Updated 3:40pm: Traffic Study Version Correction

CITY OF BLOOMINGTON

PLAN COMMISSION

October 7, 2024, 2024 5:30 p.m.
Council Chambers, Room #115
Hybrid Zoom Link:

https://bloomington.zoom.us/j/82362340978?pwd=ZnExeVNaSUNGVGdZQTJHNjBBb3M0UT09

Meeting ID: 823 6234 0978 Passcode: 622209

CITY OF BLOOMINGTON
PLAN COMMISSION (Hybrid Meeting)
❖City Council Chambers, 401 N Morton Street Bloomington – Room #115
October 7, 2024 at 5:30 p.m.

❖Virtual Link:

https://bloomington.zoom.us/j/82362340978?pwd=ZnExeVNaSUNGVGdZQTJHNjBBb3M0UT09

Meeting ID: 823 6234 0978 Passcode: 622209

Petition Map: https://arcg.is/10Tbnr0

ROLL CALL

MINUTES TO BE APPROVED: August 12, 2024 and September 9, 2024

REPORTS, RESOLUTIONS AND COMMUNICATIONS:

PETITIONS TABLED:

SP-24-22 **Cutters Kirkwood 123 LLC**
115 E Kirkwood Ave
Parcel: 53-05-33-310-062.000-005
Request: Major site plan approval to construct a 4-story building with 3 floors of residential units over a ground floor parking garage and retail space in the MD-CS zoning district. The upper floors will consist of 15 dwelling units for a total of 38 beds.
Case Manager: Jackie Scanlan

ZO-34-23 **City of Bloomington Planning and Transportation**
Text Amendment
Request: Text amendment related to Sign Standards and request for waiver of second hearing. *Case Manager: Jackie Scanlan*

PETITIONS:

DP-27-24/PLAT2024-07-0034 **Bill Evans (Second Hearing)**
1030 W. Acuff Road
Parcel: 53-05-17-300-016.000-005
Request: Primary plat approval for a 122 lot subdivision of 48.83 acres in the Residential Medium Lot (R2) zoning district.
Case Manager: Eric Greulich

***Next Meeting November 4, 2024* **Last Updated: 10/4/2024**

Auxiliary aids for people with disabilities are available upon request with adequate notice. Please call 812-349-3429 or e-mail human.rights@bloomington.in.gov.

The City is committed to providing equal access to information. However, despite our efforts, at times, portions of our board and commission packets are not accessible for some individuals. If you encounter difficulties accessing material in this packet, please contact the **Melissa Hirtzel** at **hirtzelm@bloomington.in.gov** and provide your name, contact information, and a link to or description of the document or web page you are having problems with.

ZO-30-24 — **City of Bloomington – Back from Council**
Request: Zoning Amendments throughout Title 20, Unified Development Ordinance (UDO), related to the grading permit and new site development permit; UDO Chapter 4, Development Standards & Incentives: Amendments related to steep slopes.
Case Manager: Jackie Scanlan

MP-38-24 — **City of Bloomington**
Request: Amendment to the City of Bloomington Transportation Plan in order to incorporate the Safe Streets and Roads for All (SS4A) Safety Action Plan.
Plan. *Case Manager: Ryan Robling*

SP-41-24 — **Clearpath Services**
Request: Major site plan review for one 5-story mixed-use building in the courthouse square overlay in the Mixed-Use Downtown (MD-CS) zoning district. The project will utilize Affordable Housing and Sustainable Development Incentives.
Case Manager: Jackie Scanlan

Next Meeting November 4, 2024 **Last Updated: 10/4/2024**

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BLOOMINGTON PLAN COMMISSION **CASE #: DP-27-24 / PLAT2024-07-0034**
STAFF REPORT – Second Hearing **DATE: October 7, 2024**
Location: 1030 W. Acuff Road

PETITIONER: Beacon Builders, LLC
PO Box 78483, Indianapolis, IN

CONSULTANTS: Bynum Fanyo & Associates, Inc.
528 N. Walnut Street, Bloomington, IN

REQUEST: The petitioner is requesting primary plat approval for a 122-lot subdivision of 48.83 acres in the Residential Medium Lot (R2) zoning district. The petitioner is also requesting a waiver from the required 67% of lots to be accessed by an alley and to allow streets with block length exceeding 800'.

BACKGROUND:

Area:	48.83 acre
Current Zoning:	Residential Medium Lot (R2)
Comp Plan Designation:	Neighborhood Residential
Existing Land Use:	Undeveloped/Agriculture
Proposed Land Use:	Dwelling, Single Family (detached)
Surrounding Uses:	North – Single family residence
	West – Interstate 69/Monroe County Jurisdiction
	East – Single family residences
	South – Office/Single family residences

CHANGES SINCE FIRST HEARING: At the first hearing the Plan Commission and members of the public expressed concern and comments regarding the submission of the Traffic Study that was done while school was not in session for either MCCSC or Indiana University, the number of proposed street connections with this project and adjacent roads, the amount of green space provided and tree preservation, provision of interior amenities and park space, and implications of requiring an alley along the north side of the property. Since the first hearing the Department has had an opportunity to inspect the areas of tree preservation to ensure the presence of trees and a revised traffic study has been submitted with current traffic counts. The petitioner has also included renderings of the proposed interior park area, included street trees along the north side of Acuff Road, incorporated the required changes to the primary plat showing centerlines and cross sections, The overall site plan and lot configuration has not changed.

REPORT: The property is located on the north side of W. Acuff Road and is zoned Residential Medium Lot (R2). Surrounding land uses include agriculture/single family residence to the north, single family residences to the east and west, and office (CFC) and single family residences to the sout. The site contains scattered areas of closed tree canopy coverage, as well as several sinkholes in the southwest corner of the site. There is a Duke Transmission line that runs north/south through the western portion of the property. The property currently is undeveloped and has historically been used for agricultural uses.

The petitioner is proposing to subdivide the property to create 122 single family detached residences and 9 common area lots. The proposed subdivision would be accessed with two public street connections to Acuff Road to the south and one public street connection to Kinser Pike to

the east. The Transportation Plan shows an extension of Prow Road through this site and has been shown on the proposed site plan. The extension of Prow Road has been shown with a connection to the existing intersection of Prow and Acuff on the southwest end of the site and extending through the center of the site with a stub shown to the north property line. There are a total of three proposed public street stubs provided to the north, including the extension of Prow Road, for future connectivity. All internal streets within this subdivision would be public with approximately 59% of the lots proposed to be alley accessed. There are nine common area lots shown to meet open space, tree preservation, karst preservation, and storm water detention requirements. The petitioner is proposing to develop this site in three phases and that has been outlined on a Phasing Exhibit.

A Traffic Impact Study was conducted and presented at the first hearing. Since that time it has been updated with new traffic counts taken during the active school year for both MCCSC and Indiana University. Even with the updated traffic counts, the Traffic Impact Study concluded that existing adjacent intersections at Acuff Road and Kinser Pike, Prow Road and Arlington Road, Kinser Pike and SR45, and Acuff Road and Prow Road will continue to operate at acceptable levels of service with the additional expected traffic volume from this proposed development. A new stop sign will be installed at the Prow Road/Acuff intersection and Acuff Road would be the stop for Prow Road. No additional traffic control devices were indicated as being warranted on existing intersections other than new internal stop signs to control traffic movement onto the existing adjacent public streets. At the first hearing there were several comments expressed regarding the timing of the traffic signal at the State Road 46 and Kinser Pike intersection that frequently has delays after the release of Bloomington High School North. The Department has reached out to the Indiana Department of Transportation (INDOT) to discuss possible changes to the traffic signal, however the location of this project is not expected to have any impacts on the challenges at that intersection since it over 2 miles from that intersection and is also north of Bloomington High School North, so traffic from the school to this development would not be utilizing that intersection.

Since this property is over 3 acres in size, this subdivision must utilize the Traditional Subdivision type which requires a minimum of 67% of the lots to be served by alleys. The proposed site plan shows approximately 59% of the lots being served by alleys and the petitioner is requesting a waiver from that requirement. No change to the number of lots served by an alley have been proposed since the first hearing. The petitioner is also requesting a waiver from the maximum 800' block length to allow two sections of road that are 987' and 1600'.

A meeting was held with residents of the adjacent Ridgefield, Northwood Estates, and N. Kinser Pike neighborhoods on May 20, 2024 to present this project and hear comments from adjacent residents. Comments and concerns from attending residents included concerns regarding traffic impacts to existing roads and intersections, access to the property, environmental preservation and loss of green space, and any buffering that would be done from existing residents.

20.06.060(b)(3)(E) PRIMARY PLAT REVIEW: The Plan Commission or Plat Committee shall review the primary plat subdivision petition and approve, approve with conditions, or deny the petition in accordance with Section 20.06.040(g) (Review and Decision), based on the general approval criteria in Section 20.06.040(d)(6) (Approval Criteria) and the following standards:

i. All subdivision proposals shall be consistent with the need to minimize flood damage.

ii. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

iii. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards
iv. Base flood elevation data shall be provided for subdivision proposals and other proposed development (including manufactured home parks and subdivisions), which is greater than the lesser of 50 lots or five acres.
v. All subdivision proposals shall minimize development in the SFHA and/or limit intensity of development permitted in the SFHA
vi. All subdivision proposals shall ensure safe access into/out of SFHA for pedestrians and vehicles (especially emergency responders).

PROPOSED FINDING: The petitioner is proposing four on-site detention areas to meet storm water detention and water quality requirements. These are all shown in Common Area lots on the four outer corners of the overall site. Water and sanitary sewer connections will be provided to existing facilities through Acuff Road to the south. The City of Bloomington Utilities Department is still reviewing the proposed plans and no problems with meeting sewer and water capacity have been identified. There are no portions of this site that lie within the 100-year regulatory special flood hazard area and there are no known flooding issues on this site.

20.06.040(d)(6)(B) General Compliance Criteria

i. Compliance with this UDO
ii. Compliance with Other Applicable Regulations
iii. Compliance with Utility, Service, and Improvement Standards
iv. Compliance with Prior Approvals

PROPOSED FINDING: The petitioner is requesting a waiver from the requirement to have a minimum of 67% of the lots served by an alley and a waiver to allow two road segments with a block length exceeding the maximum 800' allowance, otherwise the subdivision meets all UDO standards. All of the proposed lots meet the minimum lot area and lot width standards of the UDO. If the requested waivers are deemed appropriate and approved, the proposed subdivision would be compliant with the UDO. There are no other known applicable regulations that would apply to this property or subdivision. Approval from the City of Bloomington Utilities Department is required prior to the issuance of any grading permits. Plans have been submitted to CBU for review and no problems meeting any standards of CBU have been identified. There are no other known prior approvals for this property.

20.06.060(b)(3)(F) Subdivision Waivers: Waivers from any standards within Chapter 5 shall be reviewed according to the following criteria:

1. The granting of the subdivision waiver shall not be detrimental to the public safety, health, or general welfare, or injurious to other property; and
2. The conditions upon which the request for a Subdivision Waiver are based are unique to the property; and
3. The Subdivision Waiver shall not in any manner vary the provisions of the development standards, Comprehensive Plan, or Transportation Plan.

PROPOSED FINDING:

Alley Loaded Lots: While the request to have 59% of the lots served by an alley does not appear to have any significant detrimental impacts on public safety, health, or general welfare, or be injurious to other property, it does appear to be possible to incorporate an alley along the north side of Lots #111-118 without any significant impact to the development or loss of buildable lots. The incorporation of the alley would impact the amount of tree preservation proposed and possibly require tree preservation to be expanded elsewhere on the site which could affect the number of buildable lots. The low volume of expected traffic (both vehicular and pedestrian) along those lots and general location of this development on the periphery of the City with an expected low amount of interior traffic mitigate the impacts of 9 additional drive cuts on the street and safety of pedestrians. The granting of the waiver will not vary the provisions of the development standards, Comprehensive Plan, or Transportation Plan. Since there are no unique conditions that prevent an alley from being installed along the north side of the lots, the Department does not recommend approval of this waiver and a condition of approval has been included to require the petition to meet the 67% requirement for lots accessed by an alley.

Maximum Block Length: There are two proposed road segments that would have a lengths of 987' and 1,600'. Both of these segments of road are interrupted by several areas of common area lots, open space, karst features, tree preservation areas, and the electric transmission line that run through the site which create a unique condition that prevents additional streets to be installed. These sections of road that exceed the maximum 800' block length are not detrimental to the public safety, health, or general welfare, or injurious to other property. The granting of this waiver will not vary the provisions of the development standards, Comprehensive Plan, or Transportation Plan.

20.06.040(d)(6)(D) Additional Criteria Applicable to Primary Plats and Zoning Map Amendments (Including PUDs)

i. Consistency with Comprehensive Plan and Other Applicable Plans

The proposed use and development shall be consistent with and shall not interfere with the achievement of the goals and objectives of the Comprehensive Plan and any other adopted plans and policies.

ii. Consistent with Intergovernmental Agreements

The proposed use and development shall be consistent with any adopted intergovernmental agreements and shall comply with the terms and conditions of any intergovernmental agreements incorporated by reference into this UDO.

iii. Minimization or Mitigation of Adverse Impacts

1. The proposed use and development shall be designed to minimize negative environmental impacts and shall not cause significant adverse impacts on the natural environment. Examples of the natural environment include water, air, noise, stormwater management, wildlife habitat, soils, and native vegetation.
2. The proposed use and development shall not result in the excessive destruction, loss or damage of any natural, scenic, or historic feature of significant importance.
3. The proposed use and development shall not result in significant adverse fiscal impacts on the city.
4. The petitioner shall make a good-faith effort to address concerns of the adjoining property owners in the immediate neighborhood as defined in the pre-submittal neighborhood meeting for the specific proposal, if such a meeting is required.

iv. Adequacy of Road Systems

1. Adequate road capacity must exist to serve the uses permitted under the proposed development, and the proposed use and development shall be designed to ensure safe ingress and egress onto the site and safe road conditions around the site, including adequate access onto the site for fire, public safety, and EMS services.
2. The proposed use and development shall neither cause undue traffic congestion nor draw significant amounts of traffic through residential streets.

v. Provides Adequate Public Services and Facilities

Adequate public service and facility capacity shall exist to accommodate uses permitted under the proposed development at the time the needs or demands arise, while maintaining adequate levels of service to existing development. Public services and facilities include, but are not limited to, streets, potable water, sewer, stormwater management structures, schools, public safety, fire protection, libraries, and vehicle/pedestrian connections and access within the site and to adjacent properties.

vi. Rational Phasing Plan

If the petition involves phases, each phase of the proposed development shall contain all of the required streets, utilities, landscaping, open space, and other improvements that are required to comply with the project's cumulative development to date and shall not depend upon subsequent phases for those improvements

PROPOSED FINDING: The proposed plat and use of the property as a "Dwelling, Single Family" use is consistent with Comprehensive Plan designation of the property as Neighborhood Residential. There are not any Interlocal Agreements that would pertain to this subdivision. There are no expected adverse impacts as a result of this plat. The proposed plat allows the creation of 122 new single family lots that are consistent with the requirements of the UDO with access to existing road system, public services, and public facilities. A new sidewalk and street trees will be installed within the development and along both the Acuff Road and Kinser Pike frontages. The site contains several karst featues that are all located within karst preservation easements and areas of tree preservation that are contained within Common Area and tree preservation easements. All adjacent facilities and infrastructure are adequate to support the proposed use. The project will be constructed in three phases and the construction of Prow Road through this site must be constructed within Phase 1 as submitted.

PLAT REVIEW: The proposed subdivision is following the Traditional Subdivision (TD) design standards.

Subdivision Standards:

Parent tract size (minimum): 3 acre. This petition size is 48.83 acres and is required to follow the Traditional Subdivision design.

Open space required: 5% (2.4 acres required; 12.68 acres provided)

Block length: 800 feet maximum; 987 and 1,600 feet proposed. There are two sections of road that exceed the 800' maximum block length. One, along the west side of the property that measures approximately 1,600 feet. And the second, a portion of the Prow Road extension that measures approximately 987 feet. These would require a waiver since they exceed the 800 foot allowance. All other proposed roads meet the 800 foot allowance.

Cul-de-sac length: Not permitted and none proposed.

Lots served by alleys: 67% required *waiver requested to allow 59%. There are 122 lots in this subdivision and the UDO would require 67% (81) of those to be served by alley. The petitioner is proposing 59% (72) of the lots to be served by an alley.

Transportation facilities:

Kinser Pike: Neighborhood Connector typology and requires a total of 62' of right-of-way. A multi-use path is the recommended facility along the west side of Kinser Pike. Secondary Arterial road classification. A minimum 10' wide asphalt, multi-use path and 8' tree plot are required along the west side of Kinser Pike and must be shown.

Acuff Road: Neighborhood Connector typology and requires a total of 60' of right-of-way. Secondary Collector road classification. A 7' wide concrete sidewalk and minimum 8' wide tree plot are required. The required 7' wide sidewalk and tree plot have been shown, however there is an existing 12" public water line along the north side of Acuff Road that creates a conflict with meeting the required separation requirement for street trees from utility infrastructure and placing street trees within the right-of-way. The petitioner has shown the required street trees on the north side of the sidewalk to avoid conflict with the adjacent utilities.

Prow Road: Neighborhood Connector typology and requires a total of 60' of right-of-way. Secondary Collector road classification. The extension of Prow Road through this site will require 7' wide sidewalks with a 7' wide tree plot with street trees. The required sidewalk and tree plot have been shown.

Internal Roads: The proposed internal roads will be designed with a Neighborhood Residential typology and 61' of right-of-way. The Neighborhood Residential typology requires a 6' sidewalk and 5' tree plot which have been shown.

On-street parking: There will be on-street parking along both sides of the internal roads and along one side of the Prow Road extension. The internal streets are shown with 28' from face-of-curb to face-of-curb which follows the Transportation Plan standards for this typology and expected traffic volume. The Prow Road extension is required to be 29.5' from face-of-curb to face-of-curb and allows for on-street parking on one side.

Lot Establishment Standards:

Lot area and lot width: The minimum lot width in the R2 district is 60' and the minimum lot area is 7,200 square feet (0.165 acres). All of the proposed lots meet these standards.

Lot shape: All lots meet the UDO requirement for regular lot size and a depth-to-width ratio not to exceed four to one.

Lot access: All proposed lots have direct frontage on a public street as required. No drive cuts on Acuff Road for the new lots are proposed or allowed. As mentioned previously, there will be several alleys within the development to provide access to a majority of the lots. However, the UDO requires 67% of the lots to be served by alleys and the proposed site plan only has 59% of the lots served by an alley. The petitioner has requested a waiver to only require 59% of the lots to be alley accessed.

Open Space:

Common Area:

Tree Preservation: The petitioner has shown approximately 10.2 acres of existing tree canopy coverage of the 48.83 acre property, which equals approximately 20% coverage. Based on the coverage shown, the UDO requires 80% of the 10.2 acres of existing tree canopy to be preserved, which equals 8.17 acres of required preservation. The proposed plat shows 8.26 acres of preservation and meets the UDO requirements.
Karst Features: There are several karst features that have been identified on the southwest portion of the property. Many of the features are located in a common area lot and have all been shown with the required karst conservancy easement. No disturbance is allowed within 25' of the last closed contour and all grading has been shown to not encroach into the required preservation areas.

Storm Water: A stormwater management plan has been submitted to the City of Bloomington Utilities Department for their review. Final acceptance and approval from CBU is required prior to issuance of any permits.

Flood Damage Mitigation: There are no portions of this site that lie within the regulated 100-year floodplain.

Streets and Right-of-Way Standards:

Private/Public Streets: There are no private streets shown and all streets within this development will be public.
ROW width: All of the new internal street will be public streets with a Neighborhood Residential typology which requires 61' of dedicated right-of-way, which has been shown. Acuff road should have 60'of right of way and this appears to be shown on the proposed primary plat, however the street centerline is not indicated and must be shown. Kinser Pike should have 62' of right-of-way and again, this appears to be shown on the proposed primary plat, however the street centerline is not shown and must be shown prior to the second hearing.
Street Design: The internal streets will have on-street parking on both sides and based on the expected traffic volume, the Transportation Plans calls for a Neighborhood Residential with less than 500 ADT to have a width of 28' from face-of-curb to face-of-curb. This has been shown on the proposed cross section. The extension of Prow Road through the site is intended to have on-street parking on one side, and the Neighborhood Connector typology in the Transportation Plan calls for a 29.5' width from face-of-curb to face-of-curb. This cross section has also been shown on the Primary Plat.
Alleys: There are several alleys that are shown within the development and these have been shown within the required 20' of right-of-way and will be built to UDO and Engineering Department standards.
Arterial Frontages: Although this property does have frontage on Kinser Pike, which is classified as a Secondary Arterial road, there are no lots along that frontage and therefore the Arterial Frontage standards do not apply.
Street Names: Street names will be proposed and finalize with the Secondary Plat.
Street Lighting: A lighting plan has not been shown yet and must be shown before the second hearing.
Utilities: A utilities plan has been submitted to the City of Bloomington Utilities and is currently under review. Final acceptance and approval from CBU is required prior to secondary plat approval. At this time, no problems with meeting CBU design standards has been identified.

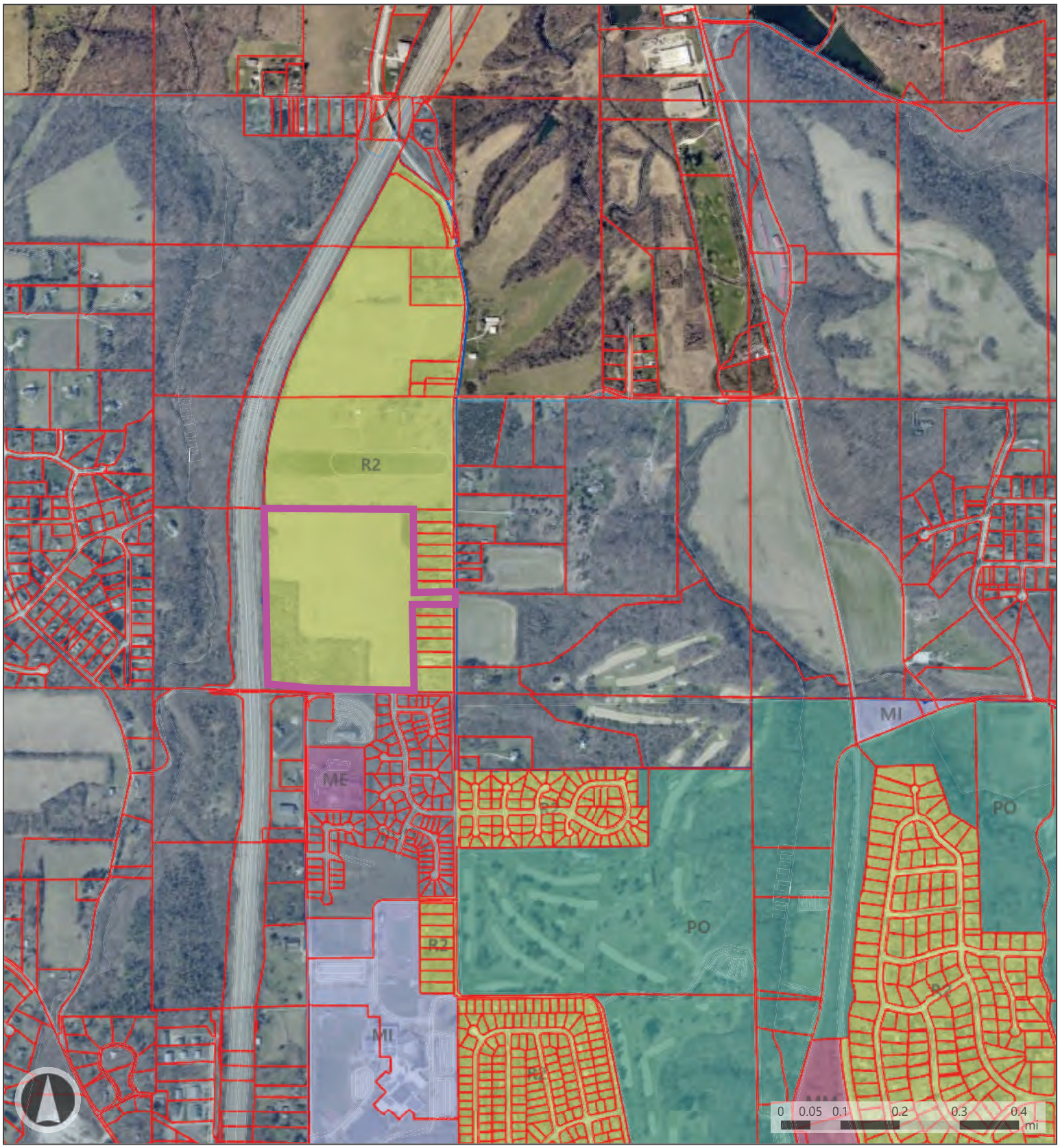
Universal Design: The UDO requires that subdivision that contain more than 25 lots designed to accommodate single family detached or single family attached dwellings, at least 20% of the dwelling units shall incorporate at least one entrance at grade level and not requiring any steps up or down or a ramp for entry. Many of the lots are shown with finished elevations with minimal slope to the adjacent sidewalk elevations and compliance with this requirement is expected to be able to be met with final plans. This will be verified with the final plans submitted with the secondary plat.

RECOMMENDATION: The Planning and Transportation Department recommends that the Plan Commission approve this petition with the waiver to allow the two road segments with a block length greater than 800', but deny the waiver to allow only 59% of the lots to be alley accessed with the following conditions of approval:

1. The extension of Prow Road must be constructed with the first phase as shown on the submitted phasing plan.
2. The petition must meet the UDO minimum of 67% of lots served by alley access.
3. The proposed park area must include the minimum elements shown in the submitted rendering.
4. All areas of tree preservation must be protected per UDO standards.

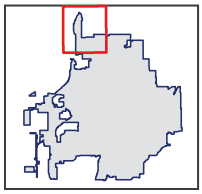
City of Bloomington

Planning and Transportation Department



Map Legend

- Parcels
- Bloomington Municipal Boundary
- Urban Area
- Metropolitan Planning Area
- Mixed-Use Employment
- Mixed-Use Institutional
- Mixed-Use Medium-Scale
- Parks and Open Space
- Planned Unit Development

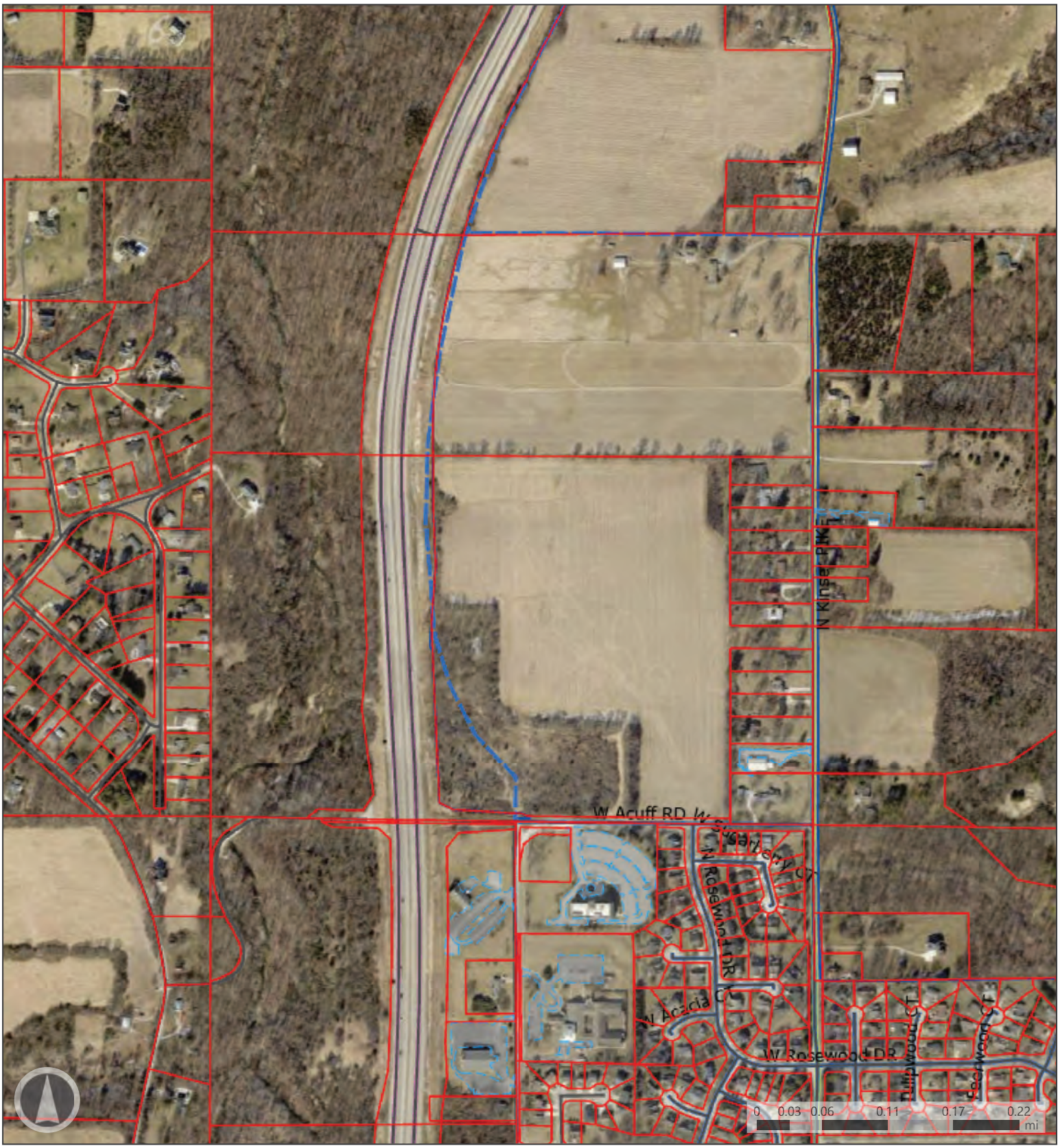


Created: 6/21/2024 *Map By:*

For use as map information only, information is NOT warranted.

City of Bloomington

Planning and Transportation Department



Map Legend

- Parcels

Parking Lot Type

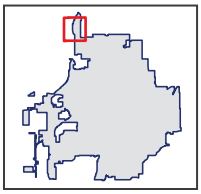
- Paved Parking Lot
- Current
- Proposed
- City Maintained Streets

Street Typology

- Neighborhood Connector
- Neighborhood Residential

Functional Classification

- Freeway
- Secondary Arterial



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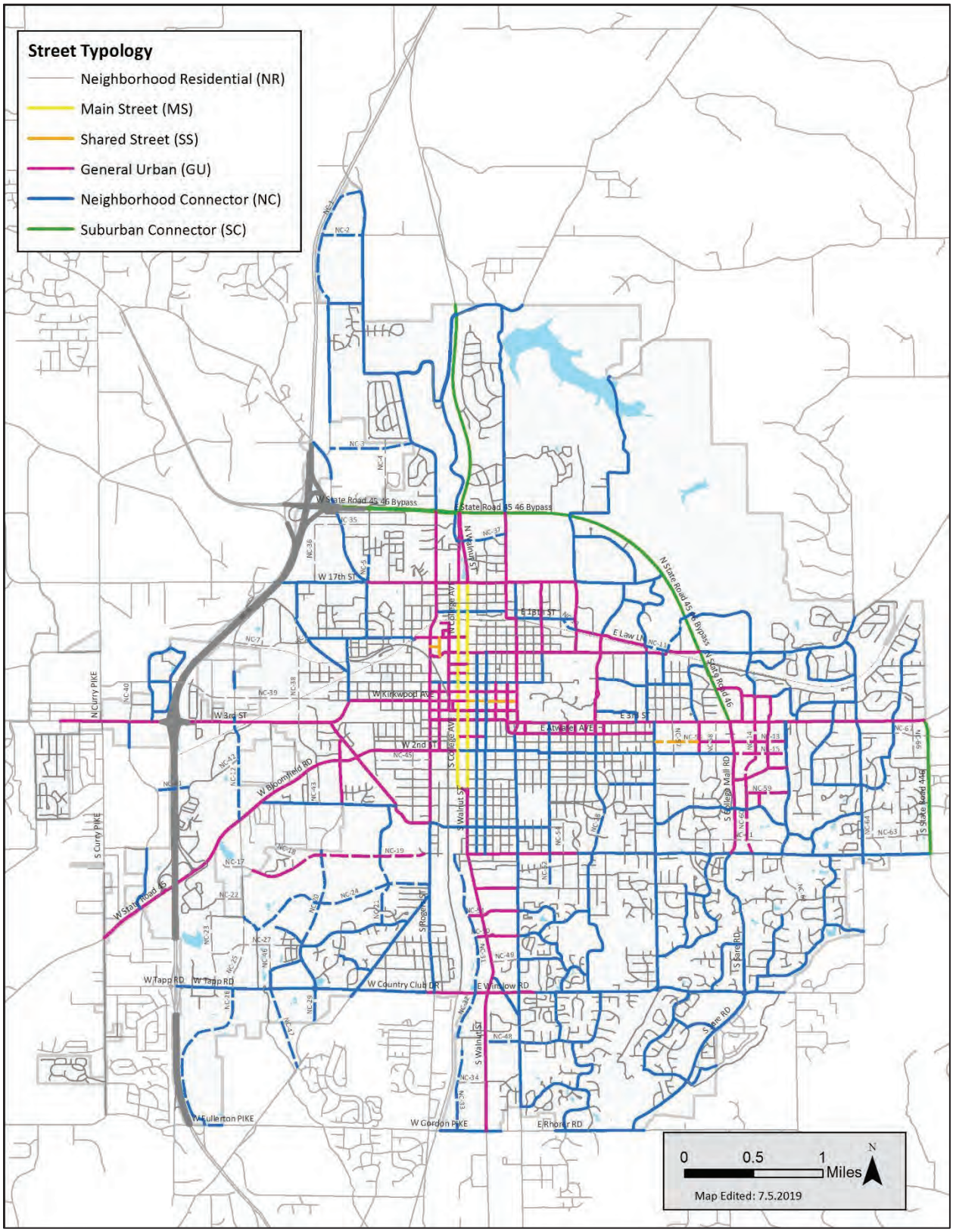
For use as map information only, information is NOT warranted.

Figure 19. New Connections and Street Typologies



BYNUM FANYO & ASSOCIATES, INC.

