



AGENDA
CITY OF CREVE COEUR
PLANNING AND ZONING
300 NORTH NEW BALLAS RD
OCTOBER 2, 2023
6:00 PM

ZOOM MEETING INFORMATION

Members of the public may access live audio and/or video at the following link:

<https://us02web.zoom.us/j/83698413955>

Phone: 312 626 6799

Webinar ID: 836 9841 3955

CALL TO ORDER

ROLL CALL

Ms. Julie LaBonte (Chair)

Ms. Muriel Hall

Mr. Larry Potashnick

Ms. Marjorie Richter

Mr. AJ Wang

Ms. Rhonda O'Brien

Mr. Thomas Buelter

Mr. Carl Lumley, City Attorney

Mr. Jason Jaggi, Director of Community Development

Ms. Bethany L. Moore, City Planner

Ms. Megan Waller, Administrative Supervisor/Recording Secretary

ACCEPTANCE OF THE AGENDA

APPROVAL OF MINUTES

**1. September 18, 2023 Planning and Zoning Commission Draft Meeting
Minutes**

PUBLIC COMMENT

An opportunity for members of the public to address the Planning and Zoning Commission regarding issues or concerns not already on the agenda for this meeting. Those wishing to speak will be asked to limit comments to three minutes and to complete a speaker card.

**AGENDA
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UNFINISHED BUSINESS

- 1. PUBLIC HEARING. Application #23-027 and #23-028: for a Rezoning From “RO” Research Office District to the Olia Village “PMD” Planned Mixed-Use Development District With a Site Concept Plan, Phase One Site Development Plan and Associated Preliminary Plat for the 96 Acre Property at 10300 Olive Boulevard.**

Matt Pfund, of Jack Matthews Development, representing 10300 Olive, LLC, has submitted an application to amend the Official Zoning Map of the City of Creve Coeur to change the zoning of the property of approximately 96 acres located at 10300 Olive Boulevard, from "RO" Research Office to "PMD" Planned Mixed Use Development District, referred to as Olia Village. In accordance with Section 405.390 of the Zoning Code for Planned Zoning Districts, the applicant has submitted the Site Concept Plan and Phase One Site Development Plan for review and approval by the City. The proposed uses within the overall development include commercial buildings, restaurants, mixed-use buildings with ground floor retail/commercial uses and multi-family dwelling units on the upper floors within a “Main Street” type setting, hotels, apartments, office and research office buildings, as well as attached townhomes. The existing buildings formerly used by Bayer are shown to remain and will be repurposed for office and residential uses. A subdivision of the property is also proposed. The submitted Site Development Plan for Phase One consists of site clearing, grading, site utilities and roadway construction. Building construction and related site improvements will be submitted for review by the City at a later date in association with each of the outlined phases as provided in the Site Concept Plan. A preliminary plat has been submitted to subdivide the property into individual lots and to establish streets and easements. The application was continued from the September 5, 2023 and September 18, 2023 meetings.

NEW BUSINESS

WORK AGENDA

DEPARTMENT REPORTS

ADJOURNMENT



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Pursuant to Section 610.022 RSMo., the Planning and Zoning Commission could, at any time during the meeting, vote to close the public meeting and move to closed session to discuss matters relating to litigation, legal actions and/or communications from the City Attorney as provided under Section 610.021(1) RSMo. and/or personnel matters under Section 610.021(13) RSMo. And/or employee matters under Section 610.021(3) RSMo. and/or real estate matters under Section 610.021(2) or other matters as permitted by Chapter 610.

Posted by: _____

Date/Time posted: _____

If you need special accommodations to attend a meeting, services may be arranged by contacting the Office of the City Administrator in advance.



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CALL TO ORDER

The meeting was called to order at 6:00 PM.

ROLL CALL

**Ms. Julie LaBonte (Chair)
Ms. Muriel Hall
Mr. Larry Potashnick
Ms. Marjorie Richter
Mr. AJ Wang
Ms. Rhonda O'Brien
Mr. Thomas Buelter (Absent)**

The following staff were also present:

**Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary**

ACCEPTANCE OF THE AGENDA

Mr. Wang made a motion to limit the meeting to 3 hours and discuss new business before unfinished business. Mr. Potashnick seconded. All in favor and amended agenda approved.

APPROVAL OF MINUTES

1. September 5, 2023 Planning and Zoning Commission Draft Meeting Minutes

Mr. Wang made a motion to approve the September 5, 2023 meeting minutes. Mr. Potashnick seconded. All in favor.

PUBLIC COMMENT

None



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NEW BUSINESS

1. Application #23-034: Site Development Plan for the Construction of A New 6,504 Square Foot Plant Growth Building Within the Donald Danforth Plant Science Center Campus Located at 975 N. Warson Road

Ms. Bethany Moore, City Planner, stated that the request is for a one-story, 6,504sqft addition to the main building.

Ms. Moore stated that the addition will not be visible from any streets, as it is surrounded by the other buildings.

Ms. Moore stated that the proposed addition materials will be metal and brick to match the greenhouse and attached building.

Ms. Moore stated that native plantings will be added around the foundation of the building.

Ms. Moore stated that staff does not have any concerns with the project, as it will be located to the interior of the site.

Mr. Potashnick made a motion to approve the site development plan subject to the conditions in the staff report. Mr. Wang seconded. All in favor.

RESULT: Approved

MOVER: Potashnick

SECONDER: Wang

AYES: Rhonda O'Brien, AJ Wang, Larry Potashnick, Muriel Hall, Marjorie Richter, Julie LaBonte

NAYS: None

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2. PUBLIC HEARING. Application #23-033: Text Amendment to the Zoning Regulations Regarding the Procedures for the Review of Conditional Use Permits as Provided Within Section 405.1070.

Ms. O'Brien made a motion to continue the public hearing to the October 16th meeting.
Mr. Wang seconded. All in favor.

RESULT: Approved MOVER: Potashnick SECONDER: Wang AYES: Rhonda O'Brien, AJ Wang, Larry Potashnick, Muriel Hall, Marjorie Richter, Julie LaBonte NAYS: None

3. PUBLIC HEARING. Application #23-032: Text Amendments to the Zoning Regulations Regarding Short Term Rentals

Ms. O'Brien made a motion to continue the public hearing to the October 16th meeting.
Mr. Wang seconded. All in favor.

RESULT: Continued MOVER: O'Brien SECONDER: Wang AYES: Rhonda O'Brien, AJ Wang, Larry Potashnick, Muriel Hall, Marjorie Richter, Julie LaBonte NAYS: None

UNFINISHED BUSINESS

1. PUBLIC HEARING Application #23-027 and #23-028: for a Rezoning From "RO" Research Office District to the Olia Village "PMD" Planned Mixed-Use Development District With a Site Concept Plan, Phase One Site Development Plan and Associated Preliminary Plat for the 96 Acre Property at 10300 Olive Boulevard

Those speaking to the request were sworn in.

Mr. Jason Jaggi, Director of Community Development, reminded the commission that this is the second public hearing session for the proposal. He explained that the applicant has made updates to the project based on the feedback received at the previous public hearing.



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Mr. Matthew Pfund, Jack Matthews Development, 3925 Blackburn Rd, Edwardsville, IL 62025, stated that changes from the last meeting include maximizing the depth of the buffer between adjacent residential, including additional plantings to create a denser buffer. He stated that the previously proposed nature trail has been removed in the northwest corner area, stormwater runoff control has been improved, fewer trees will be removed, and updates have been made to the proposed shared use path.

Mr. Chris Stritzel, Crawford, Murphy, & Tilley, 2750 W Washington St., Springfield, IL 62702, stated that since the previous meeting, the buffer has been increased to 40ft from the previously proposed 35ft. He explained that adjustments have been made to the proposed retaining wall to minimize the disturbance to the existing buffer and maximize the size of the buffer.

Mr. Stritzel stated that this part of the project will be completed in three phases, with the first being grading and clearing of the site. He explained that there are several erosion control requirements, such as silt fencing, required to obtain permits from both the City and the State of Missouri to help protect neighbors from stormwater runoff during construction.

Mr. Stritzel stated that the proposed detention ponds will be built early in phase one to help with stormwater runoff.

Mr. Stritzel stated that Metropolitan St. Louis Sewer District is requiring that all current pavement must be calculated into the stormwater mitigation as if it is currently grassy area.

Mr. Stritzel stated that after construction of the retaining wall and amended sloping of the site, stormwater will be redirected through the site rather than running off into the neighbor's yards. He explained that the amount of stormwater runoff to the existing culvert will be reduced by approximately 25% after construction.

Mr. Stritzel stated that they are proposing a single, 500ft long, left turn lane at Olive Blvd and Pavilion Dr turning west into the site with crosswalks at all 4 quadrants.

Mr. Stritzel stated that the proposed shared use path will connect from the site to the sidewalk in front of Vantage Credit Union on Lindbergh Blvd.



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Mr. Stritzel stated that the proposed shared use path will now loop through the development and will connect from Olive Blvd to Lindbergh Blvd. Mr. Stritzel also stated that the proposed nature path behind lots 1, 10, & 17 has been eliminated, and the existing nature path will connect to the shared use path.

Mr. Tobias Heddinghaus, Gray Design Group, 9 Sunnen Dr Ste 110, St. Louis, MO 63143, stated that the proposed shared use path will now connect with the sidewalks on Main Street along the east side of the site. He explained that this will help to encourage trail users to engage in Main Street.

Mr. Heddinghaus stated that the pocket park to the west of the site will offer a flexible design for outdoor events. He stated that there will be public art and shade structures as well as outdoor dining spaces.

Mr. Heddinghaus stated that public restrooms are not proposed in the pocket park. He explained that public restrooms will be available in the lobby of the apartment building that connects to a parking garage.

Mr. Heddinghaus stated that facade lighting will be limited in the south and west elevations of the site adjacent to residential. He stated that there will be full cut off parking lot fixtures with warm-colored temperature lights, and that occupancy sensors will be utilized when possible.

Mr. Heddinghaus stated that uses that will create the most noise will be located to the front of the site towards Olive and Lindbergh. He explained that the grocer will be oriented towards the northeast, including loading areas, to eliminate noise pollution.

Mr. Heddinghaus stated that there will be rooftop screening of mechanical equipment to help reduce noise.

Mr. Heddinghaus stated that the back of the proposed parking structure on Parcel 1 will be approximately 145ft from the back of the nearest residence.

Mr. Heddinghaus stated that the proposed office building on Parcel 10 looking south will require a 20ft retaining wall due to the change in slope along the back of the development. He explained that the proposed office building will sit lower than the adjacent residence because of the difference in slope. He also explained that there will be approximately 190ft between the proposed office building and the adjacent residence.



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Mr. Heddinghaus stated that on Parcel 10 looking east, the wall will only be about 5ft tall, as the slope lessens dramatically. He stated that there will be approximately 228ft between the back of the proposed office building and the adjacent residence.

Mr. Heddinghaus stated that the elevation of Parcel 17 looking east is higher than the existing residence. He explained that there will be approximately 268ft between the back of the proposed office building and the back of the adjacent residence.

Mr. Wes Haid, SWT Design Landscape Architect, 7722 Big Bend Blvd., St. Louis, MO 63119, stated that the developer has proposed a 10ft wide buffer screen between the undisturbed woodland and the proposed retaining wall. He stated that this proposed buffer would be a mix of evergreen trees and shrubs with a variety of species.

Mr. Haid stated that the additional planting is not required but is proposed in order to improve the current buffer condition.

Mr. Haid stated that the applicant has increased the undisturbed buffer from 35ft to 40ft, moved the retaining wall further from the property line, revised the grading limits along the site perimeter, eliminated the nature trail along Lots 1, 10, & 17, and moved the shared use path. He explained that these changes will help with conservation of existing trees and lower the percentage of trees removed to 50%.

Ms. Bethany Moore, City Planner, presented the site concept plan revisions.

Ms. Moore explained that the applicant has increased the residential buffer yard to 40ft.

She stated that the buildings will still be 75ft at the closest point of the property line.

Ms. Moore stated that the pedestrian plan includes crosswalks across Olive Blvd, a sidewalk along Lindbergh, an 8ft wide shared-use path loop within the site, and the existing nature path will tie into the shared-use path.

Ms. Moore reminded the commission that connection to the Sunswept neighborhood is part of the comprehensive plan goals. She stated that further direction from the commission is necessary.

Ms. Moore stated that the preliminary plat includes 17 individual lots of varying width, depth, and sizes along with 7 separate areas of common ground and park.



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Ms. Moore stated that the tree conservation plan is part of the preliminary plat and would require Planning and Zoning Commission approval.

Ms. Moore stated that the applicant has reduced the number of trees removed to 50%. She explained that 50% is the maximum percentage allowed without replacement.

Ms. Moore stated that phase one of the site development plan includes site grading, installation of proposed utilities, detention basins, construction of roads, sidewalks, pedestrian pathways, retaining wall, tree removal, and street lighting.

Ms. Moore presented the concept planting plan. She explained that additional street trees will be planted along Olive Blvd and interior streets. Ms. Moore stated that staff has requested a detailed landscaping plan be submitted for final review at the next meeting with a plant schedule.

Mr. Jaggi stated that the conceptual drainage plan is currently in review with MSD. He explained that permits will be required for the drainage plan from MSD, the City, and possibly other agencies.

Mr. Jaggi presented the preliminary stormwater management report. He explained that proposed detention facilities have sufficient volume with no increase of flow at outlet points. Mr. Jaggi stated that the stormwater plans are still under design, including storm sewer conveyance and best management practices for water quality.

Mr. Jaggi stated that the applicant has proposed development standards for the site that will be attached to the approved ordinance to provide regulations specific to the development. He stated that this plan would be used as the standard for future site development.

Mr. Jaggi stated that a component of the development standards is Table A - Permitted Uses. He explained that the proposed table includes 4 districts: A-Main, B-Mixed, C-Office, D-Residential.

Mr. Jaggi stated that the proposed uses are based off the City's NAICS land use codes.

Mr. Jaggi stated that along Main Street, businesses that would not contribute to an active streetscape, such as office uses, would be prohibited as ground floor uses. He explained that these uses could be allowed on upper floors.



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Mr. Jaggi stated that it is important to note that the proposed table does not include any conditional uses. He explained that all of the proposed uses would be permitted by right.

Mr. Jaggi stated that staff would like additional discussion on drive-through restaurants, marijuana facilities, car dealerships with no outside storage or display, etc. He explained that staff would like the commission to consider if these uses are appropriate within the development.

Mr. Jaggi stated that the proposed use table would allow multi-family housing in the proposed Residential D-district. He explained that the current proposed plan includes townhomes, but the proposed use table allows for multi-family. Mr. Jaggi stated that staff believes the multi-family component should be removed from the proposed use table, as it is inconsistent.

Mr. Jaggi stated that the applicant has confirmed that they do not plan to have free-standing restrooms in the park area.

Mr. Jaggi stated that further discussion should be considered regarding inclusive housing and security on the site.

Mr. Jaggi stated that the public works department is working with a consultant to determine costs for road maintenance within the development. He stated that Police are also determining how many additional resources will be required for the development.

Mr. Jaggi stated that the commission should be prepared to give direction on the revised buffer yard configuration, proposed uses in Table A, reconfiguration of the pedestrian path, and desirability of connection into the Sunswept neighborhood to meet Comprehensive Plan goals.

Ms. O'Brien stated that she is very happy with the changes to the pedestrian access plan. She had concerns with the lack of free-standing public restrooms, and asked for clarification on building materials. Ms. O'Brien stated that she believes drive-through facilities would be inconsistent with the design of the development, and that she would like clarification on the proposed use table. Mr. Jaggi stated that proposed building materials have been outlined in the development criteria.



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Mr. Wang had concerns regarding the sidewalk width along Main Street. Mr. Jaggi stated that it is a 6ft minimum. Mr. Wang stated that he suggests wider sidewalks to help promote a walkable downtown area with outdoor amenities. Mr. Jaggi stated that the applicant is suggesting recessed areas within the footprint of buildings to limit sidewalk space removed due to outdoor seating, furniture, etc.

Mr. Potashnick had concerns with restroom accessibility during events and special uses. Mr. Jaggi stated that portable restrooms are common for these types of events.

Mr. Potashnick asked for clarification on proposed drive-throughs. Mr. Jaggi stated that staff has not heard any plans for a drive-through, but it is not addressed in the use standards. Mr. Jaggi stated that staff is asking for direction from the commission on drive-through acceptability.

Ms. Richter had concerns regarding the water pipes running under the site. Mr. Potashnick asked how many acres of the site are undeveloped due to the easements over the existing water pipes. Mr. Pfund stated that roughly 35 acres will be undisturbed.

Ms. O'Brien asked if staff feels the proposed buffers and plantings are acceptable between the existing residences. Mr. Jaggi stated that staff will need to study these proposed changes further with a landscape plan to determine the density of the buffer.

Ms. LaBonte had concerns with the proposed height of buildings. Mr. Pfund stated that the topography of the site will affect the height of the buildings. Mr. Jaggi stated that there is a standard for height measurement.

Ms. LaBonte had concerns regarding drive-through facilities. Mr. Pfund stated that proposed lot 3 may have a drive-through coffee vendor, but no other drive-throughs are proposed at this time. Ms. LaBonte suggested that these should be conditional uses. She also had concerns with the consistency of the proposed use table compared to the existing use table.

Ms. LaBonte had concerns with the cohesiveness of the site if lots are sold to other developers. Mr. Jaggi stated that recorded covenants with a list of restrictions and maintenance responsibilities would be a required component of the final plat.



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Ms. LaBonte opened up the public comment. Those speaking to the request were sworn in. Many neighbors allocated their time to Ms. Monica Moore-Žigo to speak on behalf of the neighborhood.

Ms. Elizabeth David, 9 Ramblewood Ln., Creve Coeur, MO 63141, stated that she is pleased to see that more trees will be preserved, but she is concerned with tree removal along certain boundaries of the site. She had concerns that the proposed new buildings will be visible due to the elevation changes and proposed tree removal.

Ms. Monica Moore-Žigo, 9 Spoede Woods, Creve Coeur, MO 63141, spoke on behalf of the Spoede Woods association and neighboring streets.

Ms. Moore-Žigo stated that the neighbors are enthusiastic about the possibility of a quality development on the site.

Ms. Moore-Žigo stated that the neighbors have concerns with the developer asking for exceptions to existing rules, such as the percentage of tree removal.

Ms. Moore-Žigo stated that there are two creeks on the site. She explained that many of the neighbors' homes are upstream from the creek, and the neighbors have concerns that the proposed retaining wall will cut through the current drainage field.

Ms. Moore-Žigo stated that there are two streams on the project site. She stated portions of the Dielman creek have been channelized and are handled by large culverts.

Ms. Moore-Žigo explained that a parking lot was built over the existing stream before the 2008 stream buffer protections were in place. She had concerns that stream buffer protections are not being followed in the proposal for the site.

Ms. Moore-Žigo had concerns with the height of the proposed retaining walls on the site. She stated that typically there is a 6ft maximum height for retaining walls and had concerns with the safety of the proposed wall.

Ms. Moore-Žigo stated that the neighbors had concerns about the proposed tree conservation plan, and the number of trees being removed.



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Ms. Moore-Žigo presented renderings of the existing trees today and the proposed removal from her neighbors' and her backyards. She had concerns with the tree conservation plan and the percentage of trees being removed, as well as the visibility of the site to the neighbors once the trees are removed.

Mr. Chip Fielder, 34 Tealwood Dr., Creve Coeur, MO, had concerns that the proposed project will not follow the existing zoning requirements.

Mr. Jeff Kintz, 11969 Spruce Haven Dr., asked if pools would be a part of the proposed apartment complex. He also asked if solar panels, bus stops, etc are being considered for the project. Mr. Kintz suggested having designated pick-up locations along Main Street. He also had concerns regarding the lack of public restrooms.

Ms. Angela Rose, 1035 N Sunswept, stated that she opposes adding sidewalks and walking paths to the Sunswept neighborhood.

Ms. Susan Murphy, 10305 N Sunswept, asked if there will be discussion of the response from the school system. She also had concerns regarding the density of the D- Single Family Residential zoning district and opposed allowing multi-family in this area. Ms. Murphy stated that she opposes proposed sidewalks through the Sunswept neighborhood.

Mr. Tom Walk, 1120 Basswood Ln, Olivette, MO, stated that he would like to see more tree preservation on the site. He had concerns with maintenance of the common grounds and shared paths. Mr. Walk stated that he would like to see dedicated public restrooms on the site and encouraged a multi-modal transportation friendly development.

Mr. Blake Eastwood, 14 Sunswept, stated that he is the president of the Sunswept neighborhood association, and the neighbors strongly oppose adding pedestrian access through the neighborhood. He was grateful that the neighbors will gain pedestrian access to the Olive corridor along Lindbergh Blvd. Mr. Eastwood had concerns regarding the safety of pedestrian access across Olive Blvd.

Mr. Eastwood stated that he has concerns regarding impacts to the existing creeks and watershed and the drainage plan for the proposed development.



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Ms. Rachel Protzel, 12 Spoede Woods, stated that her home sits at the lowest part of the street. She has concerns regarding the number of trees being removed and visibility of the site to the neighbors. She also has concerns regarding the density of the proposed buffer and the visibility of the buildings over the trees.

Ms. Protzel stated that she has concerns regarding overcrowding the school systems.

Mr. Pfund addressed some of the questions asked by the residents. He stated that both of the proposed apartment complexes will have pools. Mr. Pfund stated that the proposed residential - D area will be revised in the standards to allow less density.

Mr. Pfund stated that the developer is having conversations with the school system currently.

Mr. Pfund stated that they are willing to meet with all residents with concerns about the project. He explained that the developer is required to meet the requirements of several different agencies to gain permits regarding the drainage and stream impacts on the site.

Mr. Pfund stated that dead trees that were previously removed in the spring.

Mr. Pfund stated that the existing buffer is not dense enough, and they are proposing to add plantings to make the buffer better. He stated that the proposed undisturbed buffer will not have any trees removed, and the existing trees will remain between the existing residences and the retaining wall.

Ms. LaBonte asked for clarification of the percentage of trees being removed. Mr. Pfund stated that the calculation is based on 6 caliper trees or larger. She had concerns regarding the actual number of trees being removed based on the graphic.

Ms. LaBonte asked for a better rendering showing the tree removal and size of trees being removed.

Mr. Stritzel stated that the developer is working with the Army Corp of Engineers to obtain a permit to close off the creek. Mr. Stritzel stated that they are mitigating the stormwater on the site will be re-routed around the site.

Mr. Jaggi reminded the commission that the purpose of the planned zoning district is to intentionally allow deviation from the zoning code.



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Mr. Jaggi stated that there can be a quality buffer of dense plantings that takes up less space. He explained that the developer has increased the size of the buffer and is proposing dense plantings that consist of existing and new trees.

Mr. Jaggi stated that evergreen plantings in the buffer will help with screening year round, but they may not screen the tops of all proposed buildings.

Mr. Jaggi stated clarification on the proposed heights of the buildings is needed. Ms. LaBonte suggested looking at the building heights in conjunction with the proposed uses in each section.

Mr. Pfund presented the rendering of the site and stated that the proposed garages will be incorporated into the buildings. He explained that the proposed garage will be 8 stories at the lowest point but will be 4 stories at the highest grade.

Mr. Eastwood asked the height of the garage near Spoele. Ms. Protzel asked if other parking options have been considered. Ms. Protzel also had concerns with office spaces behind the proposed parking garage.

Mr. Pfund stated that the proposed development is meant to be dense. He explained that the densest spaces are near Olive Blvd to keep the density away from existing residential areas. He stated that because of this, the proposed garages are distributed throughout the site. He also explained that having garages rather than surface parking allows for more greenspace throughout the site.

Ms. LaBonte stated that the commission would like to understand the tree count, usages, and the heights of the buildings. She stated the commission would also like to hear more from the school system and consideration of a public restroom.

Mr. Jaggi stated that scheduling a second site visit would be difficult due to the open public hearing. Mr. Lumley stated that he would suggest a block of time where commissioners could visit the site no more than a few at a time.

Mr. Potashnick asked to hear from the planning consultants on the weaknesses of the project.

Mr. Jaggi stated that the next public hearing will be on Monday, October 2nd at 6:00 PM.



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Mr. Potashnick made a motion to continue the public hearing to the October 2nd meeting.
Mr. Wang seconded. All in favor.

RESULT: Continued

MOVER: Potashnick

SECONDER: Wang

AYES: Rhonda O'Brien, AJ Wang, Larry Potashnick, Muriel Hall, Marjorie Richter,
Julie LaBonte

NAYS: None

WORK AGENDA

None

DEPARTMENT REPORTS

None

ADJOURNMENT

The meeting adjourned at 8:38 PM.

Submitted by:

Recording Secretary

Chair



**APPLICATIONS TO PLANNING AND ZONING COMMISSION
#23-027 AND #23-028: FOR A REZONING FROM “RO” RESEARCH
OFFICE DISTRICT TO THE OLIA VILLAGE “PMD” PLANNED MIXED-
USE DEVELOPMENT DISTRICT WITH A SITE CONCEPT PLAN, PHASE
ONE SITE DEVELOPMENT PLAN AND ASSOCIATED PRELIMINARY PLAT
FOR THE 96 ACRE PROPERTY AT 10300 OLIVE BOULEVARD**

FOR THE MEETING OF: October 2, 2023

LOCATION: 10300 Olive Boulevard, former Bayer West Campus, located south of Olive Boulevard and west of Lindbergh Boulevard

REQUEST: Matt Pfund, of Jack Matthews Development, representing 10300 Olive, LLC, has submitted an application to amend the Official Zoning Map of the City of Creve Coeur to change the zoning of the property of approximately 96 acres located at 10300 Olive Boulevard, from "RO" Research Office to "PMD" Planned Mixed Use Development District, referred to as Olia Village. In accordance with Section 405.390 of the Zoning Code for Planned Zoning Districts, the applicant has submitted the Site Concept Plan and Phase One Site Development Plan for review and approval by the City. The proposed uses within the overall development include commercial buildings, restaurants, mixed-use buildings with ground floor retail/commercial uses and multi-family dwelling units on the upper floors within a “Main Street” type setting, hotels, apartments, office and research office buildings, as well as attached townhomes. The existing buildings formerly used by Bayer are shown to remain and will be repurposed for office and residential uses. A subdivision of the property is also proposed. The application was continued from the September 5, 2023 and September 18, 2023 meetings.

ADDITIONAL INFORMATION: The submitted Site Development Plan for Phase One consists of site clearing, grading, site utilities and roadway construction. Building construction and related site improvements will be submitted for review by the City at a later date in association with each of the outlined phases as provided in the Site Concept Plan. A preliminary plat has been submitted to subdivide the property into individual lots and to establish streets and easements.

Key Issues:

- Does the request further the goals and/or implement the Comprehensive Plan?
- Does the request meet with the criteria for Planned Zoning Districts as provided in Section 405.390?
- Does the project provide Public Benefits and meet the Design Criteria as a Planned Mixed-Use Development District?

**Creve Coeur 2030 Plan
References**

- Mixed Use Innovation Campus District (MUIC)
- 39 North Master Plan
- Comprehensive Plan and 39 North Master Plan Amendment for the Former Bayer West Site

Zoning Code References

- Section 405.390 Planned Zoning Districts

**APPLICANT’S
REPRESENTATIVE:**

Matt Pfund
Jack Matthews
Development
90 Edwardsville
Professional Park
Edwardsville, IL 62025

**PROPERTY
OWNER:**

10300 Olive, LLC
90 Edwardsville
Professional Park
Edwardsville, IL 62025

REPORT PREPARED BY: BETHANY L. MOORE, CITY PLANNER

JASON JAGGI, AICP DIRECTOR OF COMMUNITY DEVELOPMENT

ATTACHMENTS: Applicant’s Materials received September 26, 2023

MSD Conceptual Review dated February 3, 2023

Wetland Delineation Report and Impact Summary dated March 22, 2023

MoDOT TIS Response Letter dated September 26, 2023

BACKGROUND

At the previous meeting, which represented the continuation of the public hearing from September 5th, the applicant presented revised Site Concept Plans as well as the elements of the Phase One Site Development Plan. Staff presented the proposed development standards and uses and additional comments were received from the public. The Planning and Zoning Commission continued this item's discussion from the September 5th and September 18th meetings to allow the applicant additional time to address comments raised by the Commission, Staff, and the residents and provide further information. The applicant has provided revised plan information and a response letter to the issues that were raised in the prior meetings. The revised plans were posted on the City's website, September 27, 2023.

PLANNING AND ZONING COMMISSION REVIEW TIMELINE

Due to the size of this proposal, this application has been noticed for Public Hearings before the Planning and Zoning Commission for two meetings, September 5th and September 18th. Based on feedback from the Commission given at the September 5th meeting, an additional meeting date was requested in order to address comments received and to present a final draft version of the submission. A motion to continue the item and leave open the public hearing until tonight's October 2, 2023, Planning and Zoning Commission meeting occurred at the last meeting. After the Planning and Zoning Commission review is completed and the Commission has made a recommendation on the application, the application will be forwarded to the City Council for their review and final determination.

SUMMARY OF COMMENTS FROM SEPTEMBER 18, 2023 PLANNING & ZONING COMMISSION MEETING

The September 18th meeting public hearing allowed for the public to address the Commission and the applicant for the project with concerns that they had with the proposal as submitted. The majority of the public comments were from residents of the neighborhoods adjacent to the project. Below is a summary of the comments received:

- Residential Buffer Yard-concerns in terms of tree removal and visibility from residential properties to the proposed development, more information requested about retaining wall height and proposed additional landscaping.
- Concerns about the location of Dielmann Creek on site and the stream bank buffer requirements.
- Concerns about the allowed building heights and allowable uses for the development, particularly as they affect adjacent residential property.

This staff report will focus on the revisions made since the previous meeting. Discussion on other items pertaining to this application can be found in the previous staff reports from September 5, 2023 and September 18, 2023, along with prior versions of the plans and supplemental information.

REVISED PLANS SUBMITTED IN RESPONSE TO SEPTEMBER 18TH P&Z REVIEW

The applicant submitted revised plans on September 26th in order to address the comments received at the previous meeting. The following is a summary and analysis of the revisions submitted.

Site Concept Plan

The Site Concept Plan has been revised to address the comments received from Staff, the Commission and the public at the previous hearings. At the September 18th meeting, the applicant presented revised plans showing the residential buffer on the western edge of the property where the development abuts single-family residential uses as extended from 35 feet to 40 feet and without the pedestrian path or retaining wall within the 40 feet. The revised plans still reflect this previous change and the applicant has stated that it is their intent to keep this buffer largely undisturbed. This will allow for the retention of more existing trees in the buffer as well as the planting of additional trees to create a denser screen between the residences and the project site. More details about the proposed landscaping in the buffer were submitted and will be discussed as part of the revisions to the Site Development Plan for Phase 1.

Additional information about the retaining wall has also been provided and reflected on the plans on Sheet C-101 of the Site Concept Plan. The retaining wall will have a maximum height of 20 feet on the portion that faces inward toward the site. Due to the existing grade changes on site, the retaining wall height will vary but will not exceed 20 feet. When the wall faces the project site, it will be up to 20 feet tall and when the wall faces the residential lots, it will be up to 14 feet in height. The proposed material is Redi-Rock LedgeStone which is designed to replicate rough stone and comes in a variety of face molds to give the retaining wall a more natural look with less repetition in patterns. Sheet C-101 has also been updated to include a new architectural bus shelter at the existing bus stop along Olive Boulevard but no additional details have yet been submitted. Attachment B has also been updated to include language about the shelter. The use table has also been updated to include “Office/Research” as a general use description for Lots 9 and 13 and “Single Family/Townhome” for Lot 16. The green houses proposed for Lot 17 have been removed.

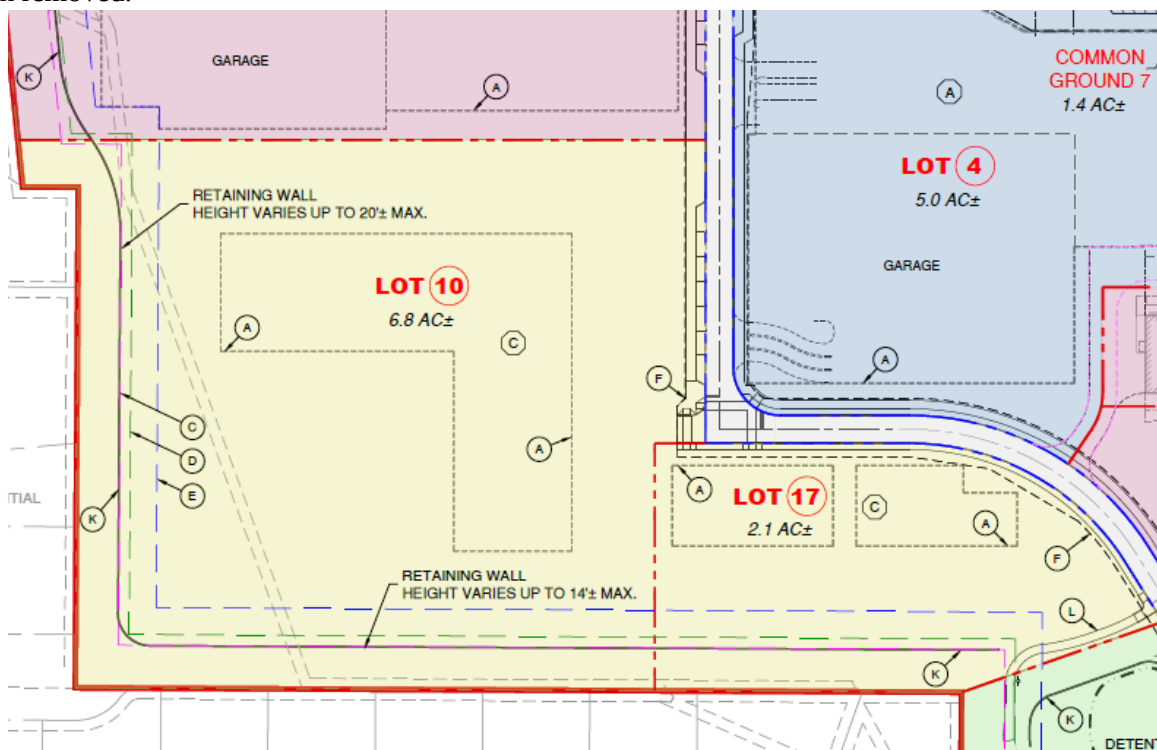


Figure 1: Sheet C-101 of Site Concept Plan showing retaining wall location outside residential buffer yard.

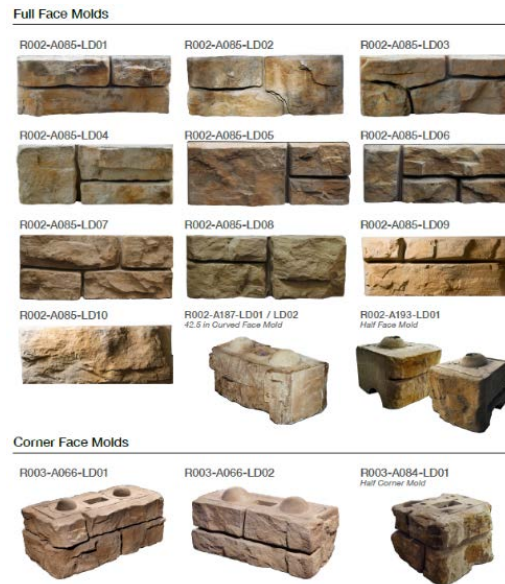


Figure 2: Retaining wall material.

The Pedestrian Plan on Sheet C-108 was revised to show the new location of the shared use path throughout the site including the new orientation of the path around the outside of Lot 7 adjacent to Twisted Branch road following comments from Staff. Staff was concerned that the previous location of the 8-foot-wide shared use path in front of the building along Main Street would be disruptive to an active, walkable streetscape. The applicant has addressed this concern by rerouting the shared use path along the northeastern edge of Lot 7 instead. The sidewalks along Main Street, within the Main Street district between Arbor Lane and Twisted Branch, now provide an unobstructed 8 feet wide path. The angled on-street parking stalls were shortened from 21 feet to 19 feet to accomplish this. The rest of the sidewalks in the Main Street district will be a minimum of 7 feet wide. Public restrooms for the Main Street district, park area and shared use path will be available in the leasing office on Lot 4 adjacent to the garage entrance at the end of Pavilion Drive and immediately southeast of the park area.

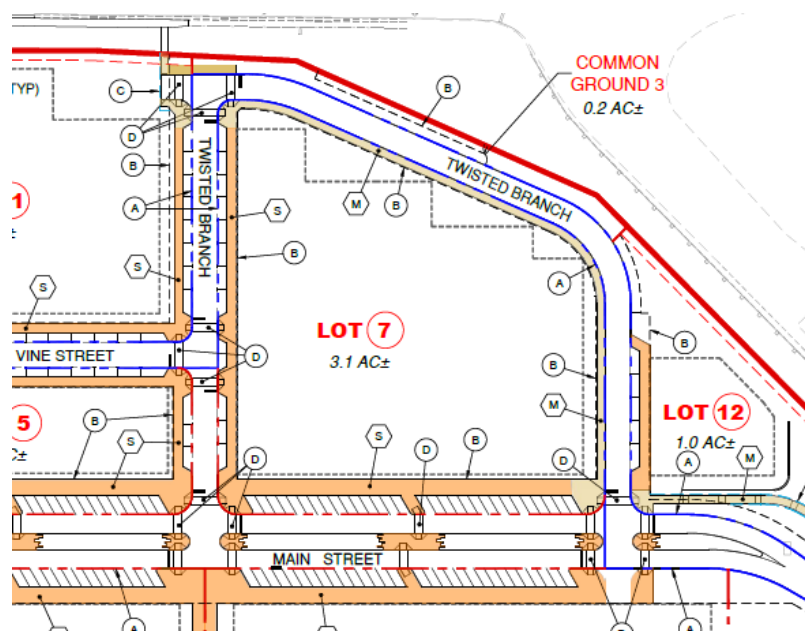


Figure 3: Sheet C-108 Pedestrian Plan showing revised location of shared use path around northern portion of Lot 7

Phase One Site Development Plan

Phase One of the development includes site clearing (including tree removal), mass grading, site utilities, retaining wall and roadway construction for the development. This site work phase will prepare the site for future build-out that will occur in phases. All building construction will take place in Phases 2-5. The amendments to the Site Concept Plan are also reflected in the Site Development Plan. The Site Development Plan also includes a more detailed concept landscaping plan for Phase One, as asked for by Staff. The revised landscaping plan includes a plant schedule of all proposed plantings in this phase including type and size at time of planting. There is a significant amount of landscaping proposed to be included within the 40-foot residential buffer yard in front of the retaining wall. The landscaping includes a continuous, dense row of evergreen trees mixed with the remaining existing trees to help block the visibility from the residential properties to the proposed development in order to help reduce light or noise pollution and provide screening for the wall itself for the portion that is visible to the adjacent properties. Staff recommends that the final landscaping plan should be amended to show the evergreens to be 8 feet tall at time of planting and all other trees to be 2.5 caliber inches at time of planting within this buffer area. Further, a condition could be added to require additional plantings, if necessary, based on “as-built” conditions in association with the site improvement permit final landscaping inspection. This condition has been provided in the draft ordinance to ensure sufficient screening is in place.

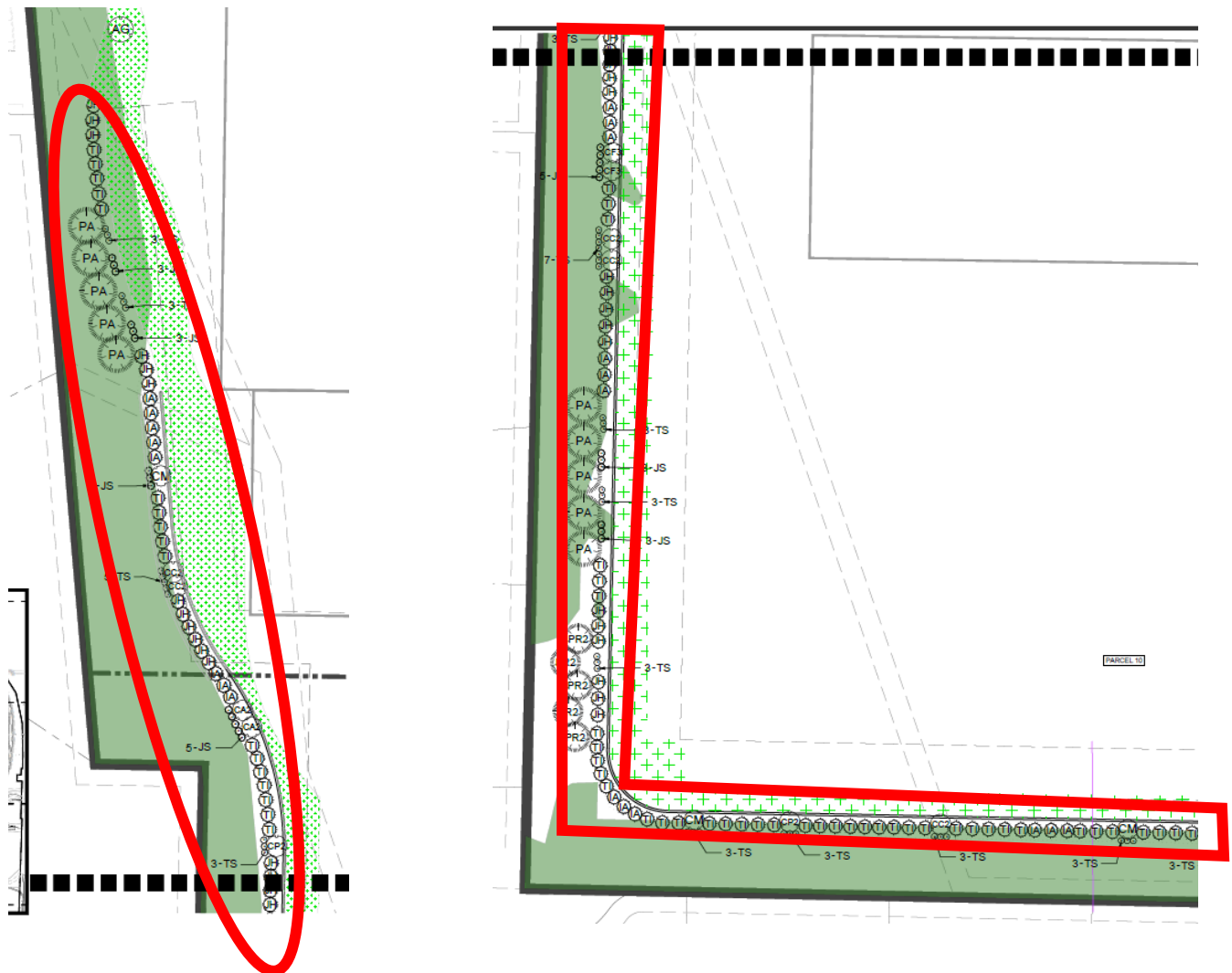


Figure 4: Sheets L-141 and L-144 showing details of proposed additional landscaping in the residential buffer yard.

Preliminary Plat

The preliminary subdivision plat should provide sufficient information regarding a proposed subdivision of land to allow the Commission to evaluate the site development concept as it relates to the City's goals and objectives. The Preliminary Plat has been amended to reflect all relevant changes to the proposed development and fix minor errors that were present. The Tree Conservation Plan, a component of the Preliminary Plat (Sheet LD-100), has been updated to reflect that no more than 50% of all existing trees greater than 6-inches in diameter and tree masses on site will be removed, which is down from 61% previously proposed. This revised percentage reflects the conclusion of the topographic survey of the site and takes into account the ability to save more trees through the extension of the residential buffer yard and retaining wall and removal of the pedestrian path from the buffer. Staff would like to have a better understanding of the methodology and calculations used to meet with the tree preservation requirements of the subdivision ordinance. Staff has included a condition of approval by the Planning and Zoning Commission that the applicant will need to provide more details for the tree conservation plan to show their methodology and supporting calculations for staff review prior to final consideration and vote by the City Council.

Traffic Study

On September 26, 2023, MoDOT approval of the Traffic Impact Study was received and a letter from MoDOT has been provided by the applicant. The developer will have to submit final roadway plans for review and obtain the appropriate permits from MoDOT prior to any construction of these improvements. A condition in the draft ordinance has been added to require MoDOT approval.

Development Standards (Attachment B) and Use Table Revisions

An important component of this rezoning is the establishment of specific development standards that will apply only to this development. These standards are unique to this project and will supersede the normal standards of the zoning code. If approved, these standards must be followed and will be enforced for all phases of the development during the review process for each Site Development Plan application. The development standards also include a list of permitted uses arranged for each sub-district within the plan.

The proposed development standards, as submitted by the applicant and discussed with staff, were presented at the last meeting. This document has been amended based on additional discussions with staff and the feedback received at the last meeting.

The amendments are as follows:

Section B. Sub-District Category Standards:

3. Category C: General Office. The height of buildings is limited to 3 stories or 50 feet for Lots 10 and 17 which are the lots immediately adjacent to existing residential areas.

4. Category D: Residential Development. Added details stating attached single family dwellings (townhouses) can be up to 40-feet or 3-stories in height and detached single family houses can be 2 ½ stories or 35-feet in height.

Section F. Landscape and Tree Requirements

A requirement has been added to acknowledge that the existing surface parking lots to remain may require additional landscaping which will be determined during the Site Development Plan review process. Landscaped areas on Lots 10 and 17 within the General Office Sub-District are also required to be irrigated.

Section H. Light Requirements

Added requirements to minimize impacts to adjacent residential areas for lighting on Lots 10 and 17 to require occupancy sensors and full cut-off and shielded fixtures. In addition, light poles for parking facilities immediately adjacent to single family residential will be limited in height to 16-feet.

Section K. Public/Private Improvements, Including Pedestrian Circulation

Revised the street design standards for public roads within the development per Public Works requirements. All roads to be dedicated to the City will be concrete.

Section M. Miscellaneous

Retaining Walls—the standards state that retaining wall height will not be limited. A revision has been included to acknowledge height maximums that are shown on the site concept or development plan.

EV Charging Stations—EV stations will be considered during the Site Development Plan stage for individual lots.

Bus Shelter—the developer will construct a new bus shelter on Olive with the specific proposal to follow Site Development Plan procedures.

Public Art—clarified that public art is required for this development with the specific proposal to follow City review procedures for public art.

Planned Zoning District Review Criteria #14: Projected Revenues and Municipal Service Costs

The Planned Zoning District ordinance requires satisfaction of 14 Review Criteria. Criterion #14 states the following:

14. Any proposed direct impacts on public services, including public improvements proposed for dedication to the public, do not impose an unacceptable burden on the City, taking into account new City revenues projected to be realized from the development.

A spreadsheet prepared by the City's Director of Finance, Lori Obermueller, has been included which summarizes the City's anticipated costs for road maintenance and to provide municipal services related to this development is attached. Expenses relating to police, public works and building inspections are summarized as follows:

Personnel 1st Year	Maintenance 1st Year	Capital Expenditures Ove 20 Years	20-year Costs with 3% Inflation Rate
\$394,150	\$298,636	\$2,813,134	\$12,406,347

The City's planning and development finance consultant, PGAV, is in the process of reviewing revenue projections that have been submitted by the developer's consultant. At this stage of the review, the projected revenues are not complete and, therefore, are not being provided at this time.

Although the revenue estimates are not complete at this time, City staff anticipates the revenues generated by this project will be sufficient to offset the additional costs to the City to provide municipal services. The Commission's recommendation could include a condition on satisfying the criteria that the revenue analysis indicate revenues in excess of anticipated municipal expenditures.

SUMMARY AND RECOMMENDATION

After the submission of the revisions, staff believes the majority of the requirements have been effectively addressed in the development, subject to the recommendations provided in the draft ordinance and the following two conditions:

- The applicant provide more details on the Tree Conservation Plan showing the methodology and supporting calculations for staff review and determination of compliance with the Tree Preservation requirement prior to final consideration and vote by the City Council on the rezoning application.
- Compliance with Review Criteria #14 of the Planned Zoning District Ordinance is met with the revenue analysis demonstrating revenues in excess of anticipated municipal expenditures prior to final consideration and vote by the City Council on the rezoning application.

Staff recommends that the Commission hear any new comments from residents at the public hearing, and upon conclusion of the public hearing, the Commission should deliberate on the components of this request: Rezoning Ordinance, Development Standards and Use Table, Site Concept Plan, Phase One Site Development Plan, and Preliminary Plat. Staff will be prepared to present this information at the meeting in order to facilitate a point-by-point review to assist the Commission with its recommendation to the City Council.

ACTION AND MOTION

The following is an example of an appropriate motion for this application:

“I move to recommend approval on applications #23-027 and #23-028, of the rezoning, site concept plan and site development plan and to approve the preliminary plat for the Olia Village Planned Mixed-Use Development, subject to the conditions discussed in the Staff Report and Draft Ordinance for the meeting of October 2, 2023” (conditions may be added, eliminated, or modified by preceding motion).

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 3: AERIAL MAP





MEMORANDUM

DATE: September 28, 2023

TO: Mark Perkins, City Administrator

FROM: Lori Obermoeller, Director of Finance

SUBJECT: Olia Village Projected Costs

The attached spreadsheet shows the projected expenditure costs to the City for the Olia Village project. I have made the following assumptions:

- Personnel costs include the mid-point for the position, the costs for benefits & an annual 3% inflation factor
 - 1 Public Works Maintenance Worker
 - 1 Inspector (only for 3 years)
 - 2 Police Officers
- All annual maintenance costs include a 3% inflation factor
 - Street Maintenance for striping, snow plow & signs
 - Vehicle Maintenance includes fuel, tires, etc.
- All Capital Infrastructure & Vehicle includes a 3% inflation factor
 - One additional police vehicle to be sold and replaced every 3 years
 - Infrastructure includes slab & curb replacements, crack sealing, patching & other improvements

I would be pleased to respond to any questions.

**Olia Village
City's Projected Costs
as of September 28, 2023**

	Personnel 1st Year	Maintenance 1st Year	Capital Expend. Over 20 years	20-Year Costs with 3% Inflation
<u>Public Works Department</u>				
1 Maintenance Worker	\$76,696			\$2,060,850
Construction Management for 1st Year Only		\$260,000		\$260,000
Annual Street Maint		\$31,500		\$846,417
Capital Improvements - 20 Year Costs			\$2,316,606	\$2,316,606
Total Public Works Department	\$76,696	\$291,500	\$2,316,606	\$5,483,873
<u>Community Development Department</u>				
1 Inspector (3 years)	\$96,550			\$298,426
Total Planning Department	\$96,550	\$0	\$0	\$298,426
<u>Police Department</u>				
2 Police Officers	\$220,904			\$5,935,773
1 Vehicle every 3 yrs (includes equip. & change-over)			\$496,528	\$496,528
Annual Vehicle Maintenance		\$7,136		\$191,747
Total Police Department	\$220,904	\$7,136	\$496,528	\$6,624,048
<u>Grand Total by Category</u>	\$394,150	\$298,636	\$2,813,134	\$12,406,347



DEPARTMENT OF PUBLIC WORKS OFFICE MEMO

DATE: September 28, 2023

TO: Jason Jaggi, Director of Community Development

CC: Mark Perkins, City Administrator

FROM: Jim Heines, Director of Public works

SUBJECT: Olia Village - Cost Projections for Construction Management Services and Long-term Maintenance of Proposed Public Streets

Background

Public Works staff has been asked to evaluate the long-term (20-years) financial impact to the city regarding the day-to-day maintenance and Capital cost if the proposed public streets in Olia Village are dedicated to and accepted by the City. The following report is based upon the acceptance of approximately 3 lane miles of concrete pavement with vertical curb.

Most of the proposed roads are two-lanes and a minimum of 26 feet wide. However, there are isolated sections of road where additional 12 to 13 foot wide lanes are proposed. The concrete road pavement is to be 8 inches thick and placed on 4 inches of compacted crushed stone.

Sidewalks, trails and street lights, on-street parking and street trees will be privately maintained under the terms of the proposed development.

Construction Inspection

During the clearing and grubbing phase of the project, minimal inspections will be necessary. Therefore, our current staff should be able to keep up with the added work. However, when we get to the grading, compacting subgrade and base and placing the concrete pavement portions of the project it will require full time inspections and project management. Public Works has obtained pricing for these services from one of our consultants for \$4,500-\$5,000 per week. We anticipate these services will be required for approximately a one-year period while the public improvements are being constructed.

Estimated one-time cost for Construction Management*	\$234,000-\$260,000
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Annual Maintenance

Public Works Maintenance staff will manage routine maintenance of pavement, street signs, striping, and snow plow of the proposed public streets in Olia Village. Currently Public Works staff is at their limits regarding their maintenance capabilities and any additional maintenance responsibilities will require an additional staff member to add available manhours to maintain the proposed pavement and associated services.

Costs for one year maintenance service is listed below in 2023 dollars:

<u>Item</u>	<u>Cost</u>
Striping	\$ 15,000.00
Snow Plow	\$ 15,000.00
Sign Maintenance	\$ 1,500.00
<u>Maintenance Worker 1 annual salary plus benefits</u>	<u>\$ 76,696.05</u>
Total one-year cost*	\$ 108,196.05
Total 20-year cost using 3% inflation value	\$2,907,268.38

Capital Improvements

Capital Improvements include isolated concrete slab replacement or even full replacement of sections of the roadway. It is likely that these costs will be minimal during the early life (0-10 years) of the concrete pavement, however later in our 20-year projection period it is likely that the road network will require an increasing level of attention. Public Works staff reached out to our pavement management consultant, IMS to evaluate the capital cost to maintain proposed public roads over the next 20 years.

IMS submitted the 20-year projection in two parts to represent the different levels of increasing capital replacement needs. These projected costs include slab and curb replacements, crack sealing, patching, and other capital improvements. A 3% inflation value to project future costs:

<u>Time period</u>	<u>Cost</u>
0-10 year total cost	\$ 192,437.00
<u>10-20 year total cost</u>	<u>\$2,123,569.00</u>
Total 20-year cost	\$2,316,606.00

Summary

The addition of the proposed public streets in Olia Village will cause a significant impact on the Department of Public Works budget as well as staffing levels. The day-to-day maintenance items and costs, capital replacements costs over a 20-year period, and the one-time cost for construction inspection/management have been identified above. The total 20-year financial impact to the budget is listed below:

<u>Item</u>	<u>Cost</u>
One-time construction inspection/management cost	\$ 260,000.00
Total annual maintenance cost over 20-years	\$2,907,268.38
<u>Total capital improvement cost over 20-years</u>	<u>\$2,316,606.00</u>
Total projected financial impact over 20-years	\$5,483,874.38

*Costs based on 2023 dollar value.



MEMORANDUM

DATE: September 11, 2023

TO: M. Perkins, City Administrator

FROM: J. Hartman, Chief of Police

SUBJECT: Service Impacts – Olia Village Development

Brief Background

As the re-zoning application process for the proposed development known as “Olia Village” develops, I would like to submit the following for consideration, concerning the potential impact this development may have on police services.

The expected increase in the residential population that would result from this development is estimated to be approximately 2,000, according to a recent presentation from the developer. This will certainly impact requests for police services in this sector of the city. In addition to the impact of the increased population, it is reasonable to expect there will be an increase in call volume due to the mixed-use nature of the development (hotels, restaurants, office space, retail).

Point of Reference: History of Staffing Since the Last Annexation

The last significant staffing increase for the Police Department was in 1994, after an annexation. The staffing, after annexation, was 50 full-time officers. The population was approximately 16,500. At that time, the Police Department was also providing police services to the Village of Westwood. The Police Department dropped to 49 full-time officers after the City of Frontenac was awarded the contract to patrol the Village of Westwood.

Summary: Very little has changed with regard to Police Department staffing in the last 30 years.

Point of Reference: Current Police Department Staffing and Organizational Chart

The current staffing for the Police Department is 50 full-time commissioned officers, 5 full-time civilian staff, and 2 part-time civilian staff. There are two divisions within the Police Department, the Patrol Division and the Support Services Division.¹ This memorandum will focus on the impact this development will have on the Uniformed Patrol Division.

There are 37 positions allocated to the Uniformed Patrol Division (74% of authorized staffing). There are four squads referred to as A, B, C, and D squads. Each squad has two (2) Sergeants and five (5) Police Officers.

Providing support to the patrol squads are two (2) Traffic Safety Officers (TSOs), two (2) Impact Unit Officers (currently unstaffed), and one (1) K-9 Officer. There are two (2) “layover” Police Officer positions that provide additional patrol support that are also currently unstaffed. The Patrol Division is commanded by a Captain (Commander) and Lieutenant (Deputy Commander)

¹ For reference, the Police Department Organizational Structure can be viewed here:
<https://www.crevecoeurmo.gov/DocumentCenter/View/8021/CCPD-Organizational-Chart---FY-2023-2024?bidId=>

Point of Reference: How Patrol Division Resources Are Allocated

The city is broken down into four (4) patrol sectors. When a uniformed patrol shift has full staffing, one officer is assigned to each sector and one officer is given city-wide directed patrol responsibility. The Sergeants are responsible for the supervision of the officers on their squads. Having two Sergeants and five Police Officers on each squad provides a (very slim) cushion to maintain a minimum staffing of four Patrol Officers and one Sergeant on any given shift. It also allows supervisors to be on two different calls at the same time, which is occasionally required.

The Officers in the Patrol Division assigned to support roles (TSOs, Layover, Impact Unit, K-9) can fill in as sector cars when staffing falls below minimum on any given shift. The most common reason for falling below minimum staffing on shifts is when one officer is off due to scheduled vacation leave or training, and there is an unexpected injury or illness that prevents another scheduled officer from being able to work their shift. It is not ideal for a Sergeant to cover a sector when there is an unexpected Patrol Officer shortage. When assigned to a sector, the Sergeant has a diminished capability to supervise officers, which is a critical component of a police department that prizes professionalism and accountability.

Determining Appropriate Police Department Staffing – Brief Introduction to Concepts and Research

There are a lot of variables to consider when answering this question. Some examples include crime rates, anticipated growth or decline, officer/population ratios, call volume, community policing style, organizational work ethic, officer distribution, and response time (or the public's expectation regarding response time).

In a report analyzing police department staffing completed by ICMA, five models for determining the appropriate staffing levels for Police Departments were examined²:

1. Crime Trends
2. Per Capita
3. Minimum Staffing
4. Authorized Budget Level
5. Workload Based

The research presented in this report recommends a “workload-based” approach to determine proper staffing. From an assumed starting point that the current authorized staffing for the Creve Coeur Police Department is appropriate, it is logical to assume that the Olia Village development will require an increase in authorized staffing to maintain the current levels of police service that the Police Department provides the city. What is unknown or difficult to predict is the exact impact the development will have on police services.

Since this Olia Village development has not been approved or completed, no data has been (or can be) collected to definitively conclude the impact this development will have on police workload. Reaching a conclusion would require evaluating factors such as call volume, (number of calls), total service time (number of officer minutes needed to handle a call), and the saturation index (ratio of dedicated call time to discretionary time). Therefore, I cannot confidently state this development will require (“X”) number of additional staff.

Although data is not available to determine how the Olia Village development (and other developments currently in discussion) will impact police service levels, I can confidently conclude that it would be poor planning to wait

²“An analysis of police department staffing: How many officers do you really need?” ICMA Center for Public Safety Management White Paper. Retrieved from: https://icma.org/sites/default/files/305747_Analysis%20of%20Police%20Department%20Staffing%20-%20McCabe.pdf

until the project is complete and data is collected before making a staffing adjustment recommendation. The Patrol Division's cushion for maintaining minimum staffing when there is an unexpected illness or injury is slim. This development will certainly put extra strain on call volume, service time, and the saturation index.³ A proactive approach will better ensure that the quality of police services CCPD provides continues to meet the community's expectations, compared to a reactive approach.

Recommendations

Recommendation #1: Proactively increase authorized staffing from 50 to 52 commissioned officers for the fiscal year 2024-2025.

These two positions would be assigned to where they are most needed, in the Uniformed Patrol Division as Patrol Officers. To balance all four squads, the two existing layover positions would also be shifted to individual patrol squads as Patrol Officers, resulting in one more patrol officer on each squad for a total of two (2) Sergeants and six (6) Police Officers on each squad. This will provide the Police Department sufficient time to have additional staffing already in place before the completion of the development. After the completion of the project(s), it also provides the Police Department the ability to expand to 5 sectors, if the data collected supports a realignment in the sector boundaries to smooth the workload across all sectors and maintain the optimal 60/40 saturation index. Even if the data results in increasing the staffing beyond 52 commissioned officers, the Police Department can implement a 5-sector plan with an authorized staffing of 52.

Two additional benefits of a modest staffing increase during the planning phase of the development(s)

- 1) The increased staffing provides the Patrol Division with additional resources and less reliance on the Traffic Safety Unit or Impact Unit to cover patrol sectors, thus leaving those specialized units more time to focus on their missions.
- 2) After the completion of the project, if data supports increasing the staffing beyond 52, it is more manageable to implement staffing increases in small steps as opposed to one large leap.

Recommendation #2: 1 year after the development is complete, re-evaluate Police Department staffing to determine whether the data supports a further increase in staffing, a decrease in staffing, or no change in staffing.

In conclusion, I believe the prudent public safety decision is to proactively increase staffing incrementally, beginning with a small increase once it is certain that the project(s) are moving toward development. The alternative is to wait for the project to be completed, then wait to determine the impact on demand for police services. I can predict with confidence that call volume will increase, service time will increase, the saturation index will be negatively impacted, and the sector boundaries will need to be re-evaluated. Having the organization chart set in place to absorb these impacts as the project is being completed is responsible planning.

After the project is complete, if an evaluation of the factors that impact staffing results in a recommendation to decrease staffing, those positions can be eliminated by attrition. If research supports a further increase in staffing, it is more manageable if the Police Department has already taken an incremental step to increase staffing as opposed to a large leap. If the data indicates, after the project is complete, that a staffing level of 52 officers is appropriate, the Police Department has lost nothing and is in a good position to continue the high level of service the community expects.

³ According to ICMA, patrol staffing is optimally deployed when the SI is slightly less than 60%. When the SI is greater than 60%, it indicates that patrol manpower is largely reactive, and overburdened with workload demands. (Reference for this recommendation noted in footnote #1)

Recommendation #3: Increase the number of fully marked⁴ patrol vehicles in the Police Department fleet from fifteen (15) to sixteen (16). Marked patrol vehicles are a critical resource in providing police services to the community. An aggravating factor to consider regarding this recommendation is the changing landscape of the auto industry. Finding and acquiring new police vehicles has been especially challenging due to the lack of availability. With the added staffing to uniformed patrol, comes the need for additional police vehicles to respond to calls. Adding an additional marked patrol vehicle to the fleet provides extra insurance that the Police Department will have enough vehicles in working order to respond to calls for police service.

The Police Department fleet, with the addition of a marked patrol vehicle, is outlined below:

Patrol Vehicles (fully marked): 16

Traffic Safety Unit Vehicles (unmarked)⁵: 2

Administrative Police Vehicle⁶: 4

Investigations Bureau Vehicles: 4

Motorcycle Units: 2⁷

⁴ A “fully marked” patrol vehicle is a “pursuit rated” police vehicle equipped with all required emergency equipment, including highly visible reflective lettering and lightbar mounted on the roof.

⁵ An “unmarked” patrol vehicle is a “pursuit rated” police vehicle equipped with all required emergency equipment, absent the highly visible reflective lettering and the lightbar mounted on the roof. (Emergency lighting is clearly visible when activated, but are covert when not activated). It is planned that these vehicles will be replaced this fiscal year due to high mileage, and the new unit vehicles will have ghost (subtly reflective) “police” lettering, with covert lighting.

⁶ Administrative and Investigations Bureau vehicles are civilian models, equipped with covert lights and siren. They are not pursuit rated.

⁷ One motorcycle unit will be sold this fiscal year, reducing the number to one.

BILL NO. _____

ORDINANCE NO. _____

AN ORDINANCE AUTHORIZING A CHANGE OF ZONING FROM “RO” RESEARCH OFFICE DISTRICT TO THE OLIA VILLAGE “PMD” PLANNED MIXED-USE DEVELOPMENT DISTRICT AND APPROVING THE SITE CONCEPT PLAN AND PHASE ONE SITE DEVELOPMENT PLAN FOR SUCH DEVELOPMENT ON THE APPROXIMATELY 96 ACRE PROPERTY LOCATED AT 10300 OLIVE BOULEVARD.

WHEREAS, Mr. Matt Pfund, of Jack Matthews Development, representing 10300 Olive, L.L.C., has submitted an application to amend the Official Zoning Map of the City of Creve Coeur to change the zoning on the property of approximately 96 acres located at 10300 Olive Boulevard, from “RO” Research Office District to “PMD” Planned Mixed-Use Development District for the Olia Village Development; and

WHEREAS, in accordance with Section 405.390 of the Zoning Ordinance, the applicant has submitted the Site Concept Plan and Phase One Site Development Plan for the Olia Village development on the subject property to the Department of Community Development; and

WHEREAS, a “PMD” Planned Mixed-Use Development district is a Planned Zoning District that will allow a unique mixture of commercial, residential, office, lodging and service uses subject to the criteria set forth in Section 405.390, Planned Zoning Districts, of the Zoning Code, the terms of this ordinance, and the conditions of approval; and

WHEREAS, a public hearing was held by the Creve Coeur Planning and Zoning Commission on Tuesday, September 5, 2023, beginning at 6:00 p.m. or immediately following the close of the previous public hearing, on said application; and

WHEREAS, notice of said public hearing had been previously published at least 15 days prior to the hearing, in the St. Louis Countian, a newspaper of general circulation in the City of Creve Coeur and otherwise posted and published in accordance with the Zoning Ordinance; and

WHEREAS, the Commission resumed the public hearing on September 18, 2023 and October 2, 2023; and

WHEREAS, the Planning and Zoning Commission reviewed and, by a ____ vote, recommended approval of the rezoning, Site Concept Plan and Phase One Site Development Plan subject to conditions at its meeting on _____, 2023; and

WHEREAS, all parties desiring to be heard, either for or against said application, were given an opportunity to be heard, and a copy of the proposed ordinance has been made available for public inspection prior to its consideration by the Council; and this Bill having been read by title in open meeting two times before final passage by the City Council, and

WHEREAS, the City Council being fully informed finds that rezoning the property as set forth herein would be in harmony with and bear a substantial relation to the public welfare, health, safety, comfort and convenience of the citizens of the City of Creve Coeur and in the public interest and in good zoning practice; and

WHEREAS, the City Council further finds that the proposed development is eligible for consideration to be a Planned Mixed-Use Development under the planned zoning district process, because it exceeds three acres in size, could not be approved under any other Zoning District, is currently zoned “RO” Research Office, and the applicant has provided credible evidence that the proposal substantially complies with the purpose, objectives and provisions of

BILL NO. _____

ORDINANCE NO. _____

Section 405.390 and is generally consistent with the applicable provisions of the Comprehensive Plan, subject to the terms and conditions of approval set forth herein; and

WHEREAS, the City Council further finds that the proposed development as described in the Site Concept Plan meets the applicable design criteria set forth in Section 405.390.F.6(a) as hereby supplemented, modified and superseded and will provide sufficient public benefits as required by Section 405.390.E; and

WHEREAS, the City Council further finds that the Phase One Site Development Plan substantially complies with the Site Concept Plan and otherwise meets the requirements of Section 405.390.H subject to the conditions of approval set forth herein:

NOW, THEREFORE, be it ordained by the City Council of the City of Creve Coeur, Missouri, as follows:

SECTION 1: The Official Zoning Map of the City of Creve Coeur shall be amended to rezone the approximately 96 acre property located at 10300 Olive Boulevard, from "RO" Research Office to the Olia Village "PMD" Planned Mixed-Use Development District, subject to the regulations, requirements and conditions stated herein, which property is more specifically described on Exhibit A attached hereto.

SECTION 2: The zoning and development regulations of the Olia Village PMD District shall be as set forth on Exhibit B attached hereto.

SECTION 3: The Site Concept Plan submitted for Olia Village on September 26, 2023, and attached hereto as Exhibit C is hereby approved, subject to the following conditions:

1. All improvements for traffic mitigation as recommended by the Traffic Impact Study dated September 13, 2023 prepared by CMT shall be approved by MoDOT and the City's Department of Public Works prior to approval of a final occupancy permit by the Building Division in association with Phase 2 building construction.
2. Each phase as identified in the approved Site Concept Plan shall require Site Development Plan approval in accordance with Section 405.390.H. of the Zoning Code.

SECTION 4: The Phase One Site Development Plan submitted for Olia Village on September 26, 2023 and attached hereto as Exhibit D is hereby approved, in lieu of a separate resolution, subject to the following conditions:

1. A final subdivision plat consistent with the approved preliminary plat for the property shall be submitted prior to issuance of any permits other than demolition and grading permits. The final subdivision plat shall include the restrictive covenants and deeds for the property; and shared parking and access agreements for review and approval by the City Attorney.
2. The Applicant shall submit Site Improvement Plans, showing all site improvements, to the Department of Public Works for review and issuance of a Site Improvement Permit. The Site Improvement Plans shall be in substantial conformance with the "Phase One Site Development Plan" received September 26, 2023 in conjunction with Application #23-028 by CMT. All regional, state and federal agency approvals

BILL NO. _____

ORDINANCE NO. _____

shall be submitted to the Department of Public Works prior to the City's issuance of a site improvement permit.

3. All street lighting shall substantially comply with the Site Lighting standards provided in the Phase One Site Development Plan, including fixture design.
4. A final landscape plan shall be submitted for staff approval in substantial compliance with the Conceptual Landscape Plan for Phase One Site Development Plan and the Tree Preservation Plan prepared by SWT and submitted to the City on 9-26-23 subject to the following additional requirements:
 - a. All deciduous trees shall be a minimum size of 2.5-inch caliper in size at time of planting; evergreen or coniferous varieties shall be a minimum height of 6-feet at time of planting.
5. Residential Bufferyard. The 40-foot bufferyard on Lots 1, 10, and 11 as shown on the approved Site Concept Plan shall be improved to the following standards:
 - a. All new plantings shall be installed as part of this phase. The plantings shall be a minimum of 2.5-inch caliper in size for deciduous trees and 8-feet in height for evergreen or coniferous varieties at time of planting. Additional plantings may be required by the Zoning Administrator, at the time of final inspection, to ensure a robust and dense landscaped screen to the maximum extent as conditions allow prior to a final inspection approval of the site improvement permit associated with Phase One.

SECTION 5: This Ordinance shall become effective in accordance with Section 3.11 (g) of the City Charter but not prior to the Ordinance and the approved Site Concept Plan and Phase One Site Development Plan being recorded by the applicant in the office of County Recorder of Deeds. The applicant must present proof to the City of such recording before any permits may be issued. If said Ordinance and Plans are not recorded within one (1) year of the date of approval, the Ordinance shall be deemed repealed and the approval of the Plans shall be deemed revoked. This Ordinance, the Site Concept Plan, and the Phase One Site Development Plan, and subsequently approved site development plans, shall govern the development and use of the subject property and no development or use, other than temporary uses allowed by the Zoning Code, shall be permitted within the area of the Olia Village Planned Mixed-Use Development District. The Site Concept Plan as herein approved shall be valid for a period of eight years from the date hereof, unless extended as provided in Section 405.390.N. The Phase One Site Development Plan as herein approved shall be valid for 12 months from the date hereof, subject to the provisions of Section 405.390.N. All building permits shall conform to the provisions of the Olia Village PMD District and the approved Site Concept Plan and Phase One Site Development Plan.

ADOPTED THIS _____ DAY OF _____, 2023.

NICOLE GREER
PRESIDENT OF CITY COUNCIL

BILL NO._____

ORDINANCE NO._____

APPROVED THIS_____ DAY OF _____, 2023.

DR. ROBERT HOFFMAN
MAYOR

ATTEST:

KELLIE HENKE
CITY CLERK



09/26/2023

Mr. Jason Jaggi
Director of Community Development
300 North New Ballas Road
City of Creve Coeur, MO 63141

Re: Applications #23-027 & #23-028
Olia Village Mixed-Use Development
CMT Project No. 23005201.00

Mr. Jaggi,

The following revisions have been made to the Site Concept Plan, Site Development Plan & Preliminary Plat dated 09/13/23 in response to the 2nd Planning & Zoning Public Hearing held on 09/18/23 and follow up correspondence with City staff. Additionally, edits to Attachment B & Table A have been included.

SITE CONCEPT PLAN / SITE DEVELOPMENT PLAN / PRELIMINARY PLAT:

1. Retaining Wall Heights. After making additional adjustments to the grading around the perimeter of the development, the maximum wall height within the development will be set at 20-feet. Currently, the maximum wall height in the "L" is 20-feet when the wall faces the development and 14-feet when the wall faces the neighborhood to the south. Per Section 410.27.C of the City's ordinance regarding Long Term Erosion Control, "such walls shall not **normally** exceed a height of six (6) feet." As such, no variance is being requested for this work.
2. Residential Buffers. Where the proposed development abuts a single-family residential development, a buffer yard of forty (40) feet will be provided. No impervious surfaces or other amenities otherwise allowed by the City's PMD ordinance are being proposed within the buffer yard as the back of the retaining wall will be placed at 40'. It is the developer's intent that the buffer yard will remain largely undisturbed. Immediately adjacent to the retaining wall and just inside of the buffer yard along Lots 1, 10 & 17, a 10' wide landscape screen will be provided to include a mixture of appropriate materials predominantly consisting of 6'-8' tall evergreens to increase the buffer's density and improve its screening quality.
3. Stream buffer protection requirements. The USGS Topo Map for this site, which was presented during the public hearing portion of the last meeting, is inaccurate, which is more than not the case for national mapping services which do not have the support of site-specific studies to back the mapping data such as in this instance. To determine the exact limits of jurisdictional streams and wetlands, a site delineation is required which has been completed by CMT's environmental team as part of the US Army Corps of Engineers (USACOE) permitting process. CMT's environmental professionals conducted a site visit on February 15-16, 2023, to evaluate the presence of wetlands and delineate Waters of the US as both were presumed to be present onsite based upon a cursory review of the national online databases (US Fish & Wildlife Service & USGS Topo). As part of this visit, the physical locations of two (2) jurisdictional wetlands and two (2) jurisdictional streams were identified within the project area. Through development of the Olia Village plans during the concept phase of this project, it has been determined that impacts to both a portion of the streams and existing jurisdictional wetlands to remain will be required. A total of 915 LF of stream (both Dielmann & Monsanto/Sunswept Creek) and 0.1 acres of jurisdictional wetland will be impacted. As such, coordination is required with the USACOE to obtain permits from the USACOE, MoDNR, US Fish & Wildlife &

USEPA. Our team is currently nearing the completion of this effort and expects a final permit within a few weeks or less from the USACOE. A complete report was submitted to the USACE on March 10, 2023, as part of the application process, and has been revised twice since that time as part of the USACOE review process. A copy of the most current report has been attached to this response letter for the City's use.

Please note that the streams discussed during the public comment portion of the Planning & Zoning meeting on 9/18 were delineated in the field by our professional team in February. As shown on Page 15 of the report, Dielmann Creek was relocated and enclosed previously with a 48" diameter storm sewer by Bayer/Monsanto and **does not** pass through the homeowners' back yards on Spoede Woods Drive or the 48" culvert as incorrectly presented at the public hearing during the last P&Z meeting. As it stands, the watershed area currently draining in the back yards and into the 48" culvert will be decreased as part of this project.

4. Sidewalks on Main Street & within Main Street District. The sidewalk width along Main Street between Arbor Lane & Twisted Branch has been updated to a minimum 8' wide unobstructed. To accomplish this, the on-street parking dimension has been changed 19' for angled parking stalls (in lieu of the original 21'), with a 3' overhang (as allowed in Section 405.810.A.b of the City's Zoning Ordinance) to provide for the minimum 8' sidewalk clear width. All other sidewalks within the Main Street District have been updated to a minimum of 7-foot wide unobstructed where storefront exists.
5. Bus Stops. The Site Concept Plan has been updated to include one (1) architectural bus shelter at the existing bus stop location on the south side of Olive Boulevard west of Pavilion Drive. Additional language has been added to Attachment B as well.
6. Shared Use Path. The plans have been updated to show the new shared use path alignment on the north and east sides of Lot 7.
7. Public Restrooms. Public restrooms will be made available in the leasing office on Lot 4 adjacent to the garage entrance at the end of Pavilion Drive and immediately southeast of the Village Green space.
8. General Uses. The table on Sheet C-101 has been updated to include "Office / Research" general use description for Lots 9 & 13 and "Single-Family / Townhome" for Lot 16. The Architectural Site Plan (A-101) has been updated to remove the greenhouses on Lot 17.
9. MoDOT Approval. MoDOT approval of the Traffic Impact Study has been received and a copy of the approval letter has been attached for the City's use.
10. EV Charging Stations. Consideration for EV charging stations will be reviewed during the individual lot Site Development Plans. Additional language has been added to Attachment B as well.
11. Tree Conservation Plan. The topographic survey originally completed for the 96-acre parcel included collecting individual trees 6" in diameter and above as well as tree masses where collecting individual trees was not practical. To better understand the quantity of individual trees 6" in diameter and above within the tree masses, our team spent days counting by hand all such trees within the tree mass areas. During this time, our team also identified any dead or invasive tree species. In total, 4,634 trees were counted as part of this effort. Assuming an even distribution of 6" diameter and above trees within the tree mass areas, we are currently proposing to remove 2,317 trees or 50%.

12. Detailed Phase 1 Landscape Plan. Additional landscape plan sheets have been included to provide additional preliminary detail for the Phase 1 landscaping. The plan includes a dense planting area to fill in and supplement existing vegetation to remain within the residential buffer. Predominate plant material for buffer planting includes 6'-8'-tall mixture of evergreens at time of planting to supplement the natural buffer to remain.
13. Retaining Wall Details. A cut sheet including proposed wall type, material and color has been included for the proposed retaining wall behind Lots 1, 10 & 17.
14. Preliminary Plat. Easements have been updated for the revised shared-use path alignments noted above. Additionally, Ramblewood Lane immediately west of the proposed development is now being shown as private.

ATTACHMENT B / TABLE A:

1. Revisions have been made to Attachment B & Table A as shown in the redline attachment based upon public comments and city staff recommendations to include, but not limited to:
 - a. Limiting the allowable building height on Lots 10 & 17 to a maximum of three (3) stories or fifty (50) feet.
 - b. Limiting the allowable residential building height on Lot 16 to three (3) stories or forty (40) feet for attached single-family dwellings or two & half (2.5) stories or thirty-five (35) feet for detached single-family dwellings.
 - c. Providing additional lighting restrictions on Lots 10 & 17 only to include requiring occupancy sensors, full cut-off / shielded fixtures, maximum light pole heights within parking lots to sixteen (16) feet.
 - d. Updating the Public Street Design Standards to allow only concrete pavement sections.
 - e. Restricting additional allowable uses in the Office District (Lots 10 & 17) as indicated in the redline markups of Table A.
 - f. Removing all references to "Multifamily" in Table A.

Thank you,

Matthew J. Pfund

President – Jack Matthews Development

Christopher J. Stritzel, P.E.

