents. (Digital copies are used for Planning Commission review. They may be submitted via email to the Planning & Zoning Coordinator at zoning@lakeorion.org, through Dropbox, or using an external USB drive.)

RG 5) Village, Planning, Engineering, and Attorney fees as necessary.

By signing below you acknowledge all of the following:

- The undersigned acknowledges that any lack of information which may result in a delay of the review process is the sole responsibility of the applicant.
- The undersigned deposes that the forgoing statements and answers and accompanying information are true and correct.
- The undersigned hereby authorizes Village representatives to enter the subject property in connection with this application, if necessary.

Signature of Property Owner: _____  _____ Date: 3/16/2023

Signature of Applicant/Contractor: _____ Date: _____

TO BE COMPLETED BY VILLAGE STAFF:

Date Received:

of Hard Copies Received:

Electronic Copies Included: Y / N

Fee: _____ Receipt #: _____

Anticipated Meeting Date:

**INTERLOCAL AGREEMENT BETWEEN
THE VILLAGE OF LAKE ORION AND ORION TOWNSHIP**

THIS INTERLOCAL AGREEMENT entered into between **THE VILLAGE OF LAKE ORION**, whose address is 21 E Church Street, Lake Orion, MI 48362 (Village), and the **CHARTER TOWNSHIP OF ORION**, whose address is 2525 Joslyn, Lake Orion, MI 48360 (Orion and/or Township), and **ROBERT/JUSTINI CO, LLC**, whose address is 969 N Conklin Road, Lake Orion, MI 48362 (Developer), all of whom are located in the County of Oakland , State of Michigan , collectively referred to as the " parties" , shall govern the zoning development standards, the property taxes and delivery of certain municipal services and utilities to a proposed development known as Orion Townhouses (" Development")

RECITALS

Article VII, § 28 of Michigan Constitution of 1963, provides, in part, that two or more counties, townships, cities, villages or districts or any combination thereof, may, among other things, enter into contractual undertakings or agreements with one another for the joint administration of any of the functions or powers each would have to perform separately; and,

The Urban Cooperation Act of 1967, being MCL 124.501 et seq., provides that public agencies may exercise jointly any power, privilege or authority that agency may exercise separately; and,

The Developer has proposed a development along the border of the Village's and the Township's jurisdictional boundaries with a portion of the Development ("Development") being located in both the Village and the Township; (as depicted on the attached Exhibit " A"); and

By approval of this Interlocal Agreement by the respective Village Council of the Village of Lake Orion and the Township Board of Trustees of the Charter Township of Orion and Robert/Justini Co, LLC, the parties do herein reach agreement to the providing of certain services and municipal water and sewer services and other conditions as stated here in.

THEREFORE, IN CONSIDERATION OF THE FOREGOING, THE PARTIES AGREE TO THIS INTERLOCAL AGREEMENT AS SET FORTH BELOW.

AGREEMENT

Based upon the foregoing statements, the parties agree to the following terms, conditions, representations, considerations and acknowledgements and mutually agree as follows:

Ordinance Designation

The entire Development including that portion located in the Township will be evaluated a constructed under the terms, standards, and conditions of the Village's current Zoning Ordinance, for Zoning Multi- Family District. The Development will adhere to the standards set forth in the Village's Ordinance for Site Plan Review and for approval by the Planning Commission of the Village of Lake Orion and all other land use standards under local and state law. Once the plans for the Development are approved by the Village, any and all building permits for the Development will be handled in the same manner as are building permits for any other development within the Village and Orion Township.

All performance guarantees and reimbursements will be paid to the Township for all expenses and costs related to water, sewer, engineering and fire reviews, inspections, services,

and other typical costs and expenses. The Village will collect any reimbursement or performance guarantee for the Township Planning Review, Planning Commission Review, and road approval. The Village's approval shall be final as to the Development's land use or any variance or waiver per the Villages Ordinances

Public Services

Police Services will be provided depending upon each unit address.

Fire and Emergency Medical Response Services for the entire Development will be provided by Orion Township Fire Department and its EMT personnel. All 911 fire or medical response calls from any unit within the Development will be sent to the Township Fire Department.

Property Taxes

July Tax Bills will be sent to each and every unit within the Development whether in the Village or the Township for the services provided by the Village. July Tax Bills sent to any unit within the Development by Orion Township will include but are not limited to the Lake Orion Community School District, the Oakland Intermediate School District, the Oakland County Community College, and Oakland County.

December Tax Bills will be sent to each and every unit within the Development whether in the Village or the Township by the Charter Township of Orion for services provided by the Township and other taxing units; including, but not limited to, Oakland County Parks, Huron Clinton Metropolitan Parks, Orion Township Public Library and the North Oakland Transportation Authority.

Water Services

The Village of Lake Orion and the Charter Township of Orion do hereby agree and approve that all water services to the Development, including those portions existing in the Village of Lake Orion, will be provided through the Orion Township Water Department and the entire Development will be considered for all purposes necessary as solely an Orion water customer. By approval and execution of this Agreement, the Village of Lake Orion waives any objection or reservation permitted by statute, ordinance or any other law and affirmatively grants permission to the Charter Township of Orion to provide water and all related water services to those portions of the Development which are located within the Village's jurisdictional boundaries of the Village. As part of this permission, the Village does hereby grant the Township reciprocal rights to any and all water utility easements and all other rights, permissions, or authority granted to the Village or Township by law to access the Development's property, any village or Township property, or any and all water infrastructure (including but not limited to pipes, meters and other water assets) for the purposes of construction, maintenance, repair, operation and other access needed for the proper operation, maintenance, repair and billing of the Township water system. Sewer Services

The Village of Lake Orion and the Charter Township of Orion hereby agree and approve that all sewer services to the Development, including those portions existing in the Village of Lake Orion, will be provided through the Orion Township Sewer Department and the Development will be considered for all purposes necessary as solely an Orion sewer customer. By approval and execution of this Agreement, the Village of Lake Orion waives any objection or reservation permitted by statute, ordinance or any other law and affirmatively grants permission to the Charter Township of Orion to provide sewer and all related sewer services to those portions of the Development which are located within the jurisdictional boundaries of the Village. As part of this permission, the Village does hereby grant the Township reciprocal rights to any and all sewer utility easements and all other rights, permission, or authority granted to the Village or Township by law to access the Development's property, any Village or Township property, or any and all sewer infrastructure (including but not limited to pipes, meters and other sewer assets) for the

purposes of construction, maintenance , repair, operation and other access needed for the proper operation, maintenance , repair and billing of the Township sewer system.

The Developer shall pay the Township all normal and customary charges, fees and expenses for the connection to both water and sewer services; including tap fees, inspection fees, and all other normal and customary charges to Orion water customers.

Addresses of Condominium Units

The addresses of the ten (10) residential condominium units will be consecutive negative numbers beginning with 601 E Flint Street and continuing through and including 619 E Flint Street.

Approval

This Agreement is subject to and conditioned upon the approval by majority vote of the Village of Lake Orion Council and the Charter Township of Orion Board of Trustees.

Robert/Justini Co., LLC

By execution of this Agreement, Robert/Justini Co., LLC, as Developer of the Development, does hereby acknowledge its understanding and agreement to the terms and conditions stated herein. Robert/Justini Co., LLC agrees to cooperate, permit access and otherwise allow both the Village and the Township to conduct any and all necessary inspections, testing, maintenance, repairs, reconstruction or other necessary actions related to the Township's delivery of water and sewer services. Further, Robert/Justini Co., LLC understands and agrees that the Agreement is intended to run with the land and is enforceable to all current and future owners or others with any property interest.

Liability and Insurance

Each party shall assume responsibility for the acts and omissions of its own personnel acting pursuant to the Agreement to the same extent as all other Village and/or Township personnel; including to the extent that such personnel are insured, indemnified or otherwise protected when acting within the participating party' s respective municipal limits.

To the extent and as otherwise provided by law, the parties agree to be responsible for the negligent or wrongful acts or omissions of the respective employees or volunteers. Nothing in this Agreement shall be construed as creating an obligation to indemnify or defend any other party or parties for claims including each other, for damage or liability arising out of or stemming from an act or action of any party.

The parties agree that at all times and for all purposes under the terms of this Agreement there is not an employer/employee relationship between the parties, nor is a right or benefit associated with and employer/employee relationship implied by the terms of this Agreement, services, activities or duties performed under this Agreement.

Each party shall maintain its own insurance, responsibilities and obligations for any and all acts of its employees, representatives, and officials as it relates to any claim, action, or circumstance arising out of this Agreement.

Each party shall provide the others with prompt notice of any claim, complaint or charge or any other accusation or allegation of negligence or wrongdoing, whether civil or criminal in nature, that another party becomes aware of and which involves the performance of activities or duties under this Agreement. Unless otherwise provided by law and/or Michigan court rule, the parties agree to cooperate with one another in any investigation conducted by the other party of any acts or performances of any activities under this Agreement, modification, termination and/or enforcement.

This Agreement sets forth the entire agreement between the parties. This Agreement may

only be amended in writing and as approved by resolution of the appropriate governing bodies of the Village and Township, with the effective date of the amendment being the date of approval.

This Agreement shall remain in effect until terminated by both the Village and the Township. While termination of this Agreement may be proposed by either the Village or the Township, no termination may be approved without both the Village and the Township reaching an understanding and agreement as to a mutually acceptable alternate division of the allocation of services provided herein. Robert/Justini Co., LLC has no authority or right under this Agreement to alter, prevent or prohibit the Village 's or the Township' s right to modify or alter the terms of this Agreement.

If a court of competent jurisdiction finds any provision of this Agreement invalid or unenforceable, then that provision shall be deemed severed from the Agreement. The remainder of the Agreement shall remain in full force and effect.

This Agreement is made and entered into in the State of Michigan and shall in all respects be interpreted, enforced and governed under the laws of the State of Michigan. Except as otherwise required by law or Court Rule, any action brought to enforce, interpret or decide any claim arising under this Agreement shall be brought in the 6th Circuit Court, Oakland County, Michigan where jurisdiction and venue are proper.

VILLAGE OF LAKE ORION

By: Kenneth Van Delft

Its: Council President

Dated: 9/10/19

CHARTER TOWNSHIP OF ORION

By: CK

Its: Township Supervisor

Dated: 9/11/19

VILLAGE OF LAKE ORION

By: Aimee C. Galega

Its: Village Clerk

Dated: 9/10/2019

CHARTER TOWNSHIP OF ORION

By: Randy Shultz

Its: Township Clerk

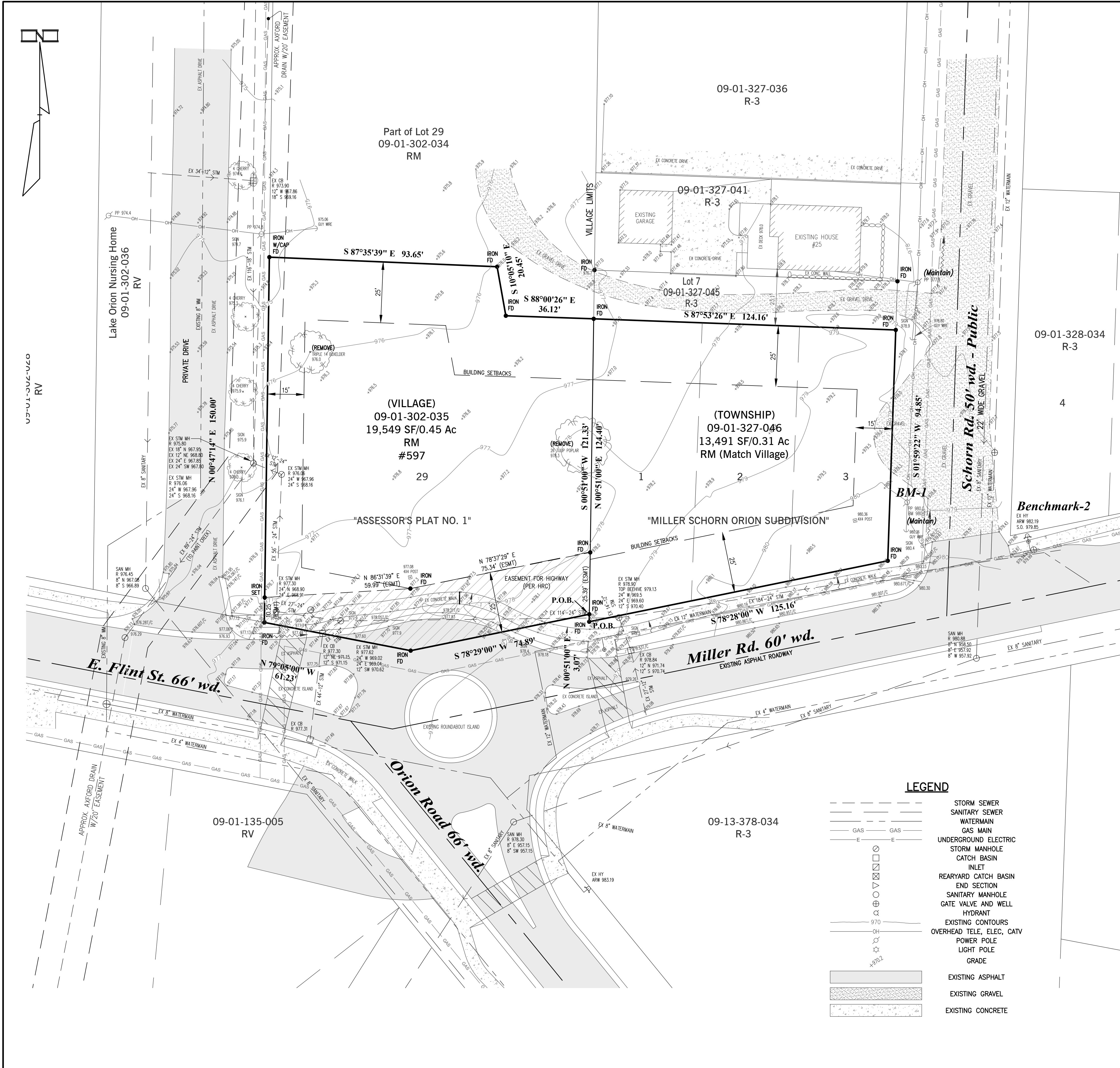
Dated: 9/11/19

ROBERT/JUSTIN/CO., LLC

By: JG

Its: OWNER

Dated: 9/16/19

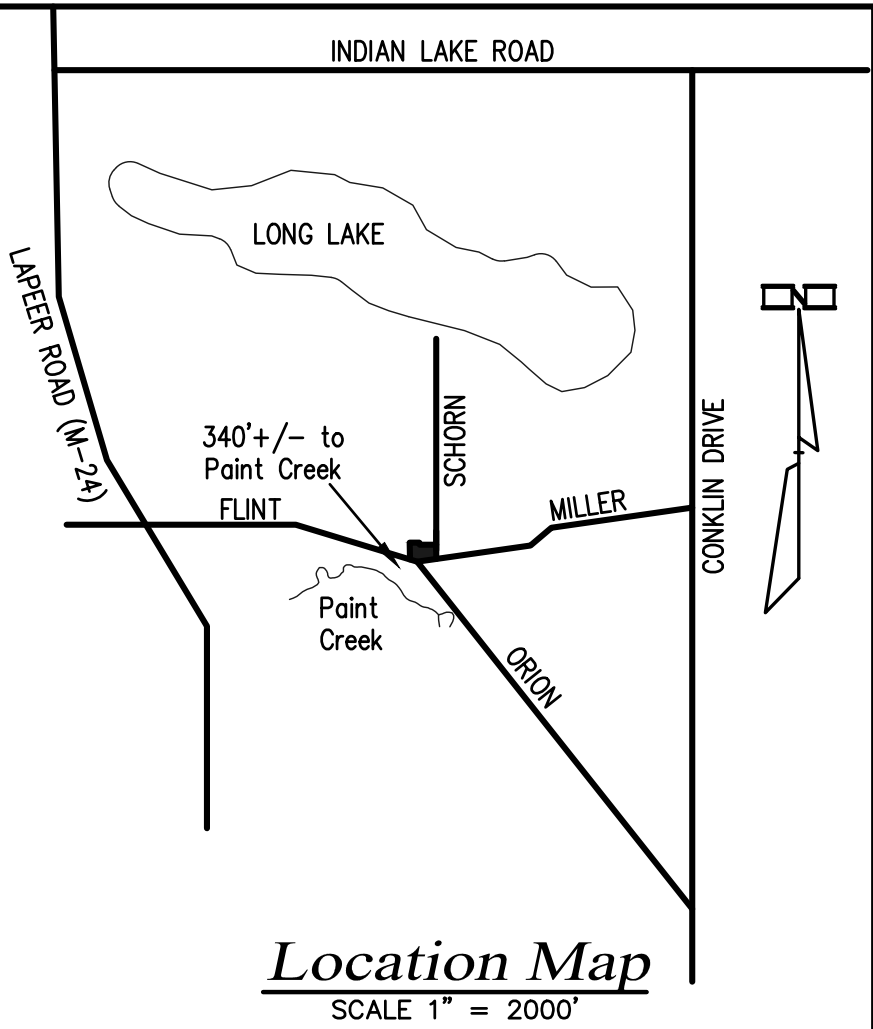


Notes:

- ALL EXISTING UTILITIES SHOWN ON THIS SITE PLAN HAVE BEEN TAKEN FROM RECORD MAPPING, WHERE AVAILABLE. NO GUARANTEE IS MADE, OR SHOULD BE ASSUMED, AS TO THE COMPLETENESS OR ACCURACY OF THE UTILITIES SHOWN ON THIS DRAWING. PARTIES UTILIZING THIS INFORMATION SHALL FIELD VERIFY THE ACCURACY AND COMPLETENESS OF OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES.
- BUILDER/DEVELOPER IS RESPONSIBLE FOR CONFIRMING BUILDING SETBACKS.