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

August 26th, 2024

Eric Greulich
City of Bloomington Planning Department
401 N. Morton Street
Bloomington, Indiana 47404

RE: Kinser Ridge Subdivision
Plan and Preliminary Plat Approval Petitioner's Statement

Eric Greulich or To Whom It May Concern:

Our client, Beacon Builders LLC, respectfully requests subdivision plan and preliminary plat approval for the referenced project and to be placed on the next Plan Commission agenda for the plan to be approved by the Plan Commission members.

Project Narrative:

The proposed development at North Kinser Pike consists of subdividing the existing 48.83-acre property into 122 lots for home development, four lots for drainage, and five common lots. An extension of existing North Prow Road is proposed to in a stub to the north, as well as a new connection to North Kinser Pike, and a connection to West Acuff Road ending in a stub to the north. We plan to treat most stormwater within the site's proposed drainage lots with the implementation of drainage pond facilities. The entire site is within the City's 'Residential Medium Lot' zoning boundary.

This proposed development is proposing two waivers (2 items) from the current UDO:

1. UDO Section 20.05.050 – Subdivision Design Standards

   The UDO requires 67% of lots in a traditional subdivision to be served by alleys. Our proposed development contains 72 lots served by alleys of 122 total, meaning only 59% of proposed lots are served by alleys. We would like to request a waiver from this condition as the nature of the site, existing canopy cover, and north-south utility easement restricts the possibility for higher alley connectivity. Many lots are located in close proximity to or bordered directly by existing Karst features such as sinkholes or springs, or existing areas of canopy cover which are desired to remain unobstructed.

2. UDO Section 20.05.050 – Subdivision Design Standards

   There are two blocks within this proposal which exceed the UDO maximum block length of 800 feet. The first lies on the Southeast side of the Prow Road extension, the second on

528 NORTH WALNUT STREET BLOOMINGTON, INDIANA 47404
812·332·8030 FAX 812·339·2990

the western side of the western-most proposed road. The existence of these large blocks is not a result of poor connectivity within the site, but a product of the existing site features and feasibility of proposed road design. We would like to request a waiver from this rule as alleys and crossroads still provide ample connectivity to these blocks as shown in the current design.

After you have had a chance to review our petition please feel free to contact us at any time with questions regarding our submission.

Sincerely,
Bynum Fanyo & Associates, Inc.

Daniel Butler, P.E., Project Engineer

Copy: BFA File #402334

08-26-2024

Bloomington Plan Commission Meeting

Re: Kinser Ridge Located on Acuff Road

Introduction: Bill Evans, Beacon Builders, small builder from the Indianapolis area. We build homes in central & southern Indiana. We have been building in Monroe County since 2010. Primarily in the Ellettsville area.

Site Specifics: The site is located on the north side of Bloomington. The site consists of 48.98 acres with rolling fields, an old home site with a dilapidated barn, and silo. An old 5.30-acre pasture area southeast of the homesite traced back since 1950's contains overgrown thistle bushes, Bradford pear and other invasive species. The easterly and northerly tree canopy around the 5.3 acres is a result of an old farm fence that separated the pasture area from the tillable area. Within the 5.3-acre area are karst areas and two springs.

The trees located around the old homestead area contain sparse and mostly have overgrown thistle bushes, Bradford pear and other invasive species. There are tree lines around the east & north perimeter. A Duke transmission line with a 100' easement is located within the site. The easement is in a northeasterly direction.

Project Specifics: We are proposing to build homes on 122 lots on 48.98 acres, resulting in a 2.49 homes per acre ratio. There are 3 phases for the project. Phase 1, the extension of Prow Road to the north line is required by the City of Bloomington Planning Department. A 10-foot-wide walking path will be constructed adjacent to Acuff road from the east side of the project to Prow Road. A pocket Park will be in Phase 2 of the project.

All lots meet the required R-2 lot width and size requirements. The perimeter homes will be garages facing the street homes along the east, north and west sides of the overall site. The homes will consist of different elevations, some with no offsets to the garage being recessed 5-18 feet from the front porch of the home. The minimum size of the homes is 1400 sf up to a maximum size of 2999 sf with 2-car garages. The exterior of the homes will consist of option materials including brick, stone, and vinyl.

60 percent of the homes for this project are garages located at the rear of the home. The garages will face a public alley for ingress/egress. Ther homes will sit on building pads with the front of the homes above the roadways a minimum of 3'. The minimum size of the homes is 1400 sf up to a maximum size 2999 sf with 2-car garages. The exterior of the homes will consist of option materials including brick, stone, and vinyl. A pocket Park will be in Phase 2 of the project.

The base price of the home is roughly $290,000 and a typical homeowner could spend $10,000 to $40,000 on upgrades. The investment in this community completely built out is approximately 36.5 million dollars.

Process to Date: Beacon builders began the due diligence process in November of 2023. Beacon Builders are the owners of the property. Then we approached staff in early 2024 with a conceptual drawing and began the process to get where we are today. We have generated 16 conceptual variations of the site through the process. We completed Geotech drilling for limestone. We completed a Karst Study and a Traffic Study. We met Linda Thompson at the site and drove her around to see the tree lines and vegetation in the pasture. We conducted a neighborhood meeting on May 20th of this year. We appreciate the time the planning and engineering staff have contributed to this project.

hydrogeology inc.
1211 S Walnut St
Bloomington, IN 47401

DRAFT

Bill Evans
Beacon Builders
Greenwood, IN

Date: March 26, 2024

Contact:
Jason Krothe

Phone:
812-219-0210

Email: jnkrothe@hydrogeologyinc.com

Subject:
Kinser Ridge – Karst Survey
Bloomington, IN

Mr. Evans:

Hydrogeology Inc. (Hydrogeology) respectfully submits this karst report for the property located at the intersection of N Prow Rd and W Acuff Ln, in Bloomington, IN. The property is approximately 50-acres (Figure 1).

1 – Overview

The Site is located at the intersection of N Prow Road and W Acuff Ln in Bloomington, Indiana and is approximately 50-acres (Figure 2). The property currently consists of mostly open fields and some areas with dense ground vegetation.

2 - Geology / Physiography

The Site is in the Mitchell Plateau physiographic region, which is one of the primary karst forming areas in Indiana. The bedrock at the Site includes the Harrodsburg and Salem Limestones (Hasenmueller, Estell, Keith, and Thompson, 2008) (Figure 3). The Harrodsburg Limestone consists of primarily limestone but includes some dolomite, and minor amounts of chert (Rexroad, 1986). The Salem Limestone is primarily limestone and known for exceptionally thick beds (Carr, Rexroad, and Gray, 1986).

3 – Sinkholes & Springs

Sinkholes are surface depressions that form in a variety of ways in karst areas (Figure 4). Sinkholes can have a swallow hole, which is an opening in the ground where water infiltrates. Groundwater flow in karst areas is predominantly fracture flow, meaning the bedrock itself has low permeability while the fractures in the bedrock are open conduits that allow water, soil, and other materials to travel quickly through the subsurface. Water that drains into a sinkhole can eventually discharge at a karst spring (Figure 5).

hydrogeology inc.
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4 – Karst Desktop Review

A review of available karst resources was conducted prior to the field survey. Those resources include United State Geological Survey (USGS) topographic maps, Indiana Map 1-ft LIDAR topographic, karst spring maps, and private cave databases.

5 – Karst Field Survey

Hydrogeology conducted a karst field survey at the Site on March 21, 2024. Where possible, the Site was walked at 20-foot transects to locate any karst features. Nine sinkholes and two springs were identified during the field survey and are described below (Figure 6, Appendix A). All sinkholes and spring were flagged and should be surveyed prior to development at the Site.

Sinkholes

SH-01 – Sinkhole SH-1 is approximately 10 feet long, 4 wide, and 2 feet deep (Photographs 21-22). Two soil openings are present within the sinkhole.

Mitigation Measures: SH-01 should receive a 25-foot Karst Conservancy Easement (KCE) based on the City of Bloomington zoning guidelines. Additionally, erosion and sediment control measures should be installed around the rim of SH-01 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-02 – Sinkhole SH-02 is 8 feet long, 3 feet wide, and 2 feet deep (Photo 25). Two soil openings are present within the sinkhole.

Mitigation Measures: SH-02 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-02 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-03 – Sinkhole SH-03 is 8 feet long, 4 feet wide, and 3 feet deep. A soil opening is present within the sinkhole and a small surface channel runs into the sinkhole (Photo 29).

Mitigation Measures: SH-03 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-03 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-04 – Sinkhole SH-04 is 3 feet long, 3 feet wide, and 2 feet deep (Photo 31). Two soil openings are present within the sinkhole.

Mitigation Measures: SH-04 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-04 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-05 – Sinkhole SH-05 is 4 feet wide, 3 feet wide, and 2 feet deep (Photo 32). The sinkhole is filled with loose stones.

Mitigation Measures: SH-05 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-05 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-06 – Sinkhole SH-06 is 6 feet long, 5 feet wide, and 3 feet deep (Photo 33).

Mitigation Measures: SH-06 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-06 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-07 – Sinkhole SH-07 is 3 feet wide and 1 foott deep (Photo 34).

Mitigation Measures: SH-07 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-07 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-08 – Sinkhole SH-08 is 2 feet wide and 1 foot deep (Photo 36). The sinkhole is located along the edge of the field and could be related to a field tile.

Mitigation Measures: An exploratory excavation should be conducted at SH-08 to determine if it is a sinkhole or a collapsed field tile. If it is determined SH-08 is a sinkhole it should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-08 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SH-09 – Sinkhole SH-09 is 4 feet wide and 3 feet deep (Photo 37).

Mitigation Measures: SH-09 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SH-09 prior to land clearing operations and until revegetation has occurred at the Site after construction.

Springs

SP-01 – Spring SP-01 has a flow of approximately 0.1 gallon per minute (gpm) and flows into a concrete cistern (Photo 24).

Mitigation Measures: SP-01 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SP-01 prior to land clearing operations and until revegetation has occurred at the Site after construction.

SP-02 – Spring SP-02 has a flow of approximately 4 gpm and flows out of a soil opening (Photo 26).

Mitigation Measures: SP-02 should receive a 25-foot KCE. Additionally, erosion and sediment control measures should be installed around the rim of SP-02 prior to land clearing operations and until revegetation has occurred at the Site after construction.

6 – Study Limitations

Dense vegetation was present in the southwestern portion of the Site (Figure 7). Identification of karst surface features can be difficult in areas with dense vegetation. Clearing of ground vegetation was not within the scope of work for this survey. The identification of karst features at the Site was limited to surface inspection. No subsurface investigations were conducted for this study. Undocumented karst features are possible in the subsurface.

7 – Karst Best Management Practices

The following are karst management practices that should be considered for the Site:

Water Quality

Groundwater recharge in karst areas predominately occurs through sinkholes. Water infiltrates into a sinkhole, then flows along karst conduits and typically discharges to a karst spring. There is minimal filtration of the water throughout this shallow groundwater cycle. Therefore, it is critical to maintain or improve water quality at the Site.

Impacts to water quality at the Site are most likely to occur due to erosion and sediment mobilization during construction. Erosion and sediment control will be critical to preventing water quality impacts. All sinkholes should be protected with appropriate erosion and sediment controls for the duration of construction at the Site.

In addition to these measures a low salt no herbicide/pesticide spray policy should be implemented for the Site.

Drainage Alteration

Alteration of natural drainage patterns can result in the development of new sinkholes, particularly when run-off is concentrated. The drainage plan for the Site should maintain the existing drainage patterns wherever possible and prevent concentrated run-off. To prevent development of new sinkholes, detention basins should be lined with an impervious material.

Unknown Karst Features

Previously unknown karst features are possibly present in the subsurface at the Site. If any previously unknown karst feature is identified during development of the Site, the features should be protected with erosion and sediment control measures and inspected by a karst specialist.

8 – Summary

A desktop review and field survey were conducted at the Site to identify any karst features. Nine sinkholes and two springs were identified at the Site. All sinkholes and springs should have a 25-ft KCE and be protected with erosion and sediment control measures throughout the entire construction process. The karst field survey was limited to surface inspection with no subsurface investigation. Unknown karst features are possibly present in the subsurface at the Site. Dense vegetation was present in the southwestern portion of the Site, which prevented close ground inspection in those areas. If a previously unknown karst feature is discovered during construction activities the feature should be protected with erosion and sediment control measures and inspected by a karst specialist.

hydrogeology inc.
1211 S Walnut St
Bloomington, IN 47401

Hydrogeology appreciates the opportunity to provide this summary report. If you have any questions, concerns, or comments please do not hesitate to contact me directly at (812) 219-0210.

Sincerely,

Hydrogeology Inc.

Jason N. Krothe, LPG IN-2511
President

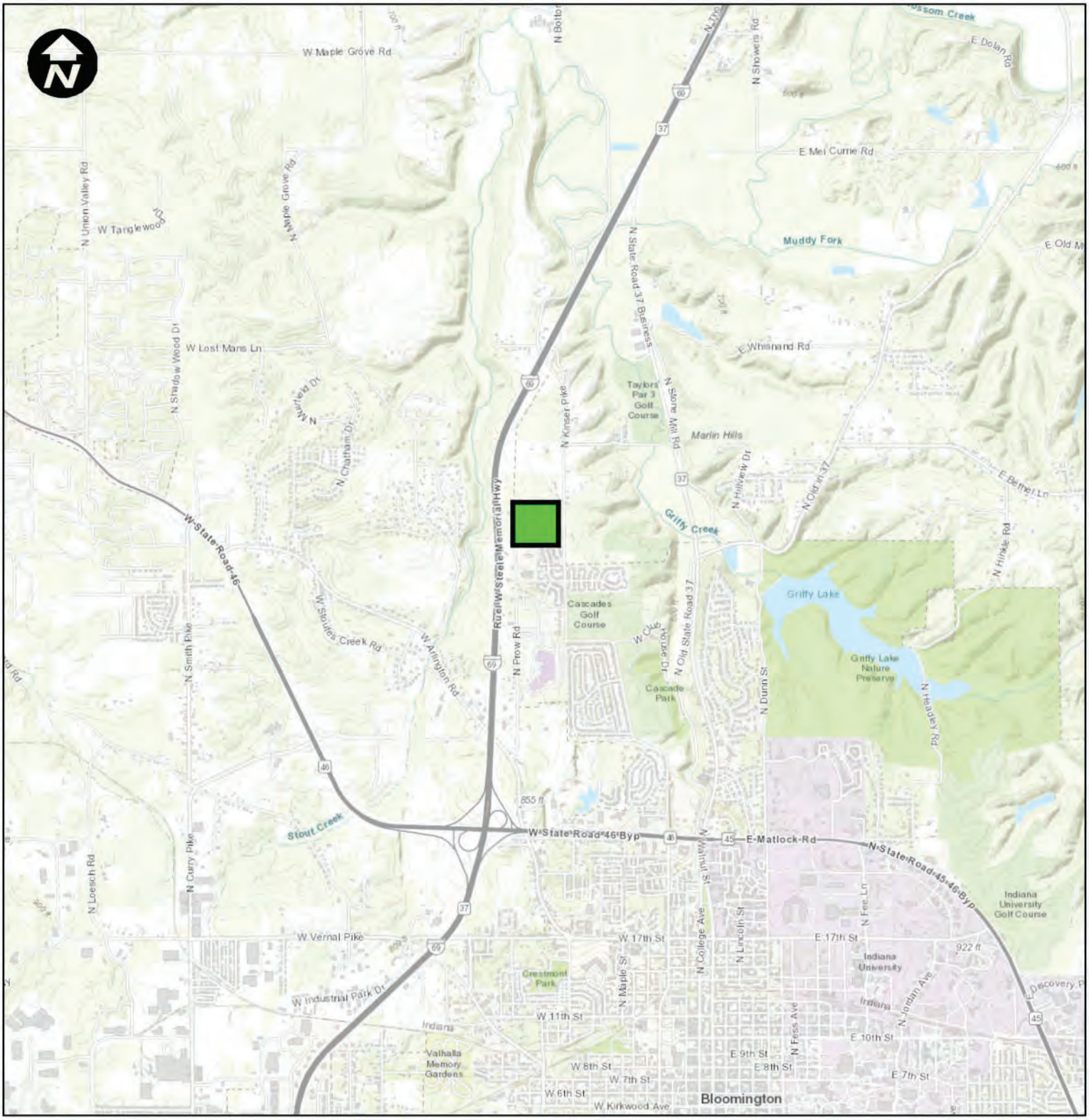
hydrogeology inc.
1211 S Walnut St
Bloomington, IN 47401

References

Carr, D. D., 1986, Salem Limestone, in Shaver, R. H., Ault, C. H., Burger, A. M., Carr, D. D., Droste, J. B., Eggert, D. L., Gray, H. H., Harper, Denver, Hasenmueller, N. R., Hasenmueller, W. A., Horowitz, A. S., Hutchison, H. C., Keith, B. D., Keller, S. J., Patton, J. B., Rexroad, C. B., and Wier, C. E., Compendium of Paleozoic rock-unit stratigraphy in Indiana–a revision: Indiana Geological Survey Bulletin 59, p. 108–109.

Hasenmueller, W. A., Estell, C. M., Keith, B., and Thompson, T. A., 2009, Bedrock geologic map of Monroe County, Indiana: Indiana Geological Survey Miscellaneous Map 73, KCEle 1:48,000.

Rexroad, C. B., 1986, Harrodsburg Limestone, in Shaver, R. H., Ault, C. H., Burger, A. M., Carr, D. D., Droste, J. B., Eggert, D. L., Gray, H. H., Harper, Denver, Hasenmueller, N. R., Hasenmueller, W. A., Horowitz, A. S., Hutchison, H. C., Keith, B. D., Keller, S. J., Patton, J. B., Rexroad, C. B., and Wier, C. E., Compendium of Paleozoic rock-unit stratigraphy in Indiana–a revision: Indiana Geological Survey Bulletin 59, p. 57-59.



LEGEND

SITE (not to scale)

0 0.25 0.5 1 Mile

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

SITE LOCATION

hydrogeology inc.

FIGURE
1

LEGEND

SITE

0 125 250 500 Feet

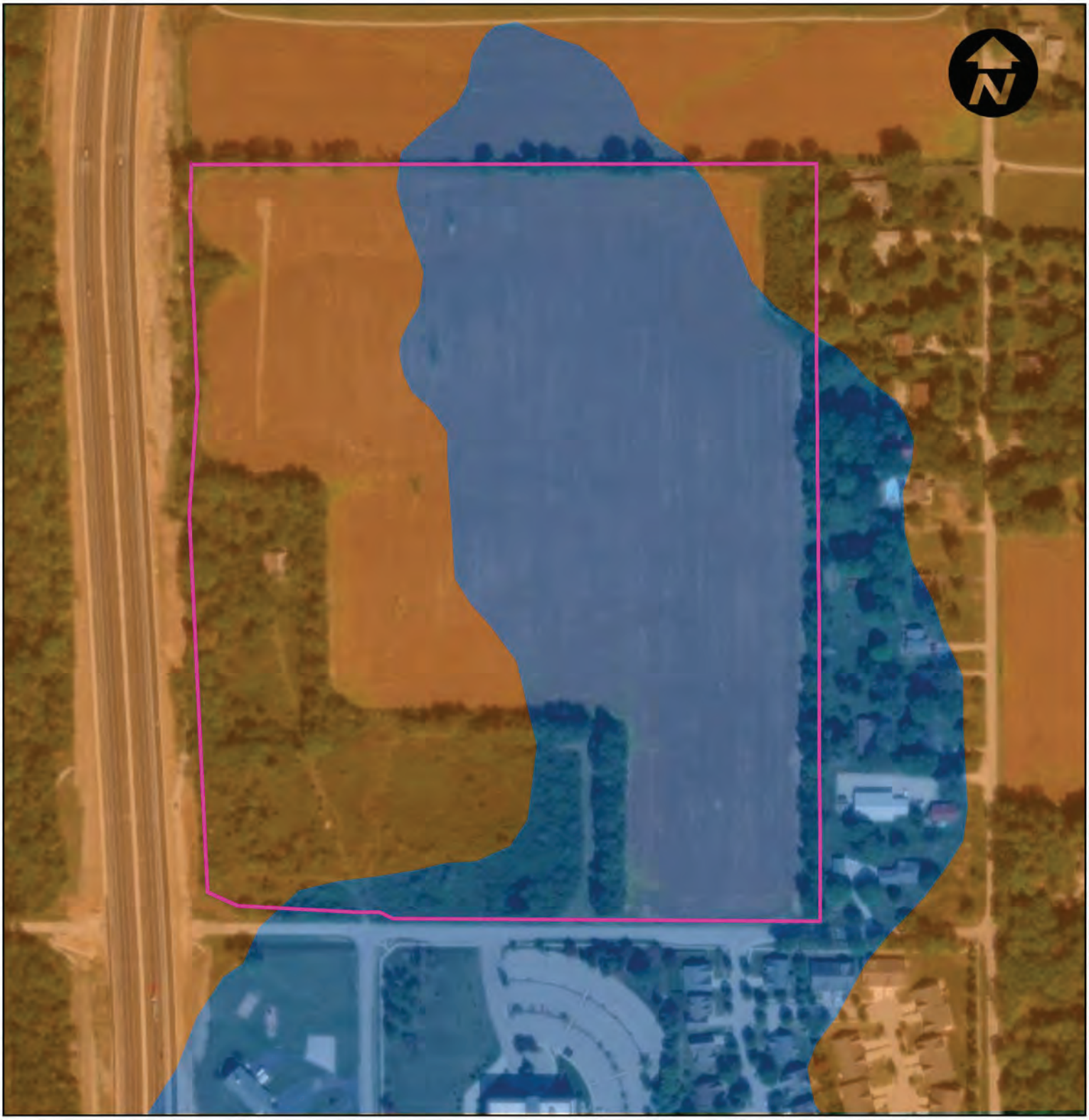
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

SITE

hydrogeology inc.

FIGURE
2



LEGEND

- SITE
- Salem Limestone
- Harrodsburg Limestone and Ramp Creek Formation

0 125 250 500 Feet

Source: Hasenmueller, W. A., Estell, C. M., Keith, B., and Thompson, T. A., 2009, Bedrock geologic map of Monroe County, Indiana: Indiana Geological Survey Miscellaneous Map 73, scale 1:48,000.

KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

BEDROCK GEOLOGY

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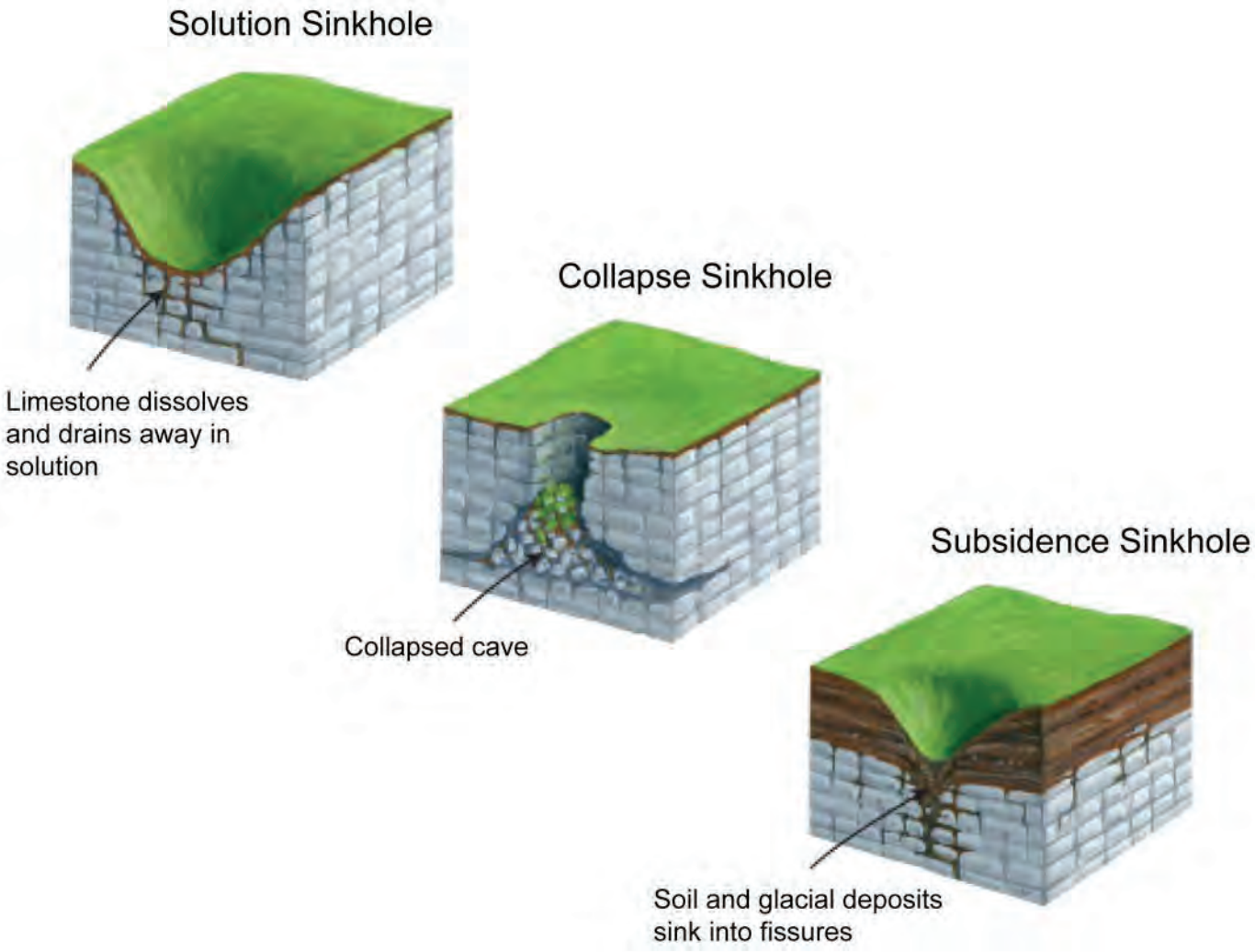
FIGURE
3



KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

SINKHOLE TYPES

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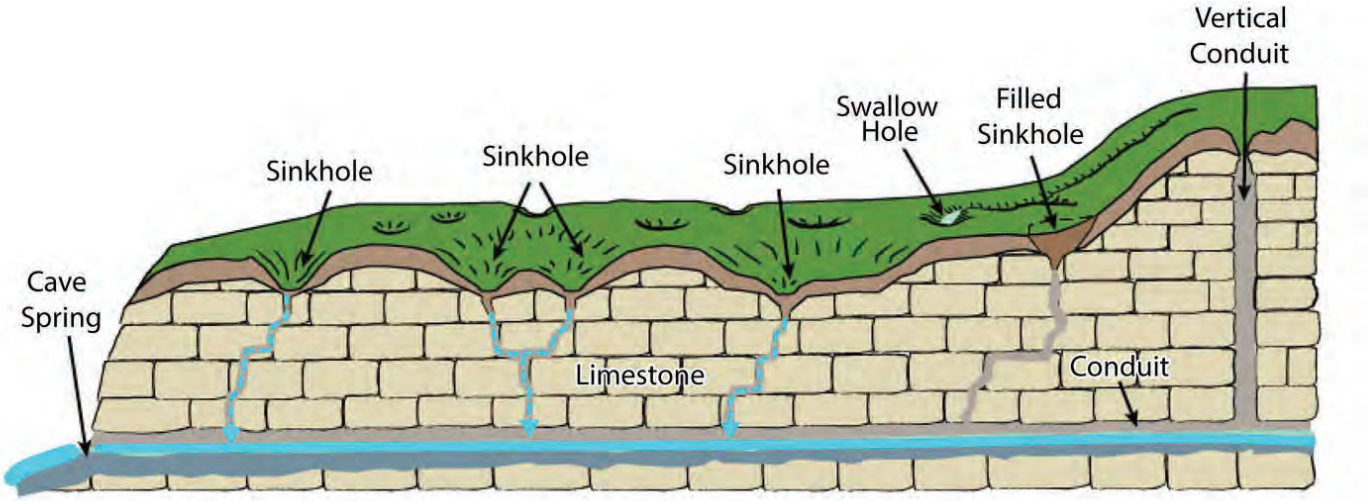
FIGURE
4



KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

CONCEPTUAL KARST CROSS SECTION

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FIGURE
5

LEGEND

- SITE
- SINKHOLE
- SPRING

0 125 250 feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

KARST FEATURES

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FIGURE
6

LEGEND

- SITE
- DENSE VEGETATION

0 125 250 feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

KARST SURVEY
KINSER RIDGE
BLOOMINGTON, IN

DENSE VEGETATION

hydrogeology inc.

FIGURE
7

Photograph Number: 1 **Coordinates (UTM Meters)** NA **Photograph Date:**3-21-24 **Comments:** Center of the Site looking northeast. Recommended treatment: NA	

Photograph Number: 2 **Coordinates (UTM Meters)** NA **Photograph Date:**3-21-24 **Comments:** Center of the Site looking North. Recommended treatment: NA	

Photograph Number: 3 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** East side of the Site looking northeast. Recommended treatment: NA	

Photograph Number: 4 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** South side of the Site looking north. Recommended treatment: NA	

Photograph Number: 5 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** East side of the Site looking southwest. Recommended treatment: NA	

Photograph Number: 6 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** East side of the Site looking northwest. Recommended treatment: NA	

Photograph Number: 7 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** East side of the Site looking southwest. Recommended treatment: NA	

Photograph Number: 8 **Coordinates (UTM Meters)** NA **Photograph Date: 3**-21-24 **Comments:** East side of the Site looking southwest. Recommended treatment: NA	

Photograph Number: 9 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** North side of the Site looking south. Recommended treatment: NA	

Photograph Number: 10 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Center of the property looking northwest. Recommended treatment: NA	

Photograph Number: 11 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Center of the property looking north. Recommended treatment: NA	

Photograph Number: 12 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** North side of the Site looking southwest. Recommended treatment: NA	

Photograph Number: 13 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Center of the property looking south. Recommended treatment: NA	

Photograph Number: 14 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Center of the property looking northwest. Recommended treatment: NA	

Photograph Number: 15 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** North side of the Site looking east. Recommended treatment: NA	

Photograph Number: 16 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** North side of the Site looking west. Recommended treatment: NA	

Photograph Number: 17 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Northwest corner of the Site looking southeast. Recommended treatment: NA	

Photograph Number: 18 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** North side of the Site looking southwest. Recommended treatment: NA	

Photograph Number: 19 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** West side of the property looking east. Recommended treatment: NA	

Photograph Number: 20 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** West side of the property looking northeast. Recommended treatment: NA	

Photograph Number: 21 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-01. Recommended treatment: 25-foot KCE	

Photograph Number: 22 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-01. Recommended treatment: 25-foot KCE	

Photograph Number: 23 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** West side of the Site looking southeast. Recommended treatment: NA	

Photograph Number: 24 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SP-01. Recommended treatment: 25-foot KCE.	

Photograph Number: 25 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-02. Recommended treatment: 25-foot KCE.	

Photograph Number: 26 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SP-02. Recommended treatment: 25-foot KCE.	

Photograph Number: 27 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** South side of the Site looking north. Recommended treatment: NA	

Photograph Number: 28 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** South side of the Site looking north. Recommended treatment: NA	

Photograph Number: 29 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-03. Recommended treatment: 25-foot KCE.	

Photograph Number: 30 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** South side of the Site looking north. Recommended treatment: NA	

Photograph Number: 31 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-04. Recommended treatment: 25-foot KCE.	

Photograph Number: 32 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-05. Recommended treatment: 25-foot KCE.	

Photograph Number: 33 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-06. Recommended treatment: 25-foot KCE.	

Photograph Number: 34 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** SH-07. Recommended treatment: 25-foot KCE.	

Photograph Number: 35 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Southwest corner of the Site. Recommended treatment: NA	

Photograph Number: 36 **Coordinates (UTM Meters)** NA **Photograph Date:** 3-21-24 **Comments:** Sinkhole SH-08. Recommended treatment: 25-foot KCE.	

Photograph Number: 37	
Coordinates (UTM Meters) NA	
Photograph Date: 3-21-24	
Comments: SH-09.	
Recommended treatment: 25-foot KCE.	

Alt & Witzig Engineering, Inc.
4105 West 99th Street • Carmel • Indiana • 46032
Ph (317) 875-7000 • Fax (317) 876-3705

December 29, 2023

Beacon Builders
122 Meander Way
Greenwood, Indiana 46140
Attention: Mr. Bill Evans

Report of Geotechnical Investigation and Foundation Recommendations

RE: Kinsington Place Subdivision
W. Acuff Road and N. Kinser Pike
Bloomington, Indiana
A&W Project No.: 23IN0698

Dear Mr. Bill Evans:

In compliance with your request, Alt & Witzig Engineering, Inc. has completed a subsurface investigation for the above-mentioned Site. The statement of objectives, scope of work, and results of our investigation are presented in the following report. It is our pleasure to transmit one (1) electronic (.pdf) report.

The results of our test borings and laboratory tests completed to date are presented in the appendix of the report. Our recommendations for the project are presented in the "Geotechnical Analysis and Recommendations" section of the report. If you have any questions or comments regarding this matter, please contact us at your convenience.

Sincerely,
ALT & WITZIG ENGINEERING, INC.

David C. Harness, P.E.

DAVID C. HARNESS REGISTERED No. 19800337 STATE OF INDIANA PROFESSIONAL ENGINEER

GEOTECHNICAL INVESTIGATION & FOUNDATION RECOMMENDATIONS

KINSINGTON PLACE SUBDIVISION
W. ACUFF ROAD AND N. KINSER PIKE
BLOOMINGTON, INDIANA
A&W PROJECT NO.: 23IN0698

PREPARED FOR:
BEACON BUILDERS
GREENWOOD, INDIANA

PREPARED BY:
ALT & WITZIG ENGINEERING, INC.
GEOTECHNICAL DIVISION

DECEMBER 29, 2023

TABLE OF CONTENTS

INTRODUCTION

In compliance with your request, we have completed a geotechnical investigation at the above referenced site for the proposed Beacon Builders Subdivision to be located at the southeast corner of W. Acuff Road and N. Kinser Pike on the north side of Bloomington, Indiana *(Exhibit 1a)*.

Exhibit 1a: Image of Site, Google Earth

This investigation was performed for Beacon Builders. The proposed statement of objectives and scope of work were outlined in the form of *A&W Proposal Number 2311G032* duly authorized by Beacon Builders.