Project Manager - CMT

CC: Kristie Bailey, Fireside Financial
 Michael Bailey, Fireside Financial
 Toby Heddinghaus, Gray Design Group
 Wes Haid, SWT Design
 Jamie Mansfield, Armstrong Teasdale

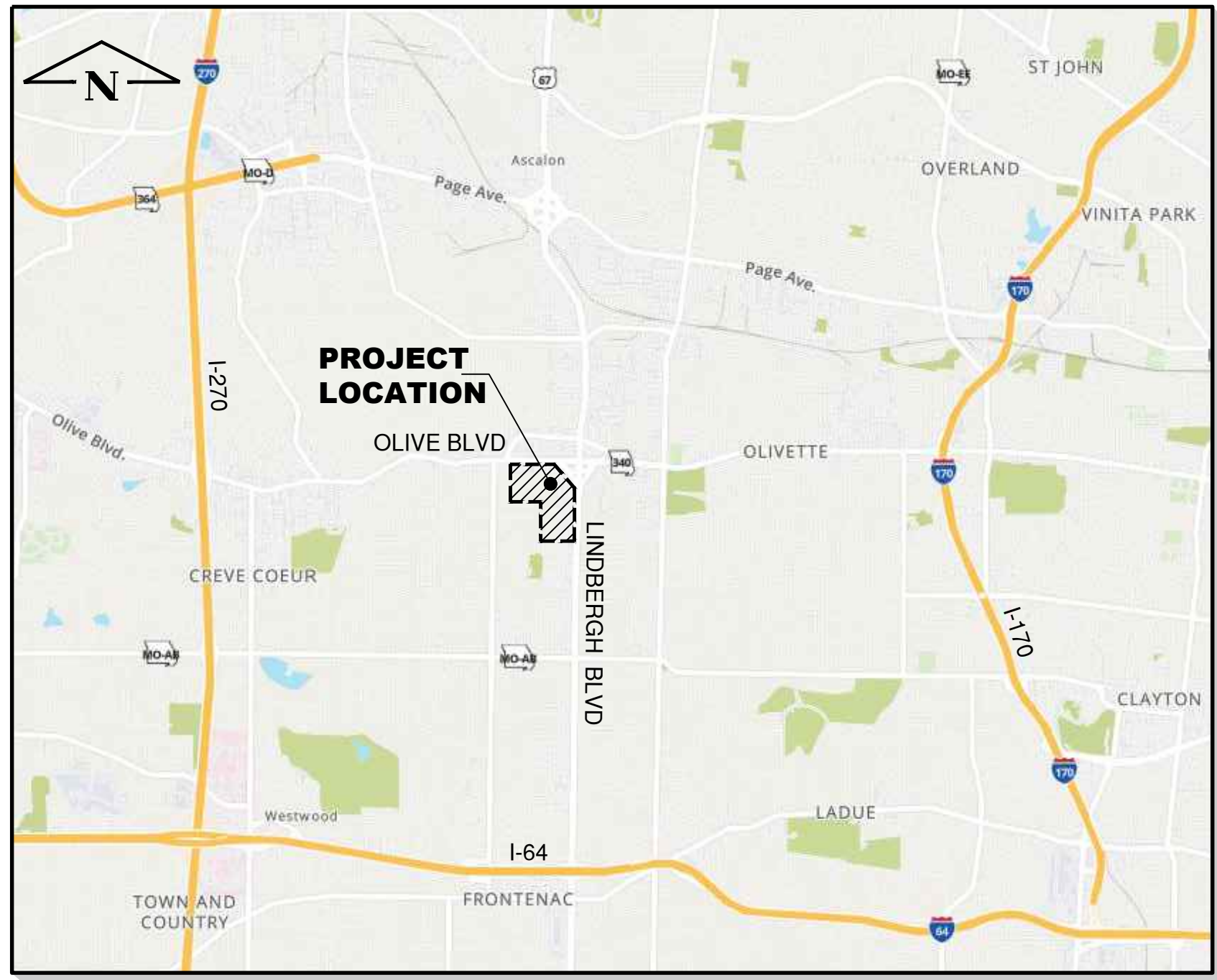
A TRACT OF LAND BEING PART OF LOTS 9, 10, 11 AND 12 OF MAJOR THOMAS SUBDIVISION
SITUATED IN THE SOUTHWEST QUARTER AND THE NORTHWEST QUARTER OF SECTION 1
TOWNSHIP 45 NORTH, RANGE 5 EAST, CITY OF CREVE COEUR, ST. LOUIS COUNTY, MISSOURI

SEPTEMBER 26, 2023

SITE INFORMATION	
SITE ACREAGE	= 95.8 AC ±
SITE ADDRESS	= 10300 OLIVE BOULEVARD, CREVE COEUR, MO 63141
OWNER	= 10300 OLIVE, LLC
LOCATOR NUMBER	= 17M420026
EXISTING ZONING	= R0 - RESEARCH & PARK DISTRICT
PROPOSED ZONING	= PMD - PLANNED MIXED-USE DEVELOPMENT
CITY	= CREVE COEUR, MO
ZIP CODE	= 63141
FEMA FLOOD MAP	= 2918R00191K (REVISED 2/4/2015) (ZONE X)
	= 2918R00192K (REVISED 2/4/2015) (ZONE X)
WUNNENBERG MAP	= PAGE 24, SECTIONS 177 & 18T
SCHOOL DISTRICT	= LAOUE SCHOOL DISTRICT
FIRE DISTRICT	= CREVE COEUR FIRE DISTRICT
WATER SHED	= RIVER DES PERES WATERSHED, DEER CREEK SUB-SHED
SEWER DISTRICT	= METROPOLITAN ST. LOUIS SEWER DISTRICT
CABLE SERVICE	= CHARTER COMMUNICATIONS
ELECTRIC SERVICE	= AMEREN MISSOURI
GAS SERVICE	= SPIRE ENERGY
PHONE SERVICE	= AT&T
WATER SERVICE	= MISSOURI AMERICAN WATER COMPANY
WATER SERVICE	= CITY OF ST. LOUIS WATER DEPARTMENT
	(TRANSMISSION MAINS)
BUILDING TYPE	= N/A (NO BUILDINGS PROPOSED)
BLDG. CONST. TYPE	= N/A (NO BUILDINGS PROPOSED)

OWNER / DEVELOPER :

10300 OLIVE, LLC
1034 S. BRENTWOOD, SUITE 2300 PH-1D
ST. LOUIS, MO 63117
MATT PFUND
(618) 692-9502



VICINITY MAP
(NOT TO SCALE)

SHEET INDEX	
C-100	TITLE SHEET
C-101	SITE OVERVIEW
C-102	PARCEL PLAN
C-103	SETBACK & BUFFER PLAN
C-104	PHASING PLAN
C-105	GRADING PLAN
C-106	UTILITY & DRAINAGE PLAN
C-107	STREET PLAN
C-108	PEDESTRIAN PLAN
C-109	SITE SECTIONS
A-101	ARCHITECTURAL SITE PLAN
A-102	BIRD'S EYE VIEW
A-103.1-4	SITE LIGHTING
A-104	ELEVATIONS
A-105	MATERIALS
A-106	RENDERED VIEW
LD-100	TREE PRESERVATION PLAN
L-140	OVERALL CONCEPT PLANTING PLAN
L-141	ENLARGEMENT PLANTING PLANS

FULL BUILD-OUT SITE CALCULATION NOTES

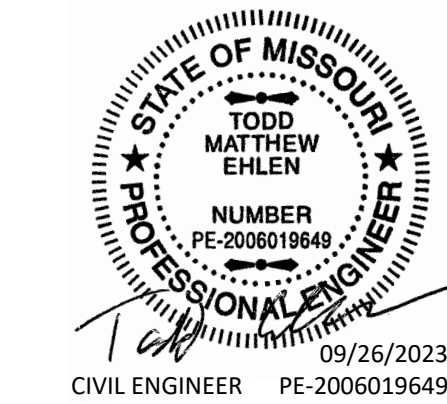
1. GROSS FLOOR AREA RATIO (FAR) = 0.59
2. IMPERVIOUS LAND COVERAGE SUMMARY:
IMPERVIOUS = 51.3 AC (53.6%)
PERVIOUS = 44.5 AC (46.4%)
TOTAL SITE = 95.8 AC (100%)
3. LAND SUMMARY:
LOT ACREAGE = 64.7 AC
COMMON GROUND = 25.3 AC
PUBLIC ROADWAY = 5.8 AC
TOTAL SITE = 95.8 AC

UTILITY NOTE :

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION ACTIVITIES. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

DISCLAIMER :

CRAWFORD, MURPHY & TILLY, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. CRAWFORD, MURPHY & TILLY, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK	DATE	DESCRIPTION
PROJECT NO: 23005201-00		
CAD DWG FILE: ISITE-CONCEPT-PLAN.DWG		
DESIGNED BY: TME/JFM		
DRAWN BY: JFM		
CHECKED BY: CJS		
APPROVED BY: ---		
COPYRIGHT: CRAWFORD, MURPHY & TILLY, INC. 2023		

SHEET TITLE

TITLE SHEET

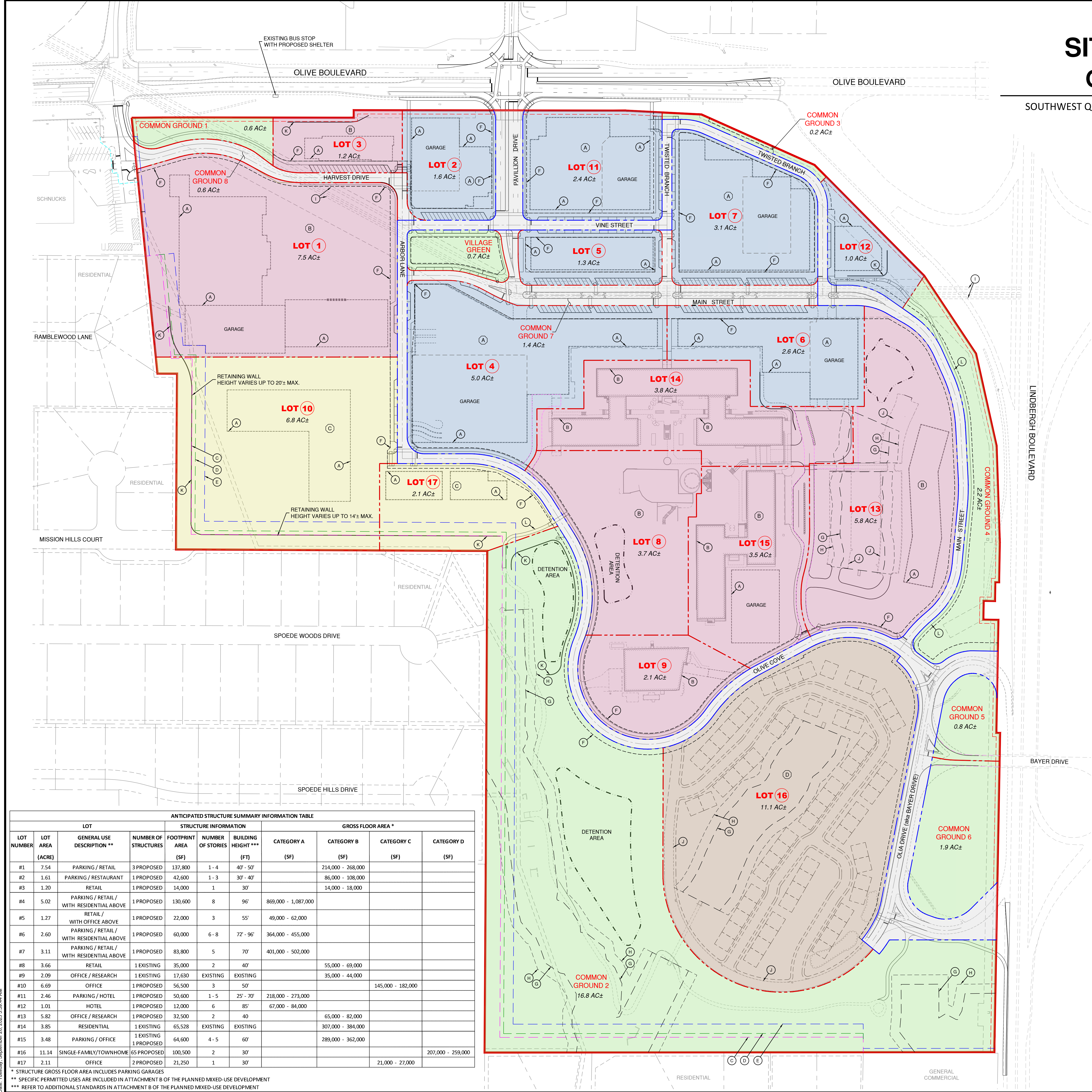
C-100

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Date: Tuesday, September 26, 2023 3:29:44 AM

ANTICIPATED STRUCTURE SUMMARY INFORMATION TABLE										
LOT			STRUCTURE INFORMATION			GROSS FLOOR AREA *				
LOT NUMBER	LOT AREA (ACRE)	GENERAL USE DESCRIPTION **	NUMBER OF STRUCTURES	FOOTPRINT AREA (SF)	NUMBER OF STORIES	BUILDING HEIGHT *** (FT)	CATEGORY A (SF)	CATEGORY B (SF)	CATEGORY C (SF)	CATEGORY D (SF)
#1	7.54	PARKING / RETAIL	3 PROPOSED	137,800	1 - 4	40' - 50'		214,000 - 268,000		
#2	1.61	PARKING / RESTAURANT	1 PROPOSED	42,600	1 - 3	30' - 40'		86,000 - 108,000		
#3	1.20	RETAIL	1 PROPOSED	14,000	1	30'		14,000 - 18,000		
#4	5.02	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	130,600	8	96'	869,000 - 1,087,000			
#5	1.27	RETAIL / WITH OFFICE ABOVE	1 PROPOSED	22,000	3	55'	49,000 - 62,000			
#6	2.60	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	60,000	6 - 8	72' - 96'	364,000 - 455,000			
#7	3.11	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	83,800	5	70'	401,000 - 502,000			
#8	3.66	RETAIL	1 EXISTING	35,000	2	40'		55,000 - 69,000		
#9	2.09	OFFICE / RESEARCH	1 EXISTING	17,630	EXISTING	EXISTING		35,000 - 44,000		
#10	6.69	OFFICE	1 PROPOSED	56,500	3	50'			145,000 - 182,000	
#11	2.46	PARKING / HOTEL	1 PROPOSED	50,600	1 - 5	25' - 70'	218,000 - 273,000			
#12	1.01	HOTEL	1 PROPOSED	12,000	6	85'	67,000 - 84,000			
#13	5.82	OFFICE / RESEARCH	1 PROPOSED	32,500	2	40'		65,000 - 82,000		
#14	3.85	RESIDENTIAL	1 EXISTING	65,528	EXISTING	EXISTING		307,000 - 384,000		
#15	3.48	PARKING / OFFICE	1 EXISTING 1 PROPOSED	64,600	4 - 5	60'		289,000 - 362,000		
#16	11.14	SINGLE-FAMILY/TOWNHOME	65 PROPOSED	100,500	2	30'				207,000 - 259,000
#17	2.11	OFFICE	2 PROPOSED	21,250	1	30'			21,000 - 27,000	

* STRUCTURE GROSS FLOOR AREA INCLUDES PARKING GARAGES
** SPECIFIC PERMITTED USES ARE INCLUDED IN ATTACHMENT B OF THE PLANNED MIXED-USE DEVELOPMENT
*** REFER TO ADDITIONAL STANDARDS IN ATTACHMENT B OF THE PLANNED MIXED-USE DEVELOPMENT



SITE OVERVIEW

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED EASEMENT
- CATEGORY A - MAIN STREET DEVELOPMENT
- CATEGORY B - MIXED USE DEVELOPMENT
- CATEGORY C - GENERAL OFFICE DEVELOPMENT
- CATEGORY D - RESIDENTIAL DEVELOPMENT

KEYNOTES

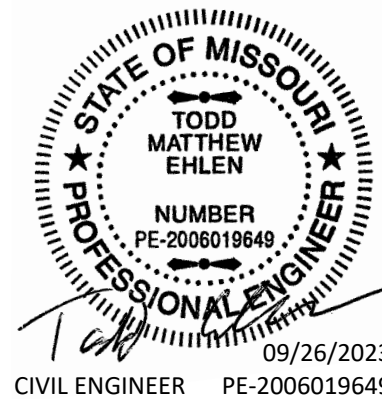
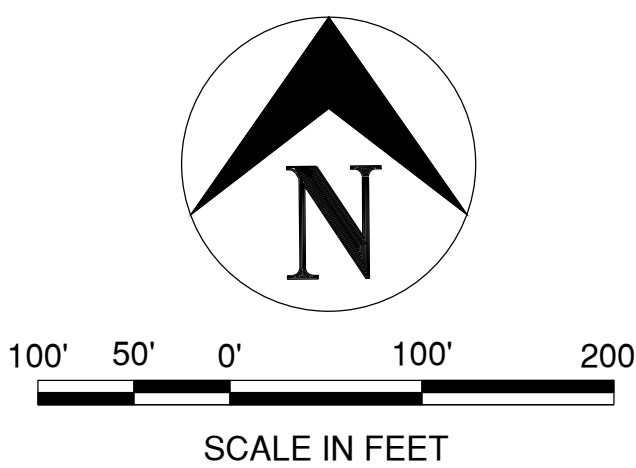
- (A) CONCEPTUAL BUILDING FOOTPRINT (TYP)
- (B) EXISTING BUILDING TO REMAIN AND BE REPURPOSED (TYP)
- (C) 40' RESIDENTIAL BUFFER YARD (TYP)
- (D) 10' RESIDENTIAL BUILDING SETBACK (BEYOND BUFFER)
- (E) 35' COMMERCIAL BUILDING SETBACK (BEYOND BUFFER)
- (F) 10' MINIMUM PROPOSED ROADWAY IMPROVEMENT MAINTENANCE UTILITY SEWER SIDEWALK EASEMENT (PRIMUMSSE)
- (G) 50' NATURAL VEGETATION STREAM BUFFER
- (H) 25' NO-IMPERVIOUS STREAM BUFFER
- (I) EXISTING STL WATER CO. WATERMAIN CONDUITS
- (J) EXISTING PARKING LOT / DRIVE TO REMAIN
- (K) PROPOSED SITE RETAINING WALL (TYP)
MECHANICALLY STABILIZED EARTH OR BLOCK GRAVITY WALL
(TO BE DETERMINED UPON FINAL DESIGN)
- (L) PROPOSED WALKING TRAIL OR SIDEWALK (TYP)
SEE PEDESTRIAN MOBILITY PLAN



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK DATE DESCRIPTION

PROJECT NO.: 23005201-00
CAD DWG FILE: ISITE-CONCEPT-PLAN.DWG
DESIGNED BY: TME/JFM
DRAWN BY: JFM
CHECKED BY: CJS
APPROVED BY: ---
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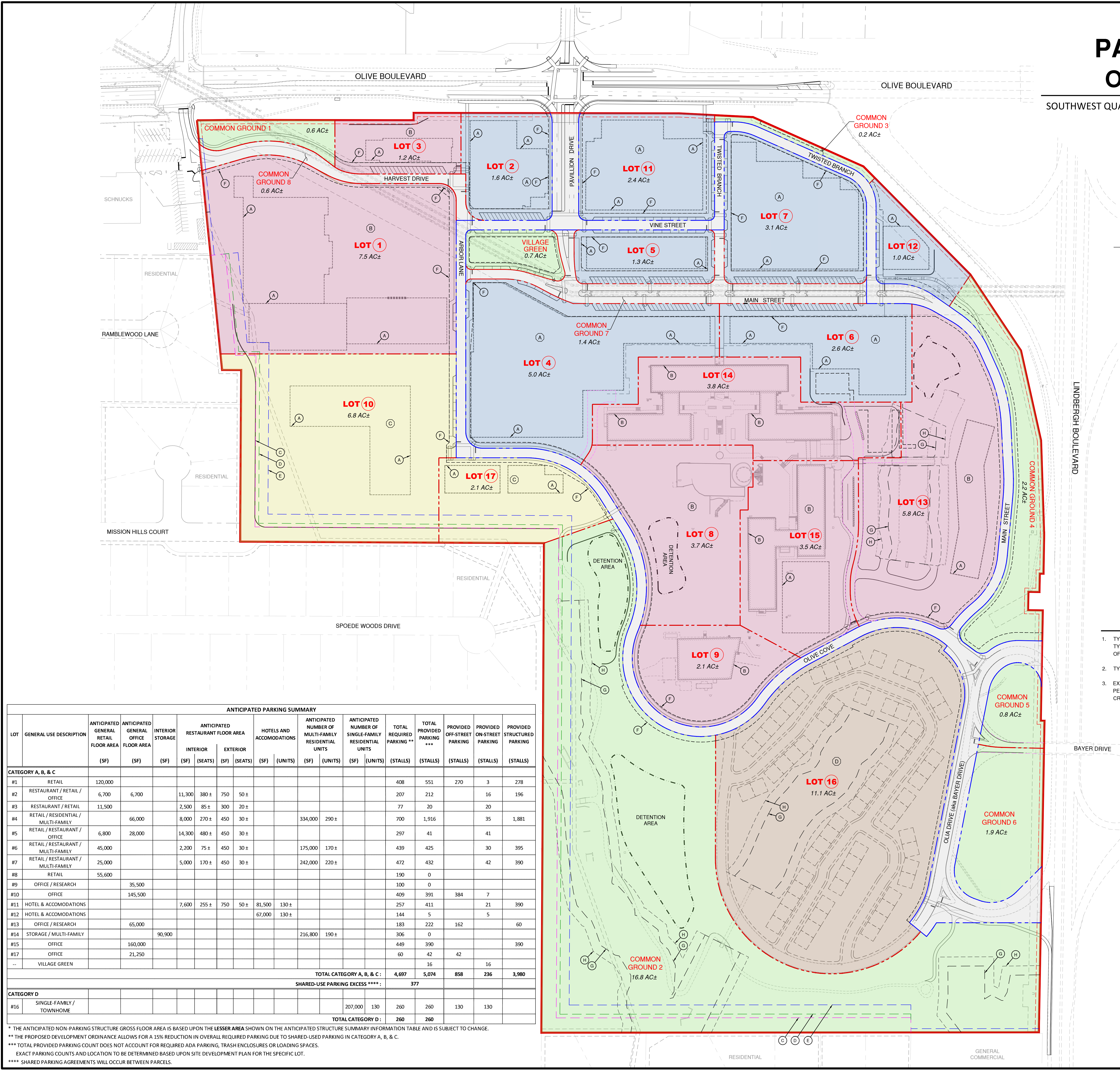
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SITE OVERVIEW

C-101

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Date: Tuesday, September 26, 2023 8:20:02 AM



PARCEL PLAN

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED EASEMENT
- CATEGORY A - MAIN STREET DEVELOPMENT
- CATEGORY B - MIXED USE DEVELOPMENT
- CATEGORY C - GENERAL OFFICE DEVELOPMENT
- CATEGORY D - RESIDENTIAL DEVELOPMENT

KEYNOTES

- CONCEPTUAL BUILDING FOOTPRINT (TYP)
- EXISTING BUILDING TO REMAIN AND BE REPURPOSED (TYP)
- 40' RESIDENTIAL BUFFER YARD (TYP)
- 10' RESIDENTIAL BUILDING SETBACK (BEYOND BUFFER)
- 35' COMMERCIAL BUILDING SETBACK (BEYOND BUFFER)
- 10' SETBACK (TYP)
- 50' NATURAL VEGETATION BUFFER
- 25' NO-IMPERVIOUS BUFFER

PARKING NOTES

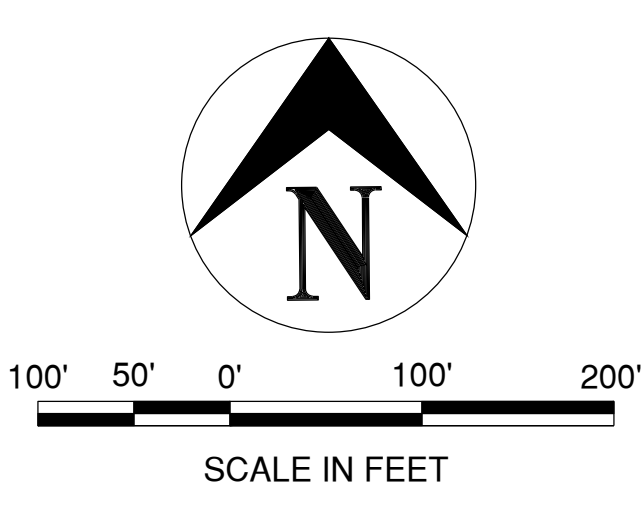
- TYPICAL PERPENDICULAR PARKING STALLS ARE 9' WIDE x 19' LONG. TYPICAL ANGLED PARKING (60°) STALLS ARE 9' WIDE x 21' LONG TO FACE OF CURB (LENGTH MEASURED PERPENDICULAR TO FACE OF CURB).
- TYPICAL PARALLEL PARKING STALLS ARE 9' WIDE x 23' LONG.
- EXACT NUMBER AND LOCATION OF ADA STALLS TO BE DETERMINED PER THE FINAL LOT LAYOUT AND WILL MEET THE REQUIREMENTS OF CREVE COEUR AND FEDERAL ACCESSIBILITY DESIGN STANDARDS.

ANTICIPATED PARKING SUMMARY																				
LOT	GENERAL USE DESCRIPTION	ANTICIPATED GENERAL RETAIL FLOOR AREA	ANTICIPATED GENERAL OFFICE FLOOR AREA	INTERIOR STORAGE	ANTICIPATED RESTAURANT FLOOR AREA				HOTELS AND ACCOMMODATIONS		ANTICIPATED NUMBER OF MULTI-FAMILY RESIDENTIAL UNITS		ANTICIPATED NUMBER OF SINGLE-FAMILY RESIDENTIAL UNITS		TOTAL REQUIRED PARKING **	TOTAL PROVIDED PARKING ***	PROVIDED OFF-STREET PARKING	PROVIDED ON-STREET PARKING	PROVIDED STRUCTURED PARKING	
		(SF)	(SF)		(SF)	(SF)	(SEATS)	(SF)	(SEATS)	(SF)	(UNITS)	(SF)	(UNITS)	(SF)	(UNITS)	(STALLS)	(STALLS)	(STALLS)	(STALLS)	(STALLS)
CATEGORY A, B, & C																				
#1	RETAIL	120,000													408	551	270	3	278	
#2	RESTAURANT / RETAIL / OFFICE	6,700	6,700		11,300	380 ±	750	50 ±							207	212		16	196	
#3	RESTAURANT / RETAIL	11,500			2,500	85 ±	300	20 ±							77	20		20		
#4	RETAIL / RESIDENTIAL / MULTI-FAMILY		66,000		8,000	270 ±	450	30 ±		334,000	290 ±				700	1,916		35	1,881	
#5	RETAIL / RESTAURANT / OFFICE	6,800	28,000		14,300	480 ±	450	30 ±							297	41		41		
#6	RETAIL / RESTAURANT / MULTI-FAMILY	45,000			2,200	75 ±	450	30 ±		175,000	170 ±				439	425		30	395	
#7	RETAIL / RESTAURANT / MULTI-FAMILY	25,000			5,000	170 ±	450	30 ±		242,000	220 ±				472	432		42	390	
#8	RETAIL	55,600													190	0				
#9	OFFICE / RESEARCH		35,500												100	0				
#10	OFFICE		145,500												409	391	384	7		
#11	HOTEL & ACCOMMODATIONS				7,600	255 ±	750	50 ±	81,500	130 ±					257	411		21	390	
#12	HOTEL & ACCOMMODATIONS								67,000	130 ±					144	5		5		
#13	OFFICE / RESEARCH		65,000												183	222	162		60	
#14	STORAGE / MULTI-FAMILY			90,900							216,800	190 ±			306	0				
#15	OFFICE		160,000												449	390			390	
#17	OFFICE		21,250												60	42	42			
--	VILLAGE GREEN															16		16		
TOTAL CATEGORY A, B, & C:															4,697	5,074		858	236	3,980
SHARED-USE PARKING EXCESS ****:																377				
CATEGORY D																				
#16	SINGLE-FAMILY / TOWNHOME												207,000	130	260	260	130	130		
TOTAL CATEGORY D:															260	260				

* THE ANTICIPATED NON-PARKING STRUCTURE GROSS FLOOR AREA IS BASED UPON THE LESSER AREA SHOWN ON THE ANTICIPATED STRUCTURE SUMMARY INFORMATION TABLE AND IS SUBJECT TO CHANGE.
** THE PROPOSED DEVELOPMENT ORDINANCE ALLOWS FOR A 15% REDUCTION IN OVERALL REQUIRED PARKING DUE TO SHARED-USED PARKING IN CATEGORY A, B, & C.
*** TOTAL PROVIDED PARKING COUNT DOES NOT ACCOUNT FOR REQUIRED ADA PARKING, TRASH ENCLOSURES OR LOADING SPACES.
EXACT PARKING COUNTS AND LOCATION TO BE DETERMINED BASED UPON SITE DEVELOPMENT PLAN FOR THE SPECIFIC LOT.
**** SHARED PARKING AGREEMENTS WILL OCCUR BETWEEN PARCELS.

CONSULTANTS:

SITE CONCEPT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK	DATE	DESCRIPTION
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PROJECT NO.:	23005201-00
CAD DWG FILE:	ISITE-CONCEPT-PLAN.DWG
DESIGNED BY:	TME/JFM
DRAWN BY:	JFM
CHECKED BY:	CJS
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SHEET TITLE

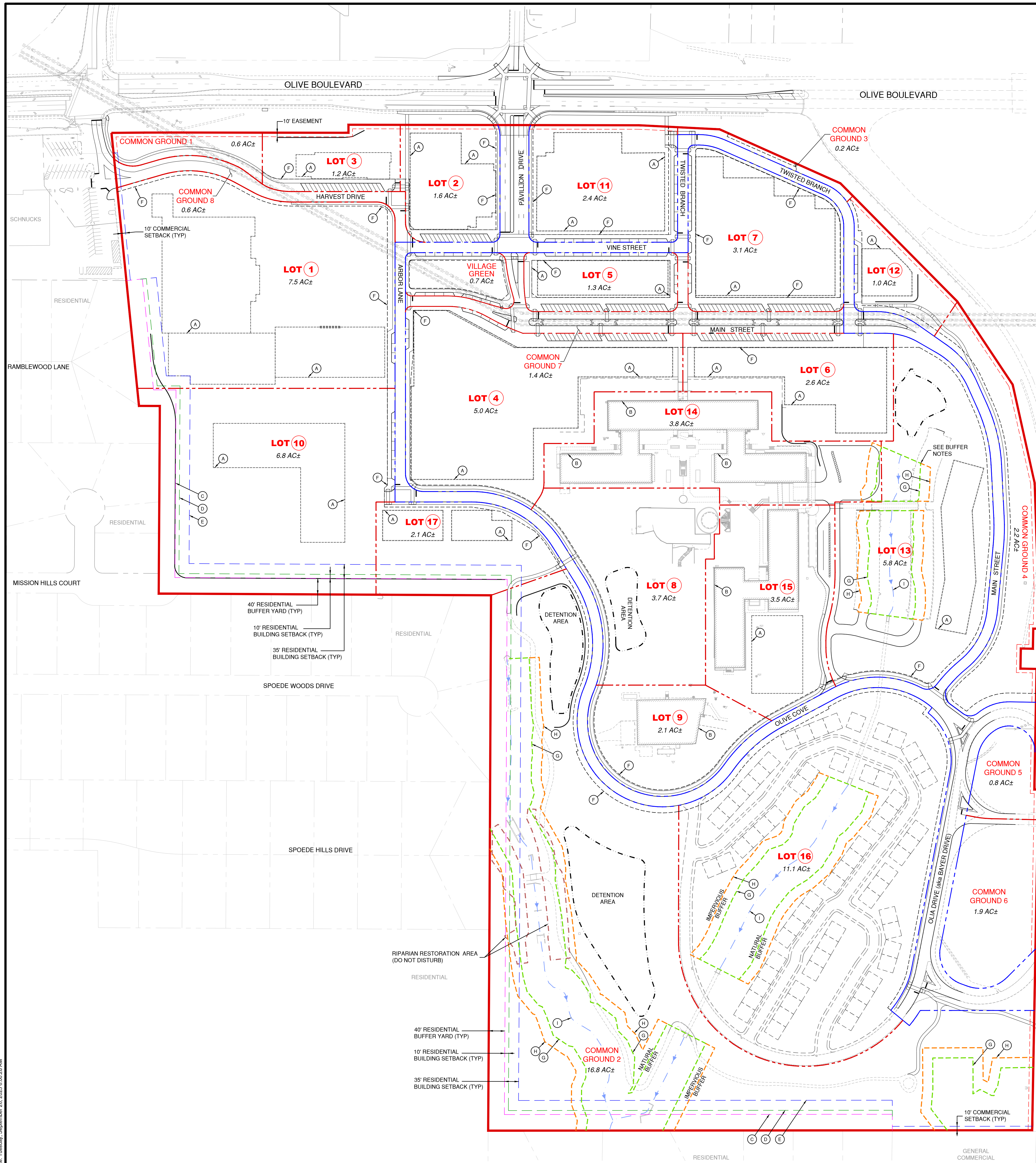
PARCEL PLAN

C-102

SHEET - OF --

SETBACK & BUFFER PLAN
OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



- LEGEND
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED EASEMENT
 - PROPOSED BUILDING SETBACK

- KEYNOTES
- (A) CONCEPTUAL BUILDING FOOTPRINT (TYP)
 - (B) EXISTING BUILDING TO REMAIN AND BE REPURPOSED (TYP)
 - (C) 40' RESIDENTIAL BUFFER YARD (TYP)
 - (D) 10' RESIDENTIAL BUILDING SETBACK (BEYOND BUFFER)
 - (E) 35' COMMERCIAL BUILDING SETBACK (BEYOND BUFFER)
 - (F) 10' MINIMUM PROPOSED ROADWAY IMPROVEMENT MAINTENANCE UTILITY SEWER SIDEWALK EASEMENT (PRIMUSSE)
 - (G) 50' NATURAL VEGETATION BUFFER
 - (H) 25' NO-IMPERVIOUS BUFFER
 - (I) EXISTING STREAM TO REMAIN

- BUFFER NOTES
- EXISTING TRAILS AND PAVEMENTS WITHIN NATURAL OR IMPERVIOUS BUFFER LIMITS ARE ALLOWED TO REMAIN.
 - ANY NEW OR IMPROVED PAVEMENTS SHALL NOT ENCR OACH INTO NATURAL OR IMPERVIOUS BUFFER LIMITS FURTHER THAN EXISTING PAVEMENT LIMITS.

- SETBACK AND BUFFER REQUIREMENTS
- SETBACK AND BUILDING LINE REQUIREMENTS WITHIN THE DEVELOPMENT (INTERNAL):
- CATEGORY A - "MAIN STREET" SUB-DISTRICT:
- MINIMUM FRONT YARD - ZERO (0) FEET
 - MINIMUM SIDE YARD - ZERO (0) FEET
 - MINIMUM REAR YARD - ZERO (0) FEET
 - BUFFER YARD - NOT APPLICABLE INTERNALLY
- CATEGORY B - MIXED USE SUB-DISTRICT:
- MINIMUM FRONT YARD - ZERO (0) FEET
 - MINIMUM SIDE YARD - ZERO (0) FEET
 - MINIMUM REAR YARD - ZERO (0) FEET
 - BUFFER YARD - NOT APPLICABLE INTERNALLY
- CATEGORY C - GENERAL OFFICE SUB-DISTRICT:
- MINIMUM FRONT YARD - ZERO (0) FEET
 - MINIMUM SIDE YARD - ZERO (0) FEET
 - MINIMUM REAR YARD - ZERO (0) FEET
 - MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS - ZERO (0) FEET
 - BUFFER YARD - NOT APPLICABLE INTERNALLY
- CATEGORY D - RESIDENTIAL SUB-DISTRICT:
- MINIMUM FRONT YARD - FIVE (5) FEET
 - MINIMUM SIDE YARD - NONE OR SEVEN AND A HALF (7.5) FEET
 - MINIMUM REAR YARD - FIVE (5) FEET
 - MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS - FIFTEEN (15) FEET
 - BUFFER YARD - NOT APPLICABLE INTERNALLY

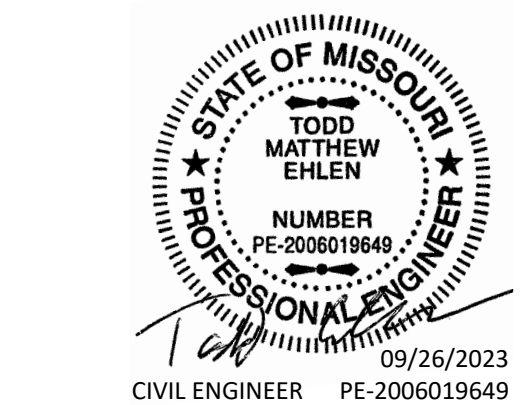
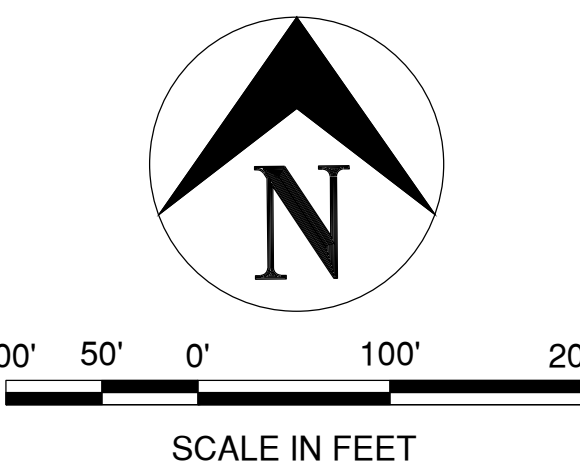
- SETBACK AND BUILDING LINE REQUIREMENTS TO ADJACENT PARCELS:
- RESIDENTIAL:
- REQUIRED BUFFER YARD - FORTY (40) FEET
 - MINIMUM RESIDENTIAL BUILDING SETBACK - TEN (10) FEET
 - MINIMUM COMMERCIAL BUILDING SETBACK - THIRTY-FIVE (35) FEET BEYOND BUFFER YARD
- NON-RESIDENTIAL:
- MINIMUM BUILDING SETBACK - TEN (10) FEET



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN



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SEPTEMBER 26, 2023

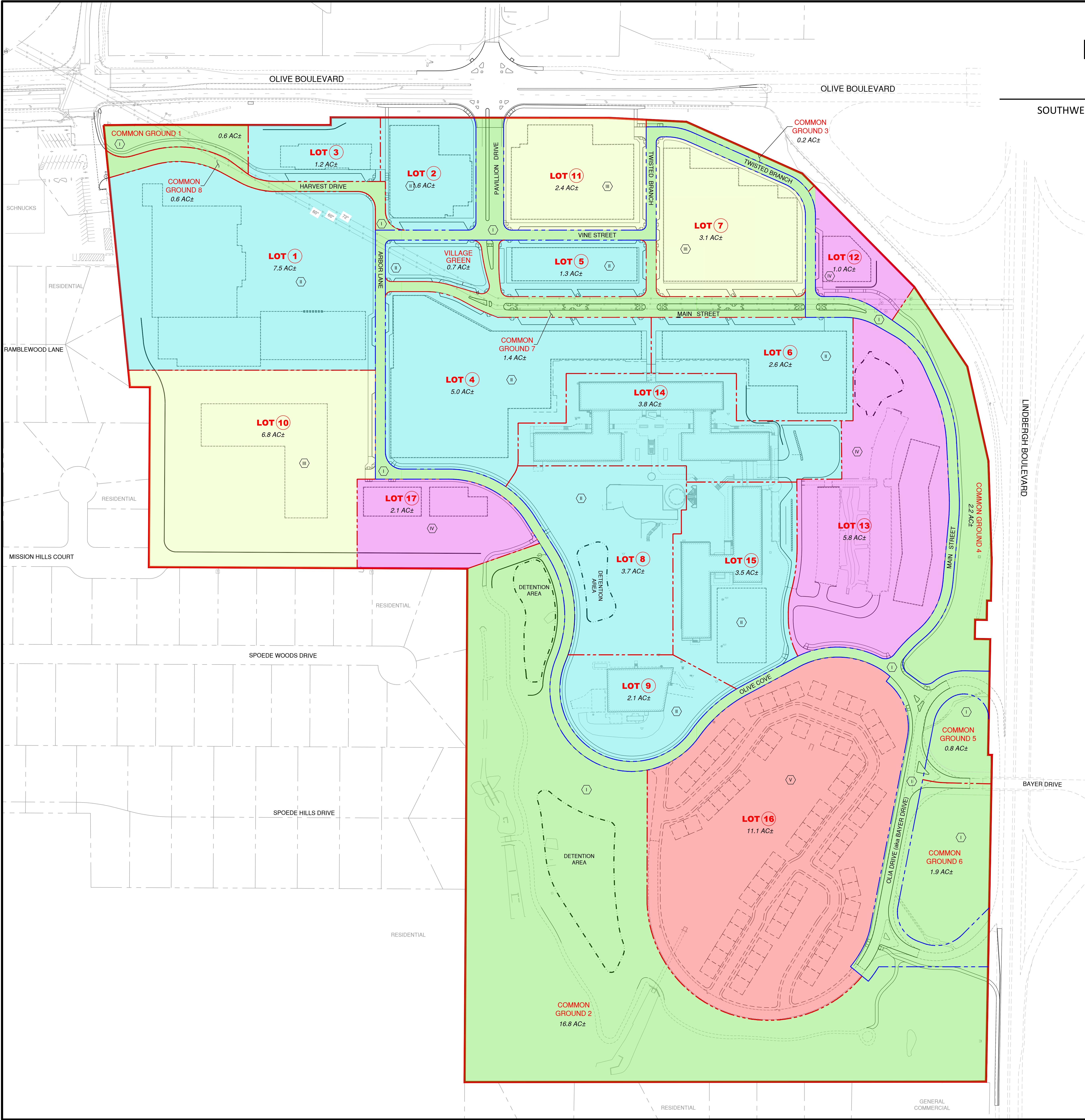
OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

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SETBACK & BUFFER PLAN		
C-103		
SHEET	OF	--



PHASING PLAN

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED DEVELOPMENT PHASE I
- PROPOSED DEVELOPMENT PHASE II
- PROPOSED DEVELOPMENT PHASE III
- PROPOSED DEVELOPMENT PHASE IV
- PROPOSED DEVELOPMENT PHASE V

DEVELOPMENT PHASING

PHASE I: SITE CLEARING, MASS GRADING, SITE UTILITIES, ROADWAY CONSTRUCTION (OCTOBER 2023 - JULY 2025)

PHASE II: BUILDING CONSTRUCTION ON LOTS 1, 2, 3, 4, 5, 6, 8, 9, 14 & 15
COMMON AREA DEVELOPMENTS (JANUARY 2024 - JULY 2026)

PHASE III: BUILDING CONSTRUCTION ON LOTS 7, 11 & 10 (JANUARY 2025 - DECEMBER 2026)

PHASE IV: BUILDING CONSTRUCTION ON LOTS 12, 13 & 17 (JANUARY 2026 - DECEMBER 2027)

PHASE V: BUILDING CONSTRUCTION ON LOT 16 (JANUARY 2025 - DECEMBER 2028)

PREPARED BY:

CMT
Crawford, Murphy & Tilly

ONE MEMORIAL DRIVE, SUITE 500
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OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN

North arrow pointing up, labeled 'N'.

Scale bar: 100' 50' 0' 100' 200'

SCALE IN FEET

Professional Engineer Seal for Matthew Erlen, State of Missouri, License No. PE-2006019649, dated 09/26/2023.

CIVIL ENGINEER PE-2006019649

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**

LINDBERGH & OLIVE BLVD


OLIA VILLAGE
THE HEART OF CREVE COEUR

CREVE COEUR, MO

MARK	DATE	DESCRIPTION
PROJECT NO: 23005201-00		
CAD DWG FILE: ISITE-CONCEPT-PLAN.DWG		
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CHECKED BY: CJS		
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SHEET TITLE

PHASING PLAN

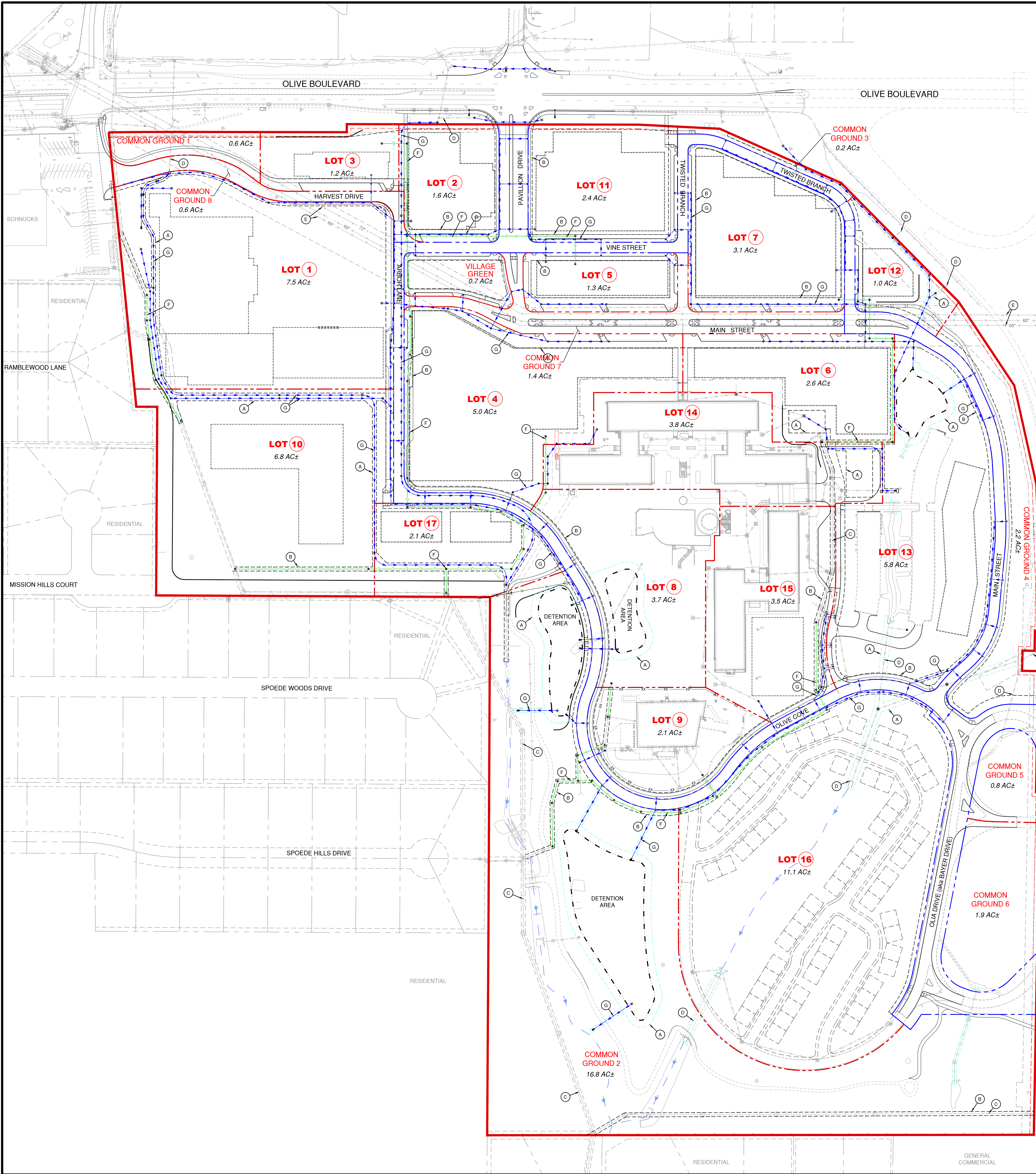
C-104

SHEET - OF --

The site plan illustrates the proposed 100-unit residential development at 1000 Olive Boulevard. The plan includes 16 numbered building footprints, parking areas, and landscaping. Key features include Olive Boulevard, Harvest Drive, Vine Street, Main Street, Olive Cove, and Olive Drive (aka Bayer Drive). The plan also shows existing topography, utility lines, and section lines A-A and B-B.

SHEET - OF --

Path: M:\JackMatthews\Draw\23005201-00_BayerSiteDesign\Draw\Exhibit01-SITE-CONCEPT\SITE-CONCEPT-PLAN.dwg
Date: Tuesday, September 26, 2023 8:01:10 AM



UTILITY & DRAINAGE PLAN

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

- ### LEGEND
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - EXISTING SANITARY SEWER
 - EXISTING STORM SEWER
 - EXISTING WATER MAIN
 - PROPOSED SANITARY SEWER
 - PROPOSED STORM SEWER
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED EASEMENT

- ### KEYNOTES
- (A) DRAINAGE EASEMENT (TYP)
 - (B) UTILITY EASEMENT (TYP)
 - (C) EXISTING SANITARY SEWER
 - (D) EXISTING STORM DRAINAGE SYSTEM
 - (E) EXISTING STL WATER CO. WATERMAIN CONDUITS
 - (F) PROPOSED SANITARY SEWER (TYP)
 - (G) PROPOSED STORM DRAINAGE SYSTEM (TYP)

PRELIMINARY BUILDOUT STORMWATER CALCULATIONS

PRE-DEVELOPED RUNOFF
TOTAL AREA = 227.90 ac
WEIGHTED "CN" VALUE = 81.59
AVERAGE "TC" VALUE = 19.86 min
TOTAL FLOW = 1,260± cfs

POST-DEVELOPED RUNOFF
TOTAL AREA = 227.90 ac
WEIGHTED "CN" VALUE = 86.54
AVERAGE "TC" VALUE = 16.34 min
TOTAL FLOW = 1,478± cfs

DIFFERENTIAL RUNOFF
PRE-DEVELOPED = 1,260± cfs
POST-DEVELOPED = 1,478± cfs
DIFFERENTIAL FLOW = +218± cfs

100-YEAR, 24-HOUR PEAK FLOW RATE COMPARISON

PRE-DEVELOPED = 404± cfs
POST-DEVELOPED = 1,142± cfs
DIFFERENTIAL FLOW = -738± cfs

THIS PROJECT HAS BEEN SUBMITTED TO MSD FOR CONCEPTUAL REVIEW (23CNCBP-00003).
ALL STORM SEWER AND DETENTION FACILITY CALCULATIONS AND REPORTS WILL BE SUBMITTED TO MSD AND CITY OF CREVE COEUR FOR FINAL APPROVAL PRIOR TO CONSTRUCTION.

PREPARED BY:
CMT
Crawford, Murphy & Tilly
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN

100' 50' 0' 100' 200'
SCALE IN FEET

CIVIL ENGINEER PE-2006019649

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD

THE HEART OF CREVE COEUR
CREVE COEUR, MO

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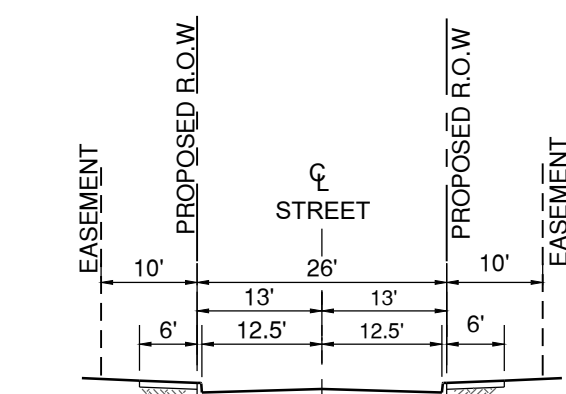
SHEET TITLE
UTILITY & DRAINAGE
PLAN
C-106
SHEET - OF --

STREET PLAN
OLIA VILLAGE

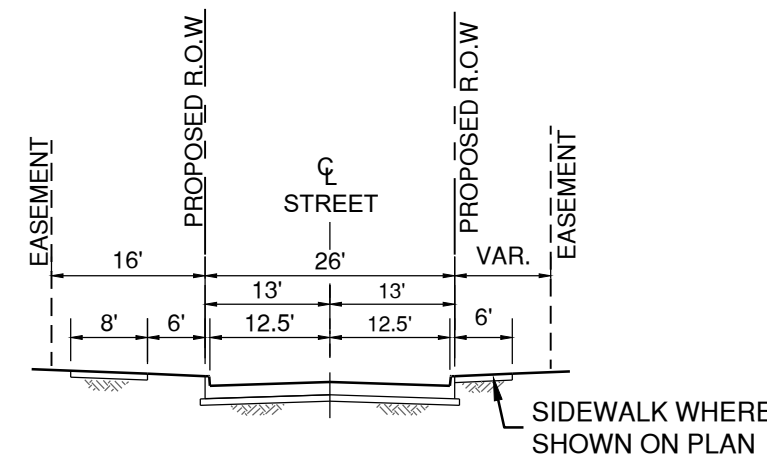
SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

- LEGEND
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED R.I.M.U.S.S. EASEMENT
 - PROPOSED ROADWAY (WITHIN RIGHT-OF-WAY)
 - PROPOSED ON-STREET PARKING (WITHIN EASEMENT)
 - PROPOSED PRIVATE ROADWAY

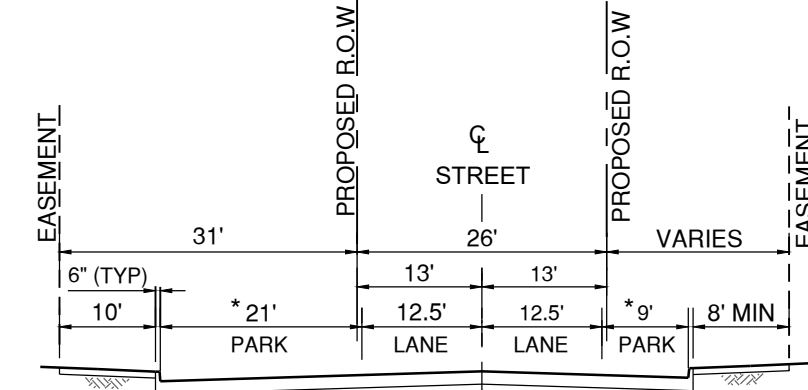
- KEYNOTES
- PROPOSED RIGHT-OF-WAY
 - PROPOSED ROADWAY IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK (R.I.M.U.S.S.) EASEMENT
 - CONCEPTUAL FUTURE ENTRANCE
 - EXISTING STL WATER MAIN CONDUITS
 - EXISTING STL WATER MAIN EASEMENT



TYPICAL SECTION #1
STANDARD STREET SECTION

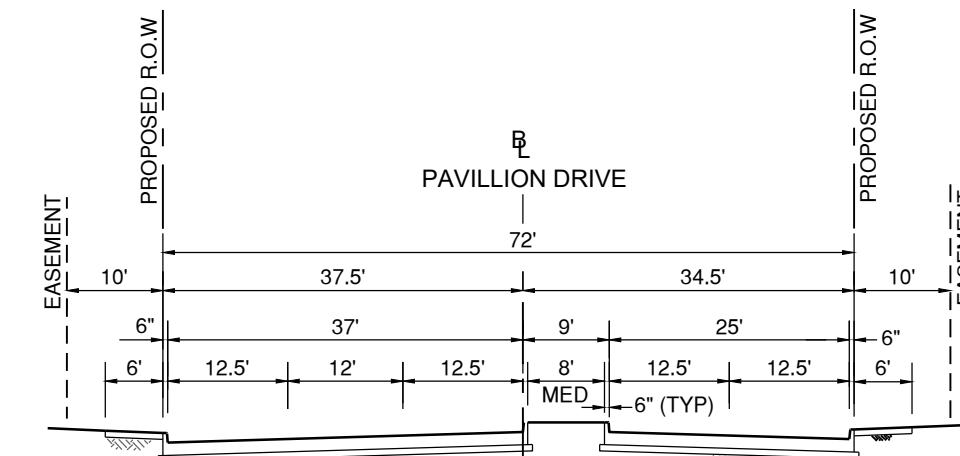


TYPICAL SECTION #2
OLIVE COVE

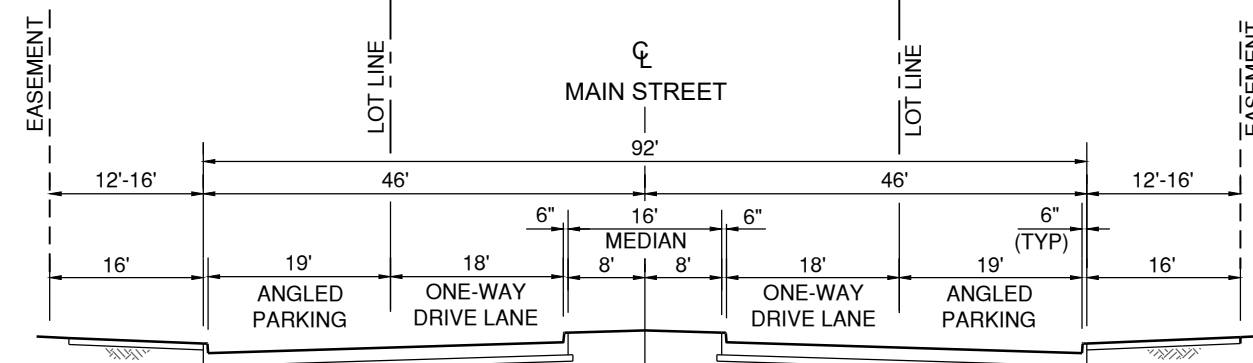


* PARKING VARIES:
9' PARALLEL PARKING
21' ANGLED PARKING

TYPICAL SECTION #3
STANDARD STREET SECTION
WITH ADJACENT PARKING



TYPICAL SECTION #4
PAVILLION DRIVE ENTRANCE



TYPICAL SECTION #5
MAIN STREET (MEDIAN SECTION)

ROADWAY INFORMATION		
STREET NAME	CENTERLINE LENGTH (FT)	LANE MILES (MI)
PUBLIC ROADWAYS		
PAVILLION DRIVE	380	0.360
MAIN STREET	1,210	0.458
ARBOR LANE	625	0.237
OLIVE COVE	2,120	0.803
TWISTED BRANCH	1,000	0.379
VINE STREET	700	0.265
BAYER DRIVE	720	0.273
ON-RAMP FROM BAYER DRIVE	180	0.034
OFF-RAMP TO BAYER DRIVE	320	0.061
SUB-TOTAL :	7,255	2.870
PRIVATE ROADWAYS		
PAVILLION DRIVE	180	0.068
MAIN STREET	1,120	0.424
TWISTED BRANCH	190	0.072
HARVEST DRIVE (FUTURE PUBLIC)	770	0.292
ARBOR LANE (FUTURE PUBLIC)	125	0.047
BAYER DRIVE (E/W)	220	0.083
SUB-TOTAL :	2,605	0.986
TOTAL :	9,860	3.856

GENERAL NOTES

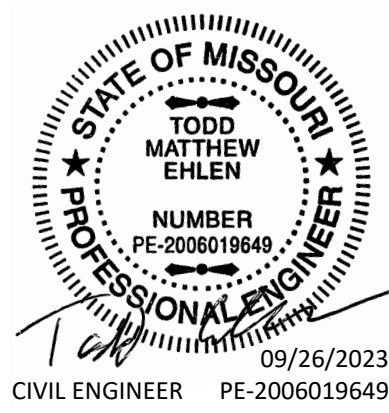
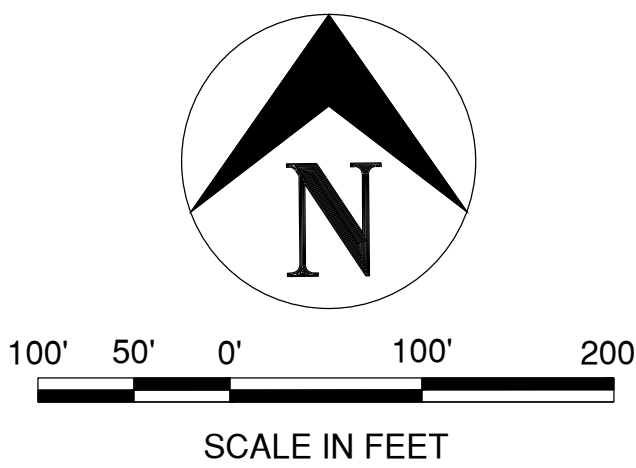
- EXISTING EASEMENTS NOT SHOWN FOR CLARITY.
- EXISTING UTILITIES NOT SHOWN FOR CLARITY.
- PROPOSED UTILITY EASEMENTS NOT SHOWN FOR CLARITY.
- PROPOSED UTILITIES NOT SHOWN FOR CLARITY.



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
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CONSULTANTS:

SITE CONCEPT PLAN



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NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

CREVE COEUR, MO

MARK DATE DESCRIPTION

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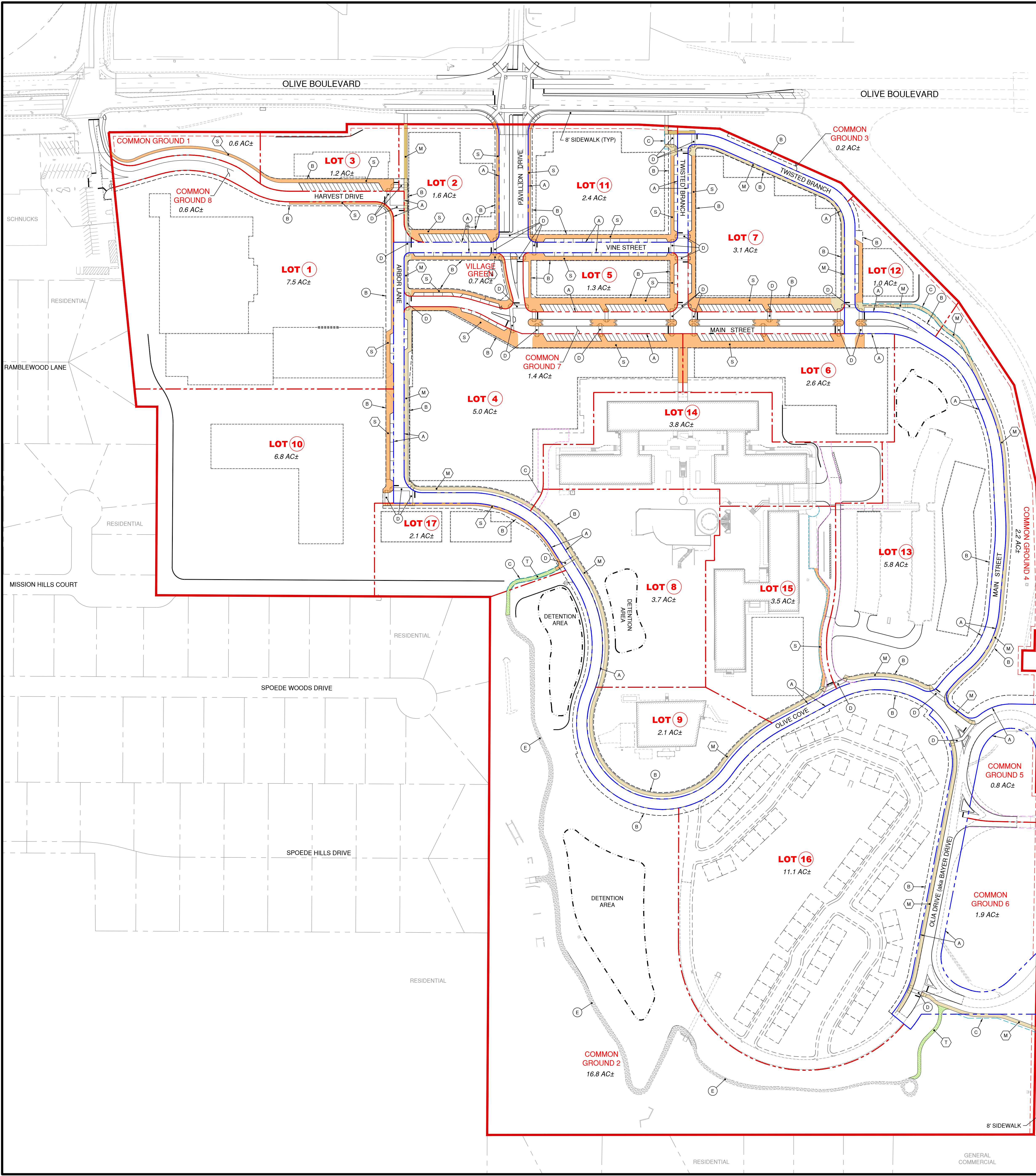
STREET PLAN

C-107

SHEET - OF --

PEDESTRIAN MOBILITY PLAN
OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED EASEMENT
- ROADWAY STRIPING - STOP BAR
- ROADWAY STRIPING - CROSSWALK
- PROPOSED CONCRETE SIDEWALK (WITHIN EASEMENT)
- PROPOSED CONCRETE MULTI-USE SIDEWALK 8' MIN WIDE (WITHIN EASEMENT)
- PROPOSED 8' WIDE NATURAL AGGREGATE TRAIL (WITHIN EASEMENT ON NON-COMMON AREAS)

KEYNOTES

- PROPOSED RIGHT-OF-WAY
- PROPOSED ROADWAY IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK (R.I.M.U.S.S.) EASEMENT
- PROPOSED SIDEWALK EASEMENT
- PROPOSED CROSSWALK
- EXISTING AGGREGATE TRAIL TO REMAIN (WIDTH VARIES APPROXIMATELY 8' TO 12')

PEDESTRIAN MOBILITY INFORMATION			
LOCATION	STANDARD SIDEWALK LENGTH (FT)	NATURAL TRAIL LENGTH (FT)	8' MULTI-USE SIDEWALK (FT)
PAVILLION DRIVE	840		
MAIN STREET	2,160		
MAIN STREET (EAST LEG)			1,245
HARVEST DRIVE	1,040		
ARBOR LANE	815		700
OLIVE COVE	505		2,010
TWISTED BRANCH	1,040		670
VINE STREET	1,190		
OLIA DRIVE (AKA BAYER DRIVE)			690
(TO) LINDBERGH BLVD			300
WEST / SOUTH TRAIL (PROPOSED)		400	
WEST / SOUTH TRAIL (EXISTING)		2,210	
SUB-TOTAL:	7,590	2,610	5,615
TOTAL SIDEWALK / TRAIL (FT) :		15,815	
TOTAL SIDEWALK / TRAIL (MI) :		3.0	

PREPARED BY:

CMT
Crawford, Murphy & Tilly

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CONSULTANTS:

SITE CONCEPT PLAN

SCALE IN FEET

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**OLIA VILLAGE
DEVELOPMENT**

LINDBERGH & OLIVE BLVD

OLIA VILLAGE

THE HEART OF CREVE COEUR

CREVE COEUR, MO

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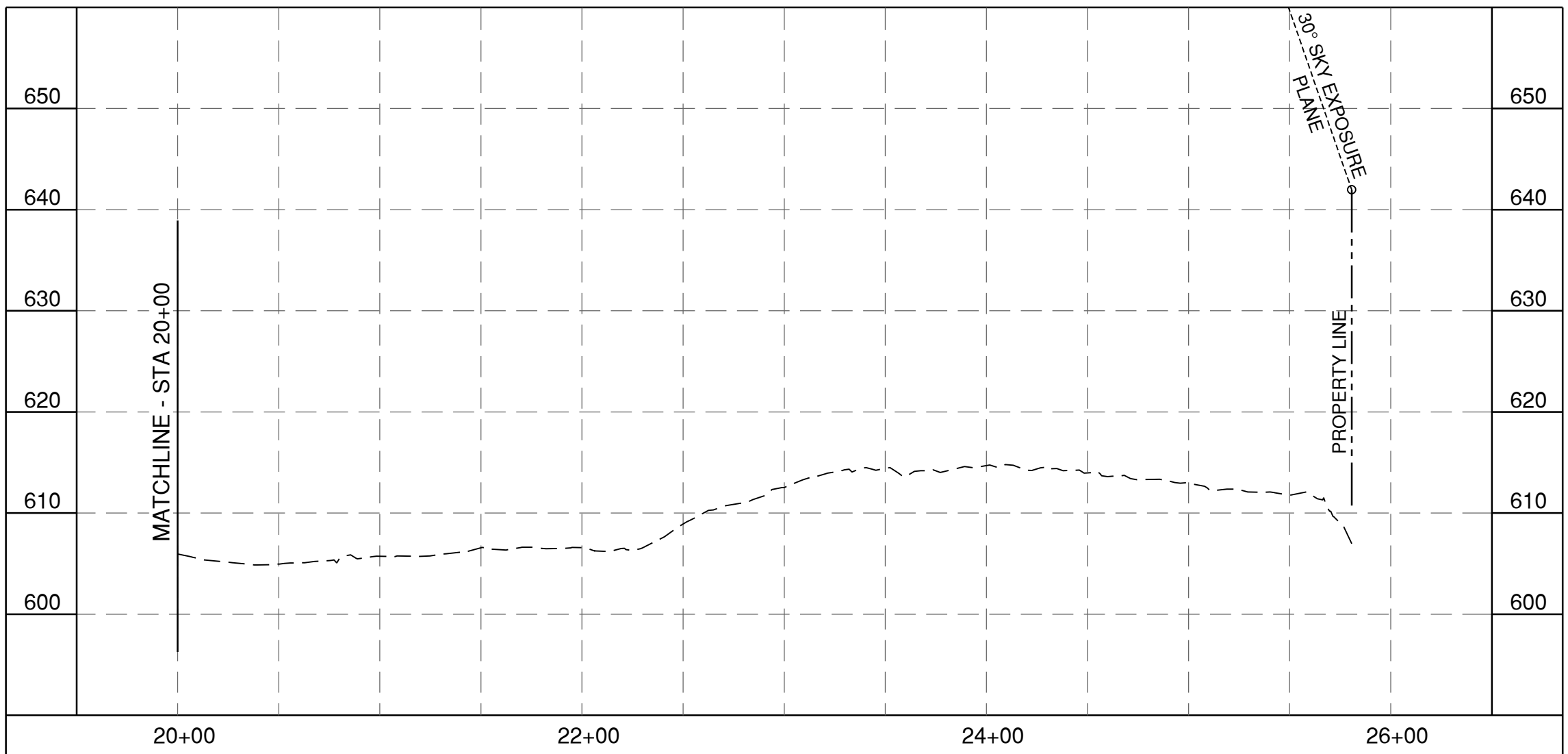
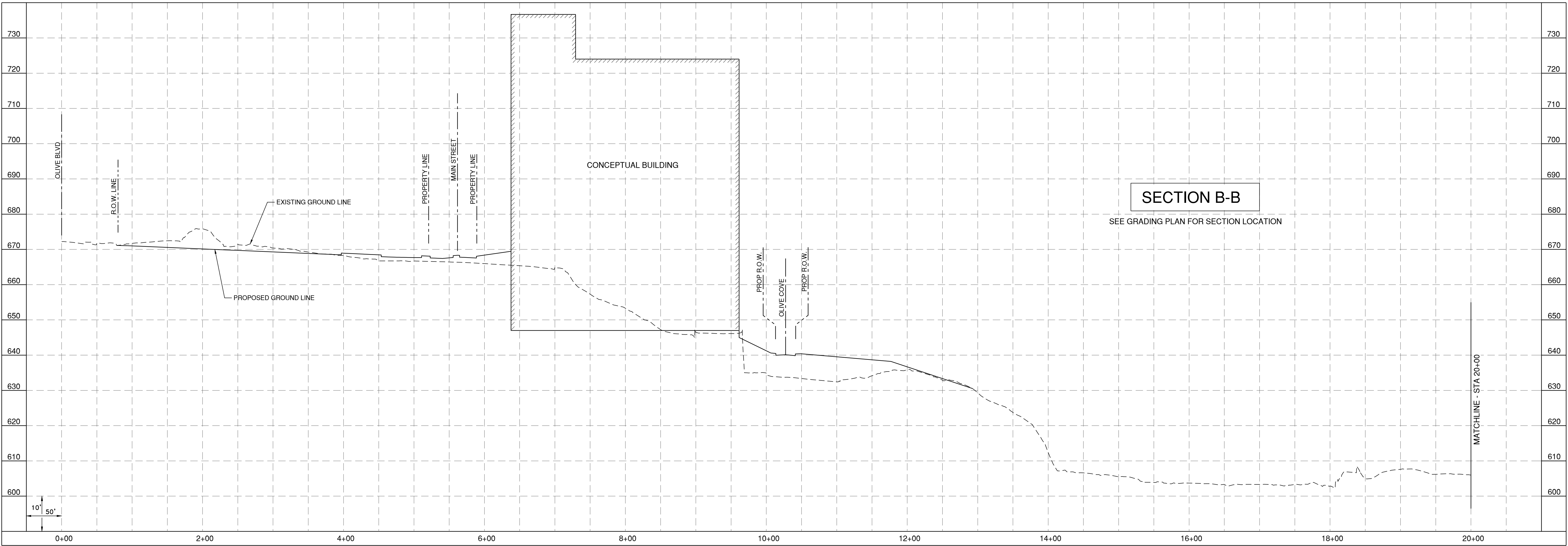
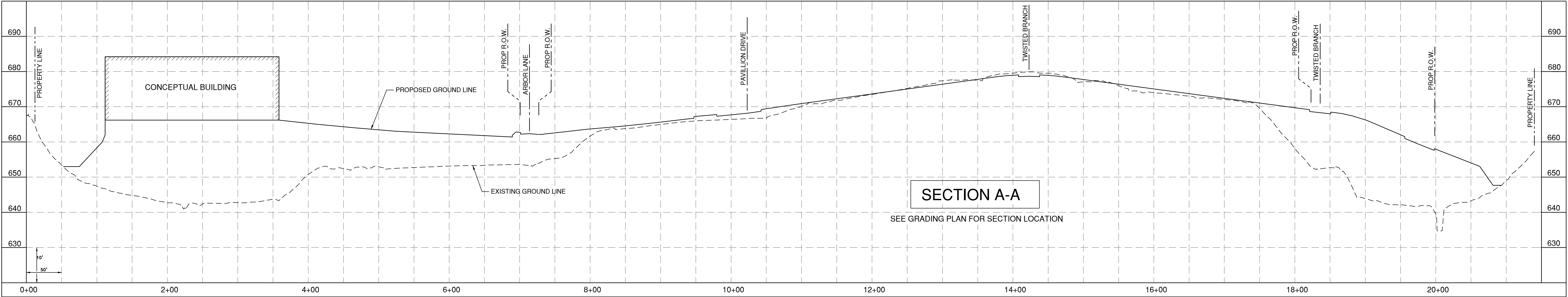
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PEDESTRIAN PLAN

C-108

SHEET - OF --

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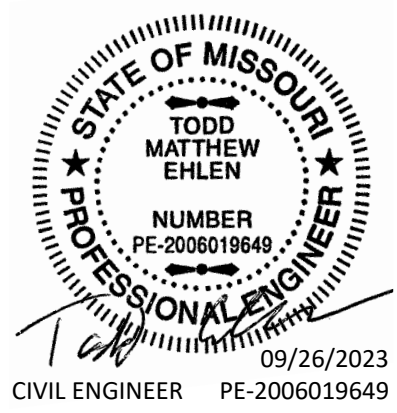
PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK	DATE	DESCRIPTION
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CAD DWG FILE:	ISITE-CONCEPT-PLAN.DWG	
DESIGNED BY:	TME/JFM	
DRAWN BY:	JFM	
CHECKED BY:	CJS	
APPROVED BY:	---	
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SHEET TITLE

SITE SECTIONS

C-109

SHEET - OF --



ARCHITECTURAL SITE PLAN

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Date: Monday, September 23, 2023 11:41:13 AM

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
------	------	-------------

PROJECT NO:	22478.00
CAD DWG FILE:	GRAY RENDERINGS A.DWG
DESIGNED BY:	TDH/EKP
DRAWN BY:	TDH
CHECKED BY:	
APPROVED BY:	
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SHEET TITLE

ARCH SITE PLAN

A-101

SHEET OF

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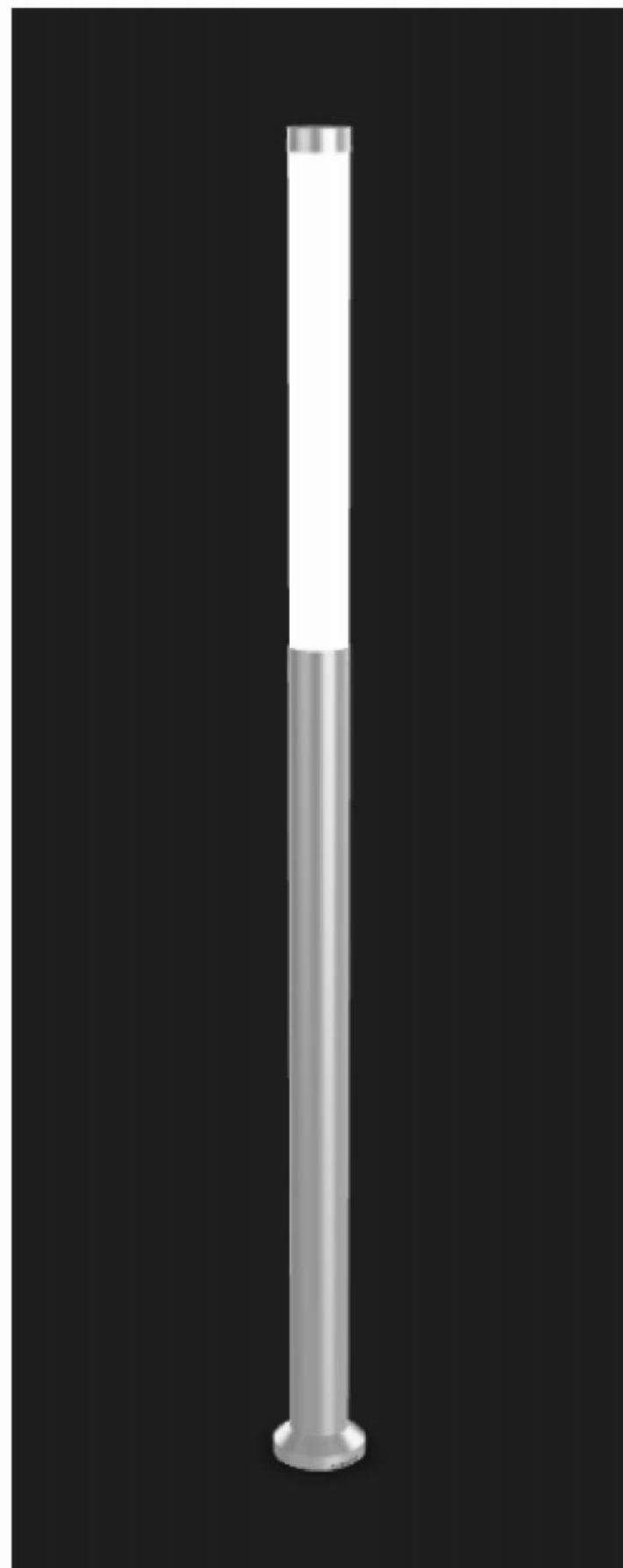
SHEET 2 OF 6

Conceptual renderings are for illustrative purposes only and final renderings will be submitted as part of the Site Development Plan application for each phase.

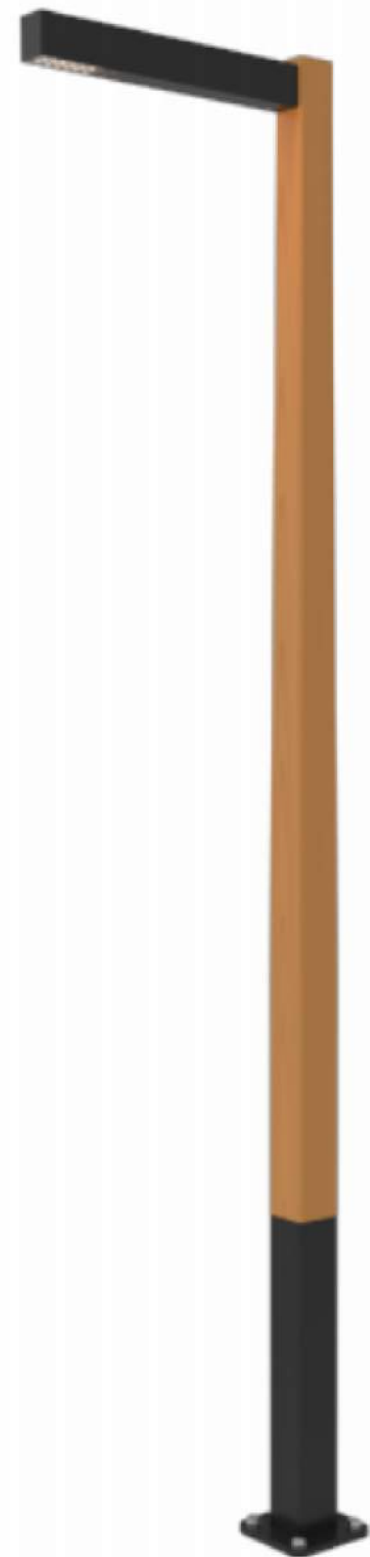
TYPE A1/A2



TYPE C1/C2



TYPE B1/B2



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	35	A1	Single	N.A.	0.912	GALN-SA3C-740-U-T3
	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00
CAD DWG FILE: GRAY RENDERINGS A.DWG
DESIGNED BY: TDH/BKP
DRAWN BY: TDH
CHECKED BY:
APPROVED BY:
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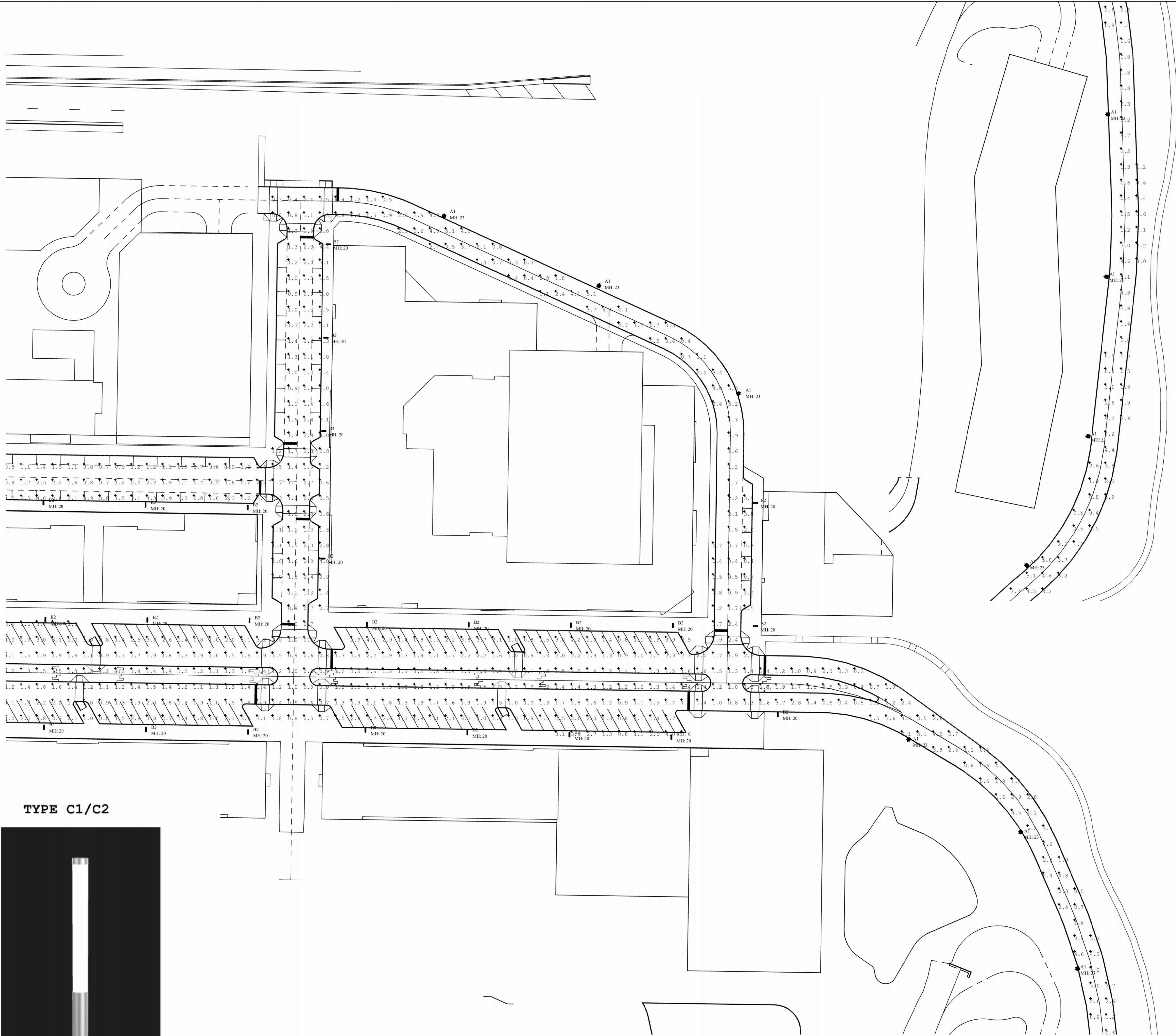
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SITE LIGHTING

A-103.1

SHEET

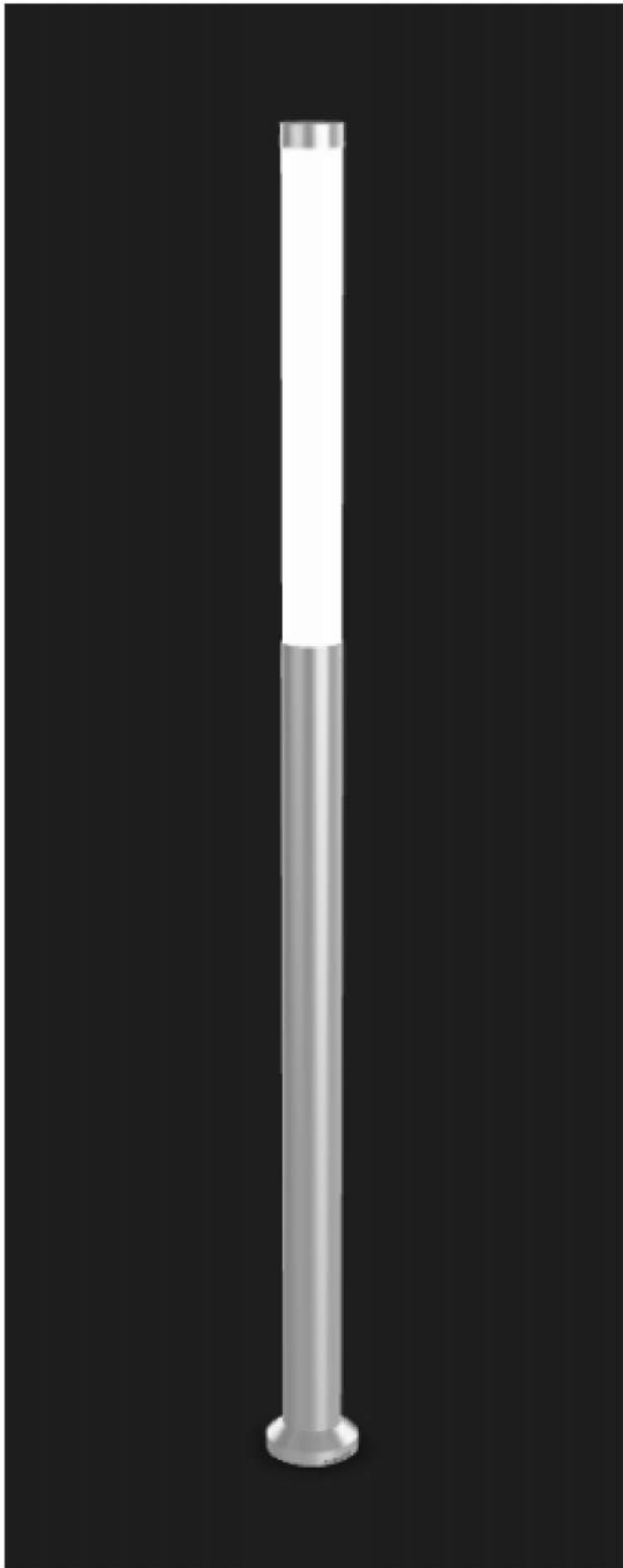
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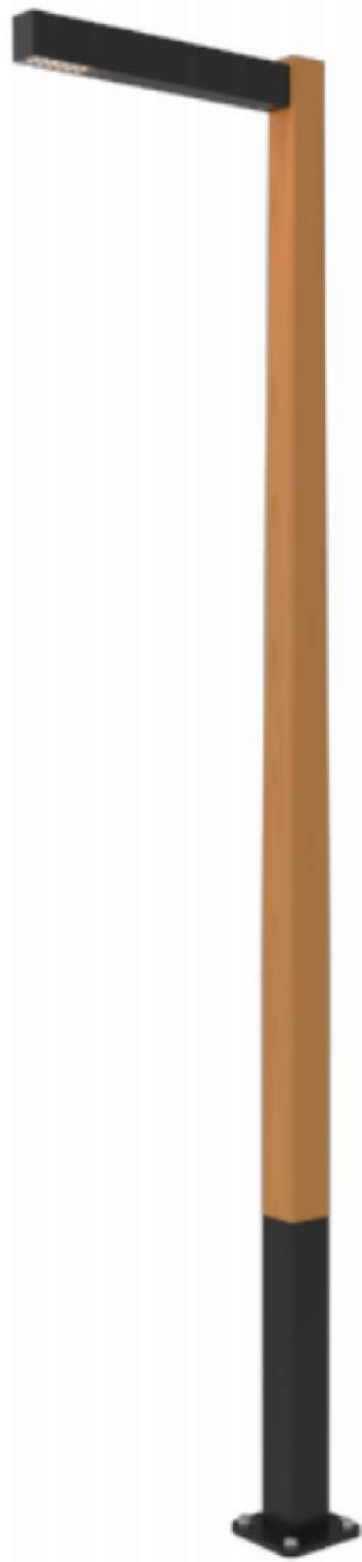
TYPE A1/A2



TYPE C1/C2



TYPE B1/B2



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

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	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL-3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00
CAD DWG FILE: GRAY RENDERINGS A.DWG
DESIGNED BY: TDH/BKP
DRAWN BY: TDH
CHECKED BY:
APPROVED BY:
COPYRIGHT: GRAY DESIGN GROUP, INC. 2023