Benchmarks:

- BM #1 - SPIKE IN POWER POLE LOCATED AT THE SW CORNER OF SCHORN AND MILLER. ELEVATION = 980.73 NAVD '88
- BM #2 - ARROW OF EXISTING HYDRANT LOCATED AT THE SE CORNER OF SCHORN AND MILLER. ELEVATION = 982.19 NAVD '88



Parcel 09-01-302-035 is Zoned RM:
Multiple Family Residential

SETBACKS:
FRONT - 25 FT
MINIMUM SIDE (EACH) - 15 FT
REAR - 25 FT
MAXIMUM BUILDING HEIGHT - 40 FT
MAXIMUM LOT COVERAGE - 35%

Parcel 09-01-327-046 is Zoned RM:
Multiple Family Residential

NOTE: TO MATCH VILLAGE ZONING & SETBACKS

SETBACKS:
FRONT - 25 FT
MINIMUM SIDE (EACH) - 15 FT
REAR - 25 FT
MAXIMUM BUILDING HEIGHT - 40 FT
MAXIMUM LOT COVERAGE - 35%

Parcel 09-01-302-035 - Village

PART OF LOT 29, "ASSESSOR'S PLAT NO. 1" A SUBDIVISION OF PART OF THE W 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, VILLAGE OF LAKE ORION, OAKLAND COUNTY, MICHIGAN AS RECORDED IN LIBER 53 OF PLATS, PAGE 52, OAKLAND COUNTY RECORDS. MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SE CORNER OF SAID LOT 29; TH S 78°29'00" W 74.89 FT; TH N 79°05'00" W 61.23 FT; TH N 00°47'14" E 150.00 FT; TH S 87°35'39" E 93.65 FT; TH S 10°05'10" E 20.45 FT; TH S 88°00'26" E 36.12 FT; TH S 00°51'00" W 121.33 FT TO THE POINT OF BEGINNING. CONTAINING 19,549 SF OR 0.45 ACRES. SUBJECT TO A HIGHWAY EASEMENT. ALSO SUBJECT TO EASEMENTS & RESTRICTIONS OF RECORD.

Highway Easement

PART OF LOT 29, "ASSESSOR'S PLAT NO. 1" A SUBDIVISION OF PART OF THE W 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, VILLAGE OF LAKE ORION, OAKLAND COUNTY, MICHIGAN. AS RECORDED IN LIBER 53 OF PLATS, PAGE 52, OAKLAND COUNTY RECORDS. MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SE CORNER OF SAID LOT 29; TH S 78°29'00" W 74.89 FT; TH N 79°05'00" W 61.23 FT; TH N 00°47'14" E 150.00 FT; TH S 87°35'39" E 93.65 FT; TH S 10°05'10" E 20.45 FT; TH S 88°00'26" E 36.12 FT; TH S 00°51'00" W 121.33 FT TO A POINT ON THE EAST LINE OF SAID LOT 29; TH ALONG THE EAST LINE OF SAID LOT 29 S 00°51'00" W 25.39 FT TO THE POINT OF BEGINNING.

Parcel 09-01-327-046 - Township

PART OF LOTS 1, 2 & 3, "MILLER SCHORN ORION SUBDIVISION" OF PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN. AS RECORDED IN LIBER 36 OF PLATS, PAGE 29, OAKLAND COUNTY RECORDS. MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SW CORNER OF SAID LOT 1; TH N 00°51'00" E (REC. AS N 00°58'00" E) 124.40 FT; TH S 87°53'26" E 124.16 FT; TH S 01°59'22" W (REC. AS S 02°15'00" W) 94.85 FT; TH S 78°28'00" W 125.16 FT TO THE POINT OF BEGINNING. CONTAINING 13,491 SF OR 0.31 ACRES. SUBJECT TO EASEMENTS & RESTRICTIONS OF RECORD.

LEGEND

	STORM SEWER
	SANITARY SEWER
	WATERMAIN
	GAS MAIN
	UNDERGROUND ELECTRIC
	STORM MANHOLE
	CATCH BASIN
	INLET
	REARYARD CATCH BASIN
	END SECTION
	SANITARY MANHOLE
	GATE VALVE AND WELL
	HYDRANT
	EXISTING CONTOURS
	OVERHEAD TELE, ELEC, CATV
	POWER POLE
	LIGHT POLE
	GRADE
	EXISTING ASPHALT
	EXISTING GRAVEL
	EXISTING CONCRETE

Sheet Index

- Existing Conditions Plan
- Overall Site Plan
- Detailed Site Plan
- Fire Protection & Signage Plan
- Calculations, Notes and Details



DATE	REVISION	ISSUE
5-9-2023	REVISED PER N & F (4-25-23) & MCKENNA (4-25-23)	

PROPRIETOR:
ROBERT GJOKAJ
969 N. CONKLIN ROAD
LAKE ORION, MICHIGAN 48362
(248) 421-7566

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PHONE (248) 625-5251 www.kiefteng.com FAX (248) 625-7110

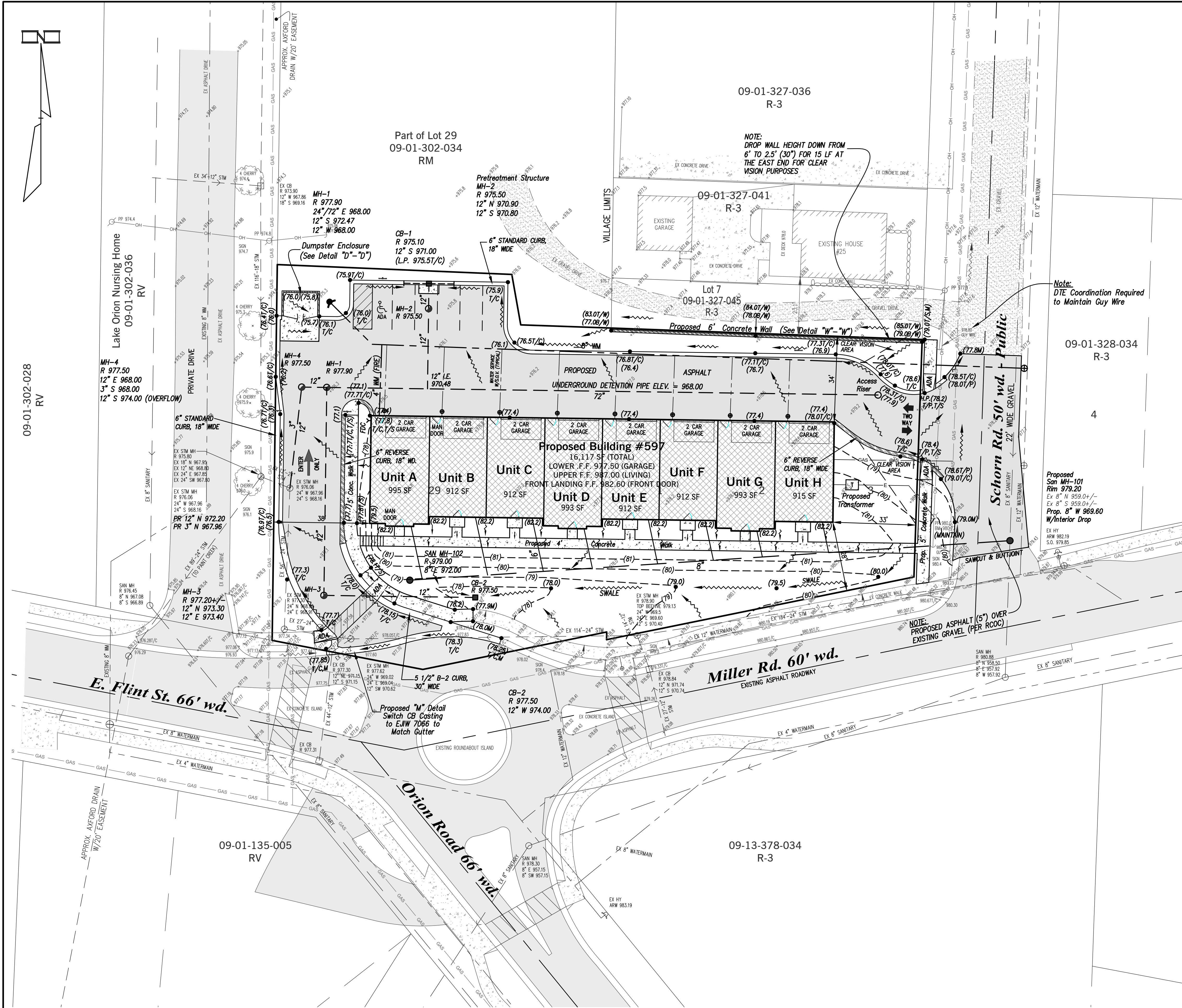
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DRAWN	GF			
DESIGN	PCM			
SECTION	01	T- 4 -N, R- 10 -E		



Existing Conditions Plan
"Orion Villas"
PART OF THE W 1/2 OF THE SW 1/4 AND PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, VILLAGE OF LAKE ORION & ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE	1" = 20'
SHEET	1 OF 5
KE 2021.171	

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Benchmarks:

BM #1 - SPIKE IN POWER POLE LOCATED AT THE SW CORNER OF SCHORN AND MILLER.
ELEVATION = 980.73 NAVD '88

BM #2 - ARROW OF EXISTING HYDRANT LOCATED AT THE SE CORNER OF SCHORN AND MILLER.
ELEVATION = 982.19 NAVD '88

EXISTING		LEGEND		PROPOSED	
---	---	STORM SEWER	---	---	---
---	---	SANITARY SEWER	---	---	---
---	---	WATERMAIN	---	---	---
---	---	GAS MAIN	---	---	---
---	---	ELEC. TELE. CABLE	---	---	---
---	---	EXISTING OVERHEAD	---	---	---
---	---	STORM MANHOLE	---	---	---
---	---	CATCH BASIN	---	---	---
---	---	INLET	---	---	---
---	---	REARYARD CATCH BASIN	---	---	---
---	---	END SECTION	---	---	---
---	---	SANITARY MANHOLE	---	---	---
---	---	GATE VALVE AND WELL	---	---	---
---	---	HYDRANT	---	---	---
---	---	CONTOURS	---	---	---
---	---	GRADE	---	---	---
---	---	FINISH FLOOR	---	---	---
---	---	MATCH ELEVATION	---	---	---
---	---	TOP OF CURB ELEV.	---	---	---
---	---	TOP OF SIDEWALK ELEV.	---	---	---
---	---	TOP OF PAVEMENT ELEV.	---	---	---
---	---	TOP OF CONCRETE	---	---	---
---	---	DOWNSPOUT	---	---	---
---	---	ROOF DRAIN	---	---	---
---	---	TOP OF WALL	---	---	---
---	---	BOTTOM OF WALL	---	---	---
---	---	REVERSE CURB	---	---	---
---	---	STANDARD CURB	---	---	---

NARRATIVE:
THIS 0.76 ACRE SITE IS PROPOSED TO BE DEVELOPED AS A MULTIPLE HOUSING CONDOMINIUM WITH (8) TWO BEDROOM UNITS. EACH UNIT WILL HAVE A (2) CAR GARAGE ON THE LOWER (REAR) LEVEL. SANITARY SEWER AND WATERMAIN SERVICE WILL BE PROVIDED FOR EACH UNIT ALONG WITH ACCESS FROM SCHORN ROAD AND MILLER ROAD.

DATE	ISSUE
5-9-2023	REVISED PER N & F (4-25-23) & MCKENNA (4-25-23)

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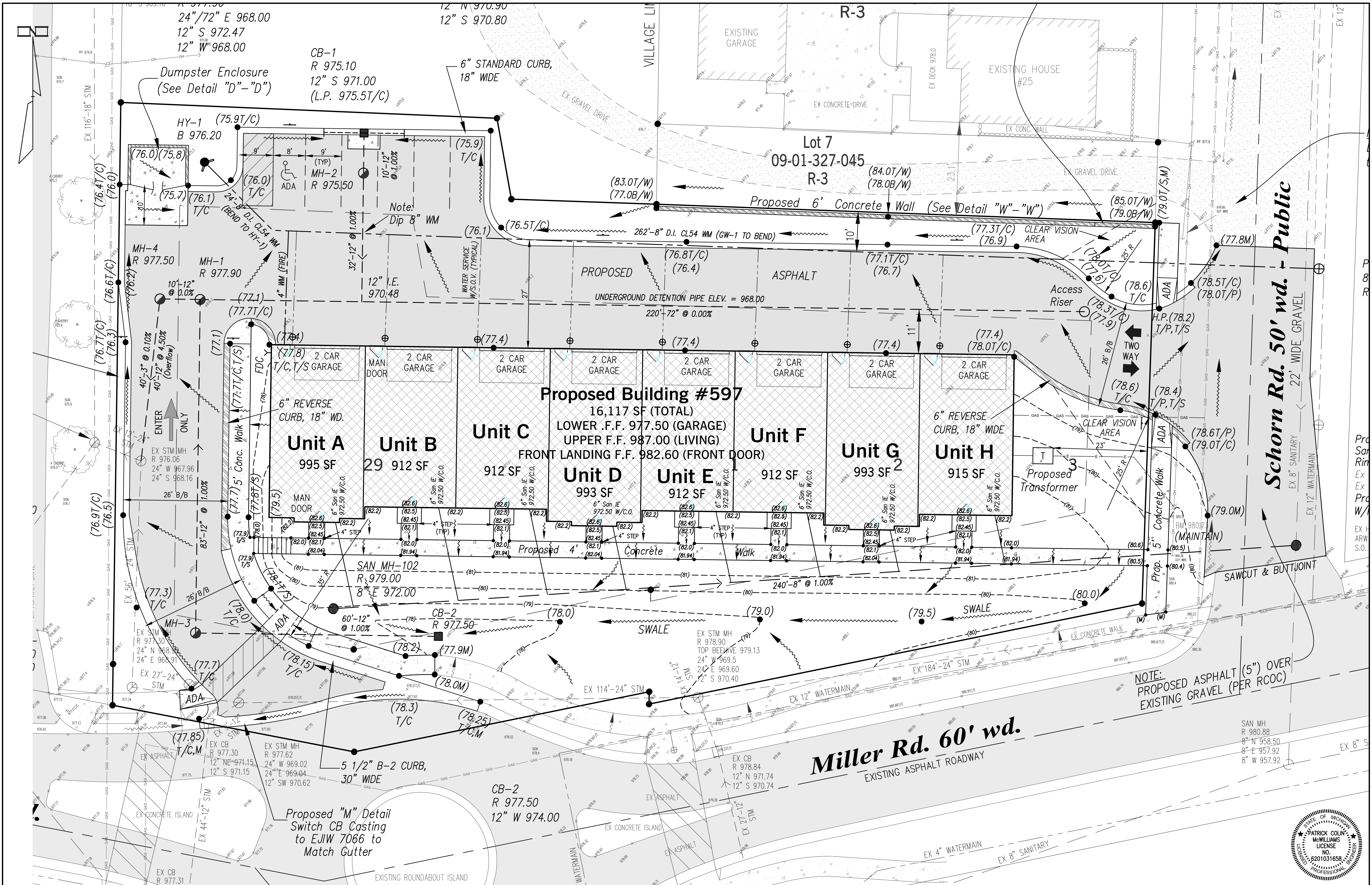
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DRAWN	GF			
DESIGN	PCM			
SECTION	01	T- 4 -N, R- 10 -E		



Overall Site Plan
"Orion Villas"
PART OF THE W 1/2 OF THE SW 1/4 AND PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, VILLAGE OF LAKE ORION & ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE	1" = 20'
SHEET	2 OF 5
KE	2021.171

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DATE	ISSUE
5-9-2023	REVISED PER N & F (4-25-23) & MCKENNA (4-25-23)

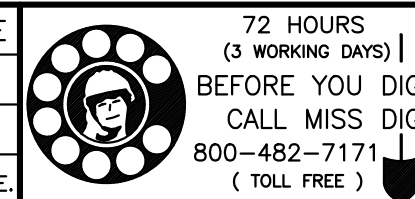
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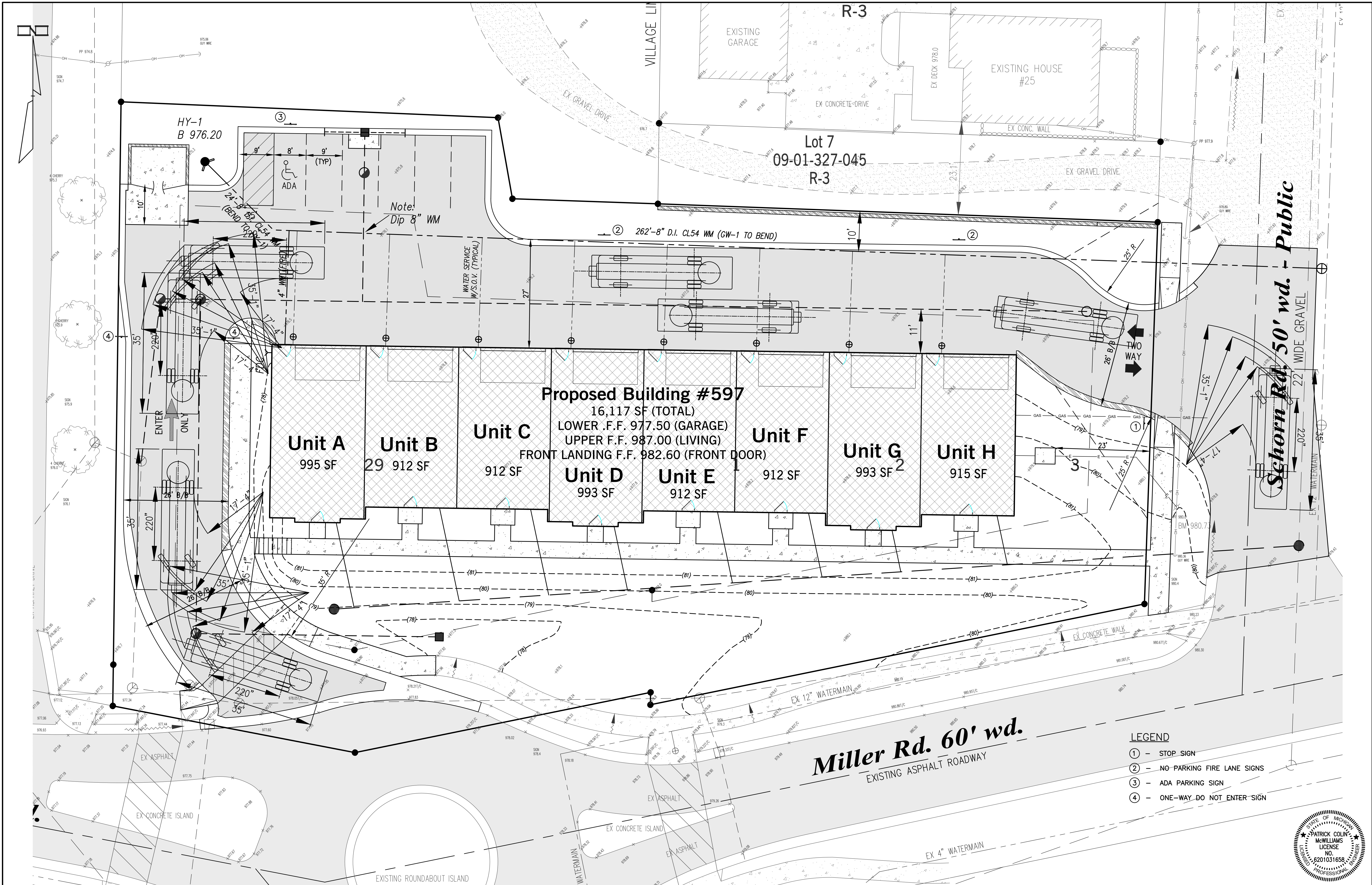
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DRAWN	GF		
DESIGN	PCM		
SECTION	01	T- 4 -N, R- 10 -E	