The soil boring layout overlaid onto Google Earth aerial photography is shown in Exhibit 1b.

Exhibit 1b: Soil Boring Layout, Google Earth

Project Description

The purpose of this subsurface investigation was to determine the soil profile and the engineering characteristics of the subsurface materials on the proposed development.

A topographic map produced by the client was relied upon as part of this investigation. The pdf document file *Kinsington Place Conceptual alternative 11-14-23.*

The scope of this investigation included a review of geological maps of the area and a review of geologic and related literature, a reconnaissance of the immediate site, a subsurface exploration, field and laboratory testing, and an engineering analysis and evaluation of the materials. The scope or purpose of the investigation did not specifically or by implication provide an environmental assessment of the site.

Site Description

The site is currently a rolling and sloping agricultural field with an overhead power line easement traversing in a north-south direction. The site slopes from east to west toward the I-69 corridor. The site has approximate maximum and minimum elevations of 708 and 772 feet. No closed depressions or other karst features were noted on the site.

Regional Setting

A review of the Soil Survey Map of Monroe County[1] indicated that the soils at the site consist predominantly of Crider silt loams. These soils are characterized as silt loams to a depth of approximately three feet and then underlain by fat clay. The silt loam soils are low strength materials and are susceptible to frost action. Bedrock beneath the site is Mississippian aged skeletal limestone of the Sanders Group. The bedrock is roughly mapped at elevations ranging from 700 to 750 feet.

While the site is located in an area generally known for karst topography, the site does not have any mapped karst features in the database displayed by IN.gov Indiana Map Viewer.

WORK PERFORMED

Field investigations to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling a total of seventeen (17) borings located as shown on the *Boring Location Plan,* and performing standard penetration tests. The apparent groundwater level during drilling at each boring location was also determined. The 14 general site borings are identified as "B-#" borings. Boring LS-1 was conducted in the southwest corner of the site near the location of a proposed lift station. Borings DS-1 and DS-2 were conducted in the northwest corner of the site near a proposed detention area.

The boring locations were staked in the field by Alt & Witzig based on the provided plans after review and comment by the client. Our approximate boring locations are depicted on the *Boring Location Plan* (Appendix).

Drilling and Sampling Procedures

The soil borings were performed with a track-mounted drilling rig equipped with a rotary head. Hollow stem augers were used to advance the holes to the prescribed depth or to auger refusal, whichever occurred first.

During the sampling procedure, standard penetration tests were performed at regular intervals in accordance with ASTM Method D 1586 to obtain the standard penetration value of the soil. The standard penetration value is defined as the number of blows a 140 lb hammer, falling 30 inches, required to advance the split-spoon sampler 12 inches into the soil. The results of the standard penetration tests indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. Soil samples were field classified and placed in unpreserved glass jars with Teflon-lined lids for transport to our geotechnical laboratory for further analysis.

Laboratory Analyses for Soil Samples

A supplementary laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials necessary in analyzing the behavior of the proposed residential development. All phases of the laboratory investigation were conducted in accordance with applicable ASTM Specifications.

Water Level Measurements

Water level observations were taken at the borehole locations during, upon completion, and several hours after completion of the boring operations. The groundwater level readings are noted on the *Boring Logs* presented herewith. In relatively pervious soils such as sandy soils, the indicated elevations are considered reliable groundwater levels. In relatively impervious soils, the accurate determination of the groundwater elevation is not possible without several days of observation. It should be noted that the groundwater measurements recorded on the individual Boring Logs in the

Appendix are accurate for the specific dates in which the measurements were performed. Due to variations in climate, precipitation, and water level, the groundwater level will fluctuate throughout portions of the year. The Boring Logs do not indicate these fluctuations.

Ground Surface Elevations

The ground surface elevation at the individual boring locations were interpolated from the 1-foot interval topographic map mentioned previously. All elevations presented in this report and on the *Boring Logs* are assumed to be accurate to within +/- two (2) foot.

INVESTIGATION RESULTS

The types of foundation materials encountered have been visually and laboratory classified and are described in detail on the *Boring Logs*. The results of the field penetration tests, strength tests, water level observations and laboratory water contents are presented on the *Boring Logs* in numerical form.

Soil Conditions Encountered

Beneath the topsoil at the site, most borings encountered a sandy silty clay (AASHTO silt loam) layer to an approximate depth of 2.5 feet. Reddish brown, stiff, silty clay and clay (CH) was encountered below the sandy silty clay. In several borings the samples contained limestone fragments. Auger refusal was encountered at depths ranging from 3 to 9 feet in all but two borings, with an average of 6 feet. However, no rock coring was conducted as part of this scope of work. Therefore, the refusal is not a verification of competent or solid bedrock and could reflect refusal on a limestone boulder or ledge of bedrock. Borings B-1, B-2, B-11, B-13, and B-14 did not encounter refusal and were completed to the prescribed depth of 10 feet (10-11 feet to sampler termination). However, the auguring within the weathered zone was slow, and the penetration testing with the split spoon met the maximum of 50 blows prior to full advancement.

The moisture contents of the upper silty cohesive soils generally ranged from 15 to 20 percent. The strength tests indicate unconfined compressive strengths in the range of 3 to 5 ksf.

The fat clays are derived from the weathering of the underlying limestone and are common in this area of Indiana. With increasing depth, they will often contain weathered fragments of limestone and chert. The fat clays were generally stiff to soft with moisture contents generally ranging from 30 to 45 percent. The soil conditions encountered are noted on the individual Boring Logs in the Appendix. The anticipated bedrock surface was found to generally follow the surface topography.

Groundwater Conditions Encountered

Groundwater readings taken during, upon completion, and several hours after the boring operations indicate no free water within the boreholes. The soil survey confirms that the water table is not expected to be within 80 inches of the surface.

Seismic Parameters

Based on the field and laboratory tests performed on the encountered subsurface materials, this site should be considered a Site Class C in accordance with the 2012 International Building Code. USGS online database indicates maximum spectral response acceleration values of Ss=0.222 g and S1=0.106 g for the site. A summary of the seismic parameters is included in the Appendix.

GEOTECHNICAL ANALYSIS AND RECOMMENDATIONS

The purpose of this subsurface investigation was to determine the soil profile and the engineering characteristics of the subsurface materials and to evaluate the grading and construction of the residential development. Exhibit 2 shows the site plan with the proposed lot layout. It should be noted that this is not necessarily the final layout.

Exhibit 2: Kinsington Place Conceptual alternative 11-14-23

Site Preparation

The topsoil should be stripped from the structural areas of the site and placed in non-structural areas or removed from the site. The thicknesses on our boring logs may not be exact and may not represent variations of the topsoil thicknesses between boring locations. Therefore, the thicknesses should be used for estimating purposes only. The amount of stripping will also be dependent on the condition of the subgrade during earthmoving operations. A representative of Alt & Witzig Engineering, Inc. should be present prior to and during stripping operations, and during removal of the unsuitable fills to aid in determining where suitable soils are encountered.

Prior to the placement of fill, the exposed subgrade should be proof-rolled with equipment approved by a representative of Alt & Witzig Engineering, Inc. This proof-rolling will assist in determining if any pockets of soft unstable materials exist beneath this exposed subgrade. Where

soft, yielding materials are encountered, it will be necessary to remediate the area prior to placement of fill materials. Remediation of these unstable areas will be dictated by the field conditions at that time and the proposed grading.

All fill placed with the intent of supporting foundations, floor slabs, and pavements should be placed in accordance with the compaction specifications in Table 1.

Bedrock Excavations

While no coring was conducted to investigate the competency of the underlying bedrock, the type of bedrock and our experience in this area indicates that the bedrock surface will not be consistent in elevation. However, when encountered, the bedrock surface is expected to contain a weathered zone ranging from two to four feet. It should be noted that our soil borings likely penetrated into or through the weathered zone, as we utilize carbide tipped cutting teeth on our hollow stem augers.

The weathered zone could include ledges and large boulders and layers or pockets of red clay. The limestone bedrock is hard and will require jack-hammering or blasting for mass earthwork. For relatively narrow utility excavations that will penetrate the weathered rock a trencher with carbide bullet teeth may be effective.

Compaction Specifications

After remediation of soil/yielding soils identified in the proof-roll inspection, the site should be raised to subgrade elevation. It is recommended that the minimum dry density as determined in accordance with ASTM D-1557 be achieved in the various areas across the site mentioned in the following table. The following table illustrates the recommended compaction percentage in several areas of the site.

Table 1: Compaction Specifications

Area	Min. Percentage of Compaction ASTM D 1557	Acceptable Material	Typical Maximum Lift Thickness
Roads, Drives, & Parking Areas (including future areas)	95%	Any besides ML, MH, CH, OL, OH	8"
Under Foundations and Footings	95%	Any besides ML, MH, CH, OL, OH	8"
Sub grade Below Slab-On-Grade	95%	INDOT #53 or other coarse-grained material approved by the geotechnical engineer	8"
Construction of Permanent Slopes	95%	Any besides ML, MH, SW, SP, GW, GP	8”
Green Space (not including permanent slopes)	85%	Any	12"
Landscaped Areas (Upper 1 ft)	Maximum 90%	Any	12"
Utility Trench Backfill	98%	SW, SP, GW, GP	10"

USCS Classifications:	SW-Well Graded Sand	ML-Silt
GW-Well Graded Gravel	SP-Poorly Graded Sand	CH-Fat Clay
GP-Poorly Graded Gravel	SM-Silty Sand	MH-Elastic Silt
GM-Silty Gravel	SC-Clayey Sand	OL-Organic Clay/Silt
GC-Clayey Gravel	CL-Lean Clay	OH-Organic Clay/Silt

The ability to obtain the above-mentioned compaction requirements are dependent upon the moisture contents of the fill soils.

General Foundation Recommendations

Based upon the initial plans and conversations with the client, it is anticipated that the foundations will be bearing on medium stiff, lean silty clays. A net allowable soil bearing capacity of 2,000 psf is recommended for design of conventional spread foundations and for spread and continuous wall footings. It is also recommended that the base of the footing excavations be inspected by a representative of Alt & Witzig Engineering, Inc. for suitable bearing material.

In order to alleviate the effects of frost action and seasonal variations in moisture content, all exterior foundations should be founded a minimum of two and one-half (2.5) feet below the final grade. Interior footings in heated areas may be founded at a nominal depth below the finished floor slab, provided suitable bearing materials are encountered.

The depth to bedrock should be carefully considered when finalizing the grading plan for the development. Should isolated foundation excavations expose bedrock prior to the prescribed depth, it will be necessary to remove the bedrock to 2.5 feet below final grade. If the bedrock cannot be excavated uniformly and excessive removal occurs, a clean crushed stone shall be placed and compacted in place to re-establish the bottom of footing elevation. Additionally, bedrock shall be removed if within 6 inches of the bottom of floor slabs, both typical and any thickened slab areas.

Floor Slab Recommendations

After preparation of the subgrade and final grade has been established, a four (4)-inch compacted granular material should be placed immediately beneath all floor slabs. This granular material will provide a uniform surface for construction of the floor slab and minimize capillary rise of water through the slab.

If the building pad subgrade should become disturbed, or excessively wet or dry prior to construction of the floor slab, the affected materials should be removed and replaced with suitable structural fill.

Pavement Subgrade & Wearing Surface Recommendations

It is recommended that all pavement subgrades be proofrolled prior to placement of new fills or at subgrades that are cut to grade. The subgrades should be protected during construction from excessive construction traffic. It is recommended that the pavement section include a stone subbase to allow for drainage and separation of the pavement section and the underlying fine-grained soils.

Lift Station Recommendations

The lift station boring encountered bedrock at a depth of five feet. Excavations into the rock will require coring or some other type of mechanical removal. No coring was completed so we cannot comment on the competency of the bedrock and potential voids, seams, and joints. Additionally, the groundwater within the bedrock un unknown

Detention Pond Recommendations

The detention area borings, D-01 and D-02, encountered bedrock at depths of 5 and 4 feet below existing grades, respectively. If possible, it is recommended that the detention area be created by building berms to temporarily detain the water for the development. The residual clays atop the bedrock are not considered good infiltration materials. However, if infiltration takes place close to the soil-bedrock interface, significant movement of water can occur due to the weathered nature of the bedrock. It is recommended that the detention system include a uniform clay liner to avoid erosion of the existing soil cap over the bedrock and to avoid excessive loss of water into the underlying bedrock.

STATEMENT OF LIMITATIONS

This report is solely for the use of Beacon Builders and their assigned agents. Any reliance of this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the scope of work, except where written approval and consent are provided by Beacon Builders and Alt &Witzig Engineering.

Our subsurface investigation was conducted in accordance with guidelines set forth in the scope of services and applicable industry standards. The scope or purpose of this geotechnical investigation did not, either specifically or by implication, provide any environmental assessment of the site.

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the particular date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction.

APPENDIX

Boring Logs
General Notes
Soil Survey
Seismic Design Parameters


Boring Location Plan
AW Project 23IN0698
Legend
Proposed Soil Boring
B-13
B-14
D-2
B-10
B-11
B-12
D-1
B-7
B-8
B-9
B-4
B-5
B-6
B-2
LS-1
B-3
B-1
N Kinser Pike
Hoosier Window Technologies
W Acuff Rd
Google Earth
700 ft
N

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-01**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 740.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
739.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY			1	SS			11		4.5	15.2	
737.5		2.5										
	Brown Silty Sandy CLAY											
735.0		5.0	5	2	SS			8	1.9	2.8	35.6	
				3	SS			3	1.4	2.0	42.5	
	Red CLAY											
			10	4	SS			50/1"				
729.0		11.0										
	End of Boring at 11 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-02**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 747.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
746.7	TOPSOIL	0.3										
	Dark Brown Silty Sandy CLAY			1	SS			8	5.4	4.5	16.8	
744.0		3.0										
	Brown and Red CLAY		5	2	SS			11		2.5	39.0	
739.5		7.5		3	SS			24		4.5	7.2	
	Brown Completely weathered limestone		10	4	SS			50/1"			7.0	
736.0		11.0										
	End of Boring at 11 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders** BORING # **B-03**

PROJECT NAME **Kinsington Place** ALT & WITZIG FILE # **23IN0698**

PROJECT LOCATION **Bloomington, IN**

DRILLING and SAMPLING INFORMATION

Date Started	12/20/23	Hammer Wt.	140 lbs.
Date Completed	12/20/23	Hammer Drop	30 in.
Boring Method	HSA	Spoon Sampler OD	2 in.
Driller	M. Winkler	Rig Type	D-50 Track ATV

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 770.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
769.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
767.5		2.5		1	SS			9		4.5	19.0	
			5	2	SS			9	4.0	4.5	31.6	
	Red CLAY											
				3	SS			50/5"		1.8	43.3	
760.5	End of Boring at 9 feet Auger Refusal @ 9.0'	9.5		4	SS			50/2"				

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-04**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 731.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
730.7	TOPSOIL	0.3										
	Dark Brown Silty Sandy CLAY											
728.5		2.5		1	SS			10	5.4	4.5	19.9	
	Red CLAY											
725.5		5.5	5	2	SS			50/4"	2.5	2.8	33.7	
	Auger Refusal @ 5.5' End of Boring at 5.5 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-05**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 746.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
745.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
743.5		2.5		1	SS			9		4.5	20.7	
	Brown and Red CLAY with Weathered Limestone fragments		5	2	SS			9		0.5	28.4	
739.0		7.0										
	Auger Refusal @ 7.0' End of Boring at 7 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-06**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/20/23**
Date Completed **12/20/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 772.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
771.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
769.5		2.5		1	SS			10		3.0	15.4	
	Brown and Red Silty CLAY											
767.0		5.0	5	2	SS			10	5.4	4.5	21.6	
	Red CLAY											
765.0		7.0		3	SS			50/1"				
	Auger Refusal @ 7.0' End of Boring at 7 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-07**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/22/23**
Date Completed **12/22/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 731.0	Strata Depth	Depth Scale	Sample No.	TEST DATA: Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
730.7	TOPSOIL	0.3										
	Brown and Red Sandy Silty CLAY			1	SS			50/1"		4.5	24.4	
728.0	Auger Refusal @ 3.0' End of Boring at 3 feet	3.0										

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-08**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 758.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
757.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
755.5		2.5		1	SS			11		4.5	16.2	
	Brown and Red CLAY		5	2	SS			5		2.0	34.7	
751.5		6.5										
	Auger Refusal @ 6.5' End of Boring at 6.5 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-09**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/20/23**
Date Completed **12/20/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 766.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
765.5	TOPSOIL	0.5										
	Dark Brown Silty Sandy CLAY											
763.5		2.5		1	SS			9	5.4	4.5	19.2	
762.0	Brown and Red Sandy Silty CLAY	4.0										
	Brown CLAY		5	2	SS			50/5"		2.8	42.1	
760.0		6.0										
	Auger Refusal @ 6.0' End of Boring at 6 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-10**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/22/23**
Date Completed **12/22/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 732.0	Strata Depth	Depth Scale	Sample No.	TEST DATA: Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
731.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
729.5		2.5		1	SS			10		4.5	20.8	
	Red Silty CLAY											
726.5		5.5	5	2	SS			7	2.3	2.8	36.3	
725.0	Brown CLAY	7.0										
	Auger Refusal @ 7.0' End of Boring at 7 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-11**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 754.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
753.5	TOPSOIL	0.5										
	Dark Brown Silty Sandy CLAY			1	SS			6	3.2	4.5	17.6	
751.5		2.5										
	Brown Silty Sandy CLAY											
749.0		5.0	5	2	SS			13	5.4	4.5	21.9	
	Red CLAY			3	SS			1		1.3	42.0	
743.5		10.5	10	4	SS			50/5"		3.5	10.8	
743.0	Brown and Gray Completely Weathered Limestone	11.0										
	End of Boring at 11 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-12**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/20/23**
Date Completed **12/20/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 749.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
748.6	TOPSOIL	0.4										
	Dark Brown Silty Sandy CLAY											
746.5		2.5		1	SS			9		4.0	18.4	
	Red CLAY		5	2	SS			6	1.7	2.5	20.2	
742.5		6.5										
	Auger Refusal @ 6.5' End of Boring at 6.5 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-13**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 748.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
747.6	TOPSOIL	0.4										
	Dark Brown Silty CLAY			1	SS			9		4.3		
745.0		3.0										
	Brown Sandy Silty CLAY											
743.0		5.0	5	2	SS			15		4.5		
	Brown and Red Silty CLAY with Weathered Limestone Fragments											
740.5		7.5		3	SS			10	3.5	4.0		
	Red CLAY											
738.0		10.0	10	4	SS			8		2.5		
737.0	Brown and Red CLAY with Limestone fragments	11.0										
	End of Boring at 11 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **B-14**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 744.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
743.6	TOPSOIL	0.4										
	Dark Brown Silty CLAY											
741.5		2.5		1	SS			7	2.3	3.5	20.9	
	Brown Sandy Silty CLAY											
739.0		5.0	5	2	SS			11	3.5	3.8	20.7	
	Red CLAY			3	SS			9	3.1	3.0	41.3	
735.0		9.0										
	Brown CLAY with Completely Weathered Limestone Pieces		10	4	SS			6		3.0	40.7	
733.0		11.0										
	End of Boring at 11 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **D-01**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/22/23**
Date Completed **12/22/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 726.0	Strata Depth	Depth Scale	Sample No.	TEST DATA: Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
725.6	TOPSOIL	0.4										
	Dark Brown Silty CLAY											
723.5		2.5		1	SS			9	4.4	2.0	34.4	
	Red CLAY											
721.0		5.0	5	2	SS			50/1"				
	Auger Refusal @ 5.0' End of Boring at 5 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **D-02**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/22/23**
Date Completed **12/22/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 726.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
725.7	TOPSOIL	0.3										
	Dark Brown Silty CLAY			1	SS			11		4.5	30.2	
723.0		3.0										
722.0	Red and Brown CLAY with Completely Weathered Limestone Fragments	4.0										
	Auger Refusal @ 4.0'											
	End of Boring at 4 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **Beacon Builders**
PROJECT NAME **Kinsington Place**
PROJECT LOCATION **Bloomington, IN**

BORING # **LS-01**
ALT & WITZIG FILE # **23IN0698**

DRILLING and SAMPLING INFORMATION

Date Started **12/21/23**
Date Completed **12/21/23**
Boring Method **HSA**
Driller **M. Winkler**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **D-50 Track ATV**

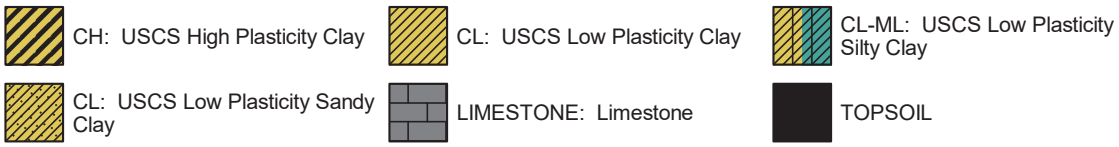
STRATA ELEV.	SOIL CLASSIFICATION SURFACE ELEVATION 722.0	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % *Dry Unit Weight (pcf)*	Remarks
721.7	TOPSOIL	0.3										
	Dark Brown Silty Sandy CLAY											
719.5		2.5		1	SS			11	5.4	4.5	20.7	
	Red Silty CLAY											
717.0		5.0	5	2	SS			50/5"		4.5	25.8	
	Auger Refusal @ 5.0' End of Boring at 5 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

MATERIAL GRAPHICS LEGEND



SOIL PROPERTY SYMBOLS

N: *Standard "N" penetration value. Blows per foot of a 140-lb hammer falling 30" on a 2" O.D. split-spoon.*

Qu: *Unconfined Compressive Strength, tsf* PP: *Pocket Penetrometer, tsf*

LL: *Liquid Limit, %* PL: *Plastic Limit, %* PI: *Plasticity Index, %*

DRILLING AND SAMPLING SYMBOLS

GROUNDWATER SYMBOLS

- ○ *Apparent water level noted while drilling.*
- ▽ *Apparent water level noted upon completion.*
- ▼ *Apparent water level noted upon delayed time.*

SAMPLER SYMBOLS

- ⊠ SS: Split Spoon

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (NON-COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Loose	0 - 5
Loose	6 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>51

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Soft	0 - 3
Soft	4 - 5
Medium Stiff	6 - 10
Stiff	11 - 15
Very Stiff	16 - 30
Hard	>31

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GENERAL NOTES

Project: Kinsington Place

Location: Bloomington, IN

Number: 23IN0698

United States Department of Agriculture

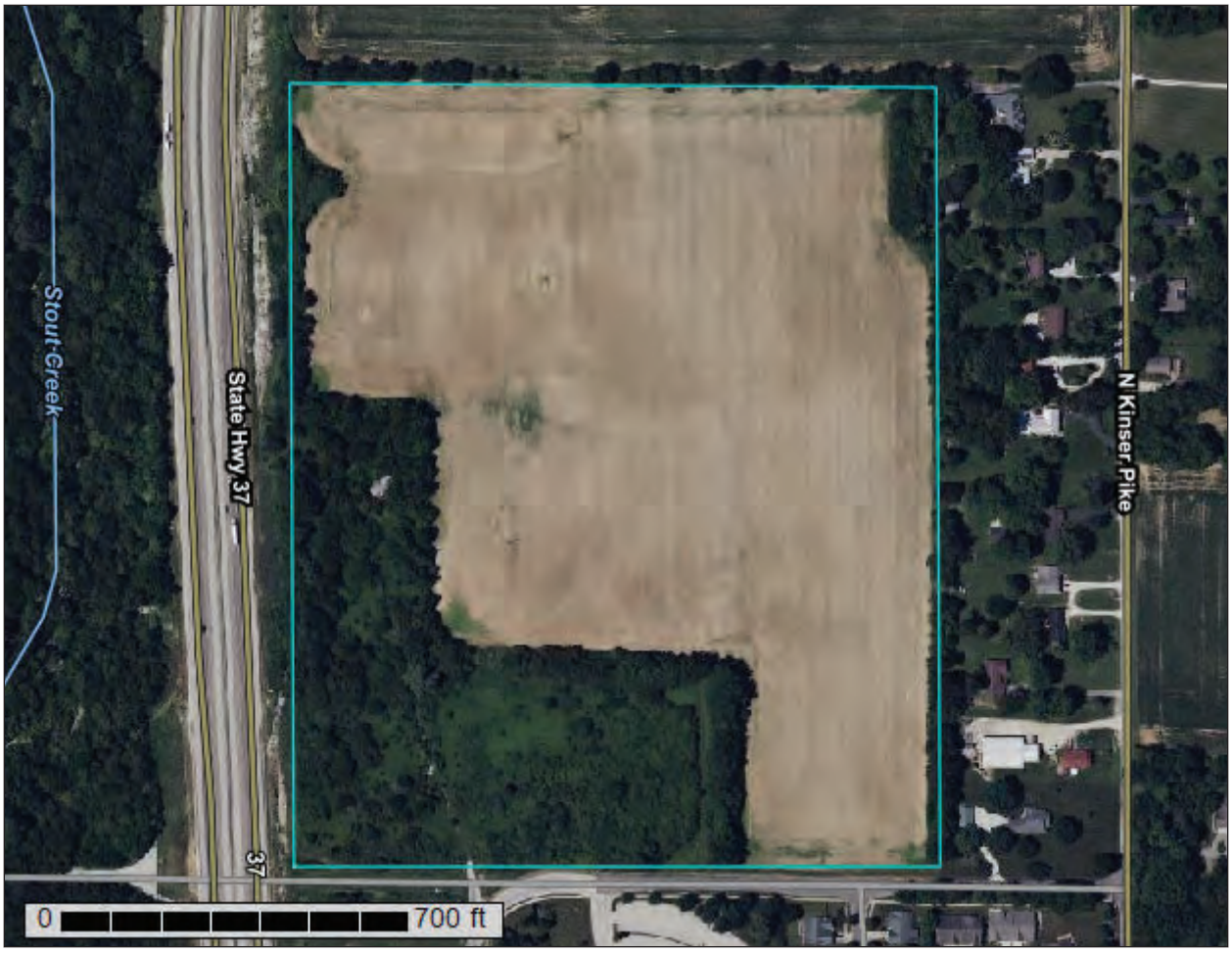
NRCS

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 Monroe County, Indiana

Kinsington Place



December 1, 2023

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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Contents

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

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.

Map Scale: 1:3,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

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 1:15,800.

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: Monroe County, Indiana
Survey Area Data: Version 30, Sep 1, 2023

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

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 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
CrB	Crider silt loam, 2 to 6 percent slopes	23.3	49.5%
CrC	Crider silt loam, 6 to 12 percent slopes	23.7	50.5%
Totals for Area of Interest		**47.0**	**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.

Monroe County, Indiana

CrB—Crider silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2vp3p
Elevation: 350 to 1,120 feet
Mean annual precipitation: 37 to 62 inches
Mean annual air temperature: 41 to 68 degrees F
Frost-free period: 145 to 212 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Crider and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crider

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-silty noncalcareous loess over clayey residuum weathered from limestone

Typical profile

Ap - 0 to 7 inches: silt loam
Bt1 - 7 to 32 inches: silty clay loam
2Bt2 - 32 to 80 inches: clay

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F122XY004KY - Loess Veneered Uplands
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Bedford

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Nolin, ponded

Percent of map unit: 10 percent
Landform: Sinkholes
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Caneyville

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

CrC—Crider silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2vp3r
Elevation: 440 to 990 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 150 to 212 days
Farmland classification: Not prime farmland

Map Unit Composition

Crider and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crider

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty noncalcareous loess over clayey residuum weathered from limestone

Typical profile

Ap - 0 to 7 inches: silt loam
Bt1 - 7 to 36 inches: silty clay loam
2Bt2 - 36 to 80 inches: clay

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F122XY004KY - Loess Veneered Uplands
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Caneyville

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Bedford

Percent of map unit: 7 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Nolin, ponded

Percent of map unit: 3 percent
Landform: Sinkholes
Landform position (three-dimensional): Talf

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Local Roads and Streets

ENG - Engineering

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use.

"Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Map Scale: 1:3,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

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 1:15,800.

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: Monroe County, Indiana
Survey Area Data: Version 30, Sep 1, 2023

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

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 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.

Tables—Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
CrB	Crider silt loam, 2 to 6 percent slopes	Very limited	Crider (75%)	Frost action (1.00)	23.3	49.5%
				Low strength (1.00)		
			Bedford (10%)	Depth to thin cemented pan (1.00)		
				Frost action (1.00)		
				Low strength (0.94)		
				Depth to saturated zone (0.43)		
				Depth to thick cemented pan (0.10)		
			Nolin, ponded (10%)	Ponding (1.00)		
				Frost action (1.00)		
				Low strength (0.32)		
			Caneyville (5%)	Low strength (1.00)		
				Shrink-swell (0.92)		
				Frost action (0.50)		
				Depth to hard bedrock (0.16)		
				Soluble bedrock (0.15)		
CrC	Crider silt loam, 6 to 12 percent slopes	Very limited	Crider (80%)	Frost action (1.00)	23.7	50.5%
				Low strength (1.00)		
				Slope (0.04)		
			Caneyville (10%)	Low strength (1.00)		
				Shrink-swell (0.92)		
				Frost action (0.50)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Depth to hard bedrock (0.16)		
				Soluble bedrock (0.15)		
			Bedford (7%)	Depth to thin cemented pan (1.00)		
				Frost action (1.00)		
				Low strength (0.94)		
				Depth to saturated zone (0.43)		
				Depth to thick cemented pan (0.10)		
			Nolin, ponded (3%)	Ponding (1.00)		
				Frost action (1.00)		
				Low strength (0.32)		
Totals for Area of Interest					**47.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	47.0	100.0%
Totals for Area of Interest	**47.0**	**100.0%**

Rating Options—Local Roads and Streets

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Dwellings Without Basements

ENG - Engineering

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper.

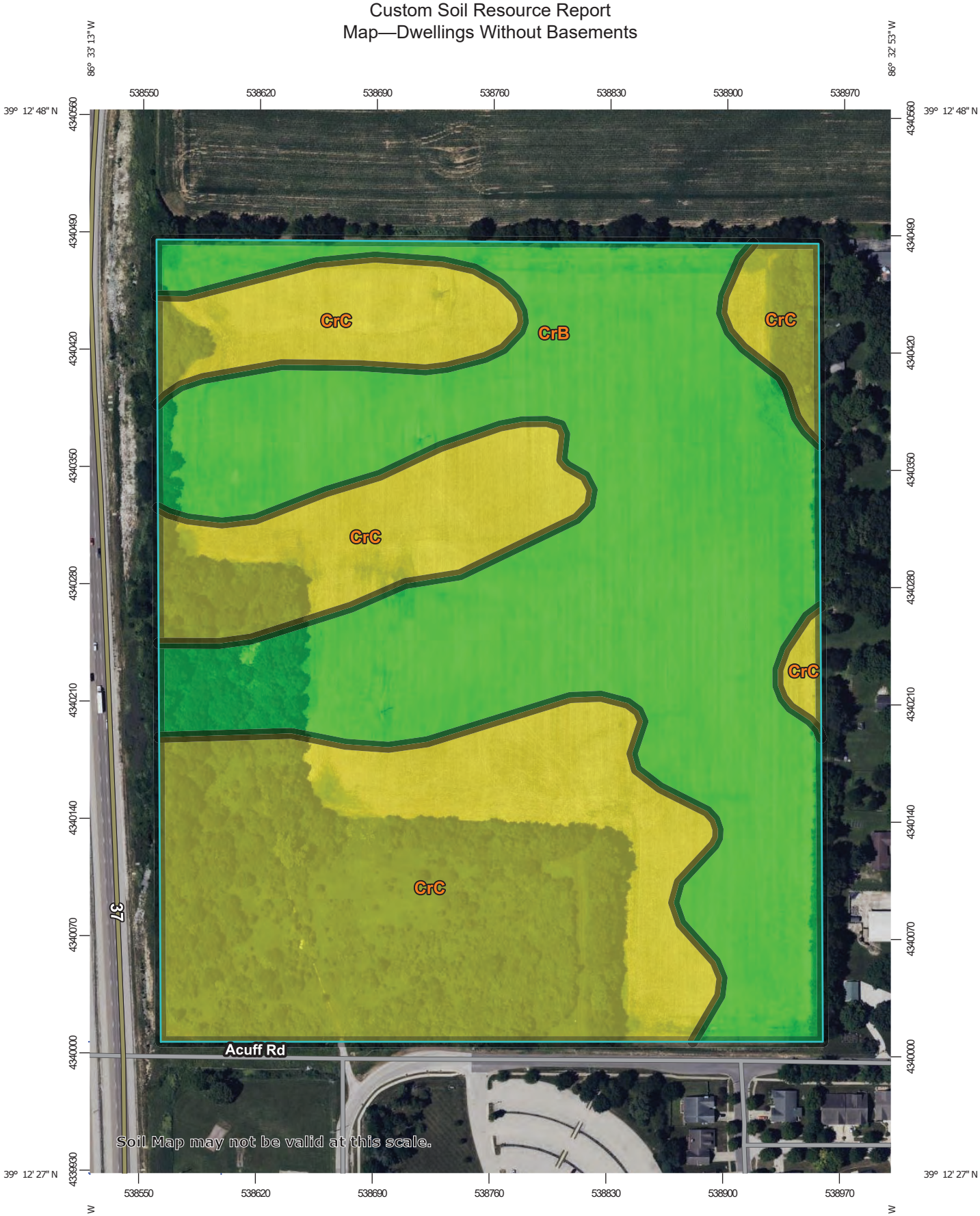
The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.



Map Scale: 1:3,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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- Area of Interest (AOI)

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- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

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- Rails
- Interstate Highways
- US Routes
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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Monroe County, Indiana
Survey Area Data: Version 30, Sep 1, 2023

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

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 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.