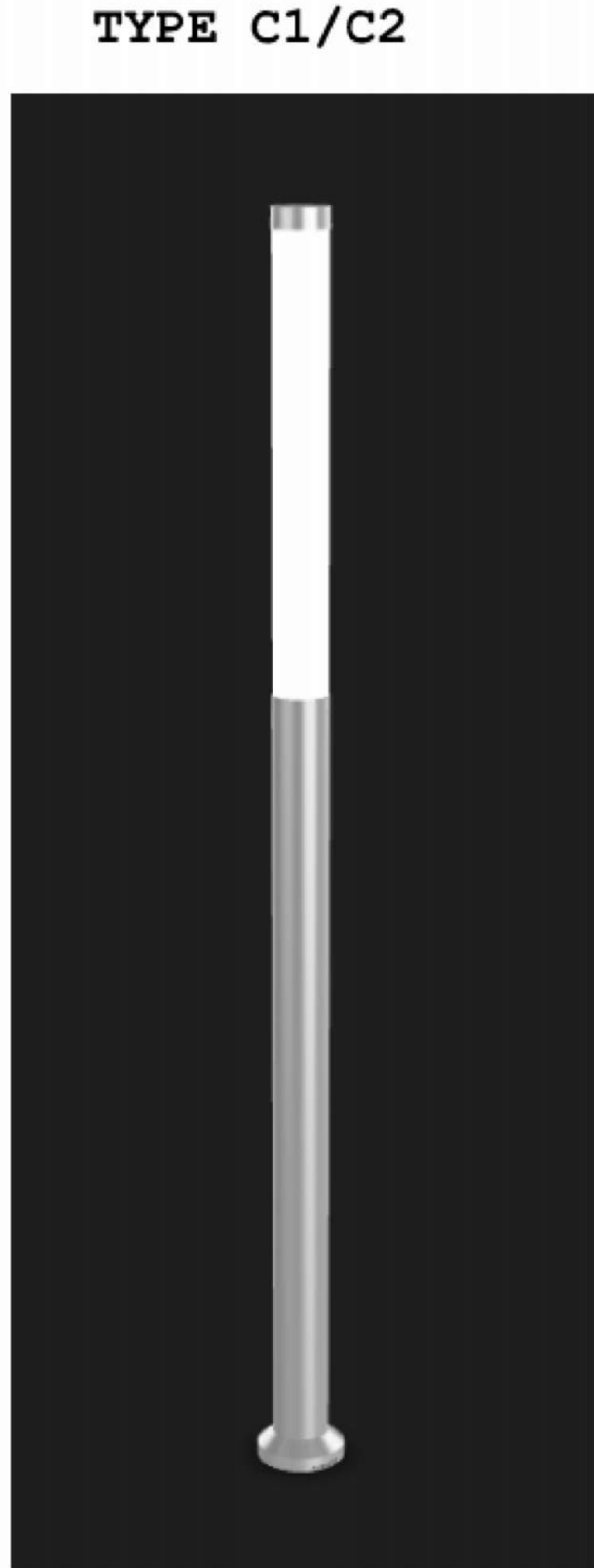
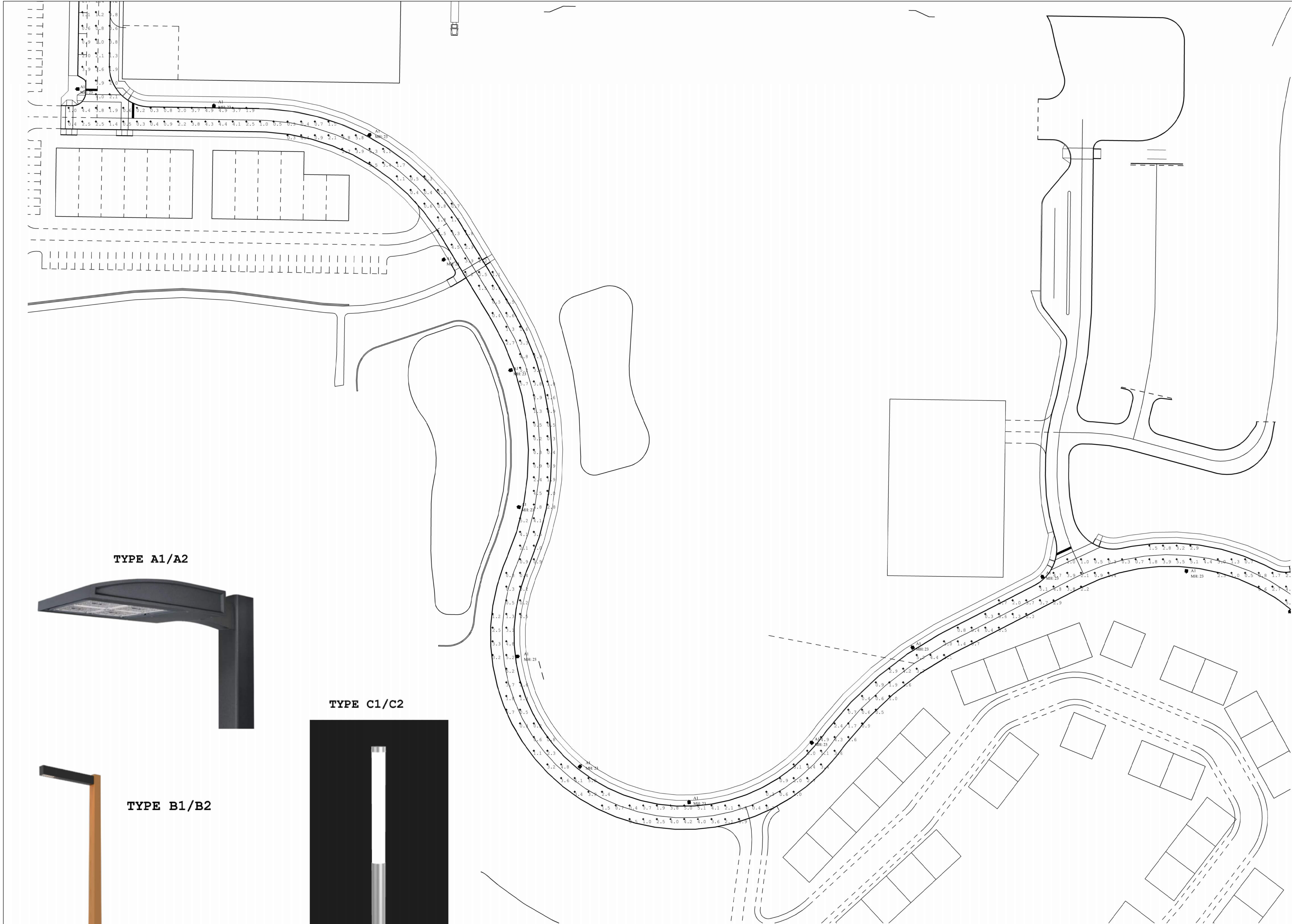
SHEET TITLE

SITE LIGHTING

A-103.2

SHEET

OF



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

Luminaire Schedule						
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	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00

CAD DWG FILE: GRAY RENDERINGS A.DWG

DESIGNED BY: TDH&KP

DRAWN BY: TDH

CHECKED BY:

APPROVED BY:

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SHEET TITLE

SITE LIGHTING

A-103.3

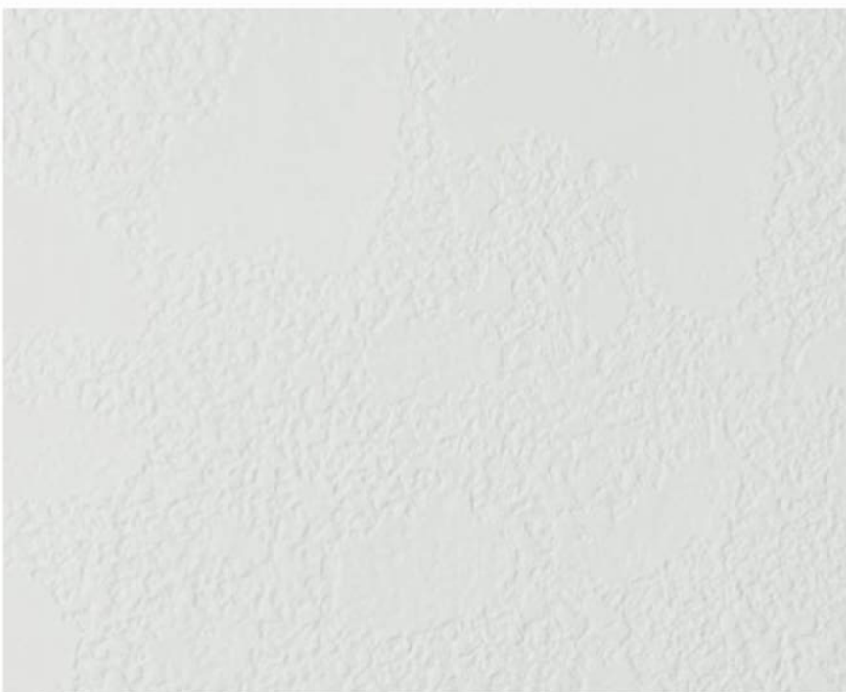
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OF

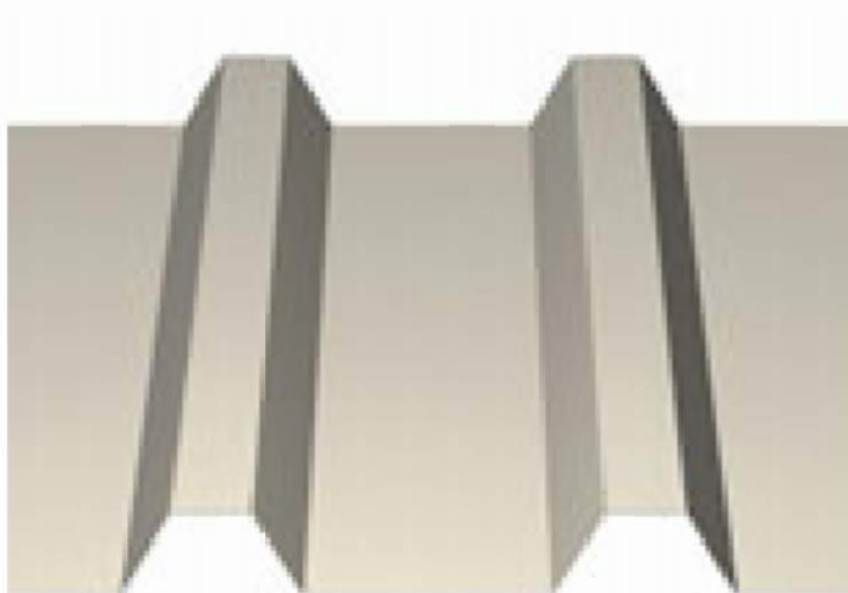




FIBER CEMENT PANEL



FIBER CEMENT PANEL



METAL PANEL



METAL PANEL



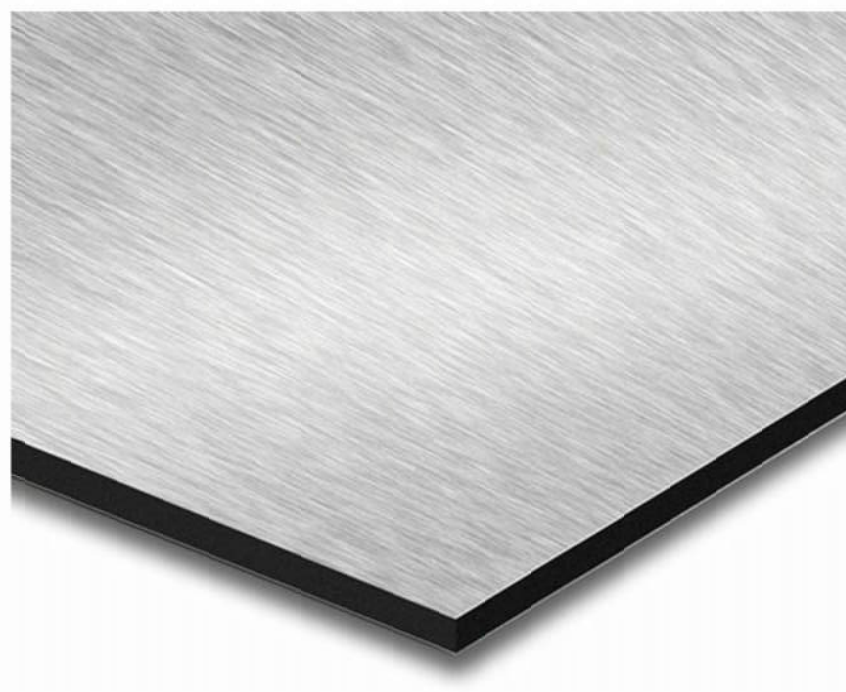
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STONE



COMPOSITE METAL PANEL



COMPOSITE METAL PANEL



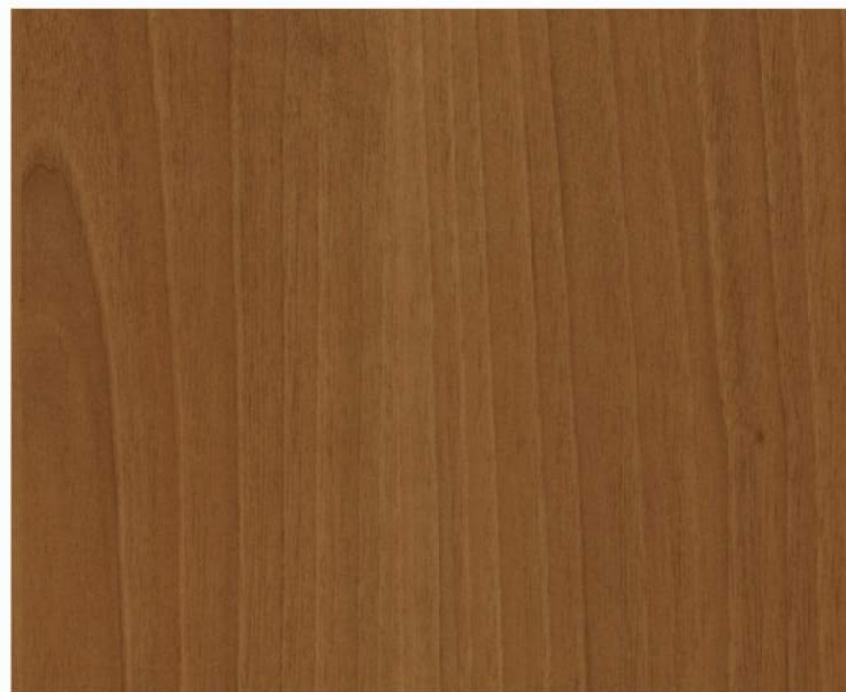
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BRICK



BRICK



WOOD PHENOLIC PANEL

ARCHITECTURAL MATERIALS



EXPOSED AGGREGATE SURFACES



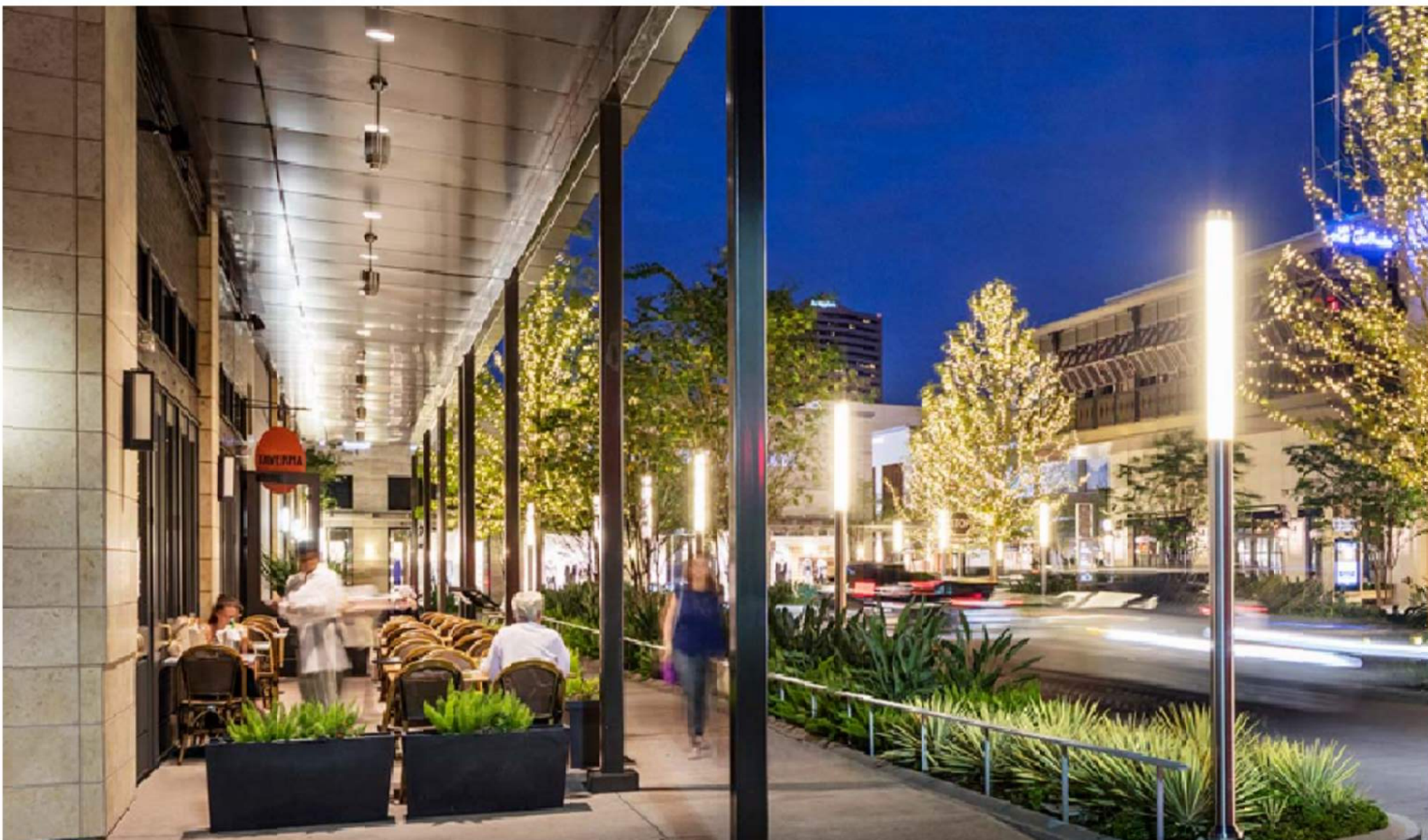
PAVERS



PLANTERS



BENCHES



LANDSCAPE RAILS

SITE FURNISHINGS AND MATERIALS

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD



MARK	DATE	DESCRIPTION
PROJECT NO:	22478.00	
CAD DWG FILE:	GRAY RENDERINGS A.DWG	
DESIGNED BY:	TDH/BKP	
DRAWN BY:	TDH	
CHECKED BY:		
APPROVED BY:		
COPYRIGHT:	GRAY DESIGN GROUP, INC. 2023	

SHEET TITLE

MATERIALS

A-105

SHEET 5 OF 6



VIEW LOOKING WEST DOWN MAIN STREET

P:\m\1030081125715 - Bayview West Masterplanning\5-SD\ACAD\Zoning Documents\Gray Renderings A.dwg
Date: Wednesday, August 9, 2023 10:05:57 AM

Note:
Conceptual Elevations are for illustrative purposes only and final elevations will be submitted as part of the Site Development Plan application for each phase.

PREPARED BY:

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296
CONSULTANTS:

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD

OLIA VILLAGE
THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
PROJECT NO:	22478.00	
CAD DWG FILE:	GRAY RENDERINGS A.DWG	
DESIGNED BY:	TDH/BKP	
DRAWN BY:	TDH	
CHECKED BY:		
APPROVED BY:		
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SHEET TITLE		
RENDERED VIEW		
A-106		
SHEET	6	OF 6

P:\m\1030081125715 - Bayview West Masterplanning\5-SD\ACAD\Zoning Documents\Gray Renderings A.dwg

Page 60 of 246



GENERAL NOTE
1. TREES SHOWN TO BE REMOVED AND TO REMAIN ARE BASED ON CONCEPTUAL SITE DESIGN AND GRADING DRAWINGS DATED 9/13/23 AND ARE SUBJECT TO CHANGE

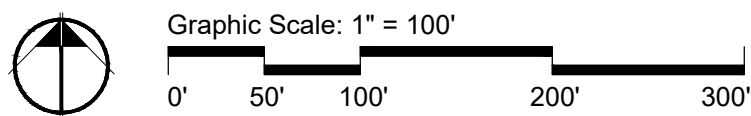
LEGEND

-  TREE OR TREE MASS TO BE REMOVED (50%)
-  TREE OR TREE MASS TO REMAIN (50%)

NOTE:
TREE SYMBOLS REPRESENT ONE 6" OR LARGER DIA. TREE. SOME TREE MASSES TOO DENSE TO SURVEY INDIVIDUAL TREES. QUANTITY OF TREES IN THESE MASSES ESTIMATED BASED ON DENSITY OF SURVEYABLE WOODED AREAS.

A TREE PRESERVATION PLAN

SCALE: 1"=100'



NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE LANDSCAPE ARCHITECT.



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
4	9/26/23	LANDSCAPE CONCEPT PLANS
3	9/13/23	LANDSCAPE CONCEPT PLANS
2	8/11/23	LANDSCAPE CONCEPT PLANS
1	7/21/23	LANDSCAPE CONCEPT PLANS

PROJECT NO: 23095201-00
CAD DWG FILE: 21585.01_SHEETS_GENERAL.DWG
DESIGNED BY: WH
DRAWN BY: MB/ZTS
CHECKED BY: BR
APPROVED BY: BR
COPYRIGHT: CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE
TREE PRESERVATION PLAN

LD-100

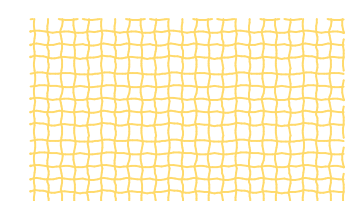
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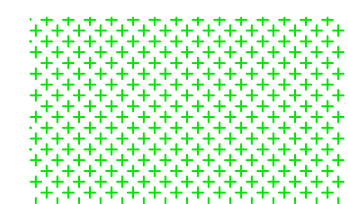
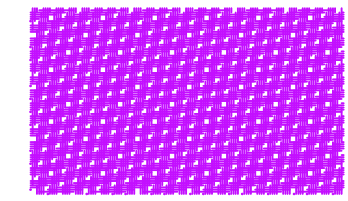
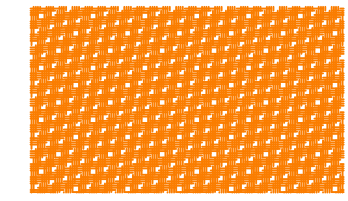
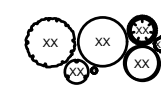


Call Before you DIG
TOLL FREE
1-800-344-7483
MISSOURI ONE-CALL SYSTEM INC.
MODOT (314) 340-4100

LEGEND



EXISTING VEGETATION

TURF GRASS
SPECIES TO BE DETERMINED BASED ON
LOCAL SOIL AND SITE CONDITIONSORNAMENTAL LANDSCAPE PLANTINGS
COMBINATION OF SHRUB, PERENNIAL, AND GROUNDCOVER
SPECIES ADAPTED TO REGIONAL CLIMATE AND SITE CONDITIONS.
NATIVE PLANT MATERIAL TO BE UTILIZED WHERE APPROPRIATE.
39NORTH GREAT STREETS PLAN PLANT PALETTE WILL BE USED AS
A REFERENCE WHEN DETERMINING FINAL PLANT MATERIALBUFFER PLANTINGS
PLANTING BUFFER TO CONSIST OF COMBINATION
OF EVERGREEN TREES AND SHRUBSEXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY
VEGETATION TO REMAIN

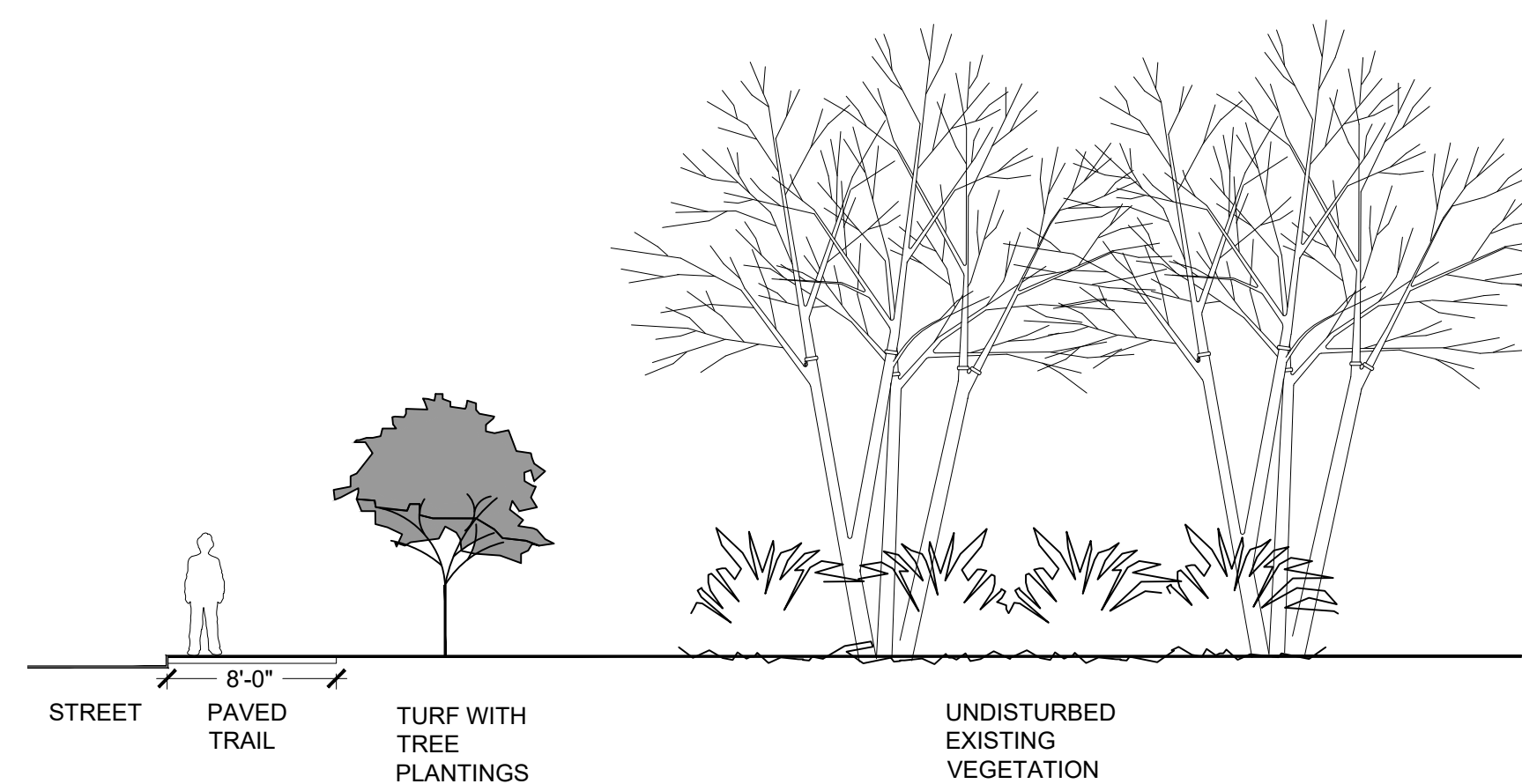
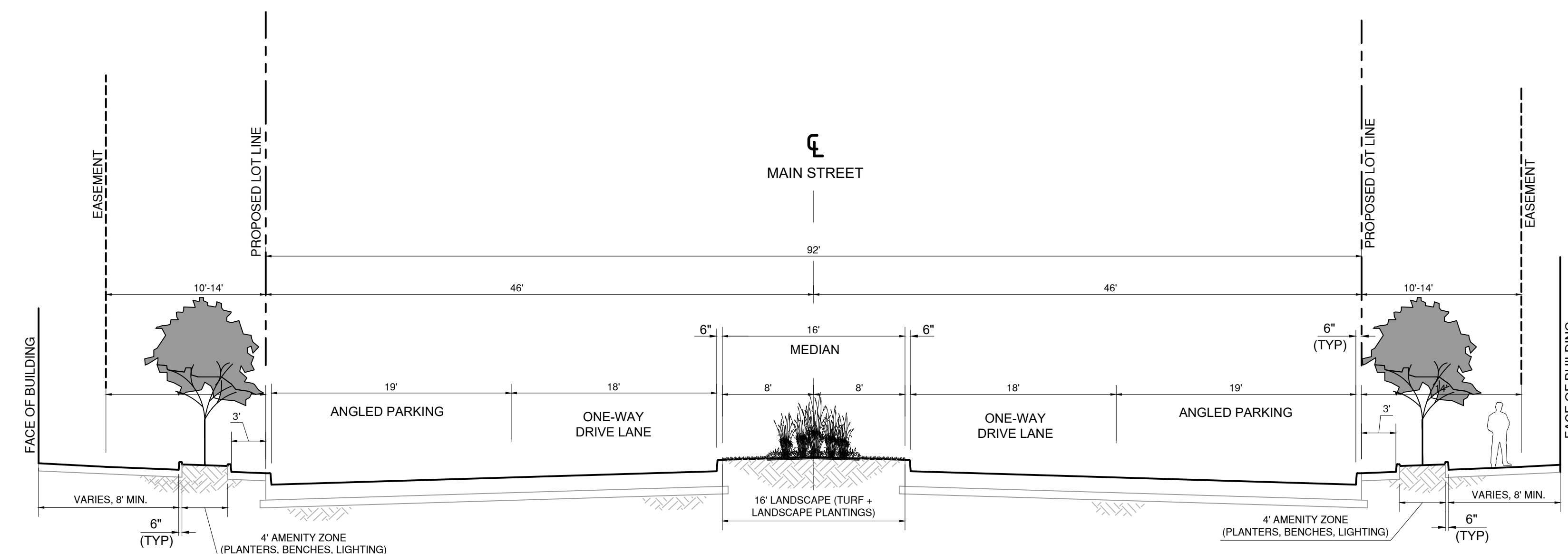
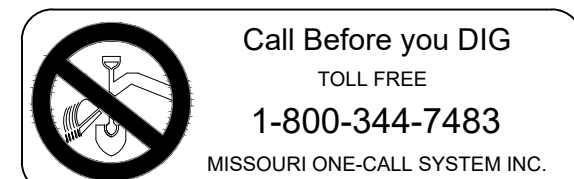
PROPOSED TREES



EXISTING TREES TO REMAIN

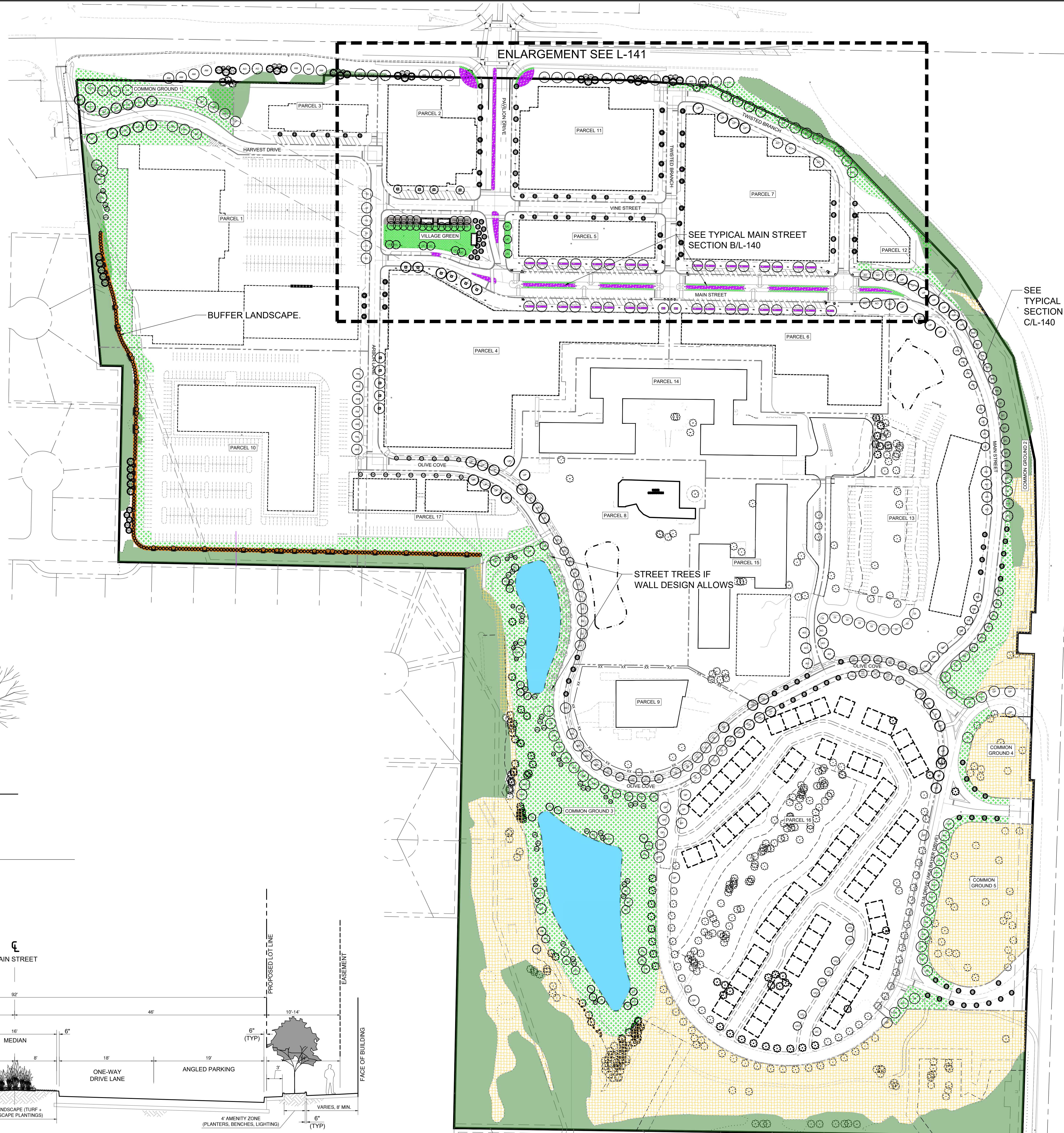
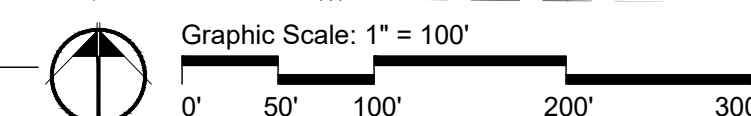
NOTES

1. TREES AND LIGHTING WITHIN CITY OF ST. LOUIS EASEMENT REQUIRES CITY APPROVAL
2. ACTUAL PLANTING AND LIGHTING DESIGN MAY VARY FROM THESE CONCEPT PLANS
3. PROPOSED LANDSCAPING MATERIALS AND LAYOUT SHOWN IN MODOT RIGHT-OF-WAY ARE SUBJECT TO MODOT REVIEW AND APPROVAL, AS WELL AS A MAINTENANCE AGREEMENT BETWEEN MODOT AND OWNER.
4. STREET TREES SHOWN ALONG PAVILION DRIVE, TWISTED BRANCH DRIVE, AN VINE STREET MAY REQUIRE ADA ACCESSIBLE TREE GRATES OR TREE PLANTING WELLS, DEPENDING ON AVAILABLE SIDEWALK WIDTH FROM BACK OF CURB TO BUILDING FACADE IN ORDER TO MAINTAIN ACCESSIBLE WALKING PATHS FREE OF OBSTRUCTIONS.
5. IRRIGATION WILL BE PROVIDED TO NEW LANDSCAPE BEDS AND TO STREET TREES INSTALLED WITHIN MAIN STREET AREA AND PARK. A WATER LINE WILL BE INSTALLED TO THE MEDIAN IN OLIVE WEST OF PAVILION.
6. ALL DISTURBED AREAS NOT OTHERWISE IMPROVED SHALL RECEIVE SEEDED TURF GRASS.
7. ALL LANDSCAPE SHALL COMPLY WITH THE REQUIREMENTS DETAILED IN ATTACHMENT B.

C TYPICAL SECTION
SCALE: 1"=8'B TYPICAL SECTION - MAIN STREET (MEDIAN SECTION)
SCALE: 1"=8' HORIZONTAL, 1"=4' VERTICAL

MODOT (314) 340-4100

ENLARGEMENT SEE L-141

A OVERALL PLANTING PLAN
SCALE: 1"=100'NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN EVENTS OF
DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR
SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE
DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS
SHALL BE IMMEDIATELY DIRECTED TO THE LANDSCAPE ARCHITECT.

PREPARED BY:

ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.57009/26/23
Bonnie C. Roy
Landscape Architect MO
#LA-000014783PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
4	9/26/23	LANDSCAPE CONCEPT PLANS
3	9/13/23	LANDSCAPE CONCEPT PLANS
2	8/11/23	LANDSCAPE CONCEPT PLANS
1	7/21/23	LANDSCAPE CONCEPT PLANS

PROJECT NO.	23090201-00
CAD DWG FILE:	21585_01_SHEETS_PLANTING.DWG
DESIGNED BY:	WH
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

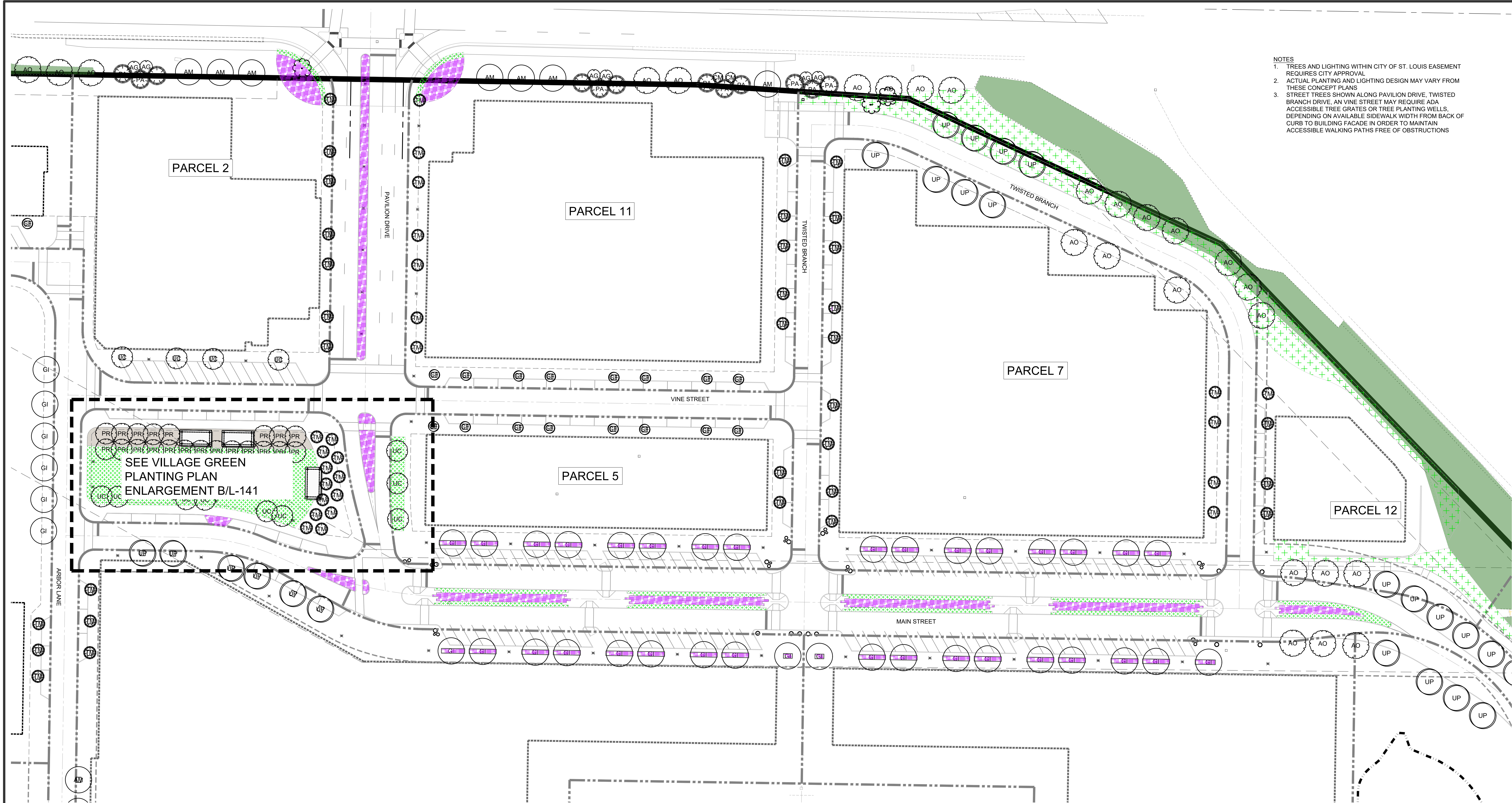
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OVERALL CONCEPT
PLANTING PLAN

L-140

SHEET

OF

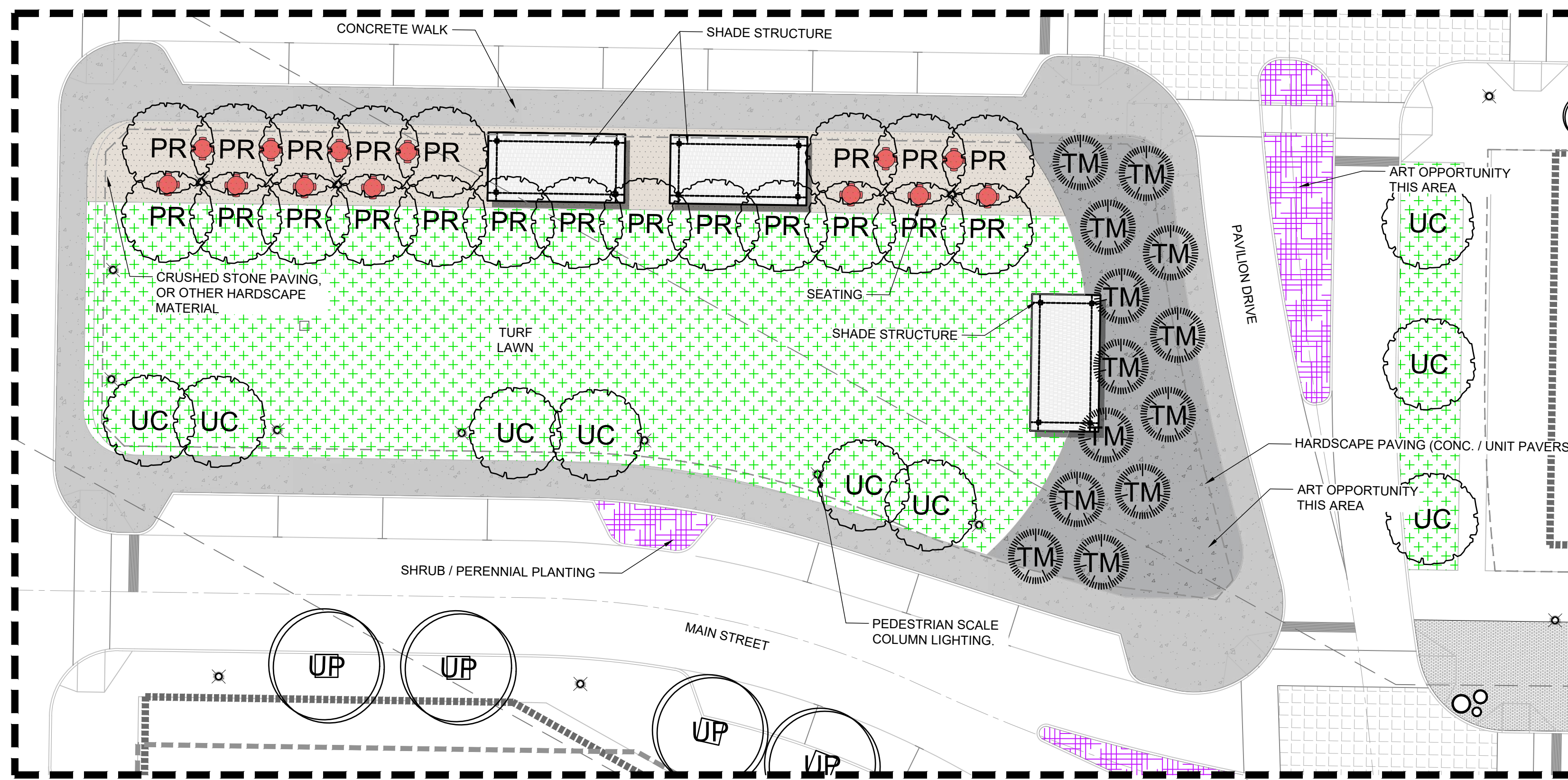


A MAIN STREET PLANTING PLAN
SCALE: 1"=40'

LEGEND

- EXISTING VEGETATION
- TURF GRASS
SPECIES TO BE DETERMINED BASED ON
LOCAL SOIL AND SITE CONDITIONS
- ORNAMENTAL LANDSCAPE PLANTINGS
COMBINATION OF SHRUB, PERENNIAL, AND GROUNDCOVER
SPECIES ADAPTED TO REGIONAL CLIMATE AND SITE CONDITIONS.
NATIVE PLANT MATERIAL TO BE UTILIZED WHERE APPROPRIATE.
39NORTH GREAT STREETS PLAN PLANT PALETTE WILL BE USED AS
A REFERENCE WHEN DETERMINING FINAL PLANT MATERIAL
- EXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY
VEGETATION TO REMAIN
- PROPOSED ORNAMENTAL AND CANOPY TREES
- EXISTING TREES TO REMAIN

- NOTES**
- TREES AND LIGHTING WITHIN CITY OF ST. LOUIS EASEMENT REQUIRES CITY APPROVAL
 - ACTUAL PLANTING AND LIGHTING DESIGN MAY VARY FROM THESE CONCEPT PLANS
 - PROPOSED LANDSCAPING MATERIALS AND LAYOUT SHOWN IN MODOT RIGHT-OF-WAY ARE SUBJECT TO MODOT REVIEW AND APPROVAL, AS WELL AS A MAINTENANCE AGREEMENT BETWEEN MODOT AND OWNER.
 - STREET TREES SHOWN ALONG PAVILION DRIVE, TWISTED BRANCH DRIVE, AN VINE STREET MAY REQUIRE ADA ACCESSIBLE TREE GRATES OR TREE PLANTING WELLS, DEPENDING ON AVAILABLE SIDEWALK WIDTH FROM BACK OF CURB TO BUILDING FACADE IN ORDER TO MAINTAIN ACCESSIBLE WALKING PATHS FREE OF OBSTRUCTIONS
 - IRRIGATION WILL BE PROVIDED TO NEW LANDSCAPE BEDS AND TO STREET TREES INSTALLED WITHIN MAIN STREET AREA AND PARK



B VILLAGE GREEN PLANTING PLAN
SCALE: 1"=20'

- NOTES**
- TREES AND LIGHTING WITHIN CITY OF ST. LOUIS EASEMENT REQUIRES CITY APPROVAL
 - ACTUAL PLANTING AND LIGHTING DESIGN MAY VARY FROM THESE CONCEPT PLANS
 - STREET TREES SHOWN ALONG PAVILION DRIVE, TWISTED BRANCH DRIVE, AN VINE STREET MAY REQUIRE ADA ACCESSIBLE TREE GRATES OR TREE PLANTING WELLS, DEPENDING ON AVAILABLE SIDEWALK WIDTH FROM BACK OF CURB TO BUILDING FACADE IN ORDER TO MAINTAIN ACCESSIBLE WALKING PATHS FREE OF OBSTRUCTIONS

PREPARED BY:

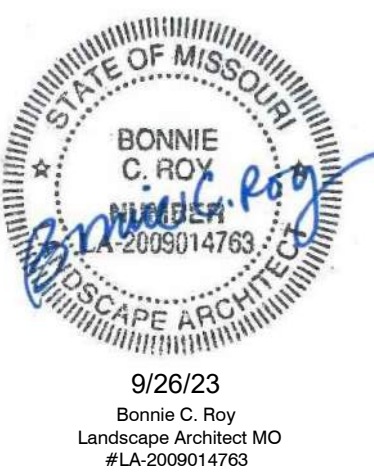


ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
4	9/26/23	LANDSCAPE CONCEPT PLANS
3	9/13/23	LANDSCAPE CONCEPT PLANS
2	8/11/23	LANDSCAPE CONCEPT PLANS
1	7/21/23	LANDSCAPE CONCEPT PLANS

PROJECT NO.: 2309201-00
CAD DWG FILE: 21585_01_SHEETS_PLANTING.DWG
DESIGNED BY: WH
DRAWN BY: MB/ZTS
CHECKED BY: BR
APPROVED BY: BR
COPYRIGHT: CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE

**ENLARGEMENT
PLANTING PLANS**

L-141

SHEET

OF

NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE LANDSCAPE ARCHITECT.

ATTACHMENT B

All provisions of the City of Creve Coeur, MO City Code shall apply to this Planned Mixed-Use Development (PMD) District (subject to the terms thereof) except as specifically modified herein.

I SPECIFIC CRITERIA

A. PERMITTED USES

Permitted Uses within the PMD shall be as shown on Table A at the end of this Attachment B. The permitted uses are further broken down by the following sub-district categories which have been identified on the approved Site Concept Plan and further defined below in this Attachment B.

1. Sub-District Category A – Main Street Development
2. Sub-District Category B – Mixed-Used Development
3. Sub-District Category C – General Office Development
4. Sub-District Category D – Residential Development

B. SUB-DISTRICT CATEGORY STANDARDS

Within the PMD, four (4) sub-districts categories have been identified to provide varying levels of regulations. The location of each sub-district shall be as shown on the approved Site Concept Plan and have each been further defined below.

1. CATEGORY A – “Main Street” Development Pattern Building placement:
 - Building volume: Buildings may be constructed not to exceed (8) stories or (100) feet measured from the primary sidewalk entrance level. Additional lower levels accessed from the side or rear are permitted.
 - Building floor heights: Sidewalk commercial level shall be 12-30 feet, upper-level office or residential shall be 9-30 feet.
 - Projecting façade elements: Awnings, canopies, balconies, colonnades are permitted.
 - Bay windows permitted on upper stories.
 - Parking: Shall not be permitted as a primary use. Structured, public surface, or on-street parking permitted. Private off-street surface parking prohibited.
2. CATEGORY B – Mixed Use Development Pattern Building placement:
 - Building volume: Buildings may be constructed not to exceed (5) stories or (60) feet measured from the primary sidewalk entrance level. Additional lower levels accessed from the side or rear are permitted.
 - Building floor heights: First floor level shall be 12-30 feet; upper levels shall be 9-30 feet.
 - Projecting façade elements: Awnings, canopies, balconies, colonnades, porte-cochères are permitted.
 - Bay windows permitted on upper stories.
 - Parking: Structured, public surface, on-street parking, private off-street parking permitted.

3. CATEGORY C – General Office Development Pattern Building Placement:

- Building Volume: Buildings may be constructed not to exceed (4) stories or (70) feet measured from the primary building entrance, except for Lots 10 and 17, as identified on the Site Concept Plan, the height of buildings cannot exceed (3) stories or (50) feet. Additional lower levels accessed from the side or rear are permitted.
- Building Floor Heights: All floor levels shall be 12-30 feet.
- Projecting Façade Elements: Awnings, canopies, balconies, colonnades, porte-cocheres are permitted.
- Outdoor Space: Outdoor amenity space such as patios or plazas serving building occupants are permitted.
- Parking: Structured, public surface, on-street parking, private off-street parking permitted.

4. CATEGORY D – Residential Development Pattern Building placement:

- ~~None~~ Building Volume: Attached single-family dwellings may be constructed not to exceed 3 stories or (40) feet in height; detached single family dwellings may be constructed not to exceed 2 ½ stories or (35) feet in height.

C. DIMENSIONAL REGULATIONS

1. Maximum Site Coverage.

- a. Maximum site coverage shall be determined globally for the entire PMD District and shall not be calculated on an individual site/lot or sub-district basis. The total acreage used to define this calculation shall be the total PMD area less any land that has been dedicated for use as public ROW.
- b. The amount of gross site area covered by buildings and structures, surface parking, pavement for automobile circulation or permitted exterior business services, storage, merchandise display, repair or processing shall not exceed 70% of the site.

2. Maximum Floor Area Ratio (FAR).

- a. Floor Area Ratio shall be defined as the gross leasable floor area of all commercial buildings and all multifamily dwellings, and the dwelling unit floor area of all other residential buildings on any lot divided by the land area of such lots. Parking garages shall not be included in the Floor Area Ratio calculation.
- b. Maximum floor area ratio shall be determined globally for the entire PMD District and shall not be calculated on an individual site/lot or sub-district basis. The total acreage used to define this calculation shall be the total PMD area less any land that has been dedicated for use as public ROW.
 - i. The Maximum Floor Area Ratio for the entire PMD District shall not exceed 0.70.

3. Lot Size Requirements:

- a. Minimum Lot Area. The permitted use of any given site or lot shall be determined by the size of the site or lot under single ownership or other common legal control as prescribed in Section 405.370(B).
- b. CATEGORY A – “Main Street” Sub-district:
 1. Minimum Lot Area. One-half (1/2) acre.
 2. Minimum Lot Width. One Hundred (100) feet.
 3. Minimum Lot Depth. One Hundred (100) feet.
- c. CATEGORY B – Mixed Use Sub-district:
 1. Minimum Lot Area. One-half (1/2) acre.
 2. Minimum Lot Width. Seventy-Five (75) feet.
 3. Minimum Lot Depth. One Hundred Fifty (150) feet.
- d. CATEGORY C – General Office Sub-district:
 1. Minimum Lot Size. One-half (1/2) acre.
 2. Minimum Lot Width. Seventy-Five (75) feet.
 3. Minimum Lot Depth. One Hundred Fifty (150) feet.
- e. CATEGORY D – Residential Sub-district:
 1. Minimum Lot Size. Eight hundred (800) square feet per [unit/lot](#).
 2. Minimum Lot Width. Fifteen (15) feet.
 3. Minimum Lot Depth. Forty (40) feet.

D. BULK REGULATIONS

1. Setback and Building Line Requirements within the Development (Internal):

- a. CATEGORY A – “Main Street” Sub-district:
 1. Minimum Front Yard. Zero (0) feet.
 2. Minimum Side Yard. Zero (0) feet.
 3. Minimum Rear Yard. Zero (0) feet.
 4. Buffer Yard. Not applicable internally.
- b. CATEGORY B – Mixed Use Sub-district:
 1. Minimum Front Yard. Zero (0) feet.
 2. Minimum Side Yard. Zero (0) feet.
 3. Minimum Rear Yard. Zero (0) feet.
 4. Buffer Yard. Not applicable internally.
- c. CATEGORY C – General Office Sub-district:
 1. Minimum Front Yard. Zero (0) feet.
 2. Minimum Side Yard. Zero (0) feet.
 3. Minimum Rear Yard. Zero (0) feet.
 4. Minimum Distance Between Buildings or Unit Clusters. Zero (0) feet.
 5. Buffer Yard. Not applicable internally.

d. CATEGORY D – Residential Sub-district:

1. Minimum Front Yard. Five (5) feet.
2. Minimum Side Yard. None or seven and a Half (7.5) feet.
3. Minimum Rear Yard. Five (5) feet.
4. Minimum Distance Between Buildings or Unit Clusters. Fifteen (15) feet.
5. Buffer Yard. Not applicable internally.

2. Buffer, Setback and Building Line Requirements to Adjacent Zoning Parcels (External to the PMD District):

a. Any tract of land site abutting or adjoining a commercial development shall not require a buffer yard. Any tract of land site abutting or adjoining a single-family residential development shall only be required to meet the following requirements below:

- ii. Provide a forty (40) foot buffer yard on all sides of the PMUD development that abut a single-family development, except if the abutting or adjoining proposed uses are residential of equal or lesser density relative to the existing residential uses then such buffer yard shall be twenty-five (25) feet. The buffer yard shall otherwise be as defined in amended Section 405.390 of the City of Creve Coeur's zoning ordinance.
- iii. No new residential building may be located closer than fifteen (10) feet to any property line or any required buffer yard.
- iv. No new commercial building may be located closer than forty (35) feet to any required buffer yard.

b. Setback and Building Line Requirements along Right-of-Ways:

- i. In every instance, the first ten (10) feet of the front yard setback measured from the right-of-way shall be provided with and maintained with sidewalks and/or landscaping including, but not limited to, deciduous street trees at regular intervals as shown on the concept plan.
- ii. No building or structure shall be closer than ten (10) feet when abutting a non-residential zoned property.
- iii. No maximum building line setback shall be enforced.

c. Other CATEGORY D Regulations:

1. Maximum number of units per acre. Twenty (20).
2. Minimum dwelling unit floor area. Seven hundred fifty (750) square feet/unit.
3. Garages. No district restrictions will be required on garage facing, recessing, architectural details, or street facing frontage.

E. PARKING AND LOADING REQUIREMENTS

1. Parking Requirements:

- a. Required parking for this entire PMD District shall be determined globally for the entire District and shall not be calculated on an individual site/lot or sub-district basis; and shall be calculated as follows:
 - i. Required parking shall be calculated cumulatively per phase of development (as designated on the approved Phase Plan) based upon the sum of the square footage of individual land uses at the rate required by the City of Creve Coeur Code, less a fifteen percent (15%) reduction in the total number of spaces. Parking within the Residential Development District (CATEGORY D) shall not be provided with a fifteen percent (15%) reduction in the total number of spaces and shall adhere to the rate required by the City of Creve Coeur Code.
 - ii. Required parking shall be allowed on surface parking lots, parking garages, and on-street locations.
 - iii. No off-street surface parking locations will be allowed in any buffer yard or within the 10' yard setback along Right-of-Ways. Off-street surface parking locations shall be allowed in all other yards or setbacks within the development.
 - iv. Joint Parking Facilities. In the case of mixed-use buildings, the parking spaces required shall be computed separately for each use except as provided in Sections 405.800(G)(3-4) and 405.820(H)(6)(b).
 - v. On-street parking shall be allowed as approved by the City's Traffic Engineer and said parking shall count towards the required PMD parking noted in (i) above.
 - vi. No individual lot Site Development Plan shall be approved which will result in parking provided at less than the amount set forth in prior paragraphs.

2. Loading Requirements:

- a. Purpose And Intent:
 - i. It is the developers' intent to provide sufficient off-street loading areas and to ensure that such areas are located in a convenient location to the extent feasible. Loading areas shall be provided for trash collection as well as general deliveries.
 - ii. The developer also acknowledges that the complexity of the proposed development will require flexibility in providing loading spaces and zones. The developer shall work with the City to find a balance of meeting the needs of the tenants and lot owners while respecting the safety and aesthetics of the traveling public. This may include actions such as restricting on-street parking during off-peak hours to allow for loading zones within on-street parking spaces to occur during early morning or late evening

hours. The developer shall work with the City to provide loading spaces and zones to meet the needs of the development.

- iii. Loading areas utilized for the location of trash collection or compaction areas may coincide with the required building loading space.

b. Dimensions of Spaces:

- i. Loading spaces, where designated, shall have a minimum dimension of twelve (12) feet width by thirty-five (35) feet length with a vertical clearance of at least fourteen (14) feet as shown on the approved individual lot Site Development Plan. In addition, some uses may require loading zones of larger dimension to accommodate larger tractor-trailers. These zones shall be at least sixty (60) feet in length, as shown on the approved individual lot Site Development Plan.

c. Schedule of Off-Street Loading Spaces:

- i. Loading spaces and zones shall take a shared approach within Category A – Main Street, Category B – Mixed-Use, and Category C – General Commercial sub-districts. The required spaces and zones for each individual use will be determined based upon the sections below with the quantity to be provided for each lot based upon the minimum required for the highest individual use (not cumulative).

- 1. A combination of dedicated loading spaces and shared loading spaces / zones may be used by restricting on street parking during off peak hours to allow for loading spaces or zones within the on-street parking space areas to occur during early morning or late evening hours.
- 2. The required loading spaces shall be calculated based upon the maximum required uses as follows:

a. CATEGORIES A, B & C:

- i. Residential & Transient Residential (Hotels, etc.) Uses. Any building containing more than fifty (50) apartment dwelling / room units shall provide one (1) loading space for each two hundred (200) units or fraction thereof.
- ii. Office Uses. One (1) loading space shall be provided for each such use having greater than 6,000 square feet of gross floor space.
- iii. Non-Residential or Non-Office Uses. The required loading spaces and/or zones shall be calculated upon the following table:

Floor Area (square foot)	Number of Spaces	Number of Zones
0 – 3,000	0	0
3,000 – 24,999	1	0
25,000 – 49,999	0	1
50,000 – 150,000	1	1
Each additional 150,000	1 additional	1 additional

- b. CATEGORY D – Residential Sub-district: No loading spaces or zones shall be required within this sub-district.
- 3. The loading spaces required for Lots 8, 14 & 15 shall be shared. The existing underground tunnel network between the existing buildings to remain will provide access from each building to the existing loading docks on Lot 14. Additional loading spaces & zones may be provided to meet the requirements above on any of the 3 lots and will be shared and accessible from the existing tunnel system.
- 4. The loading spaces and zones shall be provided based upon the approved Site Development Plan for each individual lot.

F. LANDSCAPE AND TREE REQUIREMENTS

- 1. The developer shall adhere to the Resource Protection Standards (Article V) of the City of Creve Coeur Code with the following exceptions:
 - a. Landscaping along Main Street within the City of St. Louis water main easement shall require City of St. Louis Water Department [Approval](#).
 - b. All parking and/or loading spaces adjoining interior public right-of-way shall not be required to be screened.
 - c. In addition to any landscaped front, back or side yard areas required by this or any other Section of the City of Creve Coeur code, a minimum of ten (10) square feet of interior landscaped area shall be provided within the parking lot for each five hundred (500) square feet of paved area within any surface parking lot including parking spaces and driving aisles. The landscaping shall be in one (1) or more areas so as to minimize and reduce the apparent size of parking areas. On-street parking provided within the development shall be exempt from this requirement. Existing surface parking lots to be repurposed as part of this development shall also be exempt from this requirement, even if maintenance is to be considered for said existing lots to remain.
 - d. Landscape plans for each parcel shall be coordinated and consistent with a Landscape Concept Plan for the applicable Category of this ordinance. These plans should enhance the pedestrian experience, complement architectural features, provide shade, and screen utility areas.

- e. All medians greater than 4' in width (3' of plant-able space) within the development are required to be landscaped and irrigated and will be maintained by the developer.
- f. All existing surface parking lots to remain on Lots ~~8~~, 9, ~~13~~, ~~14~~ & 15 shall not be required to meet Article V of the City of Creve Coeur Code. Existing surface parking lots to remain on Lot 13 shall be required to provide additional landscaping where appropriate during the Site Development Plan for that lot.
- g. In order to present a healthy, neat and orderly appearance, all landscaped areas within the Main Street sub-district category, as well as Lots 1 ~~and~~ 3 of the Mixed-Use sub-district category, ~~and~~ the "Park" as identified on the Site Concept Plan (with the exception of back of house and service areas), and Lots 10 and 17 within the General Office sub-district category shall be provided with an installed, operated and maintained underground irrigation system. All other landscaped areas outside of these areas shall be landscaped with plant materials adapted to the region and not requiring irrigation to thrive unless proposed plant selections deem irrigation necessary.
- h. All landscaped areas in parking areas or adjacent to parking areas or loading areas, or that can be encroached upon by a motor vehicle, shall be provided with adequate, vehicular deterrent (such as curb, bollard, wheel stop, or other design alternative to be approved by the Director of Public Works) to restrict the destruction of the landscape areas by vehicles.

G. SIGN REQUIREMENTS

- 1. Individual sign packages shall meet City of Creve Coeur signage ordinances regarding size and location. Style of signage is specifically governed by this performance standard and shall be submitted to the City of Creve Coeur as a sign package. Signs shall be permitted in accordance with a Comprehensive Plan of signage subject to the recommendation of the Planning and Zoning Commission and approval of the City Council in accordance with Section 405.955 of the Creve Coeur Sign Regulations. The Comprehensive Plan ~~effor~~ signage shall show the location, size, height, extent and design of all proposed signs.

H. LIGHT REQUIREMENTS

- 1. Provide a lighting plan in accordance with the City of Creve Coeur Code for each phase of the PMD District as a component of the Site Development Plan submission.
- ~~1-2.~~ All lighting proposed on lots within the development that are immediately adjacent to existing single family residential zoning districts ~~shall~~ (currently shown on the Site Concept Plan as Lots ~~1~~, 10, & 17) shall provide occupancy sensors and full cut-off/shielded fixtures. The maximum light pole height within any surface or structured parking lots adjacent to existing single family districts is 16-feet.
- ~~2-3.~~ Individual Lighting Plans, including fixture types, shall be consistent with a Lighting Fixture Plan for the applicable category in this ordinance. The proposed Lighting Fixture Plan must provide for consistent and complementary fixture designs and styles throughout the PMD District.

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I. ARCHITECTURAL REQUIREMENTS

1. For individual lot developments only, the developer shall submit a design package including, but not limited to, architectural elevations, colored renderings and building materials. The proposed package shall give consideration to creating a visually appealing development pattern consistent with the intent and purpose of this PMD District. Architectural information is to be reviewed and approved by the Planning ~~and Zoning~~ Commission.
2. Building facades should be articulated by using color, arrangement or change in materials to emphasize the façade elements. The planes of the exterior walls may be varied in height, depth or direction. Extremely long facades shall be designed with sufficient building articulation and landscaping to avoid a monotonous or overpowering appearance.
3. Building finish material types ~~shall not be limited~~ in Olia Village ~~but~~ shall be generally specified as any combination of white, off-white, light grey, wood grain, or light beige. Accents are acceptable as dark grey, black, or dark bronze. Red, orange, or yellow brick or other bold color finish materials are prohibited. Masonry and glass are preferred. Metal, cementitious siding, and EFIS should not be used as the primary material on the building.
4. Trash enclosures: The location, material, and elevation of any trash enclosure will be as approved on the Site Development Plan. Trash receptacles shall be located indoors or be enclosed with an eight (8) foot high sight-proof enclosure with materials that match the adjacent structures and complemented by adequate landscaping as approved on the individual lot-specific landscape plans.
5. Mechanical equipment placed on the ground shall be adequately screened with six (6) foot high sight proof enclosures or to a height equal to the height of the equipment (whichever is greater).
6. Rooftop mechanical equipment shall be screened on roofs with architecturally designed, fully enclosed screening materials that complement the building design at a height equal to or greater than the height of the equipment.
7. Flat roof surfaces below 5 stories shall incorporate ballast, green roof, artificial turf, or medium tone colored membrane to reduce daytime glare for upper-level tenants in adjacent buildings.

J. ACCESS/ACCESS MANAGEMENT

1. Street and drives related to this development shall be designed and located as directed by the Department of ~~Community Development~~Public Works.
2. The location of public streets within the PMD District shall be determined by the Site Concept Plan.
3. The location of lot access points shall be determined by individual lot-specific Site Development Plans within the PMD District.

4. Access to the development from external roadways shall be as shown on the Site Concept Plan and as directed by the City of Creve Coeur, the Missouri Department of Transportation, and St. Louis County Department of Transportation, as applicable.
5. Adequate sight distance shall be provided. If adequate sight distance cannot be provided at the access location(s), acquisition of right-of-way, reconstruction of pavement and other off-site improvements may be required to provide the required sight distance as required by the City of Creve Coeur and the agency in control of the right of way off which the access is proposed.
6. Driveway access to internal streets shall comply with City Code.
7. No construction-related parking shall be permitted within right-of-way or on an existing roadway. All construction related ~~parking~~to parking shall be confined to the development's boundary.
8. Any improvements within the Missouri Department of Transportation (MoDOT) right-of-way will require a permit from MoDOT. The entrance geometries and drainage design shall be in accordance with MoDOT standards.
9. Any request to install a gate in this development must be approved by the City of Creve Coeur and the agency in control of the right-of-way off of which the entrance is constructed. No gate installation will be permitted on public right-of-way.
 - a. If a gate is ~~allowed to be~~ installed on a street in the development, the street(s) within the development or that portion of the development that is gated shall be private~~and remain private forever.~~

K. PUBLIC/PRIVATE ROAD IMPROVEMENTS, INCLUDING PEDESTRIAN CIRCULATION

1. ~~Obtained~~ Approvals ~~are to be obtained~~ from the City of Creve Coeur Department of Public Works and/or the Missouri Department of Transportation as applicable.
2. The National Association of City Transportation Officials (NACTO) has an Urban Street Design Guide. All intersections of Olia Village shall conform to the principles of the NACTO Urban Street Design Guide.
3. Internal streets and sidewalks shall be private unless an agreement is reached and executed between the City of Creve Coeur and Olia Village whereby the City of Creve Coeur accepts the internal streets and/or sidewalks as public. All public streets shall be designed to meet the City of Creve Coeur's Code for the Development of Streets (Section 410.240), unless otherwise described herein.
4. Provide sidewalks, conforming to Americans with Disabilities Act (ADA) standards, along all frontages of the site and along internal roadways as shown on the Site Concept Plan. The sidewalk shall provide for future connectivity to adjacent developments and/or roadway projects. The sidewalk may be located within right-of-way controlled by another agency, if

permitted by that agency, or on private property within a sidewalk, maintenance, and utility easement dedicated to the City Creve Coeur for public use.

5. Pedestrian crossings for Olive Boulevard shall be provided as required by MoDOT.
6. Mid-block crossings internal to the PMD District shall be provided as shown on the approved Site Concept Plan, or as otherwise approved by the City's Traffic Engineer.
7. Obtain approvals from the City of Creve Coeur and Missouri Department of Transportation, as necessary, for locations of proposed curb cuts and access points, areas of new dedication, and roadway improvements.
8. Additional right-of-way and road improvements shall be provided, as required by the City of Creve Coeur and/or the Missouri Department of Transportation.
9. Provide a minimum 8-foot-wide shared use path for public use which connects to the existing sidewalk in right-of-way along the south side of Olive Boulevard.
 - a. The location of the shared use path within the PMD District shall be as shown in the approved Site Concept Plan.
10. Pedestrian circulation to be as shown on the approved Site Concept Plan.

11. Public Street Design Standards:

- | | |
|--|---|
| a. Minimum Right-Of-Way | 26' |
| b. Maximum Grade at Centerline | 10% |
| c. Minimum Grade at Centerline | 1.0% Asphalt / 0.5 <u>1.0%</u> Concrete |
| d. Minimum Pavement Width
(Back-to-Back of Curb) | 26' |
| e. Minimum Site Distance at
Crest of Curve | 150' |
| f. Minimum Horizontal Radius
of Centerline | 150' |
| g. Minimum Horizontal Tangent
Distance Between Reverse Curves | None |
| h. Sidewalks | As shown on approved Site Concept Plan |
| i. Curb & Gutter | Vertical Or Lip (Rolled) <u>Concrete</u> |

12. Public Street Pavement Standards:

- a. Concrete = minimum ~~8~~ 7 inches on ~~4-inch² compacted crushed limestone (typ. 1" minus rock) granular base~~
- ~~b. Asphalt = minimum 9 inches on 4" granular base~~

13. Private Street Design Standards:

- | | |
|--|--|
| a. Minimum Right-Of-Way | N/A |
| b. Maximum Grade at Centerline | 10% |
| c. Minimum Grade at Centerline | 1.0% Asphalt / <u>1.00-5%</u> Concrete |
| d. Minimum Pavement Width
(Back-to-Back of Curb) | 24' |
| e. Minimum Site Distance at
Crest of Curve | 150' |
| f. Minimum Horizontal Radius
of Centerline | 150' |
| g. Minimum Horizontal Tangent
Distance Between Reverse Curves | None |
| h. Sidewalks | As shown on approved Site Concept Plan |
| i. Curb & Gutter | Vertical Or Lip (Rolled) <u>Concrete</u> |

14. Private Street Pavement Standards:

- a. Asphalt or Concrete. Pavement section s to be determined based upon recommendations from Geotechnical Report prepared for this development.

L. TRAFFIC IMPACT STUDY

1. External Roadway Network:

- a. The developer shall provide a traffic impact study as directed by the City of Creve Coeur & the Missouri Department of Transportation for impacts to the existing adjacent public roadway network. The scope of the study shall include external circulation and may be limited to specific impacts, such as the need for additional lanes, entrance configuration, geometries, sight distance, traffic signal modifications or other improvements required, as long as the density of the proposed development remains consistent with the Site Concept Plan. The proposed trip generations included as part of this study shall be used as a baseline for the overall development of the PMD District and shall not be reviewed or required to be adhered to for each individual lot development. Should the actualproposed trip generations for the entire PMD District increase by more than 10% from the density assumed in the traffic impact study approved by MoDOT within five (5) years of the initial approved Site Concept Plan, an updated traffic study may be required by the City of Creve Coeur.

2. Internal Roadway Network:

- a. Both the City and the developer acknowledge that this development will include a built environment that is meant to encourage pedestrian activity and improve pedestrian mobility. This approach will include intentional roadway & sidewalk design geometries to be established to promote pedestrian access over vehicular where possible, while respecting the safety of both pedestrians and vehicles as well as emergency personnel. This will include a design which considers how people interact with the space to increase access for all community members, including ADA compliancy. As such, a comprehensive

traffic impact study including traffic counts, trip generations, signal warrants, accessory warrants, etc. for the internal roadway network will not be required. Approval will be required by the City's Traffic Engineer, which may include more detailed analysis of isolated locations.

M. MISCELLANEOUS

1. Kiosks are allowed in the PMD District provided they do not impede pedestrian traffic on the sidewalk and meet ADA accessibility requirements. Kiosks can be an arrangement of mobile units, fixed units, or a mixture of both joined together to form a structure not to exceed 100 sq. feet. Uses within the kiosk will be the approved uses in this Attachment A. Locations and numbers of kiosks shall be as approved on the Site Concept Plan for the PMD District.
2. Loading docks, overhead doors and service entries will be permitted only on the side or rear of a tenant space. Deliveries shall be made on the side or rear of a tenant space with the exception of designated street delivery and loading areas as approved on the Site Concept Plan.
3. The height of retaining walls required for the development shall not be limited in height conform to the approved Site Concept Plan or Site Development Plan corresponding with each phase, as appropriate.
4. Stream Buffer Protection Ordinance Requirements:
 - a. Stream bank shall be defined as the "ordinary high-water mark" as defined by the US Army Corps of Engineers.
 - b. Existing impervious encroachments into existing Stream Buffer Protection setbacks from any existing stream shall not be required to meet the Stream Buffer Protection Regulations in Chapter 430 of the City of Creve Coeur code regardless of whether improvements are proposed to be made to said existing impervious areas. No further impervious encroachment into existing Stream Buffer setbacks will be allowed.
5. The addition of Electric Vehicle (EV) charging stations will be considered where appropriate during the Site Development Plan stage for individual lots.
6. Internal bus stops shall not be required within the development. The existing bus stop along the south side of Olive Boulevard, west of Pavilion shall be upgraded to include an architectural bus shelter meeting the following minimum criteria as acceptable to MoDOT & Metro:
 - b. Pre-finished or painted steel 6' x 13' bus shelter with wind screen side, rear panels and shed roof. Shelter accessories to include a coordinating bench and waste receptacle. New 7' x 14' slab to match adjacent sidewalk finish and provide flush connection. The final bus stop shelter design will follow the Site Development Plan approval process.

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H.N. PUBLIC ART REQUIREMENTS

1. ~~An individual separate public art package shall be required and meet follow the City of Creve Coeur ordinances, review processes for public art which include review and recommendation by the City's Arts Committee to the Planning and Zoning Commission with City Council approval of public art agreements for public access easements and owner maintenance. Final art selected will be specifically governed by this performance standard and shall be submitted to the City of Creve Coeur as an art package and will meet the requirements of the City's Public Art Package.~~

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OLIA VILLAGE PLANNED MIXED-USE DEVELOPMENT
TABLE A - PERMITTED USES

Use Code	2012 NAICS Title	Zoning District - Olia PMD			
		P = Permitted Use			
		A Main	B Mixed	C Office	D Residential
CC111419	Medical Marijuana Cultivation Facility, inside a building or greenhouse as defined under Section 405.120			P	
311351	Chocolate and Confectionery Manufacturing from Cacao Beans	P	P		
311811	Retail Bakeries	P	P		
311812	Commercial Bakeries	P	P		
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	P	P		
312120	Breweries	P	P		
312140	Distilleries	P	P		
325220	Artificial and Synthetic Fibers and Filaments			P	
325411	Medicinal and Botanical Manufacturing			P	
325414	Biological Product (except Diagnostic) Manufacturing			P	
CC325415	Medical Marijuana Manufacturing Facility, entirely within an enclosed building as defined under Section 405.120			P	
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing			P	
339116	Dental Laboratories			P	
441110	New Car Dealers (No outside surface storage or display allowed)	P	P		
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers (No outside surface storage or display allowed)	P	P		
CC442100	All Drive-in and Drive Through Services (excluding Food Services)		P		
442110	Furniture Stores	P	P		
442210	Floor Covering Stores	P	P		
442291	Window Treatment Stores	P	P		
442299	All Other Home Furnishings Stores	P	P		
443141	Household Appliance Stores	P	P		
443142	Electronics Stores	P	P		
444120	Paint and Wallpaper Stores	P	P		
445110	Supermarkets and Other Grocery (except Convenience) Stores		P		
445120	Convenience Stores	P	P		
445210	Meat Markets	P	P		
445220	Fish and Seafood Markets	P	P		
445230	Fruit and Vegetable Markets	P	P		
445291	Baked Goods Stores	P	P		
445292	Confectionery and Nut Stores	P	P		
445299	All Other Specialty Food Stores	P	P		
445310	Beer, Wine, and Liquor Stores	P	P		
446110	Pharmacies and Drug Stores	P	P		
446120	Cosmetics, Beauty Supplies and Perfume Stores	P	P		
446130	Optical Goods Stores	P	P		
446191	Food (Health) Supplement Stores	P	P		
446199	All Other Health and Personal Care Stores	P	P		
448110	Men's Clothing Stores	P	P		
448120	Women's Clothing Stores	P	P		
448130	Children's and Infants' Clothing Stores	P	P		
448140	Family Clothing Stores	P	P		
448150	Clothing Accessories Stores	P	P		
448190	Other Clothing Stores	P	P		
448210	Shoe Stores	P	P		
448310	Jewelry Stores	P	P		
448320	Luggage and Leather Goods Stores	P	P		
451110	Sporting Goods Stores (except those exclusively engaged in the sale of firearms and ammunition)	P	P		
451120	Hobby, Toy, and Game Stores	P	P		
451130	Sewing, Needlework, and Piece Goods Stores	P	P		
451140	Musical Instrument and Supplies Stores	P	P		
451211	Book Stores	P	P		
451212	News Dealers and Newsstands	P	P		
452111	Department Stores (except Discount Department Stores)	P	P		
452112	Discount Department Stores	P	P		
452910	Warehouse Clubs and Supercenters	P	P		
452990	All Other General Merchandise Stores	P	P		
453110	Florists	P	P		
453210	Office Supplies and Stationary Stores	P	P		
453220	Gift, Novelty, and Souvenir Stores	P	P		
453310	Used Merchandise Stores (No building materials, outside sales, exchange or drop-off of used goods)	P	P		
453910	Pet and Pet Supplies Stores	P	P		
453920	Art Dealers	P	P		
453991	Tobacco Stores	P	P		

CC453999	Comprehensive or Medical Marijuana Dispensary Facility as defined under Section 405.120, including Microbusiness Marijuana Dispensary Facility	P	P		
492210	Local Messengers and Local Delivery	P	P		
512240	Sound Recording Industries	P	P	P	
512290	Other Sound Recording Industries	P	P	P	

OLIA VILLAGE PLANNED MIXED-USE DEVELOPMENT

TABLE A - PERMITTED USES

Use Code	2012 NAICS Title	Zoning District - Olia PMD			
		P = Permitted Use			
		A Main	B Mixed	C Office	D Residential
515111	Radio Networks	P	P	P	
518210	Data Processing, Hosting, and Related Services	P*	P	P	
519110	News Syndicates	P*	P	P	
519120	Libraries and Archives	P	P	P	
519130	Internet Publishing and Broadcasting and Web Search Portals	P*	P	P	
519190	All Other Information Services	P*	P	P	
521110	Monetary Authorities-Central Bank	P	P	P	
522110	Commercial Banking	P	P	P	
522120	Savings Institutions	P	P	P	
522130	Credit Unions	P	P	P	
522190	Other Depository Credit Intermediation	P	P	P	
522210	Credit Card Issuing	P	P	P	
522220	Sales Financing	P	P	P	
522291	Consumer Lending	P	P	P	
522292	Real Estate Credit	P	P	P	
522293	International Trade Financing	P	P	P	
522294	Secondary Market Financing	P	P	P	
522310	Mortgage and Non-Mortgage Loan Brokers	P*	P	P	
522320	Financial Transactions Processing, Reserve and Clearinghouse Activities	P	P	P	
523110	Investment Banking and Securities Dealing	P*	P	P	
523120	Securities Brokerage	P*	P	P	
523130	Commodity Contracts Dealing	P*	P	P	
523140	Commodity Contracts Brokerage	P*	P	P	
523210	Securities and Commodity Exchanges	P*	P	P	
523910	Miscellaneous Intermediation	P*	P	P	
523920	Portfolio Management	P	P	P	
523930	Investment Advice	P	P	P	
523991	Trust, Fiduciary, and Custody Activities	P	P	P	
523999	Miscellaneous Financial Investment Activities	P	P	P	
524113	Direct Life Insurance Carriers	P	P	P	
524114	Direct Health and Medical Insurance Carriers	P	P	P	
524126	Direct Property and Casualty Insurance Carriers	P	P	P	
524127	Direct Title Insurance Carriers	P	P	P	
524128	Other Direct Insurance (except Life, Health, and Medical) Carriers	P	P	P	
524130	Reinsurance Carriers	P*	P	P	
524210	Insurance Agencies and Brokerages	P	P	P	
524291	Claims Adjusting	P*	P	P	
524292	Third Party Administration of Insurance and Pension Funds	P*	P	P	
524298	All Other Insurance Related Activities	P	P	P	
525110	Pension Funds	P*	P	P	
525120	Health and Welfare Funds	P*	P	P	
525190	Other Insurance Funds	P*	P	P	
525910	Open-End Investment Funds	P*	P	P	
525920	Trusts, Estates, and Agency Accounts	P*	P	P	
525990	Other Financial Vehicles	P*	P	P	
531110	Lessors of Non-Residential Buildings and Dwellings	P	P	P	
531120	Lessors of Non-Residential Buildings (except Miniwarehouses)	P	P	P	
531190	Lessors of Other Real Estate Property	P	P	P	
531210	Offices of Real Estate Agents and Brokers	P	P	P	
531311	Residential Property Managers	P	P	P	
531312	Non-Residential Property Managers	P	P	P	
531320	Offices of Real Estate Appraisers	P	P	P	
531390	Other Activities Related to Real Estate	P	P	P	
531311	Residential Property Managers	P	P	P	
531312	Non-Residential Property Managers	P	P	P	
531320	Offices of Real Estate Appraisers	P	P	P	
531390	Other Activities Related to Real Estate	P	P	P	
532210	Consumer Electronics and Appliances Rental	P	P	P	
532220	Formal Wear and Costume Rental	P	P	P	
532230	Video Tape and Disc Rental	P	P	P	
532291	Home Health Equipment Rental	P	P	P	
541110	Offices of Lawyers	P	P	P	
541120	Office of Notaries	P	P	P	

541191	Title Abstract and Settlement Offices	P	P	P	
541199	All Other Legal Services	P	P	P	
541211	Offices of Certified Public Accountants	P	P	P	
541213	Tax Preparation Services	P	P	P	
541214	Payroll Services	P*	P	P	
541219	Other Accounting Services	P*	P	P	

* Use shall not be permitted in the street facing ground floor within Main Street District

OLIA VILLAGE PLANNED MIXED-USE DEVELOPMENT

TABLE A - PERMITTED USES

Use Code	2012 NAICS Title	P = Permitted Use			
		Zoning District - Olia PMD			
		A Main	B Mixed	C Office	D Residential
541310	Architectural Services	P	P	P	
541320	Landscape Architectural Services	P	P	P	
541330	Engineering Services	P	P	P	
541340	Drafting Services	P	P	P	
541350	Building Inspection Services	P	P	P	
541360	Geophysical Surveying and Mapping Services	P	P	P	
541370	Surveying and Mapping (except Geophysical) Services	P	P	P	
541380	Testing Laboratories	P*	P	P	
CC541381	Medical Marijuana Testing Facility, as defined under Section 405.120	P*	P	P	
541410	Interior Design Services	P	P	P	
541420	Industrial Design Services	P	P	P	
541430	Graphic Design Services	P	P	P	
541490	Other Specialized Design Services	P	P	P	
541511	Custom Computer Programming Services	P	P	P	
541512	Computer Systems Design Services	P	P	P	
541513	Computer Facilities Management Services	P	P	P	
541519	Other Computer Related Services	P	P	P	
541611	Administrative Management and General Management Consulting Services	P	P	P	
541612	Human Resources Consulting Services	P	P	P	
541613	Marketing Consulting Services	P	P	P	
541614	Process, Physical Distribution, and Logistics Consulting Services	P	P	P	
541618	Other Management Consulting Services	P	P	P	
541620	Environmental Consulting Services	P	P	P	
541690	Other Scientific and Technical Consulting Services	P	P	P	
541711	Research and Development in Biotechnology	P*	P	P	
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	P*	P	P	
541720	Research and Development in the Social Sciences and Humanities	P*	P	P	
541810	Advertising Agencies	P	P	P	
541820	Public Relations Agencies	P	P	P	
541830	Media Buying Agencies	P	P	P	
541840	Media Representatives	P	P	P	
541850	Outdoor Advertising	P	P	P	
541860	Direct Mail Advertising	P	P	P	
541870	Advertising Material Distribution Services	P	P	P	
541890	Other Services Related to Advertising	P	P	P	
541910	Marketing Research and Public Opinion Polling	P	P	P	
541921	Photography Studios, Portrait	P	P	P	
541922	Commercial Photography	P	P	P	
541930	Translation and Interpretation Services	P	P	P	
541940	Veterinary Services	P	P	P	
541990	All Other Professional, Scientific, and Technical Services	P	P	P	
551111	Offices of Bank Holding Companies	P*	P	P	
551112	Offices of Other Holding Companies	P*	P	P	
551114	Corporate, Subsidiary, and Regional Managing Offices	P*	P	P	
CC561100	Business Enterprise Center (as defined in Chapter 405.120, Definition of Terms)	P	P	P	
561110	Office Administrative Services	P	P	P	
561210	Facilities Support Services	P	P	P	
561311	Employment Placement Agencies	P	P	P	
561312	Executive Search Services	P	P	P	
561320	Temporary Help Services	P	P	P	
561330	Professional Employer Organizations	P	P	P	
561410	Document Preparation Services	P*	P	P	
561421	Telephone Answering Service	P*	P	P	
561422	Telemarketing Bureaus and Other Contact Centers	P*	P	P	
561431	Private Mail Centers	P	P	P	
561439	Other Business Service Centers (including Copy Shops)	P	P	P	
561440	Collection Agencies	P*	P	P	
561450	Credit Bureaus	P*	P	P	
561491	Repossession Services	P*	P	P	
561492	Court Reporting and Stenotype Services	P*	P	P	
561499	All Other Business Support Services	P	P	P	
561510	Travel Agencies	P	P	P	

561520	Tour Operators	P	P	P	
561591	Convention and Visitors Bureaus	P	P	P	
561599	All Other Travel Arrangement and Reservation Services	P	P	P	
621111	Offices of Physicians (except Mental Health Specialists)	P	P	P	
621112	Offices of Physicians, Mental Health Specialists	P	P	P	
621210	Offices of Dentists	P	P	P	

* Use shall not be permitted in the street facing ground floor within Main Street District

OLIA VILLAGE PLANNED MIXED-USE DEVELOPMENT
TABLE A - PERMITTED USES

Use Code	2012 NAICS Title	P = Permitted Use			
		Zoning District - Olia PMD			
		A Main	B Mixed	C Office	D Residential
621310	Offices of Chiropractors	P	P	P	
621320	Offices of Optometrists	P	P	P	
621330	Offices of Mental Health Practitioners (except Physicians)	P	P	P	
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	P	P	P	
621391	Office of Podiatrists	P	P	P	
621399	Offices of All Other Miscellaneous Health Practitioners	P	P	P	
621410	Family Planning Centers			P	
621420	Outpatient Mental Health and Substance Abuse Centers			P	
621491	HMO Medical Centers			P	
621492	Kidney Dialysis Centers			P	
621493	Freestanding Ambulatory Surgical and Emergency Centers			P	
621498	All Other Outpatient Care Centers			P	
621511	Medical Laboratories			P	
621512	Diagnostic Imaging Centers			P	
621610	Home Health Care Services			P	
713940	Fitness and Recreational Sports Centers	P	P	P	
713950	Bowling Centers	P	P	P	
713990	All Other Amusement and Recreation Industries (except gun and shooting clubs)	P	P	P	
721110	Hotels (except Casino Hotels) and Motels	P	P	P	
722410	Drinking Places (Alcoholic Beverages)	P	P	P	
722511	Full-Service Restaurants (with drive-thru only permitted in Mixed District)	P	P	P	
722513	Limited-Service Restaurants (with drive-thru only permitted in Mixed District)	P	P	P	
722514	Cafeterias, Grill Buffets, and Buffets (with drive-thru only permitted in Mixed District)	P	P	P	
722515	Snack and Non-Alcoholic Beverage Bars (with drive-thru only permitted in Mixed District)	P	P	P	
811430	Footwear and Leather Goods Repair	P	P		
811490	Other Personal and Household Goods Repair and Maintenance	P	P		
812111	Barber Shops	P	P		
812112	Beauty Salons	P	P		
812113	Nail Salons	P	P		
812191	Diet and Weight Reducing Centers	P	P		
812199	Other Personal Care Services (except escort services, massage parlors, steam baths, tattoo parlors, permanent makeup salons and Turkish baths)	P	P		
812922	One-Hour Photofinishing	P	P		
813930	Labor Unions and Similar Labor Organizations	P	P	P	
813940	Political Organizations	P	P	P	
813990	Other Similar Organizations (except Business, Professional, Labor, and Political Organizations)	P	P	P	
814110	Private Households, Single-Family Residential				P
CC814111	Attached Single-Family Residential (townhouses or duplexes)				P
CC814120	Low-Density Multifamily Residential (up to 6 single family units per acre)				P
CC814130	Medium-Density Multifamily Residential (up to 20 single family units per acre)				P
812930	Parking Lots and Garages	P	P	P	
813319	Other Social Advocacy Organizations	P	P	P	
813410	Civic and Social Organizations	P	P	P	
813910	Business Associations	P	P	P	
813920	Professional Organizations	P	P	P	
CC814140	High-Density Multifamily Residential (more than 20 single family units per acre)	P	P		
921110	Executive Offices	P	P	P	
921120	Legislative Bodies	P	P	P	
921130	Public Finance Activities	P	P	P	
921140	Executive and Legislative Offices, Combined	P	P	P	
921190	Other General Government Support	P	P	P	
922110	Courts	P	P	P	
922120	Police Protection	P	P	P	
922130	Legal Counsel and Prosecution	P	P	P	
922160	Fire Protection	P	P	P	
922190	Other Justice, Public Order, and Safety Activities	P	P	P	
923110	Administration of Education Programs	P	P	P	

SITE DEVELOPMENT PLAN

OLIA VILLAGE - PHASE 1 DEVELOPMENT

CREVE COEUR, MO

A TRACT OF LAND BEING PART OF LOTS 9, 10, 11 AND 12 OF MAJOR THOMAS SUBDIVISION
SITUATED IN THE SOUTHWEST QUARTER AND THE NORTHWEST QUARTER OF SECTION 1
TOWNSHIP 45 NORTH, RANGE 5 EAST, CITY OF CREVE COEUR, ST. LOUIS COUNTY, MISSOURI

SEPTEMBER 26, 2023

SITE INFORMATION	
SITE ACREAGE	= 95.8 AC ±
SITE ADDRESS	= 10300 OLIVE BOULEVARD, CREVE COEUR, MO 63141
OWNER	= 10300 OLIVE, LLC
LOCATOR NUMBER	= 17M420026
EXISTING ZONING	= R0 - RESEARCH & PARK DISTRICT
PROPOSED ZONING	= PMD - PLANNED MIXED-USE DEVELOPMENT
CITY	= CREVE COEUR, MO
ZIP CODE	= 63141
FEMA FLOOD MAP	= 29189C0191K (REVISED 2/4/2015) (ZONE X) 29189C0192K (REVISED 2/4/2015) (ZONE X)
WUNNENBERG MAP	= PAGE 24, SECTIONS 17T & 18T
SCHOOL DISTRICT	= LADUE SCHOOL DISTRICT
FIRE DISTRICT	= CREVE COEUR FIRE DISTRICT
WATER SHED	= RIVER DES PERES WATERSHED, DEER CREEK SUB-SHED
SEWER DISTRICT	= METROPOLITAN ST. LOUIS SEWER DISTRICT
CABLE SERVICE	= CHARTER COMMUNICATIONS
ELECTRIC SERVICE	= AMEREN MISSOURI
GAS SERVICE	= SPIRE ENERGY
PHONE SERVICE	= AT&T
WATER SERVICE	= MISSOURI AMERICAN WATER COMPANY
WATER SERVICE	= CITY OF ST. LOUIS WATER DEPARTMENT (TRANSMISSION MAINS)
BUILDING TYPE	= N/A (NO BUILDINGS PROPOSED)
BLDG. CONST. TYPE	= N/A (NO BUILDINGS PROPOSED)

OWNER / DEVELOPER :
10300 OLIVE, LLC
1034 S. BRENTWOOD, SUITE 2300 PH-1D
ST. LOUIS, MO 63117
MATT PFUND
(618) 692-9502

SITE BENCHMARK :

13294 NAVD88 (SLC2011a) ELEV = 674.60 FIPS
NGVD29 ELEV = 674.91 FIPS

FOUND "SQ" ON TOP OF THE NORTH SIDE OF THE ROUND CONCRETE BASE OF A TRAFFIC SIGNAL
ON A TRAFFIC ISLAND SITUATED NORTHEAST OF THE INTERSECTION OF OLIVE BOULEVARD WITH
PAVILLION DRIVE, AND SOUTHWEST OF THE RIGHT TURN LANE FROM WESTBOUND OLIVE
BOULEVARD ONTO NORTHBOUND PAVILLION DRIVE

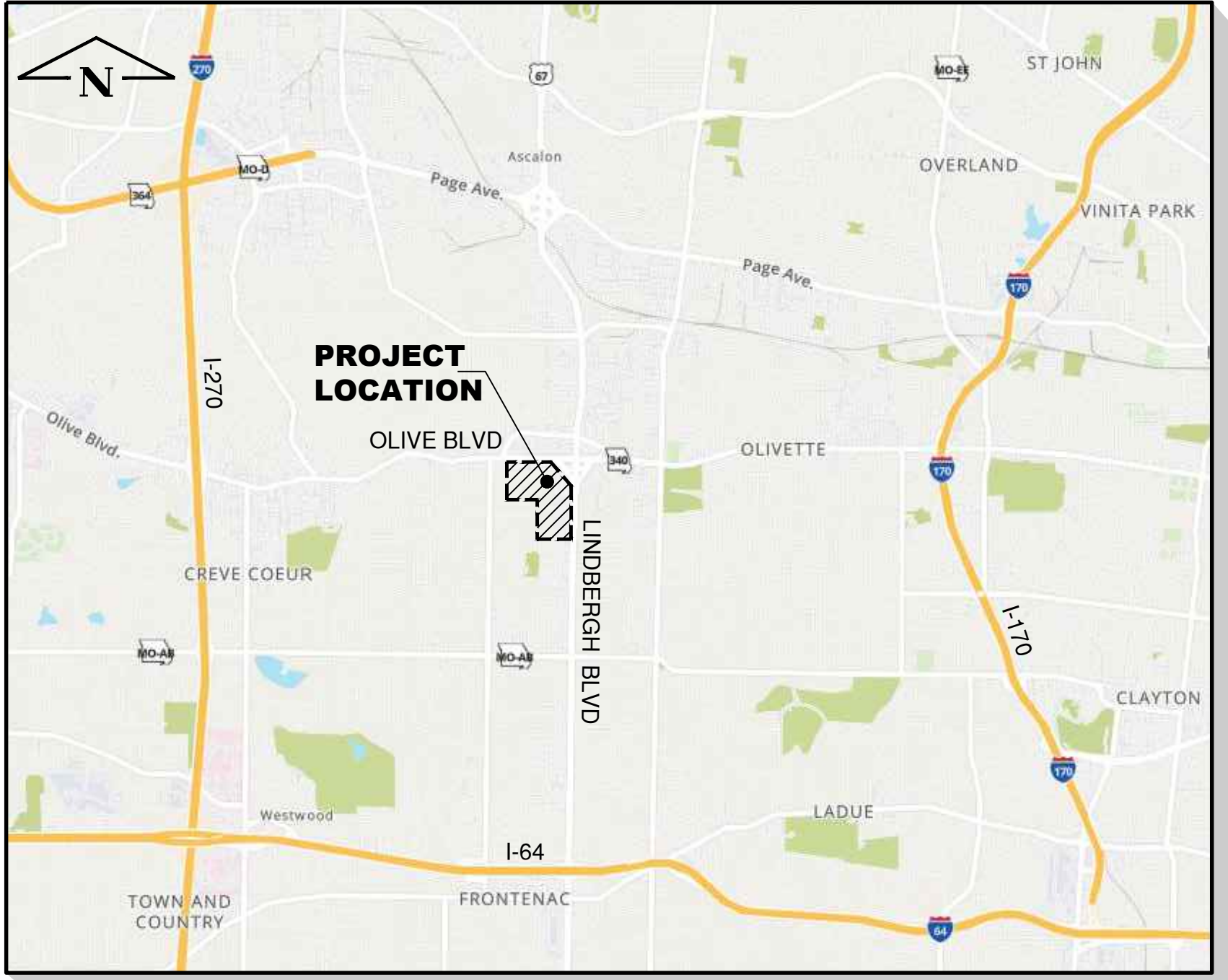
SP MO EAST N=315174± E=257868±
ROUGH NAD 83 LAT=38.673342° ± (N/+) LONG=-90.409581° ± (W/-)

UTILITY NOTE :

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE
SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE
ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES,
STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE
ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER
SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND
UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR
CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY
FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT,
CHAPTER 319 RSMo.