Detailed Site Plan
"Orion Villas"
PART OF THE W 1/2 OF THE SW 1/4 AND PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, VILLAGE OF LAKE ORION & ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE	1" = 10'
SHEET	3 OF 5
KE	2021.171

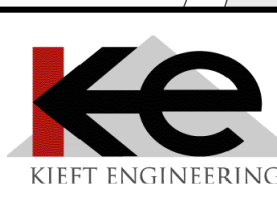
©2021/171/Orion Villas Site Planning, 4 Fire, 5/9/2023 9:15:40 AM



DATE	ISSUE
5-9-2023	REVISED PER N & F (4-25-23) & MCKENNA (4-25-23)

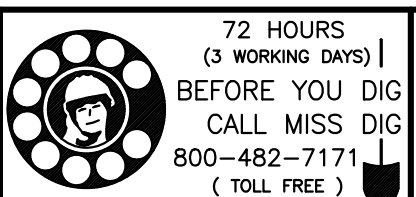
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PHONE (248) 625-5251 www.kiefteng.com FAX (248) 625-7110

DATE	CKD.	BY	DATE
5-8-2023			
DRAWN GF			
DESIGN PCM			
SECTION 01	T-4-N	R-10-E	



Fire Protection & Signage Plan
"Orion Villas"
PART OF THE W 1/2 OF THE SW 1/4 AND PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, VILLAGE OF LAKE ORION & ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE 1" = 10'
SHEET 4 OF 5
KE 2021.171

"C" CALCULATION

TOTAL SITE AREA = 0.76 ACRES
TOTAL AREA DRAINING TO UNDERGROUND DETENTION BASIN = 0.76 ACRES

BUILDING AREA = 0.20 AC. @ C = 0.90
PAVEMENT AREA = 0.34 AC. @ C = 0.80
GREENBELT AREAS = 0.22 AC. @ C = 0.20

$$C = \left(\frac{0.20 \text{ AC} \times 0.90}{0.76} \right) + \left(\frac{0.34 \text{ AC} \times 0.80}{0.76} \right) + \left(\frac{0.22 \text{ AC} \times 0.20}{0.76} \right) = 0.653 = \underline{0.66}$$

100 Year Underground Detention Basin Calculations (i.e. With Outlet)

ONSITE CONTRIBUTING AREA = 0.76 ACRES
OFFSITE CONTRIBUTING AREA = 0 ACRES
TOTAL CONTRIBUTING AREA = 0.76 ACRES
RUNOFF COEFFICIENT (C) = 0.66

$$Q_A = (0.20)(0.76 \text{ ACRES}) = \underline{0.152} \text{ C.F.S.}$$

$$Q_0 = \frac{Q_A}{(A)(C)} = \frac{0.152}{(0.76)(0.66)} = \underline{0.3030}$$

$$T = -25 + \sqrt{\frac{10,312.50}{Q_0}} = \underline{159.48} \text{ MINUTES}$$

$$V_S = \frac{16,500}{T} - 40 Q_0 \quad T = \underline{12.331} \text{ C.F./ACRE}$$

$$V_T \text{ REQ'D} = V_S (C)(A) = (12.331)(0.66)(0.76) = \underline{6.186} \text{ CF REQ'D.}$$

USING 6" DIA., (72") PIPE: 6,186 CF/28,274 CF/LF = 219 LF REQUIRED

STORAGE PROVIDED:

(220 LF OF 72") (28.274 CF/LF) = 6,220 CF PROVIDED, OK!

ORIFICE FORMULA

$$Q_A = 0.62 (A_0)(2gh)^{1/2}$$

A₀ = AREA OF ORIFICE PIPE

$$g = 32.2 \text{ FT./SEC.}^2$$

$$H = \text{DEPTH OF BASIN ABOVE CENTERLINE OUTLET PIPE} = 974.00 - [968.00 + \frac{3}{2}"] = 968.13" = 5.87'$$

$$A_0 = \frac{Q_A}{0.62 (2gh)^{1/2}} = \frac{0.152}{0.62 [(2)(32.2)(5.87)]^{1/2}} = \underline{0.0126} \text{ SF}$$

$$\text{DIAMETER ORIFICE (D}_0\text{): } D_0 = \sqrt{\frac{4(A_0)}{\pi}} = \sqrt{\frac{4(0.0126)}{\pi}} = \underline{0.1267} \text{ FT} = \underline{1.52} \text{ INCH}$$

USE 3" RESTRICTION TO AVOID CLOGGING

Underground Detention Basin

EXISTING WATER ELEVATION = NONE

DESIGN HIGH WATER ELEVATION = 974.00

1' FREEBOARD ELEVATION = 975.00

STORAGE REQUIRED = 6,186 CF

STORAGE PROVIDED = 6,220 CF

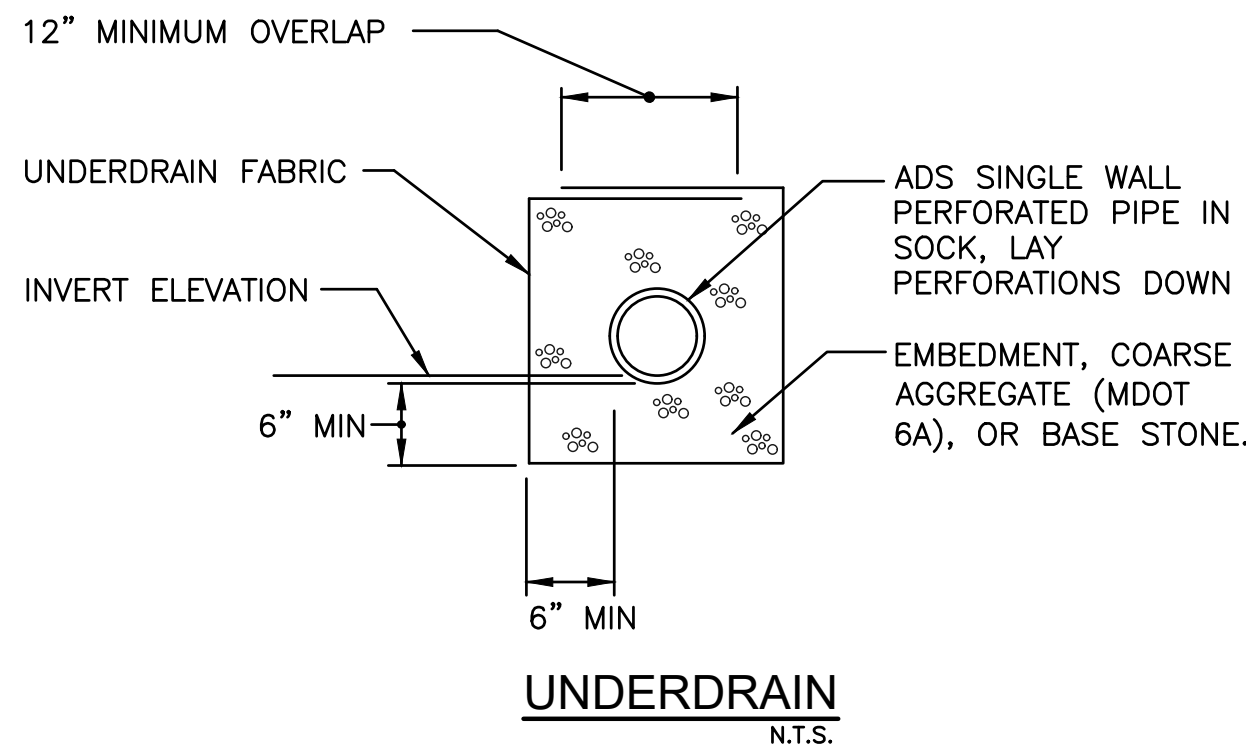
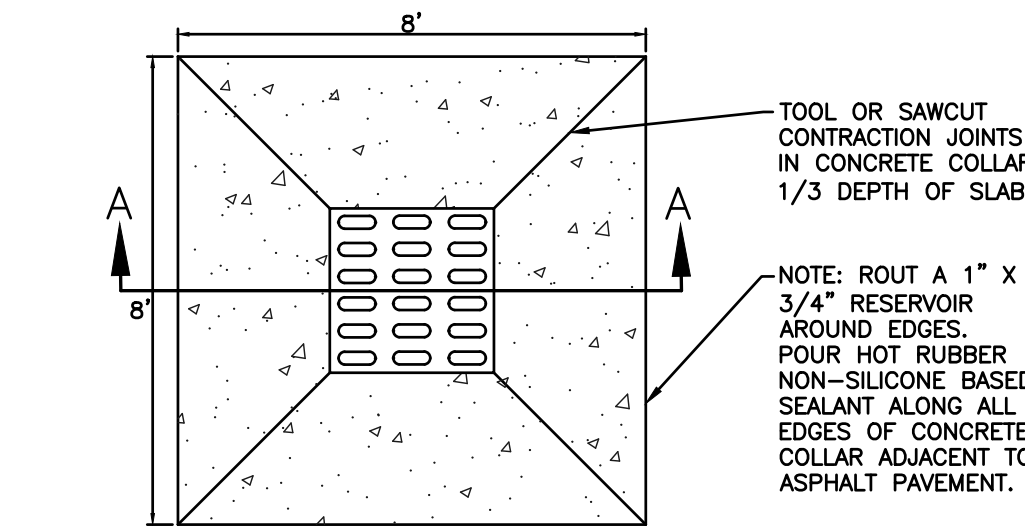
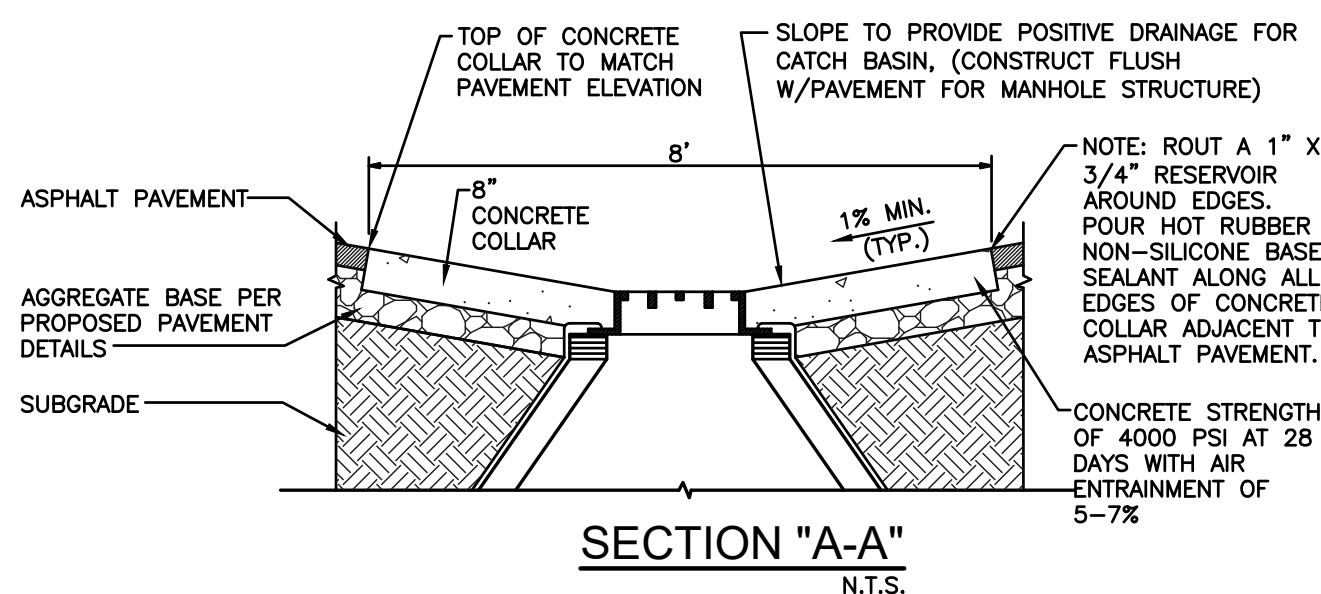
TIME TO DRAIN = 6,220 CF/0.152 CFS = 40,921 SECONDS/3600 SEC/HR = 11.4 HOURS

Approximate Storm Sewer Calculation

$$Q = ACI; A = 0.76 \text{ ACRES}, C = 0.66, I = \frac{175}{1+25} = \frac{175}{1+25} = 4.38$$

$$Q = (0.76 \text{ AC})(0.66)(4.38) = 2.20 \text{ CFS}$$

$$A \text{ 12" PIPE } @ \text{ 4.35\% HAS } Q = 7.44 \text{ CFS } \& \text{ V} = 9.48 \text{ FPS}$$



Stormceptor Sizing Detailed Report

PCSWMM for Stormceptor

Project Information

Date: 9-8-2021
Project Name: "ORION VILLAS"
Project Number: N/A
Location: Village of Lake Orion

Stormwater Quality Objective

This report outlines how Stormceptor System can achieve a defined water quality objective through the removal of total suspended solids (TSS). Attached to this report is the Stormceptor Sizing Summary.

Stormceptor System Recommendation

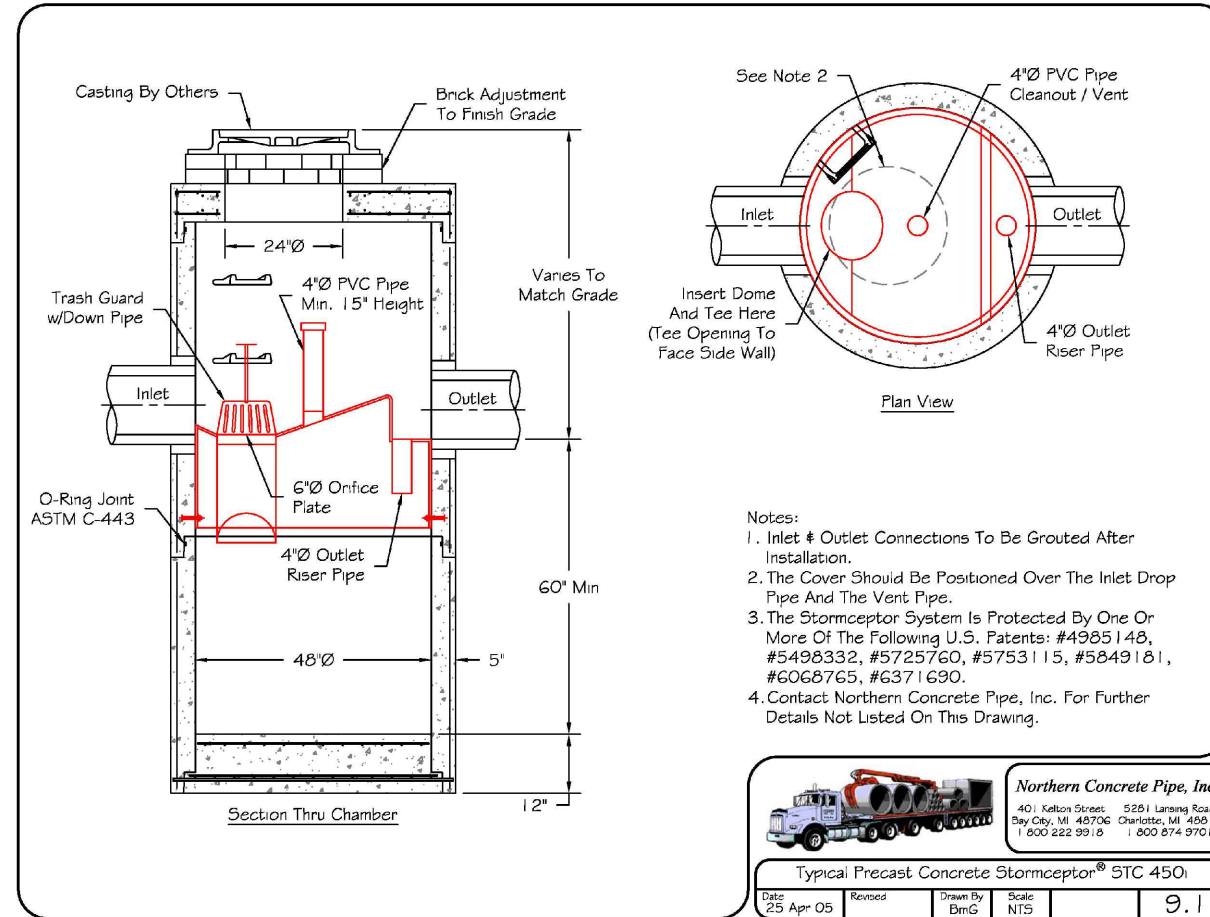
The Stormceptor System model STC 450i achieves the water quality objective removing 80% TSS for a user defined particle size distribution.

The Stormceptor System

The Stormceptor roll and sediment separator is sized to treat stormwater runoff by removing pollutants through gravity separation and flotation. Stormceptor's patented design generates positive TSS removal for all rainfall events, including large storms. Significant levels of pollutants such as heavy metals, free oils and nutrients are prevented from entering natural water resources and the re-suspension of previously captured sediment (scour) does not occur.

Stormceptor provides a high level of TSS removal for small frequent storm events that represent the majority of annual rainfall volume and pollutant load. Positive treatment continues for large infrequent events, however, such events have little impact on the average annual TSS removal as they represent a small percentage of the total rainfall volume and pollutant load.

Stormceptor is the only oil and sediment separator on the market sized to remove TSS for a wide range of particle sizes, including fine sediments (clays and silts), that are often overlooked in the design of other stormwater treatment devices.