Tables—Dwellings Without Basements

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
CrB	Crider silt loam, 2 to 6 percent slopes	Not limited	Crider (75%)		23.3	49.5%
CrC	Crider silt loam, 6 to 12 percent slopes	Somewhat limited	Crider (80%)	Slope (0.04)	23.7	50.5%
			Caneyville (10%)	Shrink-swell (0.92)		
				Depth to hard bedrock (0.16)		
				Slope (0.04)		
			Bedford (7%)	Depth to saturated zone (0.77)		
				Depth to thin cemented pan (0.50)		
				Depth to thick cemented pan (0.10)		
Totals for Area of Interest					**47.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Somewhat limited	23.7	50.5%
Not limited	23.3	49.5%
Totals for Area of Interest	**47.0**	**100.0%**

Rating Options—Dwellings Without Basements

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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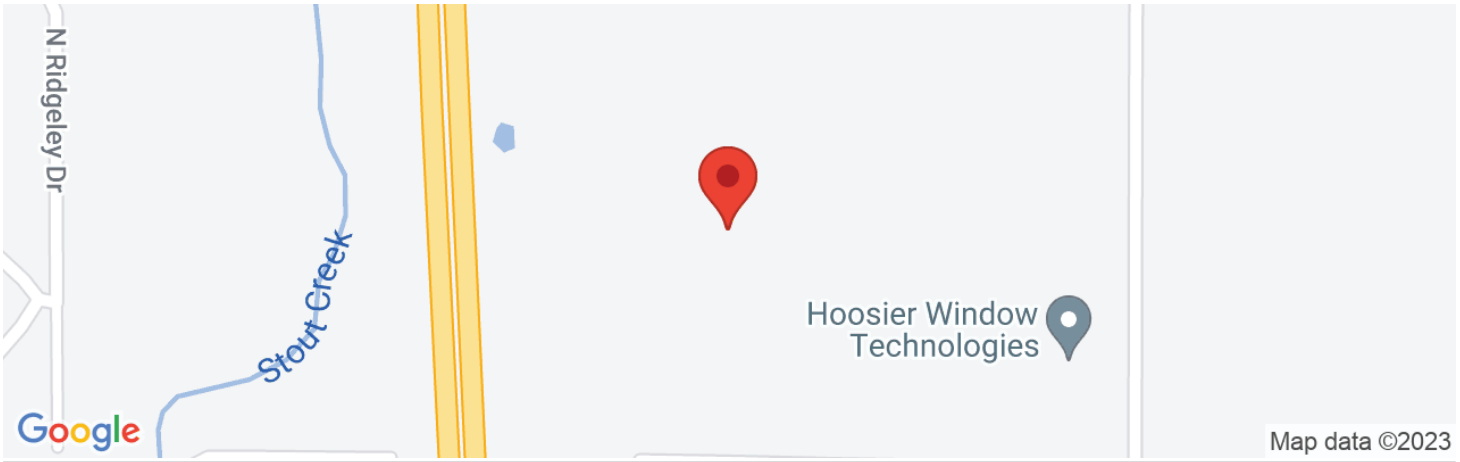
USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

Kinsington Place 23IN0698

Latitude, Longitude: 39.21007438, -86.55126724



Date	12/1/2023, 10:11:20 AM
Design Code Reference Document	IBC-2012
Risk Category	II
Site Class	C - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	0.222	MCE_R ground motion. (for 0.2 second period)
S_1	0.106	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.266	Site-modified spectral acceleration value
S_{M1}	0.179	Site-modified spectral acceleration value
S_{DS}	0.177	Numeric seismic design value at 0.2 second SA
S_{D1}	0.12	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	1.694	Site amplification factor at 1.0 second
PGA	0.106	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.127	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.222	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.246	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.106	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.124	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.106	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.9	Mapped value of the risk coefficient at short periods
C_{R1}	0.854	Mapped value of the risk coefficient at a period of 1 s
C_V		Vertical coefficient

DISCLAIMER

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TRAFFIC IMPACT STUDY

PROPOSED RESIDENTIAL DEVELOPMENT

"KINSER RIDGE"

BLOOMINGTON, INDIANA

PREPARED FOR

BEACON BUILDERS

REVISED SEPTEMBER 2024

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CERTIFICATION

I certify that this **TRAFFIC IMPACT STUDY** has been prepared by me and under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

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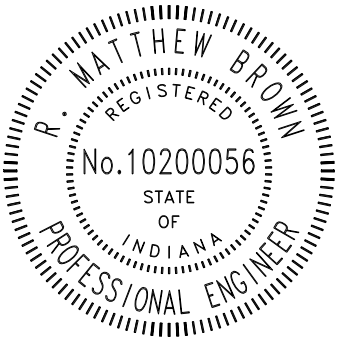

September 18, 2024
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Indiana Registration 10200056

Trevor Reich, E.I.
Senior Traffic Engineer

Sri Gayatri Kesara
Traffic Engineer Technician

INTRODUCTION

This **TRAFFIC IMPACT STUDY**, prepared on behalf of Beacon Builders, is for a proposed residential development known as "Kinser Ridge" that will be located north of Acuff Road and west of Kinser Pike in Bloomington, Indiana.

PURPOSE

The purpose of this analysis is to determine what impact the traffic generated by the proposed development will have on the existing adjacent roadway system. This analysis will identify any existing roadway deficiencies or ones that may occur when this site is developed.

Conclusions will be reached that will determine if the roadway system can accommodate the anticipated traffic volumes or will determine the modifications that will be required to the system if there are identified deficiencies.

Recommendations will be made that will address the conclusions resulting from this analysis. These recommendations will address feasible roadway system improvements to provide safe ingress and egress, to and from the proposed development, with minimal interference to traffic on the public street system.

SCOPE OF WORK

The scope of work for this analysis is as follows:

First, obtain turning movement traffic volume counts between the hours of 6:30 A.M. to 10:00 A.M. and 2:00 P.M. to 7:00 P.M. during a typical weekday when school was in session in August 2024 at the following intersections:

- Acuff Road & Kinser Pike
- Prow Road & Arlington Road
- Kinser Pike & SR 45

Second, conduct a 24-hour weekday traffic count along Prow Road/Acuff Road.

Third, estimate the year 2029 background traffic volumes by applying a 1% per year growth rate to the existing traffic volumes.

Fourth, estimate the number of peak hour and 24-hour weekday trips that will be generated by the proposed development.

Fifth, assign and distribute the generated traffic volumes from the proposed development to the study intersections.

Sixth, prepare a capacity analysis, level of service analysis, and turn lane analysis at the study intersections for each of the following scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes.

Scenario 2: Year 2029 Background Traffic Volumes – Based on applying a 1.0% per year annual growth rate to the existing traffic volumes.

Scenario 3: Year 2029 Proposed Development Traffic Volumes – Based on the sum of year 2029 background traffic volumes and generated traffic volumes from the proposed development.

Seventh, conduct an all-way stop warrant analysis at the intersection of Prow Road and Acuff Road based on the traffic volumes in *Scenario 3.*

Eighth, prepare recommendations for the roadway geometrics that will be needed to accommodate the total traffic volumes once the proposed development is constructed.

Finally, prepare a **TRAFFIC IMPACT STUDY** report documenting all data, analyses, conclusions and recommendations to provide for the safe and efficient movement of traffic through the study area.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The subject site is located north of Acuff Road and west of Kinser Pike in Bloomington, Indiana. As proposed, the development will consist of 124 single-family homes that will be served by a full access drive along Kinser Pike and a full access drive along Acuff Road. As part of the proposed development, Prow Road will be extended north of Acuff Road through the development to create "T" intersection with Acuff Road. In addition, it should be noted that 5 homes will have direct access to Acuff Road. **Figure 1** is an area map showing the location and general layout of the site.

STUDY AREA

The study area for this analysis has been defined to include the following intersections:

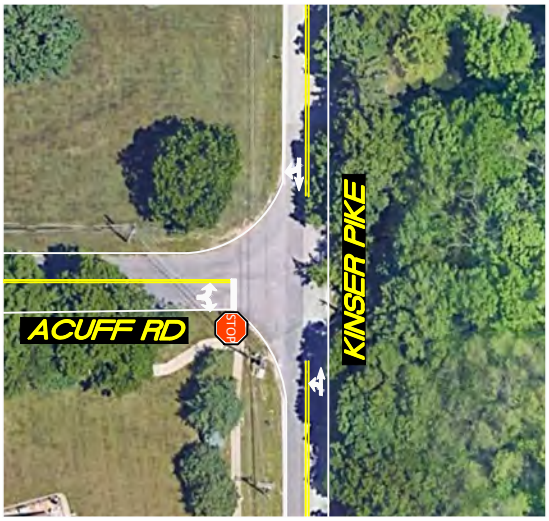
- Acuff Road & Kinser Pike
- Prow Road & Arlington Road
- Kinser Pike & SR 45
- Acuff Road & Prow Road
- Kinser Pike & Proposed Access Drive
- Acuff Road & Proposed Access Drive

Figure 2 shows the existing intersection geometrics at the existing study intersections.

FIGURE 1

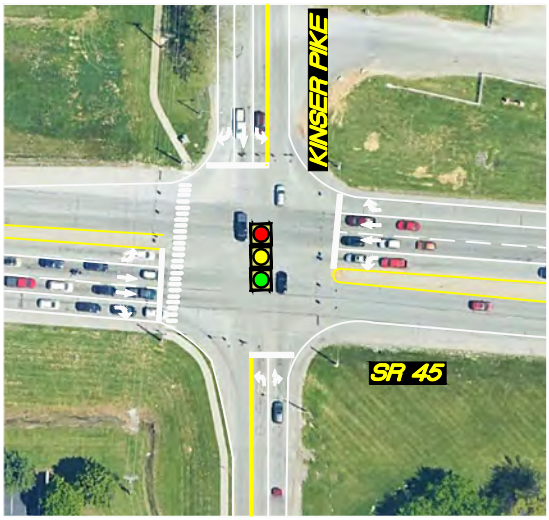
AREA MAP

TRAFFIC IMPACT STUDY
KINSER RIDGE SUBDIVISION
BLOOMINGTON, INDIANA



ACUFF RD & KINSER PIKE

PROW RD & ARLINGTON RD



KINSER PIKE & SR 45

FIGURE 2

EXISTING INTERSECTION GEOMETRICS

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KINSER RIDGE SUBDIVISION
BLOOMINGTON, INDIANA

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DESCRIPTION OF ABUTTING STREET SYSTEM

The proposed development will be primarily served by the public roadway system that includes Kinser Pike, Acuff Road, Prow Road, Arlington Road, and SR 45.

TABLE 1 – DESCRIPTION OF THE ABUTTING STREET SYSTEM

STREET NAME	NUMBER OF LANES	SPEED LIMIT (MPH)	FUNCTIONAL CLASSIFICATION
Kinser Pike	2	30	Secondary Arterial
Acuff Road	2	30	Local Road
Prow Road	2	30	Local Road
Arlington Road	2	40	Secondary Arterial
SR 45	4	50	Primary Arterial

EXISTING TRAFFIC VOLUMES & PEAK HOURS

Turning movement traffic volume counts were collected by A&F Engineering at the study intersections between the hours of 6:30 AM to 10:00 AM and 2:00 PM to 7:00 PM during a typical weekday when school was in session in August 2024 under good weather conditions. According to the turning movement counts, the AM and PM peak hours vary slightly at each study intersection. Hence, the actual peak hours are used at each study intersection to create a "worse-case" traffic volume scenario. Additionally, 24-hour weekday traffic volume counts were collected along Prow Road/Acuff Road. The count output summary sheets are included in the **Appendix** and the peak hour volumes are shown on **Figure 3**.

YEAR 2029 BACKGROUND TRAFFIC VOLUMES

In order to account for growth in background traffic volumes due to future development outside of the study area, the existing traffic volumes were grown by 1.0% per year for 5 years. Therefore, a growth rate factor of 1.05 was applied to the existing traffic volumes to yield the year 2029 background traffic volumes that are shown in **Figure 4.**

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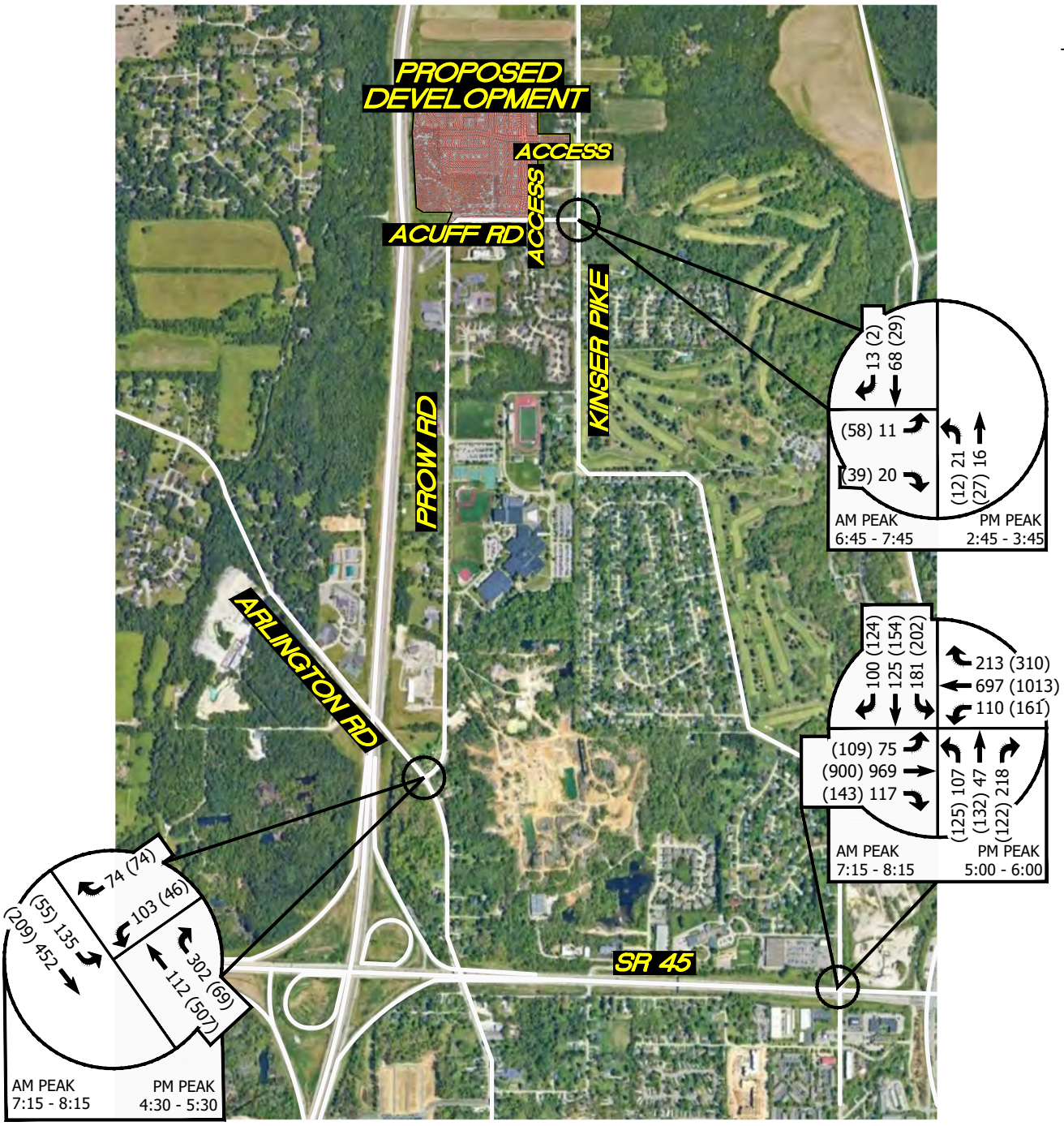

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 3

EXISTING TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
KINSER RIDGE SUBDIVISION
BLOOMINGTON, INDIANA

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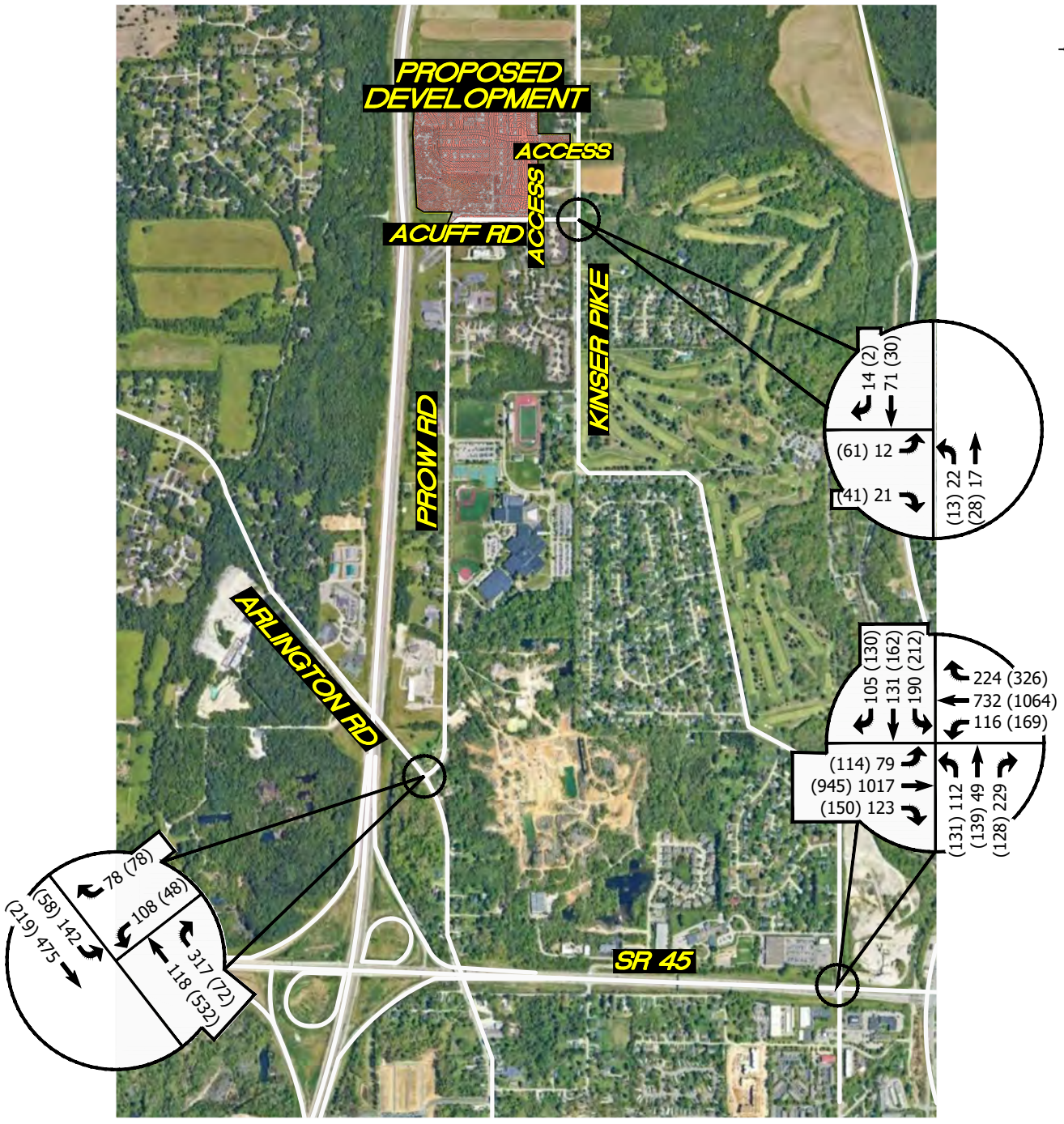

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 4

YEAR 2029 BACKGROUND TRAFFIC VOLUMES

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KINSER RIDGE SUBDIVISION
BLOOMINGTON, INDIANA

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GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT

The estimate of newly generated traffic is a function of the development size and of the character of the land use. The ITE *Trip Generation Manual*[1] was used to calculate the number of trips that will be generated by the proposed development. This report is a compilation of trip data for various land uses as collected by transportation professionals throughout the United States in order to establish the average number of trips generated by those land uses. **Table 2** is a summary of the total trips that will be generated by the proposed development.

TABLE 2 – TOTAL GENERATED TRIPS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS					
LAND USE	ITE CODE	SIZE	AM PEAK HOUR		PM PEAK HOUR		24-HOUR	
			ENTER	EXIT	ENTER	EXIT	ENTER	EXIT
Single-Family Housing	210	124 DU	23	68	77	45	615	615

PASS-BY & INTERNAL TRIPS

Pass-by trips are trips that are already in the existing traffic stream along the adjacent public roadway system that enter a site, utilize the site, and then return back to the existing traffic stream. Residential developments do not typically attract a significant number of pass-by trips. Therefore, pass-by trip reductions are not included in this study.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. The proposed development is a single land use only. Hence, internal trip reductions are not considered in this study.

ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS

The study methodology used to determine the traffic volumes from the site that will be added to the street system is defined as follows:

1. The volume of traffic that will enter and exit the proposed development must be assigned to the access points and to the public street system. Using the traffic volume data collected for this analysis, traffic to and from the site has been assigned to the proposed driveways and to the public street system that will be serving the site.

[1] *Trip Generation Manual*, Institute of Transportation Engineers, Eleventh Edition, 2021.

2. To determine the volumes of traffic that will be added to the public roadway system, the generated traffic must be distributed by direction to the public roadways at their intersection with the driveways. For the proposed development site, the trip distribution was based on the location of the development, the existing traffic patterns, and the assignment of generated traffic.

Figure 5 illustrates the assignment and distribution of generated traffic volumes for the proposed development.

GENERATED TRIPS ADDED TO THE STREET SYSTEM

The generated traffic volumes from the proposed development have been assigned to each of the study intersections. These volumes were determined based on the previously discussed trip generation data, assignment and distribution of generated traffic. The total peak hour generated traffic volumes from the proposed development are shown in **Figure 6**, while **Figure 7** shows the sum of the year 2029 background traffic volumes and generated traffic volumes from the proposed development.

TURN LANE ANALYSIS

The year 2029 background traffic volumes were combined with the generated traffic volumes from the proposed development to determine if turn lanes would be required along Kinser Pike & Acuff Road at the proposed access drive locations. This analysis was done in accordance with the INDOT *Driveway Permit Manual*[2]. The results are summarized in the following table.

TABLE 3 –TURN LANE WARRANT ANALYSIS SUMMARY

LOCATION	SCENARIO	RIGHT- TURN LANE	LEFT-TURN LANE
Kinser Pike & Proposed Access Drive	Total Year 2029 Traffic Volumes + Generated Traffic Volumes	✗	✗
Acuff Road & Proposed Access Drive	Total Year 2029 Traffic Volumes + Generated Traffic Volumes	✗	✗

✔=Turn Lane warranted; ✗=Turn Lane not warranted

While turn lanes are not shown to be warranted at either drive, it should be noted that turn lanes could be required based on local standards. The graphs that show the turn lane warrant criteria are shown in the **Appendix**.

[2] INDOT *Driveway Permit Manual*, *Version 1.4*, Indiana Department of Transportation, April 2024

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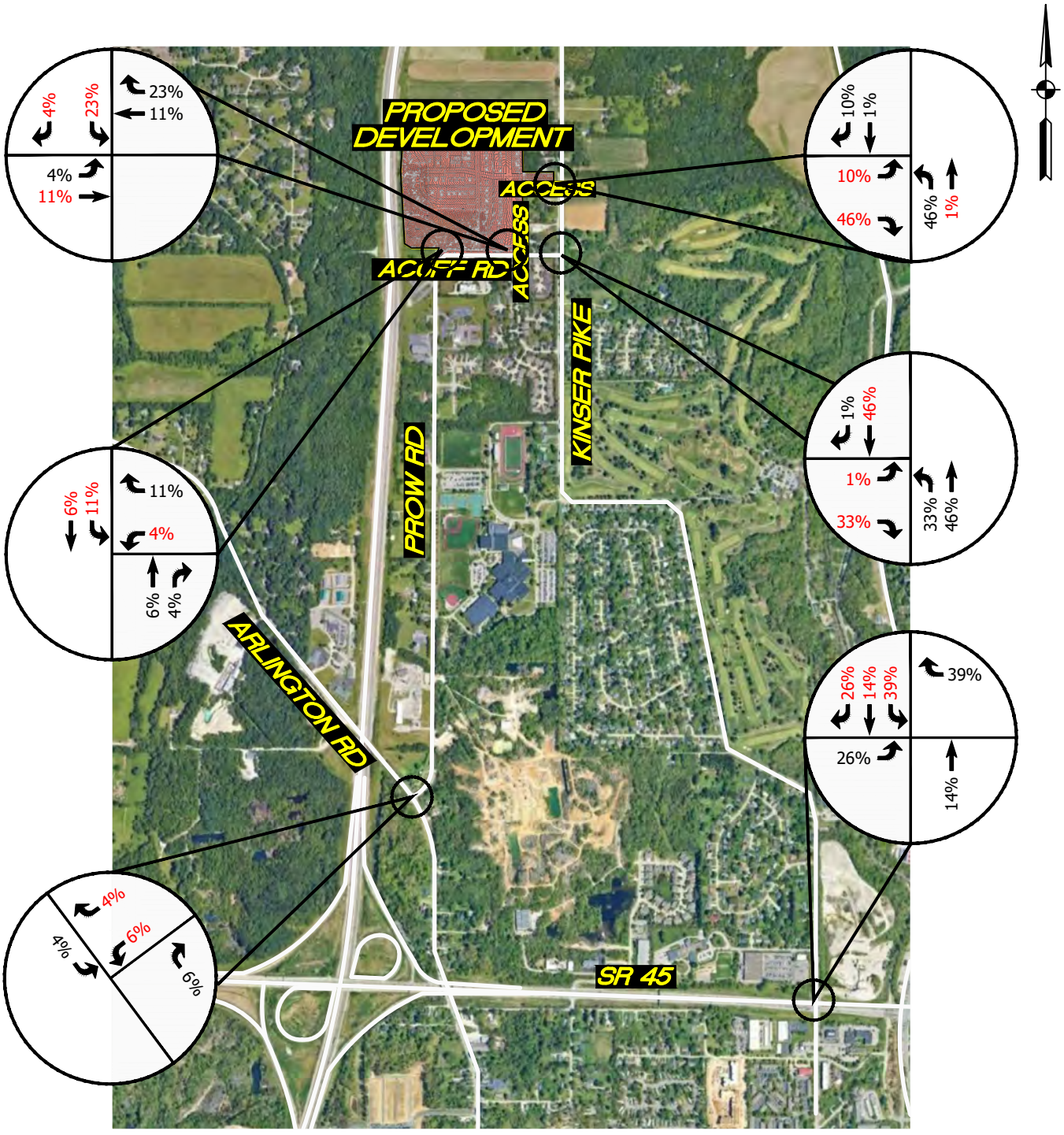

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

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BLOOMINGTON, INDIANA

FIGURE 5

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

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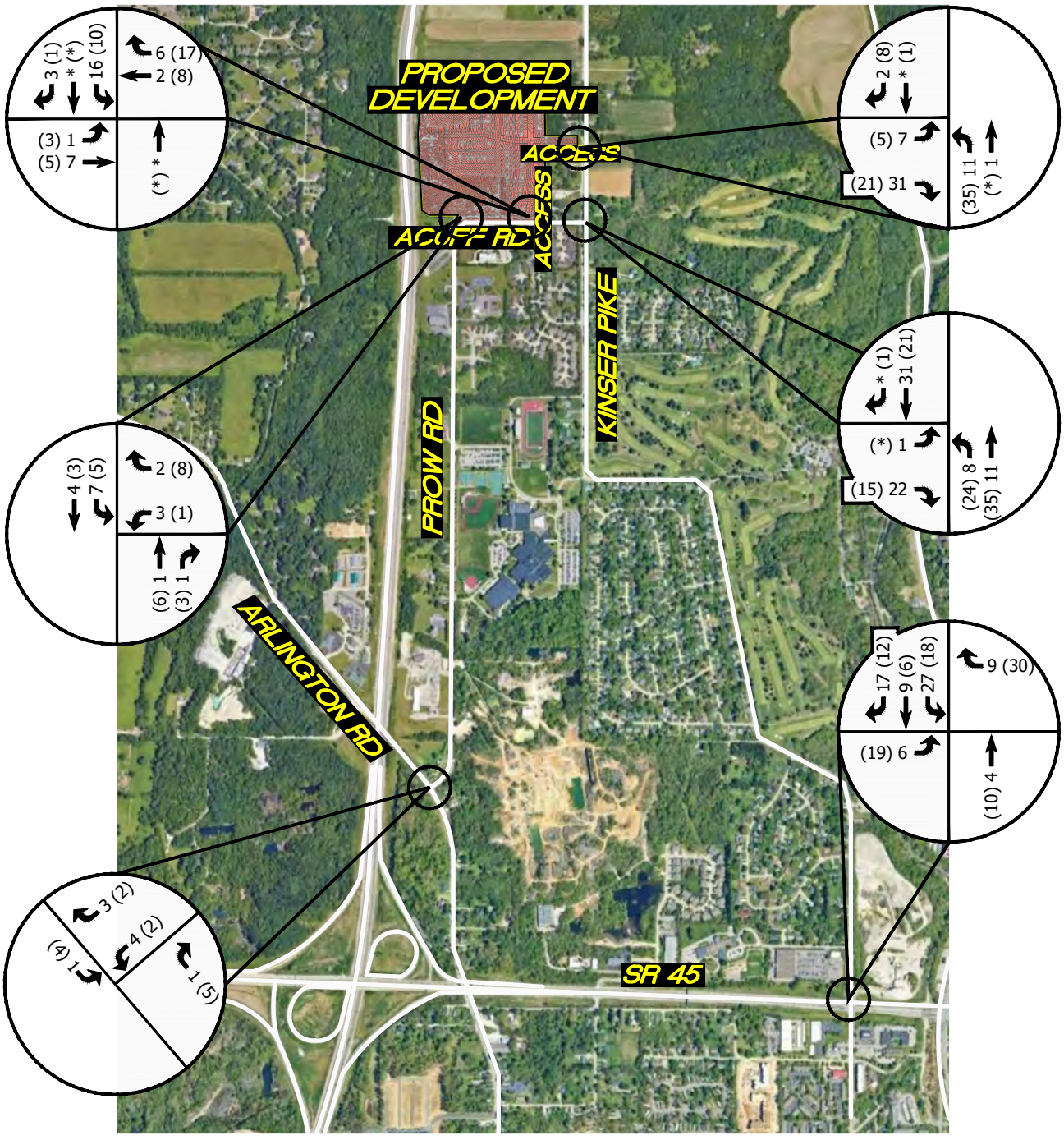

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

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FIGURE 6

TOTAL GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

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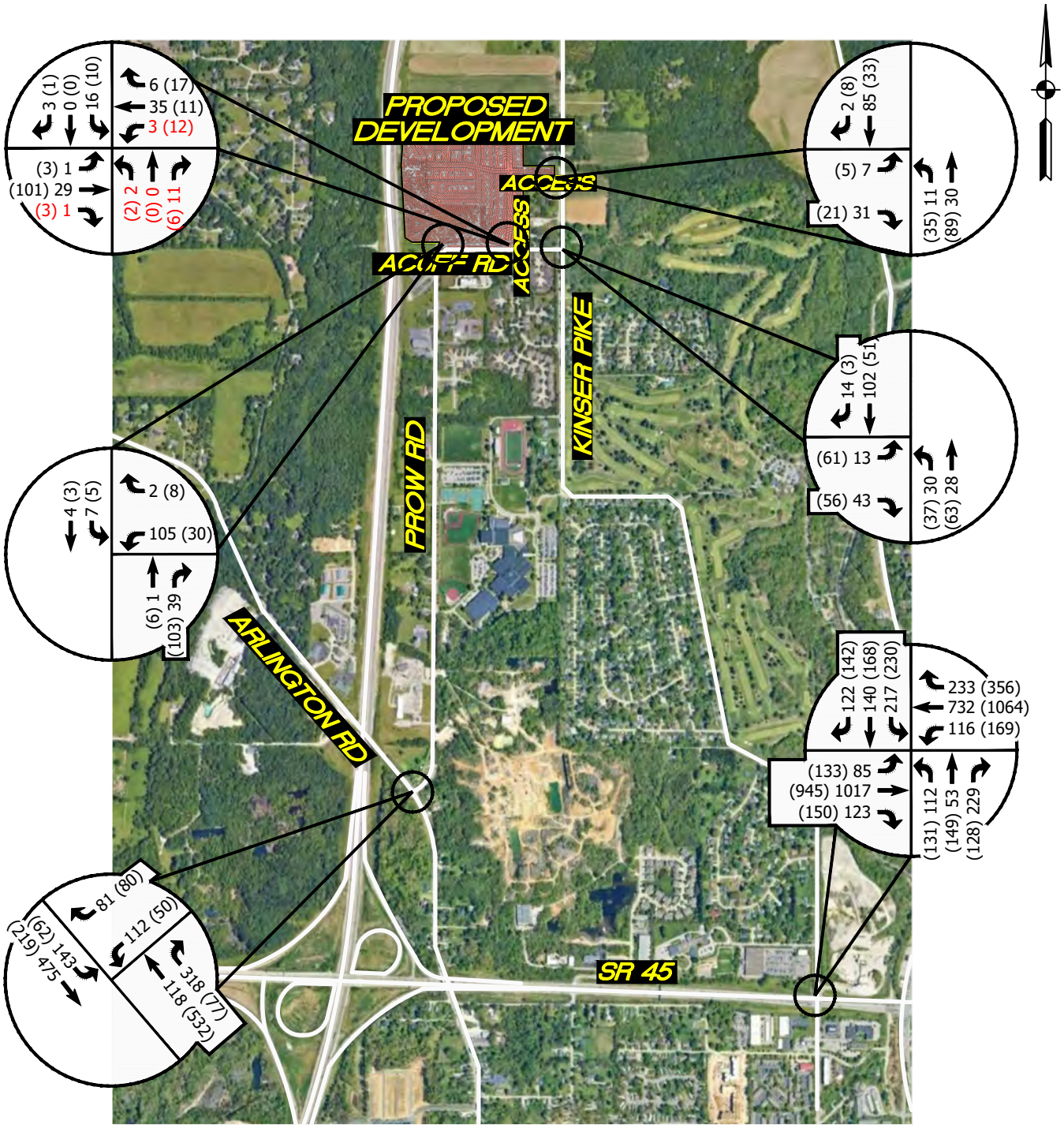

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE
XX (XX) = ESTIMATED TRAFFIC VOLUMES

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FIGURE 7

SUM OF YEAR 2029 BACKGROUND TRAFFIC VOLUMES & GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

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MULTI-WAY STOP WARRANT ANALYSIS

A multi-way stop warrant analysis has been conducted in order to determine if an all-way stop control could be warranted at the intersection of Acuff Road and Prow Road based on the sum of year 2029 background traffic volumes and the generated traffic volumes from the proposed development. Condition C (Intersection Volume & Delay) was conducted per the procedures outlined in the *Indiana Manual on Uniform Traffic Control Devices for Streets and Highways (IMUTCD).*

HOURLY DISTRIBUTION OF TRIPS

The 24-hour traffic volumes (shown in Table 2) were distributed by hour based on the distribution percentages in the time-of-day data outlined in the Trip Generation Manual Appendices. The following table summarizes the resulting 24-hour hourly distribution of trips for the proposed development.