DISCLAIMER :

CRAWFORD, MURPHY & TILLY, INC. AND THE UNDERSIGNED ENGINEER HAVE NO
RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE
IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE
UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND
METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR.
CRAWFORD, MURPHY & TILLY, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL
IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND
AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.



VICINITY MAP
(NOT TO SCALE)

SHEET INDEX	
C-100	TITLE SHEET
C-101	SITE OVERVIEW
C-102	SETBACK AND BUFFER PLAN
C-103	GRADING PLAN
C-104	UTILITY & DRAINAGE PLAN
C-105	PEDESTRIAN PLAN
C-106	SITE SECTIONS
A-103.1-4	SITE LIGHTING PLAN
LD-100	TREE PRESERVATION PLAN
L-140 TO L-147	PLANTING PLAN
L-148	BUFFER PLANTING PLAN
L-150 TO L-151	PLANTING PLAN ENLARGEMENT

SITE DEVELOPMENT CALCULATION NOTES

- GROSS FLOOR AREA RATIO (FAR) = N/A
- IMPERVIOUS LAND COVERAGE SUMMARY:
IMPERVIOUS = 29.4 AC (30.7%)
PERVIOUS = 66.4 AC (69.3%)
TOTAL SITE = 95.8 AC (100%)
- LAND SUMMARY :
LOT ACREAGE = 64.7 AC
COMMON GROUND = 25.3 AC
PUBLIC ROADWAY = 5.8 AC
TOTAL SITE = 95.8 AC

PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



SITE DEVELOPMENT PLAN

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
------	------	-------------

PROJECT NO.:	23005201-00
CAD DWG FILE:	ISITE-DEVELOPMENT-PLAN.DWG
DESIGNED BY:	TME/JFM
DRAWN BY:	JFM
CHECKED BY:	CJS
APPROVED BY:	---
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

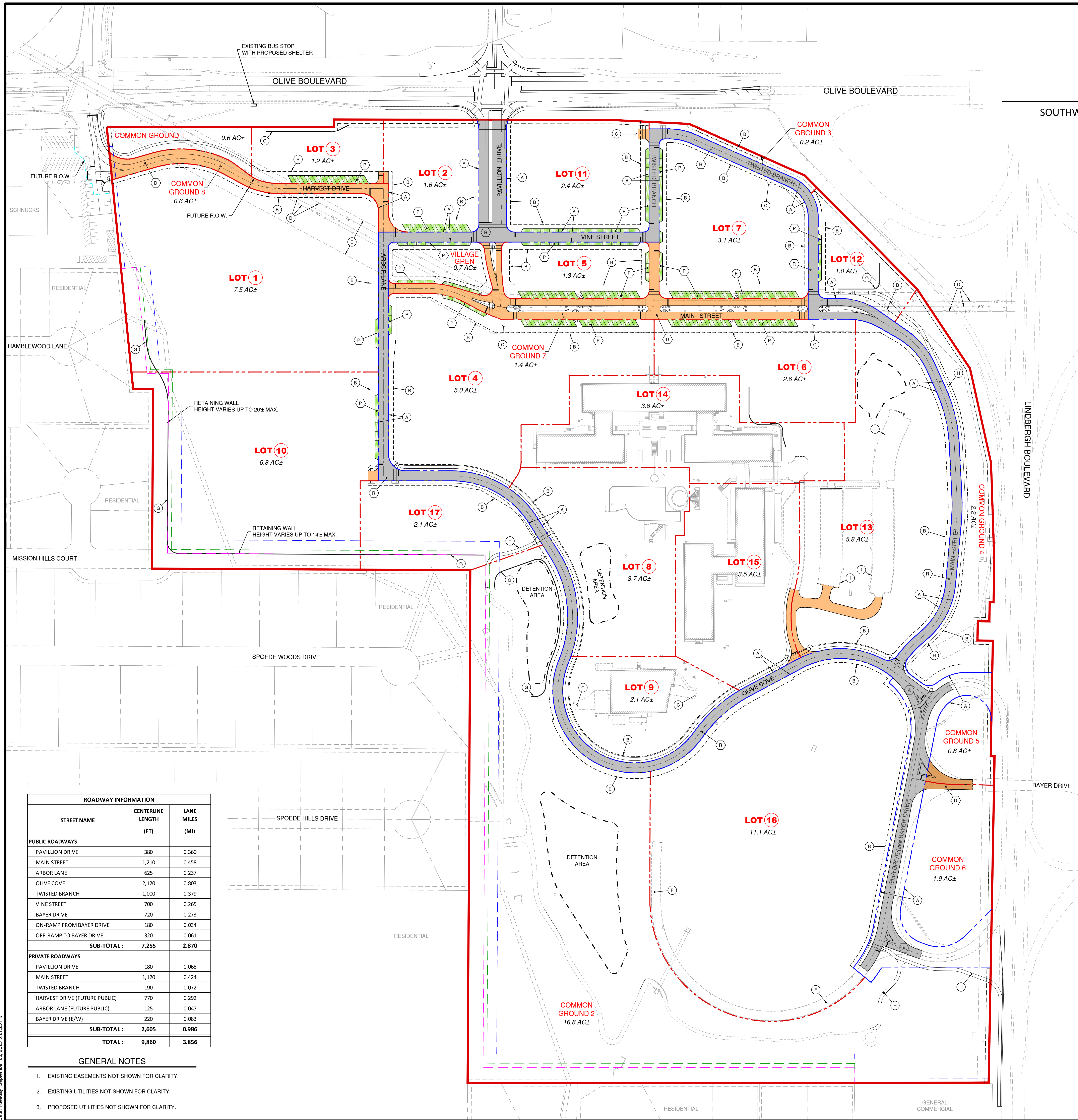
SHEET TITLE

TITLE SHEET

C-100

SHEET OF --

Path: M:\JackMatthews\Draw\23005201-00_BayerSite\Draw\Draw\Exhibit02-SITE-DEVELOPMENT\SITE-DEVELOPMENT-PLAN.dwg
Date: Tuesday, September 26, 2023 3:22:25 PM



ROADWAY INFORMATION		
STREET NAME	CENTERLINE LENGTH (FT)	LANE MILES (MI)
PUBLIC ROADWAYS		
PAVILLION DRIVE	380	0.360
MAIN STREET	1,210	0.458
ARBOR LANE	625	0.237
OLIVE COVE	2,120	0.803
TWISTED BRANCH	1,000	0.379
VINE STREET	700	0.265
BAYER DRIVE	720	0.273
ON-RAMP FROM BAYER DRIVE	180	0.034
OFF-RAMP TO BAYER DRIVE	320	0.061
SUB-TOTAL :	7,255	2.870
PRIVATE ROADWAYS		
PAVILLION DRIVE	180	0.068
MAIN STREET	1,120	0.424
TWISTED BRANCH	190	0.072
HARVEST DRIVE (FUTURE PUBLIC)	770	0.292
ARBOR LANE (FUTURE PUBLIC)	125	0.047
BAYER DRIVE (E/W)	220	0.083
SUB-TOTAL :	2,605	0.986
TOTAL :	9,860	3.856

- GENERAL NOTES**
- EXISTING EASEMENTS NOT SHOWN FOR CLARITY.
 - EXISTING UTILITIES NOT SHOWN FOR CLARITY.
 - PROPOSED UTILITIES NOT SHOWN FOR CLARITY.

SITE OVERVIEW

OLIA VILLAGE

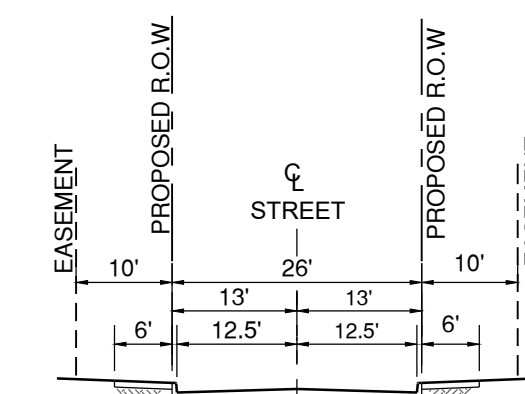
SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

LEGEND

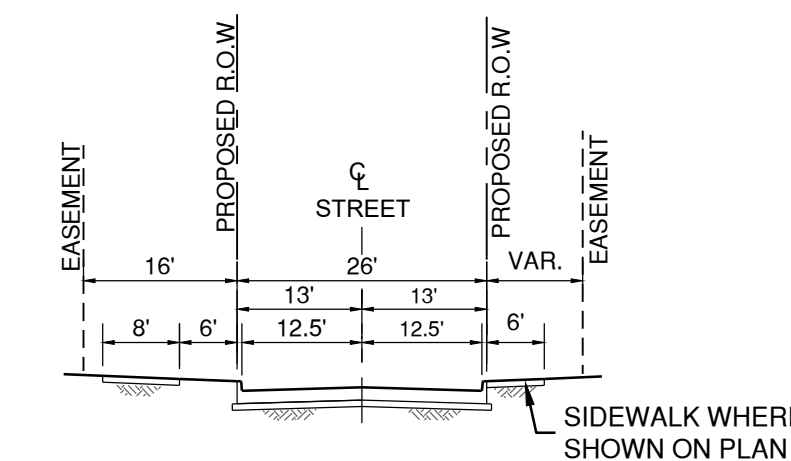
- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED R.I.M.U.S.S. EASEMENT
- PROPOSED ROADWAY (WITHIN RIGHT-OF-WAY)
- PROPOSED ON-STREET PARKING (WITHIN EASEMENT)
- PROPOSED PRIVATE ROADWAY

KEYNOTES

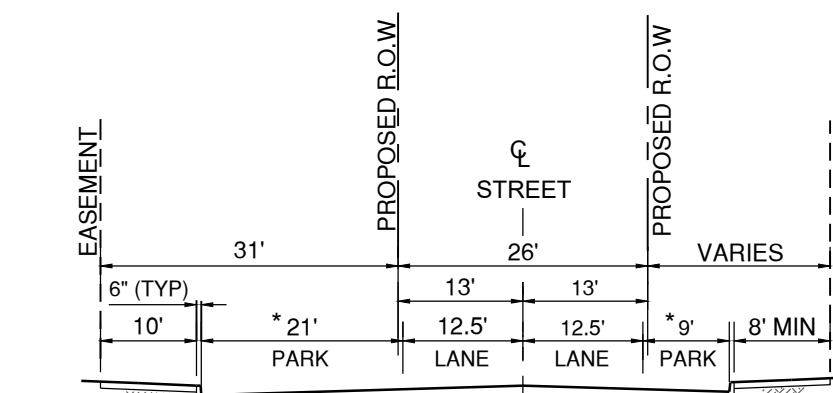
- PROPOSED RIGHT-OF-WAY
- PROPOSED ROADWAY IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK (R.I.M.U.S.S.) EASEMENT
- FUTURE ENTRANCE
- EXISTING STL WATER MAIN CONDUITS
- EXISTING STL WATER MAIN EASEMENT
- EXISTING PRIVATE DRIVE TO REMAIN
- PROPOSED SITE RETAINING WALL (TYP) MECHANICALLY STABILIZED EARTH OR BLOCK GRAVITY WALL (TO BE DETERMINED UPON FINAL DESIGN)
- PROPOSED WALKING TRAIL OR SIDEWALK (TYP) SEE PEDESTRIAN MOBILITY PLAN
- EXISTING PARKING LOT / DRIVE TO REMAIN



TYPICAL SECTION #1
STANDARD STREET SECTION

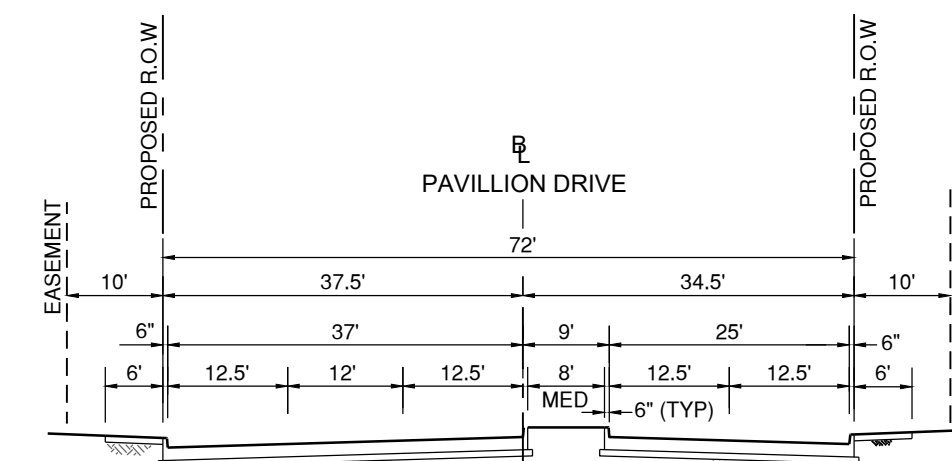


TYPICAL SECTION #2
OLIVE COVE

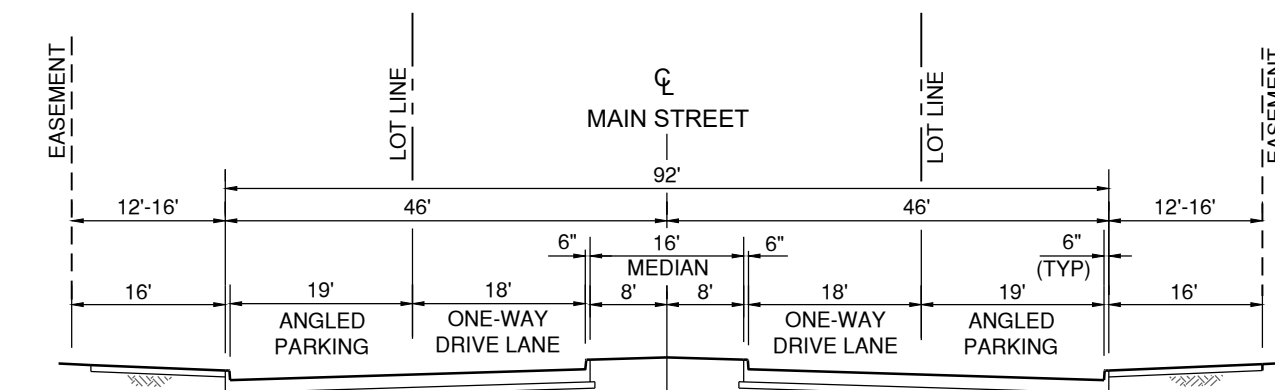


* PARKING VARIES:
9' PARALLEL PARKING
21' ANGLED PARKING

TYPICAL SECTION #3
STANDARD STREET SECTION
WITH ADJACENT PARKING



TYPICAL SECTION #4
PAVILLION DRIVE ENTRANCE



TYPICAL SECTION #5
MAIN STREET (MEDIAN SECTION)

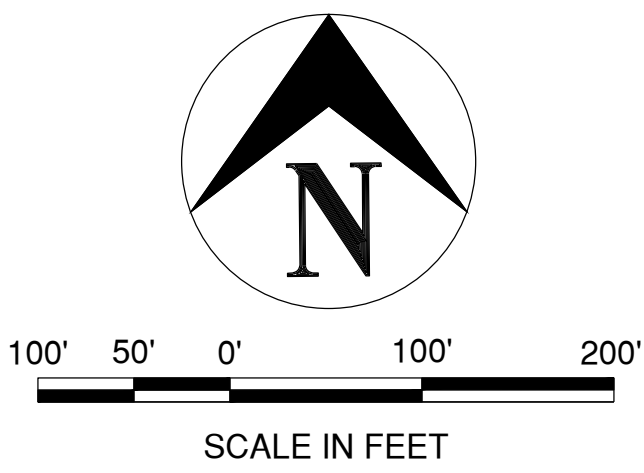
PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE DEVELOPMENT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
PROJECT NO.:	23005201-00	
CAD DWG FILE:	ISITE-DEVELOPMENT-PLAN.DWG	
DESIGNED BY:	TME/JFM	
DRAWN BY:	JFM	
CHECKED BY:	CJS	
APPROVED BY:	---	
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023	

SHEET TITLE

SITE OVERVIEW

C-101

SHEET OF --

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



CONSULTANTS:

STATE OF MISSOURI
TODD
MATTHEW
EHLN
NUMBER
PE-2006019649
PROFESSIONAL ENGINEER
09/26/2023
ENGINEER PE-2006019649

	DEVELOPMENT BOUNDARY LINE
	PROPOSED LOT LINE
	PROPOSED R.O.W. LINE
	CONCEPTUAL BLDG FOOTPRINT
	PROPOSED EASEMENT
	PROPOSED BUILDING SETBACK

- (A) OFF-SITE ROADWAY IMPROVEMENTS ON OLIVE BOULEVARD OR LINDERGUTH BOULEVARD (TYP)
- (B) EXISTING BUILDING TO REMAIN AND BE REFURPOSED (TYP)
- (C) 40' RESIDENTIAL BUFFER YARD (TYP)
- (D) 10' RESIDENTIAL BUILDING SETBACK (BEYOND BUFFER)
- (E) 35' COMMERCIAL BUILDING SETBACK (BEYOND BUFFER)
- (F) 10' MINIMUM PROPOSED ROADWAY IMPROVEMENT MAINTENANCE UTILITY SEWER SIDEWALK EASEMENT (PRIMUSSE)
- (G) 50' NATURAL VEGETATION BUFFER
- (H) 25' NO-IMPERVIOUS BUFFER
- (I) EXISTING STREAM TO REMAIN

1. EXISTING TRAILS AND PAVEMENTS WITHIN NATURAL OR IMPERVIOUS BUFFER LIMITS ARE ALLOWED TO REMAIN.
2. ANY NEW OR IMPROVED PAVEMENTS SHALL NOT ENCROACH INTO NATURAL OR IMPERVIOUS BUFFER LIMITS FURTHER THAN EXISTING PAVEMENT LIMITS.

SETBACK AND BUILDING LINE REQUIREMENTS WITHIN THE DEVELOPMENT (INTERNAL):

CATEGORY A – " MAIN STREET" SUB-DISTRICT:

1. MINIMUM FRONT YARD - ZERO (0) FEET
2. MINIMUM SIDE YARD - ZERO (0) FEET
3. MINIMUM REAR YARD - ZERO (0) FEET
4. BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY B – MIXED USE SUB-DISTRICT:

1. MINIMUM FRONT YARD - ZERO (0) FEET
2. MINIMUM SIDE YARD - ZERO (0) FEET
3. MINIMUM REAR YARD - ZERO (0) FEET
4. BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY C – GENERAL OFFICE SUB-DISTRICT:

1. MINIMUM FRONT YARD - ZERO (0) FEET
2. MINIMUM SIDE YARD - ZERO (0) FEET
3. MINIMUM REAR YARD - ZERO (0) FEET
4. MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS - ZERO (0) FEET
5. BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY D – RESIDENTIAL SUB-DISTRICT:

1. MINIMUM FRONT YARD - FIVE (5) FEET
2. MINIMUM SIDE YARD - NONE OR SEVEN AND A HALF (7.5) FEET
3. MINIMUM REAR YARD - FIVE (5) FEET
4. MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS -
5. BUFFER YARD - NOT APPLICABLE INTERNALLY

SETBACK AND BUILDING LINE REQUIREMENTS TO ADJACENT PARCELS:

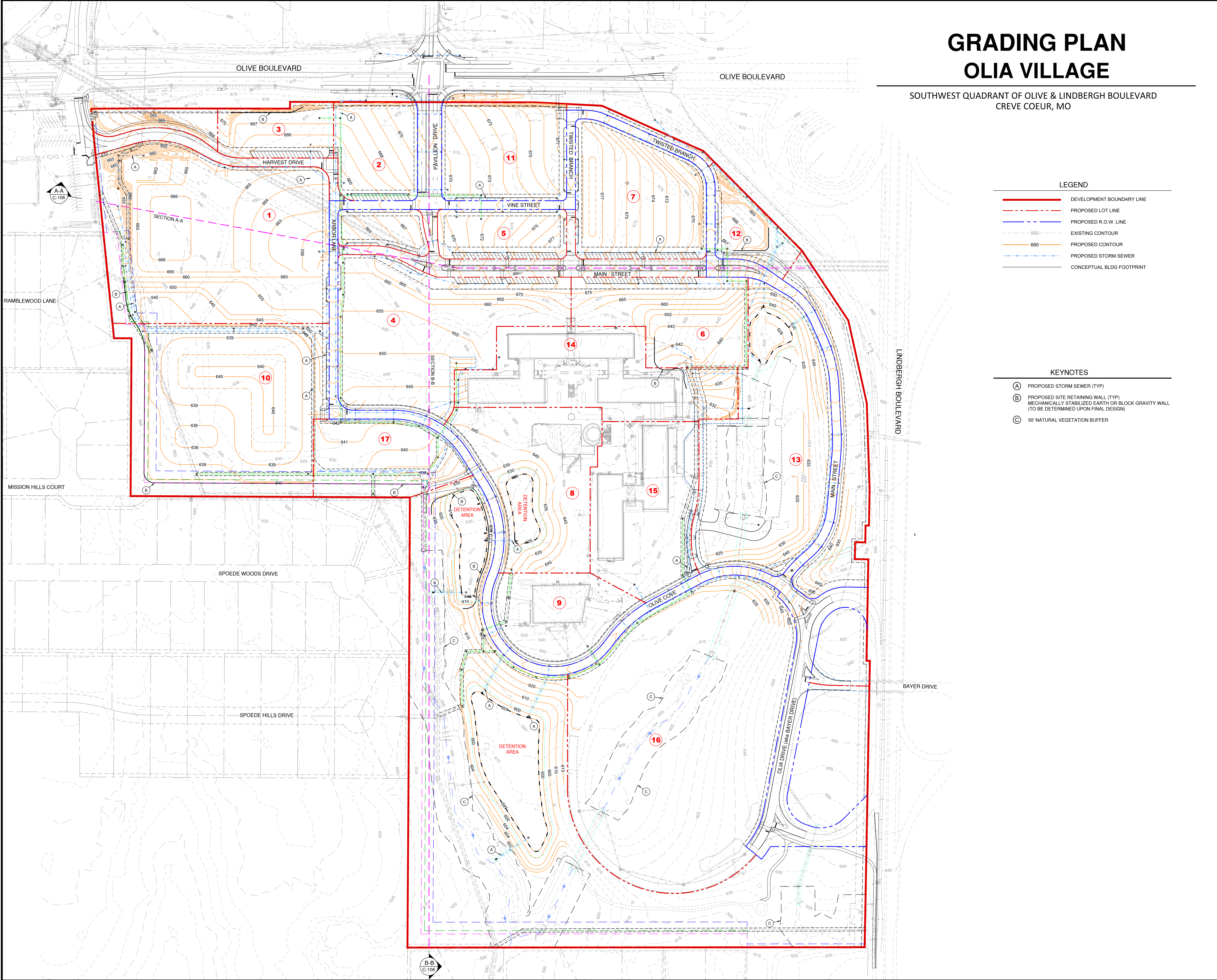
RESIDENTIAL :

1. REQUIRED BUFFER YARD - FORTY (40) FEET
2. MINIMUM RESIDENTIAL BUILDING SETBACK - TEN (10) FEET
3. MINIMUM COMMERCIAL BUILDING SETBACK - THIRTY-FIVE (35) FEET BEYOND BUFFER YARD

NON-RESIDENTIAL :

1. MINIMUM BUILDING SETBACK - TEN (10) FEET

Path: M:\JackMatthewsDev\23005201-00_BayerS...
Date: Tuesday, September 25, 2023 5:04:52 AM



PREPARED BY:
CMT
Crawford, Murphy & Tilly
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE DEVELOPMENT PLAN

100' 50' 0' 100' 200'
SCALE IN FEET

CIVIL ENGINEER PE-2006019649

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD

THE HEART OF CREVE COEUR
10300 OLIVE BLVD
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
PROJECT NO.:	23005201-00	
CAD DWG FILE:	ISITE-DEVELOPMENT-PLAN.DWG	
DESIGNED BY:	TME/JFM	
DRAWN BY:	JFM	
CHECKED BY:	CJS	
APPROVED BY:	---	
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SHEET TITLE		
GRADING PLAN		
C-103		
SHEET	-	OF --

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



CONSULTANTS

A north arrow pointing upwards, enclosed in a circle with the letter 'N' in the center. Below the arrow is a graphic scale bar with markings at 100', 50', 0', 100', and 200'. The text 'SCALE IN FEET' is centered below the bar.



OLIVIA VILLAGE

THE HEART OF CREVE COEUR

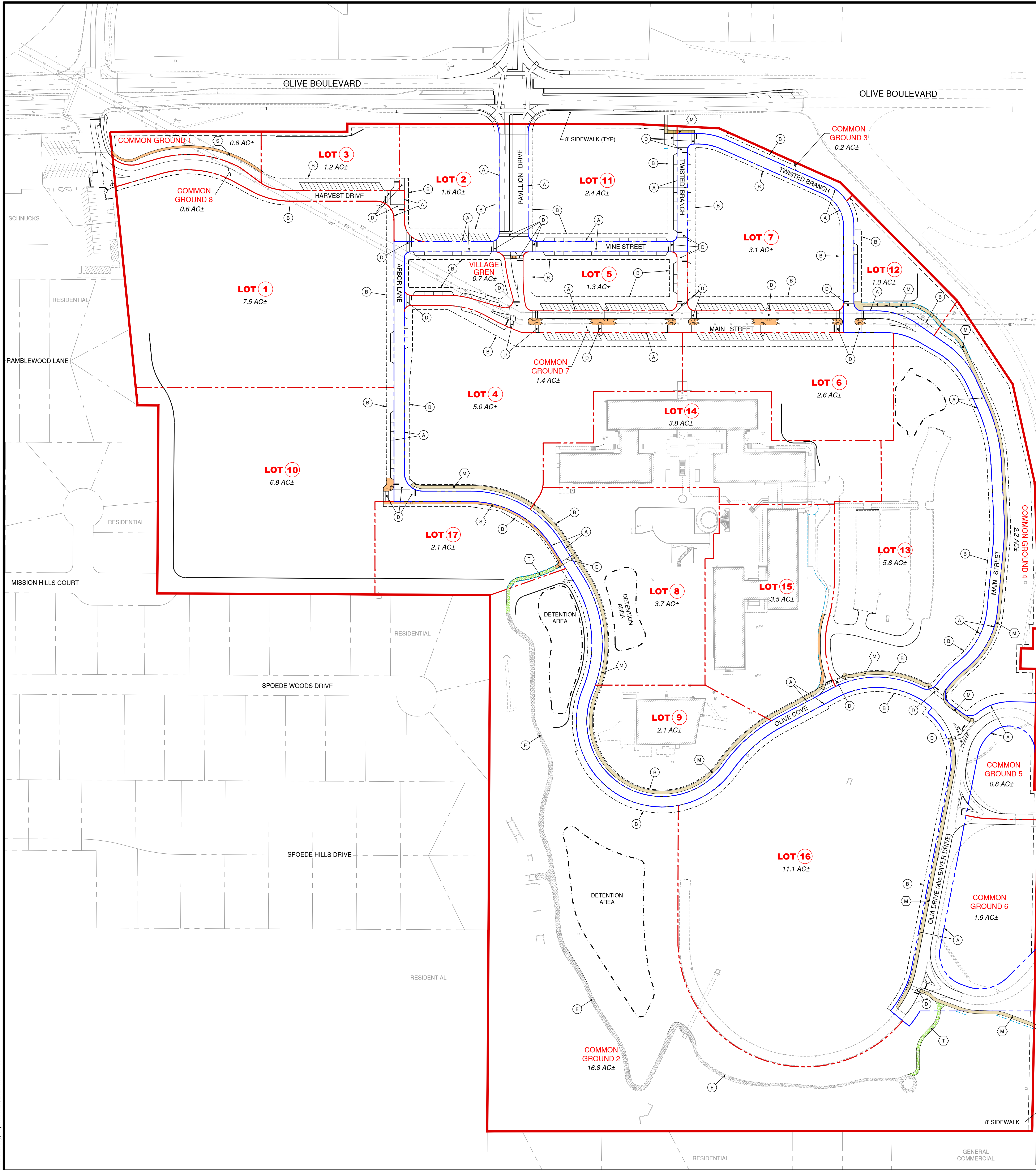
SHEET TITLE

C-104

SHEET - OF -

Page 87 of 246

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PEDESTRIAN MOBILITY PLAN

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

- LEGEND**
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED EASEMENT
 - ROADWAY STRIPING - STOP BAR
 - ROADWAY STRIPING - CROSSWALK
 - PROPOSED CONCRETE SIDEWALK (WITHIN EASEMENT)
 - PROPOSED CONCRETE MULTI-USE SIDEWALK 8' MIN WIDE (WITHIN EASEMENT)
 - PROPOSED 8' WIDE NATURAL AGGREGATE TRAIL (WITHIN EASEMENT ON NON-COMMON AREAS)

- KEYNOTES**
- (A) PROPOSED RIGHT-OF-WAY
 - (B) PROPOSED ROADWAY IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK (R.I.M.U.S.S.) EASEMENT
 - (C) PROPOSED SIDEWALK EASEMENT
 - (D) PROPOSED CROSSWALK
 - (E) EXISTING AGGREGATE TRAIL TO REMAIN (WIDTH VARIES APPROXIMATELY 8' TO 12')

PEDESTRIAN MOBILITY INFORMATION			
LOCATION	STANDARD SIDEWALK LENGTH (FT)	NATURAL TRAIL LENGTH (FT)	8' MULTI-USE SIDEWALK (FT)
PAVILLION DRIVE			
MAIN STREET			
MAIN STREET (EAST LEG)			1,245
HARVEST DRIVE	390		
ARBOR LANE			
OLIVE COVE	2,520		
TWISTED BRANCH			
VINE STREET			
OLIA DRIVE (AKA BAYER DRIVE)			690
(TO) LINDBERGH BLVD			300
WEST / SOUTH TRAIL (PROPOSED)		400	
WEST / SOUTH TRAIL (EXISTING)		2,210	
SUB-TOTAL :	2,910	2,610	2,235
TOTAL SIDEWALK / TRAIL (FT) :		7,755	
TOTAL SIDEWALK / TRAIL (MI) :		1.5	

PREPARED BY:
CMT
Crawford, Murphy & Tilly
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE DEVELOPMENT PLAN

100' 50' 0' 100' 200'
SCALE IN FEET

TODD MATTHEW EHLEN
NUMBER PE-2006019649
09/26/2023
CIVIL ENGINEER PE-2006019649

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD

OLIA VILLAGE
THE HEART OF CREVE COEUR

10300 OLIVE BLVD
CREVE COEUR, MO 63141

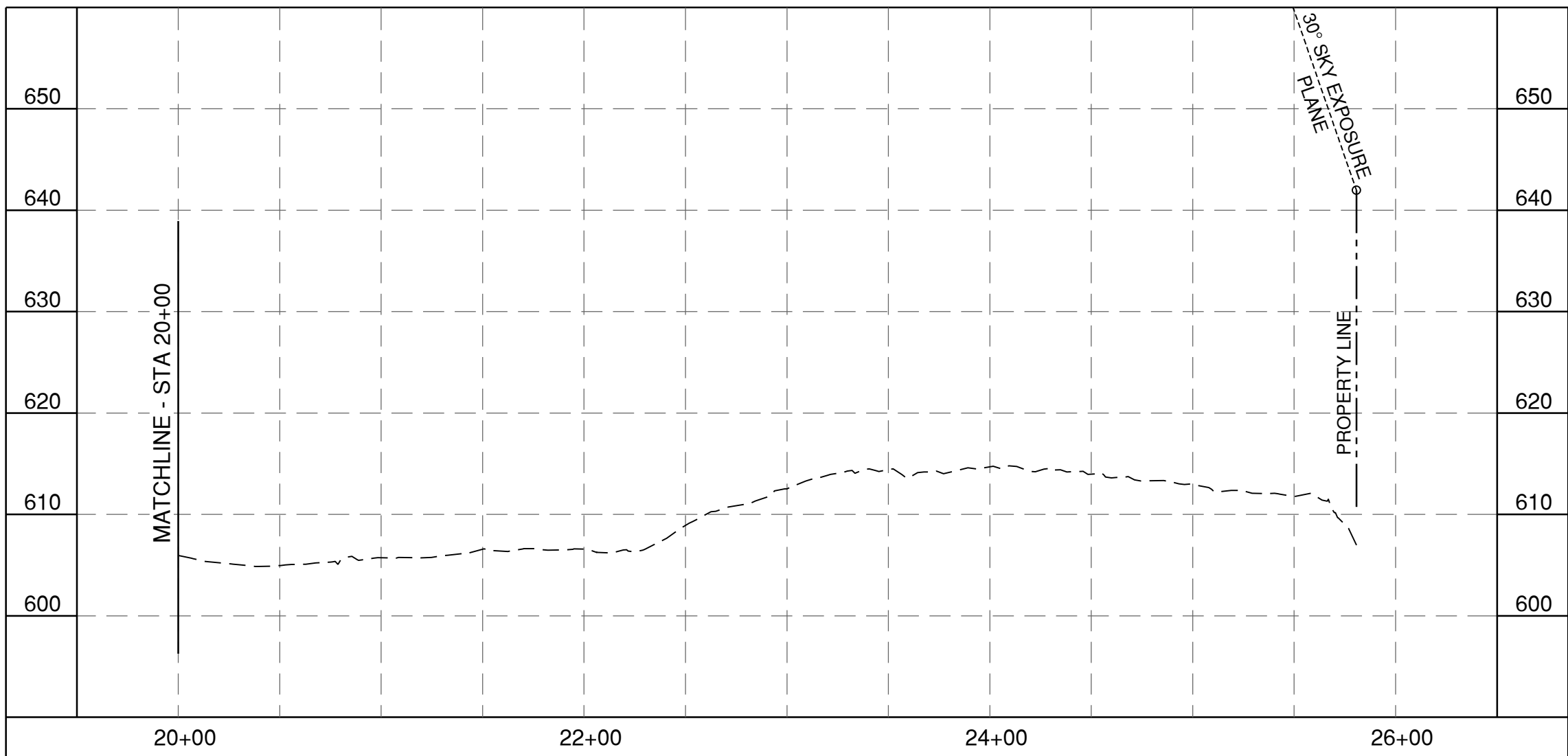
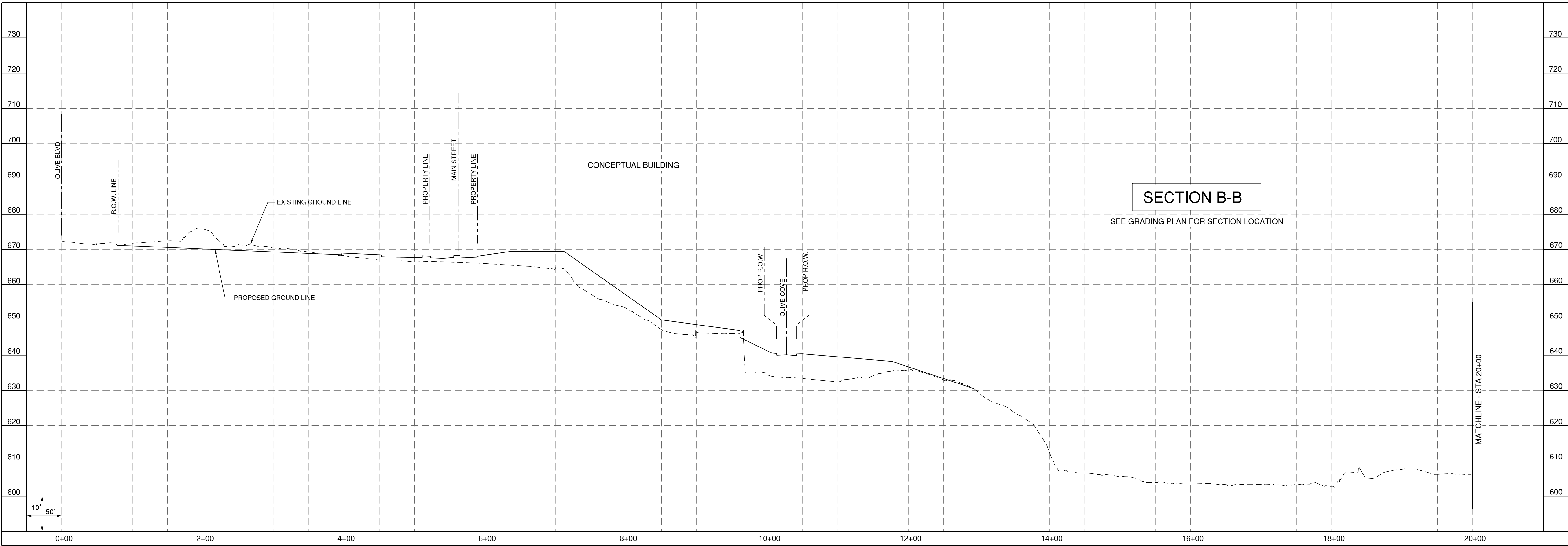
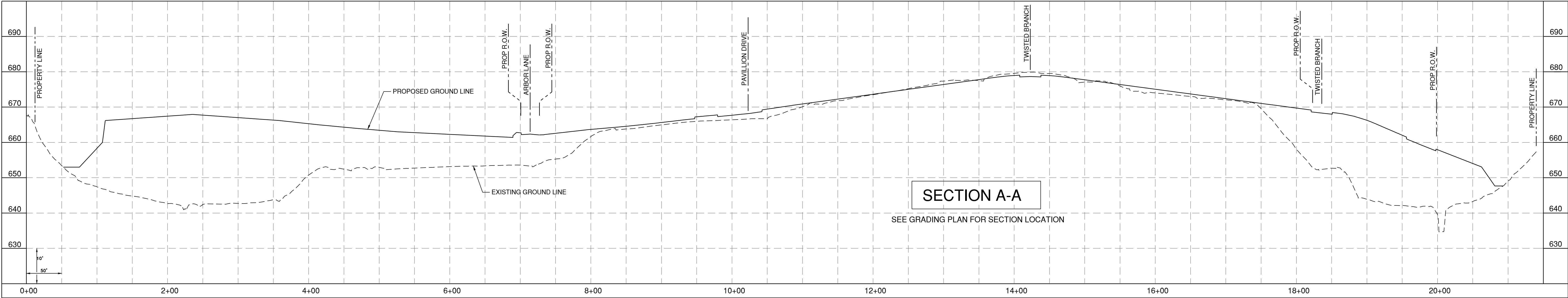
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PROJECT NO.:	23005201-00	
CAD DWG FILE:	ISITE-DEVELOPMENT-PLAN.DWG	
DESIGNED BY:	TME/JFM	
DRAWN BY:	JFM	
CHECKED BY:	CJS	
APPROVED BY:	---	
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PEDESTRIAN PLAN

C-105

SHEET - OF --

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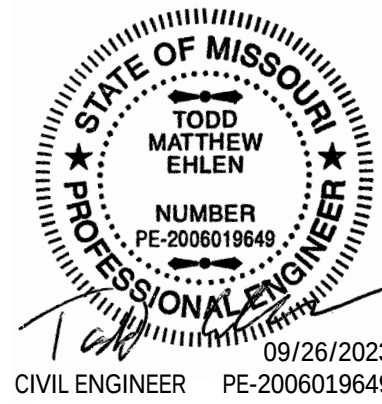
PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE DEVELOPMENT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
------	------	-------------

PROJECT NO:	23005201-00
CAD DWG FILE:	ISITE-DEVELOPMENT-PLAN.DWG
DESIGNED BY:	TME/JFM
DRAWN BY:	JFM
CHECKED BY:	CJS
APPROVED BY:	---
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE

SITE SECTIONS

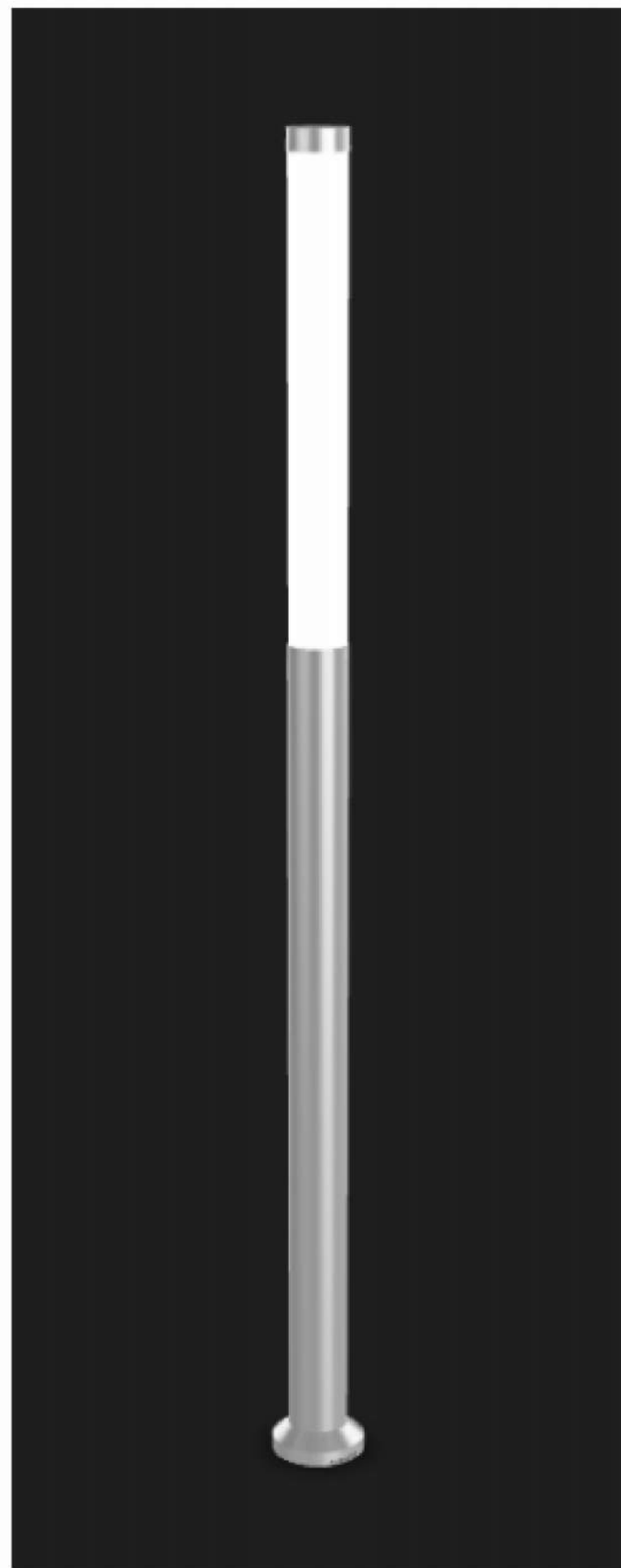
C-106

SHEET - OF --

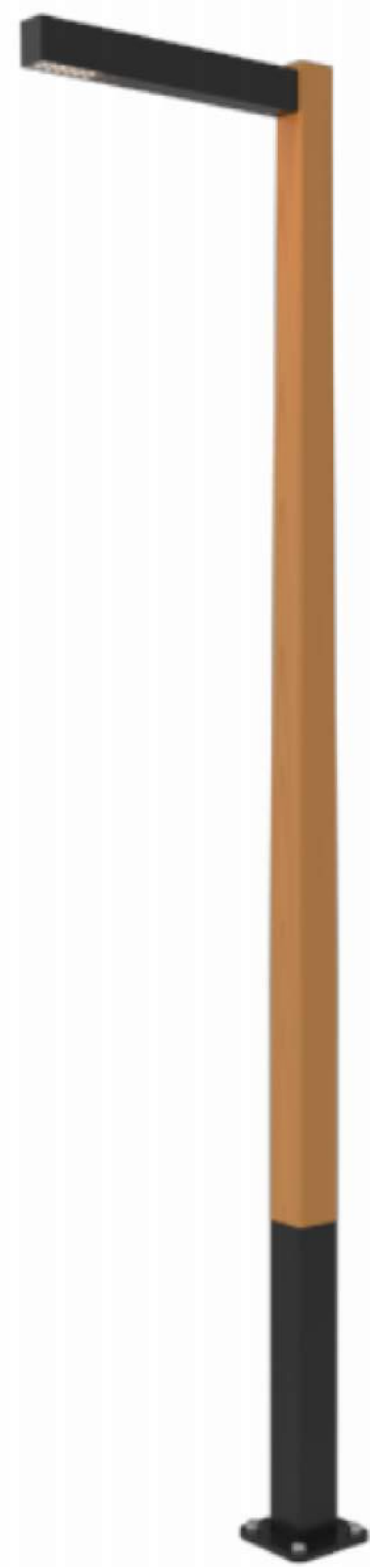
TYPE A1/A2



TYPE C1/C2



TYPE B1/B2



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	35	A1	Single	N.A.	0.912	GALN-SA3C-740-U-T3
	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00
CAD DWG FILE: GRAY RENDERINGS A.DWG
DESIGNED BY: TDH/BKP
DRAWN BY: TDH
CHECKED BY:
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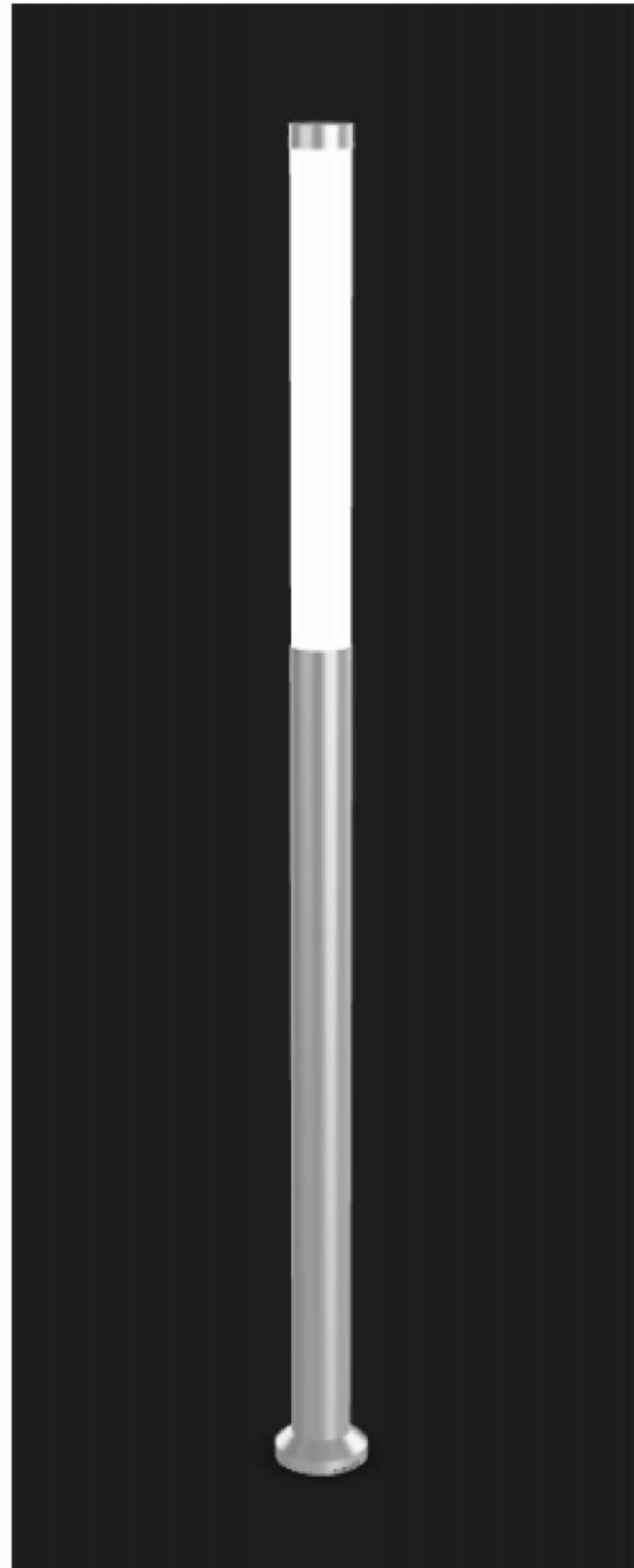
SHEET TITLE

SITE LIGHTING

A-103.1

SHEET

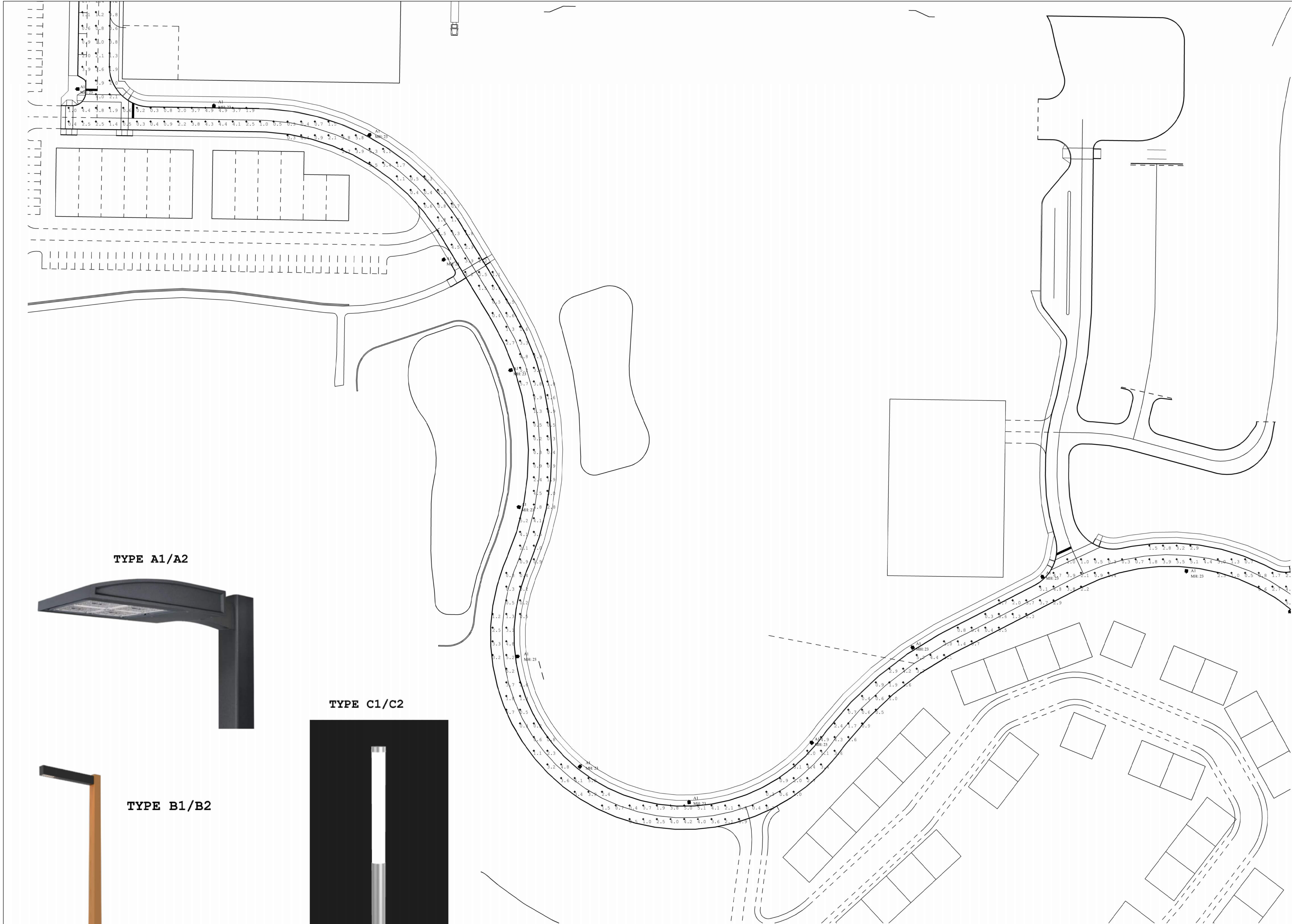
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NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

[illegible]



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	35	A1	Single	N.A.	0.912	GALN-SA3C-740-U-T3
	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00

CAD DWG FILE: GRAY RENDERINGS A.DWG

DESIGNED BY: TDH/BKP

DRAWN BY: TDH

CHECKED BY:

APPROVED BY:

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SHEET TITLE

SITE LIGHTING

A-103.3

SHEET

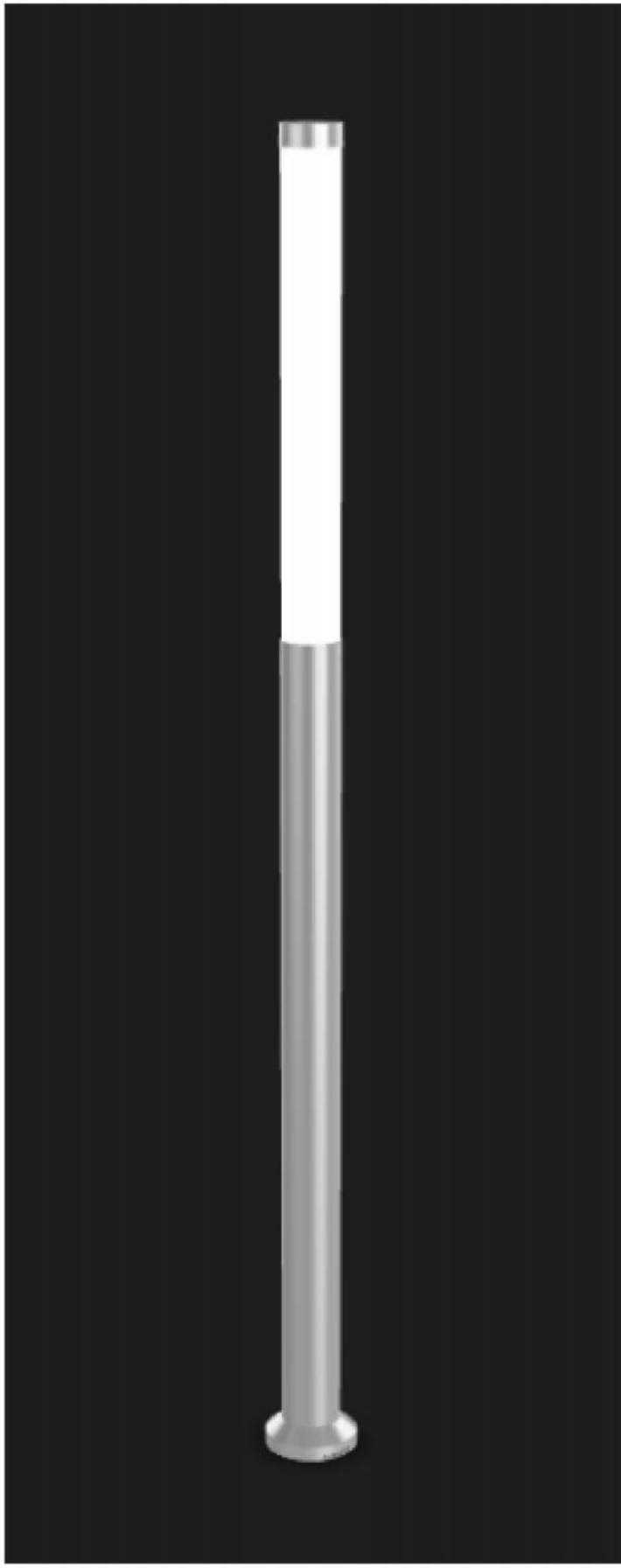
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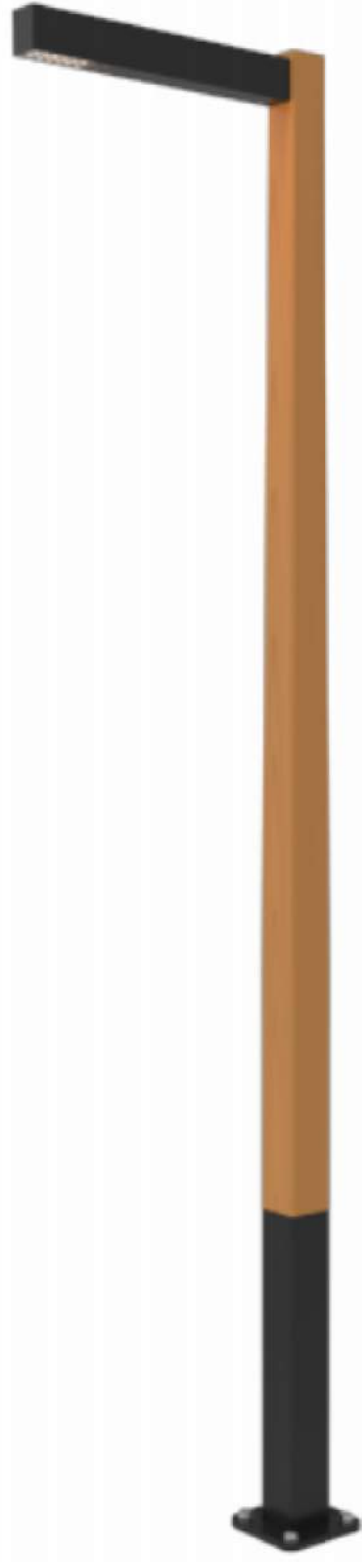
TYPE A1/A2



TYPE C1/C2



TYPE B1/B2



OLIA VILLAGE

NOTES:

CALCULATION POINTS ON GROUND
TYPE A1/A2 - 20' MOUNTING HEIGHT PLUS 3' BASE
TYPE B1/B2 - 20' MOUNTING HEIGHT
TYPE C1/C2 - 11' TALL

Luminaire Schedule						
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	4	A2	Single	N.A.	0.912	GALN-SA4C-740-U-SL3
	10	B1	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-3
	31	B2	Single	N.A.	0.900	BLDM-SD-120 277-CSL-L160-40K-CRI 70-4
	5	C1-ALT	Single	N.A.	0.900	MTRCL-X-4-4B30-30-XX-UNV
	12	C2-ALT	Single	N.A.	0.900	MTRCL-X-4-1B30-30-XX-UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARK	Illuminance	Fc	0.62	1.4	0.2	3.1	7.0
SITE	Illuminance	Fc	1.95	6.8	0.2	9.8	34.0

PREPARED BY:

gray

8 SUNNEN DRIVE, SUITE 110
ST. LOUIS, MO 63143
OFFICE NO. (314) 646-0400
LICENSE NO. A-2007011296

CONSULTANTS:



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO: 22478.00
CAD DWG FILE: GRAY RENDERINGS A.DWG
DESIGNED BY: TDH/BKP
DRAWN BY: TDH
CHECKED BY:
APPROVED BY:
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SHEET TITLE

SITE LIGHTING

A-103.4

SHEET

OF



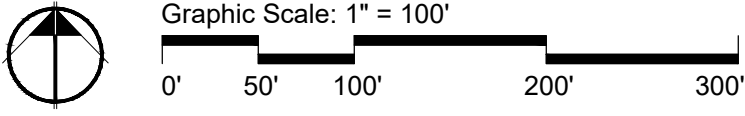
GENERAL NOTE
1. TREES SHOWN TO BE REMOVED AND TO REMAIN ARE BASED ON CONCEPTUAL SITE DESIGN AND GRADING DRAWINGS DATED 9/13/23 AND ARE SUBJECT TO CHANGE

LEGEND

	TREE OR TREE MASS TO BE REMOVED (50%)
	TREE OR TREE MASS TO REMAIN (50%)

NOTE:
TREE SYMBOLS REPRESENT ONE 6" OR LARGER DIA. TREE. SOME TREE MASSES TOO DENSE TO SURVEY INDIVIDUAL TREES. QUANTITY OF TREES IN THESE MASSES ESTIMATED BASED ON DENSITY OF SURVEYABLE WOODED AREAS.

A TREE PRESERVATION PLAN
SCALE: 1"=100'



NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE LANDSCAPE ARCHITECT.

PREPARED BY:

CMT
Crawford, Murphy & Tilly

ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SWT DESIGN

7722 Big Bend Blvd.
St. Louis, MO 63119
t. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**

LINDBERGH & OLIVE BLVD

OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
4	9/26/23	LANDSCAPE CONCEPT PLANS
3	9/13/23	LANDSCAPE CONCEPT PLANS
2	8/11/23	LANDSCAPE CONCEPT PLANS
1	7/21/23	LANDSCAPE CONCEPT PLANS

PROJECT NO:	23095201-00
CAD DWG FILE:	21585.01_SHEETS_GENERAL.DWG
DESIGNED BY:	WH
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
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SHEET TITLE	
TREE PRESERVATION PLAN	
LD-100	
SHEET	1 OF

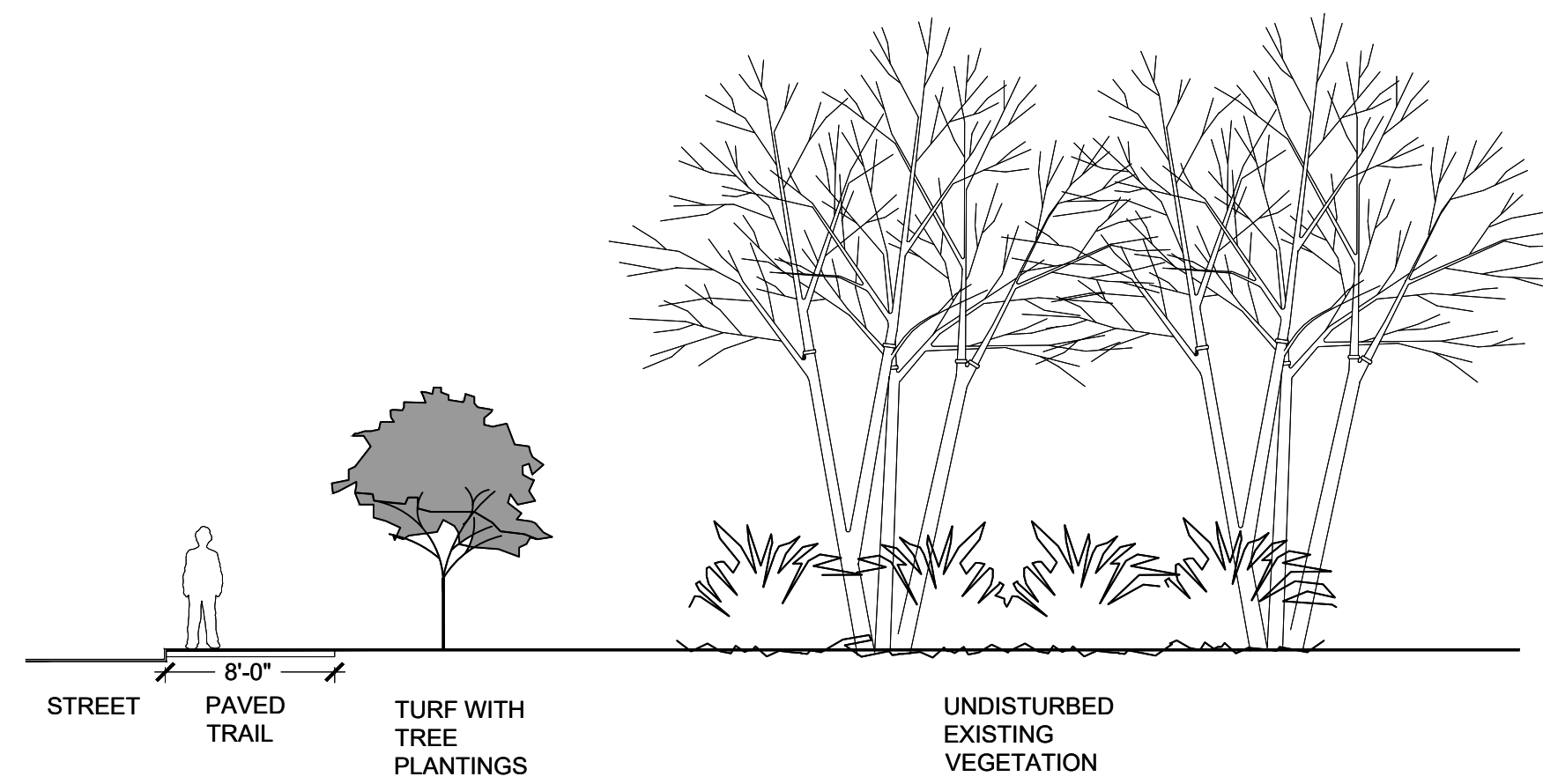
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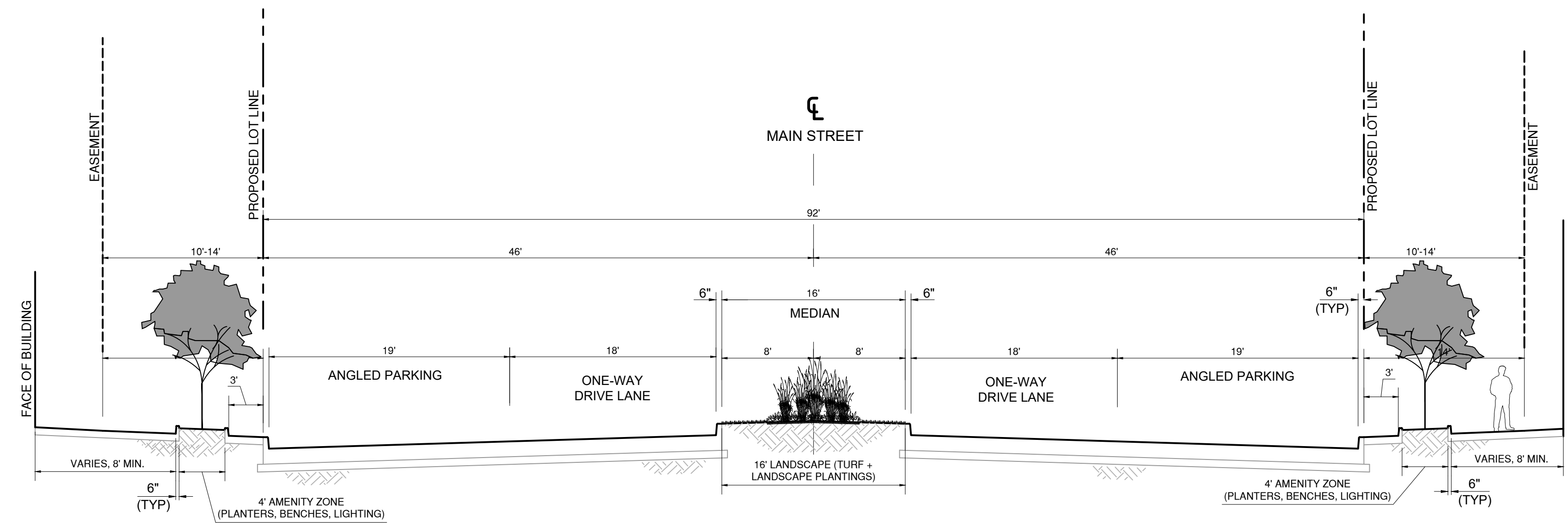
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- EXISTING VEGETATION
- TURF GRASS
SPECIES TO BE DETERMINED BASED ON
LOCAL SOIL AND SITE CONDITIONS
- ORNAMENTAL LANDSCAPE PLANTINGS
COMBINATION OF SHRUB, PERENNIAL, AND GROUNDCOVER
SPECIES ADAPTED TO REGIONAL CLIMATE AND SITE CONDITIONS.
NATIVE PLANT MATERIAL TO BE UTILIZED WHERE APPROPRIATE.
39NORTH GREAT STREETS PLANT PALETTE WILL BE USED AS
A REFERENCE WHEN DETERMINING FINAL PLANT MATERIAL.
- EXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY
VEGETATION TO REMAIN
- PROPOSED TREES
- EXISTING TREES TO REMAIN

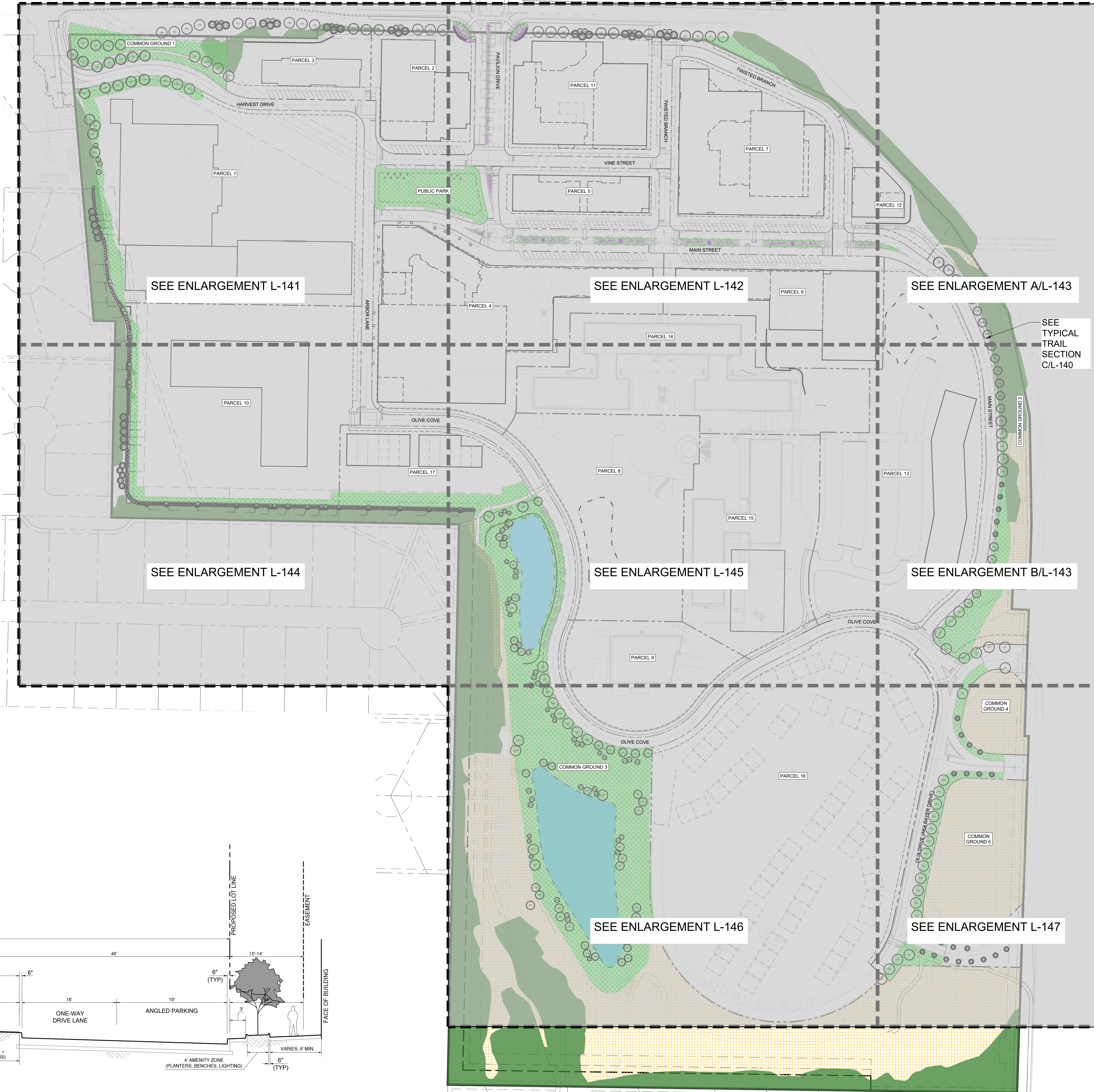
- NOTES
- TREES AND LIGHTING WITHIN CITY OF ST. LOUIS EASEMENT REQUIRES CITY APPROVAL.
 - IRRIGATION WILL BE PROVIDED TO NEW LANDSCAPE BEDS. A WATER LINE WILL BE INSTALLED TO THE MEDIAN IN OLIVE WEST OF PAVILION.
 - ALL DISTURBED AREAS NOT OTHERWISE IMPROVED SHALL RECEIVE SEEDED TURF GRASS.
 - ALL LANDSCAPE SHALL COMPLY WITH THE REQUIREMENTS DETAILED IN ATTACHMENT B.
 - SEE SHEET L-147 FOR OVERALL PLANTING SCHEDULE.



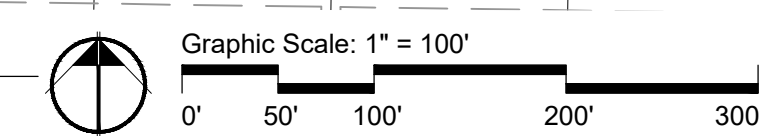
C TYPICAL TRAIL SECTION
SCALE: 1"=8"



B TYPICAL SECTION - MAIN STREET (MEDIAN SECTION)
SCALE: 1"= 8' HORIZONTAL, 1"= 4' VERTICAL



A PHASE 1 PLANTING PLAN
SCALE: 1"=100'



NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE LANDSCAPE ARCHITECT.