Pretreatment Structure

MH-2, 2.20 CFS, 0.76 ACRES, C = 0.66



Detailed Stormceptor Sizing Report – Catchment to MH-2

Project Information & Location		
Project Name	"Orion Villas"	Project Number
City	Village of Lake Orion	State/Province
Country	United States of America	Date
Designer Information		EOR information (optional)
Name	Daniel Thomson	Name
Company	Rinker Materials	Company
Phone #	414-238-3824	Phone #
Email	DanielC.Thomson@rinkerpipe.com	Email

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	Catchment to MH-2
Recommended Stormceptor Model	STC 450i
Target TSS Removal (%)	80.0
TSS Removal (%) Provided	84
PSD	D50 = 75 micron
Rainfall Station	DETROIT METRO AP

The recommended Stormceptor model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary	
Stormceptor Model	% TSS Removal Provided
STC 450i	84
STC 900	90
STC 1200	90
STC 1800	91
STC 2400	93
STC 3600	94
STC 4800	95
STC 6000	96
STC 7200	97
STC 11000	98
STC 13000	98
STC 16000	98
StormceptorMAX	Custom

Stormceptor Detailed Sizing Report – Page 1 of 8

General Notes:

- OWNER/DEVELOPER: ROBERT GJOKAJ
969 N. CONKLIN ROAD
LAKE ORION, MICHIGAN 48362
(248) 421-7566
- PROPERTY DESCRIPTION:
PARCEL 09-01-302-035 (VILLAGE):
PART OF LOT 29, "ASSESSOR'S PLAT NO. 1" A SUBDIVISION OF PART OF THE W 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, VILLAGE OF LAKE ORION, OAKLAND COUNTY, MICHIGAN AS RECORDED IN LIBER 53 OF PLATS, PAGE 52, OAKLAND COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SE CORNER OF SAID LOT 29; TH S 78°29'00" W 74.89 FT; TH N 79°05'00" W 61.23 FT; TH N 00°47'14" E 150.00 FT; TH S 87°35'59" E 93.65 FT; TH S 10°09'10" E 20.45 FT; TH S 88°02'02" E 36.12 FT; TH S 00°51'00" W 121.33 FT TO THE POINT OF BEGINNING, CONTAINING 19,549 SQ. FT OR 0.45 ACRES, SUBJECT TO A HIGHWAY EASEMENT, ALSO SUBJECT TO EASEMENTS & RESTRICTIONS OF RECORD.

HIGHWAY EASEMENT:

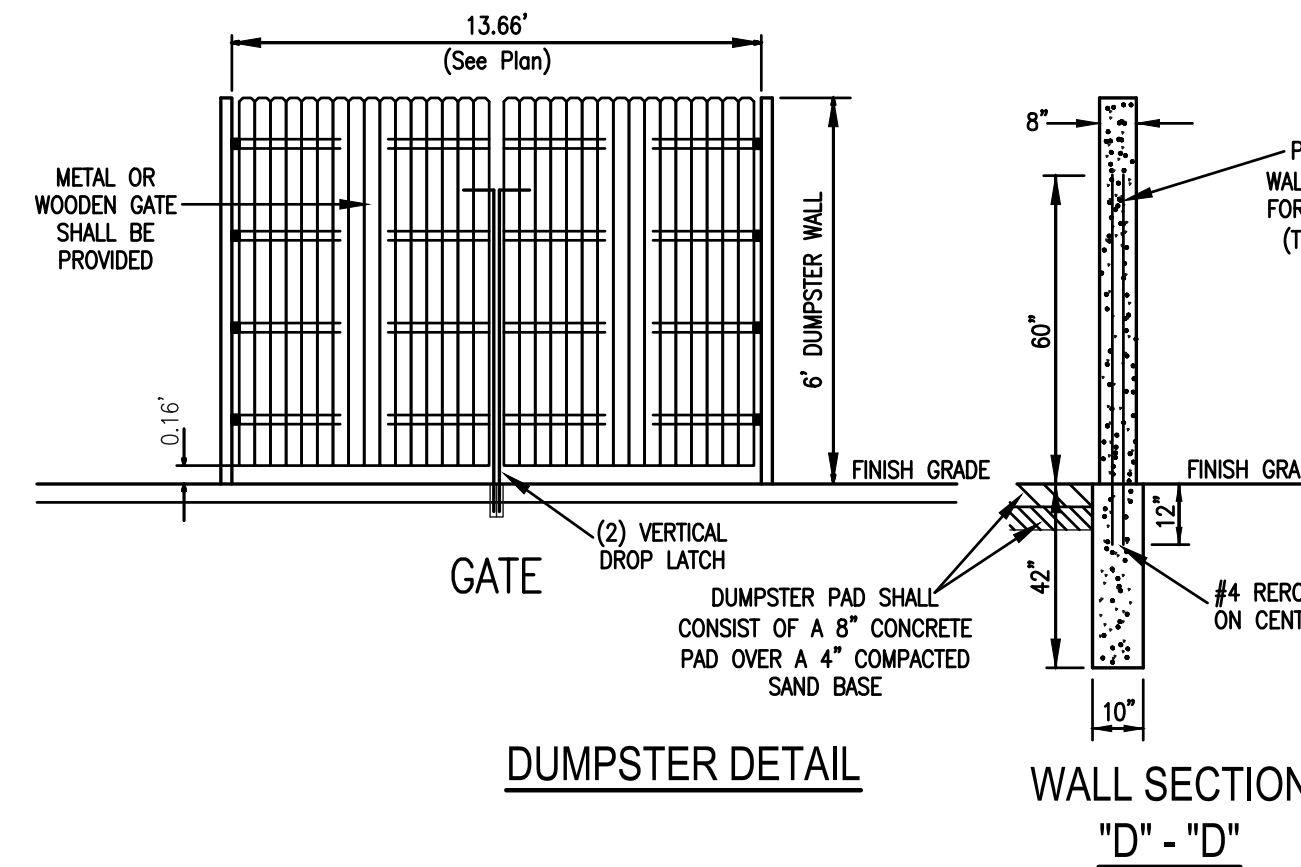
PART OF LOT 29, "ASSESSOR'S PLAT NO. 1" A SUBDIVISION OF PART OF THE W 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, VILLAGE OF LAKE ORION, OAKLAND COUNTY, MICHIGAN AS RECORDED IN LIBER 53 OF PLATS, PAGE 52, OAKLAND COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SE CORNER OF SAID LOT 29; TH ALONG THE SOUTH LINE OF SAID LOT 29 S 78°29'00" W 74.89 FT & N 79°05'00" W 61.23 FT; TH ALONG THE WEST LINE OF SAID LOT 29 N 00°47'14" E 10.25 FT; TH N 86°31'39" E 59.99 FT; TH N 78°37'29" E 75.34 FT TO A POINT ON THE EAST LINE OF SAID LOT 29; TH ALONG THE EAST LINE OF SAID LOT 29 S 00°51'00" W 25.39 FT TO THE POINT OF BEGINNING.

PARCEL 09-01-327-046 (TOWNSHIP):

PART OF LOTS 1, 2 & 3, "MILLER SCHORN ORION SUBDIVISION" OF PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, T4N, R10E, ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN, AS RECORDED IN LIBER 36 OF PLATS, PAGE 29, OAKLAND COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS BEGINNING AT THE SW CORNER OF SAID LOT 1; TH N 00°51'00" E (REC. AS N 00°58'00" E) 124.40 FT; TH S 87°53'26" E 124.16 FT; TH S 01°59'22" W (REC. AS S 02°15'00" W) 94.85 FT; TH S 78°28'00" W 125.16 FT TO THE POINT OF BEGINNING, CONTAINING 13,491 SF OR 0.31 ACRES, SUBJECT TO EASEMENTS & RESTRICTIONS OF RECORD.

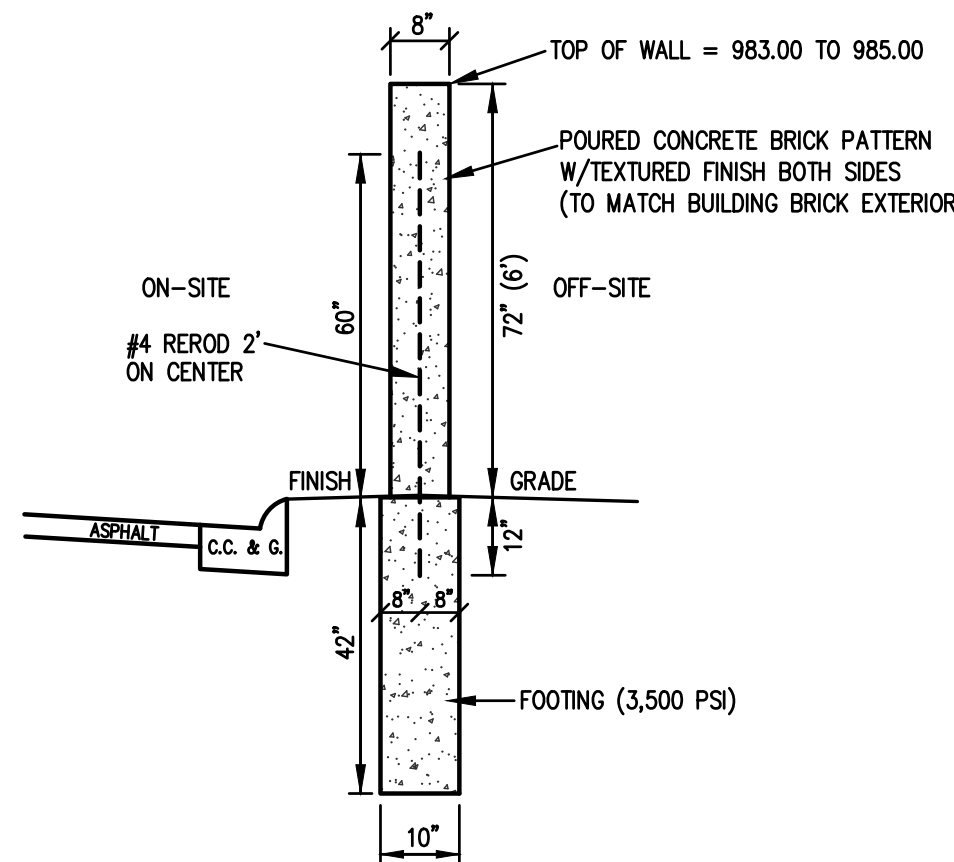
EXISTING ZONING: RM (VILLAGE), R-3 (TOWNSHIP)

- PROPOSED ZONING: RM (VILLAGE AND TOWNSHIP)
- PROPOSED USE: MULTIPLE FAMILY RESIDENTIAL (CONDOMINIUM)
- SITE AREA: 0.76 ACRES (33,105 SF)
- PROPOSED BUILDING USE: MULTIPLE HOUSING CONDOMINIUM WITH (8) TWO BEDROOM UNITS.
- DENSITY CALCULATION:
BUILDABLE ACRES = 0.76 ACRES/33,105 SF
ALLOWABLE DENSITY FOR TWO BEDROOM UNITS: REQUIRES 4,000 SF EACH
ALLOWABLE UNITS: 33,105 SF/4,000 F EACH = 8 UNITS
- THIS DEVELOPMENT IS PROPOSED TO BE RECORDED AS A CONDOMINIUM UNDER THE CURRENT RULES OF THE MICHIGAN CONDOMINIUM ACT.
- SETBACKS: EXISTING (RM) PROPOSED (RM)
FRONT 25 FT 25 FT
SIDES 15 FT 15 FT & 33 FT
REAR 25 FT 33 FT
- MAXIMUM LOT COVERAGE = 35%; ACTUAL LOT COVERAGE = 23.78%, OK
- PARKING REQUIREMENTS:
MULTIPLE FAMILY = 2 SPACES/UNIT X 8 UNITS = 16 SPACES REQUIRED
PARKING PROVIDED:
8 GARAGES X 2 SPACES/GARAGE = 16 SPACES
OVERFLOW PARKING = 6 SPACES (INCLUDES 1 ADA)
TOTAL = 22 SPACES PROVIDED
- WATER SUPPLY: CONNECTION TO MUNICIPAL 12" WATERMAIN ALONG SCHORN ROAD.
- SEWAGE DISPOSAL: CONNECTION TO MUNICIPAL 8" SANITARY SEWER ALONG SCHORN ROAD.
- SIGNAGE: PROPOSED PROJECT SIGNAGE ALONG MILLER ROAD PER TOWNSHIP REQUIREMENTS.
- PROPOSED ASPHALT PAVEMENT WITH 30" B-2 CONCRETE CURB & GUTTER WITHIN R.O.W..
- STORM SEWER & STORM WATER MANAGEMENT SYSTEM SHALL BE OWNED, OPERATED & MAINTAINED REGULARLY BY THE OWNER.
- LIGHTING: A SEPARATE PHOTOMETRIC PLAN TO BE SUBMITTED BY OTHERS.
- LANDSCAPE PLAN TO BE SUBMITTED BY OTHERS.
- THIS PROJECT DOES NOT LIE WITHIN A 100 YEAR FLOOD PLAIN.
- DUMPSTER AS SHOWN, SCREENED IN ACCORDANCE WITH TOWNSHIP REQUIREMENTS.
- THERE WILL BE A 20 FT WIDE EASEMENT FOR SANITARY SEWER GRANTED TO ORION TOWNSHIP AND CENTERED ON THE UTILITY AS SHOWN. THERE WILL BE A 20 FT WIDE EASEMENT FOR STORM SEWER CENTERED ON THE UTILITY AS SHOWN. THERE WILL BE A 12 FT WIDE EASEMENT FOR WATERMAIN CENTERED ON THE UTILITY AS SHOWN.
- ALL SIDEWALKS MUST COMPLY WITH ADA STANDARDS.
- REQUIRED PERMITS/APPROVALS:
-ORION TOWNSHIP (ORIM) - SITE ENGINEERING PLAN APPROVAL
-OAKLAND COUNTY WATER RESOURCE COMMISSION - SOIL EROSION PERMIT
-MICHIGAN E.G.L.E. - SANITARY SEWER PERMIT
-MICHIGAN E.G.L.E. - WATERMAIN PERMIT
-ROAD COMMISSION FOR OAKLAND COUNTY - APPROACH & UNDERGROUND PERMITS (E. FLINT ST. & SCHORN ROAD).

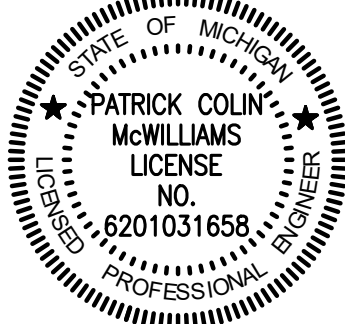


DUMPSTER DETAIL

WALL SECTION "D" - "D"



6' High Concrete Screen Wall Section "W" - "W"



Calculations, Notes and Details

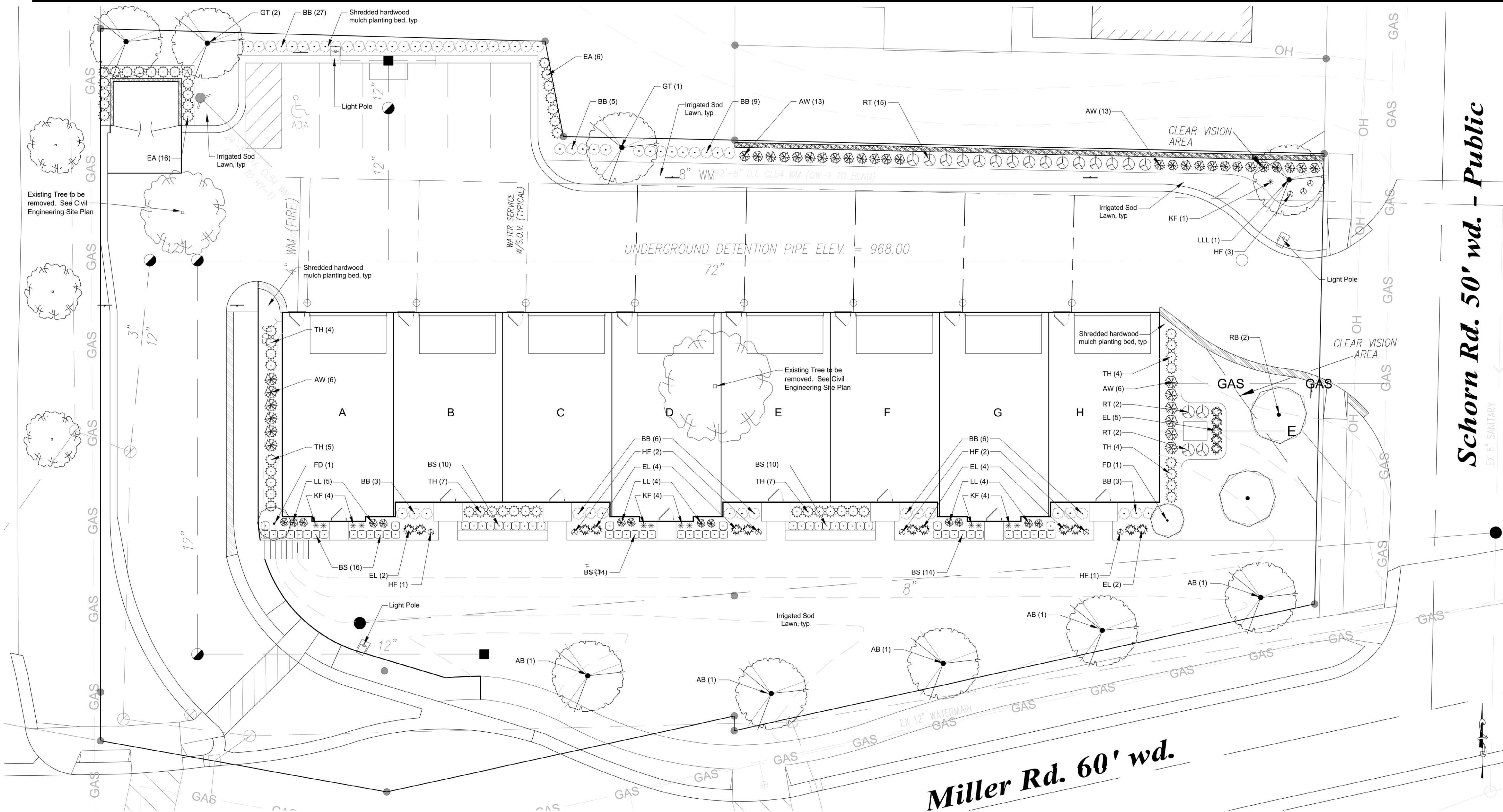
PART OF THE W 1/2 OF THE SW 1/4 AND PART OF THE W 1/2 OF THE E 1/2 OF THE SW 1/4 OF SECTION 1, VILLAGE OF LAKE ORION & ORION TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE N/A

SHEET 5 OF 5

KE 2021.171

LANDSCAPE PLANTING PLAN :



PLANTING DETAILS :



PLANTING NOTES :

- Contractor shall be responsible for contacting and coordinating with all pertinent utility companies 72 hours in advance of any digging to make themselves familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities or structures.
- Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist. Such conditions shall immediately be brought to the attention of the Owner's Representative. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- Any discrepancies between dimensioned layout and actual field conditions shall be reported to the Owner's Representative. Failure to make such discrepancies known will result in contractor's responsibility and liability for any changes and associated costs.
- Contractor shall be responsible for any coordination with subcontractors as required to accomplish construction installation operations.
- Contractor shall provide and maintain positive surface drainage.
- Contractor shall be responsible for any existing materials that are damaged during construction.
- See Plant & Material List and Planting Details for planting requirements, materials and execution.
- All trees shall have a clay loam or clay root ball. Trees with sand root balls will not be accepted.
- All tree varieties and substitutions, or deviations to the landscape plan must be approved prior to installation. Any plant material delivered to site not previously approved may be rejected and are the sole responsibility of the contractor.
- The contractor shall "water in" and fertilize all plants immediately after planting.
- Contractor shall install 3" depth Shredded Hardwood Mulch in all shrub and tree planting beds. Peat Moss is to be installed in all perennial flower area. Such beds shall have no shredded mulch, typ.
- Contractor shall coordinate lawn installation and planting bed construction in conjunction with the timing of other building construction and improvements.
- The contractor shall guarantee and maintain all trees, shrubs, ground cover and other plant materials for one year from the date of installation, including labor and removal and disposal of dead material.
- All plant material shall be grade 1 northern nursery grown from a local source. All trees and plant material shall meet the current standards of the American Society of Nurseryman.
- Contractor shall adhere to all soil erosion prevention methods as directed within civil engineering drawings and Municipal Ordinance including maintaining silt fencing and ensuring that soil, silt and other debris is prevented from leaving site or entering area drains, sewer inlets, creeks or natural areas.