TABLE 4 – HOURLY DISTRIBUTION OF TRIPS FOR PROPOSED DEVELOPMENT

HOUR	DISTRIBUTION OF TRIPS BY HOUR		
	TOTAL	ENTERING	EXITING
12-1 AM	4	3	1
1-2 AM	2	1	1
2-3 AM	1	1	0
3-4 AM	2	1	1
4-5 AM	7	2	5
5-6 AM	15	3	12
6-7 AM	46	10	36
7-8 AM	80	19	61
8-9 AM	76	23	53
9-10 AM	56	20	36
10-11 AM	60	26	34
11-12 PM	64	33	31
12-1 PM	70	35	35
1-2 PM	75	38	37
2-3 PM	82	44	38
3-4 PM	92	54	38
4-5 PM	111	65	46
5-6 PM	107	62	45
6-7 PM	88	52	36
7-8 PM	63	37	26
8-9 PM	57	38	19
9-10 PM	41	27	14
10-11 PM	19	13	6
11-12 AM	12	8	4

HOURLY GENERATED TRIPS FROM ASSIGNMENT & DISTRIBUTION

The hourly trips in **Table 4** were multiplied to the assignment & distribution percentages (shown in **Figure 5**) at Acuff Road & Prow Road to generate the hourly trips at the intersection. The following table summarizes the resulting 24-hour hourly generated trips at Acuff Road & Prow Road.

TABLE 5 – PROPOSED DEVELOPMENT GENERATED TRIPS AT ACUFF ROAD & PROW ROAD

HOUR	HOURLY GENERATED TRIPS			
	APPROACH			
	NB	SB	NB+SB	WB
12-1 AM	0	0	0	0
1-2 AM	0	0	0	0
2-3 AM	0	0	0	0
3-4 AM	0	0	0	0
4-5 AM	0	2	2	1
5-6 AM	1	2	3	2
6-7 AM	2	6	8	2
7-8 AM	2	11	13	4
8-9 AM	2	9	11	5
9-10 AM	2	6	8	3
10-11 AM	3	6	9	4
11-12 PM	3	5	8	5
12-1 PM	3	6	9	5
1-2 PM	4	6	10	5
2-3 PM	5	6	11	7
3-4 PM	5	6	11	8
4-5 PM	7	8	15	9
5-6 PM	6	8	14	9
6-7 PM	5	6	11	7
7-8 PM	3	5	8	5
8-9 PM	4	3	7	5
9-10 PM	3	3	6	4
10-11 PM	2	1	3	2
11-12 AM	0	0	0	1

TRAFFIC VOLUME SUMMARY

The hourly generated trips are added to the year 2029 background traffic volumes to yield the total hourly traffic volumes at the intersection of Acuff Road & Prow Road evaluated for the multi-way warrant analysis.

TABLE 6 – TRAFFIC VOLUME SUMMARY: YEAR 2029 BACKGROUND + PROPOSED DEVELOPMENT

HOUR	YEAR 2029 BACKGROUND + PROPOSED APPROACH			
	NB	SB	NB+SB	WB
12-1 AM	2	0	2	2
1-2 AM	0	0	0	1
2-3 AM	1	0	1	0
3-4 AM	0	0	0	0
4-5 AM	0	2	2	4
5-6 AM	4	2	6	11
6-7 AM	8	6	14	37
7-8 AM	46	11	57	99
8-9 AM	40	9	49	31
9-10 AM	18	6	24	28
10-11 AM	28	6	34	23
11-12 PM	26	5	31	34
12-1 PM	41	6	47	28
1-2 PM	26	6	32	32
2-3 PM	98	6	104	41
3-4 PM	63	6	69	31
4-5 PM	81	8	89	35
5-6 PM	65	8	73	48
6-7 PM	42	6	48	31
7-8 PM	26	5	31	27
8-9 PM	26	3	29	18
9-10 PM	14	3	17	10
10-11 PM	10	1	11	5
11-12 AM	5	0	5	2

WARRANT ANALYSIS: MULTI-WAY STOP CRITERIA

According to the *Indiana MUTCD*, the volumes needed for these criteria along the major road (Prow Road) and minor road (Acuff Road) are the sum of traffic volumes along both approaches. Per the warrant criteria from the *Indiana MUTCD*, the vehicular volume entering the intersection from the major street approaches averages at least 300 vehicles per hour for any 8 hours of an average day and the combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches averages at least 200 units per hour for the same 8 hours. Comparing the volumes shown in the table to the warrant criteria shows that an all-way stop will not likely be warranted at this location.

CAPACITY ANALYSIS

The "efficiency" of an intersection is based on its ability to accommodate the traffic volumes that approach the intersection. It is defined by the Level-of-Service (LOS) of the intersection. The LOS is determined by a series of calculations commonly called a "capacity analysis". Input data into a capacity analysis include traffic volumes, intersection geometry, and number and use of lanes. To determine the LOS at each of the study intersections, a capacity analysis has been made using the recognized computer program *Synchro/Sim Traffic*[3]. This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM 7th Edition)*[4]. The following list shows the delays related to the levels of service for unsignalized and signalized intersections:

Level of Service	Control Delay (seconds/vehicle)	
	UNSIGNALIZED	SIGNALIZED
A	Less than or equal to 10	Less than or equal to 10
B	Between 10.1 and 15	Between 10.1 and 20
C	Between 15.1 and 25	Between 20.1 and 35
D	Between 25.1 and 35	Between 35.1 and 55
E	Between 35.1 and 50	Between 55.1 and 80
F	greater than 50	greater than 80

CAPACITY ANALYSIS SCENARIOS

To evaluate the proposed development's effect on the public street system, a series of traffic volume scenarios were analyzed to determine the adequacy of the existing roadway network. From this analysis, necessary recommendations can be made to improve the public street system so it will accommodate future traffic volumes. An analysis has been made for the peak hours at each of the study intersections for the following traffic volume scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes.

Scenario 2: Year 2029 Background Traffic Volumes – Based on applying a 1.0% per year annual growth rate to the existing traffic volumes.

Scenario 3: Year 2029 Proposed Development Traffic Volumes – Based on the sum of year 2029 background traffic volumes and generated traffic volumes from the proposed development.

[3] *Synchro/Sim Traffic 12*, Cubic Transportation Systems, 2023.

[4] *Highway Capacity Manual (HCM), 7th Edition* Transportation Research Board, The National Academies of Sciences, Washington, DC, 2022.

The following tables summarize the peak hour level of service results at each of the study intersections. The *Synchro* (*HCM 7th Edition*) intersection reports illustrating the capacity analysis results are included in the **Appendix**.

TABLE 7 – LEVEL OF SERVICE SUMMARY: ACUFF ROAD & KINSER PIKE

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Eastbound Approach	A	A	B	A	A	B
Northbound Left-Turn	A	A	A	A	A	A

TABLE 8 – LEVEL OF SERVICE SUMMARY: PROW ROAD & ARLINGTON ROAD

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Southwestbound Approach	F	F	F	C	C	C
Southeastbound Left-Turn	A	A	A	A	A	A

TABLE 9 – LEVEL OF SERVICE SUMMARY: KINSER PIKE & SR 45

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Approach	D	D	D	C	C	C
Southbound Approach	C	C	C	C	C	C
Eastbound Approach	C	C	C	C	C	C
Westbound Approach	B	B	C	C	C	C
Intersection	**C**	**C**	**C**	**C**	**C**	**C**

TABLE 10 – LEVEL OF SERVICE SUMMARY: ACUFF ROAD & PROW ROAD

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenario 3
Westbound Approach	A	A
Southbound Left-Turn	A	A

Analysis considers the installation of stop control along Acuff Road with one lane approaches.

TABLE 11 – LEVEL OF SERVICE SUMMARY: KINSER PIKE & PROPOSED ACCESS DRIVE

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenario 3
Eastbound Approach	A	A
Northbound Left-Turn	A	A

Analysis considers construction of the eastbound access drive with one inbound and one outbound lane that will stop for Kinser Pike.

TABLE 12 – LEVEL OF SERVICE SUMMARY: ACUFF ROAD & PROPOSED ACCESS DRIVE

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenarios 3
Northbound Approach	A	A
Southbound Approach	A	A
Eastbound Left-Turn	A	A
Westbound Left-Turn	A	A

Analysis considers construction of the southbound access drive with one inbound and one outbound lane that will stop for Acuff Road.

CONCLUSIONS & RECOMMENDATIONS

The conclusions that follow are based on the data and analyses presented in this study and a field review conducted at the site. Based on the analysis and the resulting conclusions of this study, recommendations are formulated to ensure that the roadway system will accommodate future traffic volumes.

ACUFF ROAD & KINSER PIKE

Capacity analyses have shown that all approaches to the intersection currently operate and will continue to operate at acceptable levels of service during the AM and PM peak hours for all traffic volume scenarios. Therefore, no improvements are recommended at this location.

PROW ROAD & ARLINGTON ROAD

Capacity analyses have shown that the southwestbound approach at this intersection currently operates at level-of-service F during AM peak hour due to the amount of school traffic utilizing the intersection. The proposed development will add less than 10 vehicles to this intersection during the AM peak hour, thus only having a minor impact at this intersection. Therefore, no improvements are recommended at this location due to the proposed development traffic volumes.

KINSER PIKE & SR 45

Capacity analyses have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM and PM peak hours for all traffic volume scenarios. Therefore, no improvements are recommended at this location.

ACUFF ROAD & PROW ROAD

An all-way stop warrant analysis showed that an all-way stop will not likely be warranted at this intersection when the proposed development traffic volumes are added to the roadway network. Therefore, capacity analysis were completed assuming that all approaches to the intersection would be one lane and Acuff Road would stop for Prow Road. These analyses have shown that all approaches to the intersection will operate at acceptable levels of service during the AM and PM peak hours.

KINSER PIKE & PROPOSED ACCESS DRIVE

Capacity analyses have shown that all approaches to this intersection will operate at acceptable levels of service during the AM and PM peak hours with the following intersection conditions:

- Construction of the proposed full access drive with one inbound and one outbound lane.
- The intersection should be stop-controlled with the access drive stopping for Kinser Pike.

ACUFF ROAD & PROPOSED ACCESS DRIVE

Capacity analyses have shown that all approaches to this intersection will operate at acceptable levels of service during the AM and PM peak hours with the following intersection conditions:

- Construction of the proposed full access drive with one inbound and one outbound lane.
- The intersection should be stop-controlled with the access drive stopping for Acuff Road.

TRAFFIC IMPACT STUDY

APPENDIX

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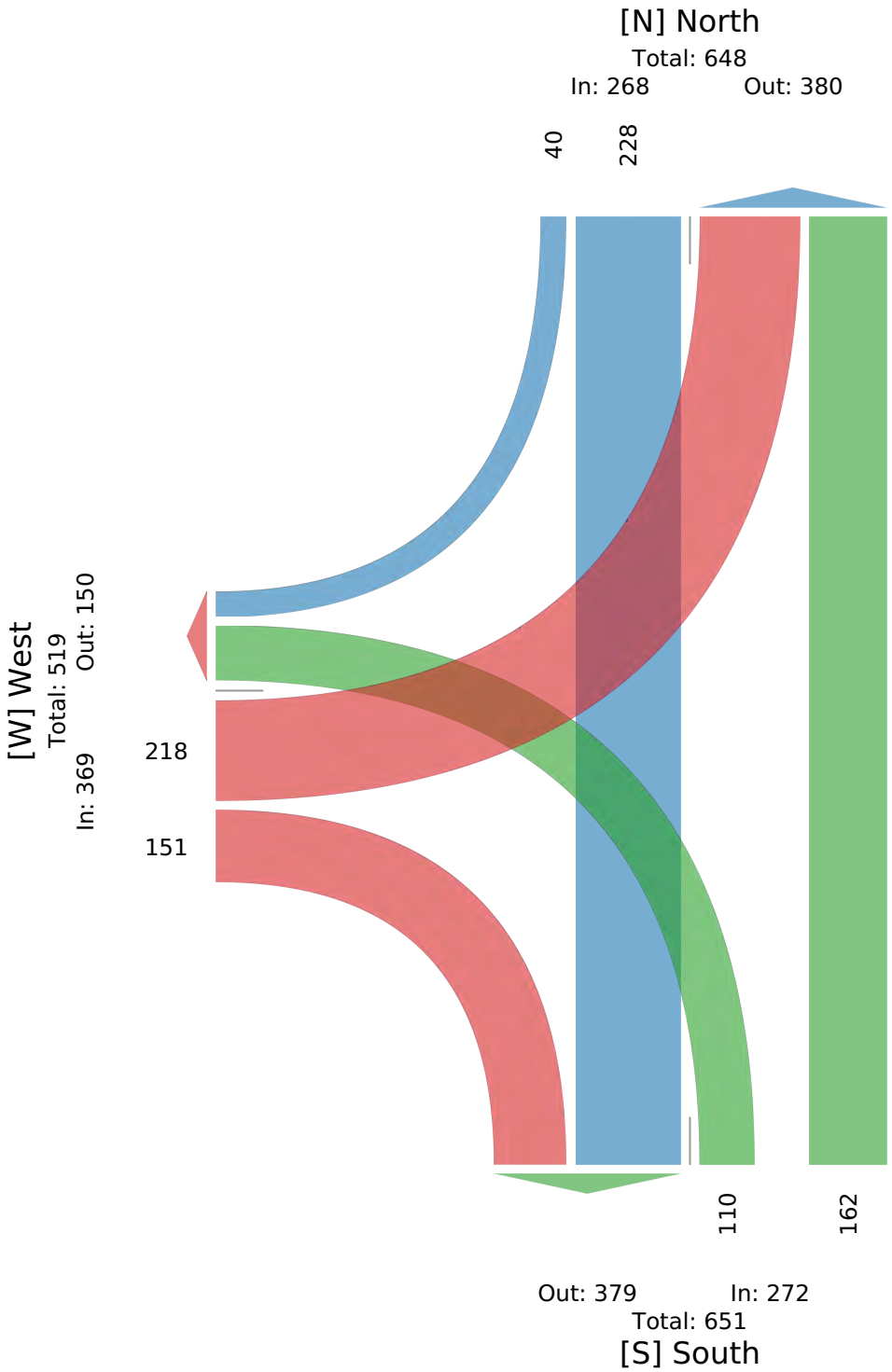
ACUFF ROAD & KINSER PIKE

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

ACUFF RD & KINSER PIKE - TMC
Tue Aug 27, 2024
Full Length (6:30 AM-10 AM, 2 PM-7 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220420, Location: 39.208336, -86.547417

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



ACUFF RD & KINSER PIKE - TMC

Tue Aug 27, 2024
AM Peak (6:45 AM - 7:45 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220420, Location: 39.208336, -86.547417

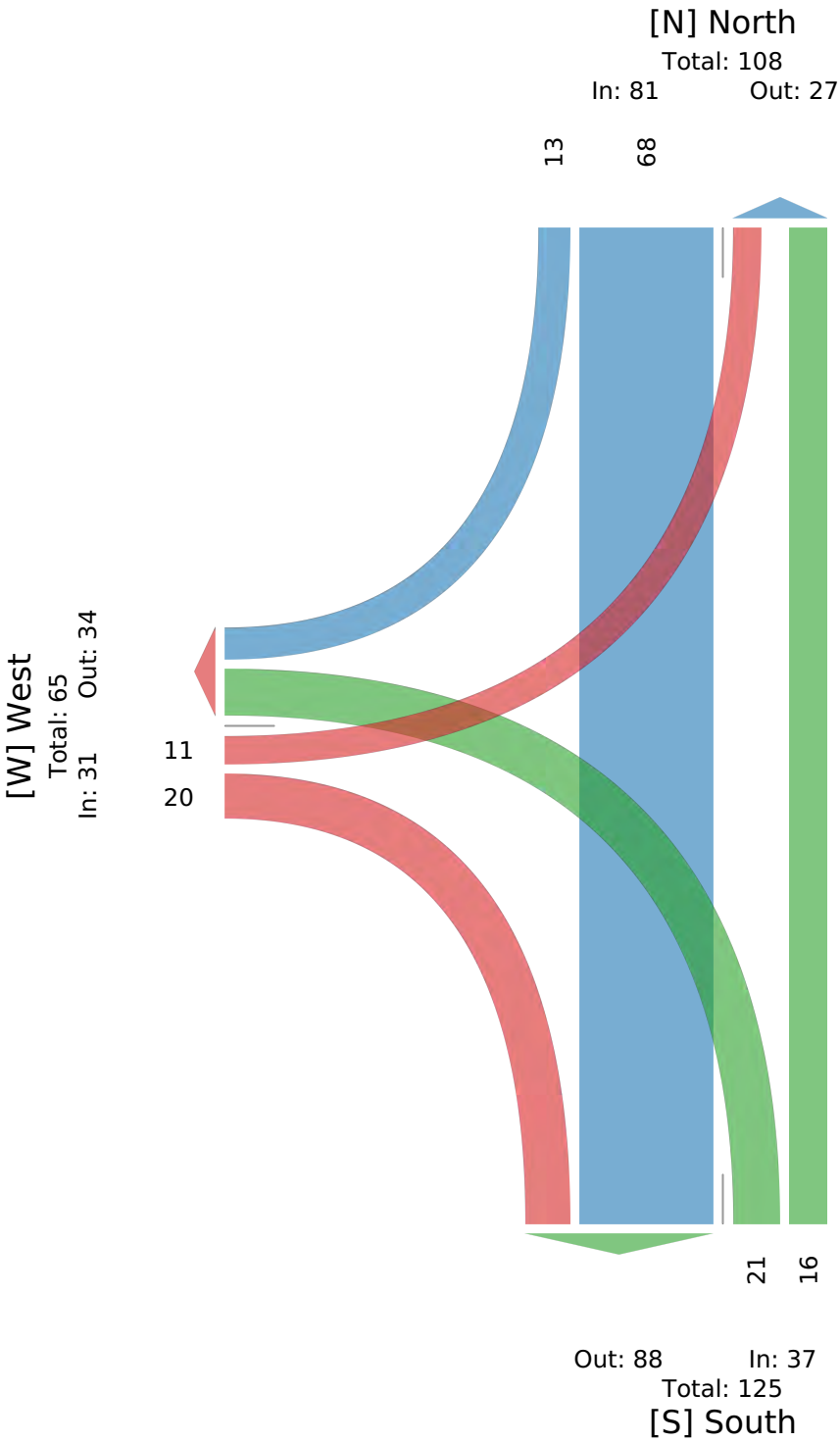
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2024-08-27 6:45AM	3	4	0	**7**	4	9	0	**13**	0	1	0	**1**	**21**
7:00AM	6	2	0	**8**	6	1	0	**7**	1	0	0	**1**	**16**
7:15AM	8	5	0	**13**	26	1	0	**27**	2	8	0	**10**	**50**
7:30AM	4	5	0	**9**	32	2	0	**34**	8	11	0	**19**	**62**
Total	21	16	0	**37**	68	13	0	**81**	11	20	0	**31**	**149**
% Approach	56.8%	43.2%	0%	**-**	84.0%	16.0%	0%	**-**	35.5%	64.5%	0%	**-**	-
% Total	14.1%	10.7%	0%	**24.8%**	45.6%	8.7%	0%	**54.4%**	7.4%	13.4%	0%	**20.8%**	-
PHF	0.656	0.800	-	**0.712**	0.531	0.361	-	**0.596**	0.344	0.455	-	**0.408**	0.601
Lights and Motorcycles	19	15	0	**34**	63	13	0	**76**	10	18	0	**28**	138
% Lights and Motorcycles	90.5%	93.8%	0%	**91.9%**	92.6%	100%	0%	**93.8%**	90.9%	90.0%	0%	**90.3%**	92.6%
Heavy	2	1	0	**3**	5	0	0	**5**	1	2	0	**3**	11
% Heavy	9.5%	6.3%	0%	**8.1%**	7.4%	0%	0%	**6.2%**	9.1%	10.0%	0%	**9.7%**	7.4%

*L: Left, R: Right, T: Thru, U: U-Turn

ACUFF RD & KINSER PIKE - TMC
Tue Aug 27, 2024
AM Peak (6:45 AM - 7:45 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220420, Location: 39.208336, -86.547417

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



ACUFF RD & KINSER PIKE - TMC

Tue Aug 27, 2024
PM Peak (2:45 PM - 3:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220420, Location: 39.208336, -86.547417

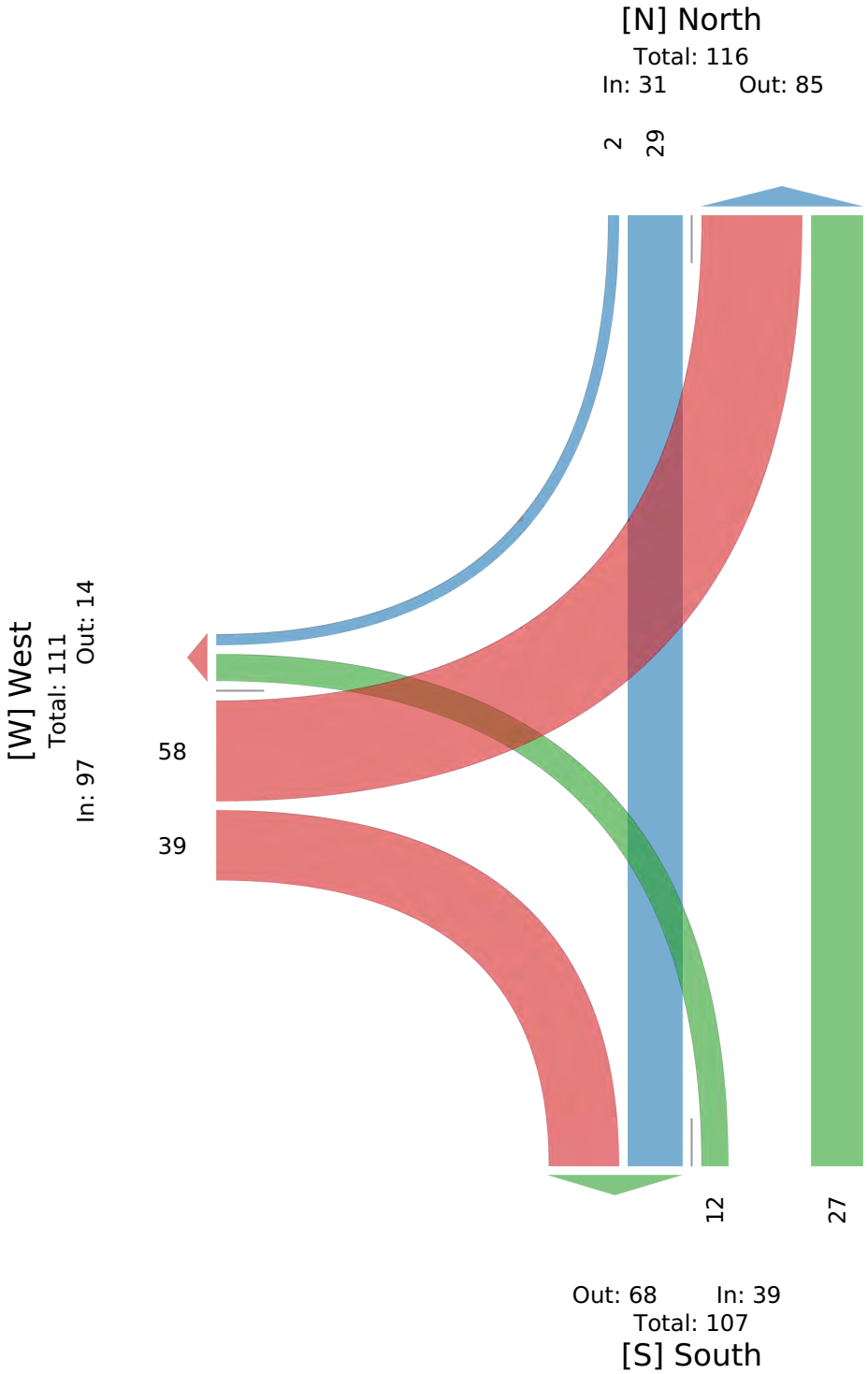
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2024-08-27 2:45PM	4	10	0	**14**	6	0	0	**6**	30	21	0	**51**	**71**
3:00PM	1	9	0	**10**	9	0	0	**9**	9	3	0	**12**	**31**
3:15PM	2	3	0	**5**	6	0	0	**6**	12	6	0	**18**	**29**
3:30PM	5	5	0	**10**	8	2	0	**10**	7	9	0	**16**	**36**
Total	12	27	0	**39**	29	2	0	**31**	58	39	0	**97**	**167**
% Approach	30.8%	69.2%	0%	**-**	93.5%	6.5%	0%	**-**	59.8%	40.2%	0%	**-**	-
% Total	7.2%	16.2%	0%	**23.4%**	17.4%	1.2%	0%	**18.6%**	34.7%	23.4%	0%	**58.1%**	-
PHF	0.600	0.675	-	**0.696**	0.806	0.250	-	**0.775**	0.483	0.464	-	**0.475**	0.588
Lights and Motorcycles	9	25	0	**34**	28	2	0	**30**	57	38	0	**95**	159
% Lights and Motorcycles	75.0%	92.6%	0%	**87.2%**	96.6%	100%	0%	**96.8%**	98.3%	97.4%	0%	**97.9%**	95.2%
Heavy	3	2	0	**5**	1	0	0	**1**	1	1	0	**2**	8
% Heavy	25.0%	7.4%	0%	**12.8%**	3.4%	0%	0%	**3.2%**	1.7%	2.6%	0%	**2.1%**	4.8%

*L: Left, R: Right, T: Thru, U: U-Turn

ACUFF RD & KINSER PIKE - TMC
Tue Aug 27, 2024
PM Peak (2:45 PM - 3:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220420, Location: 39.208336, -86.547417

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	20	21	16	68	13
Future Vol, veh/h	11	20	21	16	68	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	9	10	10	6	7	0
Mvmt Flow	18	33	35	27	113	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	221	124	135	0	-	0
Stage 1	124	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.49	6.3	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.39	2.29	-	-	-
Pot Cap-1 Maneuver	752	905	1401	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	733	905	1401	-	-	-
Mov Cap-2 Maneuver	733	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.59	4.33	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1022	-	836	-	-
HCM Lane V/C Ratio	0.025	-	0.062	-	-
HCM Control Delay (s/veh)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	39	12	27	29	2
Future Vol, veh/h	58	39	12	27	29	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	2	3	25	7	3	0
Mvmt Flow	98	66	20	46	49	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	137	51	53	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.42	6.23	4.35	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	2.425	-	-	-
Pot Cap-1 Maneuver	856	1014	1418	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	843	1014	1418	-	-	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.86	2.33	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	554	-	905	-	-
HCM Lane V/C Ratio	0.014	-	0.182	-	-
HCM Control Delay (s/veh)	7.6	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	21	22	17	71	14
Future Vol, veh/h	12	21	22	17	71	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	9	10	10	6	7	0
Mvmt Flow	20	35	37	28	118	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	232	130	142	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.49	6.3	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.39	2.29	-	-	-
Pot Cap-1 Maneuver	741	899	1394	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	721	899	1394	-	-	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.68	4.32	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1015	-	825	-	-
HCM Lane V/C Ratio	0.026	-	0.067	-	-
HCM Control Delay (s/veh)	7.7	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	61	41	13	28	30	2
Future Vol, veh/h	61	41	13	28	30	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	2	3	25	7	3	0
Mvmt Flow	103	69	22	47	51	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	144	53	54	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.42	6.23	4.35	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	2.425	-	-	-
Pot Cap-1 Maneuver	848	1012	1416	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	835	1012	1416	-	-	-
Mov Cap-2 Maneuver	835	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.96	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	571	-	898	-	-
HCM Lane V/C Ratio	0.016	-	0.192	-	-
HCM Control Delay (s/veh)	7.6	0	10	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	43	30	28	102	14
Future Vol, veh/h	13	43	30	28	102	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	9	10	10	6	7	0
Mvmt Flow	22	72	50	47	170	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	328	182	193	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.49	6.3	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.39	2.29	-	-	-
Pot Cap-1 Maneuver	652	841	1333	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	627	841	1333	-	-	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.25	4.04	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	931	-	779	-	-
HCM Lane V/C Ratio	0.037	-	0.12	-	-
HCM Control Delay (s/veh)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	61	56	37	63	51	3
Future Vol, veh/h	61	56	37	63	51	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	2	3	25	7	3	0
Mvmt Flow	103	95	63	107	86	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	321	89	92	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.42	6.23	4.35	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	2.425	-	-	-
Pot Cap-1 Maneuver	672	966	1371	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	640	966	1371	-	-	-
Mov Cap-2 Maneuver	640	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.37	2.87	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	666	-	763	-	-
HCM Lane V/C Ratio	0.046	-	0.26	-	-
HCM Control Delay (s/veh)	7.8	0	11.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

PROW ROAD & ARLINGTON ROAD

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

PROW RD & ARLINGTON RD - TMC

Tue Aug 27, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220421, Location: 39.19241, -86.552669

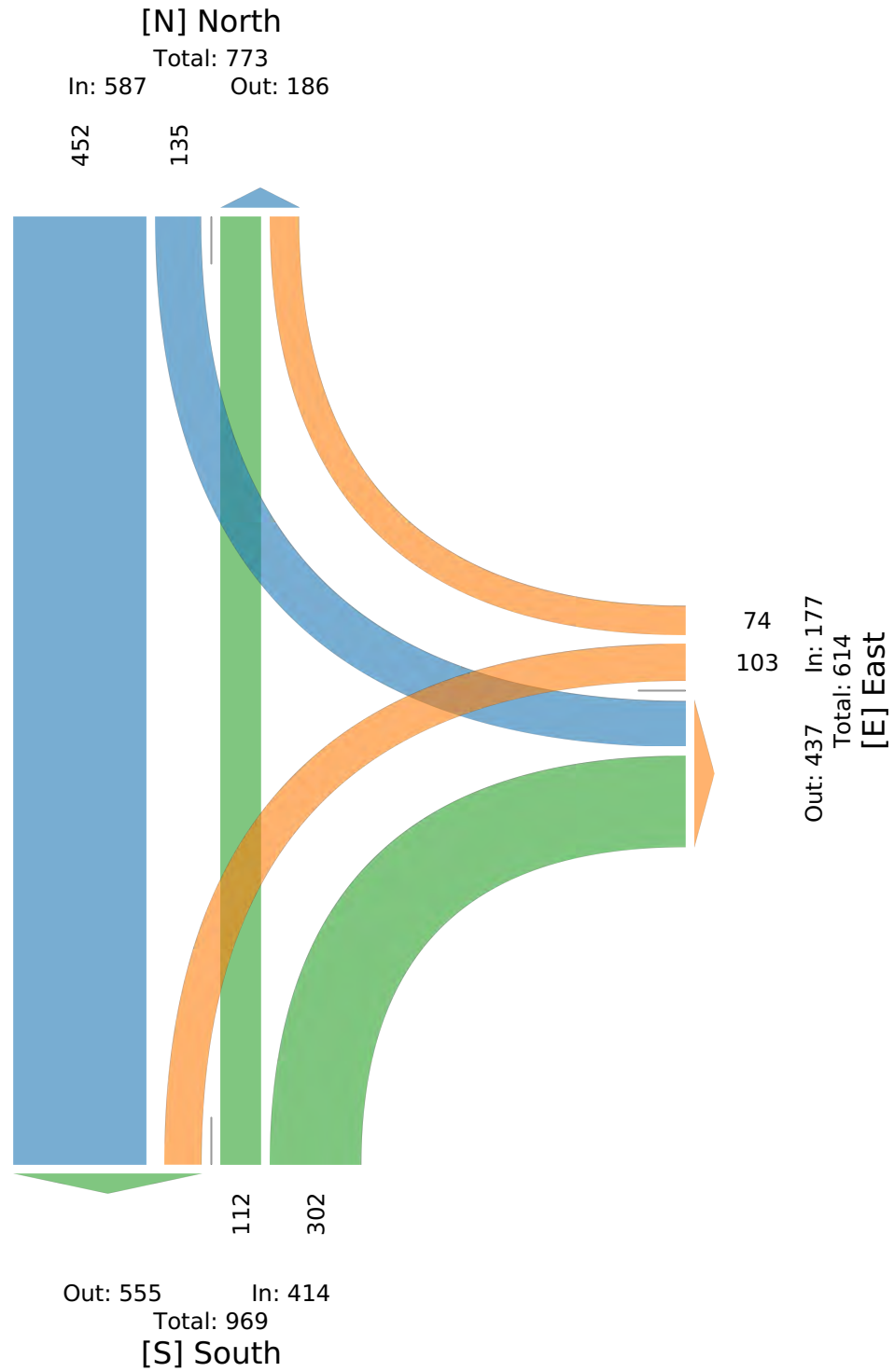
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				East				
Direction	Northbound				Southbound				Westbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2024-08-27 7:15AM	12	112	0	**124**	32	92	0	**124**	16	21	0	**37**	**285**
7:30AM	31	142	0	**173**	71	130	0	**201**	33	24	0	**57**	**431**
7:45AM	38	30	0	**68**	23	135	0	**158**	45	19	0	**64**	**290**
8:00AM	31	18	0	**49**	9	95	0	**104**	9	10	0	**19**	**172**
Total	112	302	0	**414**	135	452	0	**587**	103	74	0	**177**	**1178**
% Approach	27.1%	72.9%	0%	**-**	23.0%	77.0%	0%	**-**	58.2%	41.8%	0%	**-**	-
% Total	9.5%	25.6%	0%	**35.1%**	11.5%	38.4%	0%	**49.8%**	8.7%	6.3%	0%	**15.0%**	-
PHF	0.737	0.532	-	**0.598**	0.475	0.837	-	**0.730**	0.572	0.771	-	**0.691**	0.683
Lights and Motorcycles	108	290	0	**398**	129	447	0	**576**	96	67	0	**163**	1137
% Lights and Motorcycles	96.4%	96.0%	0%	**96.1%**	95.6%	98.9%	0%	**98.1%**	93.2%	90.5%	0%	**92.1%**	96.5%
Heavy	4	12	0	**16**	6	5	0	**11**	7	7	0	**14**	41
% Heavy	3.6%	4.0%	0%	**3.9%**	4.4%	1.1%	0%	**1.9%**	6.8%	9.5%	0%	**7.9%**	3.5%