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

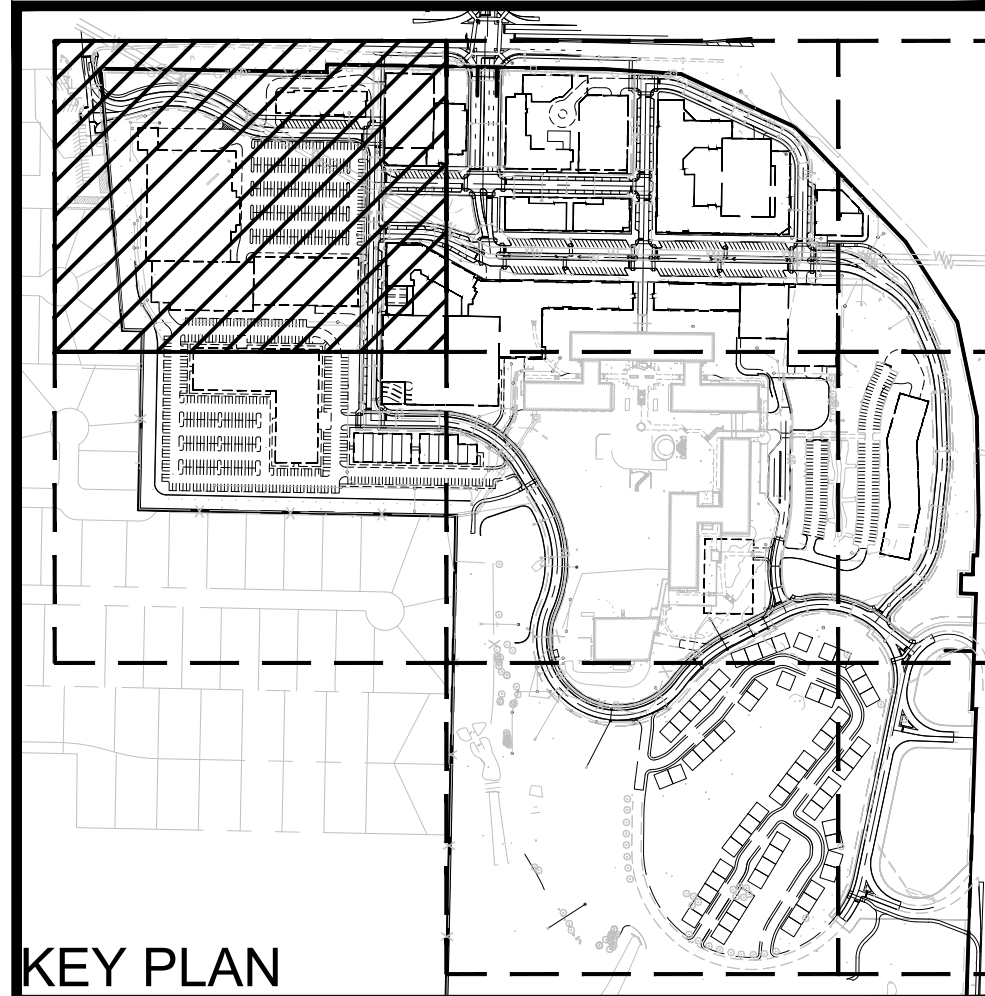
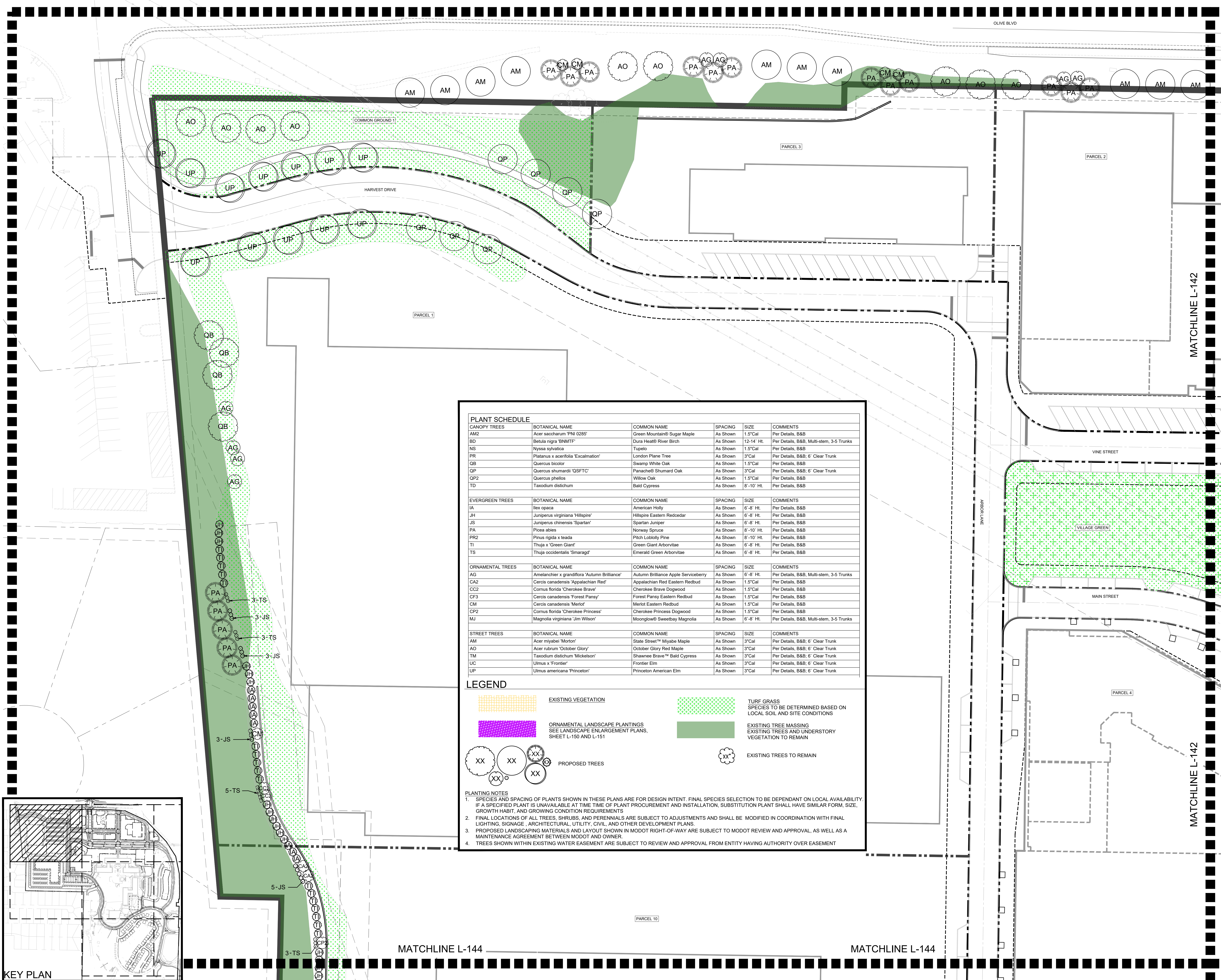
PROJECT NO.: 23092801-00
CAD DWG FILE: 21585.01_SHEETS_PLANTING_PHASE
DESIGNED BY: WMT
DRAWN BY: MB/ZTS
CHECKED BY: BR
APPROVED BY: BR
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SHEET TITLE
PHASE 1 PLANTING PLAN

L-140

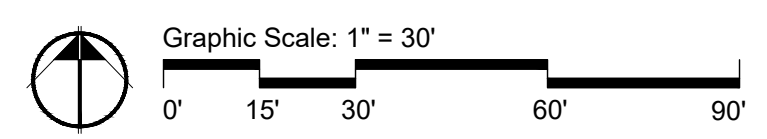
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Date: Wednesday, September 20, 2023 2:27 PM



PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'

PLANT SCHEDULE					
CANOPY TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM2	Acer saccharum 'PNI 0285'	Green Mountain® Sugar Maple	As Shown	1.5'Cal	Per Details, B&B
BD	Betula nigra 'BNMTF'	Dura Heat® River Birch	As Shown	12-14' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
NS	Nyssa sylvatica	Tupelo	As Shown	1.5'Cal	Per Details, B&B
PR	Platanus x acerifolia 'Excalmation'	London Plane Tree	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
QB	Quercus bicolor	Swamp White Oak	As Shown	1.5'Cal	Per Details, B&B
QP	Quercus shumardi 'QSFTC'	Panache® Shumard Oak	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
QP2	Quercus phellos	Willow Oak	As Shown	1.5'Cal	Per Details, B&B
TD	Taxodium distichum	Bald Cypress	As Shown	8'-10' Ht.	Per Details, B&B
EVERGREEN TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
IA	Ilex opaca	American Holly	As Shown	6'-8' Ht.	Per Details, B&B
JH	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.	Per Details, B&B
JS	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.	Per Details, B&B
PA	Picea abies	Norway Spruce	As Shown	8'-10' Ht.	Per Details, B&B
PR2	Pinus rigida x teada	Pitch Loblolly Pine	As Shown	8'-10' Ht.	Per Details, B&B
TI	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
ORNAMENTAL TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AG	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
CA2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5'Cal	Per Details, B&B
CC2	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5'Cal	Per Details, B&B
CF3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5'Cal	Per Details, B&B
CM	Cornus canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5'Cal	Per Details, B&B
CP2	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5'Cal	Per Details, B&B
MJ	Magnolia virginiana 'Jim Wilson'	Moonglow® Sweetbay Magnolia	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
STREET TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM	Acer miyabei 'Morton'	State Street™ Miyabe Maple	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
AO	Acer rubrum 'October Glory'	October Glory Red Maple	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
TM	Taxodium distichum 'Mickelson'	Shawnee Brave™ Bald Cypress	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
UC	Ulmus x 'Frontier'	Frontier Elm	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk
UP	Ulmus americana 'Princeton'	Princeton American Elm	As Shown	3'Cal	Per Details, B&B; 6' Clear Trunk



PREPARED BY:
CMT
Crawford, Murphy & Tilly
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:
SWT DESIGN
7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700

9/26/23
Bonnie C. Roy
Landscape Architect MO
#LA-2020014783

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**
LINDBERGH & OLIVE BLVD

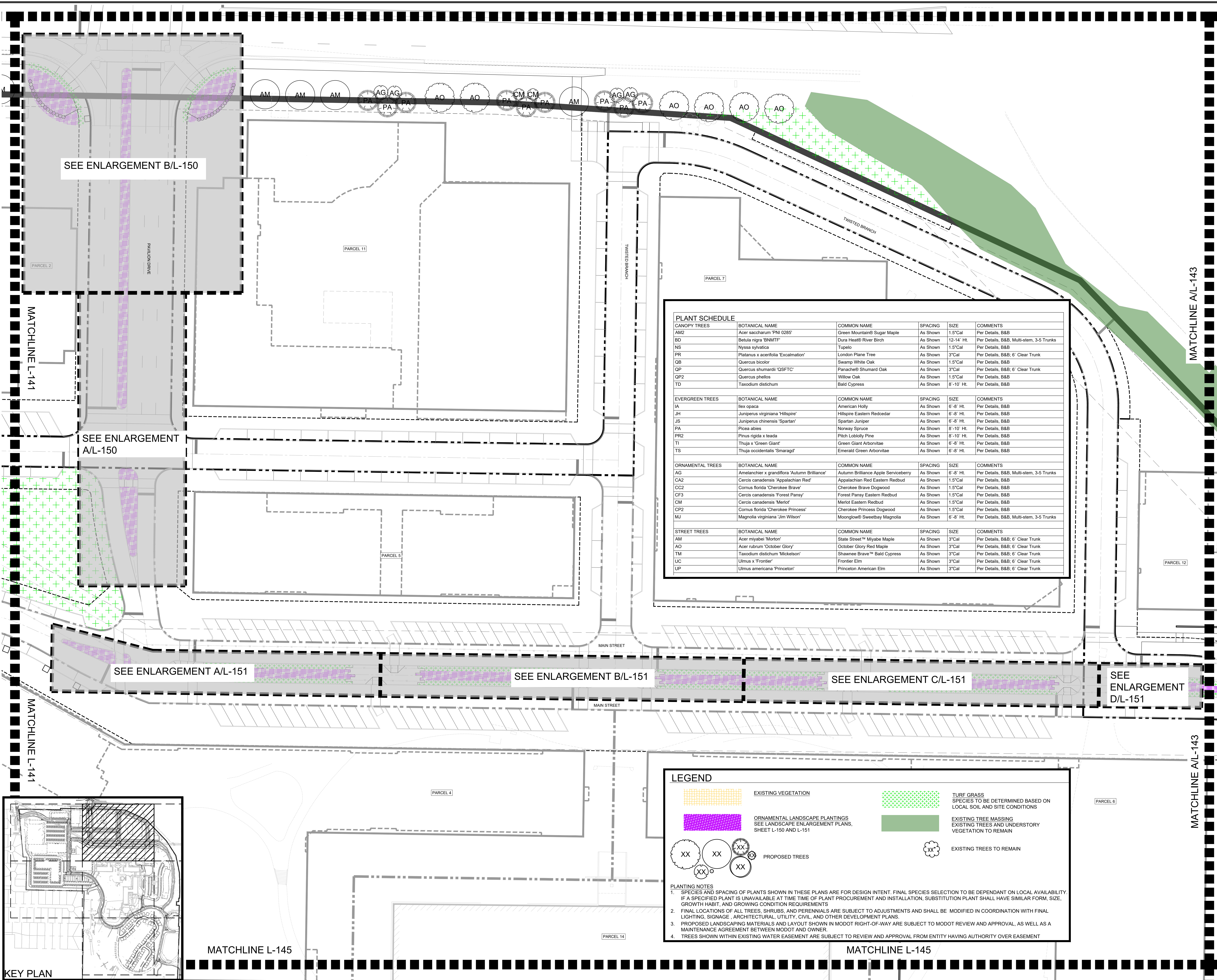
THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS
MARK	DATE	DESCRIPTION

PROJECT NO.: 2309201-00
CAD DWG FILE: 21555_01_SHEETS_PLANTING_PHASE
DESIGNED BY: WWS
DRAWN BY: MB/ZTS
CHECKED BY: BR
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SHEET TITLE
**PHASE 1 PLANTING
PLAN**
L-141
SHEET OF

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Supervisor: G.S. 2/23/23 1:14



PLANT SCHEDULE				
CANOPY TREES				
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
AM2	Acer saccharum 'PNI 0285'	Green Mountain® Sugar Maple	As Shown	1.5' Cal
BD	Betula nigra 'BNMTF'	Dura Heat® River Birch	As Shown	12-14' Ht.
NS	Nyssa sylvatica	Tupelo	As Shown	1.5' Cal
PR	Platanus x acerifolia 'Exclamation'	London Plane Tree	As Shown	3' Cal
QB	Quercus bicolor	Swamp White Oak	As Shown	1.5' Cal
QP	Quercus shumardii 'QSFTC'	Panache® Shumard Oak	As Shown	3' Cal
QP2	Quercus phellos	Willow Oak	As Shown	1.5' Cal
TD	Taxodium distichum	Bald Cypress	As Shown	6'-10' Ht.
EVERGREEN TREES				
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
IA	Ilex opaca	American Holly	As Shown	6'-8' Ht.
JH	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.
JS	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.
PA	Picea abies	Norway Spruce	As Shown	8'-10' Ht.
PR2	Pinus rigida x 'teada'	Pitch Loblolly Pine	As Shown	8'-10' Ht.
TI	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.
TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.
ORNAMENTAL TREES				
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
AG	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	As Shown	6'-8' Ht.
CA2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5' Cal
CC2	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5' Cal
CF3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5' Cal
CM	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5' Cal
CP2	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5' Cal
MJ	Magnolia virginiana 'Jim Wilson'	Moonglow® Sweetbay Magnolia	As Shown	6'-8' Ht.
STREET TREES				
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
AM	Acer miyabei 'Morton'	State Street™ Miyabe Maple	As Shown	3' Cal
AO	Acer rubrum 'October Glory'	October Glory Red Maple	As Shown	3' Cal
TM	Taxodium distichum 'Mickelson'	Shawnee Brave™ Bald Cypress	As Shown	3' Cal
UC	Ulmus x 'Frontier'	Frontier Elm	As Shown	3' Cal
UP	Ulmus americana 'Princeton'	Princeton American Elm	As Shown	3' Cal

EXISTING VEGETATION

ORNAMENTAL LANDSCAPE PLANTINGS
SEE LANDSCAPE ENLARGEMENT PLANS,
SHEET L-150 AND L-151

XX

XX

XX

XX

XX

PROPOSED TREES

TURF GRASS
SPECIES TO BE DETERMINED BASED ON
LOCAL SOIL AND SITE CONDITIONS

EXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY
VEGETATION TO REMAIN

XX

EXISTING TREES TO REMAIN

PLANTING NOTES

- SPECIES AND SPACING OF PLANTS SHOWN IN THESE PLANS ARE FOR DESIGN INTENT. FINAL SPECIES SELECTION TO BE DEPENDANT ON LOCAL AVAILABILITY. IF A SPECIFIED PLANT IS UNAVAILABLE AT TIME OF PLANT PROCUREMENT AND INSTALLATION, SUBSTITUTION PLANT SHALL HAVE SIMILAR FORM, SIZE, GROWTH HABIT, AND GROWING CONDITION REQUIREMENTS
- FINAL LOCATIONS OF ALL TREES, SHRUBS, AND PERENNIALS ARE SUBJECT TO ADJUSTMENTS AND SHALL BE MODIFIED IN COORDINATION WITH FINAL LIGHTING, SIGNAGE, ARCHITECTURAL, UTILITY, CIVIL, AND OTHER DEVELOPMENT PLANS.
- PROPOSED LANDSCAPING MATERIALS AND LAYOUT SHOWN IN MODOT RIGHT-OF-WAY ARE SUBJECT TO MODOT REVIEW AND APPROVAL, AS WELL AS A MAINTENANCE AGREEMENT BETWEEN MODOT AND OWNER.
- TREES SHOWN WITHIN EXISTING WATER EASEMENT ARE SUBJECT TO REVIEW AND APPROVAL FROM ENTITY HAVING AUTHORITY OVER EASEMENT

PREPARED BY:

Crawford, Murphy & Tilly

ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SWT DESIGN

7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700

9/26/23
Bonnie C. Roy
Landscape Architect MO
#LA-000014783

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD

OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

3	9/26/23	PHASE 1 Preliminary
2	9/13/23	PHASE 1 Preliminary
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

PROJECT NO.: 23005201-00

CAD DWG FILE: 21555_01_SHEETS_PLANTING_PHASE 1.dwg

DESIGNED BY: WWT/3

DRAWN BY: MB/ZTS

CHECKED BY: BR

APPROVED BY: BR

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SHEET TITLE

PHASE 1 PLANTING
PLAN

L-142

SHEET OF

A

PHASE 1 PLANTING PLAN - ENLARGEMENT

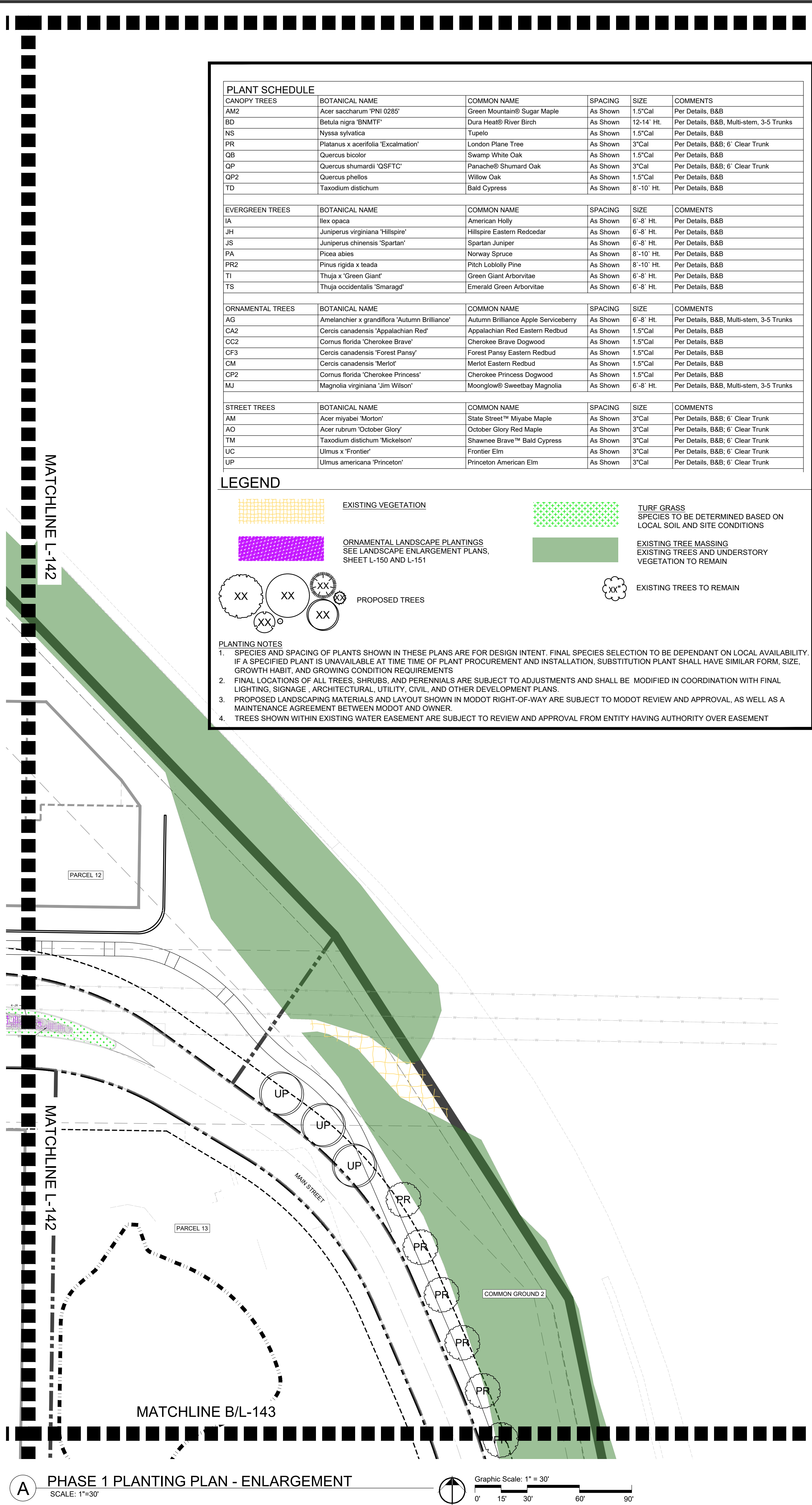
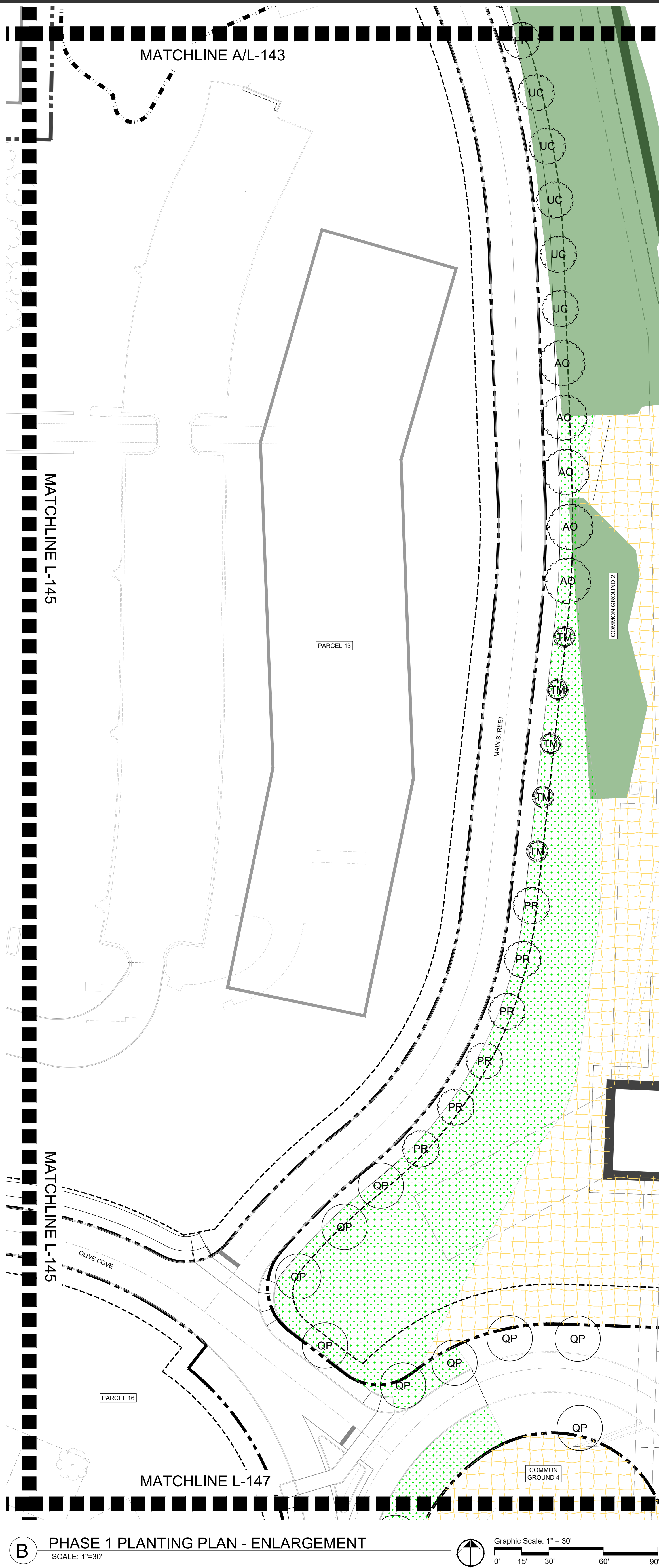
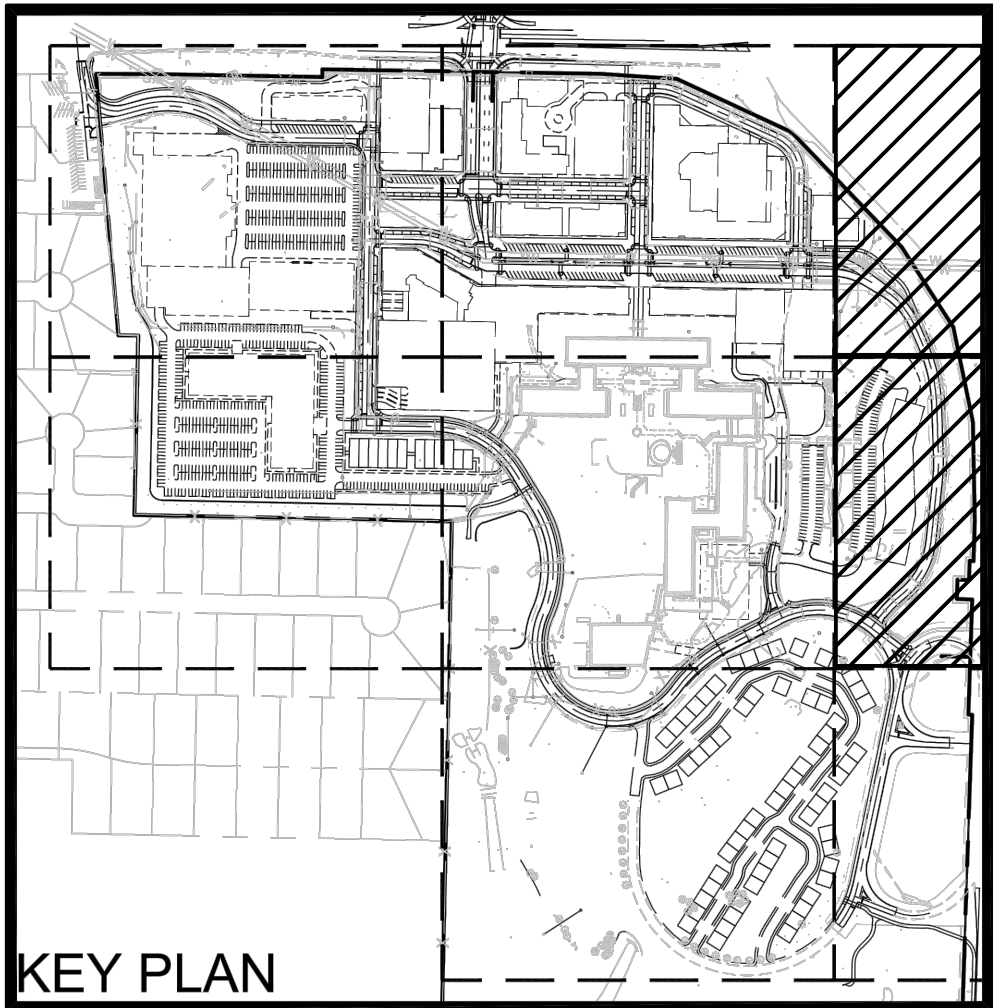
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Reviewed: J. Murphy
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PREPARED BY:



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OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



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St. Louis, MO 63119
T. 314.644.5700



9/26/23
Bonnie C. Roy
Landscape Architect MO
#LA-2005014783

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

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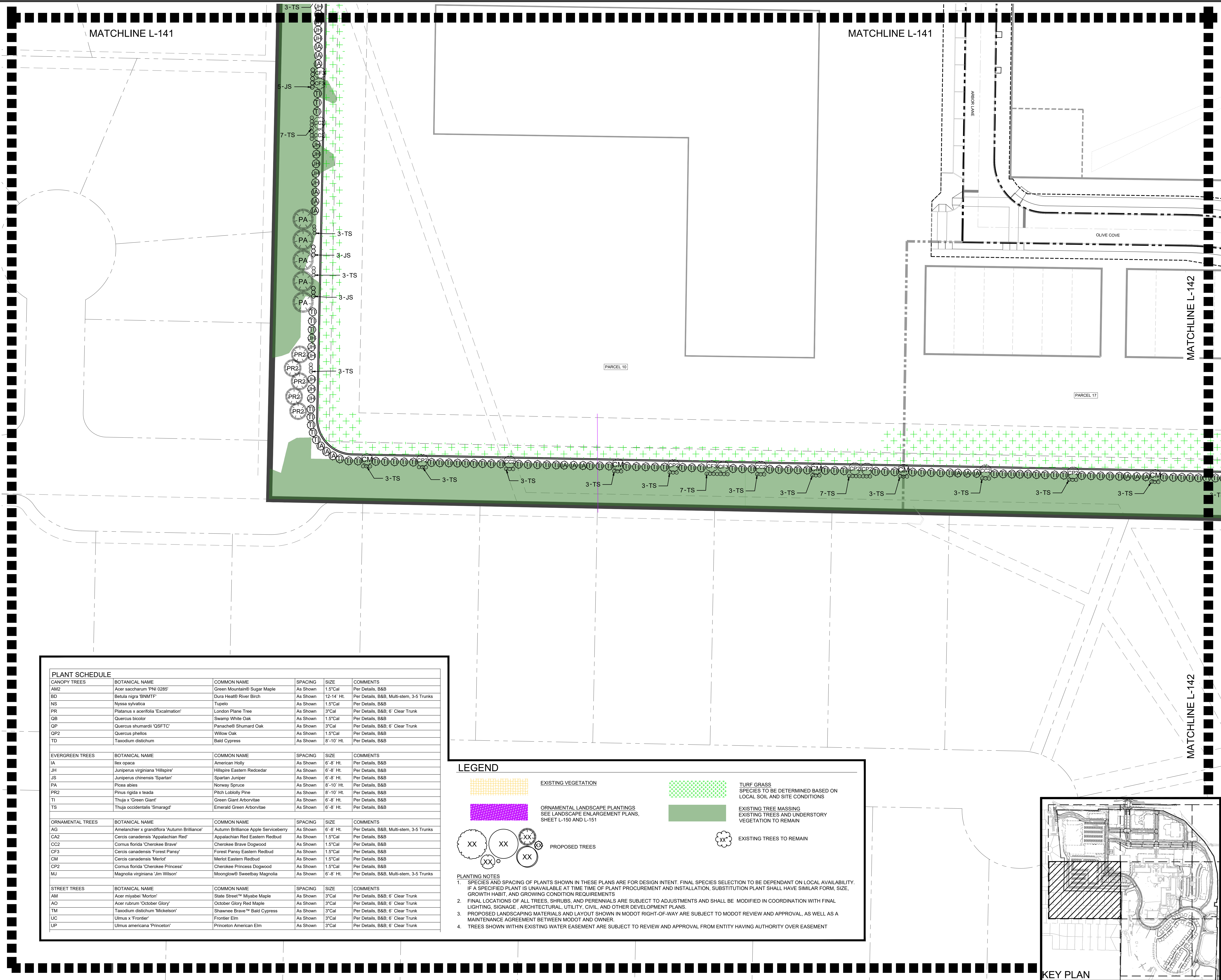
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PLAN

L-143

SHEET

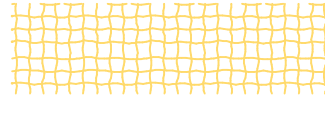
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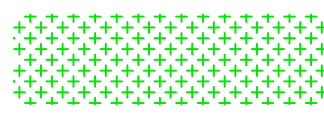


PLANT SCHEDULE					
CANOPY TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM2	Acer saccharum 'PNI 0285'	Green Mountain® Sugar Maple	As Shown	1.5" Cal	Per Details, B&B
BD	Betula nigra 'BNMTF'	Dura Heat® River Birch	As Shown	12-14' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
NS	Nyssa sylvatica	Tupelo	As Shown	1.5" Cal	Per Details, B&B
FR	Platanus x acerifolia 'Excelsation'	London Plane Tree	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
OB	Quercus bicolor	Swamp White Oak	As Shown	1.5" Cal	Per Details, B&B
QP	Quercus shumardii 'QSFTC'	Panache® Shumard Oak	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
QP2	Quercus phellos	Willow Oak	As Shown	1.5" Cal	Per Details, B&B
TD	Taxodium distichum	Bald Cypress	As Shown	8-10' Ht.	Per Details, B&B
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IA	Ilex opaca	American Holly	As Shown	6'-8' Ht.	Per Details, B&B
JH	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.	Per Details, B&B
JS	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.	Per Details, B&B
PA	Picea abies	Norway Spruce	As Shown	8-10' Ht.	Per Details, B&B
PR2	Pinus rigida x teada	Pitch Loblolly Pine	As Shown	8-10' Ht.	Per Details, B&B
TI	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
ORNAMENTAL TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AG	Aamelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
CA2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5" Cal	Per Details, B&B
CC2	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5" Cal	Per Details, B&B
CF3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5" Cal	Per Details, B&B
CM	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5" Cal	Per Details, B&B
CP2	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5" Cal	Per Details, B&B
MJ	Magnolia virginiana 'Jim Wilson'	Moonglow® Sweetbay Magnolia	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
STREET TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM	Acer miyabei 'Morton'	State Street™ Miyabe Maple	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
AO	Acer rubrum 'October Glory'	October Glory Red Maple	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
TM	Taxodium distichum 'Mickelson'	Shawnee Brave™ Bald Cypress	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
UC	Ulmus x 'Frontier'	Frontier Elm	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk
UP	Ulmus americana 'Princeton'	Princeton American Elm	As Shown	3" Cal	Per Details, B&B, 6' Clear Trunk

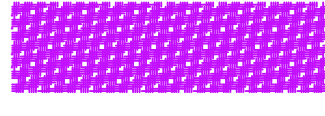
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EXISTING VEGETATION



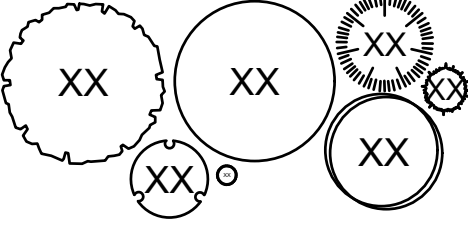
TURF GRASS
SPECIES TO BE DETERMINED BASED ON LOCAL SOIL AND SITE CONDITIONS



ORNAMENTAL LANDSCAPE PLANTINGS
SEE LANDSCAPE ENLARGEMENT PLANS, SHEET L-150 AND L-151



EXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY VEGETATION TO REMAIN



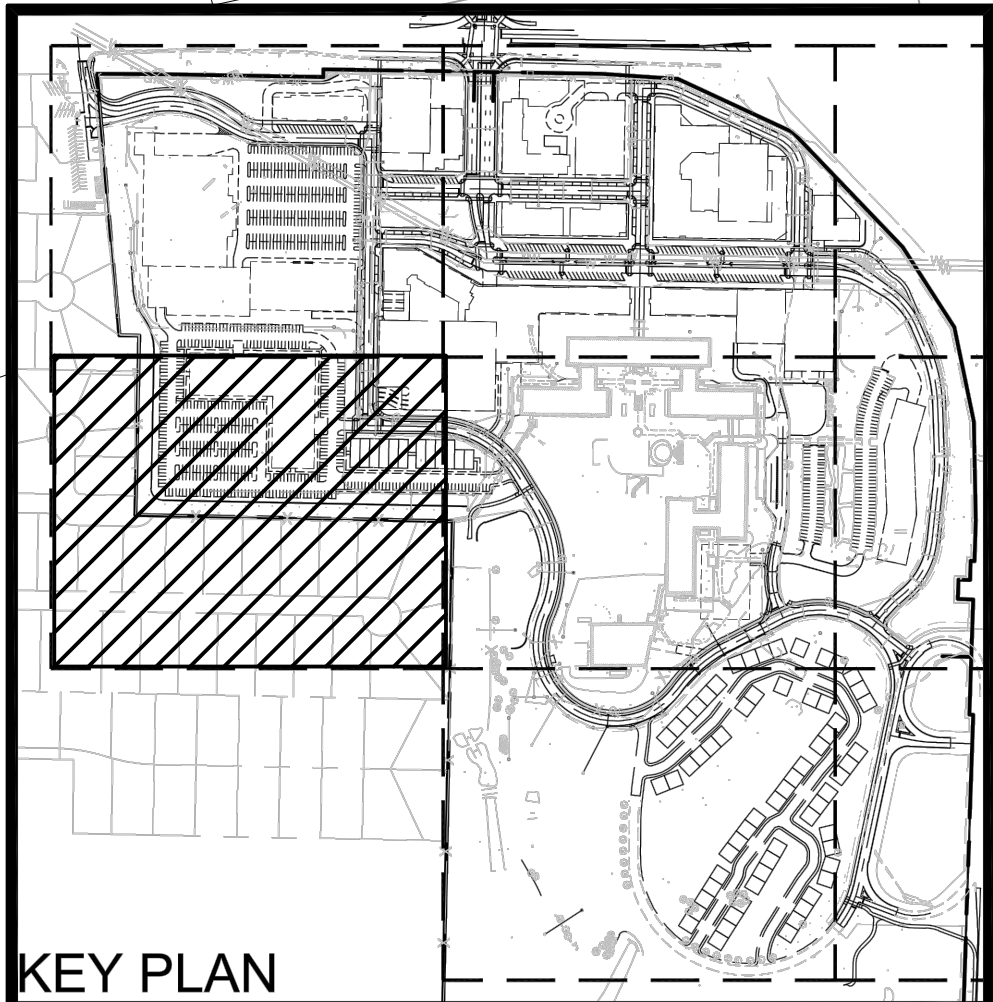
PROPOSED TREES



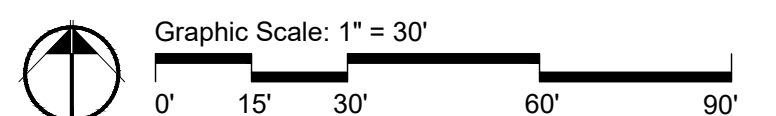
EXISTING TREES TO REMAIN

PLANTING NOTES

- SPECIES AND SPACING OF PLANTS SHOWN IN THESE PLANS ARE FOR DESIGN INTENT. FINAL SPECIES SELECTION TO BE DEPENDANT ON LOCAL AVAILABILITY. IF A SPECIFIED PLANT IS UNAVAILABLE AT TIME TIME OF PLANT PROCUREMENT AND INSTALLATION, SUBSTITUTION PLANT SHALL HAVE SIMILAR FORM, SIZE, GROWTH HABIT, AND GROWING CONDITION REQUIREMENTS
- FINAL LOCATIONS OF ALL TREES, SHRUBS, AND PERENNIALS ARE SUBJECT TO ADJUSTMENTS AND SHALL BE MODIFIED IN COORDINATION WITH FINAL LIGHTING, SIGNAGE, ARCHITECTURAL, UTILITY, CIVIL, AND OTHER DEVELOPMENT PLANS.
- PROPOSED LANDSCAPING MATERIALS AND LAYOUT SHOWN IN MODOT RIGHT-OF-WAY ARE SUBJECT TO MODOT REVIEW AND APPROVAL, AS WELL AS A MAINTENANCE AGREEMENT BETWEEN MODOT AND OWNER.
- TREES SHOWN WITHIN EXISTING WATER EASEMENT ARE SUBJECT TO REVIEW AND APPROVAL FROM ENTITY HAVING AUTHORITY OVER EASEMENT



PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'



PREPARED BY:



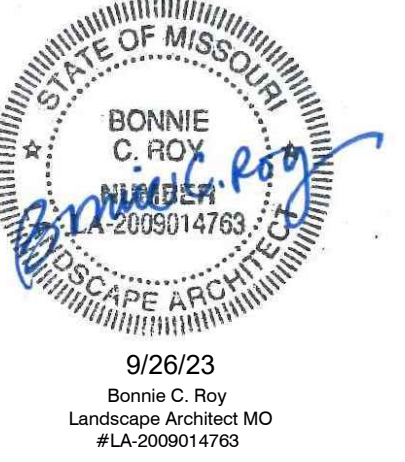
Crawford, Murphy & Tilly

ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, mo 63119
t. 314.644.5700



9/26/23
Bonnie C. Roy
Landscape Architect MO
#LA-000014783

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

MARK | DATE | DESCRIPTION

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CAD DWG FILE: 21555_01_SHEETS_PLANTING_PHASE
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DRAWN BY: MB/ZTS
CHECKED BY: BR
APPROVED BY: BR
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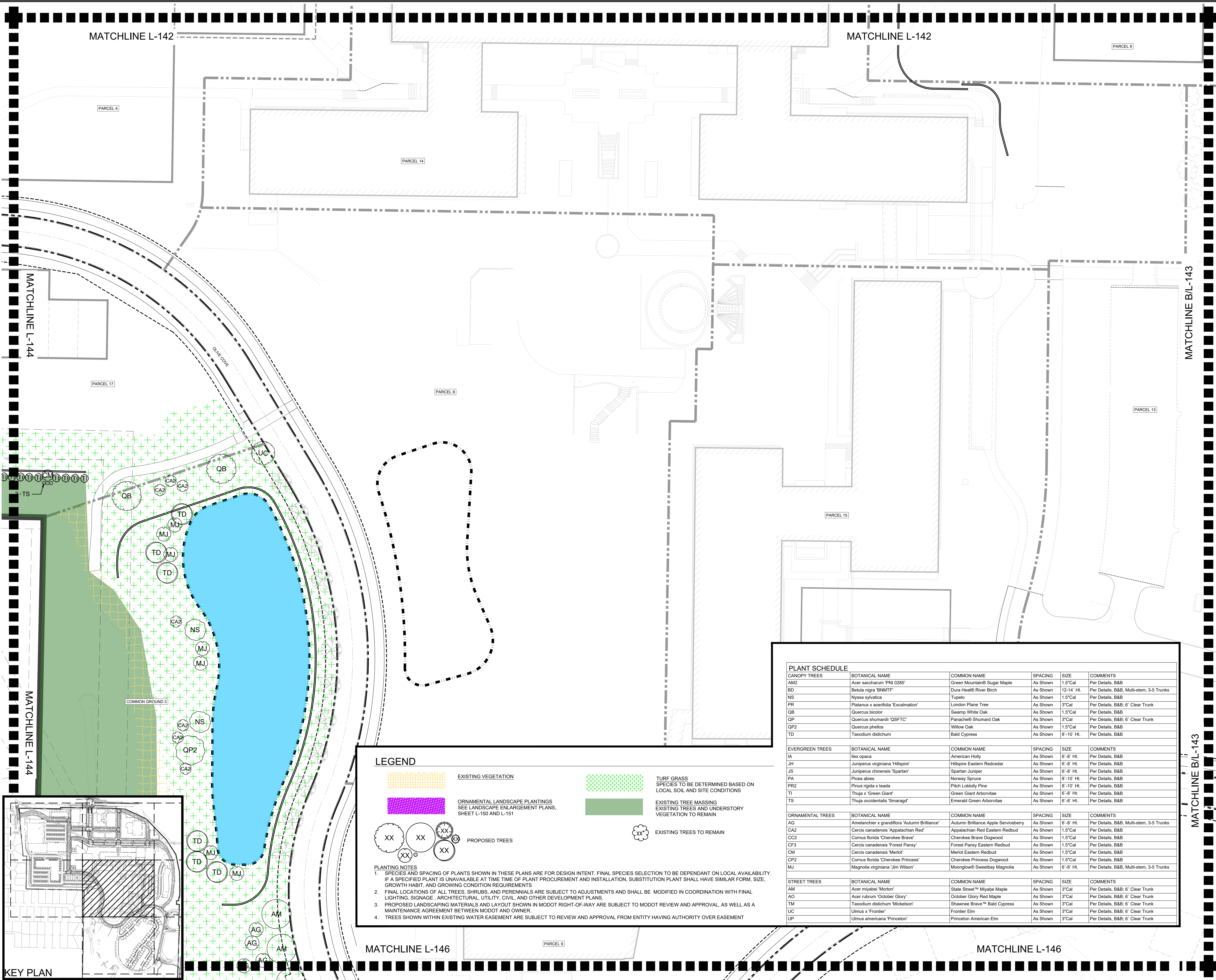
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**PHASE 1 PLANTING
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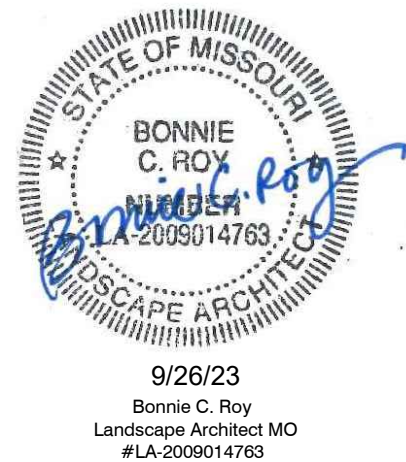
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PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'

PREPARED BY:
CMT
Crawford, Murphy & Tilly
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:
SWT DESIGN
7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



PRELIMINARY
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SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**
LINDBERGH & OLIVE BLVD

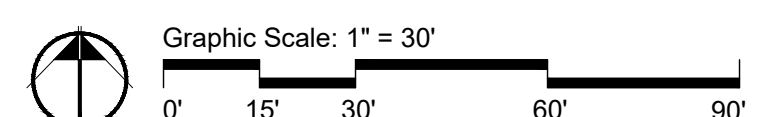


MARK	DATE	DESCRIPTION
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2	9/13/23	PHASE 1 RESUBMITTAL
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

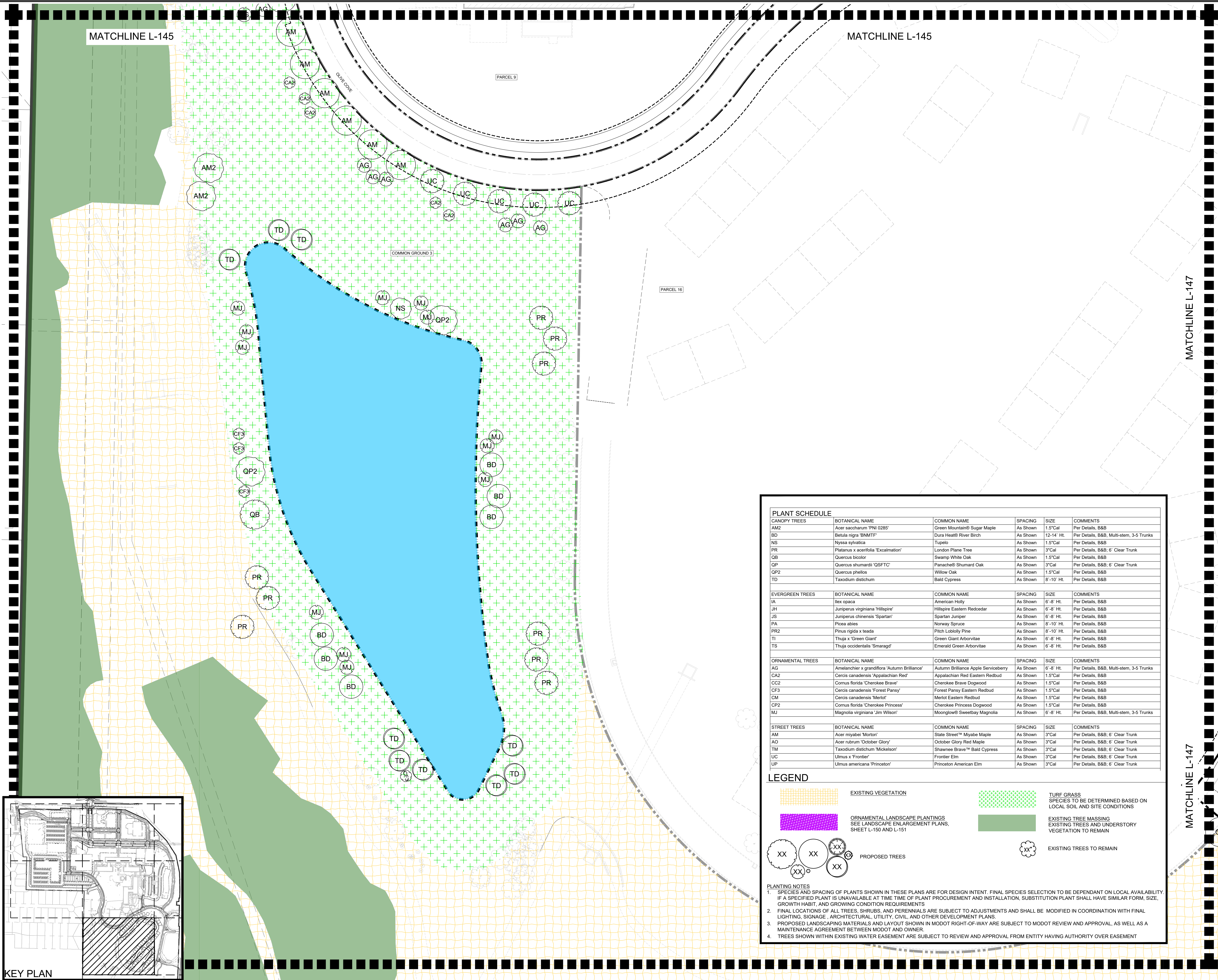
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DRAWN BY: MB/2TS
CHECKED BY: BR
APPROVED BY: BR
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**PHASE 1 PLANTING
PLAN**

L-145



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PLANT SCHEDULE

CANOPY TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM2	Acer saccharum 'PNI 0285'	Green Mountain® Sugar Maple	As Shown	1.5"Cal	Per Details, B&B
BD	Betula nigra 'BNMTP'	Dura Heat® River Birch	As Shown	12-14' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
NS	Nyssa sylvatica	Tupelo	As Shown	1.5"Cal	Per Details, B&B
PR	Platanus x acerifolia 'Excelsior'	London Plane Tree	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
QB	Quercus bicolor	Swamp White Oak	As Shown	1.5"Cal	Per Details, B&B
QP	Quercus shumardii 'QSFTC'	Panache® Shumard Oak	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
QP2	Quercus phellos	Willow Oak	As Shown	1.5"Cal	Per Details, B&B
TD	Taxodium distichum	Bald Cypress	As Shown	8'-10' Ht.	Per Details, B&B

EVERGREEN TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
IA	Ilex opaca	American Holly	As Shown	6'-8' Ht.	Per Details, B&B
JH	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.	Per Details, B&B
JS	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.	Per Details, B&B
PA	Picea abies	Norway Spruce	As Shown	8'-10' Ht.	Per Details, B&B
PR2	Pinus rigida x taeda	Pitch Loblolly Pine	As Shown	8'-10' Ht.	Per Details, B&B
TI	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B

ORNAMENTAL TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AG	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
CA2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CC2	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5"Cal	Per Details, B&B
CF3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CM	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CP2	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5"Cal	Per Details, B&B
MJ	Magnolia virginiana 'Jim Wilson'	Moonglow® Sweetbay Magnolia	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks

STREET TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM	Acer miyabei 'Morton'	State Street™ Miyabe Maple	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
AO	Acer rubrum 'October Glory'	October Glory Red Maple	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
TM	Taxodium distichum 'Mickelson'	Shawnee Brave™ Bald Cypress	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
UC	Ulmus x 'Frontier'	Frontier Elm	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk
UP	Ulmus americana 'Princeton'	Princeton American Elm	As Shown	3"Cal	Per Details, B&B, 6' Clear Trunk

LEGEND

EXISTING VEGETATION

TURF GRASS
SPECIES TO BE DETERMINED BASED ON LOCAL SOIL AND SITE CONDITIONS

ORNAMENTAL LANDSCAPE PLANTINGS
SEE LANDSCAPE ENLARGEMENT PLANS, SHEET L-150 AND L-151

EXISTING TREE MASSING
EXISTING TREES AND UNDERSTORY VEGETATION TO REMAIN

PROPOSED TREES

EXISTING TREES TO REMAIN

PLANTING NOTES

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PREPARED BY:

CMT
Crawford, Murphy & Tilly

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CONSULTANTS:

SWT DESIGN

7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700

STATE OF MISSOURI
BONNIE C. ROY
9/26/23
Landscape Architect MO
#A-2000514783

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

**OLIA VILLAGE
DEVELOPMENT**

LINDBERGH & OLIVE BLVD

OLIA VILLAGE
THE HEART OF CREVE COEUR
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CREVE COEUR, MO 63141

3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

MARK | DATE | DESCRIPTION

PROJECT NO.: 23095201-00
CAD DWG FILE: 21555_01_SHEETS_PLANTING_PHASE
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DRAWN BY: MB/ZTS
CHECKED BY: BR
APPROVED BY: BR
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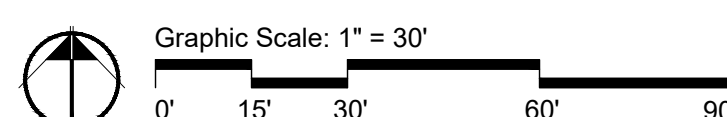
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**PHASE 1 PLANTING
PLAN**

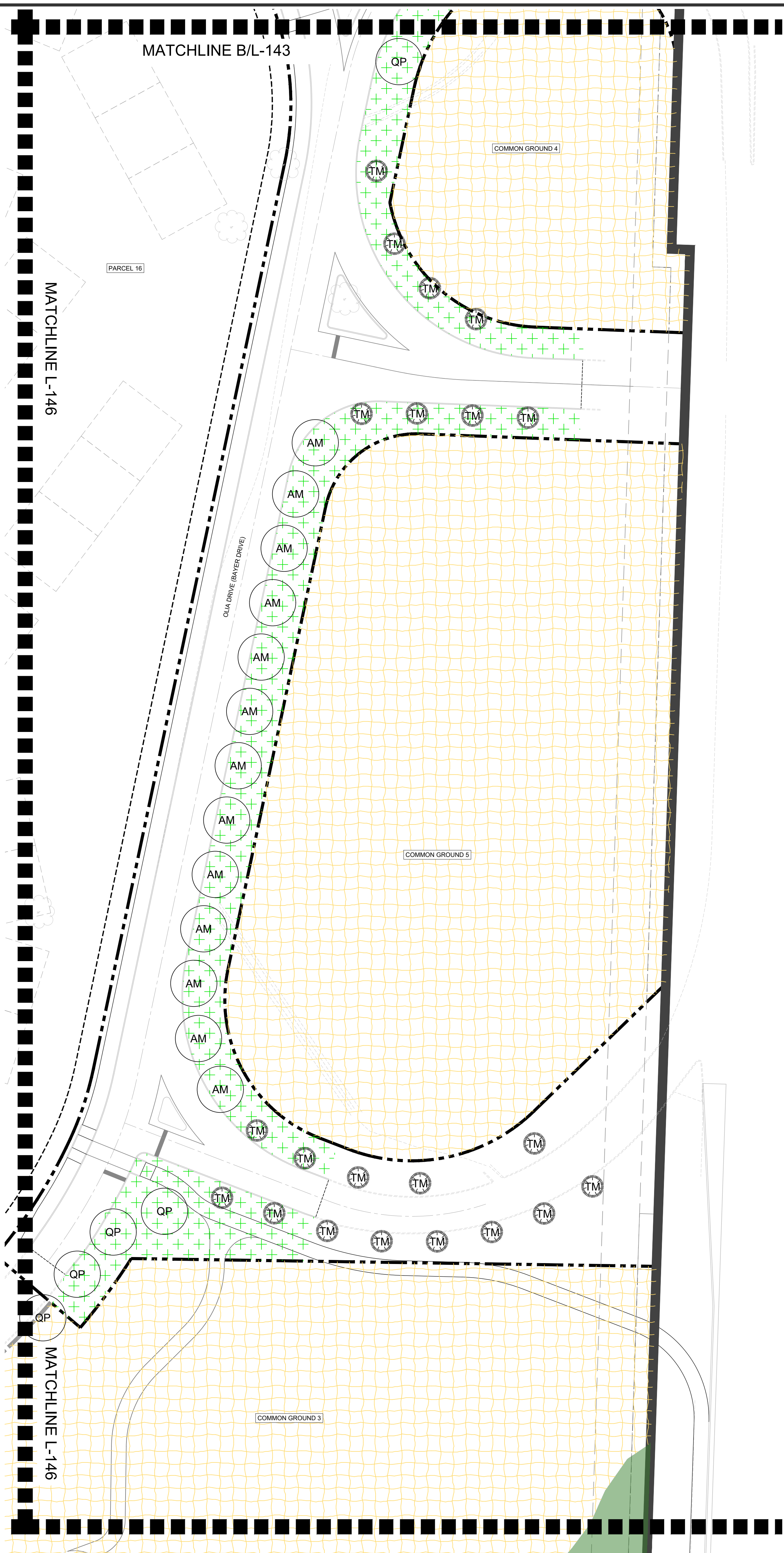
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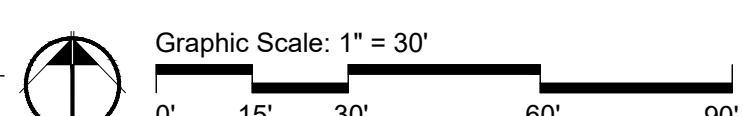
PHASE 1 PLANTING PLAN - ENLARGEMENT
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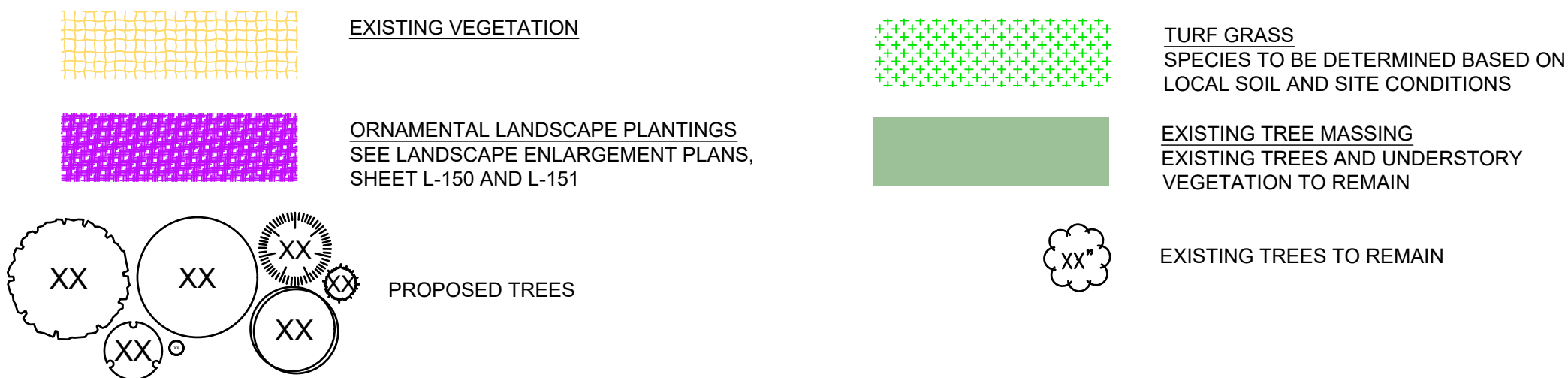


A PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'

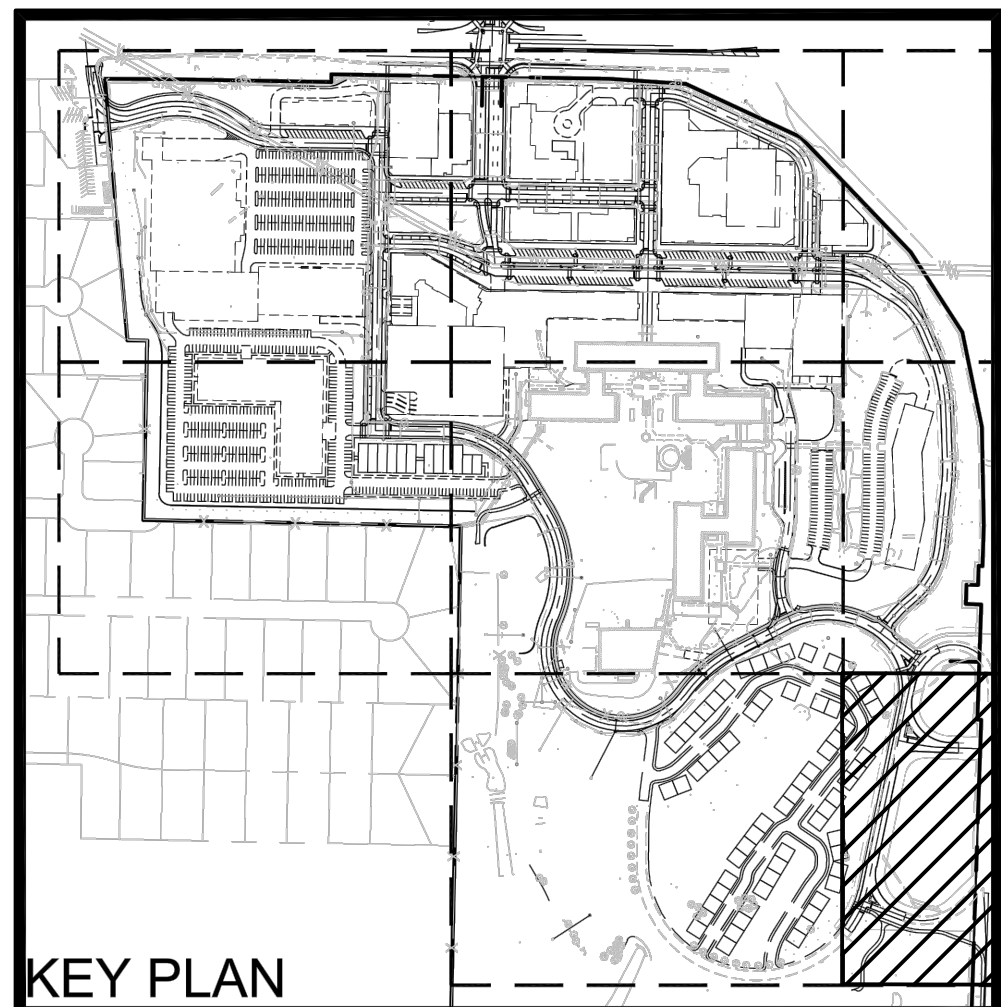


PLANT SCHEDULE - OVERALL					
CANOPY TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM2	Acer saccharum 'PNI 0285'	Green Mountain® Sugar Maple	As Shown	1.5"Cal	Per Details, B&B
BD	Betula nigra 'BNMTF'	Dura Heat® River Birch	As Shown	12-14' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
NS	Nyssa sylvatica	Tupelo	As Shown	1.5"Cal	Per Details, B&B
PR	Platanus x acerifolia 'Exclamation'	London Plane Tree	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
QB	Quercus bicolor	Swamp White Oak	As Shown	1.5"Cal	Per Details, B&B
QP	Quercus shumardii 'QSFTC'	Panache® Shumard Oak	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
QP2	Quercus phellos	Willow Oak	As Shown	1.5"Cal	Per Details, B&B
TD	Taxodium distichum	Bald Cypress	As Shown	8'-10' Ht.	Per Details, B&B
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JH	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.	Per Details, B&B
JS	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.	Per Details, B&B
PA	Picea abies	Norway Spruce	As Shown	8'-10' Ht.	Per Details, B&B
PR2	Pinus rigida x teada	Pitch Loblolly Pine	As Shown	8'-10' Ht.	Per Details, B&B
TI	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.	Per Details, B&B
ORNAMENTAL TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AG	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
CA2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CC2	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5"Cal	Per Details, B&B
CF3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CM	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5"Cal	Per Details, B&B
CP2	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5"Cal	Per Details, B&B
MJ	Magnolia virginiana 'Jim Wilson'	Moonglow® Sweetbay Magnolia	As Shown	6'-8' Ht.	Per Details, B&B, Multi-stem, 3-5 Trunks
STREET TREES	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AM	Acer miyabei 'Morton'	State Street™ Miyabe Maple	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
AO	Acer rubrum 'October Glory'	October Glory Red Maple	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
TM	Taxodium distichum 'Mickelson'	Shawnee Brave™ Bald Cypress	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
UC	Ulmus x 'Frontier'	Frontier Elm	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
UP	Ulmus americana 'Princeton'	Princeton American Elm	As Shown	3"Cal	Per Details, B&B; 6' Clear Trunk
SHRUBS	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
CR	Clethra alnifolia 'Ruby Spice'	Ruby Spice Summersweet	As Shown	#5	Per Details, Cont.
HR	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oakleaf Hydrangea	As Shown	#5	Per Details, Cont.
IR	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	As Shown	#5	Per Details, Cont.
IV	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	As Shown	#5	Per Details, Cont.
JX	Juniperus x 'Grey Owl'	Grey Owl Juniper	As Shown	#5	Per Details, Cont.
R3	Rosa x 'Radtko'	Double Knock Out® Red Rose	As Shown	#5	Per Details, Cont.
GRASSES & PERENNIALS	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AH	Amsonia hubrichtii	Arkansas Bluestar	18" O.C.	#1	Per Details, Cont.
AM3	Achillea x 'Moonshine'	Moonshine Yarrow	15" O.C.	SP4	Per Details, Cont.
EP	Echinacea purpurea 'PAST02918'	PowWow® White Coneflower	18" O.C.	#1	Per Details, Cont.
EW	Echinacea purpurea 'PAST02917'	PowWow® Wild Berry Coneflower	18" O.C.	#1	Per Details, Cont.
IC	Iris sibirica 'Caesar's Brother'	Caesar's Brother Siberian Iris	18" O.C.	#1	Per Details, Cont.
LV2	Liriope muscari 'Variegata'	Variegated Lilyturf	18" O.C.	#1	Per Details, Cont.
OL	Oenothera x 'Innoeno131'	Lemon Drop® Evening Primrose	15" O.C.	SP4	Per Details, Cont.
OR	Oenothera speciosa 'Rosea'	Mexican Evening Primrose	15" O.C.	SP4	Per Details, Cont.
PN	Panicum virgatum 'Northwind'	Northwind Switch Grass	20" O.C.	#1	Per Details, Cont.
PS	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	20" O.C.	#1	Per Details, Cont.
RS	Rudbeckia fulgida 'Little Goldstar'	Little Goldstar Coneflower	18" O.C.	#1	Per Details, Cont.
SH2	Stachys officinalis 'Hummelo'	Hummelo Betony	15" O.C.	SP4	Per Details, Cont.
SP	Symphyotrichum novae-angliae 'Purple Dome'	Purple Dome New England Aster	18" O.C.	#1	Per Details, Cont.

LEGEND



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KEY PLAN

PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



9/26/23
Bonnie C. Roy
Landscape Architect MO
#A-2005014783

PRELIMINARY
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SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR
10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
3	9/26/23	PHASE 1 Preliminary
2	9/13/23	PHASE 1 Preliminary
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

PROJECT NO:	2305201-00
CAD DWG FILE:	21555-01_SHEETS_PLANTING_PHASE
DESIGNED BY:	WV
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
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SHEET TITLE

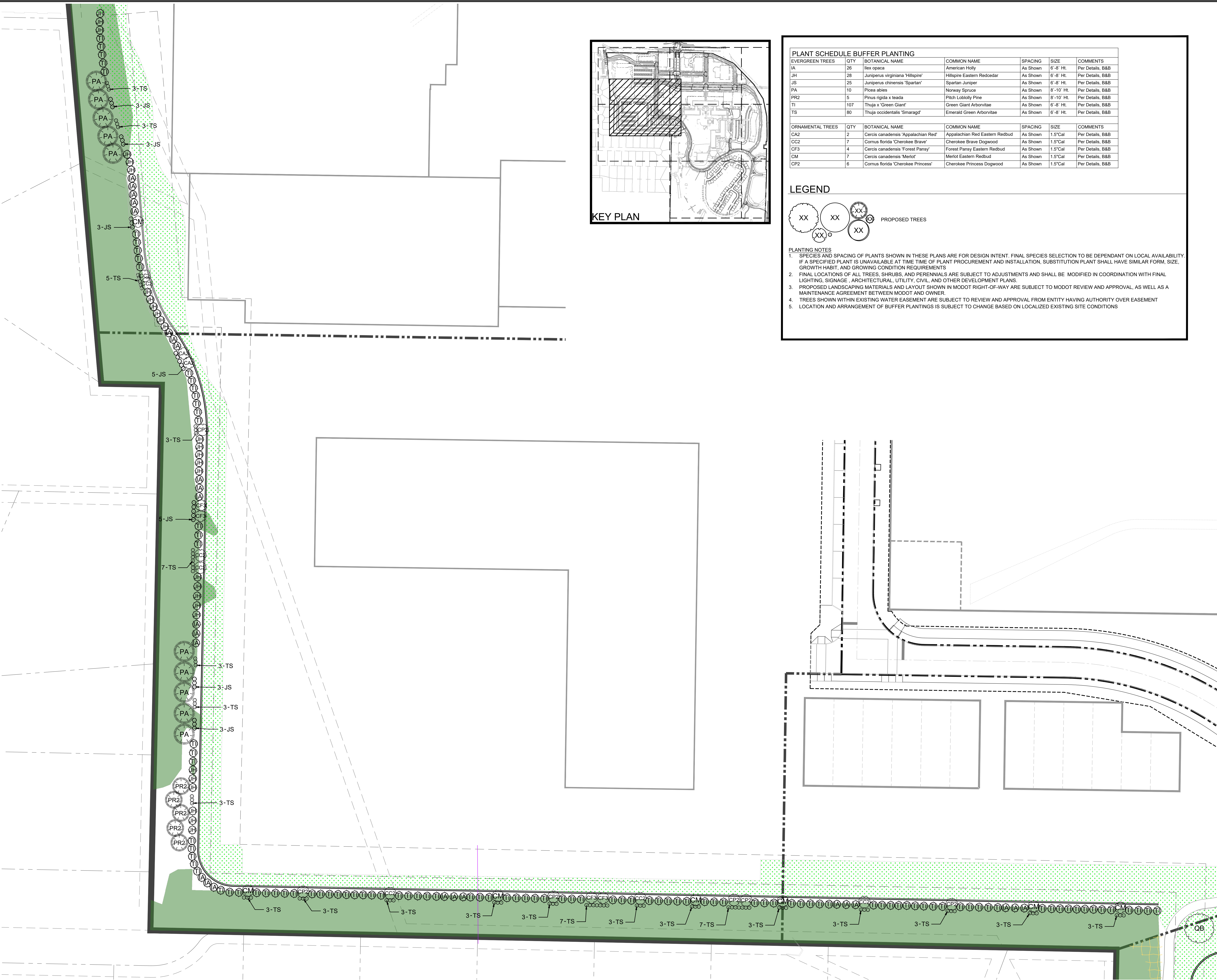
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PLAN

L-147

SHEET

OF

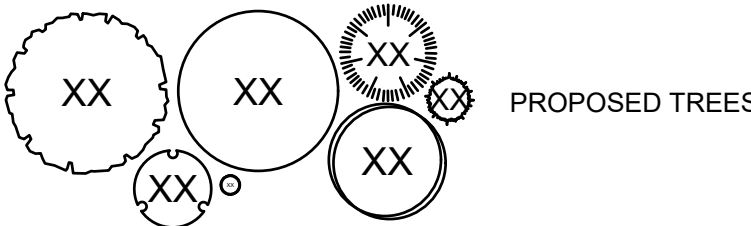
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User: j.watson Date: 9/26/23



A PHASE 1 LANDSCAPE BUFFER SCREEN PLANTING PLAN
SCALE: 1"=30'

PLANT SCHEDULE BUFFER PLANTING					
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
IA	26	Ilex opaca	American Holly	As Shown	6'-8' Ht.
JH	28	Juniperus virginiana 'Hillspire'	Hillspire Eastern Redcedar	As Shown	6'-8' Ht.
JS	25	Juniperus chinensis 'Spartan'	Spartan Juniper	As Shown	6'-8' Ht.
PA	10	Picea abies	Norway Spruce	As Shown	8'-10' Ht.
PR2	5	Pinus rigida x teada	Pitch Loblolly Pine	As Shown	8'-10' Ht.
TI	107	Thuja x 'Green Giant'	Green Giant Arborvitae	As Shown	6'-8' Ht.
TS	80	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	As Shown	6'-8' Ht.
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
CA2	2	Cercis canadensis 'Appalachian Red'	Appalachian Red Eastern Redbud	As Shown	1.5'Cal
CC2	7	Cornus florida 'Cherokee Brave'	Cherokee Brave Dogwood	As Shown	1.5'Cal
CF3	4	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	As Shown	1.5'Cal
CM	7	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	As Shown	1.5'Cal
CP2	6	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	As Shown	1.5'Cal

LEGEND



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 - LOCATION AND ARRANGEMENT OF BUFFER PLANTINGS IS SUBJECT TO CHANGE BASED ON LOCALIZED EXISTING SITE CONDITIONS

PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, mo 63119
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Bonnie C. Roy
Landscape Architect MO
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3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

PROJECT NO:	23050201-00
CAD DWG FILE:	21555_01_SHEETS_PLANTING_PHASE
DESIGNED BY:	WJW
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE

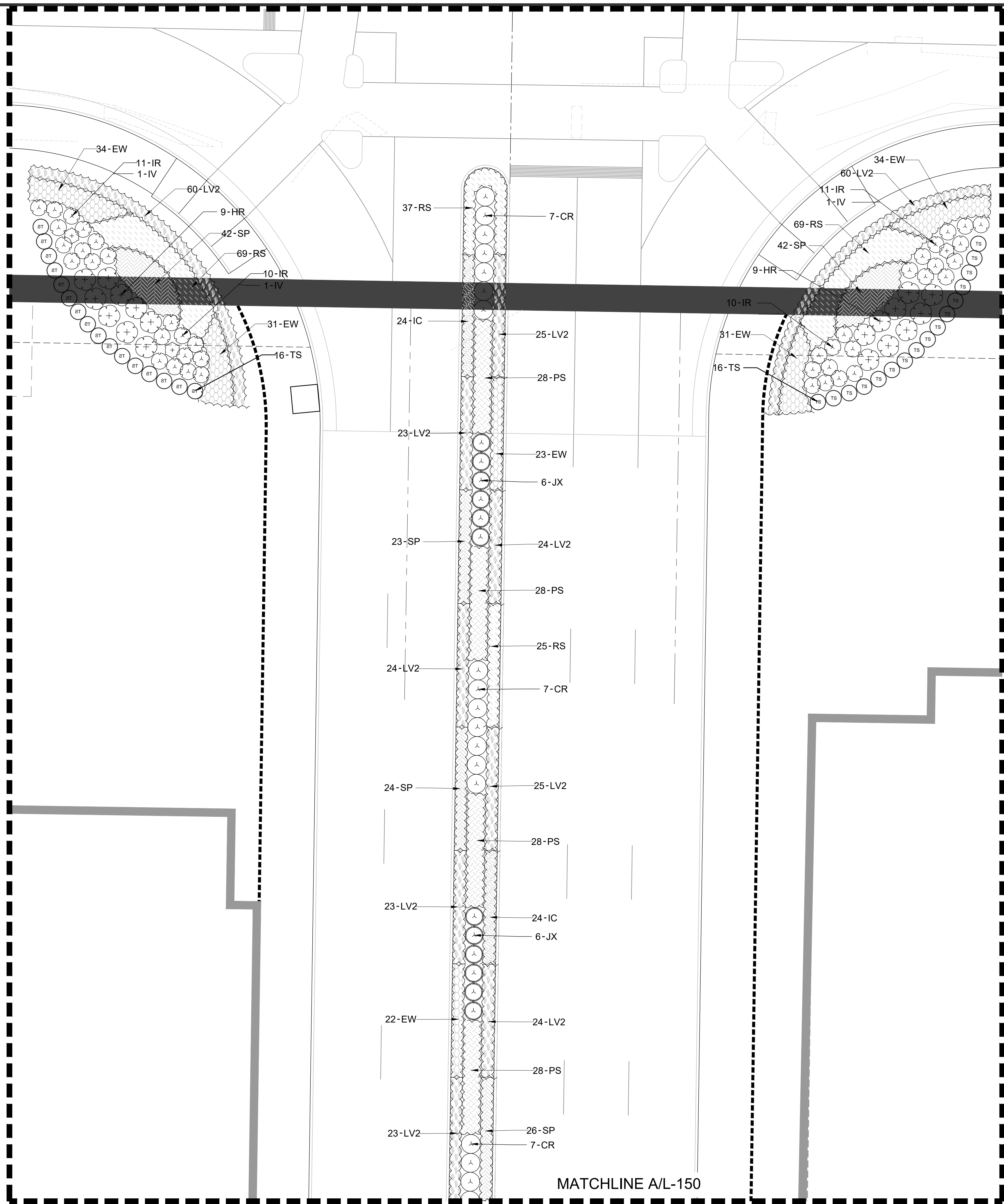
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PLANTING PLAN

L-148

SHEET

OF

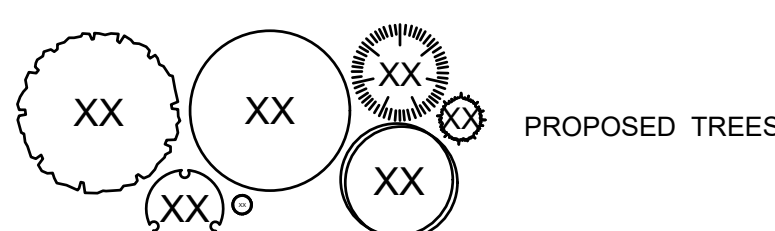
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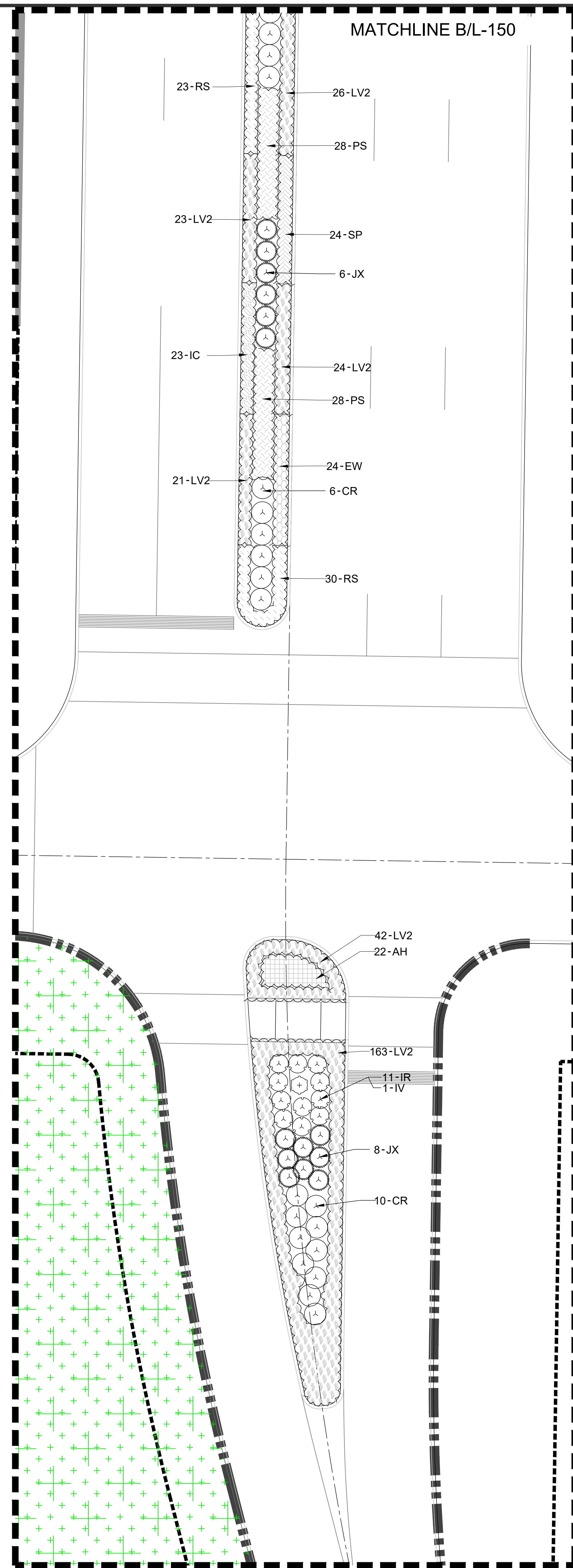
B PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=10'

PLANT SCHEDULE					
SHRUBS	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
CR	Clethra alnifolia 'Ruby Spice'	Ruby Spice Summersweet	As Shown	#5	Per Details, Cont.
HR	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oakleaf Hydrangea	As Shown	#5	Per Details, Cont.
IR	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	As Shown	#5	Per Details, Cont.
IV	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	As Shown	#5	Per Details, Cont.
JX	Juniperus x 'Grey Owl'	Grey Owl Juniper	As Shown	#5	Per Details, Cont.
R3	Rosa x 'Radiko'	Double Knock Out® Red Rose	As Shown	#5	Per Details, Cont.
GRASSES & PERENNIALS	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
AH	Amsonia hubrichtii	Arkansas Bluestar	18" O.C.	#1	Per Details, Cont.
AM3	Achillea x 'Moonshine'	Moonshine Yarrow	15" O.C.	SP4	Per Details, Cont.
EP	Echinacea purpurea 'PAs702918'	PowWow® White Coneflower	18" O.C.	#1	Per Details, Cont.
EW	Echinacea purpurea 'PAs702917'	PowWow® Wild Berry Coneflower	18" O.C.	#1	Per Details, Cont.
IC	Iris sibirica 'Caesar's Brother'	Caesar's Brother Siberian Iris	18" O.C.	#1	Per Details, Cont.
LV2	Liriodendron muscari 'Variegata'	Variegated Liriodendron	18" O.C.	#1	Per Details, Cont.
OL	Oenothera x 'Vino del 131'	Lemon Drop® Evening Primrose	15" O.C.	SP4	Per Details, Cont.
OR	Oenothera speciosa 'Rosas'	Mexican Evening Primrose	15" O.C.	SP4	Per Details, Cont.
PN	Panicum virgatum 'Northwind'	Northwind Switch Grass	20" O.C.	#1	Per Details, Cont.
PS	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	20" O.C.	#1	Per Details, Cont.
RS	Rudbeckia fulgida 'Little Goldstar'	Little Goldstar Coneflower	18" O.C.	#1	Per Details, Cont.
SH2	Stachys officinalis 'Hummelo'	Hummelo Betony	15" O.C.	SP4	Per Details, Cont.
SP	Symphyotrichum novae-angliae 'Purple Dome'	Purple Dome New England Aster	18" O.C.	#1	Per Details, Cont.