SYMB.	QTY.	DESCRIPTION	NOTES
SPREADING / LOW SHRUBS			
AW	38	Spirea x bumalda Anthony Water Spirea, 30"	Container
BS	64	Buxus 'Green Velvet' Green Velvet Boxwood, 30"	Container
LL	13	Hydrangea paniculata 'Limelight' Limelight Hydrangea, 24"	Container
HF	9	Hosta frangee Variegated Hosta, 2 gal.	Container
KF	12	Calamagrostis x acutiflora Karl Foerster Reed Grass, 2 gal.	Container

PLANT MATERIAL LIST :

SYMB.	QTY.	DESCRIPTION	NOTES
DECIDUOUS TREE			
AB	5	Acer rubrum 'Autum Red' Autumn Blaze Red Maple, 3" cal.	B&B
GT	3	Gleditsia triacanthos 'Sunburst' Sunburst Locust, 3" cal.	B&B
LLL	1	Tilia cordata Little Leaf Linden, 3" cal.	B&B
DECIDUOUS ORNAMENTAL TREE			
RB	2	Betula nigra River Birch, 8' - 10'	B&B multi-stem
FD	2	Cornus florida Flowering Dogwood 5' - 8'	B&B multi-stem
UPRIGHT / HIGH SHRUBS			
EA	22	Thuja occidentalis Emeral Arborvitae, 5'	B&B
EL	17	Taxus densaformis Everlow Yew, 36"	B&B
TH	31	Hosta hicksi Hicks Yew, 36"	B&B
RT	19	Cornus sericea Red Twig Dogwood, 36"	B&B
BB	54	Euonymous alatus compactus Dwarf Burning Bush, 36"	B&B

J EPPINK PARTNERS, INC.
Urban Design StudioLandscape Architecture
Traditional Town Planning9336 Sashabaw Road
Clarkston, Michigan 48348
248.922.0789

The ideas and design concepts expressed herein and the graphically displayed arrangement of their components represented by this drawing have been developed for the exclusive use of the specified project and are the sole property of J EPPINK PARTNERS, INC. Any conveyance or disclosure of the ideas or design concepts or use of any graphically displayed arrangements of their components shall be at the discretion of and only through the expressed written consent of J EPPINK PARTNERS, INC.

Project:

Orion Villas

Village of Lake Orion, MI
Orion Township, Michigan

Owner:

Robert Gjokaj

969 N. Conklin Road
Lake Orion, MI 48362
248-421-7566

Sheet:

Landscape
Planting
PlanIssues / Revisions
Revision per Twp Review 5/8/2023

Drawn by:

JTE

Checked By:

JTE

Date:

February 20, 2023

Scale:

1" = 10'

Not for Construction

Sheet

LP-1

Schedule								
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lumens Per Lamp	Light Loss Factor	Wattage
	A	1	Lithonia Lighting	DSX0 LED P3 30K 70CRI BLC4	D-Series Size 0 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Type 4 Extreme Backlight Control	6340	0.9	68.95
	B	16	KUZCO LIGHTING	EW17611-BK	Exterior / Wall Sconce	602	0.9	13.6
	C	2	Lithonia Lighting	DSX0 LED P3 30K 70CRI LCCO	D-Series Size 0 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Left Corner Cutoff Extreme Backlight Control	6194	0.9	68.95
	E	3	Lithonia Lighting	WDGE2 LED P4 30K 80CRI T3M	WDGE2 LED WITH P4 - PERFORMANCE PACKAGE, 3000K, 80CRI, TYPE 3 MEDIUM OPTIC	4065	0.9	46.6589

General Note

- SEE DRAWING FOR LUMINAIRE MOUNTING HEIGHT.
- CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"
- LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

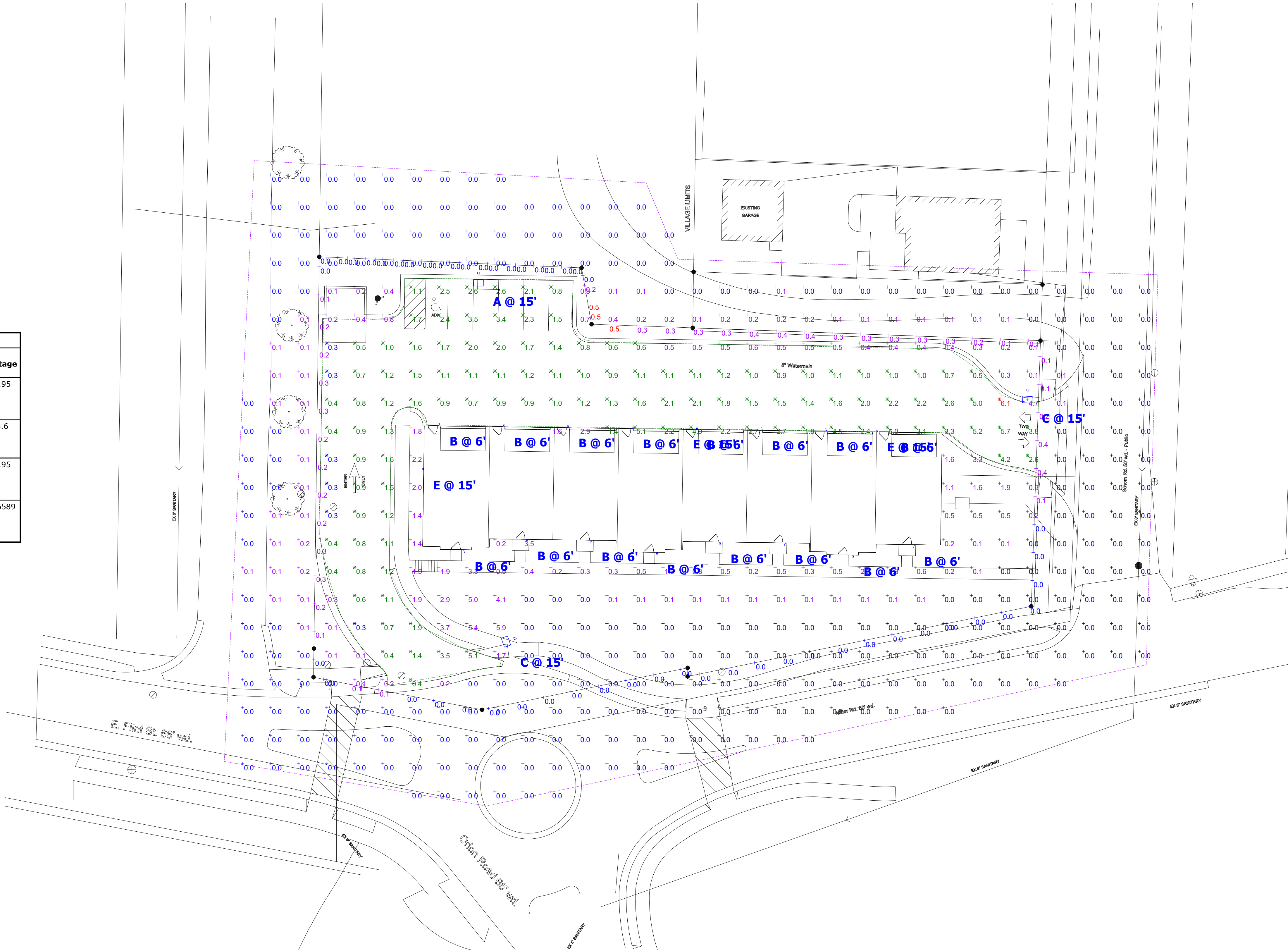
THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIRMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.



Plan View
Scale - 1" = 20ft

Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Parking and Drive	✖	1.7 fc	6.1 fc	0.3 fc	20.3:1	5.7:1	0.3:1
Property Line	+	0.1 fc	0.5 fc	0.0 fc	N/A	N/A	0.2:1
Overall	+	0.6 fc	6.1 fc	0.0 fc	N/A	N/A	0.1:1

THE IDEAS AND DESIGN CONCEPTS EXPRESSED HEREIN AND THE GRAPHICALLY DISPLAYED ARRANGEMENT OF THEIR COMPONENTS REPRESENTED BY THIS DRAWING HAVE BEEN DEVELOPED FOR THE EXCLUSIVE USE OF THE SPECIFIED PROJECT AND ARE THE SOLE PROPERTY OF JMP Design & Build, Inc. INCORPORATED. A CONVEYANCE OR DISCLOSURE OF THE IDEAS DESIGN CONCEPTS OR USE OF ANY GRAPHICALLY DISPLAYED ARRANGEMENTS OF THE COMPONENTS SHALL BE AT THE DISCRETION AND ONLY THROUGH THE EXPRESSED WRITTEN CONSENT OF JMP Design & Build, Inc. ALL MATERIALS HEREIN ARE PROPRIETARY AND COPYRIGHTED ARCHITECTURAL SEAL

PROJECT

ORION VILLAS
E. FLINT ST. & MILLER RD.
LAKE ORION & ORION TOWNSHIP, MI.

BUILDER/CLIENT
ROBERT GJOKAJ

PRELIMINARY ●
CONSTRUCTION ○
PERMIT ○

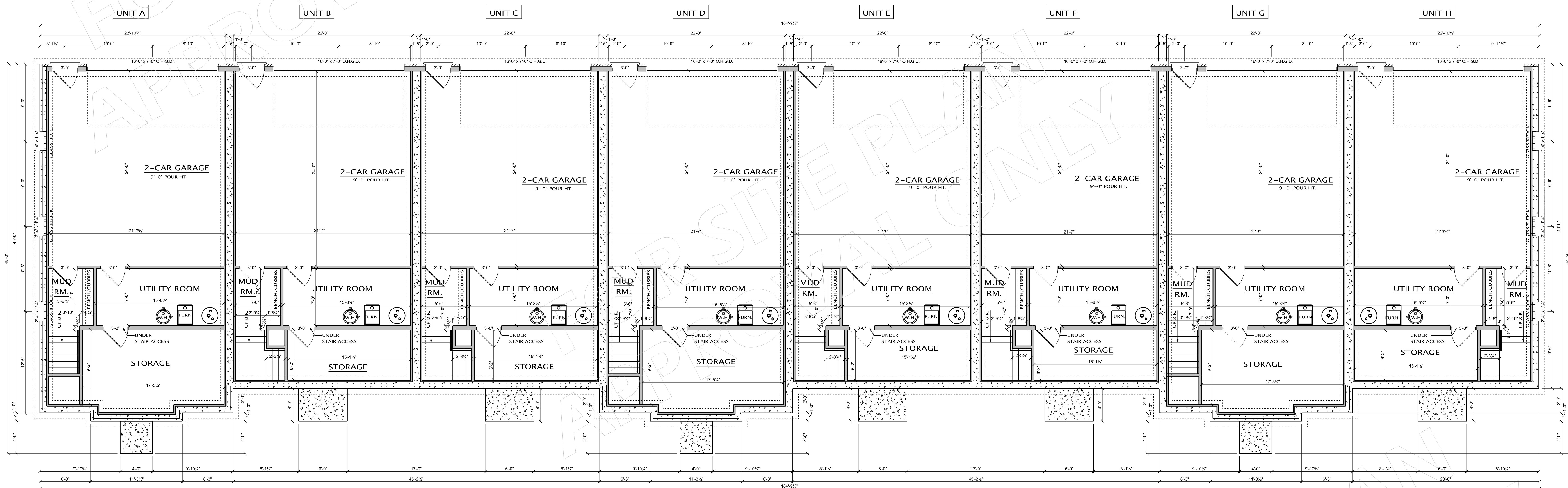
SHEET TITLE:
FOUNDATION PLAN

DATE: 11-08-2022
11-14-2022
11-21-2022
11-30-2022
05-15-2023
DRAWN BY: J.G.
CHECKED BY: J.M.P.

JOB NUMBER:
22 - 199

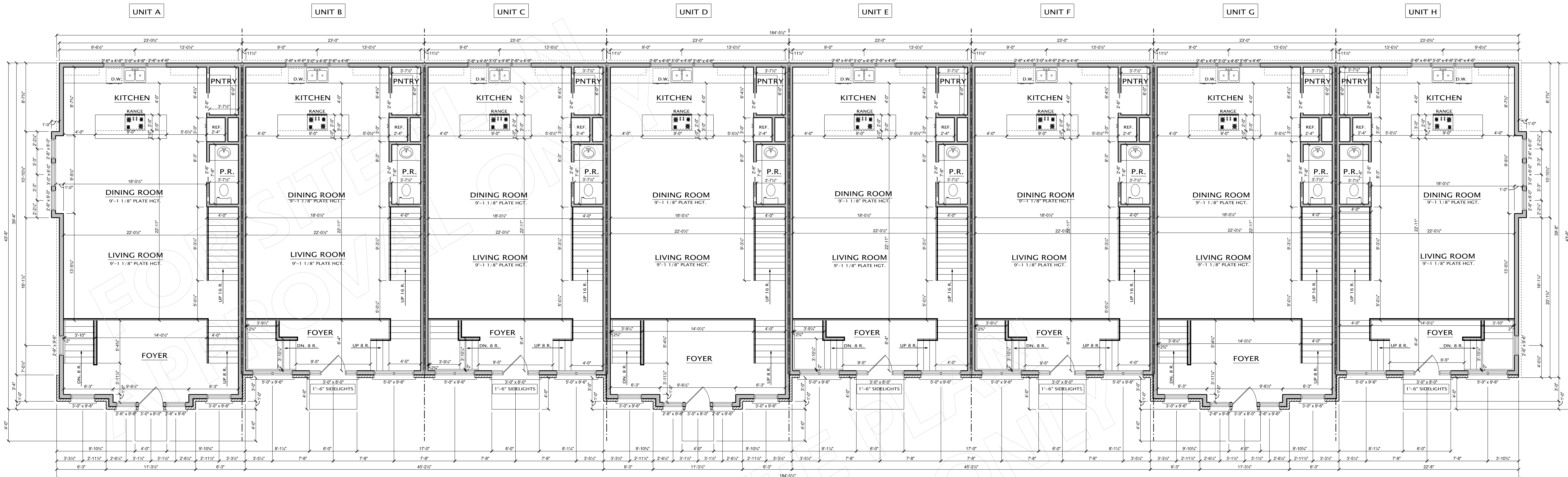
SHEET NUMBER:

A-1



FOUNDATION PLAN

SCALE: 3/16" = 1'-0"



FIRST FLOOR PLAN

SCALE: 3/16" = 1'-0"

UNIT-A:
FIRST FLOOR: 1,006 sq.ft.
SECOND FLOOR: 945 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 2,125 sq.ft.

UNIT-B:
FIRST FLOOR: 912 sq.ft.
SECOND FLOOR: 866 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 1,952 sq.ft.

UNIT-C:
FIRST FLOOR: 912 sq.ft.
SECOND FLOOR: 866 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 1,952 sq.ft.

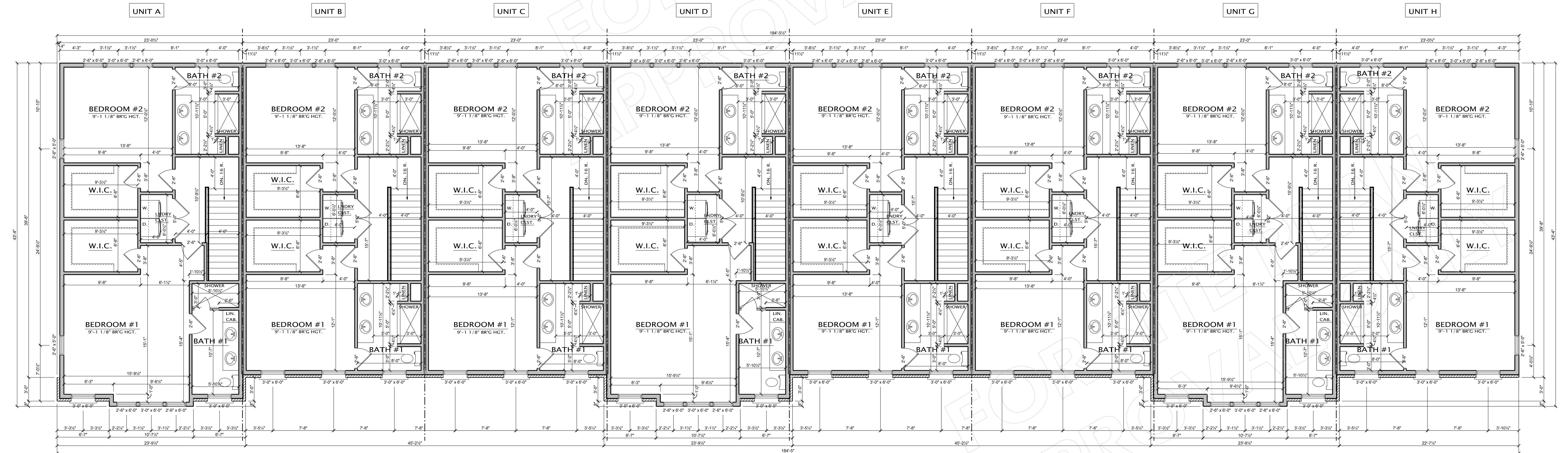
UNIT-D:
FIRST FLOOR: 993 sq.ft.
SECOND FLOOR: 952 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 2,119 sq.ft.