*L: Left, R: Right, T: Thru, U: U-Turn

PROW RD & ARLINGTON RD - TMC
Tue Aug 27, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220421, Location: 39.19241, -86.552669

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



PROW RD & ARLINGTON RD - TMC

Tue Aug 27, 2024
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220421, Location: 39.19241, -86.552669

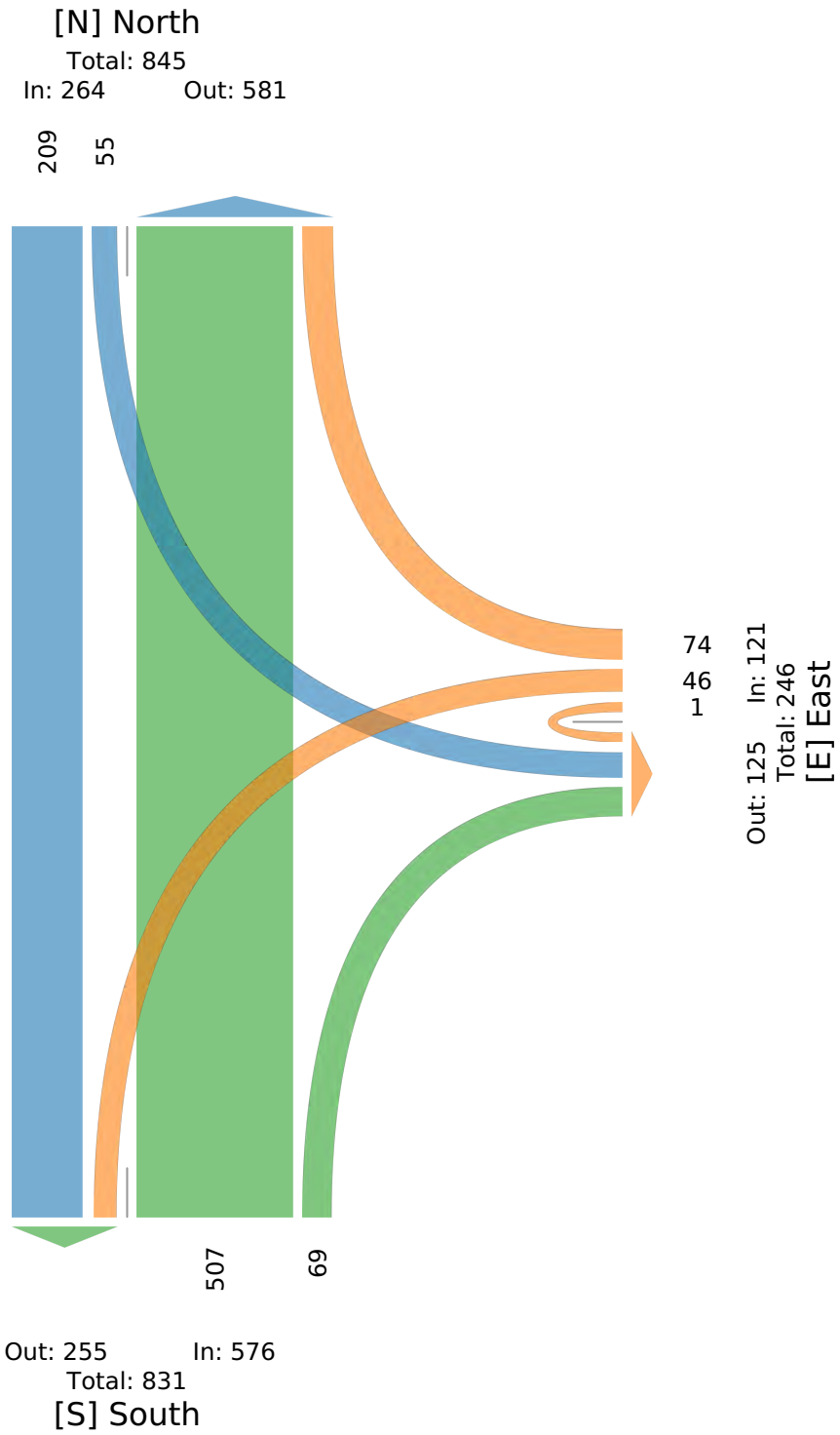
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	South Northbound				North Southbound				East Westbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2024-08-27 4:30PM	115	12	0	**127**	17	71	0	**88**	7	12	0	**19**	**234**
4:45PM	128	12	0	**140**	12	41	0	**53**	11	24	1	**36**	**229**
5:00PM	137	20	0	**157**	17	50	0	**67**	18	22	0	**40**	**264**
5:15PM	127	25	0	**152**	9	47	0	**56**	10	16	0	**26**	**234**
Total	507	69	0	**576**	55	209	0	**264**	46	74	1	**121**	**961**
% Approach	88.0%	12.0%	0%	**-**	20.8%	79.2%	0%	**-**	38.0%	61.2%	0.8%	**-**	-
% Total	52.8%	7.2%	0%	**59.9%**	5.7%	21.7%	0%	**27.5%**	4.8%	7.7%	0.1%	**12.6%**	-
PHF	0.925	0.690	-	**0.917**	0.809	0.736	-	**0.750**	0.639	0.771	0.250	**0.756**	0.910
Lights and Motorcycles	506	69	0	**575**	54	207	0	**261**	45	73	1	**119**	955
% Lights and Motorcycles	99.8%	100%	0%	**99.8%**	98.2%	99.0%	0%	**98.9%**	97.8%	98.6%	100%	**98.3%**	99.4%
Heavy	1	0	0	**1**	1	2	0	**3**	1	1	0	**2**	6
% Heavy	0.2%	0%	0%	**0.2%**	1.8%	1.0%	0%	**1.1%**	2.2%	1.4%	0%	**1.7%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

PROW RD & ARLINGTON RD - TMC
Tue Aug 27, 2024
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220421, Location: 39.19241, -86.552669

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	26.2

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	103	74	135	452	112	302
Future Vol, veh/h	103	74	135	452	112	302
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	7	10	4	1	4	4
Mvmt Flow	151	109	199	665	165	444

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1449	387	609	0	-	0
Stage 1	387	-	-	-	-	-
Stage 2	1062	-	-	-	-	-
Critical Hdwy	6.47	6.3	4.14	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.39	2.236	-	-	-
Pot Cap-1 Maneuver	~ 141	644	960	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 112	644	960	-	-	-
Mov Cap-2 Maneuver	~ 112	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	325	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/veh	67.21	2.24	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	112	644	960	-
HCM Lane V/C Ratio	-	-	1.356	0.169	0.207	-
HCM Control Delay (s/veh)	-	-	278.9	11.7	9.7	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10.4	0.6	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	46	74	55	209	507	69
Future Vol, veh/h	46	74	55	209	507	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	1	2	1	1	0
Mvmt Flow	51	81	60	230	557	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	946	595	633	0	-	0
Stage 1	595	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.42	6.21	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	2.218	-	-	-
Pot Cap-1 Maneuver	290	506	950	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	506	950	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	713	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/v	16.45	1.88	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	272	506	950	-
HCM Lane V/C Ratio	-	-	0.186	0.161	0.064	-
HCM Control Delay (s/veh)	-	-	21.2	13.5	9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.6	0.2	-

Intersection	
Int Delay, s/veh	36.2

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	108	78	142	475	118	317
Future Vol, veh/h	108	78	142	475	118	317
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	7	10	4	1	4	4
Mvmt Flow	159	115	209	699	174	466

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1523	407	640	0	-	0
Stage 1	407	-	-	-	-	-
Stage 2	1116	-	-	-	-	-
Critical Hdwy	6.47	6.3	4.14	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.39	2.236	-	-	-
Pot Cap-1 Maneuver	~ 127	627	935	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 98	627	935	-	-	-
Mov Cap-2 Maneuver	~ 98	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	306	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/veh	$ 33.43	2.29	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	98	627	935	-
HCM Lane V/C Ratio	-	-	1.614	0.183	0.223	-
HCM Control Delay (s/veh)	-	-	$ 393.3	12	10	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	12.4	0.7	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	48	78	58	219	532	72
Future Vol, veh/h	48	78	58	219	532	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	1	2	1	1	0
Mvmt Flow	53	86	64	241	585	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	992	624	664	0	-	0
Stage 1	624	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Critical Hdwy	6.42	6.21	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	2.218	-	-	-
Pot Cap-1 Maneuver	272	487	925	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	487	925	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	497	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/v	17.36	1.92	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	254	487	925	-
HCM Lane V/C Ratio	-	-	0.208	0.176	0.069	-
HCM Control Delay (s/veh)	-	-	22.9	14	9.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.6	0.2	-

Intersection	
Int Delay, s/veh	40

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	112	81	143	475	118	318
Future Vol, veh/h	112	81	143	475	118	318
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	7	10	4	1	4	4
Mvmt Flow	165	119	210	699	174	468

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1526	407	641	0	-	0
Stage 1	407	-	-	-	-	-
Stage 2	1119	-	-	-	-	-
Critical Hdwy	6.47	6.3	4.14	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.39	2.236	-	-	-
Pot Cap-1 Maneuver	~ 126	627	934	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 98	627	934	-	-	-
Mov Cap-2 Maneuver	~ 98	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	305	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/veh	251.11	2.31	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	98	627	934	-
HCM Lane V/C Ratio	-	-	1.686	0.19	0.225	-
HCM Control Delay (s/veh)	-	-	$ 424	12.1	10	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	13.1	0.7	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	50	80	62	219	532	77
Future Vol, veh/h	50	80	62	219	532	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	170	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	1	2	1	1	0
Mvmt Flow	55	88	68	241	585	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1004	627	669	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.42	6.21	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	2.218	-	-	-
Pot Cap-1 Maneuver	268	485	921	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	248	485	921	-	-	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s/v	17.71	2.03	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	248	485	921	-
HCM Lane V/C Ratio	-	-	0.221	0.181	0.074	-
HCM Control Delay (s/veh)	-	-	23.6	14.1	9.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.7	0.2	-

KINSER PIKE & SR 45

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 46 & KINSER PIKE - TMC

Tue Aug 27, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220422, Location: 39.186516, -86.537715

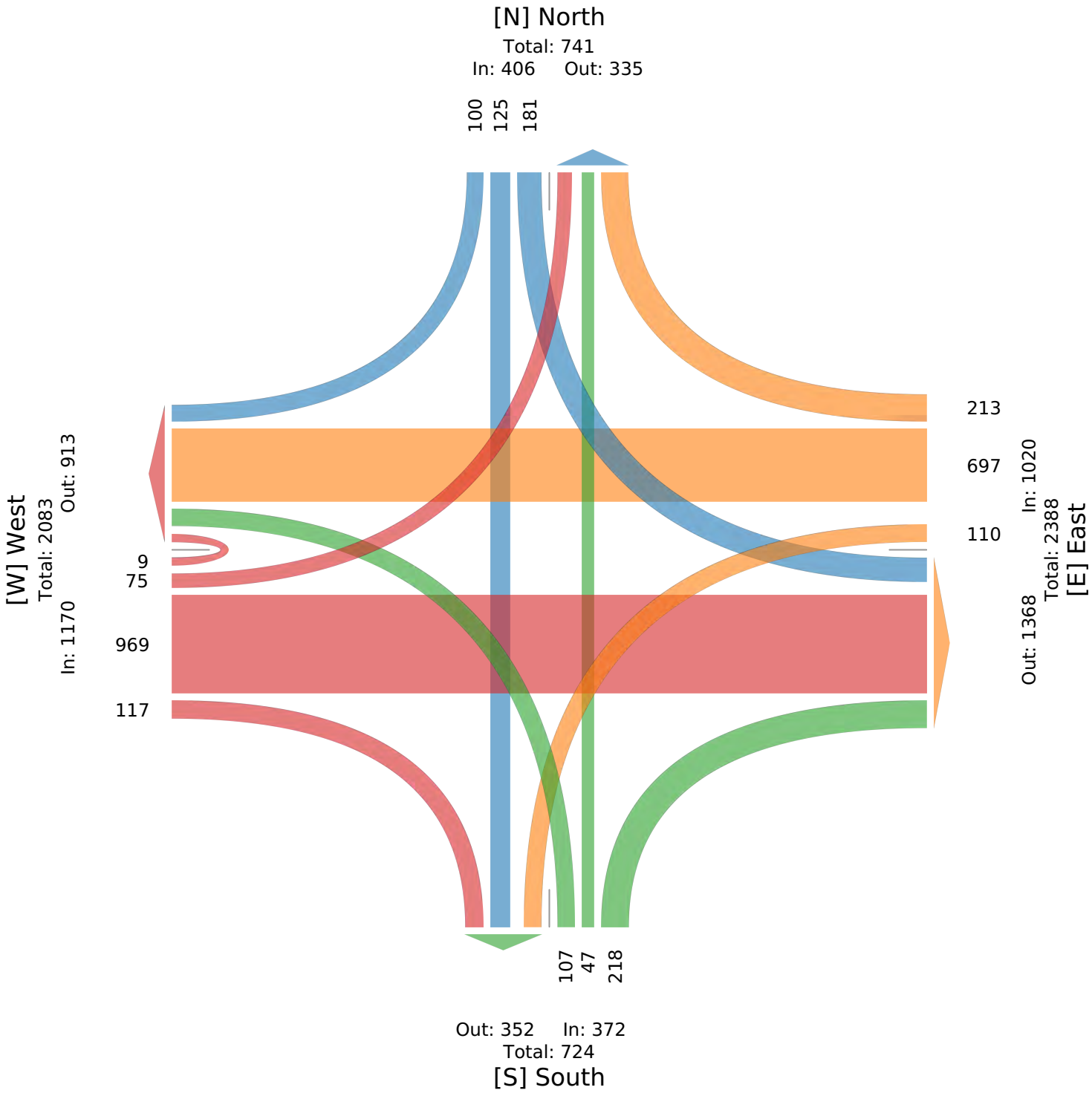
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2024-08-27 7:15AM	27	12	31	0	**70**	30	32	25	0	**87**	26	232	39	2	**299**	23	152	114	0	**289**	**745**
7:30AM	16	11	51	0	**78**	73	39	30	0	**142**	22	233	22	1	**278**	29	186	45	0	**260**	**758**
7:45AM	29	14	67	0	**110**	58	43	23	0	**124**	17	250	31	2	**300**	27	186	24	0	**237**	**771**
8:00AM	35	10	69	0	**114**	20	11	22	0	**53**	10	254	25	4	**293**	31	173	30	0	**234**	**694**
Total	107	47	218	0	**372**	181	125	100	0	**406**	75	969	117	9	**1170**	110	697	213	0	**1020**	**2968**
% Approach	28.8%	12.6%	58.6%	0%	**-**	44.6%	30.8%	24.6%	0%	**-**	6.4%	82.8%	10.0%	0.8%	**-**	10.8%	68.3%	20.9%	0%	**-**	-
% Total	3.6%	1.6%	7.3%	0%	**12.5%**	6.1%	4.2%	3.4%	0%	**13.7%**	2.5%	32.6%	3.9%	0.3%	**39.4%**	3.7%	23.5%	7.2%	0%	**34.4%**	-
PHF	0.764	0.839	0.790	-	**0.816**	0.620	0.727	0.833	-	**0.715**	0.721	0.954	0.750	0.563	**0.975**	0.887	0.937	0.467	-	**0.882**	0.962
Lights and Motorcycles	97	46	211	0	**354**	174	103	89	0	**366**	65	936	111	8	**1120**	107	669	196	0	**972**	2812
% Lights and Motorcycles	90.7%	97.9%	96.8%	0%	**95.2%**	96.1%	82.4%	89.0%	0%	**90.1%**	86.7%	96.6%	94.9%	88.9%	**95.7%**	97.3%	96.0%	92.0%	0%	**95.3%**	94.7%
Heavy	10	1	7	0	**18**	7	22	11	0	**40**	10	33	6	1	**50**	3	28	17	0	**48**	156
% Heavy	9.3%	2.1%	3.2%	0%	**4.8%**	3.9%	17.6%	11.0%	0%	**9.9%**	13.3%	3.4%	5.1%	11.1%	**4.3%**	2.7%	4.0%	8.0%	0%	**4.7%**	5.3%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 46 & KINSER PIKE - TMC
Tue Aug 27, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220422, Location: 39.186516, -86.537715

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 46 & KINSER PIKE - TMC

Tue Aug 27, 2024
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220422, Location: 39.186516, -86.537715

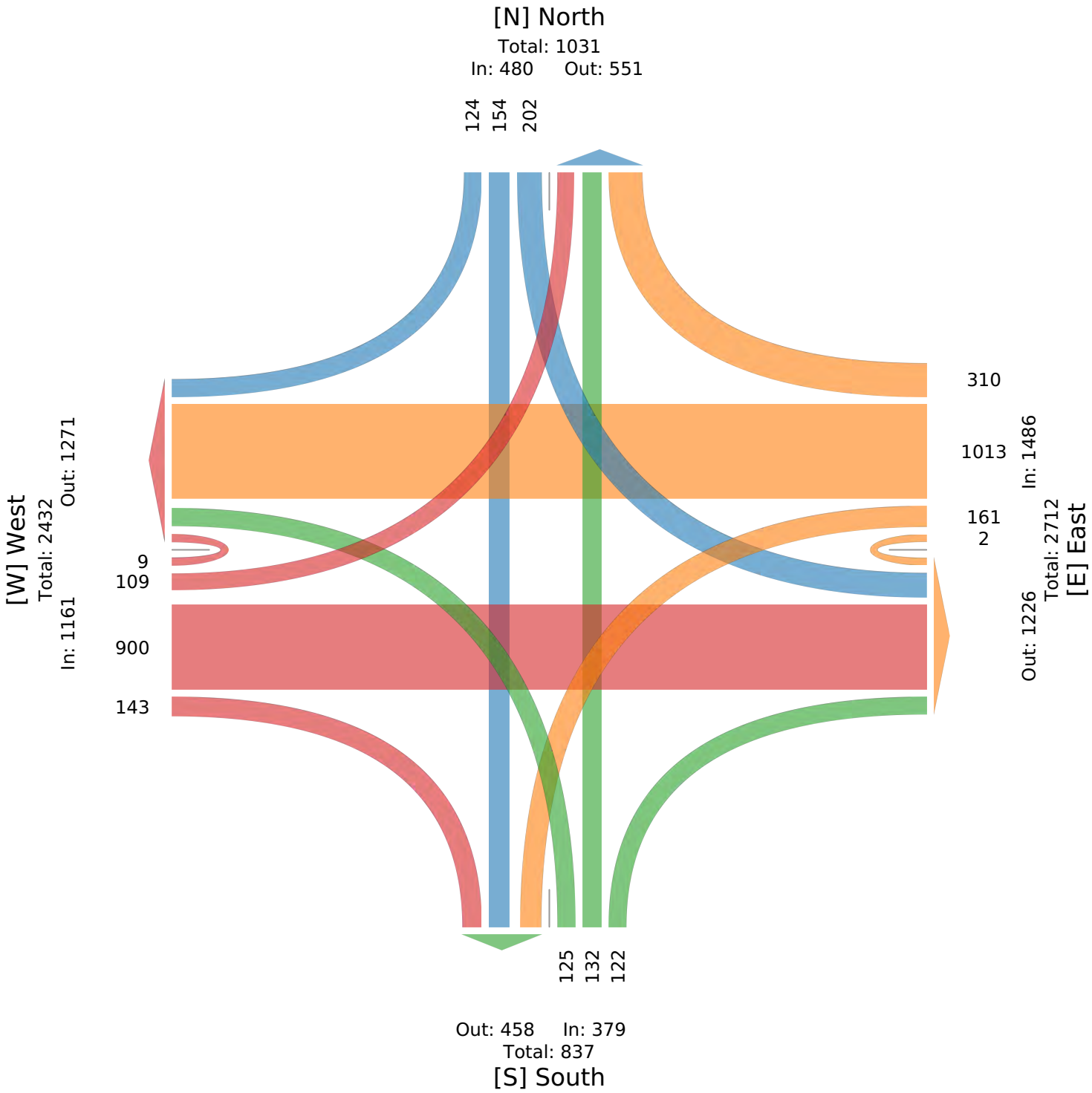
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

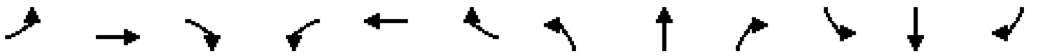
Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2024-08-27 5:00PM	37	25	37	0	**99**	33	32	22	0	**87**	26	229	40	1	**296**	39	275	56	0	**370**	**852**
5:15PM	38	42	28	0	**108**	46	39	28	0	**113**	30	259	30	3	**322**	46	263	89	1	**399**	**942**
5:30PM	33	34	36	0	**103**	52	43	40	0	**135**	27	228	39	4	**298**	38	254	96	0	**388**	**924**
5:45PM	17	31	21	0	**69**	71	40	34	0	**145**	26	184	34	1	**245**	38	221	69	1	**329**	**788**
Total	125	132	122	0	**379**	202	154	124	0	**480**	109	900	143	9	**1161**	161	1013	310	2	**1486**	**3506**
% Approach	33.0%	34.8%	32.2%	0%	**-**	42.1%	32.1%	25.8%	0%	**-**	9.4%	77.5%	12.3%	0.8%	**-**	10.8%	68.2%	20.9%	0.1%	**-**	-
% Total	3.6%	3.8%	3.5%	0%	**10.8%**	5.8%	4.4%	3.5%	0%	**13.7%**	3.1%	25.7%	4.1%	0.3%	**33.1%**	4.6%	28.9%	8.8%	0.1%	**42.4%**	-
PHF	0.822	0.786	0.824	-	**0.877**	0.711	0.895	0.775	-	**0.828**	0.908	0.869	0.894	0.563	**0.901**	0.875	0.921	0.807	0.500	**0.931**	0.930
Lights and Motorcycles	123	132	122	0	**377**	200	154	123	0	**477**	108	892	143	9	**1152**	160	994	308	2	**1464**	3470
% Lights and Motorcycles	98.4%	100%	100%	0%	**99.5%**	99.0%	100%	99.2%	0%	**99.4%**	99.1%	99.1%	100%	100%	**99.2%**	99.4%	98.1%	99.4%	100%	**98.5%**	99.0%
Heavy	2	0	0	0	**2**	2	0	1	0	**3**	1	8	0	0	**9**	1	19	2	0	**22**	36
% Heavy	1.6%	0%	0%	0%	**0.5%**	1.0%	0%	0.8%	0%	**0.6%**	0.9%	0.9%	0%	0%	**0.8%**	0.6%	1.9%	0.6%	0%	**1.5%**	1.0%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 46 & KINSER PIKE - TMC
Tue Aug 27, 2024
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1220422, Location: 39.186516, -86.537715

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

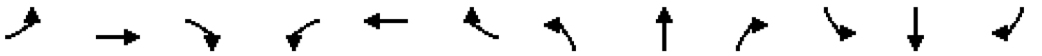




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	969	117	110	697	213	107	47	218	181	125	100
Future Volume (veh/h)	75	969	117	110	697	213	107	47	218	181	125	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1856	1826	1856	1841	1781	1767	1870	1856	1841	1633	1737
Adj Flow Rate, veh/h	78	1009	122	115	726	222	111	49	227	189	130	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	13	3	5	3	4	8	9	2	3	4	18	11
Cap, veh/h	325	1218	535	294	1245	537	409	57	263	326	358	323
Arrive On Green	0.08	0.35	0.35	0.09	0.36	0.36	0.09	0.20	0.20	0.11	0.22	0.22
Sat Flow, veh/h	1626	3526	1547	1767	3497	1510	1682	289	1340	1753	1633	1472
Grp Volume(v), veh/h	78	1009	122	115	726	222	111	0	276	189	130	104
Grp Sat Flow(s),veh/h/ln	1626	1763	1547	1767	1749	1510	1682	0	1629	1753	1633	1472
Q Serve(g_s), s	2.1	19.0	4.1	2.9	12.2	8.1	3.7	0.0	11.9	6.1	4.9	4.3
Cycle Q Clear(g_c), s	2.1	19.0	4.1	2.9	12.2	8.1	3.7	0.0	11.9	6.1	4.9	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	325	1218	535	294	1245	537	409	0	320	326	358	323
V/C Ratio(X)	0.24	0.83	0.23	0.39	0.58	0.41	0.27	0.00	0.86	0.58	0.36	0.32
Avail Cap(c_a), veh/h	369	1410	619	323	1399	604	438	0	359	340	383	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	21.8	16.9	15.7	19.0	17.6	20.1	0.0	28.2	20.8	24.0	23.8
Incr Delay (d2), s/veh	0.4	3.8	0.2	0.8	0.5	0.5	0.4	0.0	17.6	2.3	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.3	1.3	1.0	4.3	2.5	1.4	0.0	6.0	2.5	1.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.2	25.5	17.1	16.6	19.5	18.1	20.4	0.0	45.8	23.1	24.6	24.3
LnGrp LOS	B	C	B	B	B	B	C		D	C	C	C
Approach Vol, veh/h		1209			1063			387			423	
Approach Delay, s/veh		23.9			18.9			38.5			23.9	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	19.2	10.8	30.1	10.8	20.9	10.0	30.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.5	16.0	7.5	29.0	7.5	17.0	7.5	29.0
Max Q Clear Time (g_c+I1), s	8.1	13.9	4.9	21.0	5.7	6.9	4.1	14.2
Green Ext Time (p_c), s	0.0	0.3	0.1	4.0	0.0	0.7	0.0	4.5

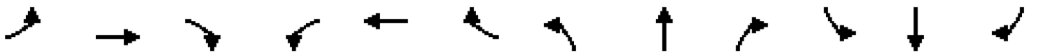
Intersection Summary	
HCM 7th Control Delay, s/veh	24.0
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	900	143	161	1013	310	125	132	122	202	154	124
Future Volume (veh/h)	109	900	143	161	1013	310	125	132	122	202	154	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1900	1885	1870	1885	1870	1900	1900	1885	1900	1885
Adj Flow Rate, veh/h	117	968	154	173	1089	333	134	142	131	217	166	133
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	1	2	1	2	0	0	1	0	1
Cap, veh/h	285	1264	568	325	1276	574	394	171	157	327	382	321
Arrive On Green	0.09	0.35	0.35	0.09	0.36	0.36	0.09	0.19	0.19	0.10	0.20	0.20
Sat Flow, veh/h	1795	3582	1610	1795	3554	1598	1781	910	839	1795	1900	1598
Grp Volume(v), veh/h	117	968	154	173	1089	333	134	0	273	217	166	133
Grp Sat Flow(s),veh/h/ln	1795	1791	1610	1795	1777	1598	1781	0	1749	1795	1900	1598
Q Serve(g_s), s	2.8	17.4	5.0	4.3	20.5	12.2	4.3	0.0	10.9	7.1	5.5	5.3
Cycle Q Clear(g_c), s	2.8	17.4	5.0	4.3	20.5	12.2	4.3	0.0	10.9	7.1	5.5	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	285	1264	568	325	1276	574	394	0	328	327	382	321
V/C Ratio(X)	0.41	0.77	0.27	0.53	0.85	0.58	0.34	0.00	0.83	0.66	0.43	0.41
Avail Cap(c_a), veh/h	314	1385	623	343	1374	618	418	0	435	327	472	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	20.8	16.8	15.4	21.4	18.8	20.6	0.0	28.3	21.7	25.3	25.2
Incr Delay (d2), s/veh	0.9	2.4	0.3	1.4	5.1	1.2	0.5	0.0	10.0	5.0	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.5	1.6	1.5	8.1	4.0	1.7	0.0	5.3	3.3	2.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.9	23.2	17.0	16.8	26.6	20.0	21.1	0.0	38.4	26.7	26.1	26.1
LnGrp LOS	B	C	B	B	C	B	C		D	C	C	C
Approach Vol, veh/h		1239			1595			407			516	
Approach Delay, s/veh		21.8			24.1			32.7			26.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	18.6	11.3	30.6	11.0	19.5	10.8	31.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	18.0	7.5	28.0	7.5	18.0	7.5	28.0
Max Q Clear Time (g_c+I1), s	9.1	12.9	6.3	19.4	6.3	7.5	4.8	22.5
Green Ext Time (p_c), s	0.0	0.7	0.1	4.2	0.0	1.0	0.1	3.5

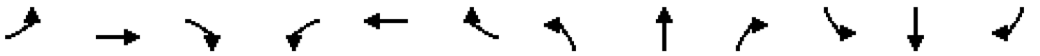
Intersection Summary	
HCM 7th Control Delay, s/veh	24.6
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	1017	123	116	732	224	112	49	229	190	131	105
Future Volume (veh/h)	79	1017	123	116	732	224	112	49	229	190	131	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1856	1826	1856	1841	1781	1767	1870	1856	1841	1633	1737
Adj Flow Rate, veh/h	82	1059	128	121	762	233	117	51	239	198	136	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	13	3	5	3	4	8	9	2	3	4	18	11
Cap, veh/h	312	1233	541	279	1256	542	408	58	271	322	374	337
Arrive On Green	0.08	0.35	0.35	0.09	0.36	0.36	0.08	0.20	0.20	0.11	0.23	0.23
Sat Flow, veh/h	1626	3526	1547	1767	3497	1510	1682	286	1342	1753	1633	1472
Grp Volume(v), veh/h	82	1059	128	121	762	233	117	0	290	198	136	109
Grp Sat Flow(s),veh/h/ln	1626	1763	1547	1767	1749	1510	1682	0	1629	1753	1633	1472
Q Serve(g_s), s	2.3	21.1	4.4	3.1	13.5	8.8	4.0	0.0	13.1	6.6	5.3	4.7
Cycle Q Clear(g_c), s	2.3	21.1	4.4	3.1	13.5	8.8	4.0	0.0	13.1	6.6	5.3	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	312	1233	541	279	1256	542	408	0	328	322	374	337
V/C Ratio(X)	0.26	0.86	0.24	0.43	0.61	0.43	0.29	0.00	0.88	0.61	0.36	0.32
Avail Cap(c_a), veh/h	350	1352	593	304	1341	579	433	0	345	323	374	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	22.8	17.4	16.8	19.9	18.4	20.8	0.0	29.3	21.4	24.5	24.3
Incr Delay (d2), s/veh	0.4	5.4	0.2	1.1	0.7	0.5	0.4	0.0	22.0	3.4	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.4	1.4	1.1	4.8	2.7	1.6	0.0	6.9	2.9	2.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.9	28.2	17.6	17.9	20.6	18.9	21.2	0.0	51.3	24.9	25.1	24.8
LnGrp LOS	B	C	B	B	C	B	C		D	C	C	C
Approach Vol, veh/h		1269			1116			407			443	
Approach Delay, s/veh		26.3			19.9			42.6			24.9	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	20.2	10.9	31.5	10.9	22.3	10.2	32.2
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.5	16.0	7.5	29.0	7.5	17.0	7.5	29.0
Max Q Clear Time (g_c+I1), s	8.6	15.1	5.1	23.1	6.0	7.3	4.3	15.5
Green Ext Time (p_c), s	0.0	0.2	0.1	3.3	0.0	0.7	0.0	4.6

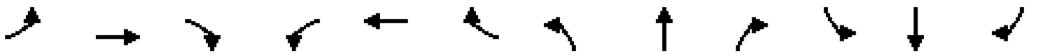
Intersection Summary	
HCM 7th Control Delay, s/veh	26.0
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	945	150	169	1064	326	131	139	128	212	162	130
Future Volume (veh/h)	114	945	150	169	1064	326	131	139	128	212	162	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1900	1885	1870	1885	1870	1900	1900	1885	1900	1885
Adj Flow Rate, veh/h	123	1016	161	182	1144	351	141	149	138	228	174	140
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	1	2	1	2	0	0	1	0	1
Cap, veh/h	274	1281	576	312	1289	580	389	176	163	317	391	329
Arrive On Green	0.09	0.36	0.36	0.09	0.36	0.36	0.09	0.19	0.19	0.10	0.21	0.21
Sat Flow, veh/h	1795	3582	1610	1795	3554	1598	1781	908	841	1795	1900	1598
Grp Volume(v), veh/h	123	1016	161	182	1144	351	141	0	287	228	174	140
Grp Sat Flow(s),veh/h/ln	1795	1791	1610	1795	1777	1598	1781	0	1749	1795	1900	1598
Q Serve(g_s), s	3.0	18.9	5.3	4.6	22.5	13.3	4.6	0.0	11.8	7.5	6.0	5.7
Cycle Q Clear(g_c), s	3.0	18.9	5.3	4.6	22.5	13.3	4.6	0.0	11.8	7.5	6.0	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	274	1281	576	312	1289	580	389	0	339	317	391	329
V/C Ratio(X)	0.45	0.79	0.28	0.58	0.89	0.61	0.36	0.00	0.85	0.72	0.45	0.43
Avail Cap(c_a), veh/h	299	1350	607	328	1339	602	410	0	424	317	460	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	21.4	17.0	16.2	22.2	19.3	20.9	0.0	28.9	22.5	25.8	25.7
Incr Delay (d2), s/veh	1.2	3.2	0.3	2.4	7.4	1.6	0.6	0.0	12.3	7.7	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.3	1.7	1.7	9.2	4.5	1.9	0.0	5.9	3.7	2.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.8	24.6	17.3	18.7	29.6	21.0	21.5	0.0	41.2	30.2	26.6	26.6
LnGrp LOS	B	C	B	B	C	C	C		D	C	C	C
Approach Vol, veh/h		1300			1677			428			542	
Approach Delay, s/veh		23.1			26.6			34.7			28.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	19.4	11.3	31.6	11.1	20.3	10.9	32.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	18.0	7.5	28.0	7.5	18.0	7.5	28.0
Max Q Clear Time (g_c+I1), s	9.5	13.8	6.6	20.9	6.6	8.0	5.0	24.5
Green Ext Time (p_c), s	0.0	0.6	0.0	3.8	0.0	1.0	0.1	2.5