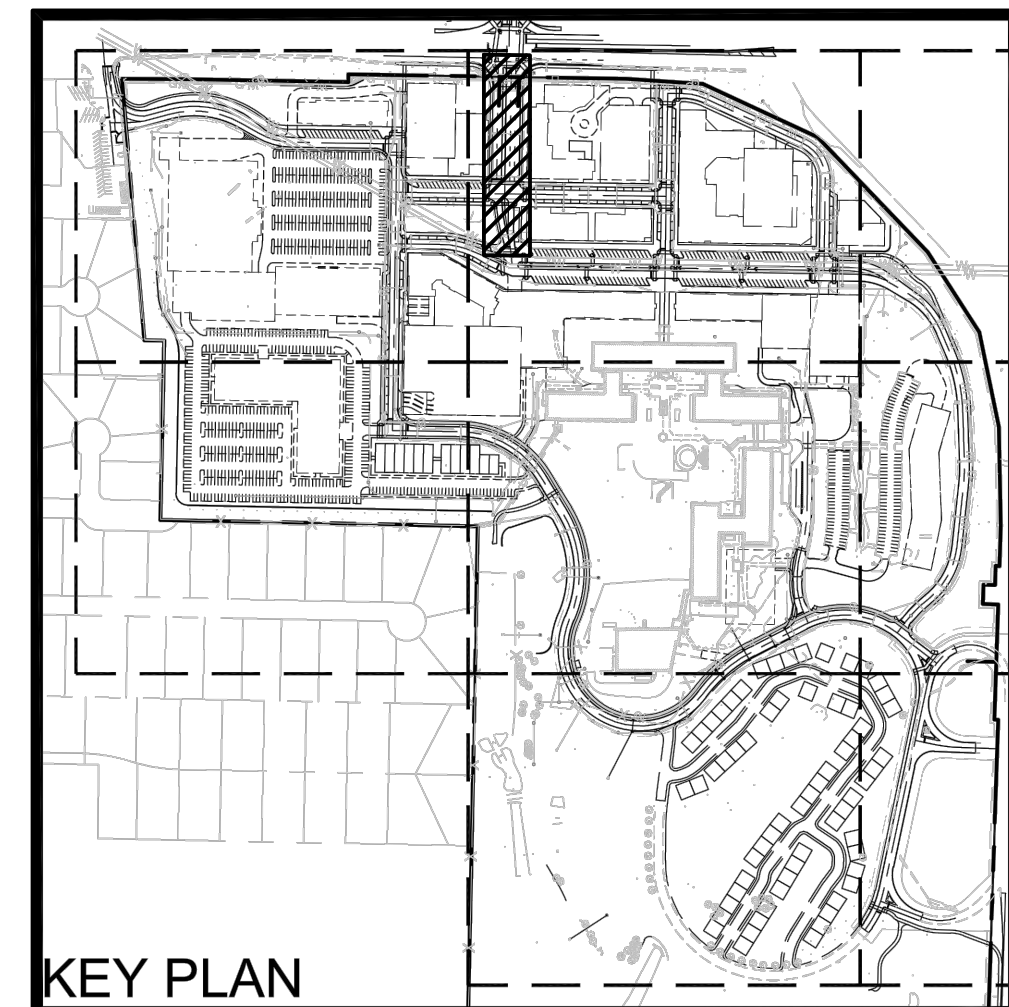
LEGEND



- PLANTING NOTES**
- SPECIES AND SPACING OF PLANTS SHOWN IN THESE PLANS ARE FOR DESIGN INTENT. FINAL SPECIES SELECTION TO BE DEPENDANT ON LOCAL AVAILABILITY. IF A SPECIFIED PLANT IS UNAVAILABLE AT TIME OF PLANT PROCUREMENT AND INSTALLATION, SUBSTITUTION PLANT SHALL HAVE SIMILAR FORM, SIZE, GROWTH HABIT, AND GROWING CONDITION REQUIREMENTS
 - FINAL LOCATIONS OF ALL TREES, SHRUBS, AND PERENNIALS ARE SUBJECT TO ADJUSTMENTS AND SHALL BE MODIFIED IN COORDINATION WITH FINAL LIGHTING, SIGNAGE, ARCHITECTURAL, UTILITY, CIVIL, AND OTHER DEVELOPMENT PLANS.
 - PROPOSED LANDSCAPING MATERIALS AND LAYOUT SHOWN IN MODOT RIGHT-OF-WAY ARE SUBJECT TO MODOT REVIEW AND APPROVAL, AS WELL AS A MAINTENANCE AGREEMENT BETWEEN MODOT AND OWNER.
 - TREES SHOWN WITHIN EXISTING WATER EASEMENT ARE SUBJECT TO REVIEW AND APPROVAL FROM ENTITY HAVING AUTHORITY OVER EASEMENT



A PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=10'



PREPARED BY:

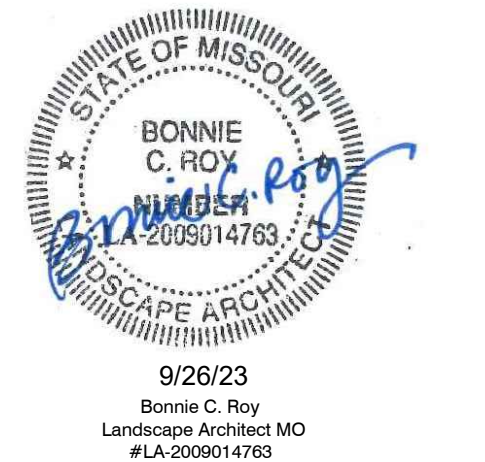


ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, mo 63119
T. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT
LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

PROJECT NO.:	23050201-00
CAD DWG FILE:	21555_01_SHEETS_PLANTING_PHASE 1.dwg
DESIGNED BY:	MB/ZTS
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE

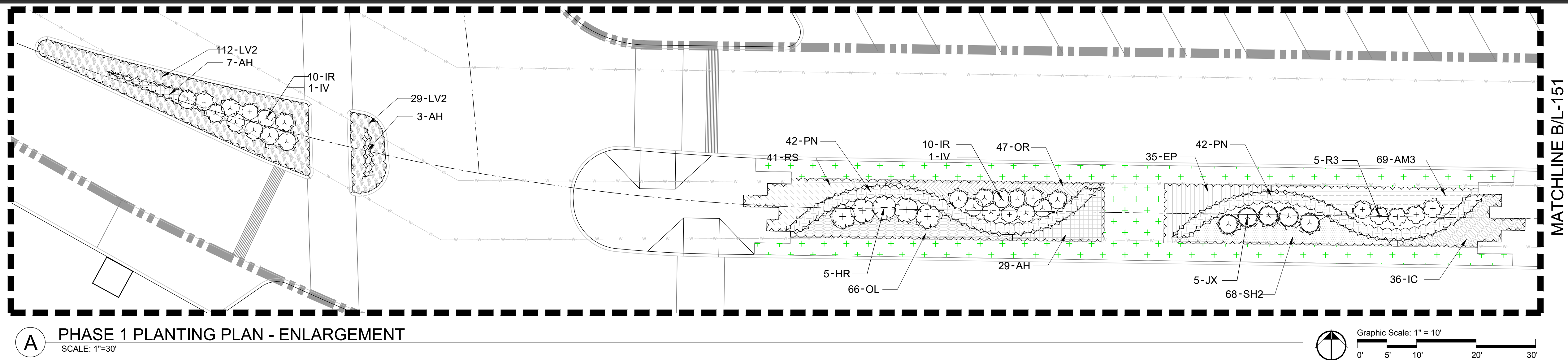
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PLAN
ENLARGEMENT

L-150

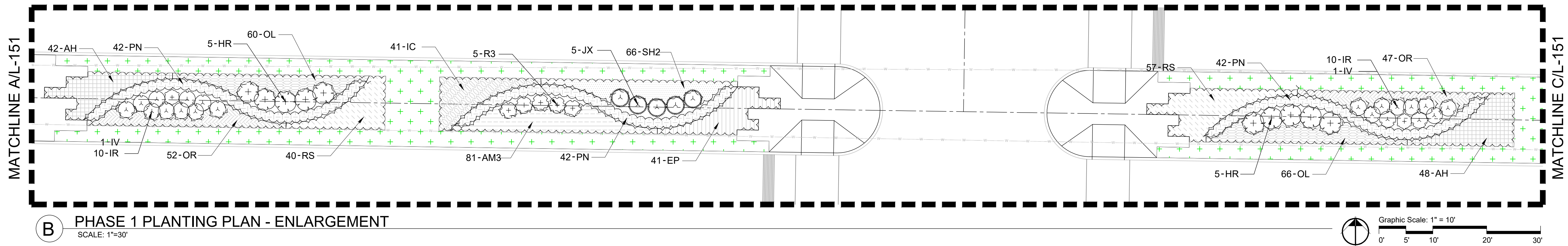
SHEET

OF

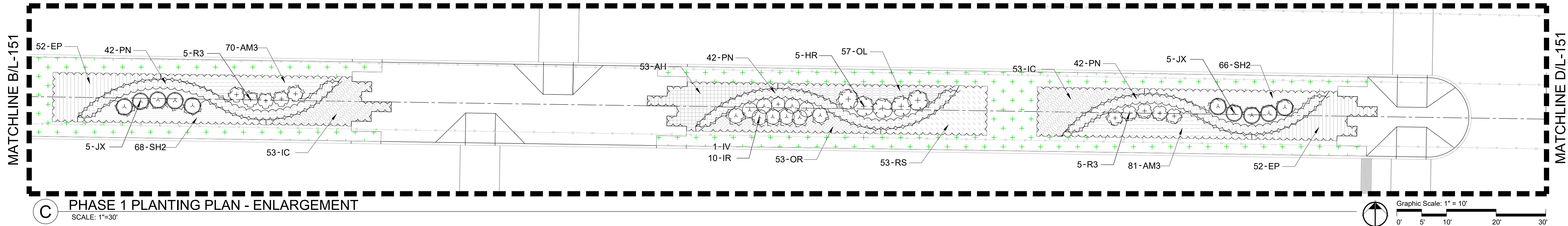
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Drawn: M. Murphy
Reviewed: C. Tilly
September 26, 2023



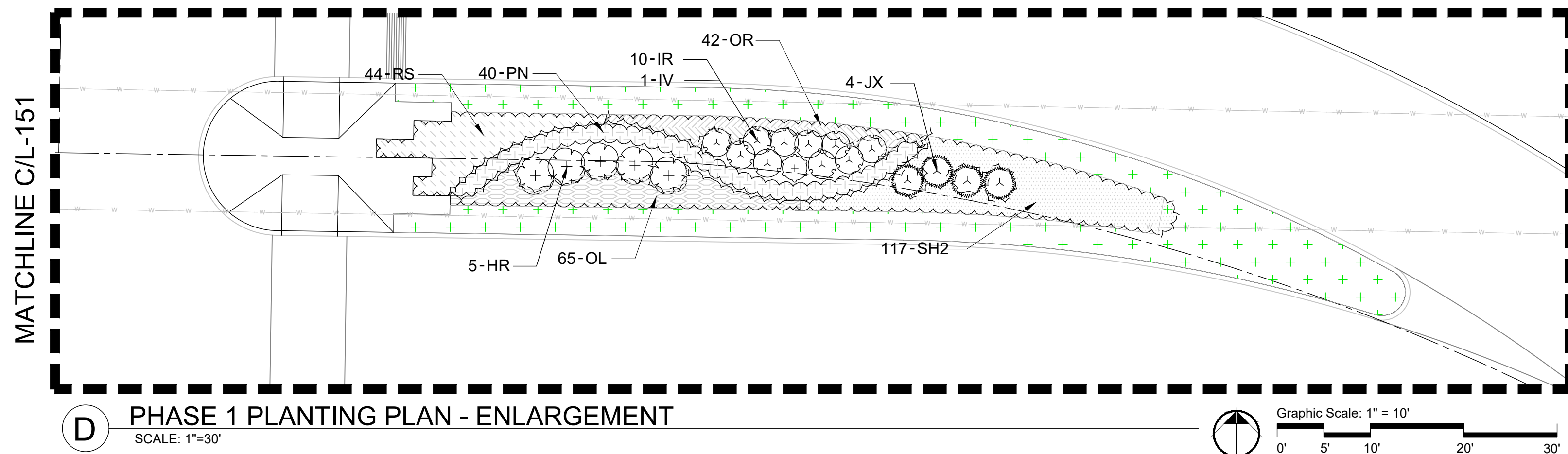
A PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'



B PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=10'



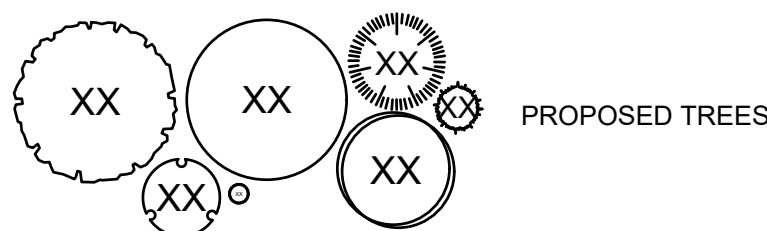
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SCALE: 1"=10'



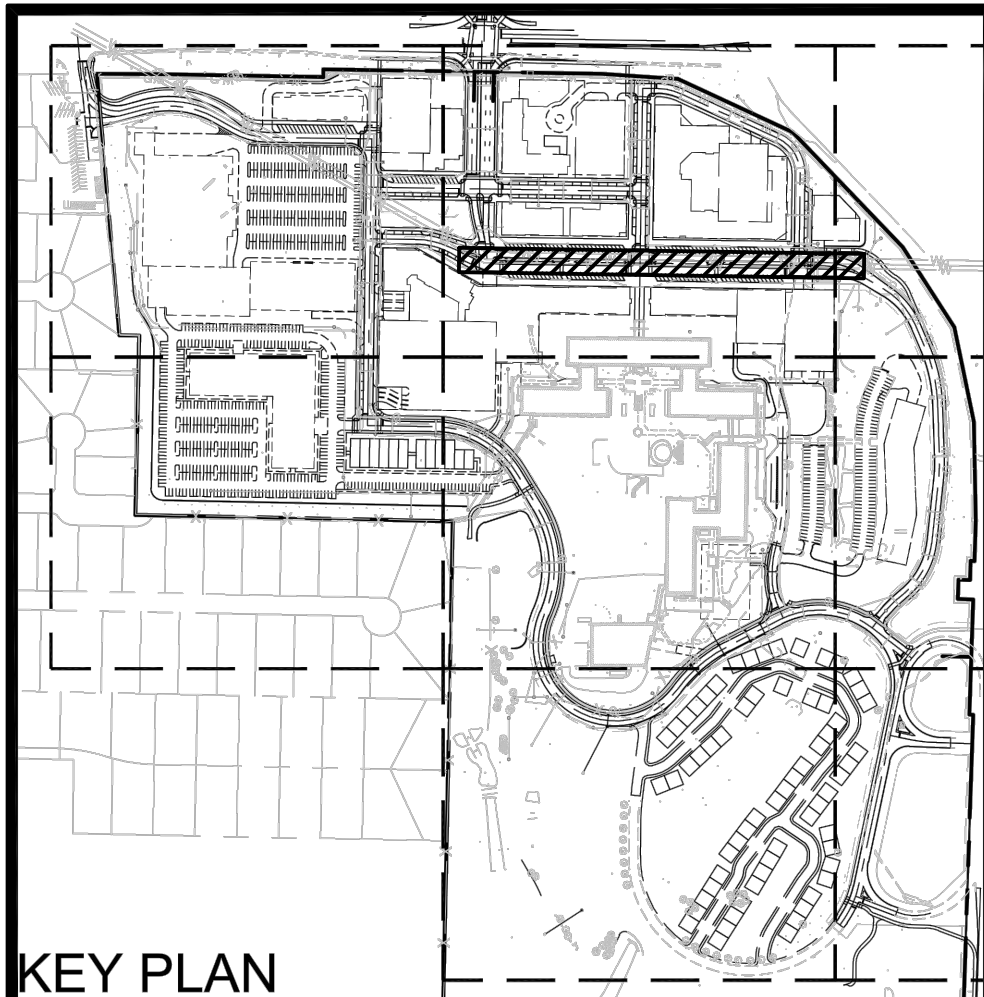
D PHASE 1 PLANTING PLAN - ENLARGEMENT
SCALE: 1"=30'

PLANT SCHEDULE						
SHRUBS						
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS	
OR	Clethra alnifolia 'Ruby Spice'	Ruby Spice Summersweet	As Shown	#5	Per Details, Cont.	
HR	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oakleaf Hydrangea	As Shown	#5	Per Details, Cont.	
IR	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	As Shown	#5	Per Details, Cont.	
IV	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	As Shown	#5	Per Details, Cont.	
JX	Juniperus x 'Grey Owl'	Grey Owl Juniper	As Shown	#5	Per Details, Cont.	
R3	Rosa x 'Radtko'	Double Knock Out® Red Rose	As Shown	#5	Per Details, Cont.	
GRASSES & PERENNIALS						
	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS	
AH	Amsonia hubrichtii	Arkansas Bluestar	18" O.C.	#1	Per Details, Cont.	
AM3	Achillea x 'Moonshine'	Moonshine Yarrow	15" O.C.	SP4	Per Details, Cont.	
EP	Echinacea purpurea 'PAST02918'	PowWow® White Coneflower	18" O.C.	#1	Per Details, Cont.	
EW	Echinacea purpurea 'PAST02917'	PowWow® Wild Berry Coneflower	18" O.C.	#1	Per Details, Cont.	
IC	Iris sibirica 'Caesar's Brother'	Caesar's Brother Siberian Iris	18" O.C.	#1	Per Details, Cont.	
LV2	Liriope muscari 'Variegata'	Variegated Lilyturf	18" O.C.	#1	Per Details, Cont.	
OL	Oenothera x 'Immoen131'	Lemon Drop® Evening Primrose	15" O.C.	SP4	Per Details, Cont.	
OR	Oenothera speciosa 'Rosea'	Mexican Evening Primrose	15" O.C.	SP4	Per Details, Cont.	
PN	Panicum virgatum 'Northwind'	Northwind Switch Grass	20" O.C.	#1	Per Details, Cont.	
PS	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	20" O.C.	#1	Per Details, Cont.	
RS	Rudbeckia fulgida 'Little Goldstar'	Little Goldstar Coneflower	18" O.C.	#1	Per Details, Cont.	
SH2	Stachys officinalis 'Hummelo'	Hummelo Betony	15" O.C.	SP4	Per Details, Cont.	
SP	Symphoricarpon novae-angliae 'Purple Dome'	Purple Dome New England Aster	18" O.C.	#1	Per Details, Cont.	

LEGEND



- PLANTING NOTES
- SPECIES AND SPACING OF PLANTS SHOWN IN THESE PLANS ARE FOR DESIGN INTENT. FINAL SPECIES SELECTION TO BE DEPENDANT ON LOCAL AVAILABILITY. IF A SPECIFIED PLANT IS UNAVAILABLE AT TIME OF PLANT PROCUREMENT AND INSTALLATION, SUBSTITUTION PLANT SHALL HAVE SIMILAR FORM, SIZE, GROWTH HABIT, AND GROWING CONDITION REQUIREMENTS.
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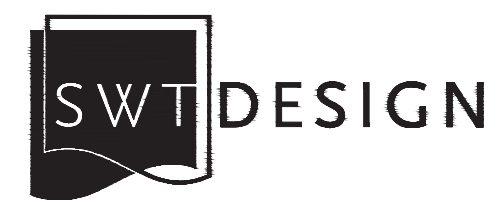
KEY PLAN

PREPARED BY:

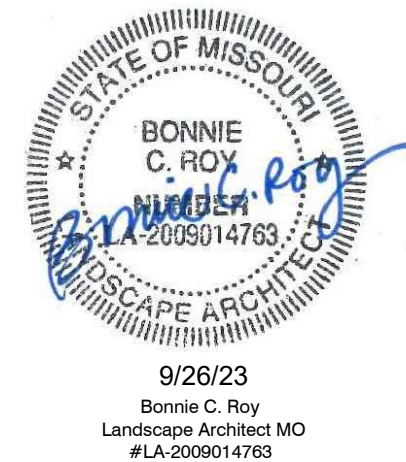


ONE MEMORIAL DRIVE, SUITE 500
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OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



7722 Big Bend Blvd.
St. Louis, MO 63119
T. 314.644.5700



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BLVD.
CREVE COEUR, MO 63141

MARK	DATE	DESCRIPTION
3	9/26/23	PHASE 1 Resubmittal
2	9/13/23	PHASE 1 Resubmittal
1	8/11/23	PHASE 1 LANDSCAPE DEVELOPMENT PLANS

PROJECT NO:	2309201-00
CAD DWG FILE:	21555_01_SHEETS_PLANTING_PHASE 1.dwg
DESIGNED BY:	MM
DRAWN BY:	MB/ZTS
CHECKED BY:	BR
APPROVED BY:	BR
COPYRIGHT:	CRAWFORD, MURPHY & TILLY, INC. 2023

SHEET TITLE

PHASE 1 PLANTING
PLAN
ENLARGEMENT

L-151

SHEET

OF

PRELIMINARY SUBDIVISION PLAT

OLIA VILLAGE

CREVE COEUR, MO

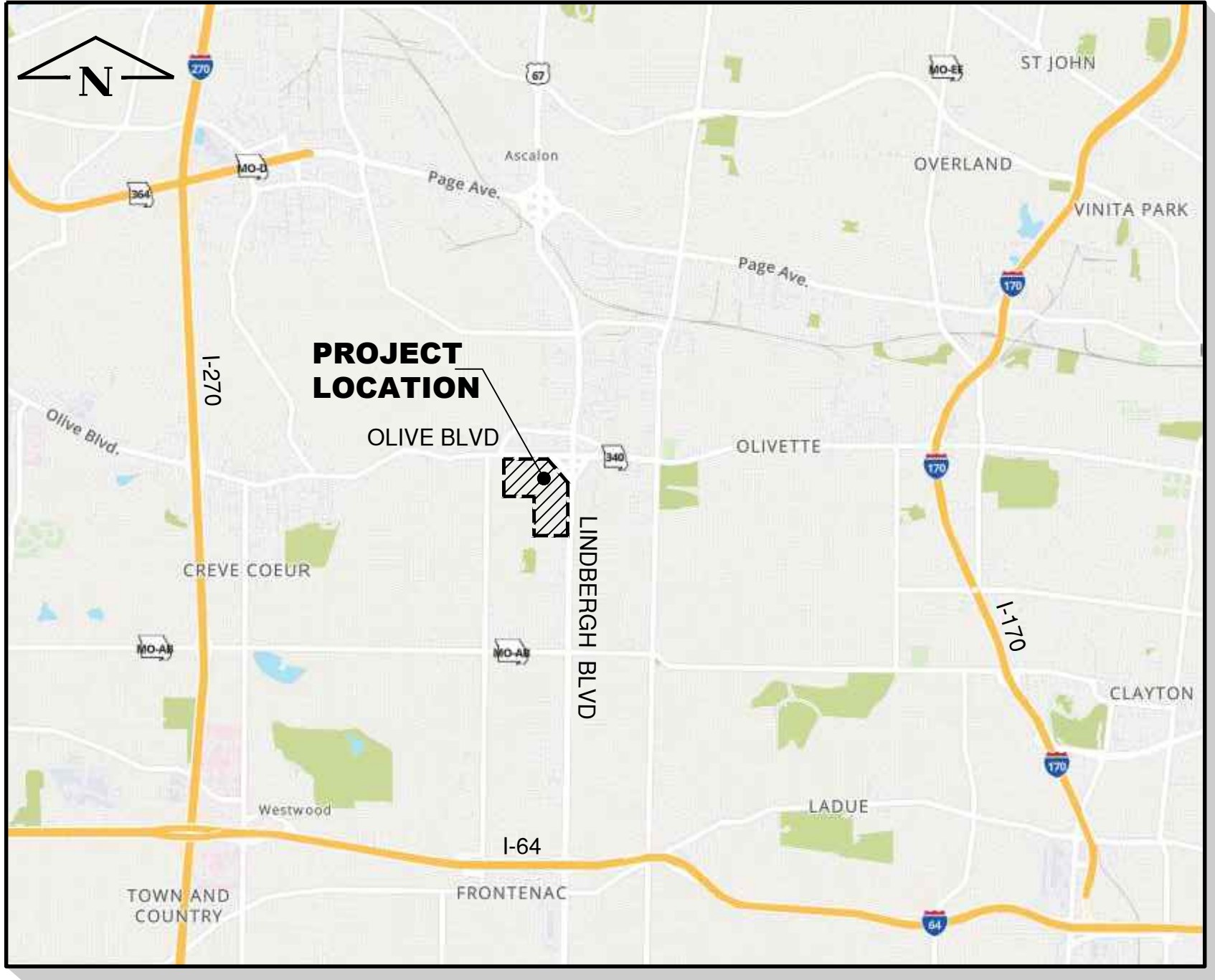
A TRACT OF LAND BEING PART OF LOTS 9, 10, 11 AND 12 OF MAJOR THOMAS SUBDIVISION
SITUATED IN THE SOUTHWEST QUARTER AND THE NORTHWEST QUARTER OF SECTION 1
TOWNSHIP 45 NORTH, RANGE 5 EAST, CITY OF CREVE COEUR, ST. LOUIS COUNTY, MISSOURI

SEPTEMBER 26, 2023

SITE INFORMATION	
SITE ACREAGE	= 95.8 AC ±
SITE ADDRESS	= 10300 OLIVE BOULEVARD, CREVE COEUR, MO 63141
OWNER	= 10300 OLIVE, LLC
LOCATOR NUMBER	= 17M420026
EXISTING ZONING	= R0 - RESEARCH & PARK DISTRICT
PROPOSED ZONING	= PMD - PLANNED MIXED-USE DEVELOPMENT
CITY	= CREVE COEUR, MO
ZIP CODE	= 63141
FEMA FLOOD MAP	= 29189C0191K (REVISED 2/4/2015) (ZONE X) 29189C0192K (REVISED 2/4/2015) (ZONE X)
WUNNENBERG MAP	= PAGE 24, SECTIONS 17T & 18T
SCHOOL DISTRICT	= LADUE SCHOOL DISTRICT
FIRE DISTRICT	= CREVE COEUR FIRE DISTRICT
WATER SHED	= RIVER DES PERES WATERSHED, DEER CREEK SUB-SHED
SEWER DISTRICT	= METROPOLITAN ST. LOUIS SEWER DISTRICT
CABLE SERVICE	= CHARTER COMMUNICATIONS
ELECTRIC SERVICE	= AMEREN MISSOURI
GAS SERVICE	= SPIRE ENERGY
PHONE SERVICE	= AT&T
WATER SERVICE	= MISSOURI AMERICAN WATER COMPANY
WATER SERVICE	= CITY OF ST. LOUIS WATER DEPARTMENT (TRANSMISSION MAINS)
BUILDING TYPE	= N/A (NO BUILDINGS PROPOSED)
BLDG. CONST. TYPE	= N/A (NO BUILDINGS PROPOSED)

OWNER / DEVELOPER :

10300 OLIVE, LLC
1034 S. BRENTWOOD, SUITE 2300 PH-1D
ST. LOUIS, MO 63117
MATT PFUND
(618) 692-9502



VICINITY MAP
(NOT TO SCALE)

SHEET INDEX	
V-100	TITLE SHEET
V-101	PRELIMINARY SUBDIVISION PLAT
C-101	SITE OVERVIEW
C-105	GRADING PLAN
C-106	UTILITY & DRAINAGE PLAN
C-107	STREET PLAN

LEGAL DESCRIPTION

A TRACT OF LAND BEING PART OF LOTS 9, 10, 11 AND 12 OF MAJOR THOMAS SUBDIVISION, SITUATED IN THE SOUTHWEST QUARTER AND NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 45 NORTH, RANGE 5 EAST, ST. LOUIS COUNTY, MISSOURI, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WEST RIGHT OF WAY LINE OF STATE HIGHWAY 67, LINDBERGH (VARIABLE WIDTH-PUBLIC RIGHT OF WAY) BOULEVARD WITH THE NORTH LINE OF LAND NOW OR FORMERLY OF VANTAGE CREDIT UNION, AS RECORDED BY DEED IN BOOK 23850, PAGE 141 OF THE ST. LOUIS COUNTY, MISSOURI RECORDER'S OFFICE;

THENCE ALONG SAID NORTH LINE AND THE NORTH LINE OF SUNSWEEP PLAT 3, A SUBDIVISION AS RECORDED IN PLAT BOOK 87 PAGE 4 AND SUNSWEEP PLAT 2, A SUBDIVISION AS RECORDED IN PLAT BOOK 87 PAGE 23, ALL OF SAID RECORDER'S OFFICE, NORTH 89 DEGREES 11 MINUTES 17 SECONDS WEST, A DISTANCE OF 1352.62 FEET TO THE EAST LINE OF LAND NOW OR FORMERLY OF DONALD J AND MARGRETTA CASSMEYER, ETAL, AS RECORDED BY DEED IN BOOK 11070, PAGE 767 OF SAID RECORDER'S OFFICE;

THENCE ALONG SAID EAST LINE AND THE EAST LINE OF LAND NOW OR FORMERLY OF JAVED MUHAMMAD ALI AND ALZUBEIDI DUHA, AS RECORDED BY DEED IN BOOK 23726, PAGE 3547; TIMOTHY C TOWNSEND, ETAL, AS RECORDED BY DEED IN BOOK 23562, PAGE 160, ALL OF SAID RECORDER'S OFFICE, NORTH 01 DEGREES 12 MINUTES 14 SECONDS EAST, A DISTANCE OF 500.19 FEET TO THE EAST LINE OF SPOEDE HILLS, A SUBDIVISION AS RECORDED IN PLAT BOOK 54, PAGE 26 OF SAID RECORDER'S OFFICE;

THENCE ALONG SAID EAST LINE AND THE EAST LINE OF SPOEDE WOODS, A SUBDIVISION FORMERLY KNOWN AS GAS LIGHT SQUARE, AS RECORDED IN PLAT BOOK 104, PAGE 18 OF SAID RECORDER'S OFFICE, NORTH 01 DEGREES 08 MINUTES 11 SECONDS EAST, A DISTANCE OF 831.21 FEET TO THE NORTH LINE OF SAID SPOEDE WOODS;

THENCE ALONG SAID NORTH LINE, NORTH 88 DEGREES 51 MINUTES 14 SECONDS WEST, A DISTANCE OF 826.36 FEET TO THE EAST LINE OF MISSION HILLS, A SUBDIVISION AS RECORDED IN PLAT BOOK 59, PAGE 36 OF SAID RECORDER'S OFFICE;

THENCE ALONG SAID EAST LINE AND THE EAST LINE OF RAMBLEWOOD, A SUBDIVISION AS RECORDED IN PLAT BOOK 59, PAGE 58 AND THE EAST LINE OF LAND NOW OR FORMERLY OF MDC COAST 22 LLC, AS RECORDED BY DEED IN BOOK 25302, PAGE 4186, ALL OF SAID RECORDER'S OFFICE;

THENCE ALONG SAID EAST LINE, THE FOLLOWING COURSES AND DISTANCES: NORTH 01 DEGREES 12 MINUTES 15 SECONDS EAST, A DISTANCE OF 466.53 FEET; NORTH 88 DEGREES 57 MINUTES 33 SECONDS WEST, A DISTANCE OF 51.85 FEET AND NORTH 04 DEGREES 53 MINUTES 33 SECONDS WEST, A DISTANCE OF 682.38 FEET TO THE SOUTH RIGHT OF WAY LINE OF MISSOURI STATE HIGHWAY 340, A.K.A. OLIVE (VARIABLE WIDTH - PUBLIC RIGHT OF WAY) BOULEVARD;

THENCE ALONG SAID SOUTH RIGHT OF WAY LINE, THE FOLLOWING COURSES AND DISTANCES: ALONG A NON- TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 11,358.19 FEET, WITH A CENTRAL ANGLE OF 00 DEGREES 49 MINUTES 02 SECONDS, WHICH CHORD BEARS SOUTH 89 DEGREES 27 MINUTES 38 SECONDS EAST, A CHORD DISTANCE OF 162.03 FEET, THROUGH AN ARC LENGTH OF 162.03 FEET; SOUTH 89 DEGREES 03 MINUTES 07 SECONDS EAST, A DISTANCE OF 427.12 FEET; NORTH 01 DEGREES 00 MINUTES 53 SECONDS EAST, A DISTANCE OF 20.00 FEET; SOUTH 89 DEGREES 03 MINUTES 07 SECONDS EAST, A DISTANCE OF 723.00 FEET AND SOUTH 86 DEGREES 13 MINUTES 52 SECONDS EAST, A DISTANCE OF 200.26 FEET TO THE SOUTHWEST RIGHT OF WAY TRANSITION BETWEEN STATE HIGHWAY 340 AND STATE HIGHWAY 67, A.K.A. LINDBERGH (VARIABLE WIDTH - PUBLIC RIGHT OF WAY) BOULEVARD;

THENCE ALONG SAID SOUTHWEST RIGHT OF WAY LINE, THE FOLLOWING COURSES AND DISTANCES: SOUTH 65 DEGREES 03 MINUTES 50 SECONDS EAST, A DISTANCE OF 328.98 FEET; SOUTH 43 DEGREES 48 MINUTES 52 SECONDS EAST, A DISTANCE OF 413.64 FEET; SOUTH 32 DEGREES 46 MINUTES 12 SECONDS EAST, A DISTANCE OF 248.25 FEET AND SOUTH 11 DEGREES 42 MINUTES 30 SECONDS EAST, A DISTANCE OF 250.82 FEET TO THE WEST RIGHT OF WAY LINE OF THE AFOREMENTIONED LINDBERGH BOULEVARD;

THENCE ALONG SAID WEST RIGHT OF WAY LINE, THE FOLLOWING COURSES AND DISTANCES: SOUTH 01 DEGREES 00 MINUTES 47 SECONDS EAST, A DISTANCE OF 256.89 FEET; SOUTH 01 DEGREES 53 MINUTES 43 SECONDS WEST, A DISTANCE OF 105.09 FEET; NORTH 88 DEGREES 06 MINUTES 17 SECONDS WEST, A DISTANCE OF 10.00 FEET; SOUTH 01 DEGREES 53 MINUTES 43 SECONDS WEST, A DISTANCE OF 50.00 FEET; NORTH 88 DEGREES 06 MINUTES 17 SECONDS WEST, A DISTANCE OF 30.00 FEET; SOUTH 01 DEGREES 53 MINUTES 43 SECONDS WEST, A DISTANCE OF 50.00 FEET; SOUTH 88 DEGREES 06 MINUTES 17 SECONDS EAST, A DISTANCE OF 40.00 FEET; SOUTH 01 DEGREES 53 MINUTES 43 SECONDS WEST, A DISTANCE OF 300.00 FEET; SOUTH 88 DEGREES 06 MINUTES 17 SECONDS EAST, A DISTANCE OF 10.00 FEET AND SOUTH 01 DEGREES 53 MINUTES 43 SECONDS WEST, A DISTANCE OF 847.31 FEET TO THE POINT OF BEGINNING.

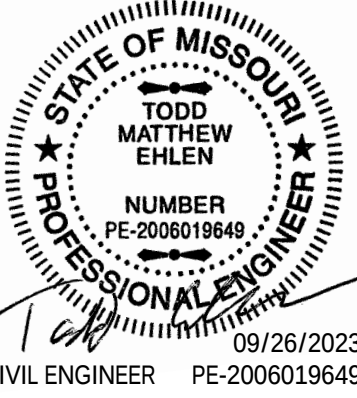
THE ABOVE DESCRIBED TRACT OF LAND CONTAINING 4,171,444 SQUARE FEET OR 95.763 ACRES IS BASED UPON AN ACTUAL URBAN CLASS BOUNDARY SURVEY DONE IN ACCORDANCE WITH THE CURRENT MISSOURI STANDARDS FOR PROPERTY BOUNDARY SURVEYS, SUBJECT TO ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, CONDITIONS OF RECORD AND NOT OF RECORD, IF ANY.

PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



10300 OLIVE BLVD
CREVE COEUR, MO 63141

UTILITY NOTE :

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

DISCLAIMER :

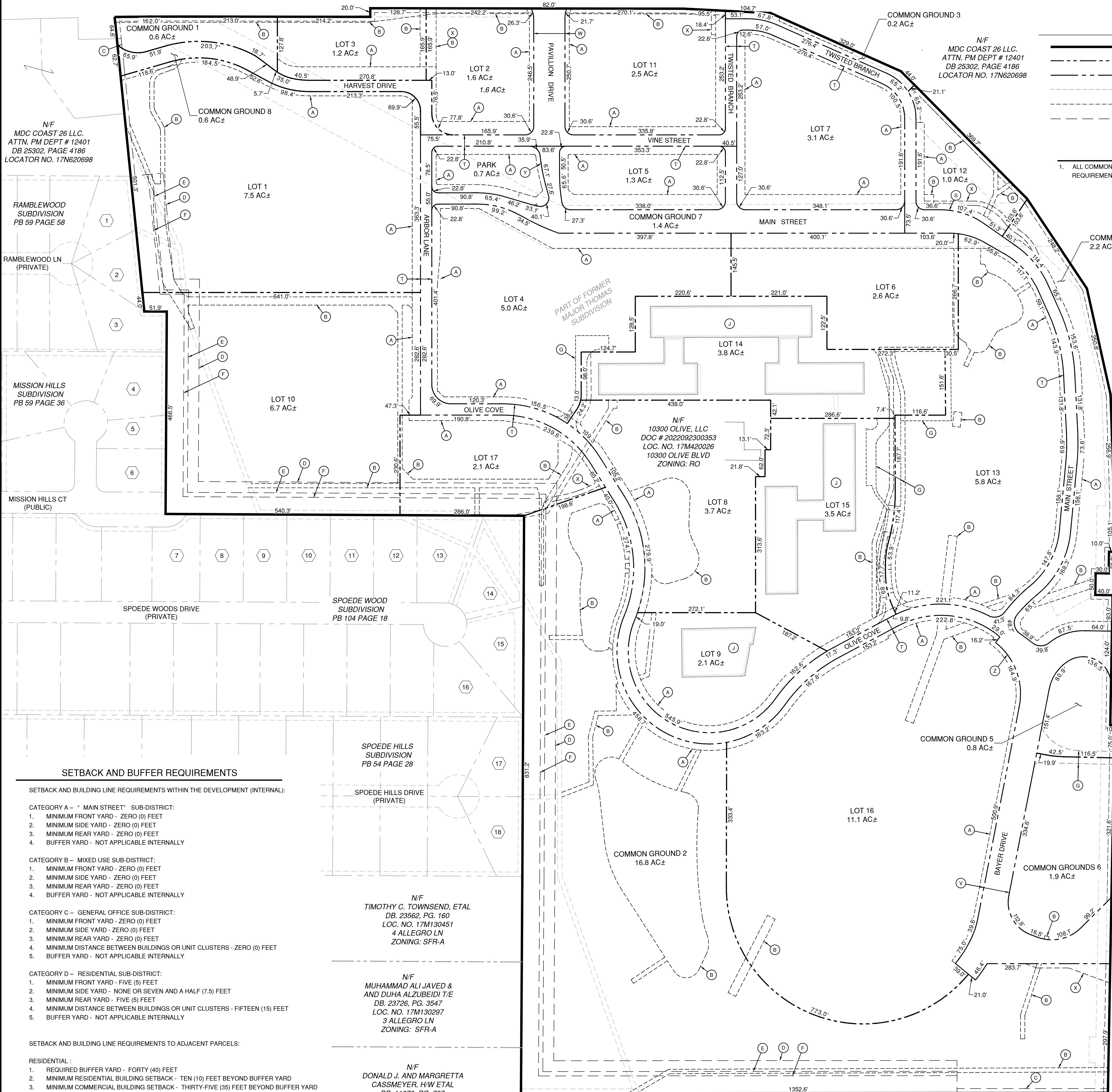
CRAWFORD, MURPHY & TILLY, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. CRAWFORD, MURPHY & TILLY, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

PRELIMINARY SUBDIVISION PLAT

OLIA VILLAGE

A TRACT OF LAND BEING PART OF THE LOTS 9, 10, 11 AND 12 OF MAJOR THOMAS SUBDIVISION, SITUATED IN THE SOUTHWEST QUARTER AND THE NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 45 NORTH, RANGE 5 EAST CITY OF CREVE COEUR, ST. LOUIS COUNTY, MISSOURI

OLIVE BOULEVARD (MISSOURI STATE HIGHWAY 340)



LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- UTILITY & DRAINAGE EASEMENT
- PROPOSED UTILITY & DRAINAGE EASEMENT
- PROPOSED BUILDING SETBACK LINE

GENERAL NOTES

- ALL COMMON GROUND AREAS SHALL BE MAINTAINED PER THE REQUIREMENTS OF THE COMMUNITY ASSOCIATION COVENANTS.

KEYNOTES

- (A) PROPOSED ROADWAY, IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK EASEMENT (P.R.I.M.U.S.S.E.) (TYP)
- (B) PROPOSED UTILITY OR DRAINAGE EASEMENT (TYP)
- (C) PROPOSED COMMERCIAL 10' BUILDING SETBACK LINE
- (D) PROPOSED COMMERCIAL 35' BUILDING SETBACK LINE
- (E) PROPOSED RESIDENTIAL 10' BUILDING SETBACK LINE
- (F) PROPOSED RESIDENTIAL 40' BUFFER LINE
- (G) PROPOSED ACCESS EASEMENT
- (J) EXISTING STRUCTURE TO REMAIN
- (S) PROPOSED RIGHT OF WAY WIDTH VARIES 26'-54'
- (T) PROPOSED RIGHT OF WAY WIDTH 26'
- (U) PROPOSED RIGHT OF WAY WIDTH VARIES 26'-38'
- (V) PROPOSED RIGHT OF WAY WIDTH 60'
- (W) PROPOSED RIGHT OF WAY WIDTH 72'
- (X) PROPOSED SIDEWALK EASEMENT
- (Y) PROPOSED RIGHT OF WAY WIDTH VARIES 28'-45'
- (Z) PROPOSED RIGHT OF WAY WIDTH VARIES 50'-60'

PROPERTY OWNER INFORMATION

- | | |
|---|---|
| 1. BRANDON L & AMY JEFFERS H/W
DB. 20819, PG. 681
LOCATOR # 17N620467
11 RAMBLEWOOD LN
ZONING: SFR-C | 14. DANIEL & DENA TRANEN T/E
DB. 21484, PG. 3870
LOCATOR # 17M4100016
13 SPOEDE WOODS ST
ZONING: SFR-B |
| 2. KANGYUN & MA BAOZHEN WU T/E
DB. 20819, PG. 681
LOCATOR # 17N620434
13 RAMBLEWOOD LN
ZONING: SFR-C | 15. MICHAEL P & CHIRAWAN C DEMOS H/W
DB. 20052, PG. 2430
LOCATOR # 17M130275
14 SPOEDE WOODS ST
ZONING: SFR-B |
| 3. DAVID E SCHRAMM TRUST ET AL
DB. 22493, PG. 634
LOCATOR # 17N620357
12 RAMBLEWOOD LN
ZONING: SFR-C | 16. 15 SPOEDE WOODS LLC
DB. 23330, PG. 217
LOCATOR # 17M130211
15 SPOEDE WOODS ST
ZONING: SFR-B |
| 4. ALAN P & LAUREL T BURKE T/E
DB. 23138, PG. 3554
LOCATOR # 17N620258
850 MISSION HILLS CT
ZONING: SFR-C | 17. ALLAN H & FRANCES R RAMSEY H/W
DB. 03865, PG. 523
LOCATOR # 17M130374
12 SPOEDE HILLS DR
ZONING: SFR-B |
| 5. TAMARA MARX
DB. 20942, PG. 289
LOCATOR # 17N620193
DB. 20942, PG. 289
844 MISSION HILLS CT
ZONING: SFR-C | 18. ALEXIS TRAVERS & MELISSA BURGUND T/E
DEED DOC. 2022112300190
LOCATOR # 17M130385
13 SPOEDE HILLS DR
ZONING: SFR-B |
| 6. SONG CAO SONG & GENGSHENG CHEN H/W
DB. 20476, PG. 136
LOCATOR # 17N620126
840 MISSION HILLS CT
ZONING: SFR-C | 19. ELLEN M LATURNO ETAL, J/T
DEED DOC. 2023040400345
LOCATOR # 17M130011
13 SUNSWEPT DR
ZONING: SFR-B |
| 7. SINGER DAVID & DANIELLE SINGER T/E
DB. 22676, PG. 1635
LOCATOR # 17N620753
6 SPOEDE WOODS ST
ZONING: SFR-B | 20. BLAKE & ROBIN EASTWOOD T/E
DB. 23734, PG. 769
LOCATOR # 17M130022
14 SUNSWEPT DR
ZONING: SFR-B |
| 8. WILLIAM M & GAIL FRIEDMAN H/W
DB. 12232, PG. 387
LOCATOR # 17M410094
7 SPOEDE WOODS ST
ZONING: SFR-B | 21. JEFFERY & AMANDA DIECKHAUS T/E
DB. 23414, PG. 2192
LOCATOR # 17M130033
10311 N. SUNSWEPT DR.
ZONING: SFR-B |
| 9. THE MANLEY FAMILY TRUST
DB. 24934, PG. 1749
LOCATOR # 17M410027
8 SPOEDE WOODS ST
ZONING: SFR-B | 22. JYOTI ETAL BEHURA T/E
DB. 24882, PG. 3484
LOCATOR # 17M140087
10327 N. SUNSWEPT DR.
ZONING: SFR-B |
| 10. TOMISLAV ZIGO ETAL
DB. 17318, PG. 4808
LOCATOR # 17M140061
9 SPOEDE WOODS ST
ZONING: SFR-B | 23. ALAN B MARIAM & CLAUDIA TRUST FBO
DB. 24351, PG. 70
LOCATOR # 17M140076
DB. 20942, PG. 289
10321 N. SUNSWEPT DR.
ZONING: SFR-B |
| 11. JEROME A & FRANCES S COHEN H/W
DB. 21569, PG. 223
LOCATOR # 17M410038
10 SPOEDE WOODS ST
ZONING: SFR-B | 24. GABRIELLA JULIAN
DB. 24286, PG. 3346
LOCATOR # 17M140043
10311 N. SUNSWEPT DR.
ZONING: SFR-B |
| 12. XUDONG LIANG & YILING MI H/W
DB. 17419, PG. 1953
LOCATOR # 17M410049
11 SPOEDE WOODS ST
ZONING: SFR-B | 25. JOHN & SUE MURPHY H/W
DB. 21426, PG. 3126
LOCATOR # 17M140032
10305 N. SUNSWEPT DR.
ZONING: SFR-B |
| 13. THE ROBERT H MAX & RACHEL E
PROTZEL LIVING TRUST
DB. 23635, PG. 213
LOCATOR # 17M410050
12 SPOEDE WOODS ST
ZONING: SFR-B | 26. VANTAGE CREDIT UNION
DB. 23850, PG. 141
LOCATOR # 17M140010
611 N LINDBERGH BLVD
ZONING: GC |

SETBACK AND BUFFER REQUIREMENTS

SETBACK AND BUILDING LINE REQUIREMENTS WITHIN THE DEVELOPMENT (INTERNAL):

CATEGORY A - "MAIN STREET" SUB-DISTRICT:

- MINIMUM FRONT YARD - ZERO (0) FEET
- MINIMUM SIDE YARD - ZERO (0) FEET
- MINIMUM REAR YARD - ZERO (0) FEET
- BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY B - MIXED USE SUB-DISTRICT:

- MINIMUM FRONT YARD - ZERO (0) FEET
- MINIMUM SIDE YARD - ZERO (0) FEET
- MINIMUM REAR YARD - ZERO (0) FEET
- BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY C - GENERAL OFFICE SUB-DISTRICT:

- MINIMUM FRONT YARD - ZERO (0) FEET
- MINIMUM SIDE YARD - ZERO (0) FEET
- MINIMUM REAR YARD - ZERO (0) FEET
- MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS - ZERO (0) FEET
- BUFFER YARD - NOT APPLICABLE INTERNALLY

CATEGORY D - RESIDENTIAL SUB-DISTRICT:

- MINIMUM FRONT YARD - FIVE (5) FEET
- MINIMUM SIDE YARD - NONE OR SEVEN AND A HALF (7.5) FEET
- MINIMUM REAR YARD - FIVE (5) FEET
- MINIMUM DISTANCE BETWEEN BUILDINGS OR UNIT CLUSTERS - FIFTEEN (15) FEET
- BUFFER YARD - NOT APPLICABLE INTERNALLY

SETBACK AND BUILDING LINE REQUIREMENTS TO ADJACENT PARCELS:

RESIDENTIAL:

- REQUIRED BUFFER YARD - FORTY (40) FEET
- MINIMUM RESIDENTIAL BUILDING SETBACK - TEN (10) FEET BEYOND BUFFER YARD
- MINIMUM COMMERCIAL BUILDING SETBACK - THIRTY-FIVE (35) FEET BEYOND BUFFER YARD

NON-RESIDENTIAL:

- MINIMUM BUILDING SETBACK - TEN (10) FEET

N/F
TIMOTHY C. TOWNSEND, ETAL
DB. 23562, PG. 160
LOC. NO. 17M130451
4 ALLEGRO LN
ZONING: SFR-A

N/F
MUHAMMAD ALI JAVED &
AND DUHA ALZUBEIDI T/E
DB. 23726, PG. 3547
LOC. NO. 17M130297
3 ALLEGRO LN
ZONING: SFR-A

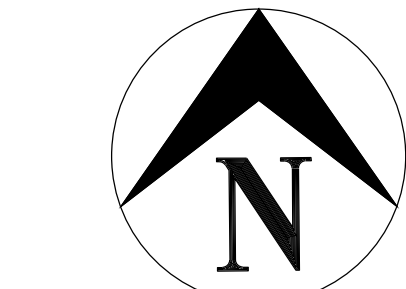
N/F
DONALD J. AND MARGARETTA
CASSMEYER, H/W ETAL
DB. 11070, PG. 767
LOC. NO. 17M130044
2 ALLEGRO LN
ZONING: SFR-A

PREPARED BY:



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:



SCALE IN FEET

OWNER / SUBDIVIDER

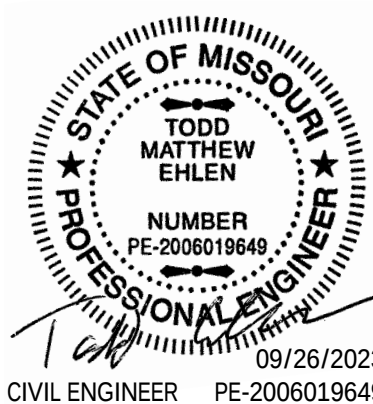
10300 OLIVE, LLC
1034 S. BRENTWOOD, SUITE 2300 PH-1D
ST. LOUIS, MO 63117
MATT PFUND
(618) 692-9502

ENGINEER

CRAWFORD MURPHY & TILLY, INC.
1 MEMORIAL DRIVE #500
ST. LOUIS, MO 63102
PH (314) 5436-5500
ENGINEER: TODD EHLEN

SURVEYOR

CRAWFORD MURPHY & TILLY, INC.
2750 WEST WASHINGTON STREET
SPRINGFIELD, IL 62702
PH (217) 787-8050
SURVEYOR: MICHAEL E MIZEUR



SEPTEMBER 26, 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BLVD
CREVE COEUR, MO 63141

MARK DATE DESCRIPTION

PROJECT NO.: 23005201-00

CAD DWG FILE: IPRELIMINARY-PLAT.DWG

DESIGNED BY: TME/JFM

DRAWN BY: JFM

CHECKED BY: CJS

APPROVED BY: ---

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SHEET TITLE

PRELIMINARY
SUBDIVISION PLAT

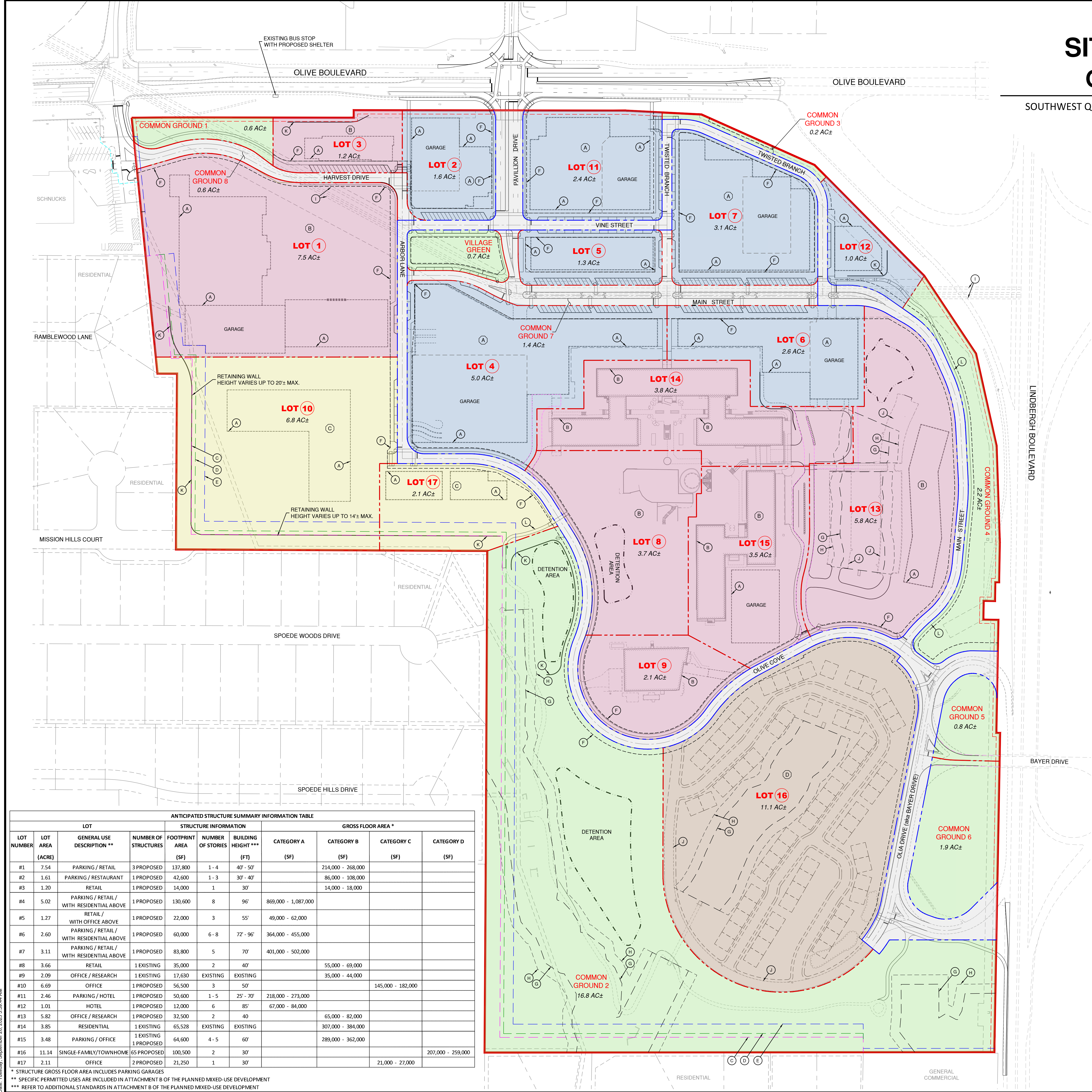
V-101

SHEET OF --

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Date: Tuesday, September 26, 2023 3:29:44 AM

ANTICIPATED STRUCTURE SUMMARY INFORMATION TABLE										
LOT				STRUCTURE INFORMATION			GROSS FLOOR AREA *			
LOT NUMBER	LOT AREA (ACRE)	GENERAL USE DESCRIPTION **	NUMBER OF STRUCTURES	FOOTPRINT AREA (SF)	NUMBER OF STORIES	BUILDING HEIGHT *** (FT)	CATEGORY A (SF)	CATEGORY B (SF)	CATEGORY C (SF)	CATEGORY D (SF)
#1	7.54	PARKING / RETAIL	3 PROPOSED	137,800	1 - 4	40' - 50'		214,000 - 268,000		
#2	1.61	PARKING / RESTAURANT	1 PROPOSED	42,600	1 - 3	30' - 40'		86,000 - 108,000		
#3	1.20	RETAIL	1 PROPOSED	14,000	1	30'		14,000 - 18,000		
#4	5.02	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	130,600	8	96'	869,000 - 1,087,000			
#5	1.27	RETAIL / WITH OFFICE ABOVE	1 PROPOSED	22,000	3	55'	49,000 - 62,000			
#6	2.60	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	60,000	6 - 8	72' - 96'	364,000 - 455,000			
#7	3.11	PARKING / RETAIL / WITH RESIDENTIAL ABOVE	1 PROPOSED	83,800	5	70'	401,000 - 502,000			
#8	3.66	RETAIL	1 EXISTING	35,000	2	40'		55,000 - 69,000		
#9	2.09	OFFICE / RESEARCH	1 EXISTING	17,630	EXISTING	EXISTING		35,000 - 44,000		
#10	6.69	OFFICE	1 PROPOSED	56,500	3	50'			145,000 - 182,000	
#11	2.46	PARKING / HOTEL	1 PROPOSED	50,600	1 - 5	25' - 70'	218,000 - 273,000			
#12	1.01	HOTEL	1 PROPOSED	12,000	6	85'	67,000 - 84,000			
#13	5.82	OFFICE / RESEARCH	1 PROPOSED	32,500	2	40'		65,000 - 82,000		
#14	3.85	RESIDENTIAL	1 EXISTING	65,528	EXISTING	EXISTING		307,000 - 384,000		
#15	3.48	PARKING / OFFICE	1 EXISTING 1 PROPOSED	64,600	4 - 5	60'		289,000 - 362,000		
#16	11.14	SINGLE-FAMILY/TOWNHOME	65 PROPOSED	100,500	2	30'				207,000 - 259,000
#17	2.11	OFFICE	2 PROPOSED	21,250	1	30'			21,000 - 27,000	

* STRUCTURE GROSS FLOOR AREA INCLUDES PARKING GARAGES
** SPECIFIC PERMITTED USES ARE INCLUDED IN ATTACHMENT B OF THE PLANNED MIXED-USE DEVELOPMENT
*** REFER TO ADDITIONAL STANDARDS IN ATTACHMENT B OF THE PLANNED MIXED-USE DEVELOPMENT



SITE OVERVIEW

OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

LEGEND

- DEVELOPMENT BOUNDARY LINE
- PROPOSED LOT LINE
- PROPOSED R.O.W. LINE
- CONCEPTUAL BLDG FOOTPRINT
- PROPOSED EASEMENT
- CATEGORY A - MAIN STREET DEVELOPMENT
- CATEGORY B - MIXED USE DEVELOPMENT
- CATEGORY C - GENERAL OFFICE DEVELOPMENT
- CATEGORY D - RESIDENTIAL DEVELOPMENT

KEYNOTES

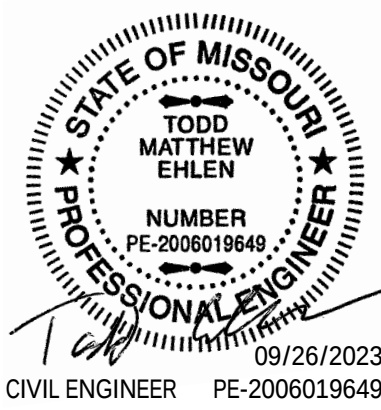
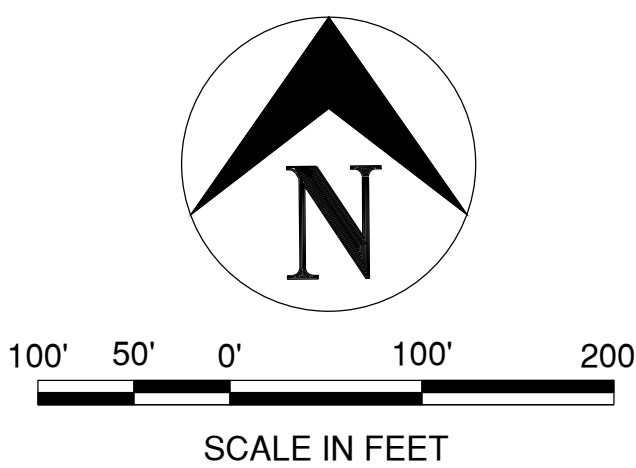
- (A) CONCEPTUAL BUILDING FOOTPRINT (TYP)
- (B) EXISTING BUILDING TO REMAIN AND BE REPURPOSED (TYP)
- (C) 40' RESIDENTIAL BUFFER YARD (TYP)
- (D) 10' RESIDENTIAL BUILDING SETBACK (BEYOND BUFFER)
- (E) 35' COMMERCIAL BUILDING SETBACK (BEYOND BUFFER)
- (F) 10' MINIMUM PROPOSED ROADWAY IMPROVEMENT MAINTENANCE UTILITY SEWER SIDEWALK EASEMENT (PRIMUSSE)
- (G) 50' NATURAL VEGETATION STREAM BUFFER
- (H) 25' NO-IMPERVIOUS STREAM BUFFER
- (I) EXISTING STL WATER CO. WATERMAIN CONDUITS
- (J) EXISTING PARKING LOT / DRIVE TO REMAIN
- (K) PROPOSED SITE RETAINING WALL (TYP)
MECHANICALLY STABILIZED EARTH OR BLOCK GRAVITY WALL
(TO BE DETERMINED UPON FINAL DESIGN)
- (L) PROPOSED WALKING TRAIL OR SIDEWALK (TYP)
SEE PEDESTRIAN MOBILITY PLAN



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK DATE DESCRIPTION

PROJECT NO.: 23005201-00
CAD DWG FILE: ISITE-CONCEPT-PLAN.DWG
DESIGNED BY: TME/JFM
DRAWN BY: JFM
CHECKED BY: CJS
APPROVED BY: ---
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SHEET TITLE

SITE OVERVIEW

C-101

SHEET - OF --

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



CONSULTANTS:

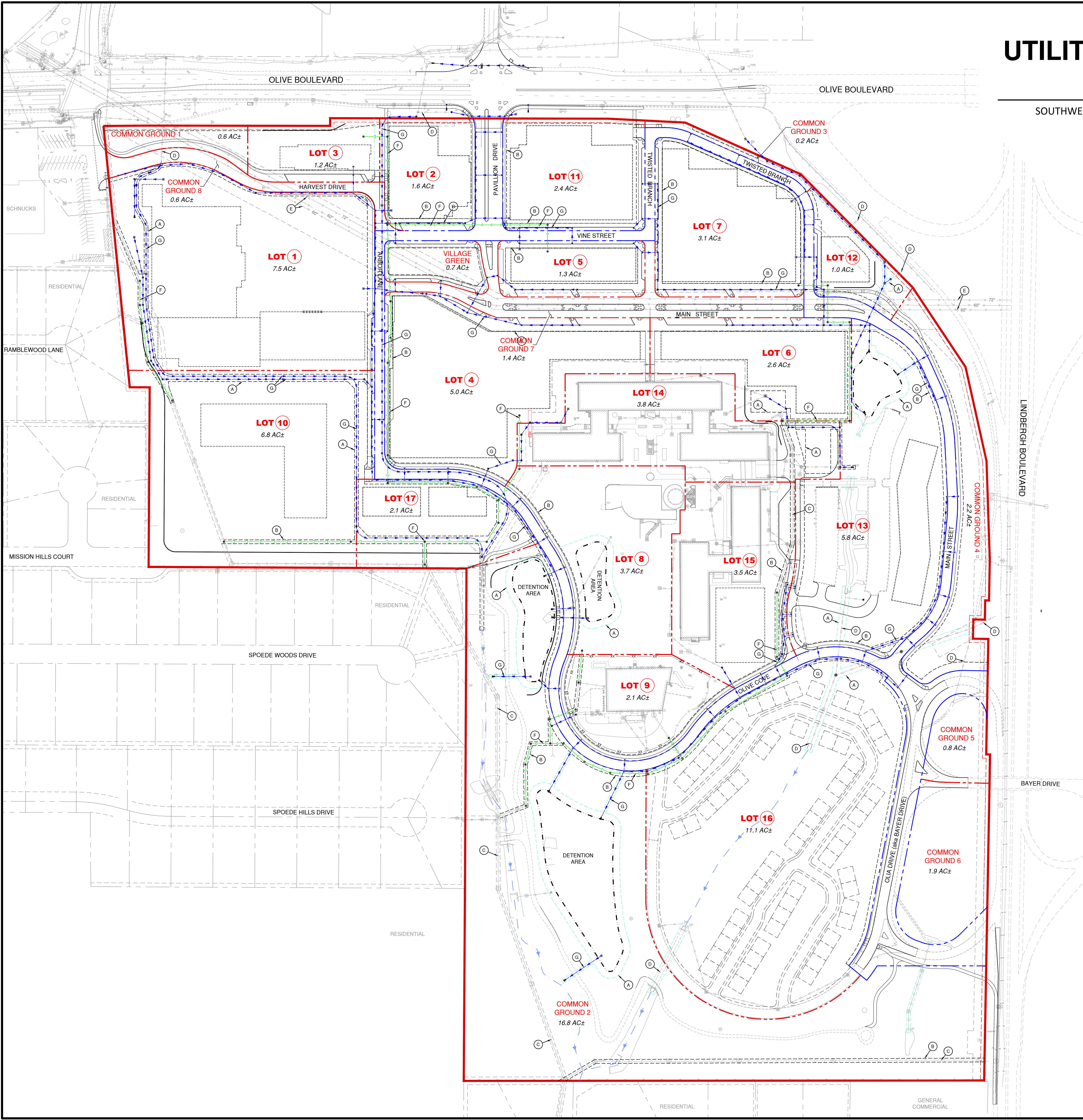
STATE OF MISSOURI
TODD MATTHEW EHLEN
NUMBER
PE-2006019649
PROFESSIONAL ENGINEER
09/26/2023
ENGINEER PE-2006019649



SHEET - OF --

UTILITY & DRAINAGE PLAN
OLIA VILLAGE

SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO



- LEGEND
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - EXISTING SANITARY SEWER
 - EXISTING STORM SEWER
 - EXISTING WATER MAIN
 - PROPOSED SANITARY SEWER
 - PROPOSED STORM SEWER
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED EASEMENT

- KEYNOTES
- (A) DRAINAGE EASEMENT (TYP)
 - (B) UTILITY EASEMENT (TYP)
 - (C) EXISTING SANITARY SEWER
 - (D) EXISTING STORM DRAINAGE SYSTEM
 - (E) EXISTING STL WATER CO. WATERMAIN CONDUITS
 - (F) PROPOSED SANITARY SEWER (TYP)
 - (G) PROPOSED STORM DRAINAGE SYSTEM (TYP)

PRELIMINARY BUILDOUT STORMWATER CALCULATIONS

PRE-DEVELOPED RUNOFF
TOTAL AREA = 227.90 ac
WEIGHTED "CN" VALUE = 81.59
AVERAGE "TC" VALUE = 19.86 min
TOTAL FLOW = 1,260± cfs

POST-DEVELOPED RUNOFF
TOTAL AREA = 227.90 ac
WEIGHTED "CN" VALUE = 86.54
AVERAGE "TC" VALUE = 16.34 min
TOTAL FLOW = 1,478± cfs

DIFFERENTIAL RUNOFF
PRE-DEVELOPED = 1,260± cfs
POST-DEVELOPED = 1,478± cfs
DIFFERENTIAL FLOW = +218± cfs

100-YEAR, 24-HOUR PEAK FLOW RATE COMPARISON

PRE-DEVELOPED = 404± cfs
POST-DEVELOPED = 1,142± cfs
DIFFERENTIAL FLOW = -738± cfs

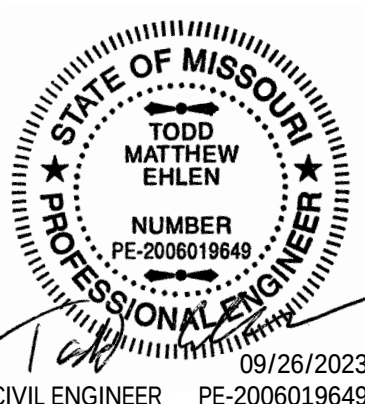
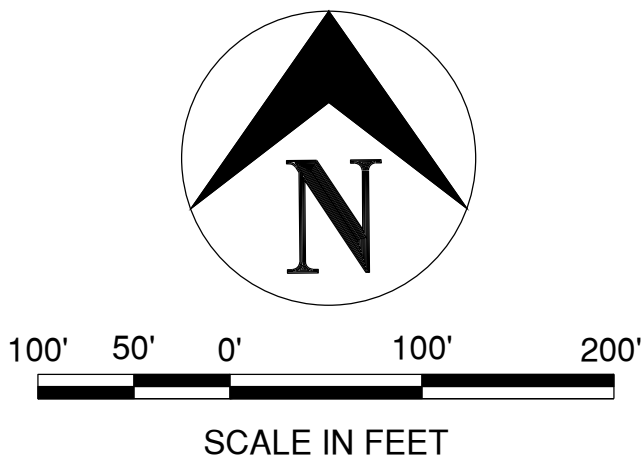
THIS PROJECT HAS BEEN SUBMITTED TO MSD FOR CONCEPTUAL REVIEW (23CNCBP-00003).
ALL STORM SEWER AND DETENTION FACILITY CALCULATIONS AND REPORTS WILL BE SUBMITTED TO MSD AND CITY OF CREVE COEUR FOR FINAL APPROVAL PRIOR TO CONSTRUCTION.



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
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PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



CREVE COEUR, MO

MARK	DATE	DESCRIPTION
PROJECT NO:	23005201-00	
CAD DWG FILE:	ISITE-CONCEPT-PLAN.DWG	
DESIGNED BY:	TME/JFM	
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UTILITY & DRAINAGE
PLAN

C-106

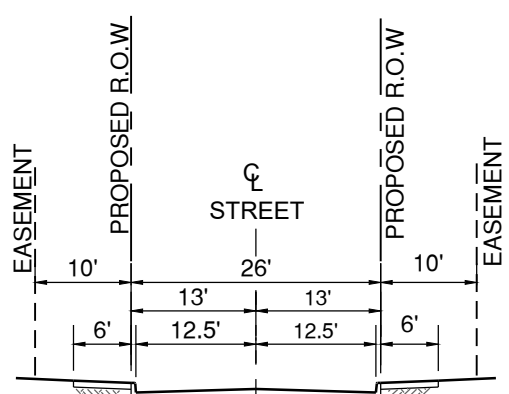
SHEET - OF --

STREET PLAN
OLIA VILLAGE

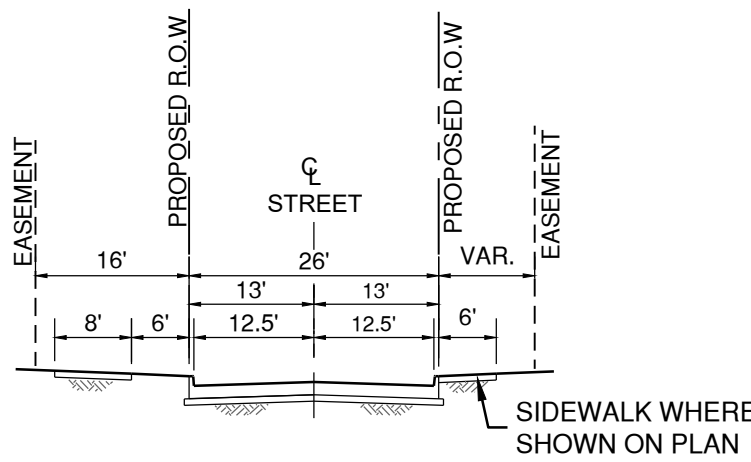
SOUTHWEST QUADRANT OF OLIVE & LINDBERGH BOULEVARD
CREVE COEUR, MO

- LEGEND
- DEVELOPMENT BOUNDARY LINE
 - PROPOSED LOT LINE
 - PROPOSED R.O.W. LINE
 - CONCEPTUAL BLDG FOOTPRINT
 - PROPOSED R.I.M.U.S.S. EASEMENT
 - PROPOSED ROADWAY (WITHIN RIGHT-OF-WAY)
 - PROPOSED ON-STREET PARKING (WITHIN EASEMENT)
 - PROPOSED PRIVATE ROADWAY

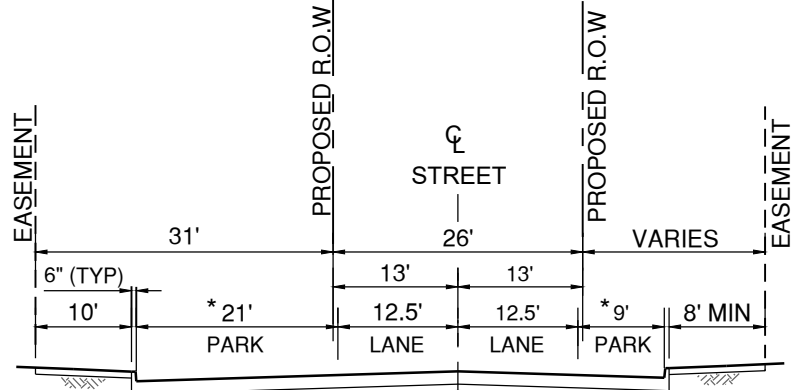
- KEYNOTES
- PROPOSED RIGHT-OF-WAY
 - PROPOSED ROADWAY IMPROVEMENT, MAINTENANCE, UTILITY, SEWER, SIDEWALK (R.I.M.U.S.S.) EASEMENT
 - CONCEPTUAL FUTURE ENTRANCE
 - EXISTING STL WATER MAIN CONDUITS
 - EXISTING STL WATER MAIN EASEMENT



TYPICAL SECTION #1
STANDARD STREET SECTION

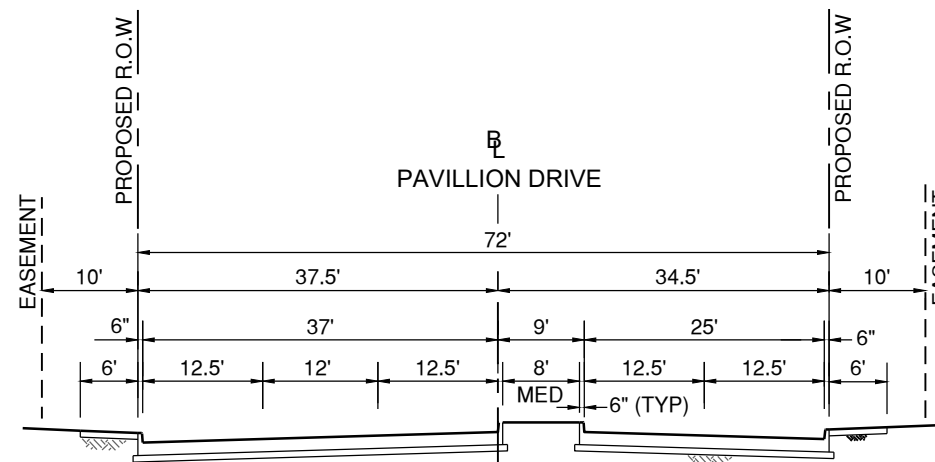


TYPICAL SECTION #2
OLIVE COVE

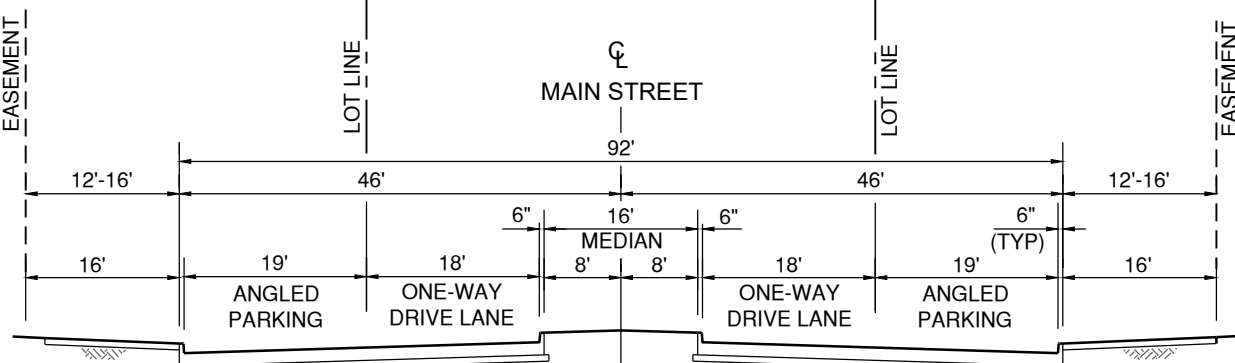


* PARKING VARIES:
9' PARALLEL PARKING
21' ANGLED PARKING

TYPICAL SECTION #3
STANDARD STREET SECTION
WITH ADJACENT PARKING



TYPICAL SECTION #4
PAVILLION DRIVE ENTRANCE



TYPICAL SECTION #5
MAIN STREET (MEDIAN SECTION)

ROADWAY INFORMATION		
STREET NAME	CENTERLINE LENGTH (FT)	LANE MILES (MI)
PUBLIC ROADWAYS		
PAVILLION DRIVE	380	0.360
MAIN STREET	1,210	0.458
ARBOR LANE	625	0.237
OLIVE COVE	2,120	0.803
TWISTED BRANCH	1,000	0.379
VINE STREET	700	0.265
BAYER DRIVE	720	0.273
ON-RAMP FROM BAYER DRIVE	180	0.034
OFF-RAMP TO BAYER DRIVE	320	0.061
SUB-TOTAL :	7,255	2.870
PRIVATE ROADWAYS		
PAVILLION DRIVE	180	0.068
MAIN STREET	1,120	0.424
TWISTED BRANCH	190	0.072
HARVEST DRIVE (FUTURE PUBLIC)	770	0.292
ARBOR LANE (FUTURE PUBLIC)	125	0.047
BAYER DRIVE (E/W)	220	0.083
SUB-TOTAL :	2,605	0.986
TOTAL :	9,860	3.856

GENERAL NOTES

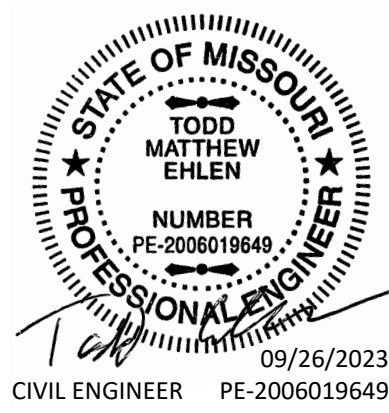
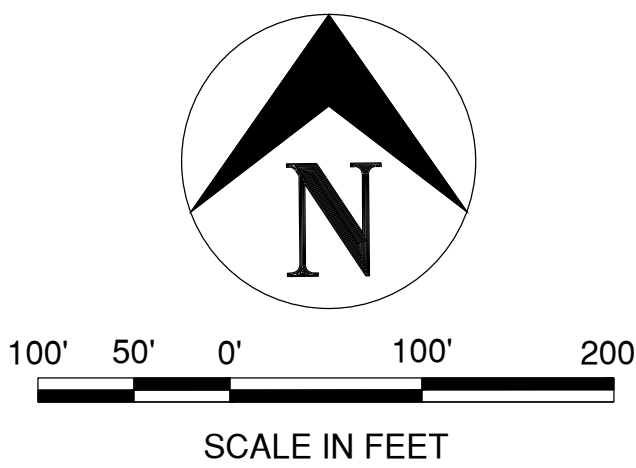
- EXISTING EASEMENTS NOT SHOWN FOR CLARITY.
- EXISTING UTILITIES NOT SHOWN FOR CLARITY.
- PROPOSED UTILITY EASEMENTS NOT SHOWN FOR CLARITY.
- PROPOSED UTILITIES NOT SHOWN FOR CLARITY.



ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
OFFICE NO. (314) 436-5500
LICENSE NO. 184-000631

CONSULTANTS:

SITE CONCEPT PLAN



PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 26, 2023

OLIA VILLAGE
DEVELOPMENT

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

CREVE COEUR, MO

MARK DATE DESCRIPTION

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CAD DWG FILE: ISITE-CONCEPT-PLAN.DWG
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STREET PLAN

C-107

SHEET - OF --

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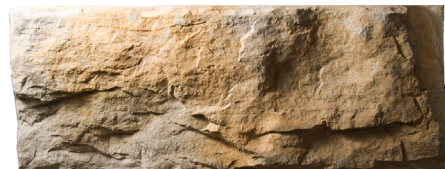
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St. Louis, MO 63103-2555
(314) 768-6200

February 3, 2023

Mr. Todd Ehlen
Crawford, Murphy & Tilly
One Memorial Drive, Suite 500
St. Louis, MO 63102

Re: Lindbergh/Olive Mixed Use Master Plan – 10300 Olive Blvd.
Preliminary Site Plan Conceptual Review
MSD Ref. No. 23CNCPB-00003

Dear Mr. Ehlen:

MSD has completed the **conceptual review** of the referenced preliminary site plan. Based upon same, the following comments are provided:

This project site is located in the Lemay WWTP service area, the River des Peres watershed, and the Deer Creek sub-shed. Jack Matthews Development is proposing to raze some existing building structures, parking areas, and campus roadway, to accommodate the proposed mixed-use complex that will include retail, commercial, dining, office space, apartments, townhomes, hotels, and parking. Three wet detention ponds were shown on the plan sheet provided. The submitted plans did not indicate the area of disturbance or the stormwater runoff differential.

Plans previously submitted to MSD for review at the 10300 Olive Blvd. property can be found under records P000394600-04, P001074900-01, P001578400-01, P002697800, P003065200, and 19MSD-00340. Plans that were submitted for the property, but subsequently withdrawn, can be found under records P001578402, P003115000, and 21MSD-00059/21FLPLS-00006. Information records for the property are 19INFOR-00067, 20INFOR-00578, and 22INFOR-00209. The project files can be found online by searching on MSD's project tracking system (<https://aca-prod.accela.com/STLMSD/Default.aspx>)

Stormwater – Water Quality/Volume Reduction/Retention/Channel Protection

Over 20% of the site is impervious and the development activities proposed on this plan will occur predominately on impervious portions of the site. Therefore, this project is categorized as "Redevelopment" for purposes of establishing storm water management goals and compliance requirements with respect to our region's MS4 permit. Onsite watershed boundaries, drainage area acreages and discharge points shall be maintained as close to their pre-developed condition as possible. **Current MSD records indicate downstream stormwater problems that will require the site to use the undeveloped or "back to grass" existing site condition for all disturbed areas when determining the runoff**

differential and stormwater management goals for this site.

The site disturbance appears to be over one acre, which will require post construction Best Management Practices (BMPs) to be installed to treat the water quality volume (WQv) per MSD regulations, in which case volume reduction BMPs should be implemented wherever possible. The likely runoff differential surpassing the 2 cfs threshold will require post construction Best Management Practices (BMPs) to treat Channel Protection Volume (CPv) and Flood Protection (Qp) for the site. The Deer Creek watershed release rate for routed detention facilities is a “zero increase” watershed. Volume reducing techniques including bioretention, permeable pavement, amended soils, etc. are acceptable. A maintenance agreement and reserve areas are required for BMPs and are to be provided by the landowner.

Wet detention ponds were shown on the submitted plan sheet, but no specifications were given. The wet ponds should be designed to MSD standards. Please also reference the Maryland Manual. The minimum drainage area to a wet pond is 25 acres. Please refer to the Maryland Manual for information about safety and aquatic benches, pond buffer, non-clogging Low Flow Orifice, riser, pond drain, valves, and safety features. Wet pond evaporation is not considered volume reduction by MSD.

Two reports will need to be submitted during formal plan review. The Stormwater Management Facilities Report: Calculations should contain an executive summary, all calculations, MEP spreadsheets, and drainage area maps. An outline of what to include can be found at <https://msdprojectclear.org/what-we-do/stormwater-management/bmp-toolbox/calculation-and-report-preparation-tools/stormwater-management-facilities-report/> . A separate report for the Operations and Maintenance Plan should also be submitted, including the maintenance plan, checklists, and information about reporting. A link for the outline of the Operations and Maintenance Plan can be found at the link above.

A BMP Drainage Area Map should be submitted with the formal plan submittal. See the attached document MSD BMP Drainage Area Map.docx. Any proposed BMPs are to be sized based on their tributary areas. Maintenance of any proposed BMPs will be the obligation of the property owner of the parcel the stormwater facilities are located on. The record property owner of the parcel containing the storm water controls will be required to execute a maintenance agreement with MSD, establish a reserve area for the stormwater facilities, and assume responsibility for their maintenance.

The engineer should carefully outline the drainage areas to the sewers affected by this development and be prepared to submit sewer capacity hydraulics with the formal submittal. It is recommended that the hydraulic capacities be run through any relocated/new sewers as well as any sewers to which the development is tributary. Those “in-place” hydraulics should extend a minimum of two reaches downstream of any proposed work. Further site storm water attenuation may be required should sewers not have sufficient capacity. There should be no deviation from the current service level as a result of this project.

A floodplain study is required since runoff will exceed a 60” pipe per previous conversations about the site. See [22INFOR-00209](#) for previous correspondence regarding the subject site. Please reference chapter 5 of MSD’s *Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities, 2018* for general floodplain requirement criteria.

Sanitary

Existing sanitary laterals shall be identified on the plans. Any laterals being removed or abandoned shall be noted as such on the plans and shall comply with MSD standard specifications.

Please provide sanitary loading calculations for the existing and proposed conditions up to manhole 17M4-109S. If the system does not have capacity, sanitary mitigation may be required.

The conceptual plans did not indicate basement levels or relative sewer connection elevations. The requirement for strapped plumbing will be evaluated during formal review and may apply.

An exterior grease trap and sampling manhole will be required for any kitchens with three-compartment sinks. Each internal use should have its own dedicated sanitary lateral available for sampling (ie, kitchens, restrooms, etc.). A separate lateral shall be installed to service the restrooms and shall remain separate until the sampling manhole, after which the laterals can be a single lateral. Please refer to latest plumbing code for other requirements that may apply. Sanitary design shall be in compliance with section 3.030.09.11.

Details for any grease/oil separators should be included in the plan sheets during the formal review process. The plumbing drawings for the proposed buildings should be submitted during the formal plan review.

All covered parking space will require drainage to be routed through a sand/oil separator prior to the sanitary sampling apparatus. Access drives and ramps that are exposed to direct rainfall are to be routed separately to the storm sewer.

Other Issues

All known existing easements should be shown on the plan sheets with the plat book and page or deed book and page indicated with the easement. Proposed public sewers, if any, will need to be within an existing easement or a new easement must be granted for the public sewer. Easements are to be a minimum 10' wide and centered on the sewer. If easements are recorded with a subdivision plat, the required notes should be included. See document *MSD Standard Plan Notes.docx* attached to record 23CNCBPB-00003 for more information.

A connection fee will be required based on the number and size of any new domestic water service taps. Existing water taps destroyed by this project or previously destroyed will factor in as a credit that will be applied towards the project's connection fee. Information from Missouri-American Water concerning the service may also be requested during the formal plan submittal. The credit available for tap destroys as well as new connection fees based on the proposed domestic services can be found at the following link. (<https://msdprojectclear.org/doing-business/development-review/required-documents-checklists/connection-fees/>)

Current MSD records do not indicate any known hazardous areas around the site. Other federal, state, and local authorities that have jurisdiction should be contacted to determine the presence of any hazardous material as MSD does not have jurisdiction and MSD's records may not be as accurate as the authority with jurisdiction.

Provide the MSD structure names that are shown on the attached MSD base map. If an MSD structure name does not exist for a structure, label the structure as "NO MSD ID". Provide diameters and materials of all existing pipe (e.g., brick sewer). Provide top and flowline elevation information for the existing structures. This information needs to be shown on the plans during formal plan review.

There are no surcharge or sub-district/recoupment fees associated with this site. This site is not within the Green Infrastructure program area.

Coordination should occur with the site and the Army Corps of Engineers. Work within MODOT right-of-way will require a letter of approval from MODOT stating that they are okay with the proposed work.

Detailed improvement plans for this project are not under formal review by the District currently. Those plans and the supporting engineering calculations shall be formally submitted to MSD for review, approval and permits prior to commencement of construction activities.

Unless otherwise indicated, any requirement mentioned in the conceptual review should be addressed during the formal plan review process. Conceptual review is normally done only once. Any new questions or other additional changes to the originally submitted plans should normally be resolved during the formal plan review.

These conceptual comments are based on the submitted preliminary plans and data and are provided as an initial guide. Understand that this conceptual review has been completed based upon the information available at the time. Note, if site and surrounding area conditions, weather conditions, as well as available information changes at any time in the future such changes could impact and/or change the comments made in this letter.

Conceptual review is subject to requirements of detailed review of final design plans and is subordinate to the review and approval of said final design plans. This project is not currently under review of final project plans.

Sincerely,



Sara Kammerer
Assistant Engineer
MSD Engineering / Planning – Development Review

Cc: File – 23CNCPB-00003

Wetlands and Other Waters of the United States Delineation Report and Impact Summary

**Olia Village Development Project
Creve Coeur, St. Louis County, Missouri**

MARCH 22, 2023

REVISED MAY 10, 2023

REVISED June 7, 2023



PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MISSOURI 63102

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APPENDICES

Appendix A	Project Mapping
Appendix B	Site Plan and Cross-sections
Appendix C	Wetland Delineation Data Forms
Appendix D	Site Photographs

1.0 EXECUTIVE SUMMARY

This report has been prepared at the request of Jack Matthews Development. The purpose of this report is to document the surface water resources located within the project area for the Olia Village Development Project in Creve Coeur, St. Louis County, Missouri. Project mapping is provided in Appendix A.

The Clean Water Act defines wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils.” Thus, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement, for an area to be considered a wetland, it must meet all of the following criteria, under normal circumstances: wetland hydrology, a dominance of hydrophytic vegetation and hydric soils.

Two (2) federally jurisdictional wetlands that connect to a Traditional Navigable Water (TNW) downstream of the project area were identified in the project area. An additional two (2) wetlands in the project area were delineated and determined to be isolated wetlands based on a lack of connection to a TNW downstream and are likely not federally jurisdictional. These isolated features were created as a result of previous site development and have been designated as stormwater features for the purposes of this report. Two (2) additional constructed stormwater features were identified but not delineated. Two (2) streams, Dielmann Creek, and Monsanto-Sunswept Creek, are present in the project area. Federal jurisdiction was determined by USACE in connection to a previous project. Both streams have been previously disturbed by segmentation, placement of riprap, and encapsulation. As a result of stream disturbance on a previous project without a Section 404 permit in place, riparian restoration was required in two (2) areas. Riparian restoration areas will not be disturbed during construction.

Summary of Features

- 2 federally jurisdictional wetlands,
- 2 isolated wetlands designated as stormwater features,
- 2 constructed stormwater features, and
- 2 streams, each with an associated USACE regulated riparian restoration corridor.

2.0 METHODOLOGY

2.1 WETLANDS

The on-site evaluation of the project area was conducted during a site visit on February 15-16, 2023. When evaluating for the presence of wetlands, CMT personnel used the routine method presented in the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement. In order for an area to be classified as a jurisdictional wetland, the area has to have a dominance of hydrophytic vegetation, hydric soils and wetland hydrology. The specific indicators used for each of the three parameters are noted in the following paragraphs. Routine Wetland Determination Data Forms were completed for both the wetland and upland data points and are provided in Appendix C.

2.1.1 HYDROPHYTIC VEGETATION

According to Tiner (2012), a hydrophyte is a vascular plant that grows in water or on a substrate that is saturated at a frequency and duration during the growing period sufficient to affect plant occurrence. Using this definition, the U.S. Army Corps of Engineers released the National Wetland Plant List. This list categorizes species according to their probability of occurrence in wetlands based on the ecological region. The list identifies five general plant indicator status categories:

- ❖ Obligate (OBL): almost always is a hydrophyte, rarely in uplands
- ❖ Facultative Wetland (FACW): Usually is a hydrophyte but occasionally found in uplands
- ❖ Facultative (FAC): Commonly occurs as either a hydrophyte or non-hydrophyte
- ❖ Facultative Upland (FACU): Occasionally is a hydrophyte but usually occurs in uplands
- ❖ Obligate Upland (UPL): Rarely is a hydrophyte, almost always in uplands

In order to satisfy the hydrophytic vegetation criteria required for a jurisdictional wetland, the area had to be dominated (over 50 percent) by obligate wetland plants, facultative wetland plants and facultative plants.