UNIT-E:
FIRST FLOOR: 912 sq.ft.
SECOND FLOOR: 866 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 1,952 sq.ft.

UNIT-F:
FIRST FLOOR: 912 sq.ft.
SECOND FLOOR: 866 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 1,952 sq.ft.

UNIT-G:
FIRST FLOOR: 993 sq.ft.
SECOND FLOOR: 952 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 2,119 sq.ft.

UNIT-H:
FIRST FLOOR: 926 sq.ft.
SECOND FLOOR: 868 sq.ft.
BASEMENT: 174 sq.ft.
TOTAL: 1,968 sq.ft.



SECOND FLOOR PLAN

SCALE: 3/16" = 1'-0"

THE IDEAS AND DESIGN CONCEPTS EXPRESSED HEREIN AND THE GRAPHICALLY DISPLAYED ARRANGEMENT OF THEIR COMPONENTS REPRESENTED BY THIS DRAWING HAVE BEEN DEVELOPED FOR THE EXCLUSIVE USE OF THE SPECIFIED PROJECT AND ARE THE SOLE PROPERTY OF JMP Design + Build, Inc. INCORPORATED. A CONVEYANCE OR DISCLOSURE OF THE IDEAS DESIGN CONCEPTS OR USE OF ANY GRAPHICALLY DISPLAYED ARRANGEMENTS OF THE COMPONENTS SHALL BE AT THE DISCRETION AND ONLY THROUGH THE EXPRESSED WRITTEN CONSENT OF JMP Design + Build, Inc. ALL MATERIALS HEREIN ARE PROPRIETARY AND COPYRIGHTED.

ARCHITECTURAL SEAL

PROJECT

ORION VILLAS
E FLINT ST. & MILLER RD.
LAKE ORION & ORION TOWNSHIP, MI

BUILDER/CLIENT
ROBERT GUCKAJ

PRELIMINARY ●
CONSTRUCTION ○
PERMIT ○
SHEET TITLE:
**FIRST FLOOR PLAN
SECOND FLOOR PLAN**

DATE: 11-08-2022
11-14-2022
11-21-2022
11-30-2022
05-15-2023
DRAWN BY: J.G.
CHECKED BY: J.M.P.

JOB NUMBER:
22 - 199

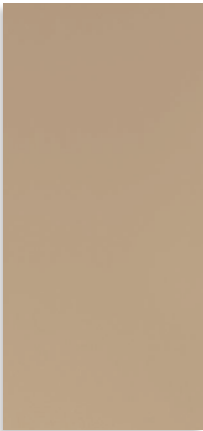
SHEET NUMBER:
A-2



LP® SMARTSIDE® VERTICAL SIDING

Vertical Siding* helps create a versatile, charming and modern aesthetic. Re-create the popular board and batten style by pairing LP® SmartSide® Smooth Finish Vertical Siding and LP SmartSide Smooth Finish Trim. The LP® SmartGuard® process provides added protection from the elements, helping your style look great for years to come.

- 16’ lengths eliminate horizontal joints
- Pre-primed for exceptional paint adhesion
- Not rated for structural use
- Treated engineered wood strand substrate
- Available in cedar texture, smooth finish, and five beautiful ExpertFinish® colors



NEW Smooth Finish

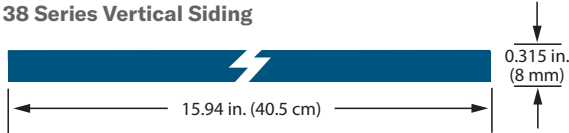


Cedar Texture



DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
38 Series Cedar Texture Vertical Siding	16 ft. (192 in.) (4.9m)	15.94 in. (40.5 cm)	0.315 in. (8 mm)	40503	1.5 PSF
38 Series Smooth Finish Vertical Siding	16 ft. (192 in.) (4.9m)	15.94 in. (40.5 cm)	0.315 in. (8 mm)	42126	1.5 PSF

38 Series Vertical Siding



*Vertical Siding may only span one plate-to-plate. Each vertical application is not to span beyond one floor to ceiling distance, or one floor to top-of-gable distance. Refer to application instructions (TN#028—Vertical Siding) at LPCorp.com for additional limitations.



ADD LP® SMARTSIDE® TRIM TO GET THE BOARD AND BATTEN LOOK

440 and 540 Series Cedar Texture Trim

DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
440 Series Cedar Texture Trim	16 ft. (192 in.) (4.9m)	1.50 in. (3.8 cm)	0.625 in. (15.9 mm)	25877	2 PSF
	16 ft. (192 in.) (4.9m)	2.50 in. (6.4 cm)	0.625 in. (15.9 mm)	25878	2 PSF
	16 ft. (192 in.) (4.9m)	3.50 in. (8.9 cm)	0.625 in. (15.9 mm)	25880	2 PSF
540 Series Cedar Texture Trim	16 ft. (192 in.) (4.9m)	1.50 in. (3.8 cm)	0.910 in. (23.1 mm)	25886*	3 PSF
	16 ft. (192 in.) (4.9m)	2.50 in. (6.4 cm)	0.910 in. (23.1 mm)	25887*	3 PSF
	16 ft. (192 in.) (4.9m)	3.50 in. (8.9 cm)	0.910 in. (23.1 mm)	25888	3 PSF

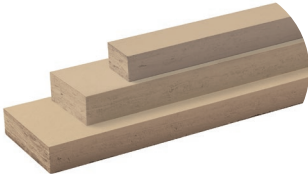
440 and 540 Series Smooth Finish Trim

DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
440 Series Smooth Finish Trim	16 ft. (192 in.) (4.9m)	1.50 in. (3.8 cm)	0.625 in. (15.9 mm)	41640	2 PSF
	16 ft. (192 in.) (4.9m)	2.50 in. (6.4 cm)	0.625 in. (15.9 mm)	41627	2 PSF
	16 ft. (192 in.) (4.9m)	3.50 in. (8.9 cm)	0.625 in. (15.9 mm)	41420	2 PSF
540 Series Smooth Finish Trim	16 ft. (192 in.) (4.9m)	1.50 in. (3.8 cm)	0.910 in. (23.1 mm)	41629	3 PSF
	16 ft. (192 in.) (4.9m)	2.50 in. (6.4 cm)	0.910 in. (23.1 mm)	41628	3 PSF
	16 ft. (192 in.) (4.9m)	3.50 in. (8.9 cm)	0.910 in. (23.1 mm)	41342	3 PSF

*Special order item. Requires minimum quantity and extended lead times.



Cedar Texture Trim

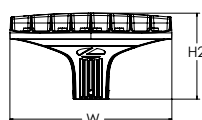
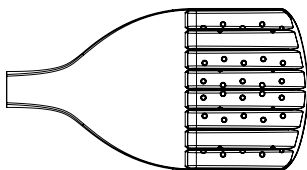


Smooth Finish Trim



For product catalog and complete warranty details, visit LPCorp.com/SmartSide

⚠ WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.



EPA:	0.44 ft ² (0.04 m ²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)

Type

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

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.

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

DSX0 LED											
Series	LEDs	Color temperature ²	Color Rendering Index ²	Distribution		Voltage	Mounting				
DSX0 LED	Forward optics		(this section 70CRI only)	AFR	Automotive front row	TSM	Type V medium	MVOLT	(120V-277V) ⁴	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) ⁹ RPAS Round pole mounting (#5 drilling, 3" min. RND pole) ⁹ SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket ¹⁰	
	P1	P5	30K 3000K	70CRI	T1S	Type I short	T5LG	Type V low glare	HVOLT		(347V-480V) ^{5,6}
	P2	P6	40K 4000K	70CRI	T2M	Type II medium	T5W	Type V wide	XVOLT		(277V-480V) ^{7,8}
	P3	P7	50K 5000K	70CRI	T3M	Type III medium	BLC3	Type III backlight control ³			
	P4		(this section 80CRI only, extended lead times apply)		T3LG	Type III low glare ³	BLC4	Type IV backlight control ³			
	Rotated optics				T4M	Type IV medium					
	P10 ¹	P12 ¹	27K 2700K	80CRI	T4LG	Type IV low glare ³	LCCO	Left corner cutoff ³			
	P11 ¹	P13 ¹	30K 3000K	80CRI	TFTM	Forward throw medium	RCCO	Right corner cutoff ³			
			35K 3500K	80CRI							
			40K 4000K	80CRI							
		50K 5000K	80CRI								

Control options		Other options		Finish <i>(required)</i>	
Shipped installed		PER7	Seven-pin receptacle only (controls ordered separate) ^{14, 19}	Shipped installed	DDBXD Dark Bronze
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}	FAO	Field adjustable output ^{15, 19}	HS	Houseside shield (black finish standard) ²⁰
PIR	High/low, motion/ambient sensor, 8-40" mounting height, ambient sensor enabled at 2fc ^{13, 18, 19}	BL30	Bi-level switched dimming, 30% ^{16, 19}	L90	Left rotated optics ¹
PER	NEMA twist-lock receptacle only (controls ordered separate) ¹⁴	BL50	Bi-level switched dimming, 50% ^{16, 19}	R90	Right rotated optics ¹
PER5	Five-pin receptacle only (controls ordered separate) ^{14, 19}	DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷	CCE	Coastal Construction ²¹
				Shipped separately	
				EGS	External Glare Shield (reversible, field install required, matches housing finish)
				BS	Bird Spikes (field install required)
					DBLXD Black
					DNAXD Natural Aluminum
					DWHXD White
					DBDXTD Textured dark bronze
					DBLTXD Textured black
					DNATXD Textured natural aluminum
					DWHGXD Textured white



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DSX0-LED
Rev. 11/10/22
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Ordering Information

Accessories

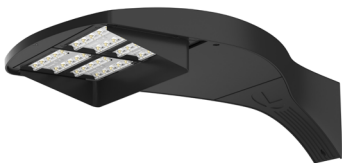
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²²
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²²
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²²
DSHORT SBK	Shorting cap ²²
DSX0HS 20C	House-side shield for P1, P2, P3 and P4 ²⁰
DSX0HS 30C	House-side shield for P10, P11, P12 and P13 ²⁰
DSX0HS 40C	House-side shield for P5, P6 and P7 ²⁰
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPAS (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPAS (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGS (FINISH)	External glare shield

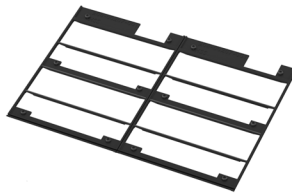
NOTES

- 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 35K only available with 80CRI. Contact Technical Support for other possible combinations.
- T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- HVOLT not available with package 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).
- XVOLT not available in packages P1, P2 or P10.
- SPAS and RPAS for use with #5 drilling only (Not for use with #8 drilling).
- WBA cannot be combined with Type 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, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT.
- PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT.
- PER/PER5/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.
- FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
- BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG.
- DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
- Reference Motion Sensor Default Settings table on page 4 to see functionality.
- Reference Controls Options table on page 4.
- Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- CCE option not available with option BS and EGS. Contact Technical Support for availability.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.

Shield Accessories



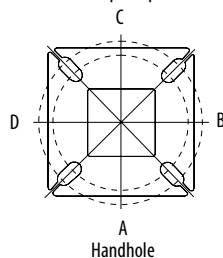
External Glare Shield (EGS)



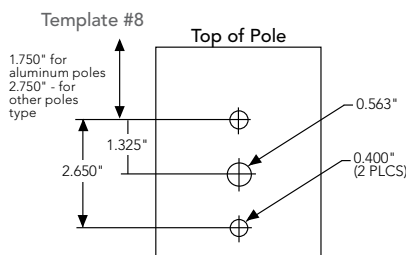
House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION (from top of pole)



Handhole



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

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	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPAS	#5	3"	3"	3"	3"		3"
RPAS	#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 @ 180 DM28	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 SPAS, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPAS	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

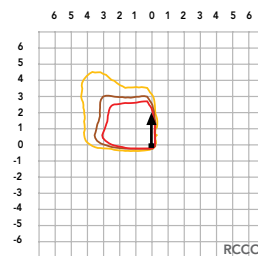
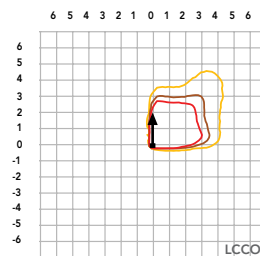
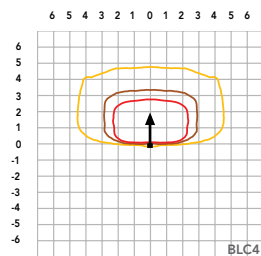
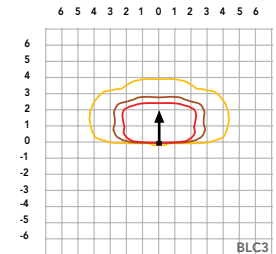
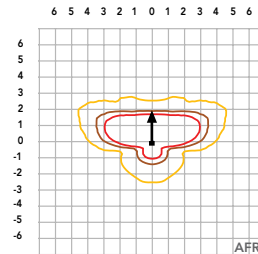
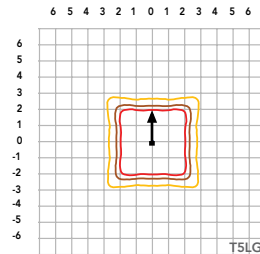
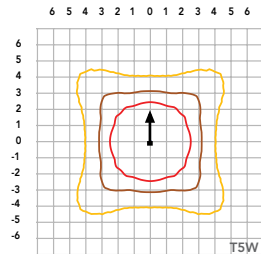
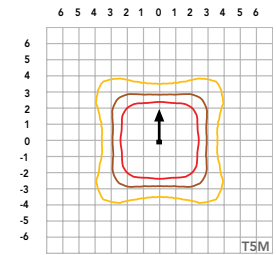
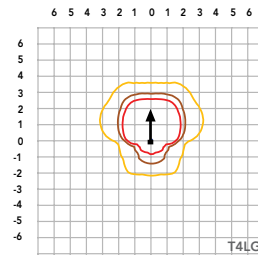
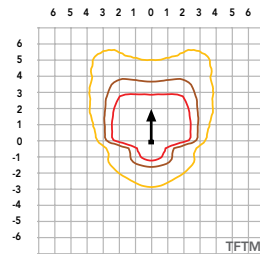
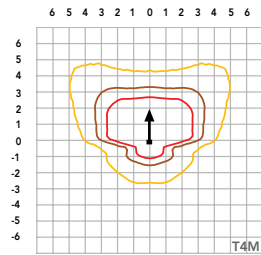
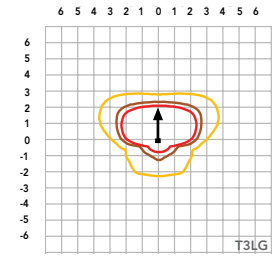
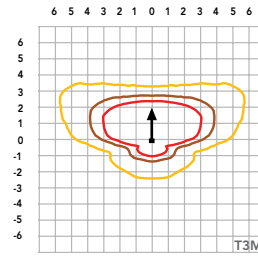
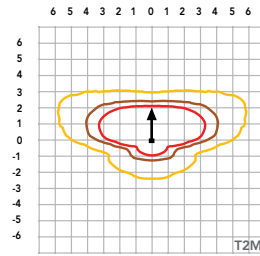
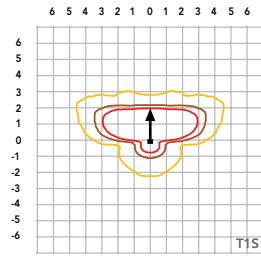
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [homepage](https://www.lithonia.com).

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

LEGEND

- 0.1 fc
- 0.5 fc
- 1.0 fc



Performance Data

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	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)	Photocell 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.
PERS 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 Eclipse.	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

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current (mA)	Wattage	120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	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	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	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
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	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		80CRI		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.