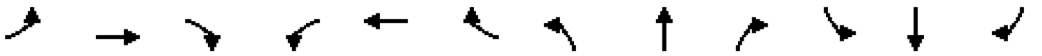
Intersection Summary	
HCM 7th Control Delay, s/veh	26.5
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1017	123	116	732	233	112	53	229	217	140	122
Future Volume (veh/h)	85	1017	123	116	732	233	112	53	229	217	140	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1856	1826	1856	1841	1781	1767	1870	1856	1841	1633	1737
Adj Flow Rate, veh/h	89	1059	128	121	762	243	117	55	239	226	146	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	13	3	5	3	4	8	9	2	3	4	18	11
Cap, veh/h	312	1127	495	280	1148	496	409	62	270	326	362	326
Arrive On Green	0.08	0.32	0.32	0.09	0.33	0.33	0.09	0.20	0.20	0.11	0.22	0.22
Sat Flow, veh/h	1626	3526	1547	1767	3497	1510	1682	305	1326	1753	1633	1472
Grp Volume(v), veh/h	89	1059	128	121	762	243	117	0	294	226	146	127
Grp Sat Flow(s),veh/h/ln	1626	1763	1547	1767	1749	1510	1682	0	1632	1753	1633	1472
Q Serve(g_s), s	2.4	20.1	4.2	3.0	12.9	8.9	3.6	0.0	12.0	7.0	5.3	5.1
Cycle Q Clear(g_c), s	2.4	20.1	4.2	3.0	12.9	8.9	3.6	0.0	12.0	7.0	5.3	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	312	1127	495	280	1148	496	409	0	332	326	362	326
V/C Ratio(X)	0.29	0.94	0.26	0.43	0.66	0.49	0.29	0.00	0.89	0.69	0.40	0.39
Avail Cap(c_a), veh/h	354	1127	495	310	1148	496	440	0	332	326	362	326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	22.8	17.4	16.2	19.9	18.5	18.5	0.0	26.6	20.0	22.9	22.8
Incr Delay (d2), s/veh	0.5	14.6	0.3	1.1	1.5	0.8	0.4	0.0	23.6	6.2	0.7	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.3	1.3	1.0	4.6	2.7	1.4	0.0	6.6	3.2	2.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.8	37.4	17.6	17.3	21.3	19.3	18.9	0.0	50.2	26.2	23.6	23.6
LnGrp LOS	B	D	B	B	C	B	B		D	C	C	C
Approach Vol, veh/h		1276			1126			411			499	
Approach Delay, s/veh		33.8			20.4			41.3			24.8	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	19.0	10.8	27.0	10.8	20.2	10.2	27.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	14.0	7.5	22.0	7.5	14.0	7.5	22.0
Max Q Clear Time (g_c+I1), s	9.0	14.0	5.0	22.1	5.6	7.3	4.4	14.9
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.7	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	28.8
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	945	150	169	1064	356	131	149	128	230	168	142
Future Volume (veh/h)	133	945	150	169	1064	356	131	149	128	230	168	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1900	1885	1870	1885	1870	1900	1900	1885	1900	1885
Adj Flow Rate, veh/h	143	1016	161	182	1144	383	141	160	138	247	181	153
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	1	2	1	2	0	0	1	0	1
Cap, veh/h	274	1194	537	306	1196	538	401	188	162	329	404	340
Arrive On Green	0.09	0.33	0.33	0.10	0.34	0.34	0.09	0.20	0.20	0.11	0.21	0.21
Sat Flow, veh/h	1795	3582	1610	1795	3554	1598	1781	942	812	1795	1900	1598
Grp Volume(v), veh/h	143	1016	161	182	1144	383	141	0	298	247	181	153
Grp Sat Flow(s),veh/h/ln	1795	1791	1610	1795	1777	1598	1781	0	1754	1795	1900	1598
Q Serve(g_s), s	3.5	18.8	5.3	4.6	22.5	14.9	4.3	0.0	11.7	7.5	5.9	5.9
Cycle Q Clear(g_c), s	3.5	18.8	5.3	4.6	22.5	14.9	4.3	0.0	11.7	7.5	5.9	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	274	1194	537	306	1196	538	401	0	350	329	404	340
V/C Ratio(X)	0.52	0.85	0.30	0.60	0.96	0.71	0.35	0.00	0.85	0.75	0.45	0.45
Avail Cap(c_a), veh/h	297	1205	542	323	1196	538	424	0	418	329	453	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	22.1	17.6	16.5	23.1	20.6	19.6	0.0	27.5	21.7	24.4	24.5
Incr Delay (d2), s/veh	1.5	5.9	0.3	2.7	16.7	4.4	0.5	0.0	13.5	9.3	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.7	1.7	1.8	10.7	5.4	1.8	0.0	6.0	4.0	2.6	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	28.1	17.9	19.1	39.8	25.0	20.2	0.0	41.0	31.1	25.2	25.4
LnGrp LOS	B	C	B	B	D	C	C		D	C	C	C
Approach Vol, veh/h		1320			1709			439			581	
Approach Delay, s/veh		25.8			34.3			34.3			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	19.2	11.3	28.8	11.1	20.2	11.1	29.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	17.0	7.5	24.0	7.5	17.0	7.5	24.0
Max Q Clear Time (g_c+I1), s	9.5	13.7	6.6	20.8	6.3	7.9	5.5	24.5
Green Ext Time (p_c), s	0.0	0.5	0.0	2.0	0.0	1.0	0.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	30.6
HCM 7th LOS	C

ACUFF ROAD & PROW ROAD

SEGMENT COUNTS
MULTI-WAY STOP ANALYSIS
CAPACITY ANALYSIS

Basic Axle Classification Report: ACUFF RD

Station ID : ACUFF RD

Info Line 1 :

Info Line 2 :

GPS Lat/Lon :

DB File : ACUFF RD.DB

Last Connected Device Type : OmegaX3

Version Number : 2.07

Serial Number : XA46354

Number of Lanes : 1

Posted Speed Limit : 0.0 mph

Lane #1 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
1.		North	Ax-Ax	4.0 ft	6.0 ft	

Lane #1 Basic Axle Classification Data From: 00:00 - 08/27/2024 To: 00:14 - 08/28/2024

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
08/27/24	00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	00:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	06:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	06:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	07:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	07:15	1	7	1	0	1	0	0	0	0	0	0	0	0	10
	07:30	0	19	2	0	1	0	0	0	0	0	0	0	0	22
	07:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
	08:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	08:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
	08:30	0	6	0	0	2	0	0	0	0	0	0	0	0	8

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
08/27/24	08:45	0	7	1	0	1	0	0	0	0	0	0	0	0	9
Tue	09:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
	09:15	0	2	2	0	0	0	0	0	0	0	0	0	0	4
	09:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	09:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	10:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
	10:15	0	4	2	0	0	0	0	0	0	0	0	0	0	6
	10:30	0	6	1	0	2	0	0	0	0	0	0	0	0	9
	10:45	0	3	2	0	0	0	0	0	0	0	0	0	0	5
	11:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	11:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
	11:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
	11:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
	12:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	12:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	12:30	0	5	3	0	0	0	0	0	0	0	0	0	0	8
	12:45	0	9	1	0	0	0	0	0	0	0	0	0	0	10
	13:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
	13:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
	13:30	0	4	2	0	0	0	0	0	0	0	0	0	0	6
	13:45	0	5	2	0	0	0	0	0	0	0	0	0	0	7
	14:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
	14:15	0	7	2	0	0	0	0	0	0	0	0	0	0	9
	14:30	0	16	0	0	1	0	0	0	0	0	0	0	0	17
	14:45	0	47	2	0	1	0	0	0	0	0	0	0	0	50
	15:00	1	13	0	0	0	0	0	0	0	0	0	0	0	14
	15:15	0	12	1	0	1	0	0	0	0	0	0	0	0	14
	15:30	1	16	1	0	1	0	0	0	0	0	0	0	0	19
	15:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
	16:00	1	16	1	0	0	0	0	0	0	0	0	0	0	18
	16:15	0	15	2	0	0	0	0	0	0	0	0	0	0	17
	16:30	0	16	2	0	1	0	0	0	0	0	0	0	0	19
	16:45	1	13	2	0	0	0	0	0	0	0	0	0	0	16
	17:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
	17:15	1	12	0	0	0	0	0	0	0	0	0	0	0	13
	17:30	0	9	1	0	0	0	0	0	0	0	0	0	0	10
	17:45	0	12	0	0	0	0	0	0	0	0	0	0	0	12
	18:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
	18:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
	18:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
	18:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10
	19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	19:15	1	6	0	0	0	0	0	0	0	0	0	0	0	7
	19:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	19:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
	20:00	1	8	1	0	0	0	0	0	0	0	0	0	0	10
	20:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	20:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	21:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
08/27/24	21:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Tue	21:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	22:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	22:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	22:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total :		8	508	50	0	13	0	0	0	0	0	0	0	0	579
	Percent :	1%	88%	9%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
	Average :	0	5	1	0	0	0	0	0	0	0	0	0	0	6

Lane #2 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
2.		South	Ax-Ax	4.0 ft	6.0 ft	

Lane #2 Basic Axle Classification Data From: 00:00 - 08/27/2024 To: 00:14 - 08/28/2024

(DEFAULTC)		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	
Date	Time	Cycle	Cars	2A-4T	Buses	2A-SU	3A-SU	4A-SU	4A-ST	5A-ST	6A-ST	5A-MT	6A-MT	Other	Total
08/27/24	00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	00:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:30	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	05:45	0	0	5	0	0	0	0	0	0	0	0	0	0	5
	06:00	0	0	3	0	1	0	0	0	0	0	0	0	0	4
	06:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	06:30	0	0	7	0	1	0	1	0	0	0	0	0	0	9
	06:45	1	0	16	1	1	0	0	0	0	0	0	0	0	19
	07:00	0	0	15	0	6	0	0	0	0	0	0	0	0	21
	07:15	0	0	28	0	1	0	0	0	0	0	0	0	0	29
	07:30	0	2	22	0	4	0	0	0	0	0	0	0	0	28
	07:45	0	0	9	1	2	0	0	0	0	0	0	0	0	12
	08:00	0	0	5	2	2	0	0	0	0	0	0	0	0	9
	08:15	0	0	3	0	1	0	0	0	0	0	0	0	0	4
	08:30	0	1	6	0	0	0	1	0	0	0	0	0	0	8
	08:45	0	0	3	0	1	0	0	0	0	0	0	0	0	4
	09:00	0	0	5	0	0	0	0	0	0	0	0	0	0	5
	09:15	1	0	4	0	1	0	0	0	0	0	0	0	0	6
	09:30	0	0	8	0	2	0	0	0	0	0	0	0	0	10
	09:45	0	0	2	0	1	0	0	0	0	0	0	0	0	3
	10:00	0	0	4	0	1	0	0	0	0	0	0	0	0	5
	10:15	0	0	5	0	1	0	0	0	0	0	0	0	0	6
	10:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
08/27/24	10:45	0	0	4	0	0	1	0	0	0	0	0	0	0	5
Tue	11:00	0	0	7	0	0	0	0	1	0	0	0	0	0	8
	11:15	0	0	5	0	0	0	0	0	0	0	0	0	0	5
	11:30	0	0	8	0	1	0	0	0	0	0	0	0	0	9
	11:45	0	0	6	0	0	0	0	0	0	0	0	0	0	6
	12:00	0	0	3	0	1	0	0	0	0	0	0	0	0	4
	12:15	0	0	4	0	0	0	0	0	0	0	0	0	0	4
	12:30	0	0	3	0	2	0	0	0	0	0	0	0	0	5
	12:45	0	0	8	0	1	0	0	0	0	0	0	0	0	9
	13:00	0	0	5	0	1	0	0	0	0	0	0	0	0	6
	13:15	0	1	3	0	0	0	0	0	1	0	0	0	0	5
	13:30	0	1	5	0	2	0	0	0	1	0	0	0	0	9
	13:45	0	0	3	1	2	0	0	0	0	0	0	0	0	6
	14:00	0	1	3	0	0	0	0	0	0	0	0	0	0	4
	14:15	0	0	8	2	1	0	0	0	0	0	0	0	0	11
	14:30	0	0	10	0	1	0	0	0	0	0	0	0	0	11
	14:45	0	0	5	1	0	0	0	0	0	0	0	0	0	6
	15:00	0	0	4	0	0	0	0	0	0	0	0	0	0	4
	15:15	0	0	4	0	3	0	0	0	0	0	0	0	0	7
	15:30	0	0	3	0	1	0	0	0	0	0	0	0	0	4
	15:45	0	1	6	0	0	0	0	0	0	0	0	0	0	7
	16:00	0	0	4	0	0	0	0	0	0	0	0	0	0	4
	16:15	0	0	7	0	0	1	0	0	0	0	0	0	0	8
	16:30	0	0	4	0	0	1	0	0	0	0	0	0	0	5
	16:45	0	0	7	0	1	0	0	0	0	0	0	0	0	8
	17:00	0	0	9	0	1	0	0	0	0	0	0	0	0	10
	17:15	0	1	5	0	0	0	0	0	0	0	0	0	0	6
	17:30	0	0	7	0	1	0	0	0	0	0	0	0	0	8
	17:45	0	1	11	0	1	0	0	0	0	0	0	0	0	13
	18:00	0	0	5	0	2	0	0	0	0	0	0	0	0	7
	18:15	1	0	4	0	0	0	0	0	0	0	0	0	0	5
	18:30	0	0	6	0	0	0	0	0	0	0	0	0	0	6
	18:45	0	0	4	0	1	0	0	0	0	0	0	0	0	5
	19:00	0	0	4	0	1	0	0	0	0	0	0	0	0	5
	19:15	0	2	4	0	1	0	0	0	0	0	0	0	0	7
	19:30	0	0	4	0	1	0	0	0	0	0	0	0	0	5
	19:45	0	0	4	0	0	0	0	0	0	0	0	0	0	4
	20:00	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	20:15	0	1	3	0	0	0	0	0	0	0	0	0	0	4
	20:30	1	0	1	0	2	0	0	0	0	0	0	0	0	4
	20:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:30	0	1	2	0	1	0	0	0	0	0	0	0	0	4
	21:45	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	22:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
08/27/24	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	23:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Daily Total :		4	14	374	8	55	3	2	1	2	0	0	0	0	463
Percent :		1%	3%	81%	2%	12%	1%	0%	0%	0%	0%	0%	0%	0%	
Average :		0	0	4	0	1	0	0	0	0	0	0	0	0	5

Basic Axle Class Summary: ACUFF RD

(DEFAULTC) Description	Lane	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Total
TOTAL COUNT :	#1.	8	508	50	0	13	0	0	0	0	0	0	0	0	579
	#2.	4	14	374	8	55	3	2	1	2	0	0	0	0	463
		12	522	424	8	68	3	2	1	2	0	0	0	0	1042
Percents :	#1.	1%	88%	9%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	56%
	#2.	1%	3%	81%	2%	12%	1%	0%	0%	0%	0%	0%	0%	0%	44%
		1%	50%	41%	1%	7%	0%	0%	0%	0%	0%	0%	0%	0%	
Average :	#1.	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	#2.	0	0	4	0	1	0	0	0	0	0	0	0	0	5
		0	5	5	0	1	0	0	0	0	0	0	0	0	11
Days & ADT :	#1.	1.0	579												
	#2.	1.0	463												
		1.0	1042												

Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	2	1	39	7	4
Future Vol, veh/h	105	2	1	39	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	2	1	42	8	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	42	22	0	0	43	0
Stage 1	22	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	969	1055	-	-	1565	-
Stage 1	1000	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	965	1055	-	-	1565	-
Mov Cap-2 Maneuver	965	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.24	0	4.65
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	966	1145	-
HCM Lane V/C Ratio	-	-	0.12	0.005	-
HCM Control Delay (s/veh)	-	-	9.2	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	8	6	103	5	3
Future Vol, veh/h	30	8	6	103	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	9	7	112	5	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	77	62	0	0	118	0
Stage 1	62	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	926	1002	-	-	1470	-
Stage 1	960	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	923	1002	-	-	1470	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	1005	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.01	0	4.66
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1125	-
HCM Lane V/C Ratio	-	-	0.044	0.004	-
HCM Control Delay (s/veh)	-	-	9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

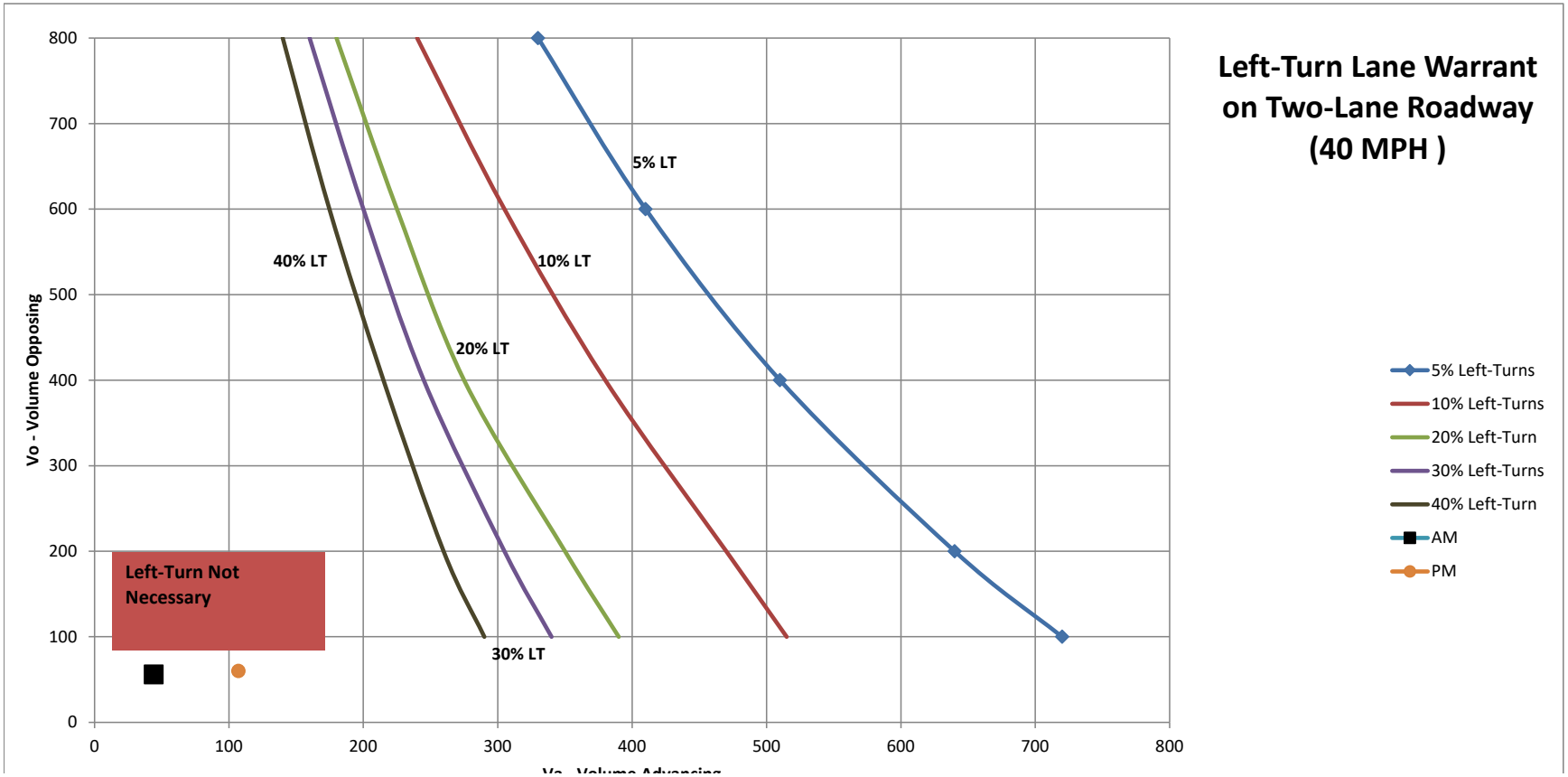
KINSER PIKE & PROSED ACCESS DRIVE

TURN LANE WARRANTS
CAPACITY ANALYSIS

Kinser Pike & Access Drive - Background + Proposed

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	210	180	170	160	150	140
	600	410	305	265	225	213	200	187	175
	400	510	380	328	275	260	245	230	215
	200	640	470	410	350	328	305	282	260
	100	720	515	453	390	365	340	315	290

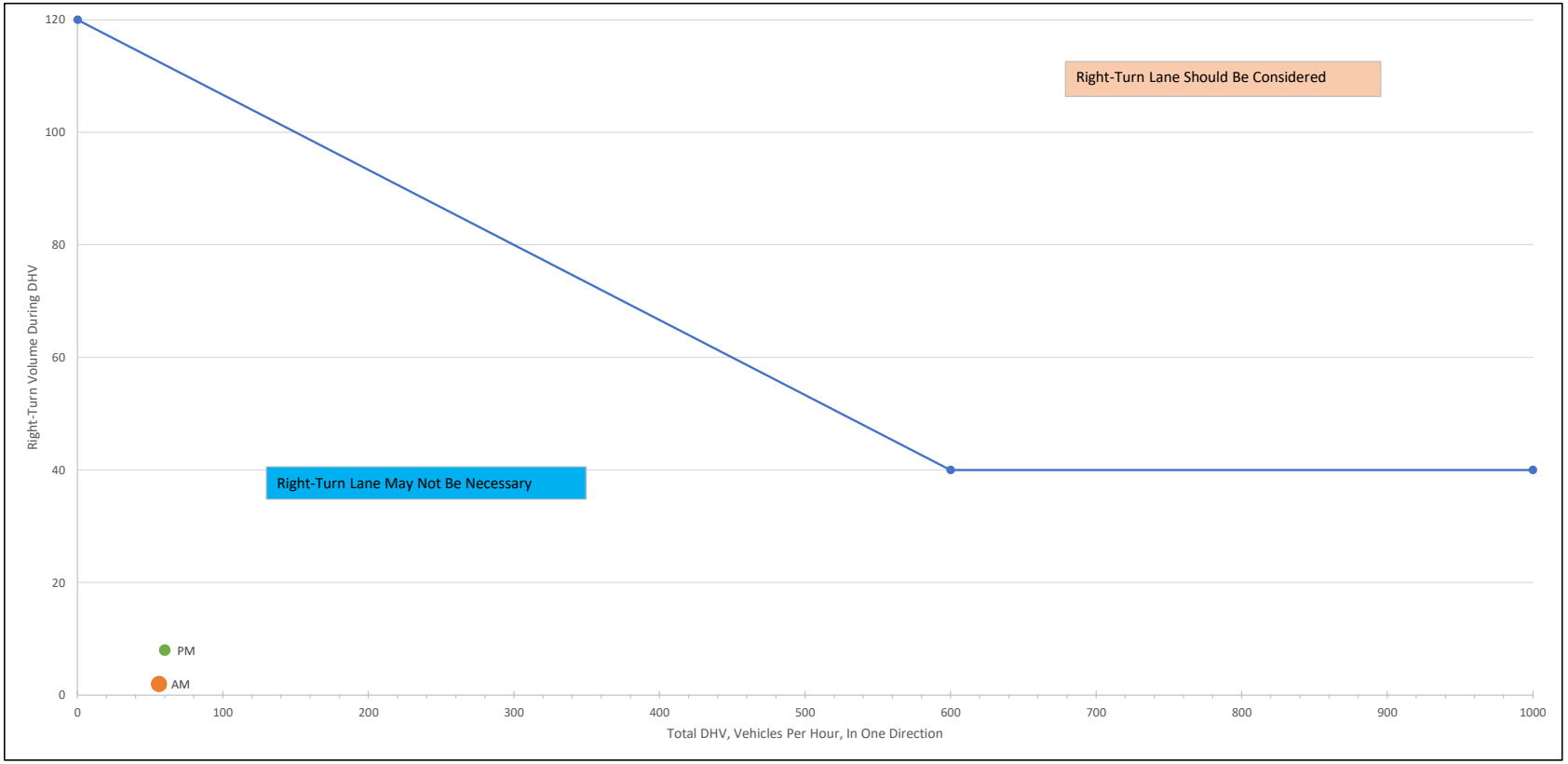
	INPUT		Warrant?
AM	Advancing Volume (Va)	44	NO
	Opposing Volume (Vo)	56	
	Left-turn Volume	11	
	Left-turn %	25%	
PM	Advancing Volume (Va)	107	NO
	Opposing Volume (Vo)	60	
	Left-turn Volume	35	
	Left-turn %	33%	



Total Volume	RT Volume
0	120
600	40
1000	40

Time	Input		Met?
AM	**RT Volume**	2	NO
	Total Volume	56	
PM	**RT Volume**	8	NO
	Total Volume	60	

Kinser Pike & Access Drive



Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	31	11	30	85	2
Future Vol, veh/h	7	31	11	30	85	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	34	12	33	92	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	150	93	95	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	842	964	1499	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	835	964	1499	-	-	-
Mov Cap-2 Maneuver	835	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	966	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.02	1.99	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	483	-	937	-	-
HCM Lane V/C Ratio	0.008	-	0.044	-	-
HCM Control Delay (s/veh)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	21	35	89	33	8
Future Vol, veh/h	5	21	35	89	33	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	23	38	97	36	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	213	40	45	0	-	0
Stage 1	40	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	775	1031	1564	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	755	1031	1564	-	-	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.85	2.08	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	508	-	963	-	-
HCM Lane V/C Ratio	0.024	-	0.029	-	-
HCM Control Delay (s/veh)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

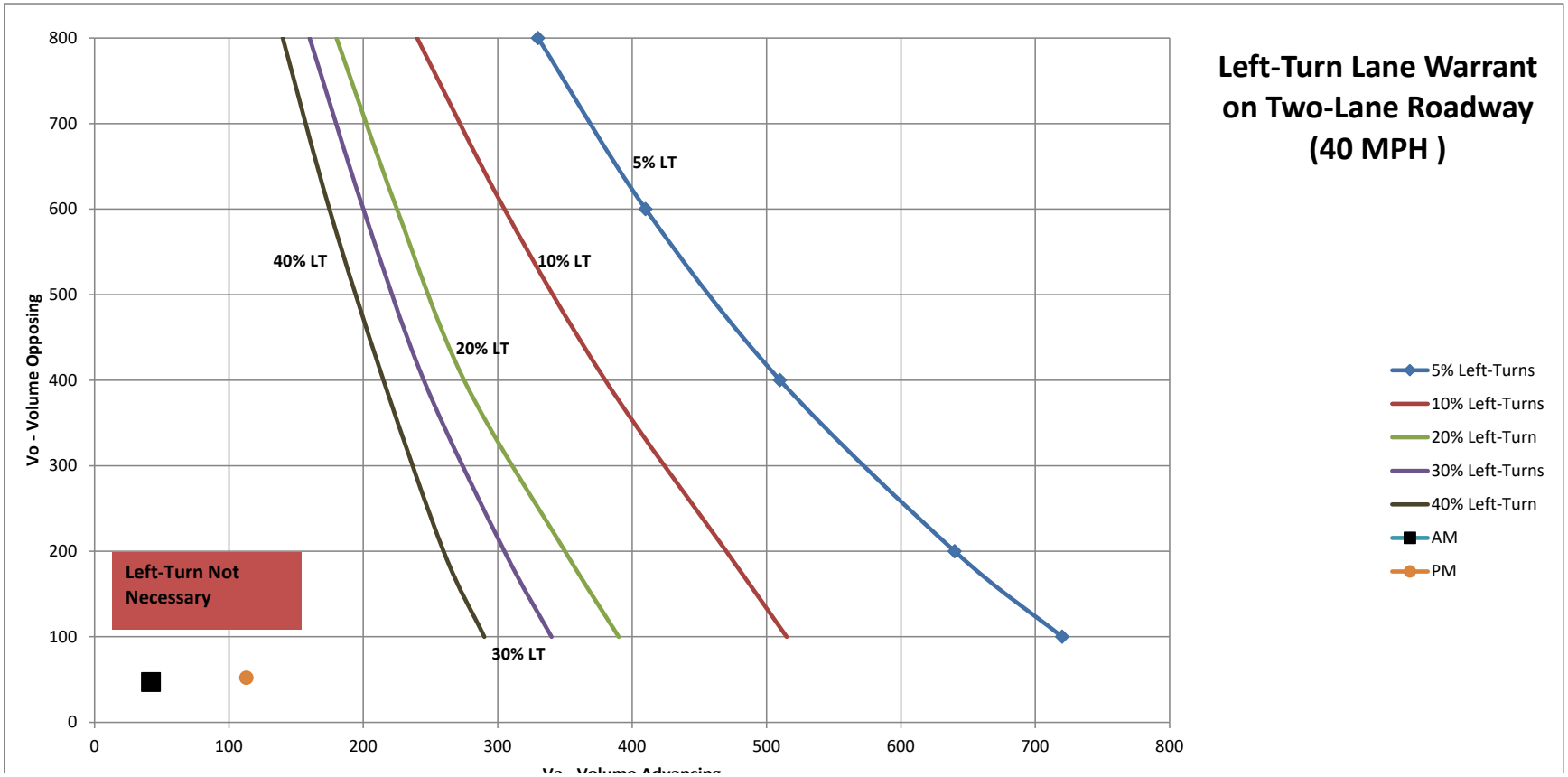
ACUFF ROAD & PROSED ACCESS DRIVE

TURN LANE WARRANTS
CAPACITY ANALYSIS

Acuff Road & Access Drive - Background + Proposed

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	210	180	170	160	150	140
	600	410	305	265	225	213	200	187	175
	400	510	380	328	275	260	245	230	215
	200	640	470	410	350	328	305	282	260
	100	720	515	453	390	365	340	315	290

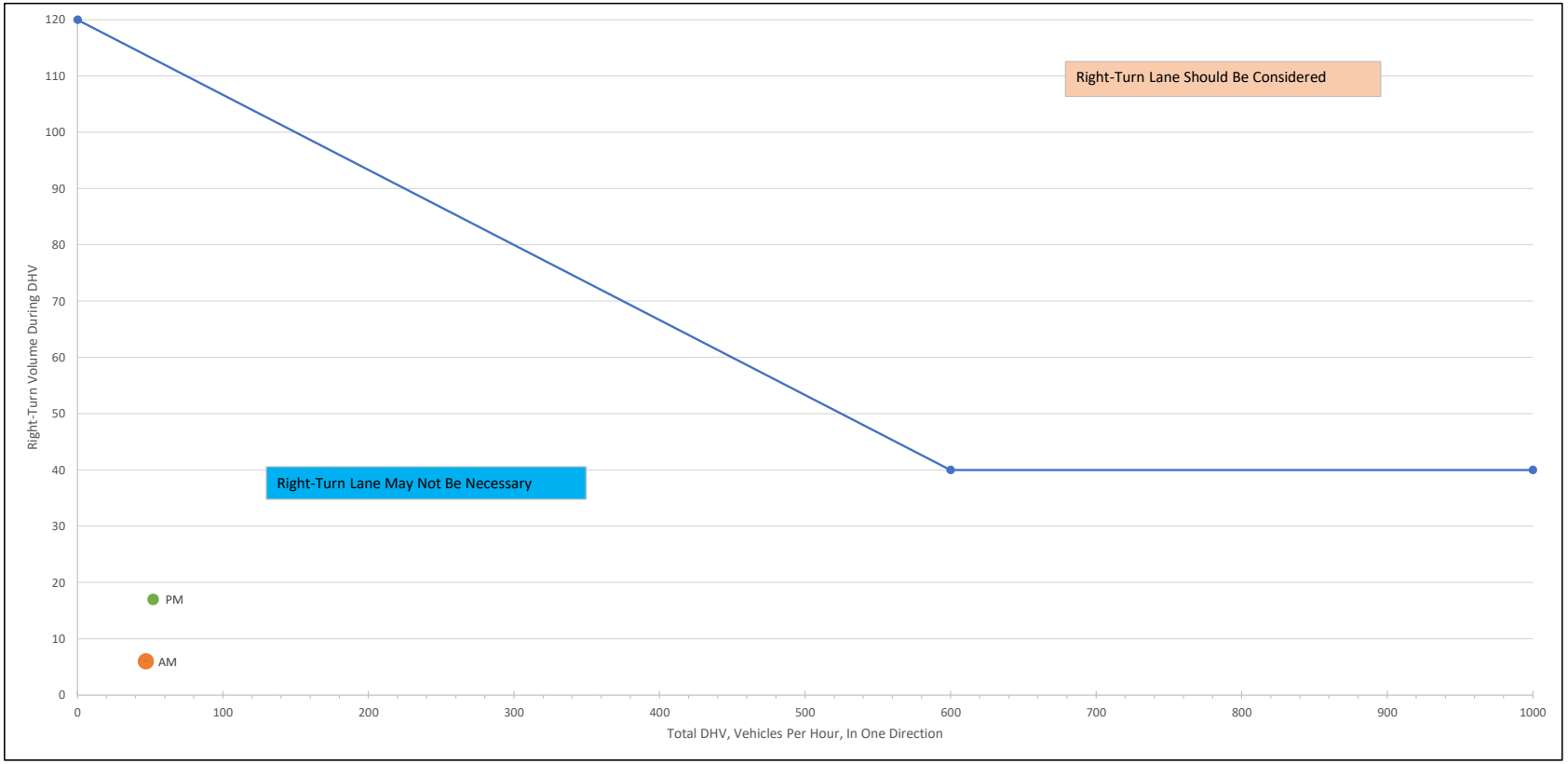
	INPUT		Warrant?
AM	Advancing Volume (Va)	42	NO
	Opposing Volume (Vo)	47	
	Left-turn Volume	1	
	Left-turn %	2%	
PM	Advancing Volume (Va)	113	NO
	Opposing Volume (Vo)	52	
	Left-turn Volume	3	
	Left-turn %	3%	



Total Volume	RT Volume
0	120
600	40
1000	40

Time	Input		Met?
AM	**RT Volume**	6	NO
	Total Volume	47	
PM	**RT Volume**	17	NO
	Total Volume	52	