The method used during this survey for determining vegetation dominance was the 50/20 method. Using this method, plant species in each stratum are ranked according to their percent aerial cover and then cumulatively summed until 50 percent of the total dominance measure is exceeded. All species contributing to that cumulative total plus any additional species that have at least 20 percent of the total dominance measure are considered dominants in their respective stratum.

2.1.2 HYDRIC SOIL

Hydric soil is soil formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Hydric soil indicators included low chroma soil colors and depleted matrices.

2.1.3 WETLAND HYDROLOGY

Wetland hydrology is defined as an area that is inundated or saturated at or near the surface for at least five percent of the growing season in most years. This can include areas that are ponded, flooded or those areas that have a water table at or near the surface. Primary indications of wetland hydrology included surface water, saturation and groundwater. Indicators such as geomorphic position, the FAC neutral test and sparse vegetation were also used to indicate wetland hydrology.

2.1.4 WETLAND LOCATION

The wetland boundary was surveyed using a handheld GPS device with sub-foot accuracy. The wetland boundaries are found on maps in Appendix A.

2.2 STREAMS

Streams were evaluated for their jurisdictional status based on the definition of waters of the United States, which requires the presence of an ordinary high water mark (OHWM) and ultimate connection to downstream TNWs.

The following USACE definitions for the three streams types were used:

Ephemeral streams have flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Intermittent streams have flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Perennial Streams have flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

The determination of stream designation is based on an evaluation of the size of the watershed for each stream, the presence of flow during the on-site evaluation and the evidence observed of the frequency of flow and the presence of aquatic life.

An evaluation of whether the stream flows continuously at least seasonally and is likely considered a Relatively Permanent Water (RPW) was also completed.

3.0 BACKGROUND INFORMATION

3.1 PROJECT DESCRIPTION

A mixed-use development will be constructed on a 95-acre site and consist of commercial, retail, office, recreational, and residential uses. A 1.5-mile-long walking path, a park, three (3) retention ponds, retaining walls, and surface and structured parking are also components of the project. The project area is shown in Figure 1 below.



FIGURE 1 – PROJECT AREA

3.2 PROJECT LOCATION

The project area is located in the southwest quadrant of Olive Boulevard/ MO340 and Lindbergh Avenue/ US67 in the City of Creve Coeur, St. Louis County, Missouri. The project area is the former West Bayer Campus development. Features include buildings, parking lots, paved roads, landscaped areas, and forested riparian corridors bordering two streams. The site is bordered by roads to the north and east, and residences to the west and south.

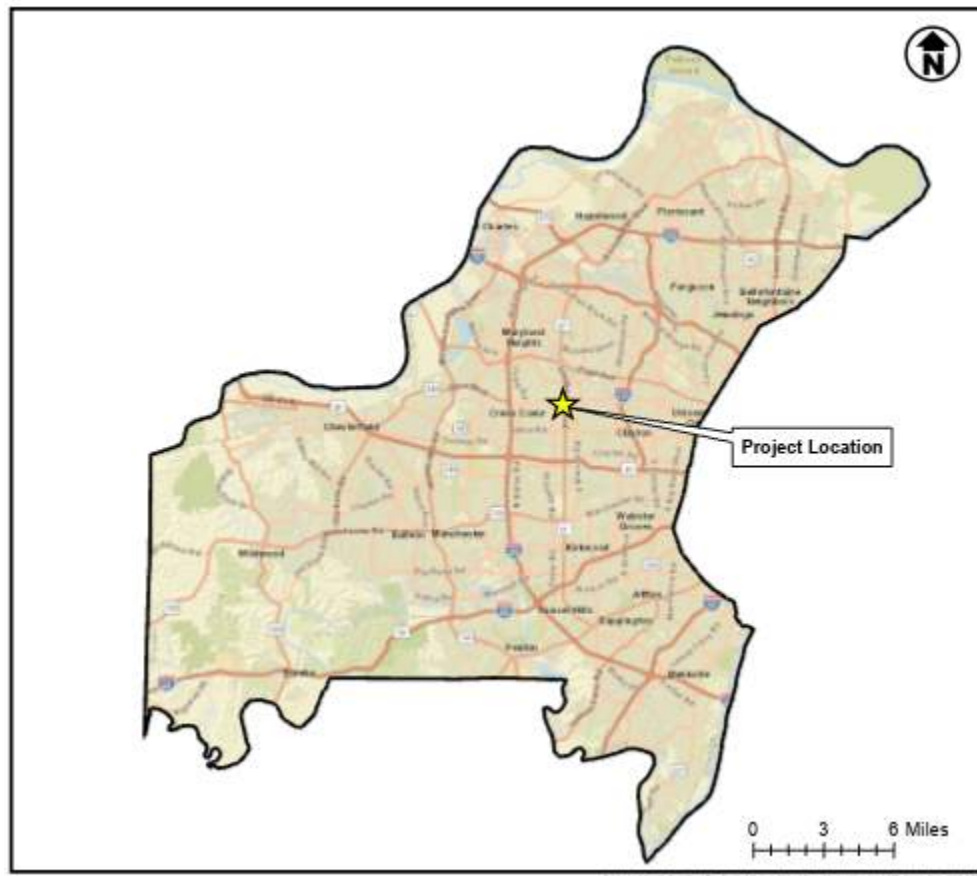


FIGURE 2 – COUNTY LOCATION MAP

3.3 HISTORICAL OR PUBLISHED INFORMATION

The major water course that travels through this region is the Mississippi River, located east of the project area. The project area is located within the headwaters of the Cahokia- Joachim watershed, within the 8-digit Hydrologic Unit Code (HUC) 07140101.

The Natural Resources Conservation Service (NRCS) St. Louis County Soil Survey indicates the following soils are dominant within the project area, several of which are indicated to be hydric:

- ❖ 60025 – Urban land-Harvester complex, 2 to 9 percent slopes, not hydric
- ❖ 60223 – Urban land-Harvester complex, 9 to 20 percent slopes, not hydric

The National Wetlands Inventory (NWI) map indicates two riverine features within the project area: Diehlmann Creek and Monsanto-Sunswept Creek.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) map indicates that the project area is partially located within FEMA Flood Zone A, which corresponds to the 1% annual chance of a flood with base flood elevations provided.

According to the Missouri 2018 303(d) Listed Waters web mapper, no impaired waters are identified in the project area or Deer Creek downstream of the project area.

Soil, NWI and floodplain mapping is provided in Appendix A.

4.0 RESULTS

Two (2) jurisdictional wetlands and two (2) streams were identified within the project area during the February 15-16, 2023 site visit. The Aquatic Resources Map provided in Appendix A depicts the location of these resources on an aerial photograph. Details on the soil, hydrology and dominant vegetation are provided on the Routine Wetland Determination Data Forms in Appendix C. Site photographs are provided in Appendix D.

4.1 WETLANDS

A total of two (2) jurisdictional wetlands were identified within the project area. A summary of these wetlands is provided in the table below.

WETLAND SUMMARY							
Wetland ID	Location	Connection to Downstream TNW	Preliminary USACE Jurisdictional Status	Wetland Type	MWMM		Acres
					Aquatic Resource	Existing Condition	
A	Northwest corner of the site	Adjacent to Diehlmann Creek which ultimately flows to the Mississippi River.	Federally Jurisdictional a(4)	Scrub-Shrub	B	Fully Functional	0.1
B	Southcentral portion of the site	Adjacent to Monsanto-Sunswept Creek which ultimately flows to the Mississippi River.	Federally Jurisdictional a(4)	Emergent	B	Fully Functional	0.02

4.1.1 WETLAND A

Wetland A is a 0.1-acre scrub-shrub wetland located in the northwest corner of the project area. This wetland is adjacent to Diehlmann Creek. Due to the predominance of hydrophytic vegetation, presence of hydric soils, and wetland hydrology, Wetland A meets the three wetland criteria.

4.1.2 WETLAND B

Wetland B is a 0.02-acre palustrine emergent wetland located east of the Monsanto-Sunswept Creek. Due to the predominance of hydrophytic vegetation, presence of hydric soils, and wetland hydrology, Wetland B meets the three wetland criteria.

4.2 STREAMS

A total of two (2) streams were identified within the project area. A summary of these streams is provided in the table below. Both are heavily segmented by culverts and underground piping and have channelized riprap sections. Monsanto-Sunswept Creek is divided into reaches on project mapping to more easily identify impacts and photographic documentation. US Geological Survey (USGS) Stream Stats software was used to delineate the drainage area. Aquatic Resources and USGS watershed maps are included in Appendix A.

Approximately half of Dielmann Creek within the project area was not delineated since it will not be disturbed during construction. Contours mapping the non-delineated portion of stream were obtained from site specific topographic survey data and used to draw the stream boundary. This portion is designated as a desktop delineation on project mapping.

As a result of stream disturbance on a previous project without a Section 404 permit in place, riparian restoration was required in one location on each stream in the southeast corner of the project area. Riparian restoration areas are shown on mapping in Appendix A and will not be disturbed during construction. Approximate boundaries were mapped based on the October 2022 Riparian Enhancement Completion Report supplied by USACE.

STREAM SUMMARY							
Stream Name	Receiving Waters	Preliminary USACE Jurisdictional Status	Stream Type	Drainage Area ¹ (Sq.Mile)	MSMM ² Assessment		Linear Feet within Study Area
					Priority Waters	Existing Condition	
Dielmann Creek	Mississippi River	Federally Jurisdictional a(2)	Perennial	0.17	Tertiary Priority	Functionally Impaired	3,000
Monsanto-Sunswept Creek	Mississippi River	Federally Jurisdictional a(2)	Perennial	0.2	Tertiary Priority	Functionally Impaired	2,337

¹As calculated by USGS Stream Stats at most downstream location within the project area

²MSMM - Missouri Stream Mitigation Method

4.3 OTHER SURFACE WATER RESOURCES

Four (4) features functioning as stormwater detention were identified. Features 1 and 2 were delineated as wetlands but do not drain to a TNW. They collect run-off from buildings and roadways and were created in conjunction with the development of the site. They are not known to connect to any other surface water and are likely not considered a jurisdictional water of the U.S. due to the lack of apparent hydrologic connectivity to known waters of the U.S. These isolated features have been designated as stormwater features for the purposes of this report.

Features 3 and 4 were constructed specifically for stormwater detention. Feature 3 was constructed in 2021 based on aerial photography, devoid of vegetation and has an outlet structure. Feature 4 has topographic contours indicative of a constructed detention basin and an outlet structure. Three (3) constructed concrete ditches and two (2) drainage features that did not meet the definition of a stream were also identified and are shown on the aquatic resources map. Features 3 and 4 were observed but not delineated in the field. Contours of the features were obtained from site specific topographic survey data and used to draw the boundaries.

SUMMARY OF STORMWATER FEATURES				
ID	Location	Preliminary JD Status	Type	Acres
1	NW quadrant of site	Non-jurisdictional b(1)	Isolated Wetland	0.09
2	Center of site	Non-jurisdictional b(1)	Isolated Wetland	0.004
3	Center of site	Non-jurisdictional b(10)	Constructed Basin	0.16
4	SW corner of site	Non-jurisdictional b(10)	Constructed Basin	0.08
Total				0.33

5.0 DELINEATION CONCLUSIONS

Two (2) federally jurisdictional wetlands that connect to a TNW downstream of the project area were identified in the project area. An additional two (2) wetlands in the project area were delineated and determined to be isolated wetlands based on a lack of connection to a TNW downstream, and are likely not federally jurisdictional. Two (2) additional constructed stormwater features were identified.

Two (2) streams, Dielmann Creek and Monsanto-Sunswept Creek, are present in the project area. Federal jurisdiction was determined by USACE in connection to a previous project. Both streams have been previously disturbed by segmentation, placement of riprap and encapsulation.

Summary of Features

- 2 federally jurisdictional wetlands,
- 2 isolated wetlands designated as stormwater features,
- 2 constructed stormwater features, and
- 2 streams, each with a USACE regulated riparian restoration corridor.

Wetlands and other surface water resources that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers.

6.0 SURFACE WATER IMPACTS

Although surface water resource avoidance measures were employed throughout the development of alternatives, waters of the United States will be unavoidably affected. The project will permanently impact Wetland A, Dielmann Creek and Monsanto-Sunswept Creek. Fill will be used to significantly raise the current grade and allow construction of buildings and parking lots. This will result in soil fill of wetland A and of a portion of Dielmann Creek and Monsanto-Sunswept Creeks. Existing water flow will be encapsulated and re-routed. Plan and cross-section views of the impact areas are provided in Appendix B.

SUMMARY OF IMPACTS				
Resource	Acres	Linear Feet	Cubic Yards	Type of Impact
Dielmann Creek	0.01	590	NA	Earthen Fill
Monsanto-Sunswept Creek	0.07	325	NA	Earthen Fill
Wetland A	0.1	NA	160	Earthen Fill
Total Impact	0.19	915	160	

The Missouri Stream and Wetland Mitigation Methods were used to determine the amount of credits required for compensatory mitigation. Results are included in the worksheets below. A total of one (1) wetland credit and 3,563 stream credits are required as shown in the tables below.

ADVERSE IMPACT FACTORS WORKSHEET - DEBITS								
FACTORS								
Aquatic Resource Type	Type C			Type B			Type A	
	-1.0			2.0			3.0	
Priority Category	Tertiary 0.5			Secondary 1.5			Primary 2	
Existing Condition	Very Impaired		Impaired		Slightly Impaired		Fully Functional	
	-1.0		1.0		2.0		2.5	
Impact Duration	Temporary 0.2					Permanent 2.0		
Dominant Impact	Clear	Dredge	Drain	Impound	Fill			
	1.0	1.5	2.0	2.5	3.0			
Cumulative Impact	0.05							

WETLAND ADVERSE IMPACT FACTORS WORKSHEET	
Factor	Wetland A
Aquatic Resource Type	B
	2.0
Priority Category	Tertiary
	0.5
Existing Condition	Fully Functional
	2.5
Impact Duration	Permanent
	2.0
Dominant Impact	Fill
	3.0
Cumulative Impact	0.10
Sum of Factors (M)	10.1
Impacted Area (AA)	0.10
Credits = M x AA	1.01
Compensation Ratio	1:1

ADVERSE IMPACT FACTORS WORKSHEET									
FACTORS									
Stream Type Impacted	Ephemeral			Intermittent			Perennial		
	0.3			0.4			0.8		
Priority Waters	Tertiary 0.1			Secondary 0.4			Primary 0.8		
Existing Condition	Functionally Impaired			Moderately Functional			Fully Functional		
	0.1			0.8			1.6		
Impact Duration	Temporary					Permanent			
	0.5					0.3			
Impact Activity	Armor	Below Grade Culvert	Clearing	Detention	Fill	Impoundment	Morphological Disturbance	Pipe	Utility Crossing/Bridge Footing
	0.5	0.3	0.05	0.75	2.5	2	1.5	2.2	0.15
Linear Impact Calculation	0.0002 multiplied by linear feet of stream impact recorded in each column below								

STREAM ADVERSE IMPACT FACTORS WORKSHEET				
Factor	Dielmann Creek		Monsanto Sunswept Creek	
Stream Type Impacted	Perennial		Perennial	
	0.8		0.8	
Priority Waters	Tertiary		Tertiary	
	0.1		0.1	
Existing Condition	Functionally Impaired		Functionally Impaired	
	0.1		0.1	
Impact Duration	Permanent		Permanent	
	0.3		0.3	
Impact Activity	Fill		Fill	
	2.5		2.5	
Linear Impact Calculation	0.118		0.05	
Sum of Factors (M)	3.918		3.85	
Linear Feet of Impact (LF)	590		325	
Credits = M x LF	2311.62		1251.250	
Compensation Ratio*	1:1			
TOTAL CREDITS REQUIRED			3563	

*Compensation ratio can be greater than 1:1 when outside of service area for bank or in-lieu fee program.

7.0 REFERENCES

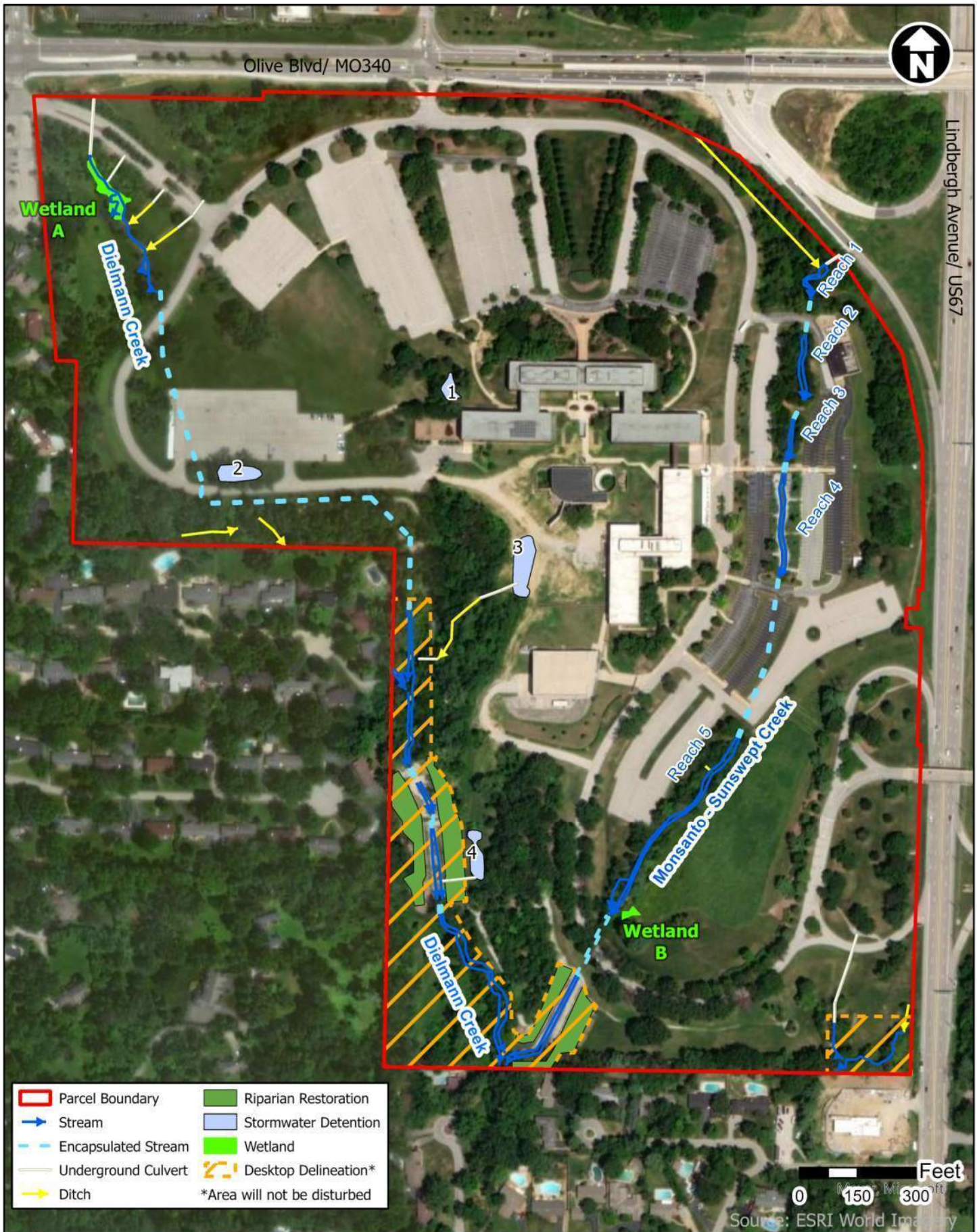
The following references were consulted during the investigation:

- ❖ Brown, Lauren, Grasses an Identification Guide. Houghton Mifflin Company. New York, 1979.
- ❖ Brown, Lauren, 1997. Wildflowers and Winter Weeds. W.W. Norton and Company. New York.
- ❖ Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Biological Survey Program FWS/OBS-79/31.
- ❖ Knobel, Edward, Field Guide to the Grasses, Sedges and Rushes of the United States. Dover Publications, Inc. New York, 1977.
- ❖ Munsell Soil Color Charts. 1994 Revised Edition. Macbeth Division of Kollmorgen Instruments Corporation. New Windsor, New York.
- ❖ Natural Resources Conservation Service (NRCS) Soil Survey of St. Louis County. Issued September 2017. Data accessed March 2023 using the Web Soil Survey. [Web Soil Survey - Home \(usda.gov\)](https://websoilsurvey.sc.egov.usda.gov/)
- ❖ Newcomb, Lawrence, Newcomb's Wildflower Guide. Little, Brown and Company, Boston, New York, Toronto, London, 1977.
- ❖ National Wetland List of Plant Species That Occur in Wetlands, Missouri. U.S. Fish and Wildlife Service, May 2016.
- ❖ Tiner, Ralph W. Defining Hydrophytes for Wetland Identification and Delineation ERDC/CRREL CR-12-1. January 2012.
- ❖ U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- ❖ United States Department of Agriculture (USDA), NRCS 1999. The PLANTS database (<http://plants.usda.gov/plants>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- ❖ USGS Streams Stats Web Application. [StreamStats | U.S. Geological Survey \(usgs.gov\)](https://streamstats.cr.usgs.gov/). Accessed March 10, 2023.

Olia Village Development Project

APPENDIX A: PROJECT MAPPING

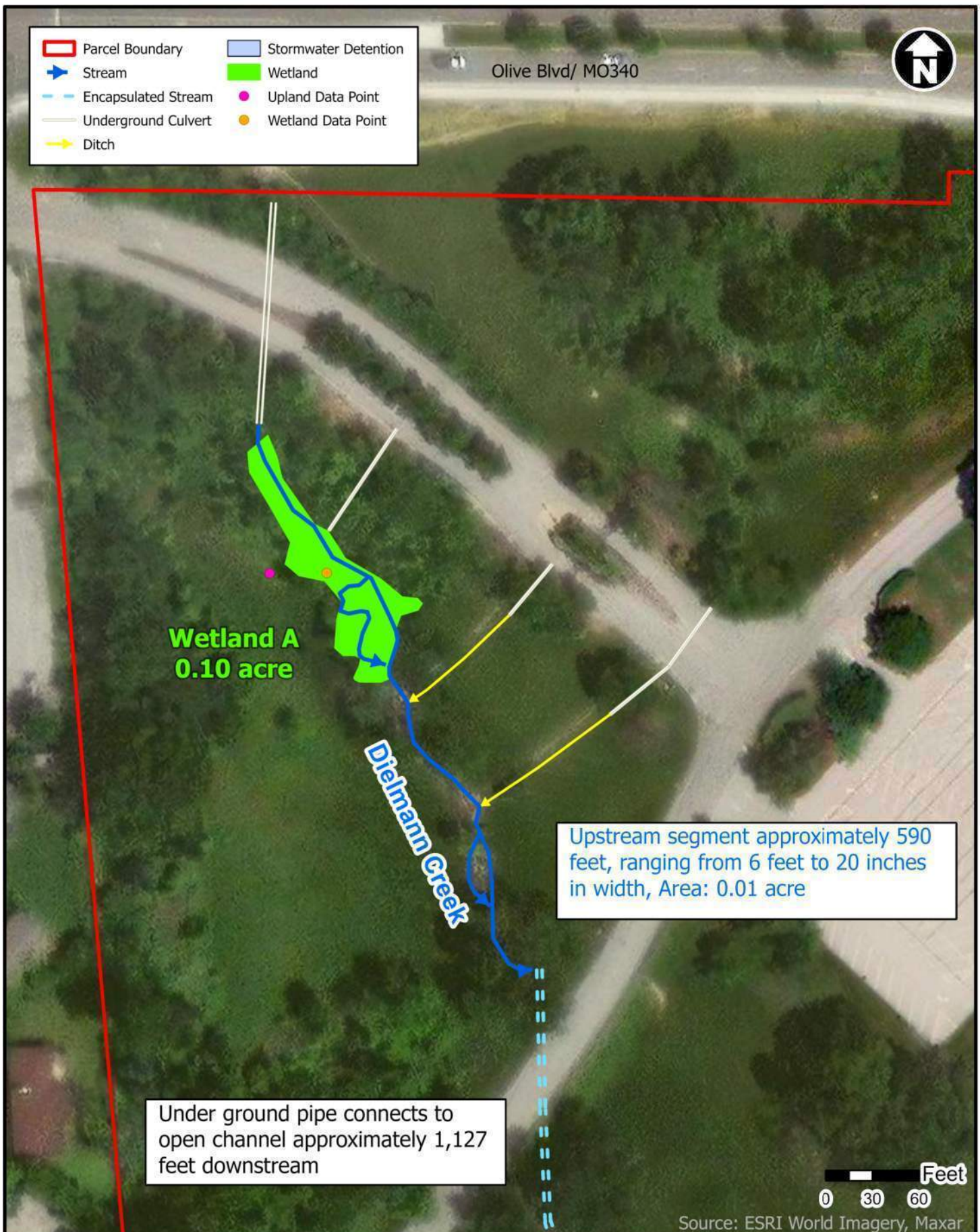




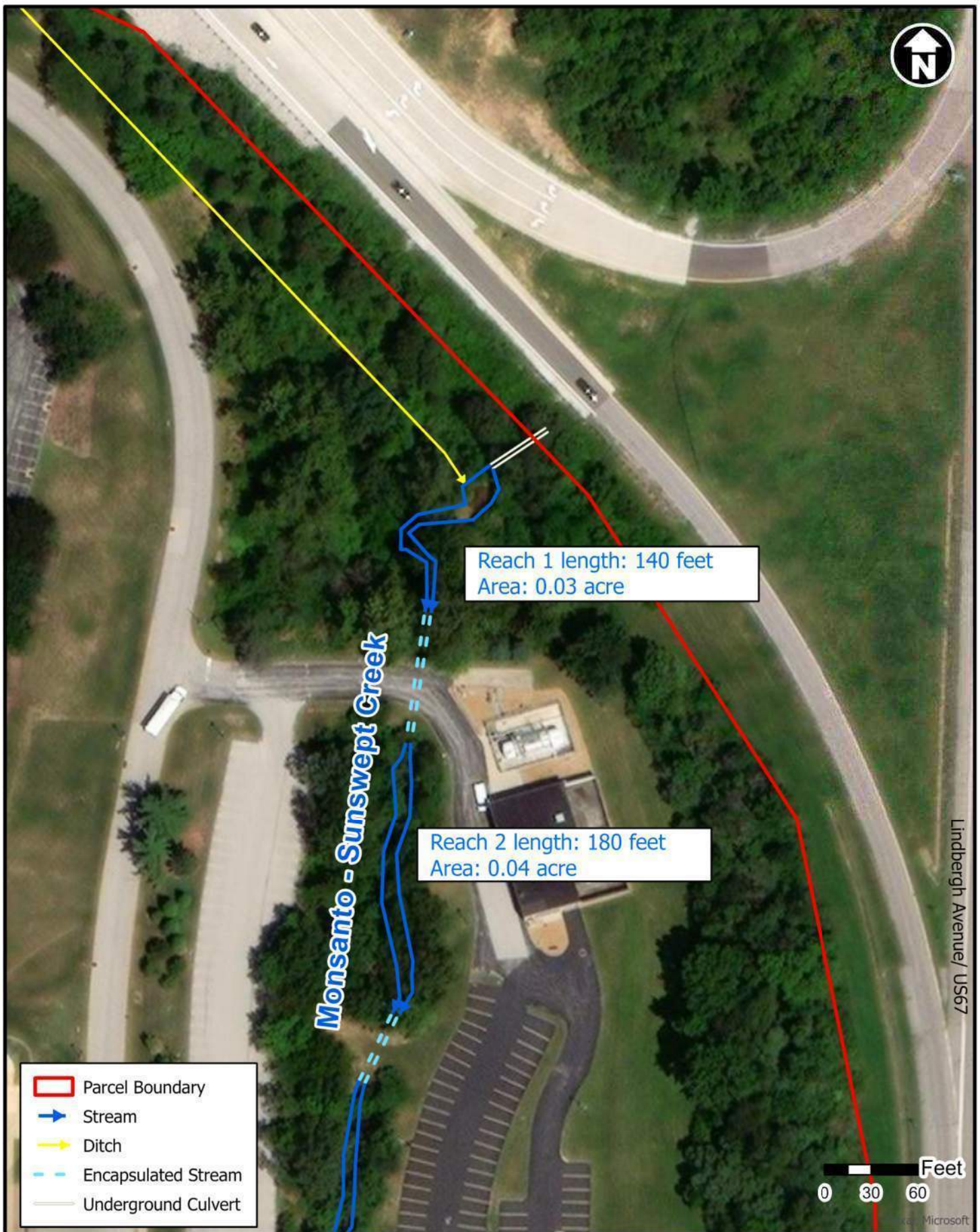
Olia Village Development Aquatic Resources



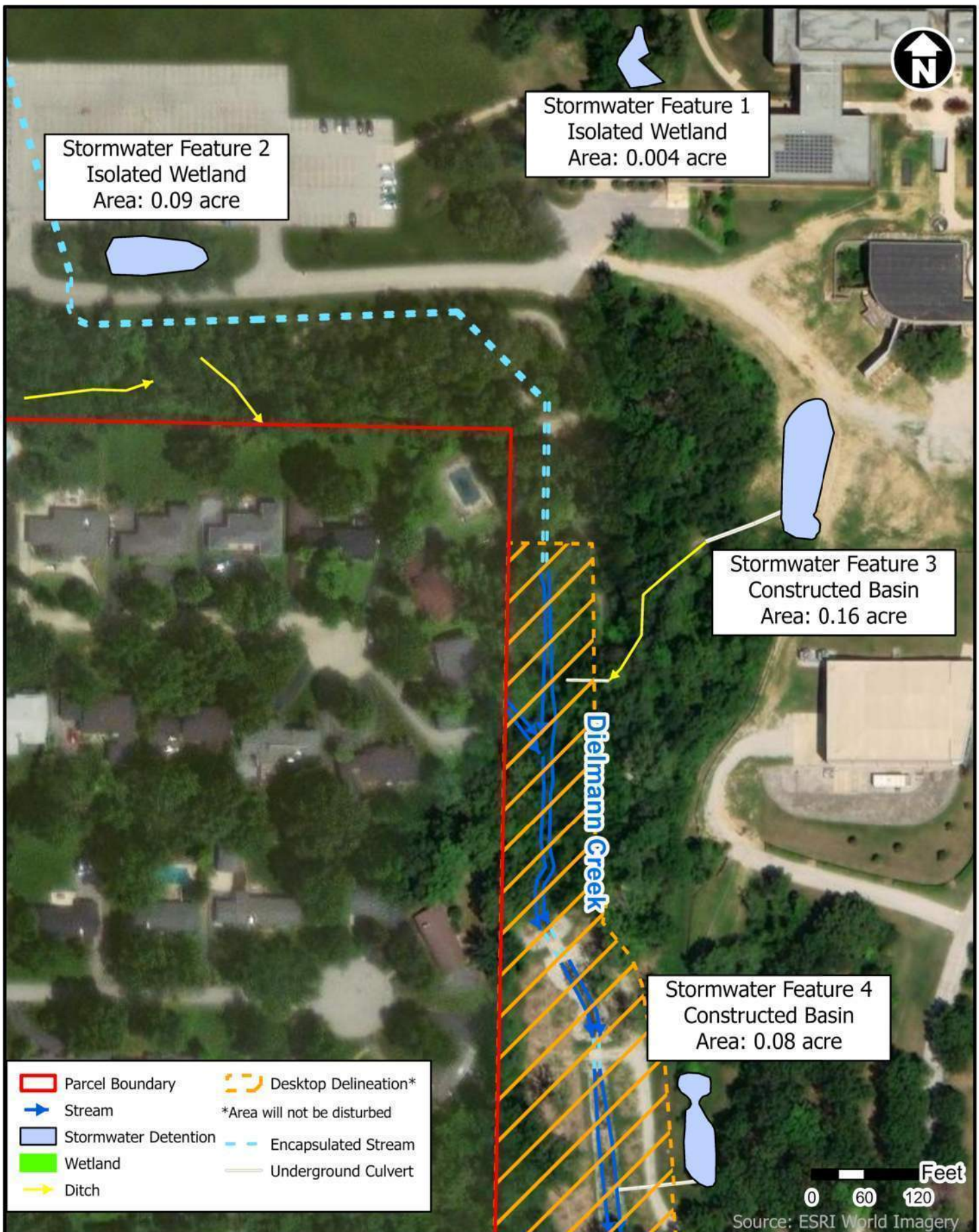
Crawford, Murphy & Tilly



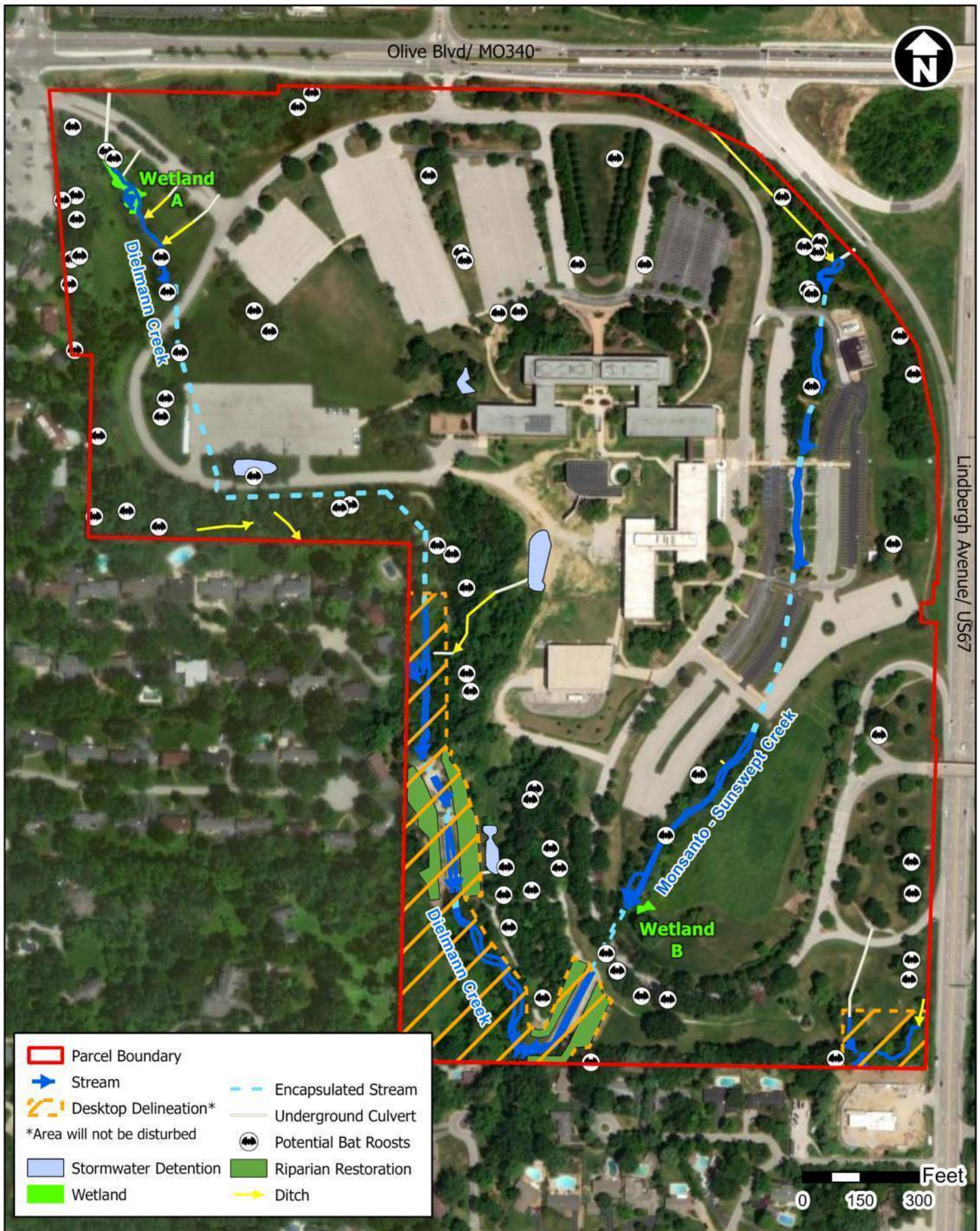
Olia Village Development Wetland A and Dielmann Creek



Olia Village Development Monsanto-Sunswept Creek Impact Area



Olia Village Development Stormwater Features



Olia Village Development Combined Environmental Resources



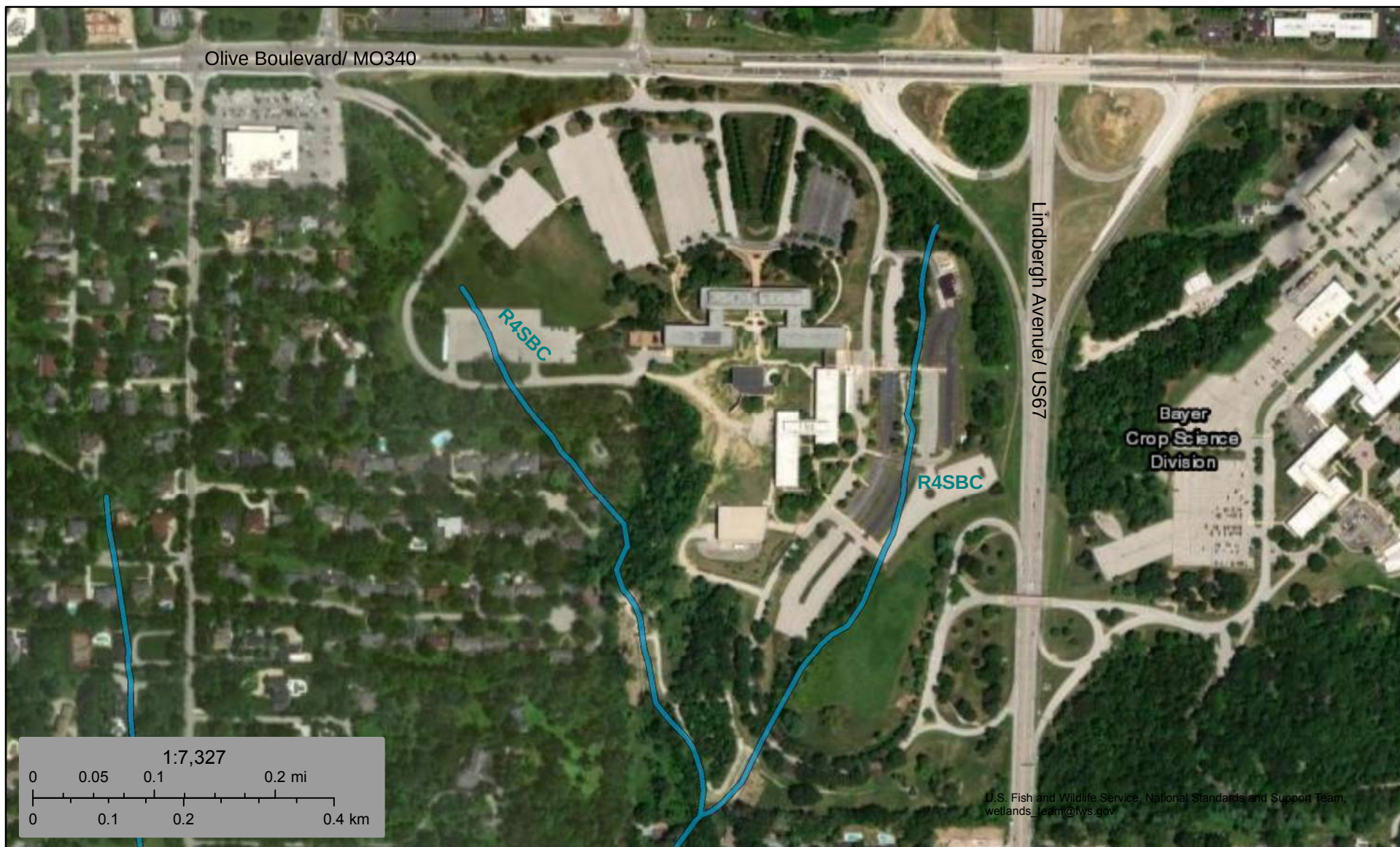
Crawford, Murphy & Tilly



U.S. Fish and Wildlife Service

National Wetlands Inventory

Bayer West Campus/ Olia Development



March 22, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

ff1



%DHS 86DWLRQD DS 2WKRLBHL DVDUHUHMKGZWRHU

HQ

Q)657 754(65)55.557

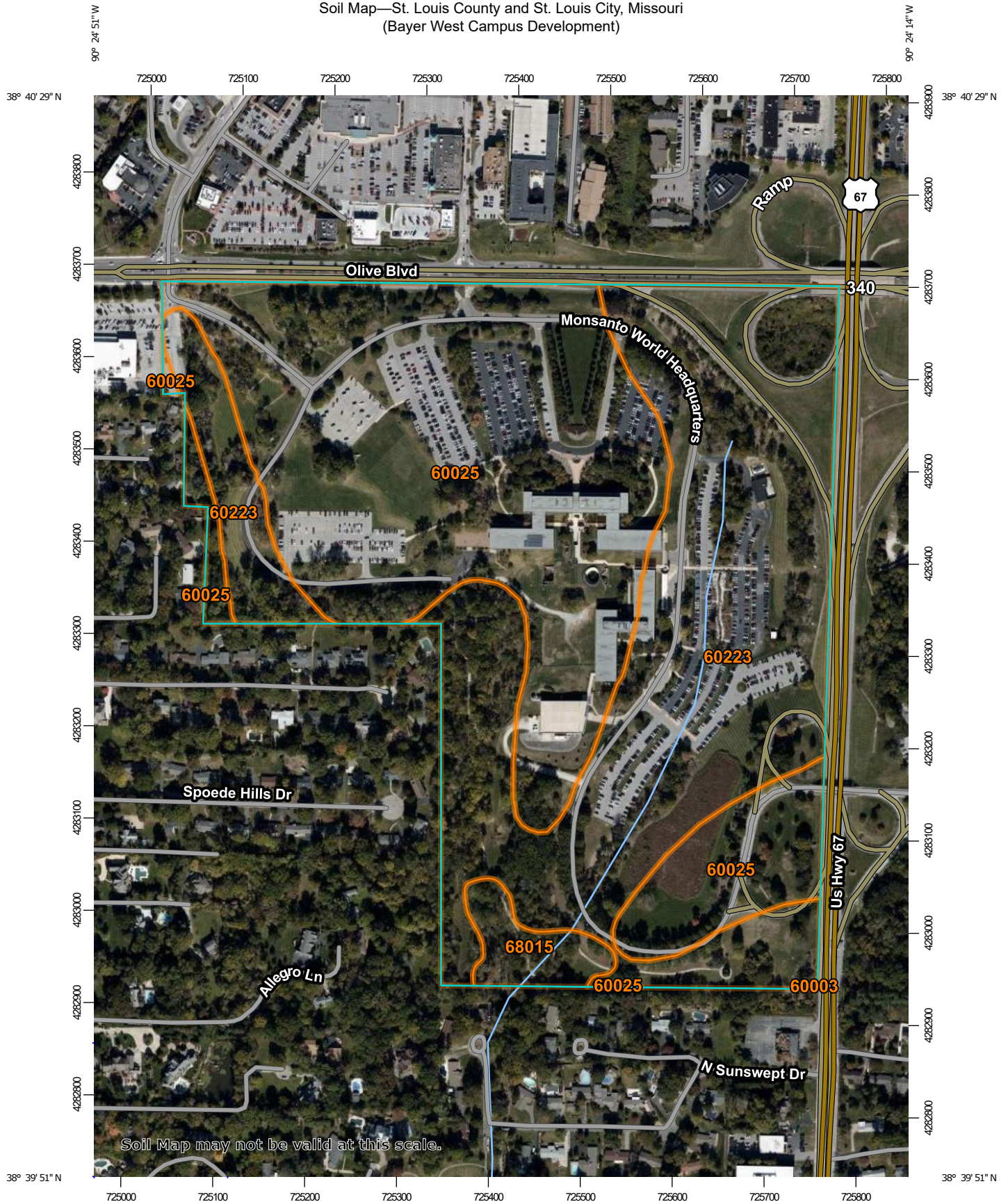
65.52 65.55		LWHRW %DHJRRGPHDWLRQ % -FQH\$ 9\$
		LWK%RUFBWK -FQH\$ 5\$ 9\$ 5\$ \$HODWRLUJRRG
26.52 26.55		\$QDD &QQHJRRG-EPUG \$JHDV R DQDD RQQHIORRGZWKDHUHH G\$WKOHVWQDQRQHRRW RU ZWKGDULQ DJHDV R OHVWQDQRQVXUHEOHFQH;
		XWUH&QJLWLQ/\$QDD &QQHJRRG-EPUG -FQH;
		\$JHDZWK\$G\$HJRRG\$NGHWR HMH GHHRMHV -FQH;
		\$JHDZWKJRRG\$NGHWRHMH -FQH'
26.55		\$JHJR QLEO JRRG-EPUG -FQH; (HFWLYHJ
26.55		\$JHJR QJWHUEQGJRRG-EPUG -FQH'
65.55		&QQD &OYHUW RU \$VRURJHU HMH'LNH RU JRRGDDO
		\$JRW\$FWLRQ/ZWK\$QDD &QQH DVHU \$UIDPHOHYDLRQ - - - &QDWD TUDQHFW ~~~~~ %DHJRRGPHDWLRQLQH % LEW R \$VXG -XULGLFWLRQ%QJDU - - - &QDWD TUDQHFW %DHLQH - - - \$JRLQH%DHLQH - - - \$JURD\$LFJ-DVXUH
26.55		LJLWDD DWD\$DLOEDH
		RJLWDD DWD\$DLOEDH
65.55		QJSSG
		74HSQGLVSDHGRQWKHBSLV DQDSSJRLBWH SLQV VIOHFWHGBWHXHU DQGGRVQRW UHSHU DQDWKRLWDLWYHSUR\$UWOFDMLRQ

§

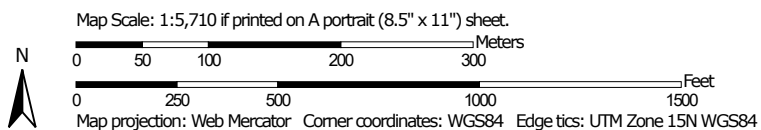
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ZVH\$RUWHGRQ DV 3 DQGGRVQRW
UHOHFW RQJHV RU DQQRQV VEHXHQV WRWKLVDWHDQG
WLR 74HJ DQGHIFWL YHLQRUBMLRQ\$RQQRU
BFFHV\$UWHGBQZGDVDRYHU WLR

74LVBSLBLHVYRLGLI WKHQHURU RUHR WKHIOFRZQBS
HOFQWVQRW DSSDU EDHBSLBUH IOFRJRHODHDOV
OHHQG VADHEDU BSURHMLRQDWH FRQLWLGQWLILHV
)\$QDQ QH-U DQGHIFWL YHGDWH D\$BHVIRU
XQSSG DQGXQGUQLJGDHVDQQRW BHXHGIRU
UHDWRLUSURMHV

Soil Map—St. Louis County and St. Louis City, Missouri
(Bayer West Campus Development)



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Soil Map—St. Louis County and St. Louis City, Missouri
(Bayer West Campus Development)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils



Soil Map Unit Polygons



Soil Map Unit Lines



Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Louis County and St. Louis City, Missouri
Survey Area Data: Version 23, Sep 7, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 17, 2018—Oct 24, 2018

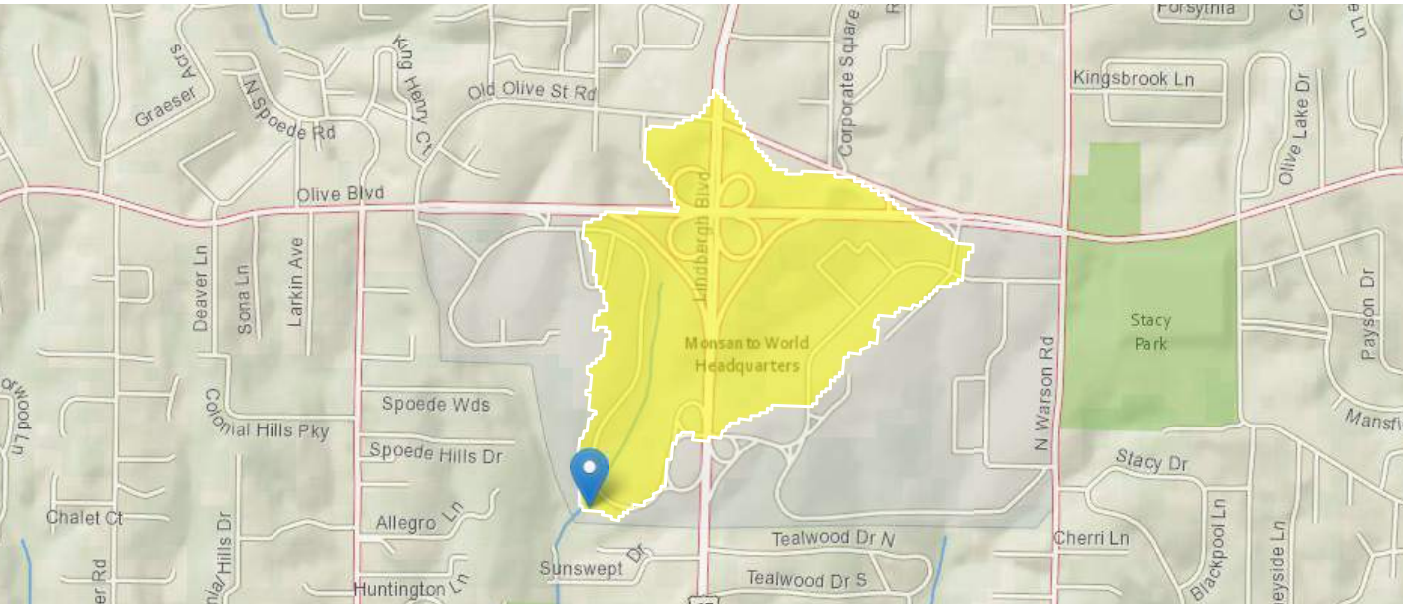
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60003	Menfro silt loam, 9 to 14 percent slopes, eroded	0.0	0.0%
60025	Urban land-Harvester complex, 2 to 9 percent slopes	51.3	48.8%
60223	Urban land-Harvester complex, 9 to 20 percent slopes	51.1	48.6%
68015	Fishpot-Urban land-Freeburg complex, 0 to 3 percent slopes	2.7	2.5%
Totals for Area of Interest		105.2	100.0%

Monsanto-Sunswept Creek

Region ID: MO
Workspace ID: MO20230310211240176000
Clicked Point (Latitude, Longitude): 38.66655, -90.40840
Time: 2023-03-10 15:12:32 -0600



+ Collapse All

Basin Characteristics

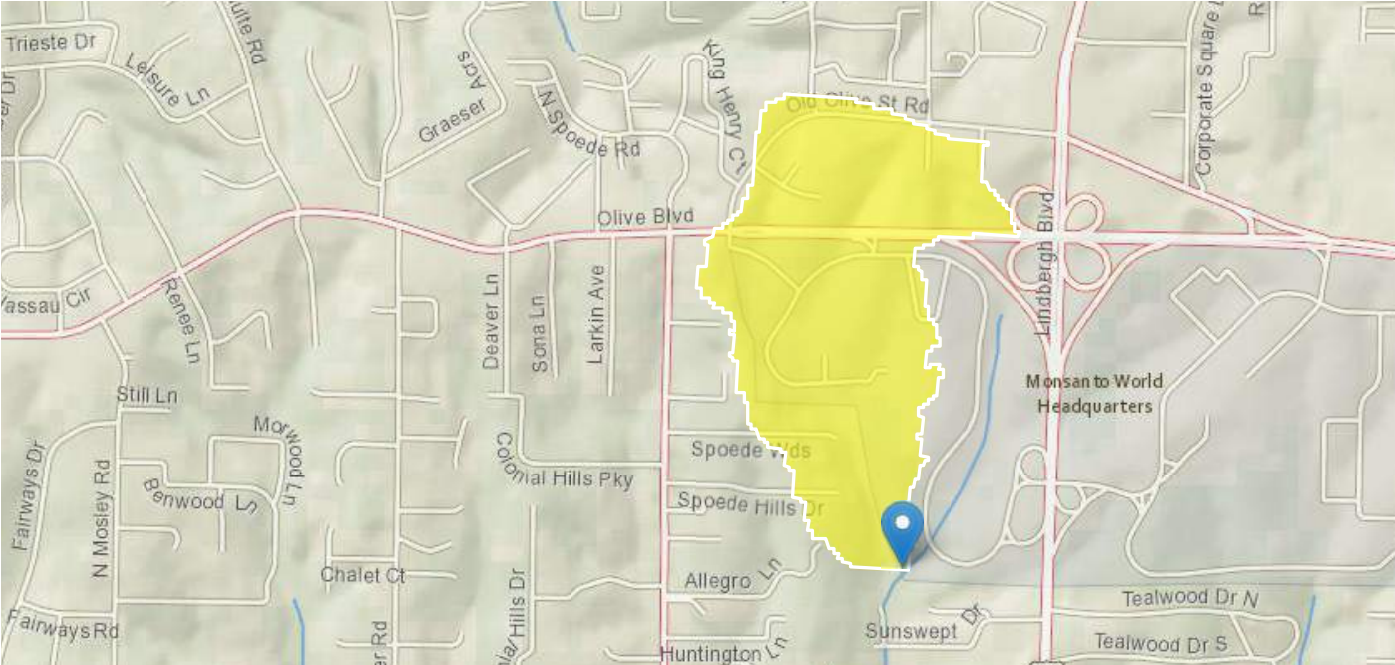
Parameter Code	Parameter Description	Value	Unit
BSHAPE	Basin Shape Factor for Area	2.66	dimensionless
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	165	feet per mi
DRNAREA	Area that drains to a point on a stream	0.2	square miles
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	47.1	percent
LFPLENGTH	Length of longest flow path	0.73	miles
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0	percent
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.72	dimensionless

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Dielmann Creek

Region ID: MO
Workspace ID: MO20230310211632648000
Clicked Point (Latitude, Longitude): 38.66651, -90.40885
Time: 2023-03-10 15:16:23 -0600



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSHAPE	Basin Shape Factor for Area	4.45	dimensionless
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	134	feet per mi
DRNAREA	Area that drains to a point on a stream	0.17	square miles
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	40.5	percent
LFPLENGTH	Length of longest flow path	0.86	miles
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0	percent
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.72	dimensionless

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Application Version: 4.13.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Olia Village Development Project

APPENDIX B: PLANS AND CROSS-SECTIONS





LEGEND

A A
↑ ↑
CROSS SECTION

EXISTING CULVERT

POTENTIAL CULVERT



THE HEART OF CREVE COEUR

A NEW MIXED-USE MASTER PLAN

10300 Olive Boulevard, Creve Coeur, MO

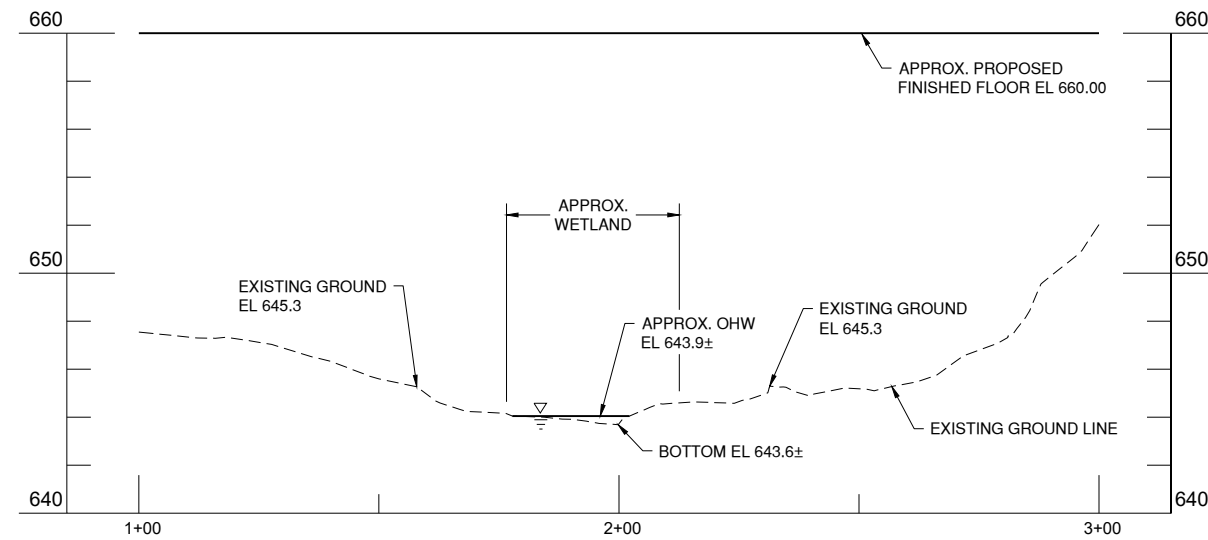
MASTER PLAN

22478.00

03.09.2023

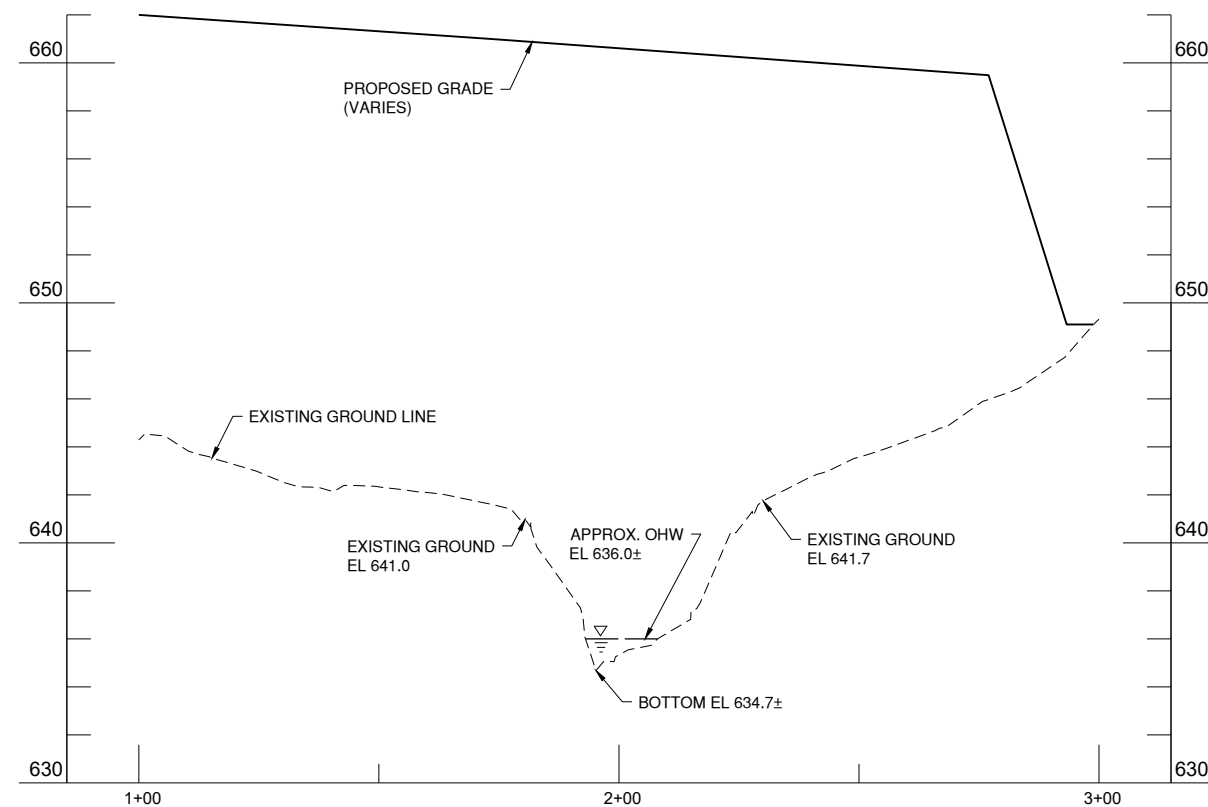


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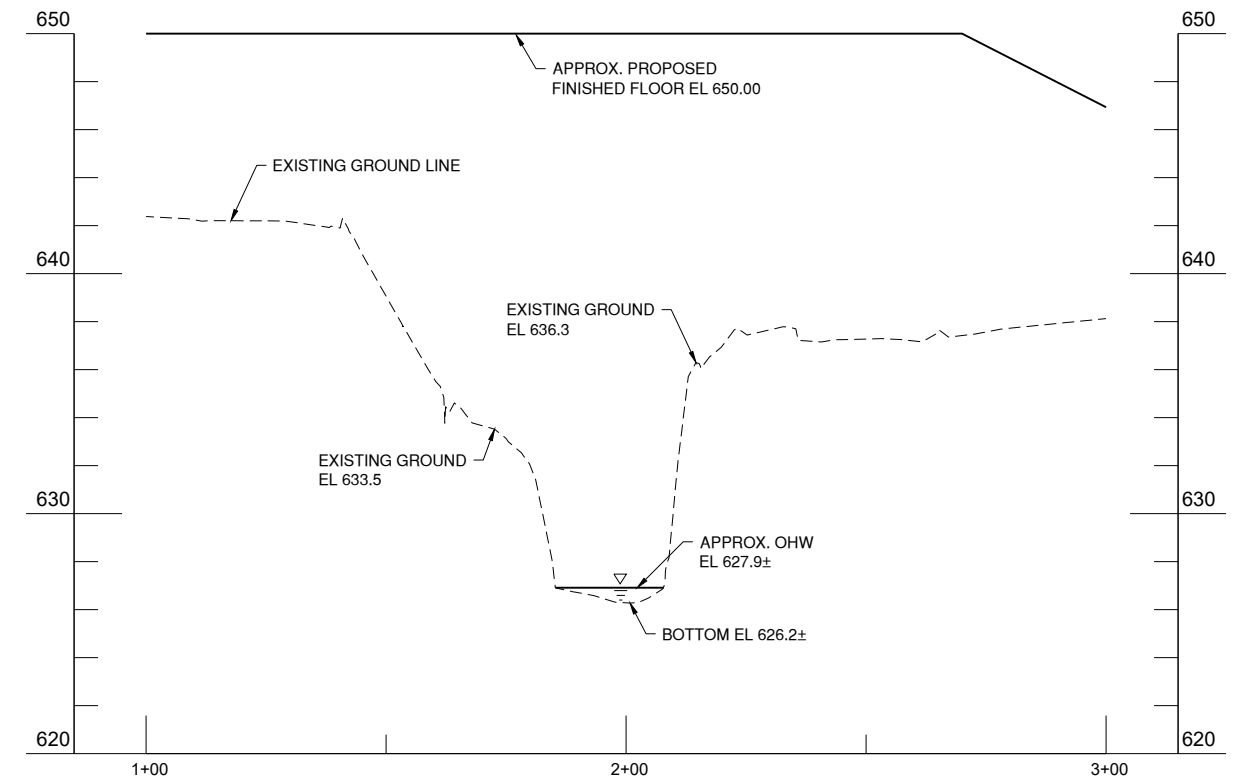
A CROSS SECTION A-A
N.T.S.

Dielmann Creek and Wetland A



B CROSS SECTION B-B
N.T.S.

Monsanto-Sunswept Creek



C CROSS SECTION C-C
N.T.S.

Monsanto-Sunswept Creek

Olia Village Development Project

APPENDIX C: DATA FORMS



U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bayer West Campus/ Olia Village City/County: Creve Coeur Sampling Date: 3/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Wet A
Investigator(s): AMZ Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
Slope (%): 0 Lat: 38.67232 Long: -90.412549 Datum: NAD 83 MO East
Soil Map Unit Name: Urban land harvester complex, 2- 9 percent slope NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No

**Is the Sampled Area
within a Wetland?** Yes X No

Remarks:
Wetland A surrounds Dielmann Creek

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Fraxinus pennsylvanica</i>		20	Yes	FACW
2. <i>Acer saccharinum</i>		10	Yes	FACW
3. <i>Populus deltoides</i>		5	No	FAC
4. <u> </u>				
5. <u> </u>				
		35	=Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <i>Salix interior</i>		10	Yes	FACW
2. <i>Lonicera maackii</i>		3	Yes	UPL
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		13	=Total Cover	
Herb Stratum (Plot size: <u>5</u>)				
1. <i>Poa pratensis</i>		40	Yes	FAC
2. <i>Carex sp.</i>		20	Yes	
3. <i>Solidago canadensis</i>		10	No	FACU
4. <i>Typha X glauca</i>		5	No	OBL
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
		75	=Total Cover	
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <i>Toxicodendron radicans</i>		1	No	FAC
2. <i>Vitis riparia</i>		1	No	FACW
		2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That
Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species
Across All Strata: 6 (B)
Percent of Dominant Species That
Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>41</u>	x 2 = <u>82</u>
FAC species <u>46</u>	x 3 = <u>138</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>3</u>	x 5 = <u>15</u>
Column Totals: <u>105</u> (A)	<u>280</u> (B)
Prevalence Index = B/A = <u>2.67</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting
data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.

**Hydrophytic
Vegetation
Present?**

Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	98	10YR 4/6	2	C	PL/M	Loamy/Clayey	Prominent redox concentrations
4-18	10YR 3/2	30	10YR 4/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/2	50	D	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☒ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Aquatic Fauna (B13)	☒ Drainage Patterns (B10)	
☒ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☒ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): <u>3</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Bayer West Campus/ Olia Development City/County: Creve Coeur Sampling Date: 3/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Upl A
Investigator(s): AMZ Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave
Slope (%): 0 Lat: 38.672319 Long: -90.412678 Datum: NAD 83 MO East
Soil Map Unit Name: Urban land harvester complex, 2- 9 percent slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes No X

Is the Sampled Area
within a Wetland? Yes No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15</u>)			
1.	<u>Lonicera maackii</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>
2.				
3.				
4.				
5.				
		<u>5</u> =Total Cover		
Herb Stratum	(Plot size: <u>5</u>)			
1.	<u>Schizachyrium scoparium</u>	<u>88</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Solidago canadensis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
3.	<u>Panicum</u>	<u>2</u>	<u>No</u>	
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u> =Total Cover		
Woody Vine Stratum	(Plot size: <u>30</u>)			
1.	<u>Vitus riparia</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
2.				
		<u>1</u> =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That
Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species
Across All Strata: 2 (B)

Percent of Dominant Species That
Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>1</u>	x 2 = <u>2</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>98</u>	x 4 = <u>392</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>104</u> (A)	<u>419</u> (B)
Prevalence Index = B/A = <u>4.03</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting
data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.

**Hydrophytic
Vegetation
Present?** Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Upl A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Loamy/Clayey	
3-18	10YR 4/2	80	10YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☒ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☐ Depth (inches): _____ Water Table Present? Yes ☐ No ☐ Depth (inches): _____ Saturation Present? Yes ☒ No ☐ Depth (inches): <u>13</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Bayer West Campus/ Olia Village City/County: St Louis Sampling Date: 3/16/23
 Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Wet B
 Investigator(s): MKO/ AMZ Section, Township, Range: S1 T45N R5E
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 38.667237 Long: -90.407866 Datum: NAD 83 MO East
 Soil Map Unit Name: Urban land harvester complex, 9- 20 percent slope NWI or WWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Wetland B is approximately 15 feet east of Monsanto- Sunswept Creek.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover Herb Stratum (Plot size: <u>5</u>) 1. <u>Panicum virgatum</u> 30 Y FAC 2. <u>Bidens fondrosa</u> 10 Y FACW 3. <u>Prunella vulgaris</u> 10 Y FAC 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>50</u> = Total Cover Woody Vine Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ <u>0</u> = Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>50</u> (A)</td> <td><u>140</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.8</u> Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>50</u> (A)	<u>140</u> (B)
Total % Cover of:	Multiply by:														
OBL species <u>0</u>	x 1 = <u>0</u>														
FACW species <u>10</u>	x 2 = <u>20</u>														
FAC species <u>40</u>	x 3 = <u>120</u>														
FACU species <u>0</u>	x 4 = <u>0</u>														
UPL species <u>0</u>	x 5 = <u>0</u>														
Column Totals: <u>50</u> (A)	<u>140</u> (B)														
Remarks: (Include photo numbers here or on a separate sheet.)															

SOIL

Sampling Point: Wet B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	95	10YR 5/4	5	C	M	Silty clay	
8+	10YR 4/2	70	7.5YR 5/8	20	C	M	Clay	
			10YR 5/4	10	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☒ No ☐ Depth (inches): 8
Saturation Present? Yes ☒ No ☐ Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Some of the saturation may have been due to rain within 8 hours of delineation.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Bayer West Campus/ Olia Village City/County: St Louis Sampling Date: 3/16/23
 Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Upl B
 Investigator(s): MKO/ AMZ Section, Township, Range: S1 T45N R5E
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 38.667214 Long: -90.407761 Datum: NAD 83 MO East
 Soil Map Unit Name: Urban land harvester complex, 9- 20 percent slope NWI or WWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover Herb Stratum (Plot size: <u>5</u>) 1. <u>Echinacea sp.</u> 80 Y UPL 2. <u>Panicum sp.</u> 10 N FAC 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>90</u> = Total Cover Woody Vine Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ <u>0</u> = Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>430</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>4.78</u> Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>90</u> (A)	<u>430</u> (B)
Total % Cover of:	Multiply by:														
OBL species <u>0</u>	x 1 = <u>0</u>														
FACW species <u>0</u>	x 2 = <u>0</u>														
FAC species <u>10</u>	x 3 = <u>30</u>														
FACU species <u>0</u>	x 4 = <u>0</u>														
UPL species <u>80</u>	x 5 = <u>400</u>														
Column Totals: <u>90</u> (A)	<u>430</u> (B)														
Remarks: (Include photo numbers here or on a separate sheet.)															

SOIL

Sampling Point: Upl B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silty clay	
4-18	10YR 5/4	90	7.5YR 5/8	10	C	M	Silty Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) ☐ 2 cm Muck (A10) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Mucky Mineral (S1) ☐ 5 cm Mucky Peat or Peat (S3)	☐ Sandy Gleyed Matrix (S4) ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Sparsely Vegetated Concave Surface (B8)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Gauge or Well Data (D9) ☐ Other (Explain in Remarks)	Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>4</u>	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The top 4 inches of soil was saturated but the lack of concentrations in the top 4 inches of soil and the fact that no water table was found beneath indicate that the saturation was due to rain within 8 hours prior to delineation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Olia Village Development City/County: St. Louis Sampling Date: 2/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Wet Iso 1
Investigator(s): MKO/ MEW Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave
Slope (%): 0 Lat: 38.670938 Long: -90.409463 Datum: NAD 83 MO East
Soil Map Unit Name: Urban land harvester complex, 2-9 percent slope NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil x, or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No

Is the Sampled Area
within a Wetland? Yes X No

Remarks:

Depression near buildings that was created due to construction of existing site. This area collects stormwater runoff from infrastructure.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus deltoides</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Quercus phellos</u>		<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u>60</u>	<u>=Total Cover</u>	

Sapling/Shrub Stratum	(Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u> </u>	<u>=Total Cover</u>	

Herb Stratum	(Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex sp.</u>		<u>40</u>	<u>Yes</u>	<u> </u>
2. <u>Symphotrichum lanceolatum</u>		<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u>60</u>	<u>=Total Cover</u>	

Woody Vine Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u> </u>	<u>=Total Cover</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>60</u>	x 3 = <u>180</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>80</u> (A)	<u>220</u> (B)
Prevalence Index = B/A = <u>2.75</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

Herb stratum more sparsely vegetated outside sample point. Cover was difficult to determine due to seasonal conditions.

SOIL

Sampling Point: Wet Iso 1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/2	84	10YR 5/8	6	C	M	Loamy/Clayey	Prominent redox concentrations
7-15	10YR 5/6	75	10YR 4/3	25	C	M	Loamy/Clayey	Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Sandy Gleyed Matrix (S4)
☐ Histic Epipedon (A2)	☐ Sandy Redox (S5)
☐ Black Histic (A3)	☐ Stripped Matrix (S6)
☐ Hydrogen Sulfide (A4)	☐ Dark Surface (S7)
☐ Stratified Layers (A5)	☐ Loamy Mucky Mineral (F1)
☐ 2 cm Muck (A10)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ 5 cm Mucky Peat or Peat (S3)	☒ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ Coast Prairie Redox (A16)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: _____
Depth (inches): _____**Hydric Soil Present?** Yes ☒ No ☐**Remarks:**

Native soils excavated or disturbed.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)
☐ Saturation (A3)	☐ True Aquatic Plants (B14)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)
☒ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☒ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (inches): _____
Water Table Present?	Yes ☐	No ☒	Depth (inches): _____
Saturation Present?	Yes ☐	No ☒	Depth (inches): _____
(includes capillary fringe)			

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Local runoff from infrastructure outlets to this area.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Olia Village Development City/County: St. Louis Sampling Date: 2/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Upl Iso 1
Investigator(s): MKO/ MEW Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave
Slope (%): 0 Lat: 38.671010 Long: -90.409463 Datum: NAD 83 MO East
Soil Map Unit Name: Urban land harvester complex, 2-9 percent slope NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5</u>)			
1. <u>Festuca rubra</u>		<u>40</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carex sp.</u>		<u>20</u>	<u>Yes</u>	
3. <u>Solidago canadensis</u>		<u>10</u>	<u>No</u>	<u>FACU</u>
4. <u>Symphyotrichum lateriflorum</u>		<u>10</u>	<u>No</u>	<u>FACW</u>
5.				
6.				
7.				
8.				
9.				
10.				
		<u>80</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>30</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:
Number of Dominant Species That
Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species
Across All Strata: 2 (B)
Percent of Dominant Species That
Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>60</u> (A)	<u>220</u> (B)
Prevalence Index = B/A = <u>3.67</u>	

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting
data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.

**Hydrophytic
Vegetation
Present?** Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Upl Iso 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 2/2	100						
7-18	10YR 4/3	90	10YR 4/6	10	C	M		Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>0</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>0</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>0</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Olia Village Development City/County: St. Louis Sampling Date: 2/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Wet Iso 2
Investigator(s): MKO/ MEW Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave
Slope (%): 0 Lat: 38.670304 Long: -90.411415 Datum: NAD MO East
Soil Map Unit Name: Urban land harvester complex, 2-9 percent slope NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No

**Is the Sampled Area
within a Wetland?** Yes X No

Remarks:

This depression is between the road and parking lot.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus deltoides</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Ulmus americana</u>		<u>25</u>	<u>Yes</u>	<u>FACW</u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u>65</u>	=Total Cover	

Sapling/Shrub Stratum	(Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u> </u>	=Total Cover	

Herb Stratum	(Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u> </u>	=Total Cover	

Woody Vine Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>
		<u> </u>	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That
Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species
Across All Strata: 2 (B)
Percent of Dominant Species That
Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>65</u> (A)	<u>170</u> (B)
Prevalence Index = B/A = <u>2.62</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting
data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.

**Hydrophytic
Vegetation**

Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet Iso 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/2	98	10YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
7-15	10YR 4/4	70	10YR 4/6	30	C	M	Loamy/Clayey	Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ 5 cm Mucky Peat or Peat (S3) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☒ Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
This depression is 2-3 feet deep. No herbs or shrubs are present. Native material was likely removed and replaced with fill during construction of the existing development.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☒ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Olia Village Development City/County: St. Louis Sampling Date: 2/15/23
Applicant/Owner: Jack Matthews Development State: MO Sampling Point: Upl Iso 2
Investigator(s): MKO/ MEW Section, Township, Range: S1 T45N R5E
Landform (hillside, terrace, etc.): Roadside Local relief (concave, convex, none): None
Slope (%): 0 Lat: 38.670263 Long: -90.411408 Datum: NAD 83 MO East
Soil Map Unit Name: Urban land harvester complex, 2-9 percent slope NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>) <table border="1" style="width:100%"><thead><tr><th></th><th>Absolute % Cover</th><th>Dominant Species?</th><th>Indicator Status</th></tr></thead><tbody><tr><td>1. <u>Populus deltoides</u></td><td align="center">15</td><td align="center">Yes</td><td align="center">FAC</td></tr><tr><td>2. <u>Ulmus americana</u></td><td align="center">15</td><td align="center">Yes</td><td align="center">FACW</td></tr><tr><td>3. <u> </u></td><td></td><td></td><td></td></tr><tr><td>4. <u> </u></td><td></td><td></td><td></td></tr><tr><td>5. <u> </u></td><td></td><td></td><td></td></tr><tr><td></td><td align="center">30</td><td align="center">=Total Cover</td><td></td></tr></tbody></table> <u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>) <table border="1" style="width:100%"><tbody><tr><td>1. <u> </u></td><td></td><td></td><td></td></tr><tr><td>2. <u> </u></td><td></td><td></td><td></td></tr><tr><td>3. <u> </u></td><td></td><td></td><td></td></tr><tr><td>4. <u> </u></td><td></td><td></td><td></td></tr><tr><td>5. <u> </u></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td align="center">=Total Cover</td><td></td></tr></tbody></table> <u>Herb Stratum</u> (Plot size: <u>5</u>) <table border="1" style="width:100%"><tbody><tr><td>1. <u>Poa pratensis</u></td><td align="center">80</td><td align="center">Yes</td><td align="center">FAC</td></tr><tr><td>2. <u>Festuca rubra</u></td><td align="center">20</td><td align="center">Yes</td><td align="center">FACU</td></tr><tr><td>3. <u> </u></td><td></td><td></td><td></td></tr><tr><td>4. <u> </u></td><td></td><td></td><td></td></tr><tr><td>5. <u> </u></td><td></td><td></td><td></td></tr><tr><td>6. <u> </u></td><td></td><td></td><td></td></tr><tr><td>7. <u> </u></td><td></td><td></td><td></td></tr><tr><td>8. <u> </u></td><td></td><td></td><td></td></tr><tr><td>9. <u> </u></td><td></td><td></td><td></td></tr><tr><td>10. <u> </u></td><td></td><td></td><td></td></tr><tr><td></td><td align="center">100</td><td align="center">=Total Cover</td><td></td></tr></tbody></table> <u>Woody Vine Stratum</u> (Plot size: <u>30</u>) <table border="1" style="width:100%"><tbody><tr><td>1. <u> </u></td><td></td><td></td><td></td></tr><tr><td>2. <u> </u></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td align="center">=Total Cover</td><td></td></tr></tbody></table>		Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Populus deltoides</u>	15	Yes	FAC	2. <u>Ulmus americana</u>	15	Yes	FACW	3. <u> </u>				4. <u> </u>				5. <u> </u>					30	=Total Cover		1. <u> </u>				2. <u> </u>				3. <u> </u>				4. <u> </u>				5. <u> </u>						=Total Cover		1. <u>Poa pratensis</u>	80	Yes	FAC	2. <u>Festuca rubra</u>	20	Yes	FACU	3. <u> </u>				4. <u> </u>				5. <u> </u>				6. <u> </u>				7. <u> </u>				8. <u> </u>				9. <u> </u>				10. <u> </u>					100	=Total Cover		1. <u> </u>				2. <u> </u>						=Total Cover		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B) Prevalence Index worksheet: <table border="1" style="width:100%"><thead><tr><th>Total % Cover of:</th><th>Multiply by:</th></tr></thead><tbody><tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr><tr><td>FACW species <u>15</u></td><td>x 2 = <u>30</u></td></tr><tr><td>FAC species <u>95</u></td><td>x 3 = <u>285</u></td></tr><tr><td>FACU species <u>20</u></td><td>x 4 = <u>80</u></td></tr><tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr><tr><td>Column Totals: <u>130</u> (A)</td><td><u>395</u> (B)</td></tr></tbody></table> Prevalence Index = B/A = <u>3.04</u> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>395</u> (B)
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Remarks: (Include photo numbers here or on a separate sheet.) Trees from the adjacent wetland overhang the upland data point. The prevalence index indicating nonwetland is considered accurate.																																																																																																																											

SOIL

Sampling Point: Upl Iso 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/1	100						
10-18	10YR 5/6	80	10YR 4/3	20	C	M	Loamy/Clayey	Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>0</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>0</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>0</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Olia Village Development Project

APPENDIX D: SITE PHOTOGRAPHS





1. View northwest of Wetland A.



2. View southeast of Wetland A.



3. View southeast of Wetland A and Dielmann Creek.



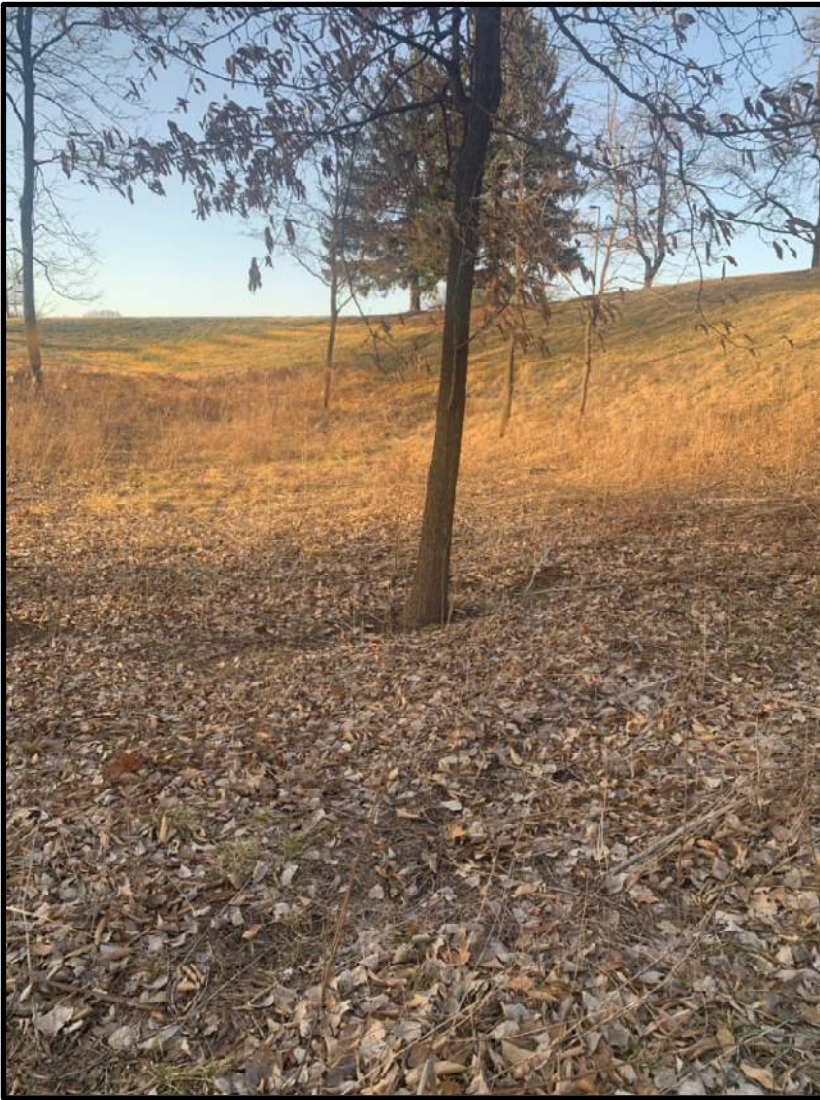
4. View southeast of Dielmann Creek, looking downstream from northern culvert.



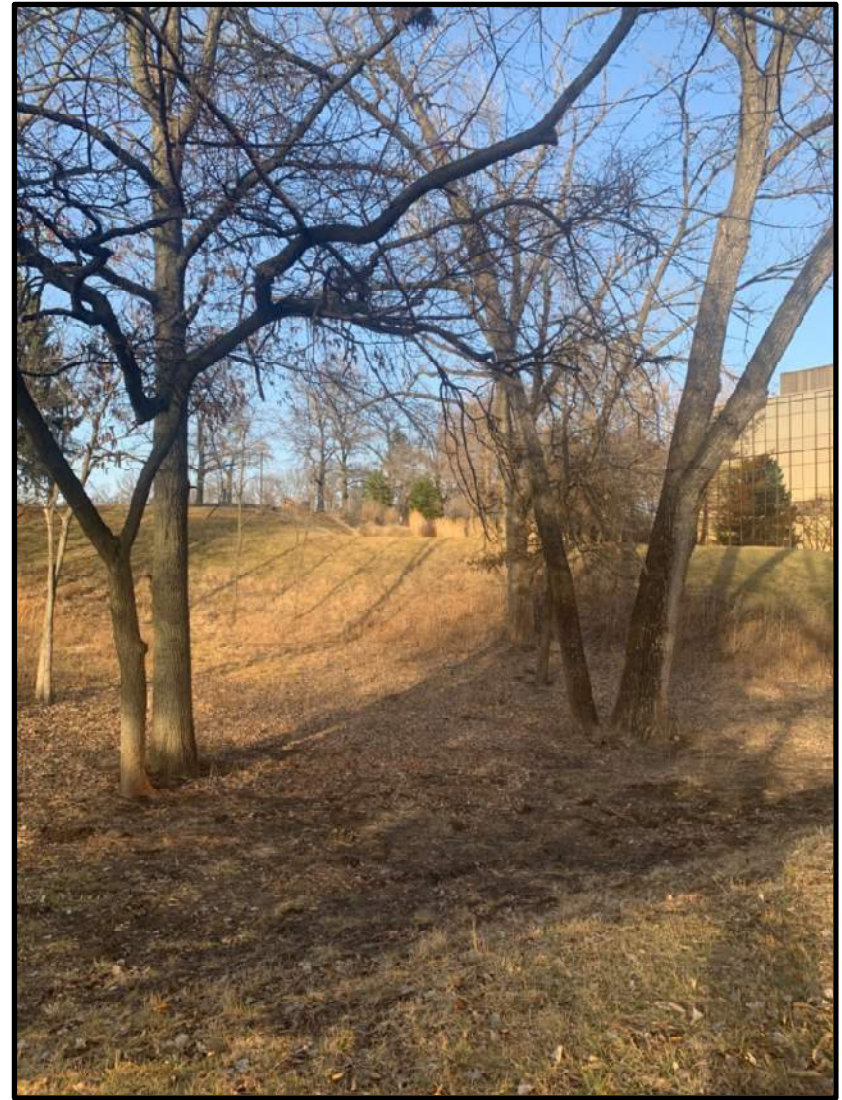
5. View southwest of Dielmann Creek, looking downstream.