Performance Data

Lumen Output

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

Forward Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
20	530	P1	33W	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	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
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				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
20	700	P2	45W	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
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				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
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
20	1050	P3	69W	T1S	9,006	1	0	2	131	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
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	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
20	1400	P4	93W	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
				T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	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
				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
				T5LG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

Performance Data

Lumen Output

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

Forward Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
40	700	P5	90W	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
				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
				T5LG	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	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
40	1050	P6	137W	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				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
40	1300	P7	171W	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	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

Performance Data

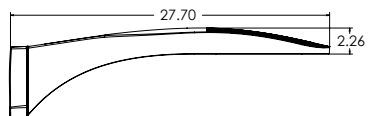
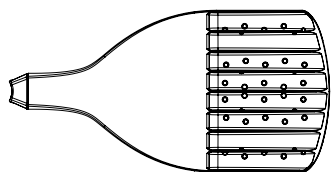
Lumen Output

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

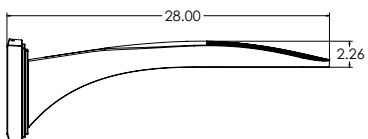
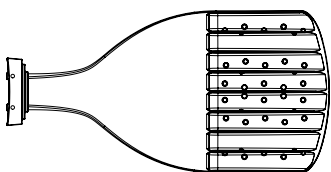
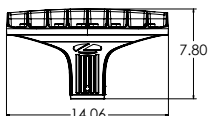
Rotated Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30	530	P10	51W	T1S	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
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				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
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				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	107	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
30	700	P11	68W	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				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
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				T5W	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				T5LG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	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
30	1050	P12	103W	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				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
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				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
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
30	1300	P13	129W	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				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
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				T5M	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				T5W	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				T5LG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				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
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

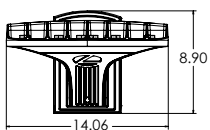
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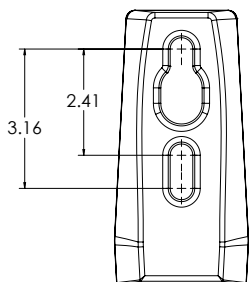
DSX0 with RPA, RPA5, SPA5, SPA8N



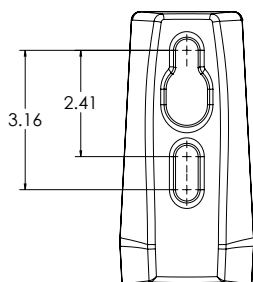
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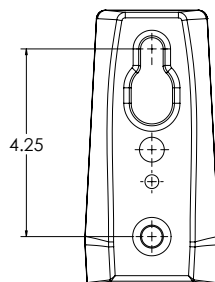
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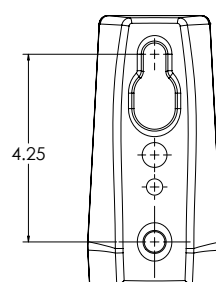
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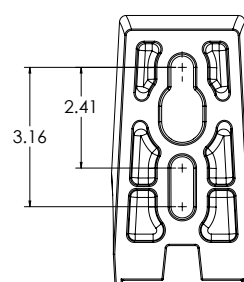
SPA5



RPA5

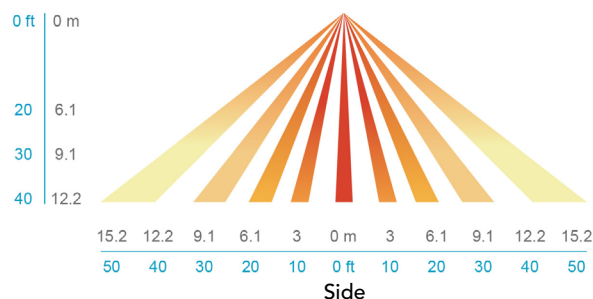
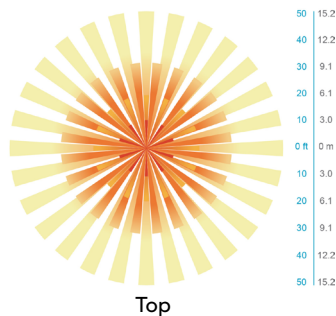
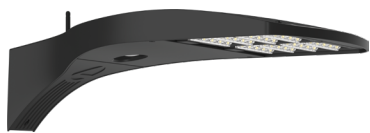


BASE FIXTURE



nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



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 1.5G. 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 metal-core 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 programming 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-to-use CLAIRITY app, nLight AIR equipped luminaires 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 Eclipse. 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.

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.

DAVY
EW17611
WALL

PROJECT



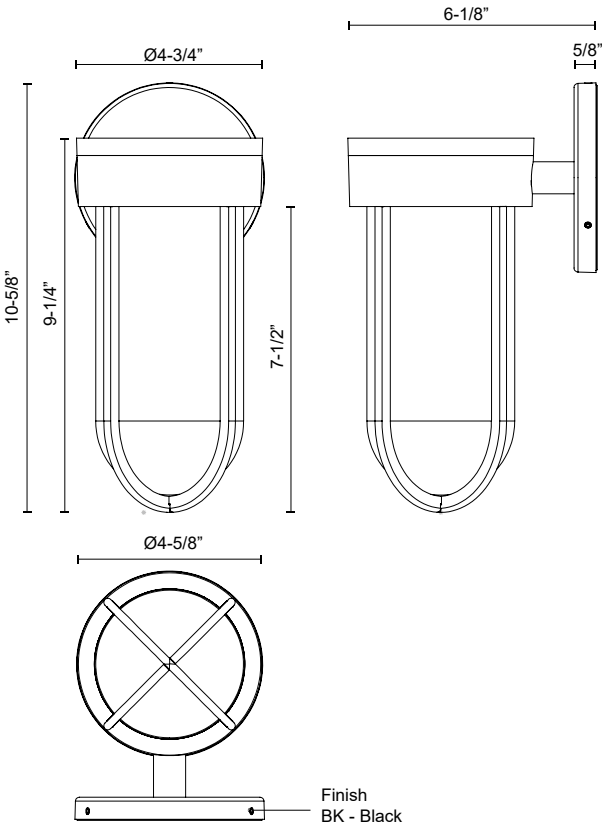
SPECIFICATION DETAILS

* For custom options, consult factory for details.

Fixture Dimensions	W4-5/8" x H10-5/8" x E6-1/8"
Light Source	AC LED Module
Wattage	16W
Total Lumens	1200lm
Delivered Lumens	BK-602lm
Voltage	120V
Color Temperature	3000K
CRI (Ra)	90CRI
Optional Color Temps	2700K - 5000K Available, Minimum Order Quantities Apply
LED Rated Life	50,000 hours
Dimming	100% - 10%, ELV Dimmer (Not Included)
Diffuser Details	Frosted PC Diffuser
Glass Details	Clear Water Glass
Location	Wet
Warranty	5 Years
Mounting Style	All Orientation; Wall;
Canopy Dimensions	D4-3/4" x E5/8"
Finish Option(s)	Black

DESCRIPTION

With a unique rounded metal frame and interior glass shell, this collection adds modern style to any exterior. Its style is matched by its function, providing ample illumination for all outdoor lighting needs.



KUZCO

19054 28TH AVENUE
SURREY - BC V3Z 6M3
CANADA

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COMMENT





WDGE2 LED

Architectural Wall Sconce

Precision Refractive Optic



Catalog
Number

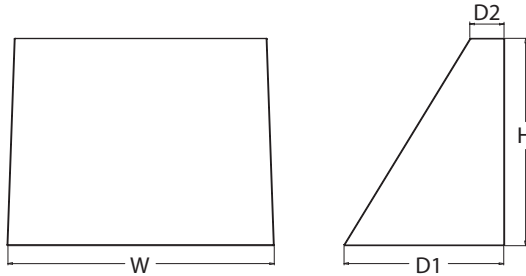
Notes

Type

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

Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: 13.5 lbs
 (without options)



Introduction

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

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	--	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

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

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE2 LED	P0 ¹	27K 2700K	70CRI ⁴	T1S Type I Short	MVOLT	Shipped included SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only) ⁶ Shipped separately AWS 3/8inch Architectural wall spacer PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.
	P1 ²	30K 3000K	80CRI	T2M Type II Medium	347 ⁵	
	P2 ²	40K 4000K	LW ³ Limited Wavelength	T3M Type III Medium	480 ⁵	
	P3 ²	50K 5000K		T4M Type IV Medium		
	P4 ²	AMB ³ Amber		TFTM Forward Throw Medium		

Options				Finish	
E10WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C min)	Standalone Sensors/Controls PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching. PIRH Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation. PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation. Networked Sensors/Controls NLTAIR2 PIR nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights. NLTAIR2 PIRH nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights. See page 4 for out of box functionality	DDBXD	Dark bronze	
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)		DBLXD	Black	
PE ⁷	Photocell, Button Type		DNAXD	Natural aluminum	
DMG ⁸	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)		DWHXD	White	
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.		DSSXD	Sandstone	
BAA	Buy America(n) Act Compliant		DDBTXD	Textured dark bronze	
			DBLBDX	Textured black	
			DNATXD	Textured natural aluminum	
			DWHGXD	Textured white	
			DSSTXD	Textured sandstone	



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WDGE2 LED
 Rev. 11/21/22

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD WEDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2P8BW DDBXD U WEDGE2 surface-mounted back box (specify finish)

NOTES

- 1 PO option not available with sensors/controls.
- 2 P1-P4 not available with AMB and LW.
- 3 AMB and LW always go together.
- 4 70CRI only available with T3M and T4M.
- 5 347V and 480V not available with E10WH or E20WC.
- 6 Not qualified for DLC. Not available with emergency battery backup or sensors/controls.
- 7 PE not available in 480V or with sensors/controls.
- 8 DMG option not available with sensors/controls.

Performance Data

Lumen Output

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

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)					Amber (Limited Wavelength)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	7W	T1S	636	92	0	0	0	666	97	0	0	0	699	101	0	0	1	691	100	0	0	1	712	47	0	0	1
		T2M	662	96	0	0	0	693	101	0	0	0	728	106	0	0	0	719	104	0	0	0	741	48	0	0	0
		T3M	662	96	0	0	0	693	101	0	0	0	728	106	0	0	0	719	104	0	0	0	741	48	0	0	0
		T4M	648	94	0	0	0	679	98	0	0	0	712	103	0	0	0	704	102	0	0	0	726	47	0	0	0
		TFTM	652	95	0	0	0	683	99	0	0	0	717	104	0	0	0	708	103	0	0	0	730	48	0	0	1
P1	11W	T1S	1,105	99	0	0	1	1,157	104	0	0	1	1,215	109	0	0	1	1,200	107	0	0	1					
		T2M	1,150	103	0	0	1	1,204	108	0	0	1	1,264	113	0	0	1	1,249	112	0	0	1					
		T3M	1,150	103	0	0	1	1,205	108	0	0	1	1,265	113	0	0	1	1,250	112	0	0	1					
		T4M	1,126	101	0	0	1	1,179	106	0	0	1	1,238	111	0	0	1	1,223	110	0	0	1					
		TFTM	1,133	101	0	0	1	1,186	106	0	0	1	1,245	112	0	0	1	1,230	110	0	0	1					
P2	19W	T1S	1,801	95	1	0	1	1,886	99	1	0	1	1,981	104	1	0	1	1,957	103	1	0	1					
		T2M	1,875	99	1	0	1	1,963	103	1	0	1	2,061	109	1	0	1	2,037	107	1	0	1					
		T3M	1,876	99	1	0	1	1,964	103	1	0	1	2,062	109	1	0	1	2,038	107	1	0	1					
		T4M	1,836	97	1	0	1	1,922	101	1	0	1	2,018	106	1	0	1	1,994	105	1	0	1					
		TFTM	1,847	97	1	0	1	1,934	102	1	0	1	2,030	107	1	0	1	2,006	106	1	0	1					
P3	32W	T1S	2,809	87	1	0	1	2,942	92	1	0	1	3,089	96	1	0	1	3,052	95	1	0	1					
		T2M	2,924	91	1	0	1	3,062	95	1	0	1	3,215	100	1	0	1	3,176	99	1	0	1					
		T3M	2,925	91	1	0	1	3,063	95	1	0	1	3,216	100	1	0	1	3,177	99	1	0	1					
		T4M	2,862	89	1	0	1	2,997	93	1	0	1	3,147	98	1	0	1	3,110	97	1	0	1					
		TFTM	2,880	90	1	0	1	3,015	94	1	0	1	3,166	99	1	0	1	3,128	97	1	0	1					
P4	47W	T1S	3,729	80	1	0	1	3,904	84	1	0	1	4,099	88	1	0	1	4,051	87	1	0	1					
		T2M	3,881	83	1	0	1	4,063	87	1	0	1	4,267	91	1	0	1	4,216	90	1	0	1					
		T3M	3,882	83	1	0	1	4,065	87	1	0	1	4,268	91	1	0	1	4,217	90	1	0	1					
		T4M	3,799	81	1	0	1	3,978	85	1	0	1	4,177	90	1	0	1	4,127	88	1	0	1					
		TFTM	3,822	82	1	0	1	4,002	86	1	0	1	4,202	90	1	0	1	4,152	89	1	0	1					

Performance Package	System Watts	Dist. Type	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	7W	T3M	737	107	0	0	0	763	111	0	0	0	822	119	0	0	0	832	121	0	0	1
		T4M	721	105	0	0	0	746	108	0	0	0	804	117	0	0	1	814	118	0	0	1
P1	11W	T3M	1,280	115	0	0	1	1,325	119	0	0	1	1,427	128	1	0	1	1,445	129	1	0	1
		T4M	1,253	112	0	0	1	1,297	116	0	0	1	1,397	125	0	0	1	1,415	127	0	0	1
P2	19W	T3M	2,087	110	1	0	1	2,160	114	1	0	1	2,327	123	1	0	1	2,357	124	1	0	1
		T4M	2,042	108	1	0	1	2,114	111	1	0	1	2,278	120	1	0	1	2,306	121	1	0	1
P3	32W	T3M	3,254	101	1	0	1	3,369	105	1	0	1	3,629	113	1	0	1	3,675	114	1	0	1
		T4M	3,185	99	1	0	1	3,297	103	1	0	1	3,552	111	1	0	1	3,597	112	1	0	1
P4	47W	T3M	4,319	93	1	0	1	4,471	96	1	0	1	4,817	103	1	0	2	4,878	105	1	0	2
		T4M	4,227	91	1	0	1	4,376	94	1	0	2	4,714	101	1	0	2	4,774	102	1	0	2



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Electrical Load

Performance Package	System Watts	Current (A)					
		120Vac	208Vac	240Vac	277Vac	347Vac	480Vac
P0	7.0	0.061	0.042	0.04	0.039	--	--
	9.0	--	--	--	--	0.031	0.021
P1	11.0	0.100	0.064	0.059	0.054	--	--
	14.1	--	--	--	--	0.046	0.031
P2	19.0	0.168	0.106	0.095	0.083	--	--
	22.8	--	--	--	--	0.067	0.050
P3	32.0	0.284	0.163	0.144	0.131	--	--
	37.1	--	--	--	--	0.107	0.079
P4	47.0	0.412	0.234	0.207	0.185	--	--
	53.5	--	--	--	--	0.153	0.112

Lumen Output in Emergency Mode (4000K, 80 CRI, T3M)

Option	Lumens
E10WH	1,358
E20WC	2,230

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

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).

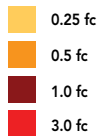
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.93	>0.87

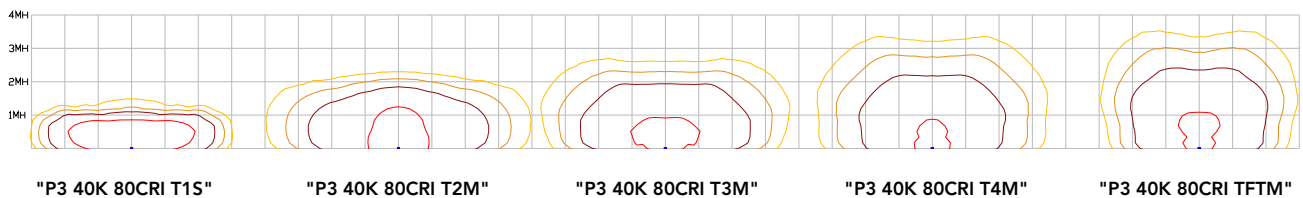
Photometric Diagrams

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

LEGEND



MH = 10ft
Grid = 10ft x 10ft



Emergency Egress Options

Emergency Battery Backup

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

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



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Motion/Ambient Sensor (PIR_, PIRH_)

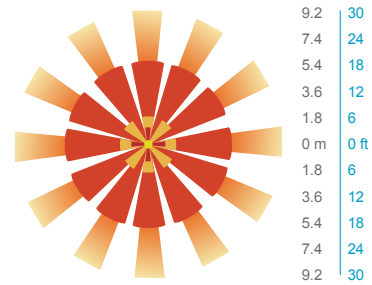
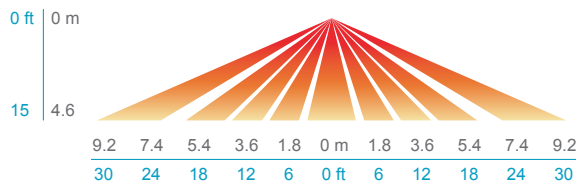
Motion/Ambient sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing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

Networked Control (NLTAIR2)

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

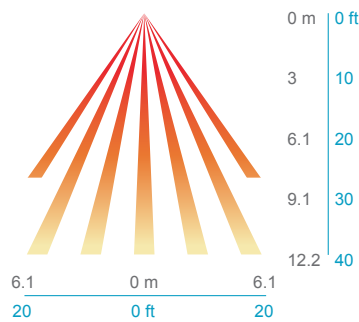
PIR

HIGH VIEW

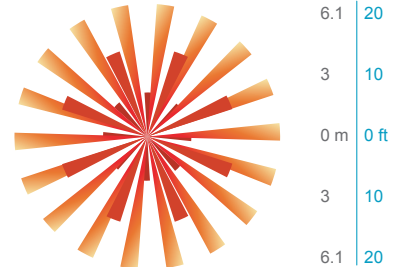


PIRH

SIDE VIEW



TOP VIEW



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



Motion/Ambient Sensor

D = 7"

H = 9" (Standalone controls)

11" (nLight AIR controls, 2" antenna will be pointing down behind the sensor)

W = 11.5"



PBBW – Surface-Mounted Back Box

Use when there is no junction box available.

D = 1.75"

H = 9"

W = 11.5"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE

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

CONSTRUCTION

The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH

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

OPTICS

Individually formed acrylic lenses are engineered for superior application efficiency which maximizes the light in the areas where it is most needed. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting 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.



Kieft Engineering Responses

FCM

5-8-2023

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

April 25, 2023

Darwin McClary
Village Manager
Village of Lake Orion
21 E. Church St.
Lake Orion, MI 48362

Re: Orion Villas
Site Plan Review #1 amended
NFE Job No. N569

Dear Mr. McClary:

We have reviewed the Site Plan for the above referenced site. Our review is consistent with the requirements of Article 19 of the Zoning Ordinance, Section D – Required Information and relevant sections of the Zoning Ordinance related to the zoning district. After meeting April 20 with Village staff, we have the following comments:

- ✓1. The submittal has been sealed but not signed as required. *Added to Sht 1.*
- ✓2. Show the Point of Beginning for each legal description. *Add to Sht 1.*
- ✓3. The bearings of the legal description for the Township parcel do not match the bearings shown *Corrected as Sht 1.* on the drawing. Indicate record vs. measured as needed for clarity. *Corrected to match.*
- ✓4. Show, via label or legend, the existing and proposed pavement types. *Added to Shts 1 & 2.*
- ✓5. Provide a fire protection / vehicle maneuvering plan that identifies the proposed fire lane, with signage, and shows emergency vehicle circulation using AASHTO turning radii. See the Township website for turning templates for a fire engine and aerial apparatus. *Added Sht 5.*
- ✓6. Show proposed fire suppression lead and the location of a Fire Department Connection (FDC) to the building. *Added fire lead & FDC to Shts 2, 3 & 5. Architect to address suppression.*
- ✓7. We recommend requiring paving of Schorn Road at least to the entrance of the site for emergency vehicle access. Schorn Road has historically presented access difficulties for emergency responders. *Asphalt added to Shts 2 & 3.*
- ✓8. The existing watermain(s) in Flint Street must be shown. Note on the plans that field verification of underground utilities will be necessary along the Flint Street entrance; during round-about construction, contractors encountered several water mains and gas lines which are not indicated on this plan set. *Added to all Shts*
- ✓9. Provide dimensions to show:
 - ✓• Concrete pad extends at least 10' in front of the trash enclosure *Added to Shts 2 & 3*
 - ✓• Size of standard parking stalls and handicap stall/access island *Added to Sht 3*
 - ✓• Width of proposed front walk *Added to Sht 3*
 - ✓• Setback to the transformer pad *Added to Sht 3*

- ✓10. Show location of any on-site identifying signage for the development, or note that none is proposed. *Signage shown on new Sht 5.*
- ✓11. Provide required statistical data per section 19.02.D *Added to Sht 4.*
- ✓ Number of dwelling units = 8 Units
 - ✓ Type (i.e. apartment, condominium, etc.) = Condominium
 - ✓ Total number of bedrooms = Two Bedroom Units
 - ✓ Proposed density
- ✓12. Show that clear vision area requirements are met at the Schorn Road entrance, particularly as it relates to the wall height and line of sight from the adjacent home's driveway. *Added to Sht 2 with wall height note.*
- ✓13. The one-way entrance inward from the roundabout is shown 26' wide back to back of curb, widening to 28' along the west property line. This extra width may encourage wrong-way traffic from the development, and should be narrowed if possible after analyzing the truck circulation requirements. We recommend a one-way entrance width of 20'. Narrowing the driveway could also allow the existing storm manhole to be located outside of the new pavement area, which is preferable. *Prop. 26' width required per Fire Dept. for truck circulation. Revised on Shts 2 & 3.*
- ✓14. At this entrance, we recommend the Flint Street sidewalk ramps be relocated further north, to provide a crossing that is closer to perpendicular to the driveway for pedestrian safety. *Revised on Shts 2 & 3.*
- ✓15. Show location of "one-way, do not enter" signage to discourage vehicles driving south into the drive adjacent to Unit A. *Added to new Sht 5.*
- ✓16. The northern drive is shown 32' wide from the garage face to the back of curb. This extra width contributes additional impervious area, increasing runoff that must be detained. This width should be narrowed to 26' if possible after analyzing truck circulation and passenger vehicle access to the garages. *Reduced to 27' width for proper garage access.*
- ✓17. The proposed landscaping and lighting plan indicates strong potential for interference with the proposed storm sewer near the Flint Street entrance, and with the proposed water main near the Schorn Road entrance. We recommend providing 10' clearance between utilities and trees or light poles. *Utilities added to Landscape Plan & light poles & trees shifted as req'd.*
- ✓18. A portion of existing 24" storm sewer that conveys drainage from Miller Road and Flint Street is located on-site along the west property line. No easement is shown on the plans. If there is not an easement over this area, we recommend the Village require a drainage easement to facilitate maintenance. *No Comment.*
- ✓19. The architectural plans do not indicate the total proposed height of the building. Show total height and verify that it does not exceed the maximum allowable. *Architect to add building height dimension.*

Landscape
Architect

Architect

The following items are required, but can be addressed during the engineering phase of the project:

- ✓1. The proposed storm sewer design indicates the removal of an existing 12" pipe that runs NE out of the existing manhole just off site to the west. It is our understanding that this 12" pipe is a portion of the Axford Drain. The on-site drainage must be reconfigured to connect to the existing on-site manhole. Show the location of the Axford Drain and any associated easements on the site plans. It may be necessary to add a structure in order to make all connections at acceptable angles. *Revised on all Shts.*

- ✓ 2. Connection to the Axford Drain will require a permit from the County. *Agreed.*
- ✓ 3. Although detailed grading will be reviewed with the engineering plan submittal, we note the site plan indicates drainage entering the site from Schorn Road. We recommend the drainage be split at the right-of-way line. *Revised on Sht. 3*
- ✓ 4. We note that the proposed outlet from the underground detention is indicated as a 3" pipe when an orifice of just over 1.5" diameter was calculated. For the engineering submittal, provide the proper size orifice to meet OCWRC requirements for detention volume and time. *will address later.*
- ✓ 5. We note that the only sanitary lead shown is from Unit A. If this is meant to serve all units, we question the length of the sanitary sewer extension. If each unit is to have a separate sewer lead, it should be shown. *Sanitary leads and clean outs added to Sht 3.*
- ✓ 6. Water service leads are not shown. *Added to Sht 3.*
- ✓ 7. We note that the cross section detail for entrance pavement is incorrectly labeled Pontiac Lake Road. *Corrected on Sht. 4*

We recommend that the plan be revised and resubmitted subject to the above comments. If you have any questions, please do not hesitate to call.

Sincerely,

Nowak & Fraus Engineers



Wendy E. Spence, PE
Senior Project Manager

CC: Laura Haw, McKenna
Gage Belko, McKenna
Wesley Sanchez, DPW Director
Harold Rossman, Chief of Police, Lake Orion
John Pender, Assistant Chief, Orion Township Fire Department
Jeffrey Williams, Fire Marshall, Orion Township Fire Department
David Goodloe, Building Official, Orion Township
Susan Galeczka, Clerk, Lake Orion

Kieft Engineering Responses

PCM 5-8-2023



MCKENNA

April 25, 2023

Darwin McClary
Village Manager
Village of Lake Orion
21 E. Church St.
Lake Orion, MI 48362

Subject: PC 23-003 Orion Villas Site Plan Review #1

Dear Mr. McClary:

This is a review of a site plan for Orion Villas, an eight unit townhome development located at 597 Flint Street. This Project is located on two parcels, one in the Village of Lake Orion (09-01-302-035) and the other in Orion Township (09-01-327-046). Due to a 2019 interlocal agreement, the entire development is subject to Village Ordinance review standards. A summary of the findings are shown in the table below.

K.E. plans now signed

	Ordinance Standard	Compliance	Comments
Arch ✓	Data Required	Not in Compliance	Drawings must be signed; Façade materials/colors required. <i>- Architect to provide.</i>
✓	Use & Harmonious Design	In Compliance	n/a
Arch ✓	Dimensional Standards	Not in Compliance	Building height dimensions required. <i>- Architect to provide.</i>
Land, Arch. ✓	Natural Features & Landscaping	Not in Compliance	<i>Added to Sht 1.</i> Tree removals should be noted. Plant material should be separated by type. Plant diversity standard not met. Additional landscaping recommended. Environmentally sensitive designs are encouraged.
✓	Access & Circulation	Not in Compliance	Truck turning diagram required; Incidental signage must be detailed (one-way, do no enter, handicapped parking, etc.); Traffic study encouraged, subject to Village/Township Engineer review. <i>Fire Protection Plan added (Sht 5)</i>
✓	Parking & Loading	Not in Compliance	Parking spaces must be dimensioned. Parking spaces exceed the minimum by over 20%, therefore, the Applicant must get Planning Commission approval for the 3 extra spaces or remove them from the plan. <i>We will seek P.C. Approval for 3 extra spaces.</i>
✓	Engineering / Stormwater Management	n/a	Subject to Village/Township Engineer review
✓	Lighting	In Compliance	n/a

Further specifications, review, and recommendations regarding the amended site plan are detailed in the Site Plan Review on the following pages.

HEADQUARTERS
235 East Main Street
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Northville, Michigan 48167

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MCKA.COM

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Site Plan Review

Standards for Site Plan Approval are set forth by [Article 19: Administrative Procedures and Standards](#). This project is reviewed against the Village's [Zoning Ordinance](#), Master Plan, existing site conditions, and sound planning and design principles. We offer the following comments for your consideration:

✓ 1. USE & HARMONIOUS DESIGN

Zoning Ordinance Standards: All elements of the site shall be harmoniously and efficiently designed in relation to the topography, size, and type of land, and the character of the adjacent properties and the proposed use. The site will be developed so as not to impede the normal and orderly development or improvement of surrounding properties for uses permitted on such property.

Findings: The site is zoned the RM, Multiple Family Residential District where the varied residential uses are outlined in Section 5.02. The Intent section of Article 5 reads:

The intent of the RM, Multiple Family Residential District is to address the varied housing needs of residents of different age and family groups by providing various types and sizes of residential dwellings for ownership or rental at a higher density than is permitted in any of the Single Family Residential Districts. Multiple family housing should be located near major thoroughfares and collector streets for good accessibility and must be designed so as not to overtax existing community facilities, utilities or services.

The proposed townhouses are suitable for the RM, Multiple Family Residential District as it fits the higher density residential intent. The Project also adheres to the accessibility intent of the District as it is located near major thoroughfares (Flint Street and Orion Road).

✓ 2. DIMENSIONAL STANDARDS

Zoning Ordinance Standards: The site plan shall comply with the district requirements for minimum floor area, height of building, lot size, yard space, density and all other requirements as set forth in the Schedule of Regulations.

✓ **Findings:** The Applicant meets most of the dimensional standards of the RM, Multiple Family Residential District; however, the proposed building height must be provided. The table below outlines the dimensional standards required and whether compliance has been met:

Architect to provide.

Dimensional Measurement	Required	Proposed	Comments
Min. Lot Area	8,000 sq. ft.	33,040 sq. ft.	In compliance.
Min. Lot Frontage	70'	261'	In compliance.
Front Yard Setback	25'	28'	In compliance.
Min. Side Yard Setback (both)	15'	33' (east); 38' (west)	In compliance.



✓

Dimensional Measurement	Required	Proposed	Comments
Min. Rear Yard Setback	25'	34'	In compliance.
Min. Floor Area per 2-Bedroom Unit	800 sq. ft.	>900 sq. ft.	In compliance.
Max. Building Height	40'	Not provided	Required. Architect to provide
Max. Lot Coverage	35%	22.8%	In compliance

✓ 3. NATURAL FEATURES & LANDSCAPING

Zoning Ordinance Standards: The existing natural landscape shall be preserved in its natural state as much as possible, by minimizing tree and soil removal and by topographic modifications that result in maximum harmony with adjacent properties

There shall be reasonable visual and sound privacy. Fences, walks, barriers, and landscaping shall be used, as appropriate, for the protection and enhancement of property and the safety and privacy of occupants and users.

Findings:

✓ Landscaping and Plant Material. Tree removals should be noted on the Landscape plan. The plant material list should be broken out by the following types of plant material:

- Landscape Architect
- Deciduous Shade Trees
 - Deciduous Ornamental Trees
 - Evergreen Trees
 - Upright/High Shrubs (min 30 inches)
 - Spreading/Low Shrubs (below 30 inches)

Added to Landscape Plan

Per section 15.02, no single species shall consist of more than 20% of any particular type of plant material provided on a site. It is anticipated that this standard will not be met, however the Planning Commission may waive this requirement. We recommend additional landscaping along the screening wall north of the parking/driveway area, provided the driveway width is reduced. Drive width reduced to 21' to allow access to garages. Will seek P.C. Approval for 3 extra spaces. More Landscaping added. It is encouraged that the Applicant incorporates environmentally sensitive design treatments such as permeable pavers or rain gardens. The Applicant should also note the impervious surface amount on the site plan. The landscape plan indicates the intent to plant native plant species, however, it is anticipated that the diversity standards will not be met.

4. ACCESS & CIRCULATION

Zoning Ordinance Standards: All buildings or groups of buildings shall be so arranged as to permit convenient and direct emergency vehicle access.

The arrangement of public or common ways for vehicular and pedestrian circulation shall respect the pattern of existing or planned streets or pedestrian or bicycle pathways in the vicinity of the site. Streets and drives



that are a part of an existing or planned street system serving adjacent developments shall be of an appropriate width to the volume of traffic they are planned to carry and shall have a dedicated right-of-way equal to that specified in a recognized source of reference.

There shall be a pedestrian circulation system that is insulated as completely as possible from the vehicular circulation system.

Where the Planning Commission determines, after expert consultation, that public safety would be substantially promoted in a particular location by reducing the number of points of ingress and egress between private property and an adjoining highway, cross-access may be required. Shared drive approaches between adjoining parcels may also be permitted under this Section.

Findings:

- ✓ Access Points. Access to the site is provided at two locations. The primary access point is a two-way driveway via Schorn Rd on the eastern side of the Project. Currently, Schorn Road is unpaved, and will likely track debris and mud into the site and onto Flint Street with the increased traffic. We recommend that the applicant pave Schorn Road up to at least the northern property line. The applicant should consider reducing the width of this drive to 26 feet, provided a truck turning diagram is provided showing adequate access to the site for emergency and service vehicles. Further, the screening wall to the property's north obscures the sightline for exiting vehicles – we recommend stepping down the wall to allow clear vision of the road to the north. *Asphalt for Schorn Rd. added. Drive width reduced to 27' to B.O.C. to allow garage access. Wall now stepped down for proper clear vision on shfts 2 & 3.*
- The secondary access point is a one-way ingress point on the southern side of the Project that allows traffic into the site from the roundabout intersection of Flint St./Miller Rd. and Orion Rd. This configuration adds another curb cut to the roundabout and may negatively impact traffic, however, as the driveway is a one-way exit point from the roundabout, it is not anticipated that traffic will be negatively impacted. The driveway widens as it enters the site and should be as narrow as possible to discourage wrong-way traffic. We recommend the applicant reduce the width of the one-way drive to 20 feet, which is the minimum necessary for emergency and service access, provided that the applicant must also submit a truck turning diagram for emergency vehicles and trash collection, demonstrating accessibility of the site. *Proposed 26' B/B width required by Fire Dept. (see shfts 2 & 3). Fire Protection Plan with turning radius shown on shft 5 (new)*
- ✓ Pedestrian Connectivity. A 5-foot concrete sidewalk is proposed in front of the townhomes. This sidewalk connects the front doors of the townhomes to a shared sidewalk that connects to the existing public sidewalk along Flint St./Miller Rd. Additionally, the proposed sidewalk extends along Schorn Rd. and to the western side of the townhomes. The proposed sidewalk adequately allows for pedestrian connection within the site and with respect to existing pedestrian infrastructure.

Vehicular and pedestrian access is subject to further review by the Village/Township Engineer.

5. PARKING & LOADING

Zoning Ordinance Standards: Off-street parking, loading, and unloading areas and outside refuse storage areas, or other storage areas that face or are visible from adjacent homes, or from public thoroughfares, shall be screened by walls, fencing or landscaping of effective height.

Findings: Off-street parking is located within the site. Each townhouse includes a two-car garage. Additionally, 6 parking spots are proposed along the back of the Project site. 1 of these parking spaces is barrier free, as required by section 14.02.



✓ Per section 14.02, two parking spaces are required for each unit which results in a total of 16 required parking spaces (with 8 units). A total of 22 parking spaces are proposed, including 1 barrier free parking space, exceeding this requirement by 6 parking spaces. Off-street parking space and aisleway dimensions must be dimensioned. *Added to sh#3.*

✓ Per section 14.02(B.2), the minimum parking requirement shall not exceed 20% in an effort to minimize excessive areas of pavement, unless otherwise approved by the Planning Commission. 20% of 16 is 3.2, therefore the additional 3 spaces must be approved by the Planning Commission.

will seek P.C. Approval for 3 extra spaces

6. BUILDING DESIGN & ARCHITECTURE

Zoning Ordinance Standards: Building design and architecture shall relate to and be harmonious with the surrounding neighborhood in terms of texture, scale, mass, proportion, materials, and color. Buildings should be designed with stylistic harmony and aim to serve people of all ages and abilities.

✓ Findings: *Architect to address.*

Building Design: The proposed townhomes have slightly varied front setbacks and façade elements, providing some relief to the large building. Three pitched, hipped roof segments help ground the design and provide some vertical interest. We recommend that the applicant include dormer-style windows in the empty space between the hipped segments to give greater visual interest.

Building Materials. The front façade of the townhomes appears to be comprised mainly of brick accented with vertical board siding. It appears some metal flashing above the doors and embossed windows will be applied. Building materials and colors must be described on the plan – material samples shall be provided to the Planning Commission for their approval. Manufacturers cut sheets were provided, but only for the vertical siding.

We recommend that the applicant provide a solid band of brick around the sides and rear, bringing the brick to just above the garage doors. Further, blank wall are highly discouraged; we recommend the installation of windows for both floors on either side of the building along with additional architectural detailing such trim, flashing, and awnings.

✓ All landscaping walls and screening walls must match the brick exterior and should be detailed on the plan.

Added note to sh#4.

7. ENGINEERING / STORMWATER MANAGEMENT

Zoning Ordinance Standards: Appropriate measures shall be taken to ensure that the removal of stormwater will not adversely affect adjoining properties or the capacity of the public storm drainage system and shall comply with State and Federal standards. Provisions shall be made for the construction of stormwater facilities, and the prevention of erosion and dust. Surface water on all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicles or pedestrian traffic and will not create nuisance ponding in paved areas.

Adequate services and utilities and improvements shall be available or provided, located and constructed with sufficient capacity and durability to properly serve the development. All utilities shall be located underground unless modified by the Planning Commission based on persuasive evidence provided by the applicant indicating it is not feasible to locate utilities underground. Where possible and practical, drainage design shall recognize existing natural drainage patterns.



✓ **Findings:** Stormwater pre-treatment infrastructure is not proposed for this Project. All stormwater and utility requirements must be addressed to the satisfaction of the Village Engineer.

Stormwater Pretreatment MH-2 shown on sheets Z&4.

✓ 8. LIGHTING

Zoning Ordinance Standards: Exterior lighting shall be so arranged so that it is deflected away from adjoining properties and so that it does not impede vision of drivers along adjacent streets.

Findings: Building mounted lighting and light pole fixtures are proposed within the Project. Parking areas, driveways and pedestrian walkways within the site are adequately illuminated.

Standards	Required	Proposed Lighting	Comments
Max. Height of Light Fixtures	22' or the height of the building, whichever is less.	15' maximum	In compliance.
Max. Illumination at Any Given Point	10 fc.	6.1 fc.	In compliance.
Max. Illumination at the Property Line	0.5 fc.	0.5 fc.	In compliance.

Recommendation

Based on our comments within this report, we recommend that the applicant revise and resubmit their site plan for the proposed Orion Villas at 597 Flint Street (Parcel#: 09-01-302-035, 09-01-327-046) in order to address the noted deficiencies and omissions. Upon receipt of a revised set of plans, we will be happy to coordinate a second review among Village and Township professional staff.

If you have any questions, please do not hesitate to contact us. Thank you.

Respectfully submitted,

McKENNA

Gage Belko
Associate Planner

Lauren Sayre
Assistant Planner

CC: Village Manager, Mr. Darwin McClary (mcclaryd@lakeorion.org)

Village Clerk, Ms. Susan Galeczka (galeczkas@lakeorion.org)

21 E. Church Street, Lake Orion, MI 48362