6. View northwest of Dielmann Creek, looking upstream.



7. View north of Stormwater Feature 1- Isolated Wetland.



8. View northeast of Stormwater Feature 1- Isolated Wetland.



9. View northeast of Stormwater Feature 2- Isolated Wetland.



10. View west Stormwater Feature 2- Isolated Wetland.



11. View southeast of Stormwater Feature 3- Constructed Basin.



12. View west of Stormwater Feature 4- Constructed Basin.



13. View northeast of Monsanto-Sunswept Creek, looking upstream at northern inlet.



14. View west of Monsanto-Sunswept Creek, looking downstream at Reach 1.



15. View southwest of Monsanto-Sunswept Creek, looking downstream at Reach 2.



16. View south of Monsanto-Sunswept Creek, looking downstream at Reach 3.



17. View south of Monsanto-Sunswept Creek, looking downstream at Reach 4.



18. View northeast of Monsanto-Sunswept Creek Reach 5.



19. View north of Monsanto-Sunswept Creek, looking upstream at Reach 5.



20. View south of Monsanto-Sunswept Creek, looking downstream at Reach 5.



21. View south of Monsanto-Sunswept Creek oxbow, looking downstream at Reach 5.



22. View southwest of Monsanto-Sunswept Creek, looking downstream at Reach 6.



23. View northeast of Wetland B.



24. View southeast of Dielmann Creek riparian restoration area.

Missouri Department of Transportation

1590 Woodlake Drive
Chesterfield, Missouri 63017-5712
314.275.1500
Fax: 573.522.6475
1.888.ASK MODOT (275.6636)

September 26, 2023

Crawford, Murphy & Tilly
Gateway Tower
One Memorial Dr, Suite 500
St Louis, MO 63102
<< *Transmitted via email* >>

RE: Traffic Impact Study (TIS) Response Letter

Greetings,

Thank you for submitting your finalized TIS with supporting documents regarding the Olia Village development in Creve Coeur, Missouri for MoDOT's traffic team evaluation. We've reviewed the study and offer the following comments:

- MoDOT traffic concurs with the findings and recommendations of the study.
- MoDOT traffic advises the developer to continue their collaborations and to follow state standards with consideration to any state highway system modifications and improvements.

Should you have any questions or comments, you may contact me via email at robert.meyer@modot.mo.gov.

Respectfully,



Robert Meyer
Traffic Studies Specialist
Missouri Department of Transportation



Our mission is to provide a world-class transportation system that is safe, innovative, reliable, and dedicated to a prosperous Missouri.

www.modot.org

CC'd: Ryan Percy, Area Engineer
Eddie Watkins, Area Traffic Operations Engineer
John Braden, Area Permits Specialist
Joseph Mulnik, Area Traffic Studies Specialist

PRELIMINARY STORMWATER MANAGEMENT REPORT

OLIA VILLAGE CREVE COEUR, MO



OLIA VILLAGE

THE HEART OF CREVE COEUR

July 7, 2023

Prepared by:



CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

1 Memorial Drive, Suite 500
St. Louis, MO 63102
(314) 436-5500

RECEIVED
JUL 10 2023
PLANNING DEPT.



Stormwater Management Report

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APPENDICES

APPENDIX A: PRE-DEVELOPED DRAINAGE AREA MAP

APPENDIX B: POST-DEVELOPED DRAINAGE AREA MAP

APPENDIX C: CALCULATIONS

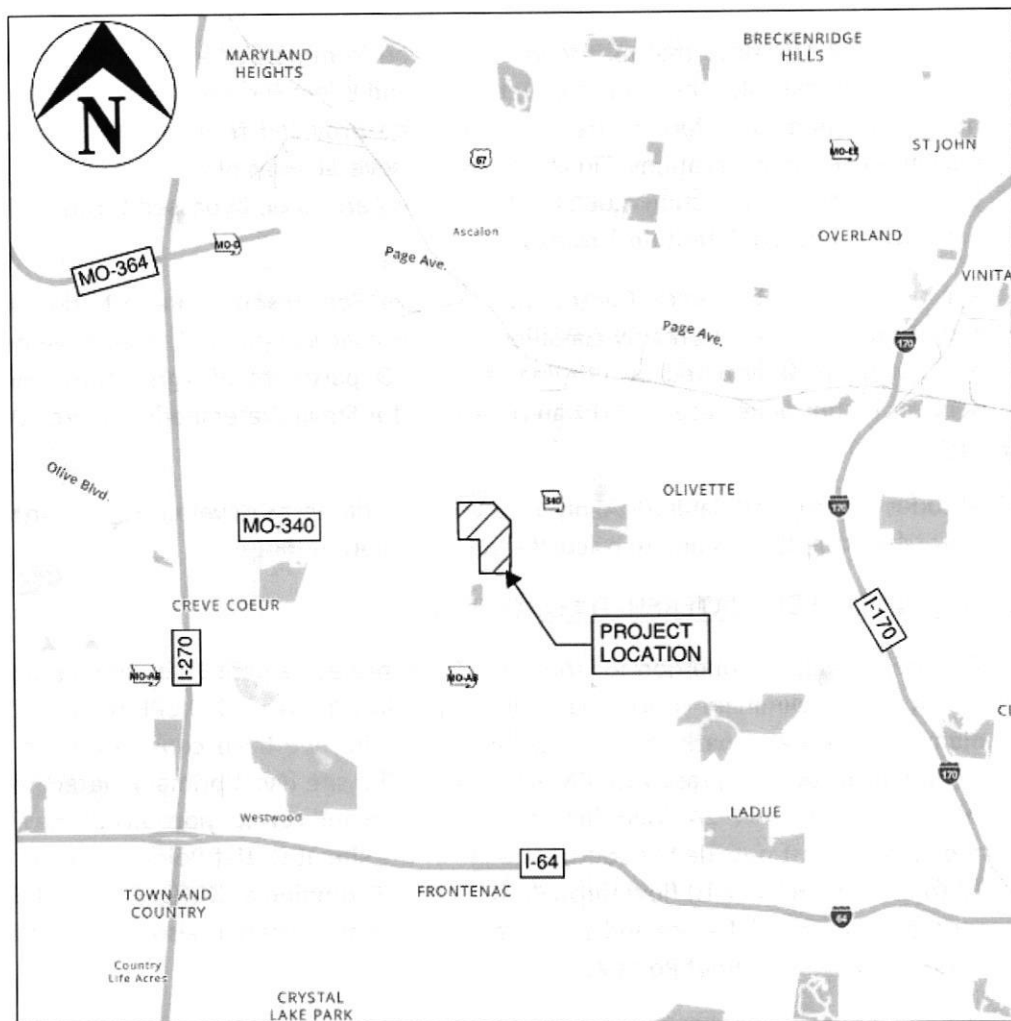
APPENDIX D: SOURCE DATA

EXECUTIVE SUMMARY

This report was prepared by Crawford, Murphy, & Tilly, Inc. (CMT), on behalf of Jack Matthews Development for the construction of the approximately 95-acre Olia Village Development within the City of Creve Coeur, MO.

The purpose of this preliminary report is to document the pre-developed and anticipated post-developed drainage conditions of the site as well as the design methodology for the hydrologic analysis. Many aspects of the proposed development are still being designed including the storm sewer plans and BMPs for water quality and volume reduction. The purpose of this report is to provide a preliminary analysis of the proposed detention facilities to confirm that they will have sufficient volume for the proposed development. The project location is shown in the Vicinity Map below:

Figure 1. VICINITY MAP



I) INTRODUCTION

A. GOVERNING CRITERIA AND METHODOLOGY

The Authority having jurisdiction over the development will be the Metropolitan St. Louis Sewer District (MSD). As such, the proposed design will follow the MSD Drainage Manual.

Section 4.060.02 states that the detention system for the property shall be designed to control the peak rate of discharge from the property for the 2-year (24-hour) and 100-year (24-hour) storm events. The SCS Method from Technical Release 55 shall be used with Type II distribution and rainfall quantities of 3.1" for 2-year and 7.2" for 100-year storm events. Our preliminary calculations only show results for the 100-year storm as this will be the controlling event for maximum pond volume. Outlet structures will be designed to control the 2-year event as the plans are further developed.

Section 4.060.04 states that maximum fluctuation from permanent pool elevation to maximum ponding elevation shall be 6 feet for wet ponds and 8 feet for dry ponds. Section 4.060.03 states that a minimum of 1 foot of freeboard shall be provided from the top of the basin to the maximum ponding elevations. Finally, there are several acres of offsite flow that come onto the Olia Village site. Per Section 4.060.02, these flows are to be bypassed through the site and not enter the proposed detention facilities.

Per the Natural Resources Conservation Service Soil Resource Report, the soils within the proposed project are primarily classified in Hydrologic soil group C. The curve numbers for the analysis were determined by utilizing the U.S. Department of Agriculture, Soil Conservation Service, Technical Release 55, "Urban Hydrology for Small Watersheds". Source Data is shown in Appendix D.

Autodesk Storm and Sanitary Analysis (SSA) was utilized to develop the existing and proposed watershed runoff rates and to calculate the detention routing.

B. PRE-DEVELOPED WATERSHED CONDITIONS

The pre-developed condition for the Olia Village project is defined as the natural conditions of the site per preliminary conceptual review by MSD (Ref. No. 23CNCPB-00003). While there are many buildings and parking lots present on the site, we have considered the pre-developed conditions to be fully grass with CN value of 74. The site has 3 primary watersheds (E-1A, E-2A, and E-3A). E-1A and E-2A drain through the western and central portions of the site respectively and combine just outside the southern edge of the site at Outlet Point 1. Offsite Watersheds (E-1B to E-1G, E2-B to E2-H) flow through the site and combine at Outlet Point 1. E-3A includes the southeast corner of the site and drains to Outlet Point 2. There is also a small offsite watershed, E-3B, that flows to Outlet Point 2.

The pre-developed watershed map can be seen in Appendix A. A summary of all pre-developed watershed information is shown in Table 1 below. TC, CN, and output Q calculations are shown in Appendix C.

DRAINAGE AREA	TOTAL AREA (AC)	WEIGHTED "CN" VALUE	TC (MIN)	Q (CFS)
E-1A	48.35	74.00	28.32	186.38
E-1B	7.81	83.60	10.19	55.29
E-1C	3.67	98.00	13.00	28.52
E-1D	2.57	85.94	16.11	16.61
E-1E	6.76	91.70	15.80	47.34
E-1F	18.02	93.72	17.88	122.62
E-1G	0.56	89.52	11.58	4.21
E-1H	0.47	91.03	10.41	3.65
E-2A	41.34	74.00	22.00	182.94
E-2B	1.09	86.49	11.36	7.85
E-2C	10.07	86.87	15.89	66.23
E-2D	1.22	85.25	13.33	8.31
E-2E	1.93	81.09	14.36	11.95
E-2F	22.15	85.78	17.49	138.21
E-2G	1.43	86.01	7.31	11.31
E-2H	51.94	84.84	17.77	317.10
E-2I	0.42	89.15	11.40	3.16
E-2J	1.52	85.72	13.98	10.28
E-3A	6.08	74.00	11.12	34.60
E-3B	0.52	90.98	14.35	3.72

C. POST-DEVELOPED WATERSHED CONDITIONS

In the post-developed watershed conditions, drainage patterns will be maintained to the two existing outlet points. Two dry detention basins and three wet ponds are proposed to detain runoff from the site. Basin 1 is in the northeast corner of the site and detains flow from P5-1. Basin 2 is in the southeast corner of the site and detains flow from P14-1A. Pond 1 is in the center of the site and detains flow from P4-1. Pond 2 is in the central portion of the site located near the western property line and detains flow from P2-1 as well as the outflow from Pond 1. Pond 3 is in the southwestern portion of the site and detains flow from P6-1, P7-1, and P9-1. P-14-1A, P14-1B, and 16-P?-1 flow to Outlet Point 2.

All other watersheds drain to Outlet Point 1. The post-developed watershed map can be seen in Appendix B. A summary of undetained post-developed watershed information can be found in Table 2 below. TC, CN, and output Q calculations are shown in Appendix C.

TABLE 2: PROPOSED DRAINAGE AREAS (POST-DEVELOPMENT)				
DRAINAGE AREA	TOTAL AREA (AC)	WEIGHTED "CN" VALUE	TC	Q (CFS)
P1-1	6.02	74.79	28.32	23.7
P2-1	28.12	92.05	15.00	201.29
P3-1	6.57	91.67	15.00	46.81
P4-1	4.34	78.41	15.00	25.07
01-P?-1	7.81	83.60	10.19	55.29
02-P?-1	3.67	98.00	13.00	28.52
03-P?-1	2.57	85.94	16.11	16.61
04-P?-1	6.76	91.70	15.80	47.34
05-P?-1	18.02	93.72	17.88	122.62
06-P?-1	0.47	91.03	10.41	3.65
07-P?-1	0.56	89.52	11.58	4.21
P5-1	7.76	90.95	22.00	54.92
P6-1	2.64	92.65	15.00	19.03
P7-1	1.71	90.03	15.00	11.95
P8-1	4.74	83.52	15.00	30.21
P9-1	11.05	82.32	15.00	68.94
P10-1	2.13	75.53	15.00	11.54
P11-1	11.23	83.95	15.00	72.01
P12-1	1.19	80.60	15.00	7.18
P13-1	1.91	74.73	15.00	10.14
08-P?-1	1.09	86.49	11.36	7.85
09-P?-1	10.07	86.87	15.89	66.23
10-P?-1	22.15	85.78	17.49	138.21
11-P?-1	1.43	86.01	7.31	11.31
12-P?-1	1.22	85.25	13.33	8.31
13-P?-1	1.93	81.09	14.36	11.95
14-P?-1	1.52	85.72	13.98	10.28
15-P?-1	0.42	89.15	11.40	3.16
16-P?-1	0.52	90.98	14.35	3.72
17-P?-1	51.93	84.84	17.77	317.1
P14-1A	3.89	76.11	11.12	23.82
P14-1B	2.68	77.17	0.00	15.47

D. DETENTION FACILITY INFORMATION

A summary of information for each Detention Facility is shown in Table 3 below. Calculations are shown for the 100-year, 24-hour storm event. The calculations show that 1 foot freeboard is maintained from the maximum water surface to the top of berm in each detention facility. Detailed calculations output from SSA are shown in Appendix C.

TABLE 3. DETENTION FACILITY SUMMARY					
DETENTION FACILITY	INFLOW (CFS)	OUTFLOW (CFS)	NORMAL POOL ELEVATION	MAXIMUM WATER SURFACE ELEVATION	TOP OF BERM ELEVATION
BASIN 1	32.89	13.76	625.00	630.80	632.00
BASIN 2	53.56	19.32	615.00	620.67	622.00
POND 1	24.03	0.70	624.00	626.82	631.00
POND 2	196.81	97.99	610.00	616.02	617.00
POND 3	96.86	19.14	597.00	598.99	604.00

II) COMPARISON OF PRE-DEVELOPED AND POST-DEVELOPED CONDITIONS

The pre- and post-development flow rates to each of the two outlet points are shown in Table 4 below. These include flows from all the proposed detention facilities described above and include all offsite flows that will bypass the proposed detention facilities to the proposed outlet points. Detailed calculations output from SSA are shown in Appendix C.

TABLE 4. 100-YEAR, 24-HOUR PEAK FLOW RATE COMPARISON				
ANALYSIS POINT	STORM EVENT	PRE-DEVELOPED FLOW RATE (cfs)	POST-DEVELOPED FLOW RATE (cfs)	FLOW RATE DIFFERENTIAL (cfs)
OUTLET POINT 1	100-YEAR	1158.81	1109.43	-49.38
OUTLE POINT 2	100-YEAR	38.25	32.89	-5.36

III) CONCLUSION

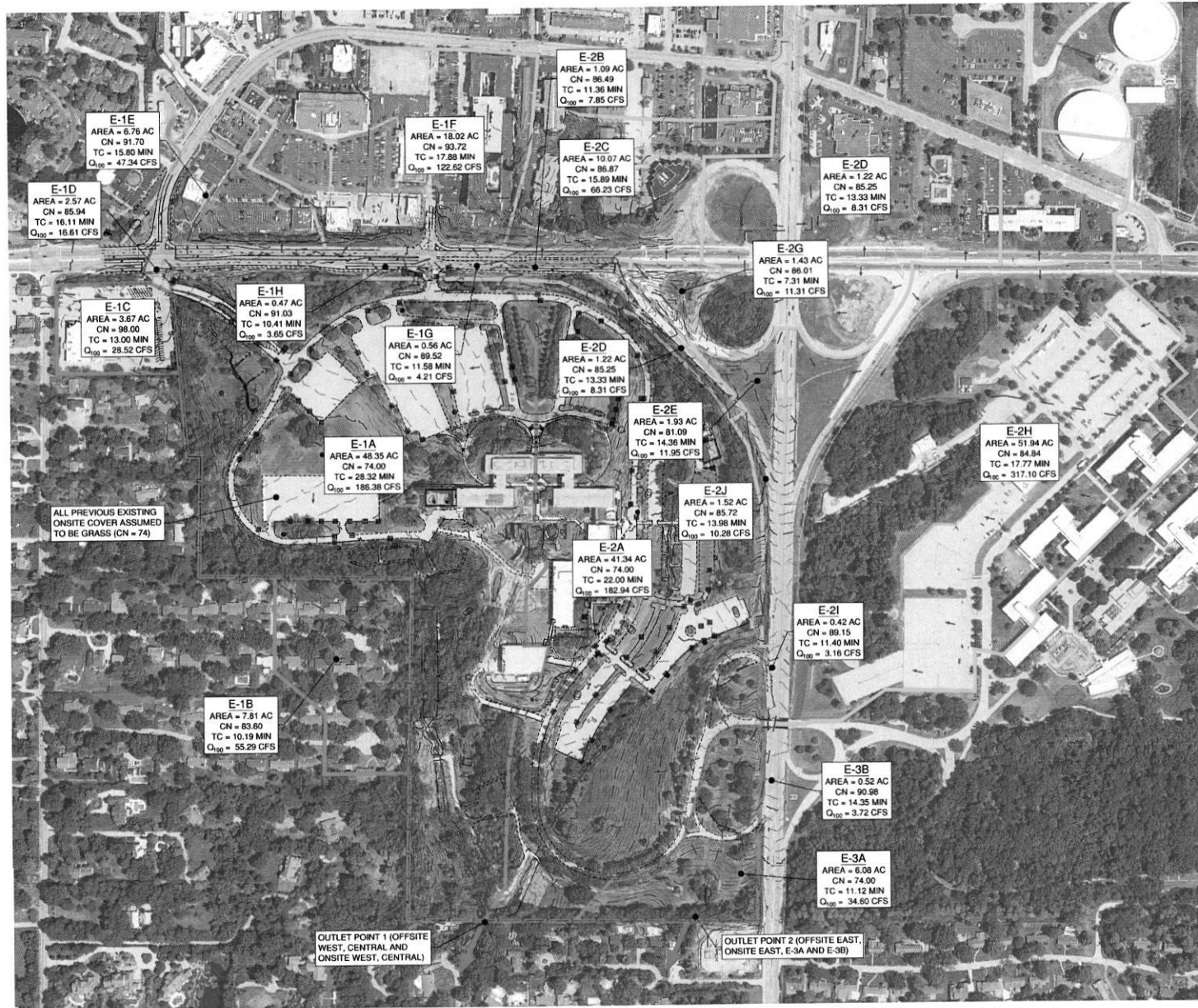
As mentioned in the Executive Summary, this preliminary report documents the pre-developed and anticipated post-developed drainage conditions of the site as well as the design methodology for the hydrologic analysis. This report demonstrates that the proposed detention facilities have sufficient volume to meet drainage requirements by showing no increase in flow at the outlet points and 1 foot of freeboard at each detention facility.

Many aspects of the development are still being designed including the storm sewer conveyance plans and BMPs for water quality and volume reduction. As the plans are developed, complete drainage reports will be completed with all required information and will be submitted to both the City of Creve Coeur and MSD for final approval prior to construction.

APPENDIX A: PRE-DEVELOPED DRAINAGE AREA MAP



200' 100' 0' 200' 400'
SCALE 1 in. = 200 ft.



License No. 184-000531

PRELIMINARY PLANS
DESIGN DEVELOPMENT
JULY 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



OLIA VILLAGE

THE HEART OF CREVE COEUR

10300 OLIVE BOULEVARD
CREVE COEUR, MO

MARK	DATE	DESCRIPTION
PROJECT NO.	23005201-00	
CAD DWG FILE:	PRE-DEV. DRAINAGE AREA MAP ON VALLES.DWG	
DESIGNED BY:	DOS	
DRAWN BY:	DOS	
CHECKED BY:	TME	
APPROVED BY:		
COPYRIGHT: CRAWFORD, MURPHY & TILLY, INC. 2023		

SHEET TITLE
**PRE-DEVELOPED
DRAINAGE AREA MAP**

1
OF

APPENDIX B: POST-DEVELOPED DRAINAGE AREA MAP



200' 100' 0' 200' 400'
SCALE 1 in. = 200 ft.



CMT
Crawford, Murphy & Tilly

License No. 184-000831

PRELIMINARY PLANS
DESIGN DEVELOPMENT
JULY 2023

OLIA VILLAGE

LINDBERGH & OLIVE BLVD



THE HEART OF CREVE COEUR

10300 OLIVE BOULEVARD
CREVE COEUR, MO

MARK	DATE	DESCRIPTION
PROJECT NO.	23005201-00	
CAD DWG FILE:	POST-DEVELOPED DRAINAGE AREA MAP\OLIAVILLAGE.DWG	
DESIGNED BY:	DGS	
DRAWN BY:	DGS	
CHECKED BY:	TME	
APPROVED BY:	-	
COPYRIGHT: CRAWFORD, MURPHY & TILLY, INC. 2023		

SHEET TITLE
**POST-DEVELOPED
DRAINAGE AREA MAP**

2
OF
SHEET

Path: M:\Johanna\Projects\23005201-00_Olia_Village\Design\Report\POST-DEVELOPED DRAINAGE AREA MAP\OLIAVILLAGE.DWG
Date: Friday, July 7, 2023 10:53:14 AM

APPENDIX C: CALCULATIONS

LIST OF CALCULATIONS

1. PRE-DEVELOPED: TIME OF CONCENTRATION CALCULATIONS
2. POST-DEVELOPED: TIME OF CONCENTRATION CALCULATIONS
3. PRE-DEVELOPED: CN CALCULATIONS
4. POST-DEVELOPED: CN CALCULATIONS
5. PRE-DEVELOPED: 100-YEAR, 24-HOUR STORM EVENT SSA SUMMARY
6. POST-DEVELOPED: 100-YEAR, 24-HOUR STORM EVENT SSA SUMMARY

APPENDIX C: PRE-DEVELOPED: TIME OF CONCENTRATIONS

CMT				PROJECT : Bayer Site Design		REVISIONS:									
CRAWFORD, MURPHY & TILLY, INC.				JOB CODE : 23005201-00											
CONSULTING ENGINEERS				DESIGNED : DGS		CHECKED : TME									
				DATE : 7/7/2023		DATE : 7/7/2023									
EXISTING DRAINAGE AREAS (PRE-DEVELOPMENT)															
DRAINAGE AREA	K	n (roughness coefficient)	Length	Upstream El.	Downstream El.	Slope	Overland Travel Time (min)		K	Length	Upstream El.	Downstream El.	Slope	Open Channel Flow Travel Time (min)	Total Travel Time (min)
WESTERN TRIBUTARY STREAM (OUTLET POINT 1)															
ON-SITE DRAINAGE AREAS															
E-1A	0.83	0.3	100	680.00	678.00	0.0200	10.29		0.0078	3580	678.00	594.00	0.0235	18.03	28.32
OFF-SITE DRAINAGE AREAS															
E-1B	0.83	0.3	100	646.00	634.00	0.1200	6.76		0.0078	510	634.00	616.00	0.0353	3.44	10.19
E-1C	0.83	0.3	100	679.00	674.80	0.0420	8.65		0.0078	506	674.80	665.27	0.0188	4.35	13.00
E-1D	0.83	0.3	100	679.00	677.73	0.0127	11.45		0.0078	366	677.73	674.71	0.0083	4.66	16.11
E-1E	0.83	0.3	100	682.00	680.00	0.0200	10.29		0.0078	560	680.00	673.00	0.0125	5.51	15.80
E-1F	0.83	0.3	100	682.00	680.00	0.0200	10.29		0.0078	713	680.00	673.71	0.0088	7.58	17.88
E-1G	0.83	0.3	100	676.33	674.00	0.0233	9.93		0.0078	130	674.00	672.00	0.0154	1.65	11.58
E-1H	0.83	0.3	100	672.00	669.00	0.0300	9.36		0.0078	104	669.00	665.66	0.0321	1.05	10.41
CENTRAL TRIBUTARY STREAM (OUTLET POINT 1)															
ON-SITE DRAINAGE AREAS															
E-2A	0.83	0.3	100	681.81	677.00	0.0481	8.38		0.0078	2874	677.00	587.00	0.0313	13.62	22.00
OFF-SITE DRAINAGE AREAS															
E-2B	0.83	0.3	100	690.00	688.00	0.0200	10.29		0.0078	114	688.00	683.80	0.0368	1.07	11.36
E-2C	0.83	0.3	100	710.00	708.00	0.0200	10.29		0.0078	923	708.00	678.00	0.0325	5.60	15.89
E-2D	0.83	0.3	100	690.00	689.00	0.0100	12.12		0.0078	219	689.00	668.00	0.0959	1.22	13.33
E-2E	0.83	0.3	100	676.00	674.36	0.0164	10.79		0.0078	248	674.36	672.49	0.0075	3.57	14.36
E-2F	0.83	0.3	100	712.00	710.00	0.0200	10.29		0.0078	1447	710.00	649.68	0.0417	7.19	17.49
E-2G	0.83	0.3	100	691.00	678.00	0.1300	6.63		0.0078	115	678.00	664.00	0.1217	0.68	7.31
E-2H	0.83	0.3	100	700.00	675.00	0.2500	5.69		0.0078	1835	675.00	643.00	0.0174	12.08	17.77
E-2I	0.83	0.3	100	656.00	654.00	0.0200	10.29		0.0078	89	654.00	652.20	0.0202	1.11	11.40
E-2J	0.83	0.3	100	667.70	665.60	0.0210	10.18		0.0078	730	665.60	624.94	0.0557	3.80	13.98
EASTERN TRIBUTARY STREAM (OUTLET POINT 2)															
ON-SITE DRAINAGE AREAS															
E-3A	0.83	0.3	100	673.83	662.26	0.1157	6.81		0.0078	874	662.26	611.68	0.0579	4.30	11.12
OFF-SITE DRAINAGE AREAS															
E-3B	0.83	0.3	100	656.50	655.50	0.0100	12.12		0.0078	225	655.50	650.76	0.0211	2.23	14.35
NOTES:															

APPENDIX C: POST-DEVELOPED: TIME OF CONCENTRATIONS

			PROJECT : Bayer Site Design				REVISIONS:									
CRAWFORD, MURPHY & TILLY, INC.			JOB CODE : 23005201-00													
CONSULTING ENGINEERS			DESIGNED : DGS		CHECKED : TME											
			DATE : 7/7/2023		DATE : 7/7/2023											
PROPOSED DRAINAGE AREAS (POST-DEVELOPMENT)																
DRAINAGE AREA	K	n (roughness coefficient)	Length	Upstream El.	Downstream El.	Slope	Overland Travel Time (min)			K	Length	Upstream El.	Downstream El.	Slope	Open Channel Flow Travel Time (min)	Total Travel Time (min)
WESTERN TRIBUTARY STREAM (OUTLET POINT 1)																
ON-SITE DRAINAGE AREAS																
P1-1	0.83	0.3	100	680.00	678.00	0.0200	10.29			0.0078	3580	678.00	594.00	0.0235	18.03	28.32
P2-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P3-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P4-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
OFF-SITE DRAINAGE AREAS																
01-P7-1	0.83	0.3	100	646.00	634.00	0.1200	6.76			0.0078	510	634.00	616.00	0.0353	3.44	10.19
02-P7-1	0.83	0.3	100	679.00	674.80	0.0420	8.65			0.0078	506	674.80	665.27	0.0188	4.35	13.00
03-P7-1	0.83	0.3	100	679.00	677.73	0.0127	11.45			0.0078	366	677.73	674.71	0.0083	4.66	16.11
04-P7-1	0.83	0.3	100	682.00	680.00	0.0200	10.29			0.0078	560	680.00	673.00	0.0125	5.51	15.80
05-P7-1	0.83	0.3	100	682.00	680.00	0.0200	10.29			0.0078	713	680.00	673.71	0.0088	7.58	17.88
06-P7-1	0.83	0.3	100	672.00	669.00	0.0300	9.36			0.0078	104	669.00	665.66	0.0321	1.05	10.41
07-P7-1	0.83	0.3	100	676.33	674.00	0.0233	9.93			0.0078	130	674.00	672.00	0.0154	1.65	11.58
CENTRAL TRIBUTARY STREAM (OUTLET POINT 1)																
ON-SITE DRAINAGE AREAS																
P5-1	0.83	0.3	100	681.81	677.00	0.0481	8.38			0.0078	2874	677.00	587.00	0.0313	13.62	22.00
P6-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P7-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P8-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P9-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P10-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P11-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P12-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
P13-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.00
OFF-SITE DRAINAGE AREAS																
08-P7-1	0.83	0.3	100	690.00	688.00	0.0200	10.29			0.0078	114	688.00	683.80	0.0368	1.07	11.36
09-P7-1	0.83	0.3	100	710.00	708.00	0.0200	10.29			0.0078	923	708.00	678.00	0.0325	5.60	15.89
10-P7-1	0.83	0.3	100	712.00	710.00	0.0200	10.29			0.0078	1447	710.00	649.68	0.0417	7.19	17.49
11-P7-1	0.83	0.3	100	691.00	678.00	0.1300	6.63			0.0078	115	678.00	664.00	0.1217	0.68	7.31
12-P7-1	0.83	0.3	100	690.00	689.00	0.0100	12.12			0.0078	219	689.00	668.00	0.0959	1.22	13.33
13-P7-1	0.83	0.3	100	676.00	674.36	0.0164	10.79			0.0078	248	674.36	672.49	0.0075	3.57	14.36
14-P7-1	0.83	0.3	100	667.70	665.60	0.0210	10.18			0.0078	730	665.60	624.94	0.0557	3.80	13.98
15-P7-1	0.83	0.3	100	656.00	654.00	0.0200	10.29			0.0078	89	654.00	652.20	0.0202	1.11	11.40
17-P7-1	0.83	0.3	100	700.00	675.00	0.2500	5.69			0.0078	1835	675.00	643.00	0.0174	12.08	17.77
EASTERN TRIBUTARY STREAM (OUTLET POINT 2)																
ON-SITE DRAINAGE AREAS																
P14-1A	0.83	0.3	100	673.83	662.26	0.1157	6.81			0.0078	874	662.26	611.68	0.0579	4.30	11.12
P14-1B	0.83	0.3	100	673.83	662.26	0.1157	6.81			0.0078	874	662.26	611.68	0.0579	4.30	11.12
OFF-SITE DRAINAGE AREAS																
16-P7-1	0.83	0.3	100	656.50	655.50	0.0100	12.12			0.0078	225	655.50	650.76	0.0211	2.23	14.35
NOTES:																
1. TC FOR ONSITE DRAINAGE AREAS WILL BE UPDATED WHEN GRADING AND STORM SEWER PLANS ARE COMPLETED.																

APPENDIX C: PRE-DEVELOPED: CN CALCULATIONS

 CRAWFORD, MURPHY & TILLY, INC. CONSULTING ENGINEERS		PROJECT : <i>Bayer Site Design</i>		REVISIONS:					
		JOB CODE : <i>23005201-00</i>							
		DESIGNED : <i>DGS</i>	CHECKED : <i>TME</i>						
		DATE : <i>7/7/2023</i>	DATE : <i>7/7/2023</i>						
EXISTING DRAINAGE AREAS (PRE-DEVELOPMENT)									
DRAINAGE AREA	SITE INFORMATION				WEIGHTED "CN" VALUE				COMMENTS
	TOTAL AREA (sf)	100% IMPERVIOUS (ROOF) (sf)	100% IMPERVIOUS (PVMT) (sf)	5% IMPERVIOUS (GRASS) (sf)	TOTAL AREA (ac)	CN = 98 IMPERVIOUS PAVEMENT (ac)	CN = 74 GRASS (GOOD) (ac)	WEIGHTED "CN" VALUE	
WESTERN TRIBUTARY STREAM (OUTLET POINT 1)									
ON-SITE DRAINAGE AREAS									
E-1A	2,106,065	0	0	2,106,065	48.35	0.00	48.35	74.00	
SUB-TOTAL:	48.35 ac	0.00 ac	0.00 ac	48.35 ac					
OFF-SITE DRAINAGE AREAS									
E-1B	340,180	0	136,072	204,108	7.81	3.12	4.69	83.60	
E-1C	159,787	0	159,787	0	3.67	3.67	0.00	98.00	
E-1D	111,815	0	55,631	56,184	2.57	1.28	1.29	85.94	
E-1E	294,668	0	217,278	77,390	6.76	4.99	1.78	91.70	
E-1F	784,992	0	645,093	139,899	18.02	14.81	3.21	93.72	
E-1G	24,187	0	15,645	8,542	0.56	0.36	0.20	89.52	
E-1H	20,327	0	14,422	5,905	0.47	0.33	0.14	91.03	
SUB-TOTAL:	39.85 ac	0.00 ac	28.56 ac	11.30 ac					
CENTRAL TRIBUTARY STREAM (OUTLET POINT 1)									
ON-SITE DRAINAGE AREAS									
E-2A	1,800,847	0	0	1,800,847	41.34	0.00	41.34	74.00	
SUB-TOTAL:	41.34 ac	0.00 ac	0.00 ac	41.34 ac					
OFF-SITE DRAINAGE AREAS									
E-2B	47,309	0	24,629	22,680	1.09	0.57	0.52	86.49	
E-2C	438,457	0	235,120	203,338	10.07	5.40	4.67	86.87	
E-2D	53,220	0	24,938	28,282	1.22	0.57	0.65	85.25	
E-2E	84,124	0	24,847	59,277	1.93	0.57	1.36	81.09	
E-2F	964,757	0	473,450	491,307	22.15	10.87	11.28	85.78	
E-2G	62,149	0	31,093	31,056	1.43	0.71	0.71	86.01	
E-2H	2,262,339	0	1,022,006	1,240,333	51.94	23.46	28.47	84.84	
E-2I	18,172	0	11,475	6,697	0.42	0.26	0.15	89.15	
E-2J	66,372	0	32,414	33,959	1.52	0.74	0.78	85.72	
SUB-TOTAL:	91.76 ac	0.00 ac	43.16 ac	48.60 ac					
EASTERN TRIBUTARY STREAM (OUTLET POINT 2)									
ON-SITE DRAINAGE AREAS									
E-3A	264,661	0	0	264,661	6.08	0.00	6.08	74.00	
SUB-TOTAL:	6.08 ac	0.00 ac	0.00 ac	6.08 ac					
OFF-SITE DRAINAGE AREAS									
E-3B	22,833	0	16,158	6,675	0.52	0.37	0.15	90.98	
SUB-TOTAL:	0.52 ac	0.00 ac	0.37 ac	0.15 ac					
TOTAL:	227.90 ac	0.00 ac	72.09 ac	155.81 ac					
NOTES:									

APPENDIX C: POST-DEVELOPED: CN CALCULATIONS

 CRAWFORD, MURPHY & TILLY, INC. CONSULTING ENGINEERS		PROJECT : Bayer Site Design			REVISIONS:					
		JOB CODE : 23005201-00								
		DESIGNED : DGS	CHECKED : TME							
		DATE : 7/7/2023	DATE : 7/7/2023							
PROPOSED DRAINAGE AREAS (POST-DEVELOPMENT)										
TRIBUTARY DRAINAGE STRUCTURE NUMBER	DRAINAGE AREA	SITE INFORMATION				WEIGHTED "CN" VALUE				COMMENTS
		TOTAL AREA (sf)	100% IMPERVIOUS (ROOF)	100% IMPERVIOUS (PVTMT) (sf)	5% IMPERVIOUS (GRASS) (sf)	TOTAL AREA (ac)	CN = 98 IMPERVIOUS PAVEMENT (ac)	CN = 74 GRASS (GOOD) (ac)	WEIGHTED "CN" VALUE	
WESTERN TRIBUTARY STREAM (OUTLET POINT 1)										
ON-SITE DRAINAGE AREAS										
--	P1-1	262,206	8,616	0	253,590	6.02	0.20	5.82	74.79	UNDISTURBED STREAM
	P2-1	1,224,864	437,080	483,937	303,847	28.12	21.14	6.98	92.05	
	P3-1	286,115	56,428	154,178	75,508	6.57	4.83	1.73	91.67	
	P4-1	189,260	16,552	18,244	154,464	4.34	0.80	3.55	78.41	
	SUB-TOTAL:	45.05 ac	11.91 ac	15.07 ac	18.08 ac					
OFF-SITE DRAINAGE AREAS										
--	01-P?-1	340,180	0	136,072	204,108	7.81	3.12	4.69	83.60	SEE NOTE 2
	02-P?-1	159,787	0	159,787	0	3.67	3.67	0.00	98.00	
	03-P?-1	111,815	0	55,631	56,184	2.57	1.28	1.29	85.94	
	04-P?-1	294,668	0	217,278	77,390	6.76	4.99	1.78	91.70	
	05-P?-1	784,992	0	645,093	139,899	18.02	14.81	3.21	93.72	
	06-P?-1	20,327	0	14,422	5,905	0.47	0.33	0.14	91.03	
	07-P?-1	24,187	0	15,645	8,542	0.56	0.36	0.20	89.52	
	SUB-TOTAL:	39.85 ac	0.00 ac	28.56 ac	11.30 ac					
CENTRAL TRIBUTARY STREAM (OUTLET POINT 1)										
ON-SITE DRAINAGE AREAS										
	P5-1	337,985	109,944	128,798	99,243	7.76	5.48	2.28	90.95	
	P6-1	114,808	12,831	76,397	25,580	2.64	2.05	0.59	92.65	
	P7-1	74,298	33,339	16,294	24,665	1.71	1.14	0.57	90.03	
	P8-1	206,635	49,414	32,523	124,698	4.74	1.88	2.86	83.52	
	P9-1	481,225	24,594	142,168	314,463	11.05	3.83	7.22	82.32	
	P10-1	92,842	0	5,902	86,940	2.13	0.14	2.00	75.53	
	P11-1	488,994	99,615	103,189	286,190	11.23	4.66	6.57	83.95	
	P12-1	51,792	0	14,250	37,542	1.19	0.33	0.86	80.60	
	P13-1	83,162	0	2,536	80,626	1.91	0.06	1.85	74.73	
	SUB-TOTAL:	44.35 ac	7.57 ac	11.98 ac	24.79 ac					
OFF-SITE DRAINAGE AREAS										
	08-P?-1	47,309	0	24,629	22,680	1.09	0.57	0.52	86.49	
	09-P?-1	438,457	0	235,120	203,338	10.07	5.40	4.67	86.87	
	10-P?-1	964,757	0	473,450	491,307	22.15	10.87	11.28	85.78	
	11-P?-1	62,149	0	31,093	31,056	1.43	0.71	0.71	86.01	
	12-P?-1	53,220	0	24,938	28,282	1.22	0.57	0.65	85.25	
	13-P?-1	84,124	0	24,847	59,277	1.93	0.57	1.36	81.09	
	14-P?-1	66,372	0	32,414	33,959	1.52	0.74	0.78	85.72	
	15-P?-1	18,172	0	11,475	6,697	0.42	0.26	0.15	89.15	
	17-P?-1	2,262,270	0	1,022,006	1,240,264	51.93	23.46	28.47	84.84	
	SUB-TOTAL:	91.75 ac	0.00 ac	43.16 ac	48.60 ac					
EASTERN TRIBUTARY STREAM (OUTLET POINT 2)										
ON-SITE DRAINAGE AREAS										
	P14-1A	169,402	0	22,362	147,040	3.89	0.51	3.38	77.17	
	P14-1B	116,674	0	2,770	113,904	2.68	0.06	2.61	74.57	
	SUB-TOTAL:	6.57 ac	0.00 ac	0.58 ac	5.99 ac					
OFF-SITE DRAINAGE AREAS										
	16-P?-1	22,833	0	16,158	6,675	0.52	0.37	0.15	90.98	
	SUB-TOTAL:	0.52 ac	0.00 ac	0.37 ac	0.15 ac					
	TOTAL:	228.10 ac	19.48 ac	99.72 ac	108.90 ac					
NOTES:										

APPENDIX C: PRE-DEVELOPED: 100-YEAR, 24-HOUR STORM EVENT SSA SUMMARY

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.4.304 (Build 0)

Project Description

File Name EXISTING DRAINAGE COMBINED OUTLETS.SPF

Analysis Options

Flow Units cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... User-Defined
Link Routing Method Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-03-2023 00:00:00
Ending Date JUL-04-2023 00:00:00
Report Time Step 00:05:00

Element Count

Number of rain gages 1
Number of subbasins 20
Number of nodes 3
Number of links 1

Raingage Summary

Gage ID	Data Source	Data Type	Recording Interval	min
Rain Gage-01	TS-02	INTENSITY	6.00	

Subbasin Summary

Subbasin ID	Total Area acres	Peak Rate Factor
E-1A	48.35	484.00
E-1B	7.81	484.00
E-1C	3.67	484.00
E-1D	2.57	484.00
E-1E	6.76	484.00
E-1F	18.02	484.00
E-1G	0.56	484.00
E-1H	0.47	484.00
E-2A	41.34	484.00
E-2B	1.09	484.00
E-2C	10.07	484.00
E-2D	1.22	484.00
E-2E	1.93	484.00
E-2F	22.15	484.00
E-2G	1.43	484.00
E-2H	51.94	484.00
E-2I	0.42	484.00
E-2J	1.52	484.00

E-3A	6.08	484.00
E-3B	0.52	484.00

Node Summary

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft ²	External Inflow
JUNC.OFF.W	JUNCTION	0.00	6.00	0.00	
OUTLET1	OUTFALL	0.00	0.00	0.00	
OUTLET2	OUTFALL	0.00	0.00	0.00	

Link Summary

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-01	JUNC.OFF.W	OUTLET1	DIRECT	400.0	0.0003	0.0150

Cross Section Summary

Link Design ID Flow	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft ²	Full Flow Hydraulic Radius ft
Capacity cfs						

Link-01	DUMMY	0.00	0.00	1	0.00	0.00
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Runoff Quantity Continuity

	Volume acre-ft	Depth inches
Total Precipitation	138.443	7.289
Surface Runoff	9.583	0.505
Continuity Error (%)	-0.001	

Flow Routing Continuity

	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	95.773	31.209
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Composite Curve Number Computations Report

Subbasin E-1A

Soil/Surface Description	Area (acres)	Soil Group	CN
-	46.91	-	74.00
Composite Area & Weighted CN	46.91		74.00

Subbasin E-1B

Soil/Surface Description	Area (acres)	Soil Group	CN
-	7.81	-	83.60
Composite Area & Weighted CN	7.81		83.60

Subbasin E-1C

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.67	-	98.00
Composite Area & Weighted CN	3.67		98.00

Subbasin E-1D

Soil/Surface Description	Area (acres)	Soil Group	CN
-	2.57	-	85.94
Composite Area & Weighted CN	2.57		85.94

Subbasin E-1E

Soil/Surface Description	Area (acres)	Soil Group	CN
-	6.80	-	91.70
Composite Area & Weighted CN	6.80		91.70

Subbasin E-1F

Soil/Surface Description	Area (acres)	Soil Group	CN
-	18.02	-	93.72
Composite Area & Weighted CN	18.02		93.72

Subbasin E-1G

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.57	-	89.52
Composite Area & Weighted CN	0.57		89.52

Subbasin E-1H

Soil/Surface Description	Area (acres)	Soil Group	CN
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-	0.47	-	91.03
Composite Area & Weighted CN	0.47		91.03

Subbasin E-2A

Soil/Surface Description	Area (acres)	Soil Group	CN
-	41.04	-	74.00
Composite Area & Weighted CN	41.04		74.00

Subbasin E-2B

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.09	-	86.49
Composite Area & Weighted CN	1.09		86.49

Subbasin E-2C

Soil/Surface Description	Area (acres)	Soil Group	CN
-	10.05	-	86.87
Composite Area & Weighted CN	10.05		86.87

Subbasin E-2D

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.22	-	85.25
Composite Area & Weighted CN	1.22		85.25

Subbasin E-2E

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.93	-	81.09
Composite Area & Weighted CN	1.93		81.09

Subbasin E-2F

Soil/Surface Description	Area (acres)	Soil Group	CN
-	22.15	-	85.78
Composite Area & Weighted CN	22.15		85.78

Subbasin E-2G

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.43	-	86.01
Composite Area & Weighted CN	1.43		86.01

Subbasin E-2H

Soil/Surface Description	Area (acres)	Soil Group	CN
-	51.94	-	84.84
Composite Area & Weighted CN	51.94		84.84

Subbasin E-2I

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.42	-	89.15
Composite Area & Weighted CN	0.42		89.15

Subbasin E-2J

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.52	-	85.72
Composite Area & Weighted CN	1.52		85.72

Subbasin E-3A

Soil/Surface Description	Area (acres)	Soil Group	CN
-	6.08	-	74.00
Composite Area & Weighted CN	6.08		74.00

Subbasin E-3B

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.52	-	90.98
Composite Area & Weighted CN	0.52		90.98

Subbasin Runoff Summary

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days hh:mm:ss
E-1A	7.20	4.22	186.38	74.000	0 00:28:19
E-1B	7.20	5.29	55.29	83.600	0 00:10:11
E-1C	7.20	6.96	28.52	98.000	0 00:13:00
E-1D	7.20	5.55	16.61	85.940	0 00:16:06
E-1E	7.20	6.22	47.34	91.700	0 00:15:48
E-1F	7.20	6.45	122.62	93.720	0 00:17:52
E-1G	7.20	5.96	4.21	89.520	0 00:11:34
E-1H	7.20	6.14	3.65	91.030	0 00:10:24
E-2A	7.20	4.22	182.94	74.000	0 00:22:00
E-2B	7.20	5.61	7.85	86.490	0 00:11:21
E-2C	7.20	5.66	66.23	86.870	0 00:15:53
E-2D	7.20	5.47	8.31	85.250	0 00:13:19
E-2E	7.20	5.00	11.95	81.090	0 00:14:21
E-2F	7.20	5.53	138.21	85.780	0 00:17:29

E-2G	7.20	5.56	11.31	86.010	0	00:07:18
E-2H	7.20	5.43	317.10	84.840	0	00:17:46
E-2I	7.20	5.92	3.16	89.150	0	00:11:24
E-2J	7.20	5.53	10.28	85.720	0	00:13:58
E-3A	7.20	4.22	34.60	74.000	0	00:11:07
E-3B	7.20	6.13	3.72	90.980	0	00:14:21

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
JUNC.OFF.W	0.00	0.00	0.00	0 00:00	0	0	0:00:00
OUTLET1	0.00	0.00	0.00	0 00:00	0	0	0:00:00
OUTLET2	0.00	0.00	0.00	0 00:00	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
JUNC.OFF.W	JUNCTION	266.88	266.88	0 12:05	0.00	
OUTLET1	OUTFALL	905.42	1158.81	0 12:10	0.00	
OUTLET2	OUTFALL	38.25	38.25	0 12:05	0.00	

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
OUTLET1	97.05	48.50	1158.81
OUTLET2	88.02	1.37	38.25
System	92.54	49.87	1190.47

Link Flow Summary

Link ID	Ratio of Total Time Surcharged	Element Reported Type Condition	Time of Peak Flow Occurrence	Maximum Velocity Attained	Length Factor	Peak Flow during Analysis	Design Flow Capacity	Ratio of Maximum /Design
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Depth	minutes	days hh:mm	ft/sec	cfs	cfs	Flow
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Link-01	DIRECT	0 12:05		266.88		
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Highest Flow Instability Indexes

All links are stable.

WARNING 004 : Minimum elevation drop used for Conduit Link-01.

Analysis began on: Thu Jul 6 11:17:29 2023
Analysis ended on: Thu Jul 6 11:17:32 2023
Total elapsed time: 00:00:03

APPENDIX C: POST-DEVELOPED: 100-YEAR, 24-HOUR STORM EVENT SSA SUMMARY

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.4.304 (Build 0)

Project Description

File Name PROPOSED DRAINAGE COMBINED OUTLETS.SPF

Analysis Options

Flow Units cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... User-Defined
Link Routing Method Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-03-2023 00:00:00
Ending Date JUL-04-2023 00:00:00
Report Time Step 00:05:00

Element Count

Number of rain gages 1
Number of subbasins 32
Number of nodes 8
Number of links 6

Raingage Summary

Gage ID	Data Source	Data Type	Recording Interval	min
Rain Gage-01	TS-02	INTENSITY	6.00	

Subbasin Summary

Subbasin ID	Total Area acres	Peak Rate Factor
01-P?-1	7.81	484.00
02-P?-1	3.67	484.00
03-P?-1	2.57	484.00
04-P?-1	6.76	484.00
05-P?-1	18.02	484.00
06-P?-1	0.47	484.00
07-P?-1	0.56	484.00
08-P?-1	1.09	484.00
09-P?-1	10.07	484.00
10-P?-1	22.15	484.00
11-P?-1	1.43	484.00
12-P?-1	1.22	484.00
13-P?-1	1.93	484.00
14-P?-1	1.52	484.00
15-P?-1	0.42	484.00
16-P?-1	0.52	484.00
17-P?-1	51.94	484.00
P10-1	2.13	484.00

P1-1	6.02	484.00
P11-1	11.23	484.00
P12-1	1.19	484.00
P13-1	1.91	484.00
P14-1A	3.89	484.00
P14-1B	2.68	484.00
P2-1	28.12	484.00
P3-1	6.57	484.00
P4-1	4.34	484.00
P5-1	7.76	484.00
P6-1	2.64	484.00
P7-1	1.71	484.00
P8-1	4.74	484.00
P9-1	11.05	484.00

Node Summary

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft ²	External Inflow
JUNC.ON.C	JUNCTION	590.50	700.00	0.00	
OUTLET1	OUTFALL	0.00	5.00	0.00	
OUTLET2	OUTFALL	613.00	614.50	0.00	
BASIN1	STORAGE	625.00	632.00	0.00	
BASIN2	STORAGE	615.00	622.00	0.00	
POND1	STORAGE	624.00	631.00	0.00	
POND2	STORAGE	610.00	617.00	0.00	
POND3	STORAGE	597.00	604.00	0.00	

Link Summary

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-01	BASIN1	JUNC.ON.C	ORIFICE			
Link-02	POND1	POND2	ORIFICE			
Link-03	POND2	JUNC.ON.C	ORIFICE			
Link-04	POND3	JUNC.ON.C	ORIFICE			
Link-05	JUNC.ON.C	OUTLET1	ORIFICE			
Link-07	BASIN2	OUTLET2	ORIFICE			

	Volume acre-ft	Depth inches
***** Runoff Quantity Continuity *****		
Total Precipitation	138.571	7.289
Surface Runoff	10.658	0.561
Continuity Error (%)	-0.002	

	Volume acre-ft	Volume Mgallons
***** Flow Routing Continuity *****		
External Inflow	0.000	0.000
External Outflow	104.556	34.071
Initial Stored Volume	0.000	0.000
Final Stored Volume	1.952	0.636
Continuity Error (%)	0.000	

Composite Curve Number Computations Report

Subbasin 01-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	7.81	-	83.60
Composite Area & Weighted CN	7.81		83.60

Subbasin 02-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.67	-	98.00
Composite Area & Weighted CN	3.67		98.00

Subbasin 03-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	2.57	-	85.94
Composite Area & Weighted CN	2.57		85.94

Subbasin 04-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	6.80	-	91.70
Composite Area & Weighted CN	6.80		91.70

Subbasin 05-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	18.02	-	93.72
Composite Area & Weighted CN	18.02		93.72

Subbasin 06-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.47	-	91.03
Composite Area & Weighted CN	0.47		91.03

Subbasin 07-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.57	-	89.52
Composite Area & Weighted CN	0.57		89.52

Subbasin 08-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.09	-	86.49
Composite Area & Weighted CN	1.09		86.49

Subbasin 09-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	10.05	-	86.87
Composite Area & Weighted CN	10.05		86.87

Subbasin 10-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	22.15	-	85.78
Composite Area & Weighted CN	22.15		85.78

Subbasin 11-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.43	-	86.01
Composite Area & Weighted CN	1.43		86.01

Subbasin 12-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.22	-	85.25
Composite Area & Weighted CN	1.22		85.25

Subbasin 13-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.93	-	81.09
Composite Area & Weighted CN	1.93		81.09

Subbasin 14-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.52	-	85.72
Composite Area & Weighted CN	1.52		85.72

Subbasin 15-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
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-	0.42	-	89.15
Composite Area & Weighted CN	0.42		89.15

Subbasin 16-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	0.52	-	90.98
Composite Area & Weighted CN	0.52		90.98

Subbasin 17-P?-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	51.94	-	84.84
Composite Area & Weighted CN	51.94		84.84

Subbasin P10-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	2.13	-	75.53
Composite Area & Weighted CN	2.13		75.53

Subbasin P1-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	6.02	-	74.79
Composite Area & Weighted CN	6.02		74.79

Subbasin P11-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	11.23	-	83.95
Composite Area & Weighted CN	11.23		83.95

Subbasin P12-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.19	-	80.60
Composite Area & Weighted CN	1.19		80.60

Subbasin P13-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	1.91	-	74.73
Composite Area & Weighted CN	1.91		74.73

Subbasin P14-1A

Soil/Surface Description	Area (acres)	Soil Group	CN
-	3.89	-	77.17
Composite Area & Weighted CN	3.89		77.17

Subbasin P14-1B

Soil/Surface Description	Area (acres)	Soil Group	CN
-	2.68	-	74.57
Composite Area & Weighted CN	2.68		74.57

Subbasin P2-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	28.12	-	92.05
Composite Area & Weighted CN	28.12		92.05

Subbasin P3-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	6.57	-	91.67
Composite Area & Weighted CN	6.57		91.67

Subbasin P4-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.34	-	78.41
Composite Area & Weighted CN	4.34		78.41

Subbasin P5-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	7.76	-	90.95
Composite Area & Weighted CN	7.76		90.95

Subbasin P6-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	2.64	-	92.65
Composite Area & Weighted CN	2.64		92.65

Subbasin P7-1

Soil/Surface Description	Area (acres)	Soil Group	CN
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-	1.71	-	90.03
Composite Area & Weighted CN	1.71		90.03

Subbasin P8-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.74	-	83.52
Composite Area & Weighted CN	4.74		83.52

Subbasin P9-1

Soil/Surface Description	Area (acres)	Soil Group	CN
-	11.05	-	82.32
Composite Area & Weighted CN	11.05		82.32

Subbasin Runoff Summary

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	hh:mm:ss
01-P?-1	7.20	5.29	55.29	83.600	0	00:10:11
02-P?-1	7.20	6.96	28.52	98.000	0	00:13:00
03-P?-1	7.20	5.55	16.61	85.940	0	00:16:06
04-P?-1	7.20	6.22	47.34	91.700	0	00:15:48
05-P?-1	7.20	6.45	122.62	93.720	0	00:17:52
06-P?-1	7.20	6.14	3.65	91.030	0	00:10:24
07-P?-1	7.20	5.96	4.21	89.520	0	00:11:34
08-P?-1	7.20	5.61	7.85	86.490	0	00:11:21
09-P?-1	7.20	5.66	66.23	86.870	0	00:15:53
10-P?-1	7.20	5.53	138.21	85.780	0	00:17:29
11-P?-1	7.20	5.56	11.31	86.010	0	00:07:18
12-P?-1	7.20	5.47	8.31	85.250	0	00:13:19
13-P?-1	7.20	5.00	11.95	81.090	0	00:14:21
14-P?-1	7.20	5.53	10.28	85.720	0	00:13:58
15-P?-1	7.20	5.92	3.16	89.150	0	00:11:24
16-P?-1	7.20	6.13	3.72	90.980	0	00:14:21
17-P?-1	7.20	5.43	317.10	84.840	0	00:17:46
P10-1	7.20	4.38	11.54	75.530	0	00:15:00
P1-1	7.20	4.30	23.70	74.790	0	00:28:19
P11-1	7.20	5.32	72.01	83.950	0	00:15:00
P12-1	7.20	4.95	7.18	80.600	0	00:15:00
P13-1	7.20	4.30	10.14	74.730	0	00:15:00
P14-1A	7.20	4.57	23.82	77.170	0	00:11:07
P14-1B	7.20	4.28	15.47	74.570	0	00:11:07
P2-1	7.20	6.26	201.29	92.050	0	00:15:00
P3-1	7.20	6.21	46.81	91.670	0	00:15:00
P4-1	7.20	4.70	25.07	78.410	0	00:15:00
P5-1	7.20	6.13	54.92	90.950	0	00:15:00
P6-1	7.20	6.33	19.03	92.650	0	00:15:00
P7-1	7.20	6.02	11.95	90.030	0	00:15:00
P8-1	7.20	5.28	30.21	83.520	0	00:15:00
P9-1	7.20	5.14	68.94	82.320	0	00:15:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm		Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
JUNC.ON.C	0.77	4.47	594.97	0	12:19	0	0	0:00:00
OUTLET1	0.00	0.00	0.00	0	00:00	0	0	0:00:00
OUTLET2	0.00	0.00	613.00	0	00:00	0	0	0:00:00
BASIN1	0.74	5.80	630.80	0	12:25	0	0	0:00:00
BASIN2	0.30	5.67	620.67	0	12:11	0	0	0:00:00
POND1	1.36	2.82	626.82	0	16:01	0	0	0:00:00
POND2	0.70	6.02	616.02	0	12:18	0	0	0:00:00
POND3	0.48	1.99	598.99	0	12:30	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm		Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
JUNC.ON.C	JUNCTION	0.00	129.49	0	12:19	0.00	
OUTLET1	OUTFALL	997.21	1109.43	0	12:10	0.00	
OUTLET2	OUTFALL	15.46	32.89	0	12:05	0.00	
BASIN1	STORAGE	53.56	53.56	0	12:05	0.00	
BASIN2	STORAGE	27.46	27.46	0	12:05	0.00	
POND1	STORAGE	24.03	24.03	0	12:05	0.00	
POND2	STORAGE	196.36	196.81	0	12:05	0.00	
POND3	STORAGE	96.86	96.86	0	12:05	0.00	

Storage Node Summary

Storage Node ID	Maximum Time of Max.	Maximum Total Ponded Volume 1000 ft ³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm		Average Ponded Volume 1000 ft ³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs
BASIN1	0.00	60.312	76	0	12:25	6.247	8	13.76
BASIN2	0.00	7.913	65	0	12:11	0.198	2	19.32
POND1	0.00	50.272	32	0	16:01	24.031	15	0.70
POND2	0.00	170.699	84	0	12:18	18.105	9	97.99
POND3	0.00	149.304	25	0	12:30	35.018	6	19.14

 Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
OUTLET1	97.05	52.91	1109.43
OUTLET2	87.09	1.56	32.89
System	92.07	54.46	1141.22

 Link Flow Summary

Link ID	Ratio of	Total	Element	Time of	Maximum	Length	Peak Flow	Design	Ratio of
	Flow	Time	Reported	Peak Flow	Velocity	Factor	during	Flow	Maximum
	Surcharged		Type	Occurrence	Attained		Analysis	Capacity	/Design
Depth	minutes		Condition	days hh:mm	ft/sec		cfs	cfs	Flow
Link-01			ORIFICE	0 12:25			13.76		
1.00									
Link-02			ORIFICE	0 16:01			0.70		
1.00									
Link-03			ORIFICE	0 12:18			97.99		
1.00									
Link-04			ORIFICE	0 12:30			19.14		
0.79									
Link-05			ORIFICE	0 12:20			129.51		
0.89									
Link-07			ORIFICE	0 12:12			19.32		
1.00									

 Highest Flow Instability Indexes

 All links are stable.

WARNING 107 : Initial water surface elevation defined for Junction JUNC.ON.C is below junction invert elevation.

Assumed initial water surface elevation equal to invert elevation.

WARNING 108 : Surge elevation defined for Junction JUNC.ON.C is below junction maximum elevation. Assumed surge elevation equal to maximum elevation.

WARNING 110 : Initial water surface elevation defined for Storage Node BASIN2 is below storage node invert elevation.

Assumed initial water surface elevation equal to invert elevation.
WARNING 118 : Orifice crest elevation defined for Orifice Link-05 is below upstream node invert elevation.
Assumed orifice crest elevation equal to upstream node invert elevation.

Analysis began on: Thu Jul 6 11:29:08 2023
Analysis ended on: Thu Jul 6 11:29:11 2023
Total elapsed time: 00:00:03

APPENDIX D: SOURCE DATA

LIST OF SOURCE DATA

1. NATURAL RESOURCES CONSERVATION SERVICE SOIL RESOURCE REPORT
2. UNITED STATES ARMY CORPS OF ENGINEERS SCS TR-55 RUNOFF CURVE NUMBERS



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for St. Louis County and St. Louis City, Missouri



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

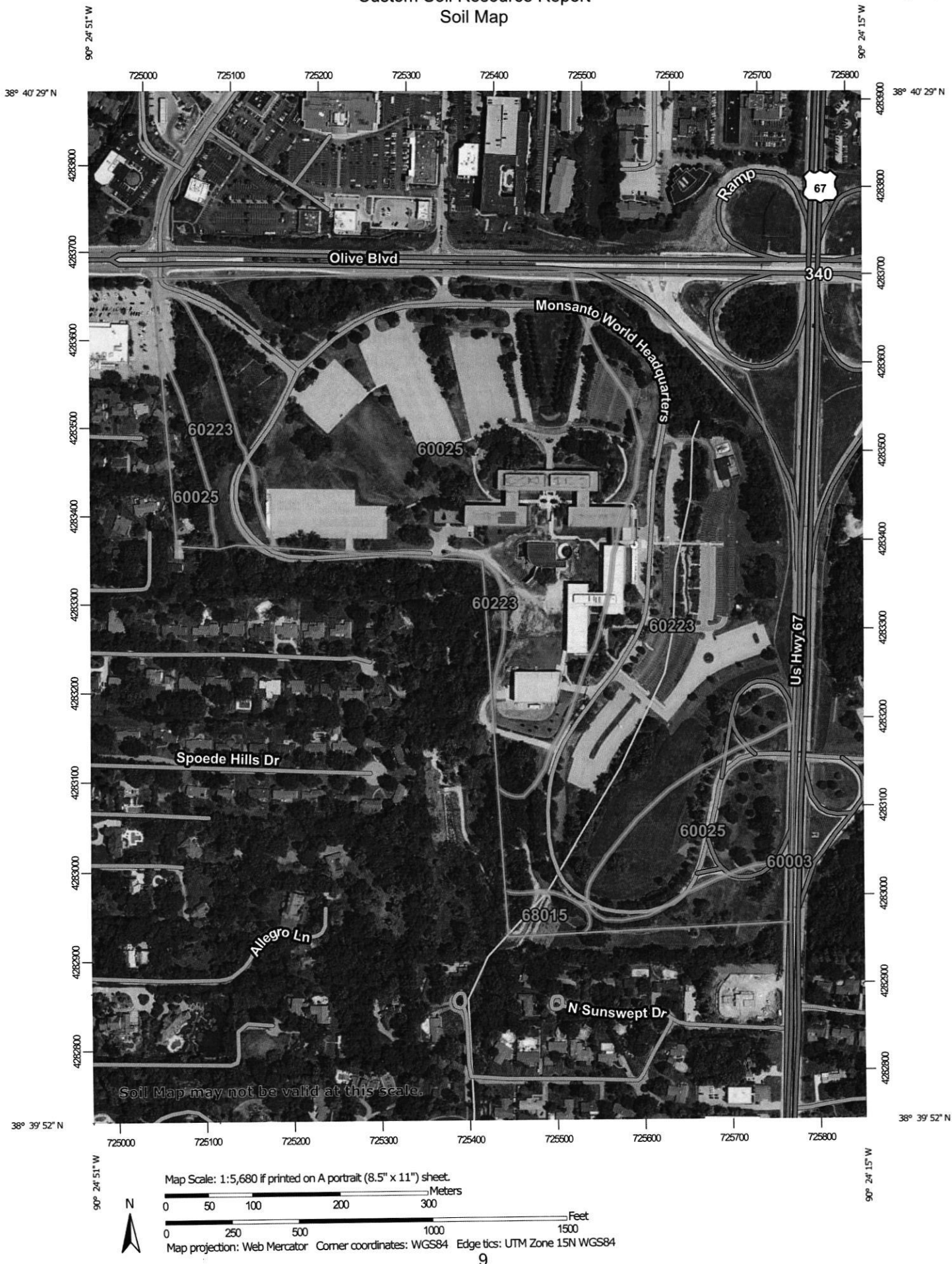
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Louis County and St. Louis City, Missouri

Survey Area Data: Version 23, Sep 7, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 22, 2022—Aug 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60003	Menfro silt loam, 9 to 14 percent slopes, eroded	0.0	0.0%
60025	Urban land-Harvester complex, 2 to 9 percent slopes	49.5	57.0%
60223	Urban land-Harvester complex, 9 to 20 percent slopes	36.3	41.8%
68015	Fishpot-Urban land-Freeburg complex, 0 to 3 percent slopes	1.0	1.2%
Totals for Area of Interest		86.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

St. Louis County and St. Louis City, Missouri

60003—Menfro silt loam, 9 to 14 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2qp0b
Elevation: 400 to 900 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Menfro and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Menfro

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess

Typical profile

Ap - 0 to 4 inches: silt loam
BE - 4 to 9 inches: silt loam
Bt1 - 9 to 35 inches: silty clay loam
Bt2 - 35 to 60 inches: silt loam

Properties and qualities

Slope: 9 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F115XB003MO - Deep Loess Protected Backslope Forest,
F115XB043MO - Deep Loess Exposed Backslope Woodland
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Winfield

Percent of map unit: 10 percent
Landform: Hillslopes, ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F115XB003MO - Deep Loess Protected Backslope Forest,
F115XB043MO - Deep Loess Exposed Backslope Woodland
Hydric soil rating: No

60025—Urban land-Harvester complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2qp0t
Elevation: 310 to 1,020 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Harvester and similar soils: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Harvester

Setting

Landform: Hillslopes, interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loess

Typical profile

C1 - 0 to 7 inches: silt loam
C2 - 7 to 31 inches: silty clay loam
C3 - 31 to 80 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 30 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F115XB061MO - Anthropic Deep Loess Upland
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Winfield

Percent of map unit: 5 percent
Landform: Hillslopes, ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F115XB003MO - Deep Loess Protected Backslope Forest,
F115XB043MO - Deep Loess Exposed Backslope Woodland
Hydric soil rating: No

60223—Urban land-Harvester complex, 9 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2qp6z
Elevation: 390 to 820 feet
Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 180 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent
Harvester and similar soils: 30 percent
Minor components: 10 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Harvester

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess

Typical profile

C1 - 0 to 7 inches: silt loam

C2 - 7 to 31 inches: silty clay loam

C3 - 31 to 80 inches: clay loam

Properties and qualities

Slope: 9 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: About 30 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F115XB061MO - Anthropic Deep Loess Upland

Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil rating: No

Minor Components

Winfield

Percent of map unit: 10 percent

Landform: Hillslopes, ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F115XB001MO - Deep Loess Upland Woodland

Hydric soil rating: No

68015—Fishpot-Urban land-Freeburg complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2zhxx
Elevation: 360 to 660 feet
Mean annual precipitation: 37 to 47 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 184 to 228 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Fishpot and similar soils: 45 percent
Urban land: 25 percent
Freeburg and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fishpot

Setting

Landform: Stream terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Human-transported material over alluvium

Typical profile

^Au - 0 to 12 inches: silt loam
^Cu - 12 to 26 inches: silty clay loam
2Aub - 26 to 40 inches: silt loam
2Cg - 40 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 20 to 53 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F115XB060MO - Anthropic Wet Terrace

Hydric soil rating: No

Description of Urban Land

Setting

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Freeburg

Setting

Landform: Drainageways

Landform position (three-dimensional): Head slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Alluvium

Typical profile

Ap - 0 to 8 inches: silt loam

E - 8 to 18 inches: silt loam

Bt - 18 to 37 inches: silty clay loam

Btg - 37 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: About 12 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F115XB025MO - Wet Terrace Forest

Hydric soil rating: No

Minor Components

Winfield

Percent of map unit: 10 percent

Landform: Hillslopes

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F115XB001MO - Deep Loess Upland Woodland

Custom Soil Resource Report

Hydric soil rating: No

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Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area ^{2/}	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) ^{5/}		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹ Average runoff condition, and $I_a = 0.2S$.² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



Jason Jaggi <jjaggi@crevecoeurmo.gov>

Re: Olia Village - Revised Plans?

1 message

Jason Jaggi <jjaggi@crevecoeurmo.gov>

Thu, Sep 28, 2023 at 2:09 PM

To: Monica Moore-Zigo <Monica_Moore-Zigo@gensler.com>

Cc: "blmoore@crevecoeurmo.gov" <blmoore@crevecoeurmo.gov>, "hsilverman@crevecoeurmo.gov" <hsilverman@crevecoeurmo.gov>, "Dsinger@stlwarehouse.com" <Dsinger@stlwarehouse.com>, "rachelprotzel@gmail.com" <rachelprotzel@gmail.com>, "faye.mccary@sbcglobal.net" <faye.mccary@sbcglobal.net>, "yilingmi@hotmail.com" <yilingmi@hotmail.com>, Mark Manlin <mmanlin@crevecoeurmo.gov>, Marty Smith <smarty26@att.net>

Good Afternoon,

I thought it would be appropriate to provide a response to your bullet list of questions below (in bold text) with additional information on these topics and to help you find the updates on the revised plans which are posted on the City's website. I will also include your comments in the packet for Monday's P&Z meeting.

A few other items that I want to pass along:

- Residents can sign up to receive e-mailed notices for P&Z and City Council agendas after they are posted. The link for this service can be found here: [E-News and Notices](#) If you choose not to subscribe, meeting agendas and minutes can always be found here: [Agendas and Minutes](#)
- The Project Planning Page is the best source to find updated information regarding this proposal: [Current Planning Projects](#)

I hope this information is helpful.

Thank you,
--Jason

On Wed, Sep 27, 2023 at 6:57 PM Monica Moore-Zigo <Monica_Moore-Zigo@gensler.com> wrote:

Hi, Jason-

Thank you for your previous follow up responses on Monday, and for your continued efforts to advocate for a destination-quality, amenity-rich, pedestrian friendly development on the Bayer West site. The City has put a lot of work into developing its Comprehensive Plan and we know that this site has been identified by many as a key support piece for the future development of 39 North, Creve Coeur, and the greater region.

Our neighborhood group is 100% in favor of a well-planned mixed use development on this site. We believe that a Planned Mixed-Use District (PMD) to support this objective can be an appropriate way to reach this objective; however, the rules embedded in such a special zoning district must be carefully considered to not only meet the needs of the property owner today, but also align with the City's long-term vision and serve as a benefit to the surrounding neighborhoods.

Our neighborhood group was able to meet with the development team on site yesterday. We walked through the concerns the neighbors have previously raised with the current plans, and the development team used the opportunity to clarify their proposal:

- RETAINING WALLS:** The development team told us they have adjusted the grades to lower the retaining wall height where it backs up to Mission Hills, Ramblewood, and Spode Woods

(with the highest walls now ~14', in lieu of the ~20' walls originally proposed). However, there were substantial discrepancies in the site sections we were presented, and we have concerns that the development team is not working from accurate information about existing conditions. We understand that the proposed changes to the wall design have been made on the latest grading plan and this information will be included with the updated package posted today. We will review the updates and advise the City of any discrepancies. No updates were presented to the proposed 20' tall retaining wall to the east of Spoede Hills. We would like to note that even the "improved" retaining wall proposal still far exceeds the City's maximum height of 6', and that the proposed walls are still each designed as one single wall that far exceeds the City's design standard of a 4' height limit before a stepped wall design is required. **The City's Subdivision Regulations, under long term erosion control (Section 410.270.C.1), state that retaining walls shall not normally exceed a height of 6-feet. Below is the full text:**

All excavations, grading or filling shall have a finished grade not to exceed thirty-three percent (33%) except that embankments less than three (3) feet in height shall be exempt therefrom if properly sodded. Steeper grades are allowed if the excavation is through rock or the excavation or fill is protected by a properly designed revetment or retaining wall approved by the Zoning Administrator. Such walls shall not normally exceed a height of six (6) feet.

Based on the way it is written, Staff does not interpret this provision to represent an absolute maximum height limitation. As you mention, the city's Design Guidelines also provide recommendations for the design of retaining walls to minimize the height and length of retaining walls and to screen with appropriate landscaping. It goes on to talk about terracing of walls that are above 4-feet, with specific recommendations for walls facing a street. These design guidelines serve the purpose of *guiding* site planning and building design but they do not serve the same function as a code required standard that must be met. The introduction section of the Design Guidelines speaks to this distinction by acknowledging that site features or other conditions may require variation. As presented in the revised plans (Sheet C-101) the developer has lowered the wall with a maximum height now at approximately 14-feet with some segments of the wall facing internal to the site and some facing outward. A planting plan has been provided which shows a continuous buffer of mostly evergreens along the entire border of Lots 1, 10, and 17 when adjacent to existing single family to screen the wall and provide an additional layer of buffering (Site Development Plan Submittal Sheets L-141 and L-144). The cut sheet for the retaininzoning district process and the explanation above, retaining walls taller than 6-feet can be approved but I expect this component, and really the buffering proposal in general, to be a significant part of the discussion Monday night.

- **STORMWATER:** CMT Engineering showed us a stormwater study they have submitted to the Army Corps of Engineers, showing the present-day course of Dielmann Creek. We were not provided a copy. Is this study available to the public? We could not find it posted on the city's web site as part of the application package. Our concern here too is that the design team may not be working from accurate information. The study appeared to show that the entire upper course of present-day Dielmann Creek (north of Spoede Woods) occurs within an existing stormwater pipe; however, this does not correlate with the drainage patterns the residents have observed on our properties over the past 15+ years. There is a 3'-5' deep surface drainage channel in the woods north of Spoede Woods (about 40' north of the property line) which appears to have been the real course of Dielmann Creek ever since Monsanto constructed a parking lot over the original stream course 40+ years ago. This on the ground reality does not appear to be reflected in the current engineering documents, and the City's required stream buffers on either side of this drainage channel are not being provided in the proposed design. We understand that the engineering team is working on a stormwater impact plan showing upstream catchment areas. We recommend that the City take the opportunity to review this document with its own engineering consultant before approving the current development plan, but if this is not possible then the neighborhoods would like the opportunity to consult our own professional on this matter for a peer review of drainage issues. **We will place the Corps of Engineers study and the MSD conceptual review comments that the developer provided to us with the latest submittal on the Project Planning website. This should be posted later this afternoon. Please refer to the developer's response letter on the website with additional details on the status of the federal review. I would also point**

out that state and federal permitting requirements control this aspect of the development as they have the primary jurisdictional authority. In the City's Stream Buffer Regulations, there is an exemption to the requirements of that ordinance for projects that fall under Corps of Engineers and State DNR permitting requirements. The full code section is below (Section 430.040.C.7) for reference.

C. Exemptions

7. Any activities approved under a 404 permit issued by the Corps of Engineers and 401 water quality certification issued by the Missouri Department of Natural Resources.

The stormwater plan requires MSD approval based on the final design prior to the City issuing a site improvement permit. MSD's comments, based on their review at the conceptual review stage, have been provided by the developer which gives you a sense of all of the requirements that will need to be provided to MSD with the final design of the stormwater plans.

- **TREE PRESERVATION:** We did not hear of any updates yesterday to the proposed tree preservation plan. The neighbors would like to note that the tree preservation plan presented at the second zoning hearing does not meet the City's land development standard of 50% preservation of tree masses AND 50% preservation of individually surveyed trees. **Staff would also like to have a better understanding of the methodology of how they performed their calculations based on the requirements of the ordinance. Staff will suggest that a condition of approval be included to provide more details for the tree conservation plan to show their calculations prior to final consideration and vote by the City Council.**

We also discussed possible ways that the office building, parking lots and/or parking garage siting could potentially be adjusted to both maintain the desired leasable office area and parking counts, maintain the existing 100' green buffer with Spoede Woods, Ramblewood, and Mission Hills, and to provide a better opportunity to address stormwater concerns. However, we understand that there is no opportunity to make substantial changes to the current plans before the final vote before Planning and Zoning this coming Monday, October 2.

Residents were also disappointed to learn that there will be no opportunity for City decisionmakers to view the impact of the development proposal from our side of the property line, despite repeated offers to the City to open up our properties to a public meeting, if needed, for this purpose. The City has now arranged three on-site tours for the development team to make their case, while Creve Coeur taxpayers have not been afforded the same opportunity when they requested it.

Thank you for letting us know about the materials posted on the city website today. We will review the updates that have been submitted and provide and further input we may have at Monday's Planning and Zoning hearing.

Best Regards,

Monica

Monica Moore-Zigo

+1 713.844.0154 Direct

+1 713.844.0000 Main

+1 314.753.3007 Mobile

Gensler

2 Houston Center
909 Fannin Street
Suite 200
Houston, Texas 77010
USA

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From: Jason Jaggi <jjaggi@crevecoeurmo.gov>
Sent: Wednesday, September 27, 2023 3:10 PM
To: Monica Moore-Zigo <Monica_Moore-Zigo@gensler.com>; Dsinger@stlwarehouse.com; rachelprotzel@gmail.com; faye.mccary@sbcglobal.net; yilingmi@hotmail.com
Cc: blmoore@crevecoeurmo.gov; hsilverman@crevecoeurmo.gov
Subject: Re: Olia Village - Revised Plans?

Good afternoon,

I'm reaching out to let you know that the applicant's revised plans and supplemental documents have been received and we have placed them on the City's website here: [Current Planning Projects](#).

These revisions and the staff report will be presented to the Planning and Zoning Commission on Monday, October 2nd at 6:00pm. The public hearing was continued from the last meeting should you wish to address the Commission with any additional comments. The October 2nd agenda packet, when complete, will be available on the Agendas and Minutes page of the City's website here: [Agendas and Minutes](#).

Thank you,

--Jason

On Fri, Sep 22, 2023 at 3:53 PM Monica Moore-Zigo <Monica_Moore-Zigo@gensler.com> wrote:

Dear Jason-

Thank you for your continued efforts in coordinating the zoning review process for the proposed Olia Village development.

On behalf of the surrounding neighborhoods, I have a few follow up questions from last Monday's zoning hearing:

1. Can you give us a better idea of the timeline and process for MSD review of the development proposal?
2. As part of Creve Coeur's 2023 Watershed Management Planning process, is there an opportunity for the City to ask its civil engineering consultant to conduct a peer review of the proposed development to ensure it aligns with stormwater planning best practices and with the City's Watershed Management Plan?
3. Has there been any movement on arranging a Planning Commission tour of or access to adjoining residential properties? As stated at the hearing, there are several Spoede Woods residents who are more than happy to accommodate Commissioner Potashnick's request for the Commission to view the potential impact of the development in person. We have not heard anything back from the City on this as of yet.

The neighborhood group has been working with the development team to find a time next week for them to present any further plan updates they may have with us.

Thank you,

Monica

Monica Moore-Zigo

+1 713.844.0154 Direct

+1 713.844.0000 Main

+1 314.753.3007 Mobile

Gensler

2 Houston Center

909 Fannin Street

Suite 200

Houston, Texas 77010

USA



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Jason W. Jaggi, AICP

Director of Community Development

City of Creve Coeur, Missouri

300 North New Ballas Rd

Creve Coeur, MO 63141

314-872-2504

www.crevecoeurmo.gov

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--
Jason W. Jaggi, AICP
Director of Community Development
City of Creve Coeur, Missouri
300 North New Ballas Rd
Creve Coeur, MO 63141
314-872-2504

www.crevecoeurmo.gov



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Jason Jaggi <jjaggi@crevecoeurmo.gov>

Fwd: Pictures of Trees behind Spoede Woods

1 message

Rachel Protzel <rachelprotzel@gmail.com>

Tue, Sep 19, 2023 at 3:07 PM

To: Jason Jaggi <jjaggi@crevecoeurmo.gov>, bmoore@crevecoeurmo.gov

Dear Ms. Moore and Mr. Jaggi,

Last night, several of the commission members mentioned wanting to see the trees that are in question directly behind the Spoede Woods homes. I am hoping that they will still come for a site visit as discussed, but I am also attaching some pictures of the trees as some of these vantage points cannot be seen from our yards and can only be viewed from the current nature trail. I'm also including pictures of the trees taken from our yard in the winter time when the trees are all bare as this view also cannot be observed at this time. I think it is important that these pictures be shared with the commission members so they can get a better understanding of our perspective prior to making any decisions. Below is an explanation of what is shown in each picture. Please forward to the Planning and Zoning Commission members for their review.

2386- a current view along the nature trail directly behind homes 11 and 12 Spoede Woods

2388 - the very tall, mature trees closest to new development all of which I believe would be removed under the current plans

2389- view from the break in the current trees looking from the trail towards the existing office building. Please note how close the building is already. The large 8 story parking garage would be directly to the left of this building, making it closer to my home, and then there would also be two small office buildings in front of these structures, even closer still to my home (presumably where the trees are now).

2392- the nature trail looking in the opposite direction. Can see the existing office building off to the left, through the trees.

2397- view from the existing service road on the former Bayer property looking back through the trees to my house. Please notice there is already a direct view and it will be even further exacerbated once they remove the trees there. It will take many decades for newly planted evergreens to reach the heights of these existing trees, and with an 8 story garage on top of a 15-20 foot retaining wall, that view will likely never be blocked.

2439- View from our second floor window. For scale, the evergreen trees planted in the corner of my yard are about 25 feet tall, and the trees on the former Bayer property behind them are about three times taller than that. If many of those trees behind are removed, we will be left with almost no screening for many years to come. Also please note towards the right side of the picture, you can see the truck that is parked on the service road on the former Bayer property. I believe in the presentation, they said that road was about 120 feet away from our property line and they are planning to build the retaining wall and office buildings substantially closer than that.

6034 and 8524- views from our backyard patio taken last winter and the winter prior (with and without snow). Please note just how much of the former Bayer property is visible once the leaves have fallen.

Thank you for taking these pictures under consideration and please let me know if you have any questions.

Thanks,
Rachel Protzel
12 Spoede Woods
314-503-4141

8 attachments



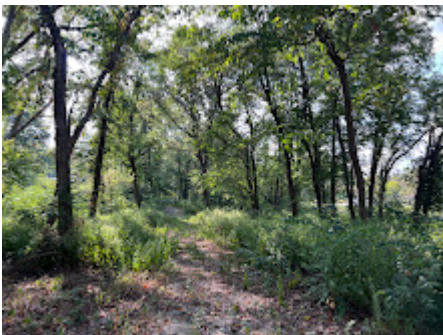
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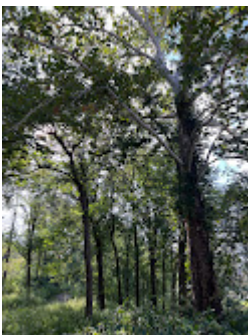
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Jason Jaggi <jjaggi@crevecoeurmo.gov>

Comments on #23-027, #23-028 aka Olia Village

1 message

Daniel Teasley <daniel.teasley@gmail.com>

Mon, Sep 18, 2023 at 5:24 PM

To: jjaggi@crevecoeurmo.gov

Cc: Carolyn Teasley <carolynteasley@gmail.com>

Hi Jason,

I wanted to offer some comments in writing to the Planning and Zoning Commission since I will be unable to attend tonight's meeting. These reflect the views of my wife and me, residents of a property on Mission Hills Ct that would be impacted by the development.

We welcome new economic development and are encouraged at the growth the proposal could generate. However, we have two major concerns that we do not see as addressed fully from the proposal documents and the first Commission meeting a few weeks ago. Hopefully the Commission can take them into account when considering the applications.

First, we would like to see impacts to the Ladue School District assessed. It does not appear the developers have done any work on this topic. I would expect a demographic study that tabulates the projected number of school-age children who would reside in the development as an essential start. And from that, I would like to see an action plan from the developers working with the Ladue School District to understand how the District will accommodate new students. The Ladue School District provides tremendous value to our community, and a surge in enrollment that is not sufficiently planned could have a detrimental impact to our childrens' education. The District asked for and was granted a substantial bond issuance to modernize our schools and this capital expansion work is just now being completed. It is unclear to me, however, that our schools can handle the enrollment that could be generated by this development and the development at I-170 and Olive in Olivette already under construction even with our new school facilities.

Second, we would like to see the issue of tree removal and sound/sight/noise barriers on the western edge of the development (against which we reside) better addressed. The developer is proposing removing a tremendous number of old growth trees in the area. They should consider adjusting the plan to remove fewer trees in the first place, and be sure they are planting sufficient trees in the areas where they must be cleared (more than are currently planned, in my opinion). I know the last meeting had some discussion on this topic, but I wanted to reiterate that a situation where currently undisturbed forest is razed isn't to be taken lightly. The development seems to have some additional geography in the east and south of its plans with fewer trees already that may allow for a shift of the overall construction further away from those residences on the west edge to retain some of the natural barrier and existing forest. New trees alone will not provide a sufficient screen during construction or for decades afterwards to retain the privacy or environmental benefits these neighborhoods currently enjoy.

I look forward to reviewing the hearing and hope our comments will enter the record to be considered by the Commission.

Sincerely,
Daniel and Carolyn Teasley
855 Mission Hills Ct
Creve Coeur, MO 63141