Acuff Road & Access Drive



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	29	1	3	35	6	2	0	11	16	0	3
Future Vol, veh/h	1	29	1	3	35	6	2	0	11	16	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	32	1	3	38	7	2	0	12	17	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	45	0	0	33	0	0	79	85	32	82	83	41
Stage 1	-	-	-	-	-	-	34	34	-	48	48	-
Stage 2	-	-	-	-	-	-	45	51	-	34	35	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1564	-	-	1579	-	-	910	805	1042	906	808	1030
Stage 1	-	-	-	-	-	-	982	866	-	966	855	-
Stage 2	-	-	-	-	-	-	969	852	-	982	866	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1564	-	-	1579	-	-	904	803	1042	893	805	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	904	803	-	893	805	-
Stage 1	-	-	-	-	-	-	981	866	-	964	853	-
Stage 2	-	-	-	-	-	-	964	851	-	970	865	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.24	0.5	8.59	9.04
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1018	58	-	-	119	-	-	912
HCM Lane V/C Ratio	0.014	0.001	-	-	0.002	-	-	0.023
HCM Control Delay (s/veh)	8.6	7.3	0	-	7.3	0	-	9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	101	3	12	11	17	2	0	6	10	0	1
Future Vol, veh/h	3	101	3	12	11	17	2	0	6	10	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	110	3	13	12	18	2	0	7	11	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	113	0	0	156	174	111	164	167	21
Stage 1	-	-	-	-	-	-	118	118	-	47	47	-
Stage 2	-	-	-	-	-	-	38	57	-	116	120	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1582	-	-	1476	-	-	810	719	942	801	726	1056
Stage 1	-	-	-	-	-	-	887	798	-	966	855	-
Stage 2	-	-	-	-	-	-	977	848	-	888	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1582	-	-	1476	-	-	801	711	942	787	718	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	801	711	-	787	718	-
Stage 1	-	-	-	-	-	-	885	796	-	958	848	-
Stage 2	-	-	-	-	-	-	967	840	-	880	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	2.24	9.03	9.54
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	902	50	-	-	482	-	-	805
HCM Lane V/C Ratio	0.01	0.002	-	-	0.009	-	-	0.015
HCM Control Delay (s/veh)	9	7.3	0	-	7.5	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

KINSER RIDGE
SUBDIVISION
PROJECT NO. 402334

PROPOSED:

KINSER RIDGE SUBDIVISION

VICINITY/LOCATION MAP
SCALE: 1"=2000'

NORTH PROW ROAD
BLOOMINGTON, IN 47404

UTILITY CONTACT INFORMATION

GAS	SEWER AND WATER	ELECTRIC
VECTREN 205 S. MADISON ST. BLOOMINGTON, IN 47401 DOUG ANDERSON (812)330-4029	CITY OF BLOOMINGTON UTILITIES 600 E. MILLER DR. BLOOMINGTON, IN 47402 NANCY AXSOM (812)349-3699	DUKE ENERGY 1619 N. DEPENDABLE ROAD KOKOMO, INDIANA 46902 JIM SHIELDS (317)375-2071
TELEPHONE	**CABLE TELEVISION**	**UNDERGROUND UTILITY LOCATION**
AT&T P.O. BOX 56 BLOOMINGTON, IN 47402 BRENT McCABE (812)334-4521	COMCAST 3455 SOUTH HENDERSON STREET BLOOMINGTON, IN 47404 SCOTT TEMPLETON (812)355-7022	INDIANA UNDERGROUND PLANT PROTECTION 1-(800)382-5544

SHEET INDEX

SHEET NO.	SHEET NO.
C301	OVERALL SITE PLAN
C302-308	ENLARGED SITE PLANS
C401-408	PROFILE PLANS
C501	LANDSCAPING PLAN
C602	ROAD CROSS SECTIONS

INDIANA 811 KNOW what's below. Call before you DIG

DIAL '811' BEFORE YOU DIG
PER INDIANA STATE LAW IC8-1-26,
IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404 (812) 332-8030

architecture
civil engineering
planning

OWNER/DEVELOPER:
BEACON BUILDERS LLC
PO BOX 78483
INDIANAPOLIS, IN 46278

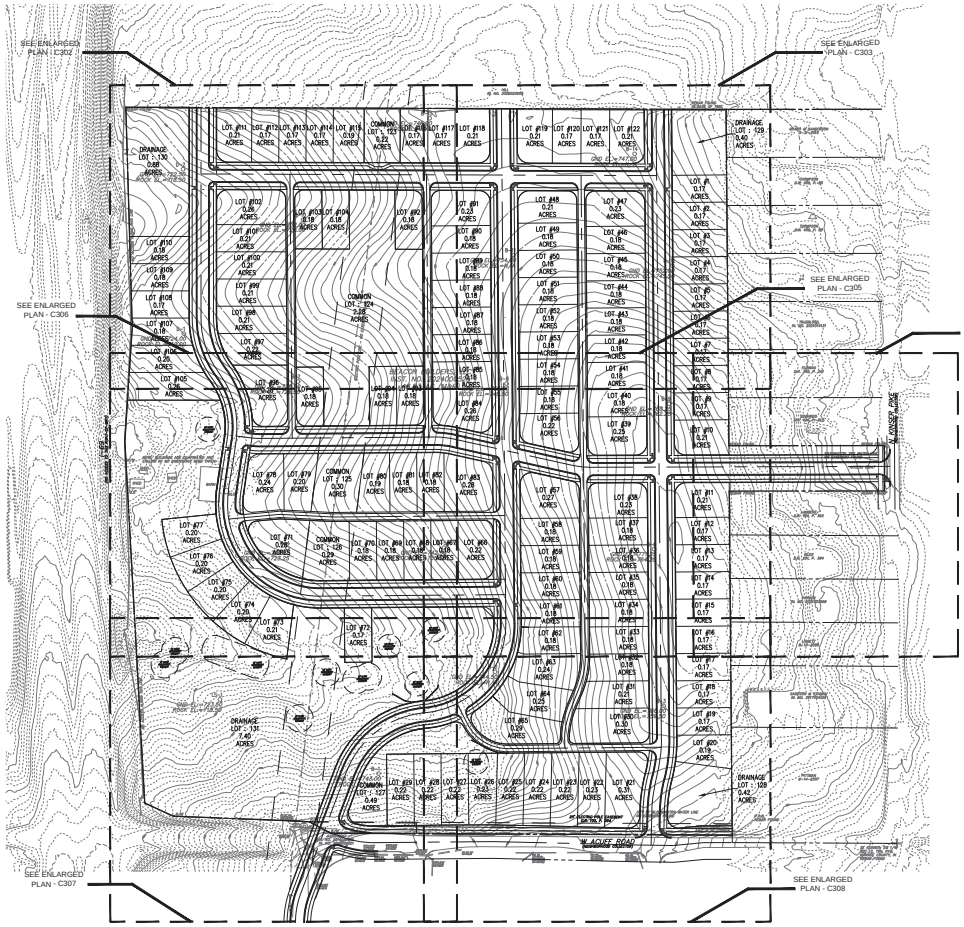
THE CURRENT EDITION OF THE INDIANA DEPARTMENT OF TRANSPORATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES & CITY OF BLOOMINGTON UTILITIES STANDARD SPECIFICATIONS IS TO BE USED WITH THESE PLANS

Certified By:

JEFFREY S. FANYO, P.E.
IND. REG. NO. 18283

Revisions

KINSER RIDGE SUBDIVISION
PROJECT NO. 402334



EXISTING LEGEND

EXISTING FENCE	X X X
EXISTING WATER LINE	W
EXISTING OVERHEAD UTILITY LINES	OHU
EXISTING UNDERGROUND ELECTRIC LINES	UGE
EXISTING UNDERGROUND TELEPHONE LINES	UGT
EXISTING UNDERGROUND FIBER OPTIC LINES	FO
EXISTING GAS LINE	GAS
EXISTING SANITARY FORCEMAIN	FM
EXISTING ELEVATION CONTOUR LINE	XXX
EXISTING SANITARY SEWER AND MANHOLE	
EXISTING STORM SEWER AND INLET	
PROPERTY LINE	
EXISTING EASEMENT	
GEOTECHNICAL REPORT BORE HOLE LOCATION - SEE SEPERATE GEOTECHNICAL REPORT BY "APEX" FOR MORE INFORMATION	GEOTECHNICAL BORING KEY GROUND ELEV.=XXX ROCK ELEV.=XXX

SCALE: 1"=100'

NOTE TO CONTRACTOR

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revisions:

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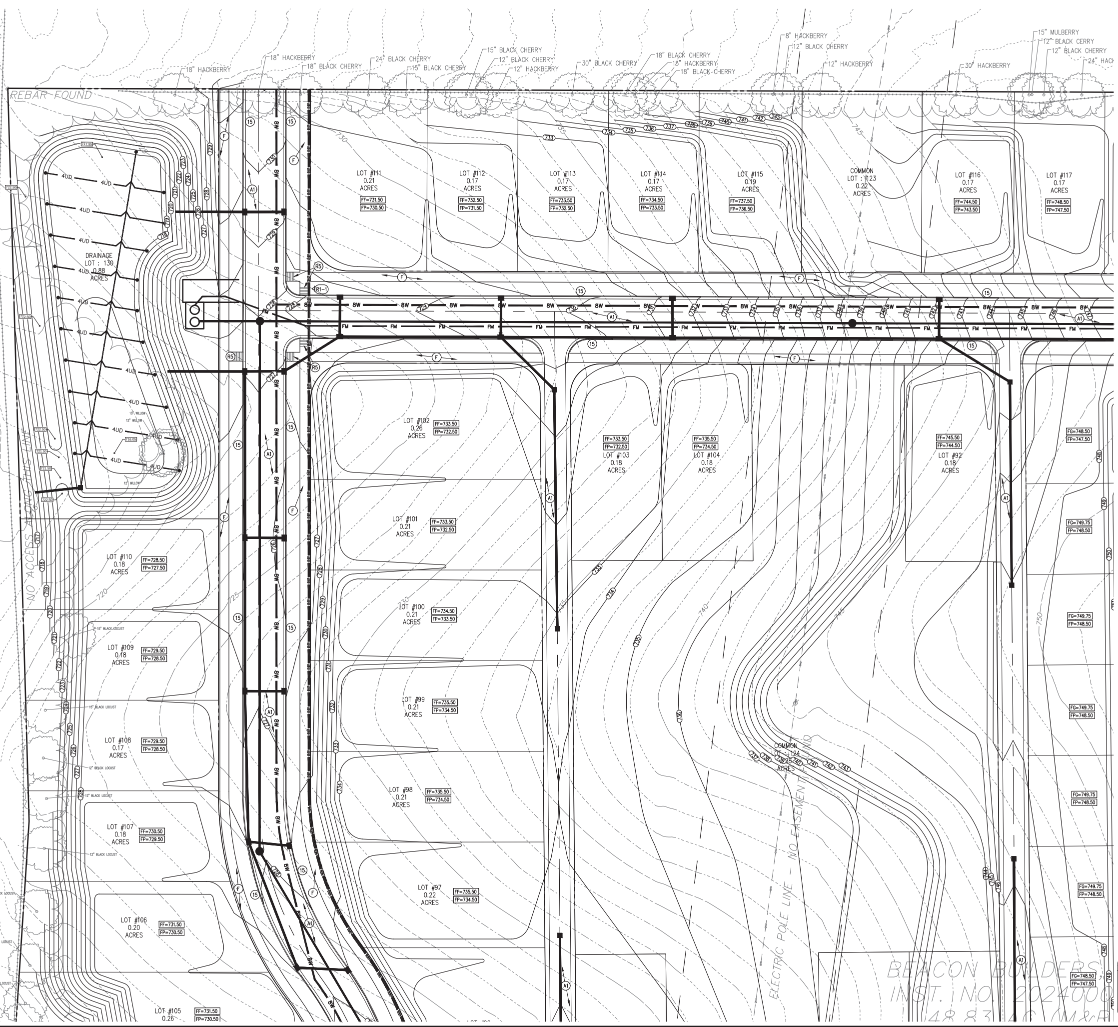
CIVIL ENGINEERING
PLANNING
Bloomington, Indiana
(812) 339-2990 (Fax)
BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
(812) 332-8030

certified by:

PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD. W ACUFF RD. N KINSER PIKE
BLOOMINGTON, IN 47404

title: SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C301
project no.: 402334



EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
EXISTING OVERHEAD UTILITY LINES	— OHU —
EXISTING UNDERGROUND ELECTRIC LINES	— UGE —
EXISTING UNDERGROUND TELEPHONE LINES	— UGT —
EXISTING UNDERGROUND FIBER OPTIC LINES	— FO —
EXISTING GAS LINE	— GAS —
EXISTING SANITARY FORCEMAIN	— FM —
EXISTING ELEVATION CONTOUR LINE	- - - XXX - - -
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UTILITY LEGEND

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PROPOSED POST INDICATOR VALVE LOCATION IN ACCORDANCE WITH CBU SPECIFICATIONS. CONTRACTOR TO PLACE MONITORING SWITCH WITH CONDUIT TO CONNECT TO CORRESPONDING PANEL WITHIN BUILDING – REFER TO THE FIRE PROTECTION SERIES DRAWINGS FOR MORE INFORMATION

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PROPOSED ASTM D3034 SDR 35 PVC SANITARY SEWER MAIN PIPING AND E-ONE PUMP, REFER TO PROFILES, PLAN AND DETAILS. NOTE: PROPOSED SANITARY MAIN SHOWN AS A PART OF THIS PROJECT IS TO BE PUBLIC AND MAINTAINED BY CBU AFTER CONSTRUCTION IS COMPLETE

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NOTE: CONTRACTOR TO USE A STEEL SLEEVE WHEN IT IS SHOWN TO ROUTE PIPING THROUGH WALL, COORDINATE WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS

SITE LEGEND

A1	PROPOSED HEAVY DUTY ROAD BITUMINOUS PAVING
F	PROPOSED CONCRETE SIDEWALK
15	PROPOSED 6 IN CONCRETE CURB AND GUTTER
R5	PROPOSED SIDEWALK ACCESSIBLE RAMP TYPE H
R1-1	PROPOSED INDOT 30 IN. X 30 IN. ROAD STOP SIGN

GRADING LEGEND

— XXX —	PROPOSED GRADE CONTOUR
- - XXX - -	EXISTING GRADE CONTOUR
XXX.XX	PROPOSED SPOT GRADE ELEVATION
FP=XXX.XX	FINISH PAD ELEVATION
FF=XXX.XX	FINISH FLOOR ELEVATION
FB=XXX.XX	FINISH BASEMENT LEVEL ELEVATION

SCALE: 1"=30'

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revisions:

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bloomington, indiana
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certified by:

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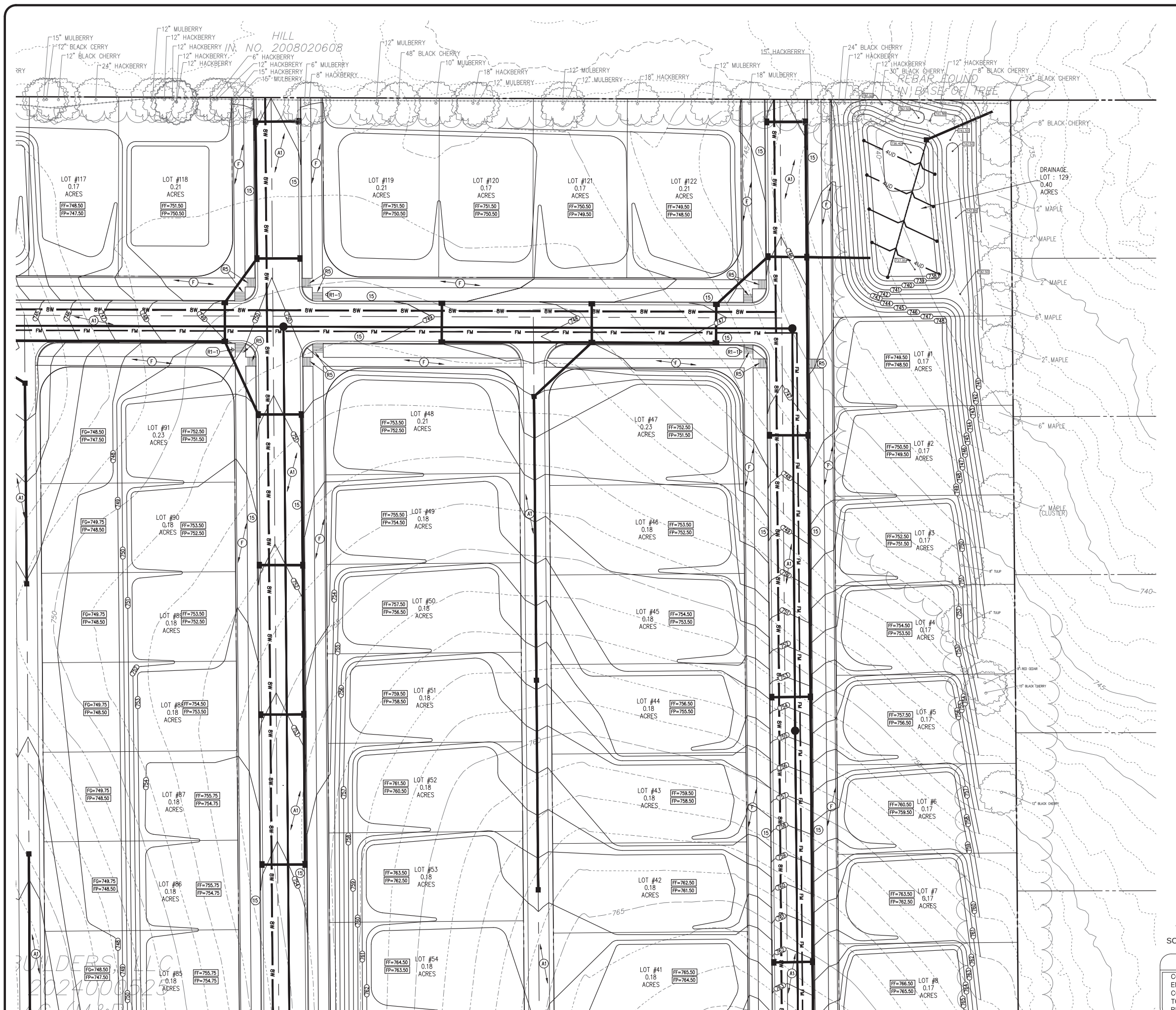
KINSER RIDGE SUBDIVISION
N PROW RD, W ACUFF RD, N KINSER PIKE,
BLOOMINGTON, IN 47404

title: ENLARGED SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C302
project no.: 402334



EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
EXISTING OVERHEAD UTILITY LINES	— OHU —
EXISTING UNDERGROUND ELECTRIC LINES	— UGE —
EXISTING UNDERGROUND TELEPHONE LINES	— UGT —
EXISTING UNDERGROUND FIBER OPTIC LINES	— FO —
EXISTING GAS LINE	— GAS —
EXISTING SANITARY FORCEMAIN	— FM —
EXISTING ELEVATION CONTOUR LINE	- - XXX - -
EXISTING SANITARY SEWER AND MANHOLE	
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- - XXX - -	EXISTING GRADE CONTOUR
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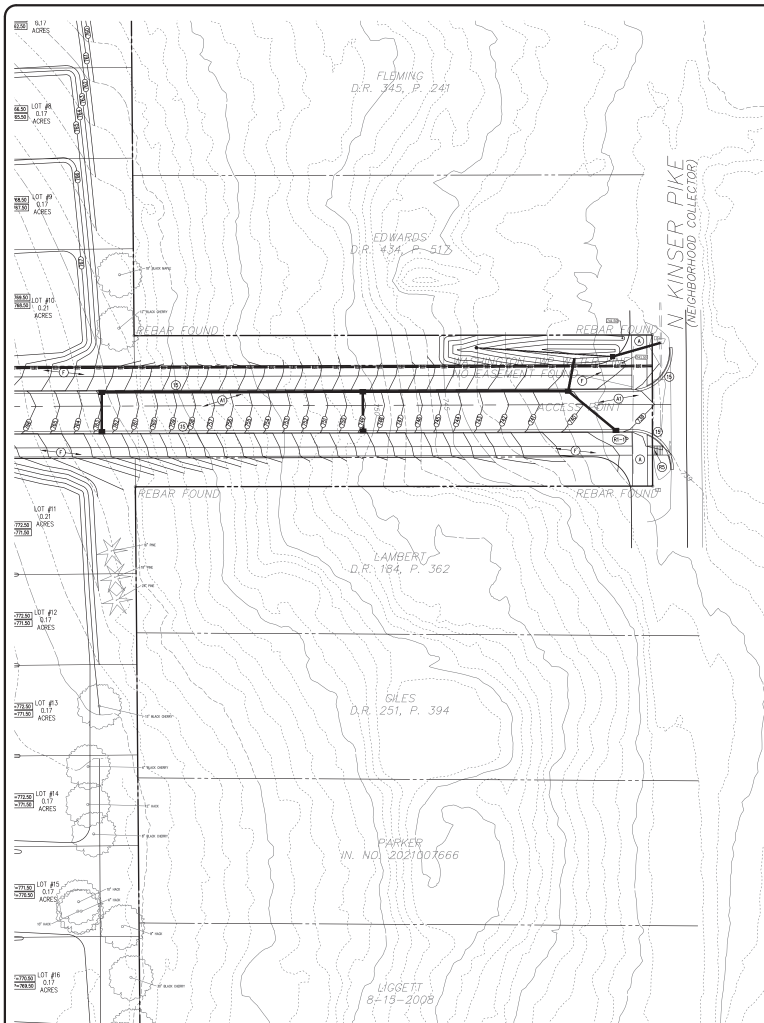

SCALE: 1"=30'

EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
EXISTING OVERHEAD UTILITY LINES	— OHU —
EXISTING UNDERGROUND ELECTRIC LINES	— UGE —
EXISTING UNDERGROUND TELEPHONE LINES	— UGT —
EXISTING UNDERGROUND FIBER OPTIC LINES	— FO —
EXISTING GAS LINE	— GAS —
EXISTING SANITARY FORCEMAIN	— FM —
EXISTING ELEVATION CONTOUR LINE	- - XXX - -
EXISTING SANITARY SEWER AND MANHOLE	
EXISTING STORM SEWER AND INLET	
PROPERTY LINE	
EXISTING EASEMENT	
GEOTECHNICAL REPORT BORE HOLE LOCATION – SEE SEPERATE GEOTECHNICAL REPORT BY 'APEC' FOR MORE INFORMATION	GEOTECHNICAL BORING KEY GROUND ELEV.=XXX ROCK ELEV.=XXX

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SITE LEGEND

A1	PROPOSED HEAVY DUTY ROAD BITUMINOUS PAVING
F	PROPOSED CONCRETE SIDEWALK
15	PROPOSED 6 IN CONCRETE CURB AND GUTTER
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R1-1	PROPOSED INDOT 30 IN. X 30 IN. ROAD STOP SIGN

GRADING LEGEND

—— XXX ——	PROPOSED GRADE CONTOUR
- - - XXX - - -	EXISTING GRADE CONTOUR
XXX.XX	PROPOSED SPOT GRADE ELEVATION
FP=XXX.XX	FINISH PAD ELEVATION
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certified by:

PROPOSED
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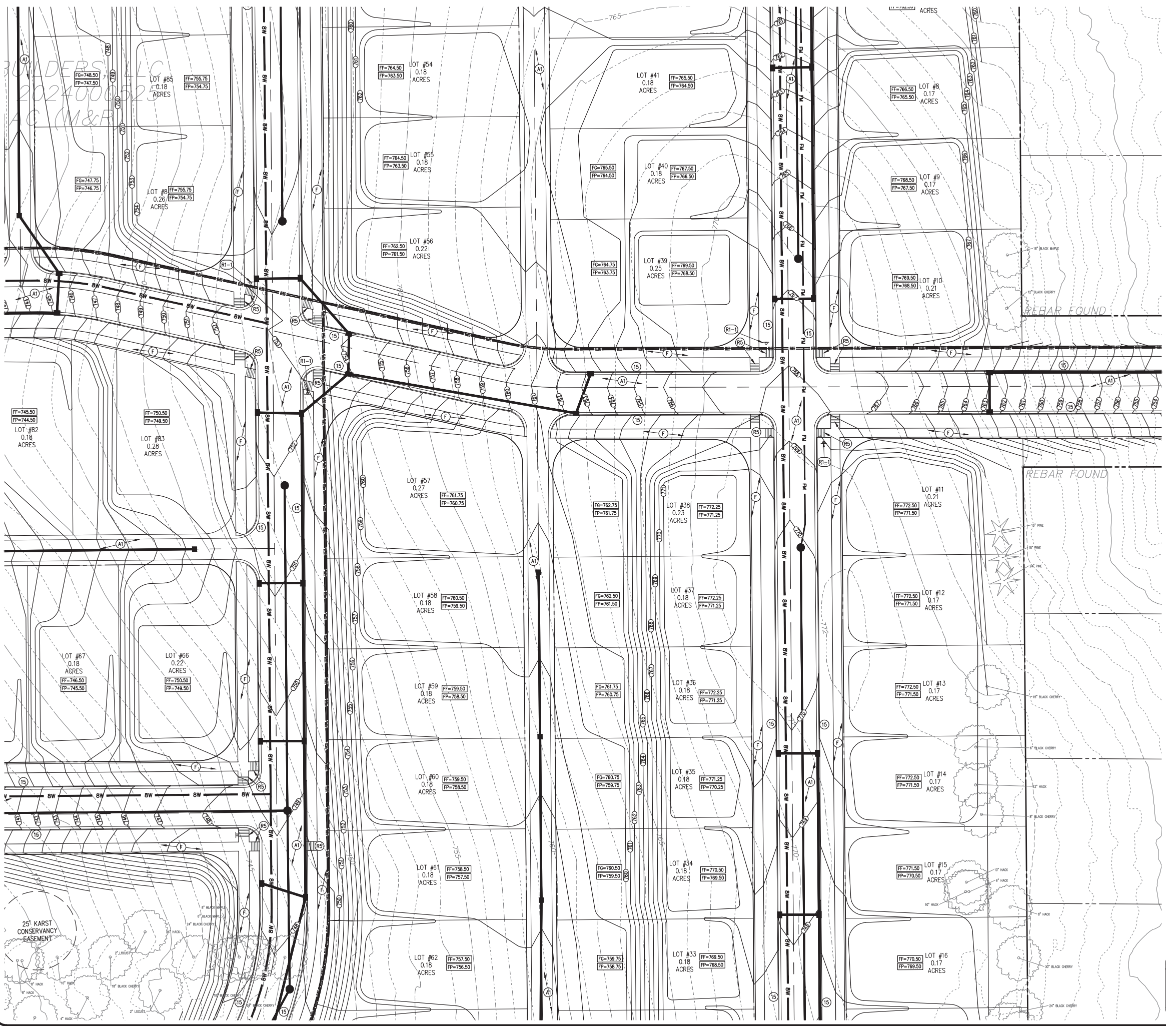
BLOOMINGTON, IN 47404

title: ENLARGED SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C304
project no.: 402334



EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
EXISTING OVERHEAD UTILITY LINES	— OHU —
EXISTING UNDERGROUND ELECTRIC LINES	— UGE —
EXISTING UNDERGROUND TELEPHONE LINES	— UGT —
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GEOTECHNICAL REPORT BORE HOLE LOCATION – SEE SEPERATE GEOTECHNICAL REPORT BY 'APEC' FOR MORE INFORMATION	GEOTECHNICAL BORING KEY GROUND ELEV.=XXX ROCK ELEV.=XXX

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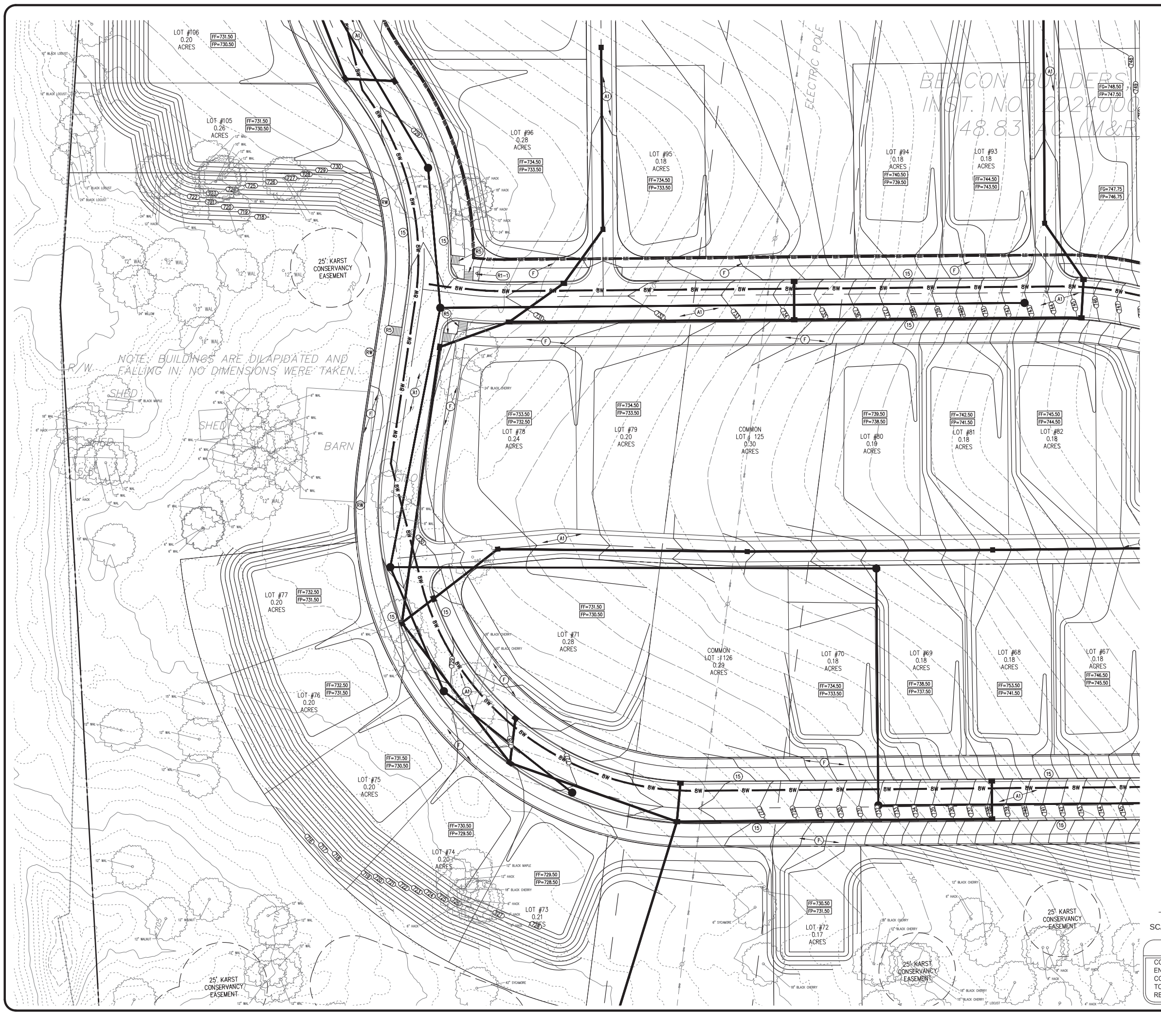

EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
EXISTING OVERHEAD UTILITY LINES	— OHU —
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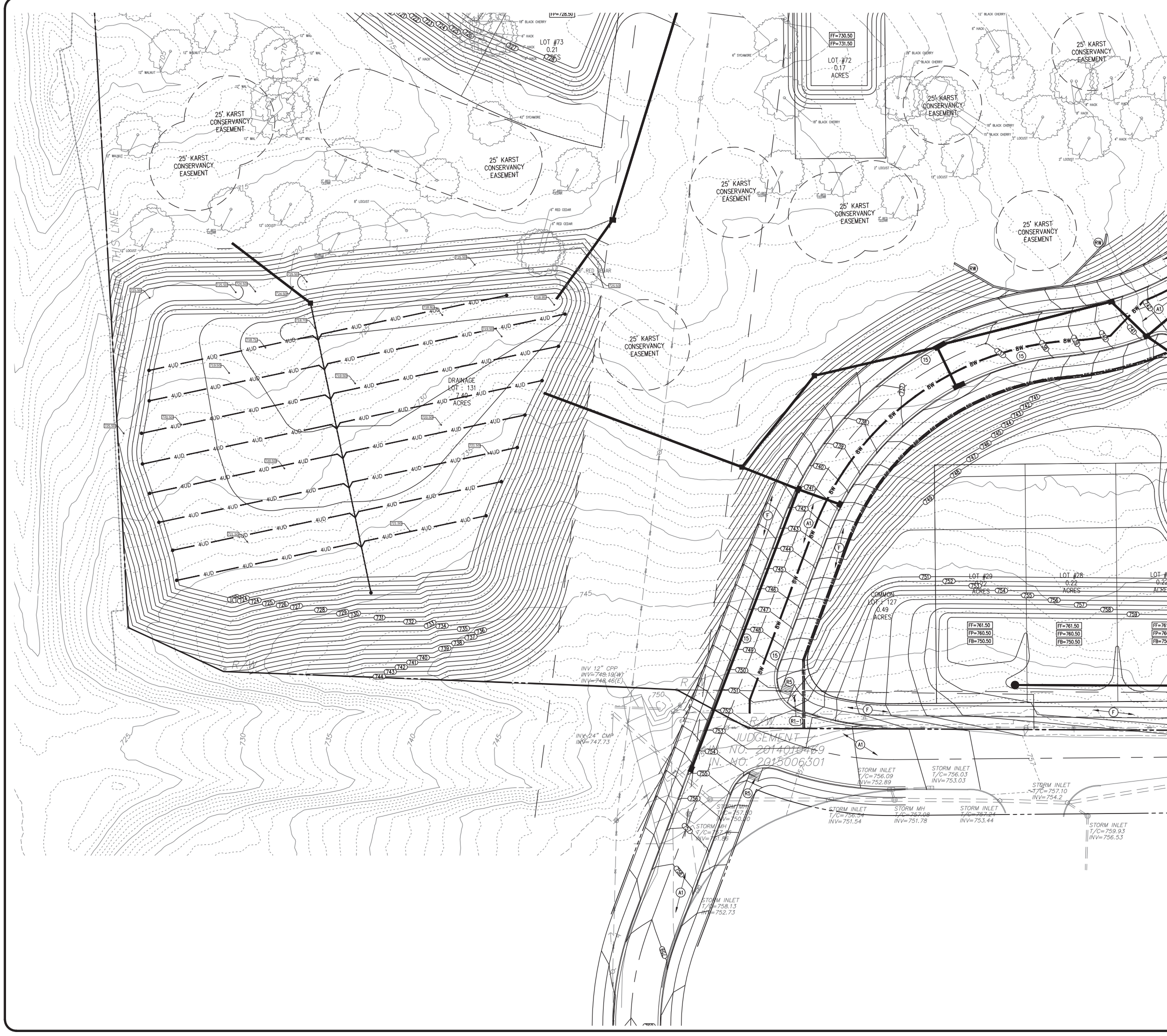
title: ENLARGED SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C306
project no.: 402334



EXISTING LEGEND

EXISTING FENCE	—X—X—X—
EXISTING WATER LINE	— W —
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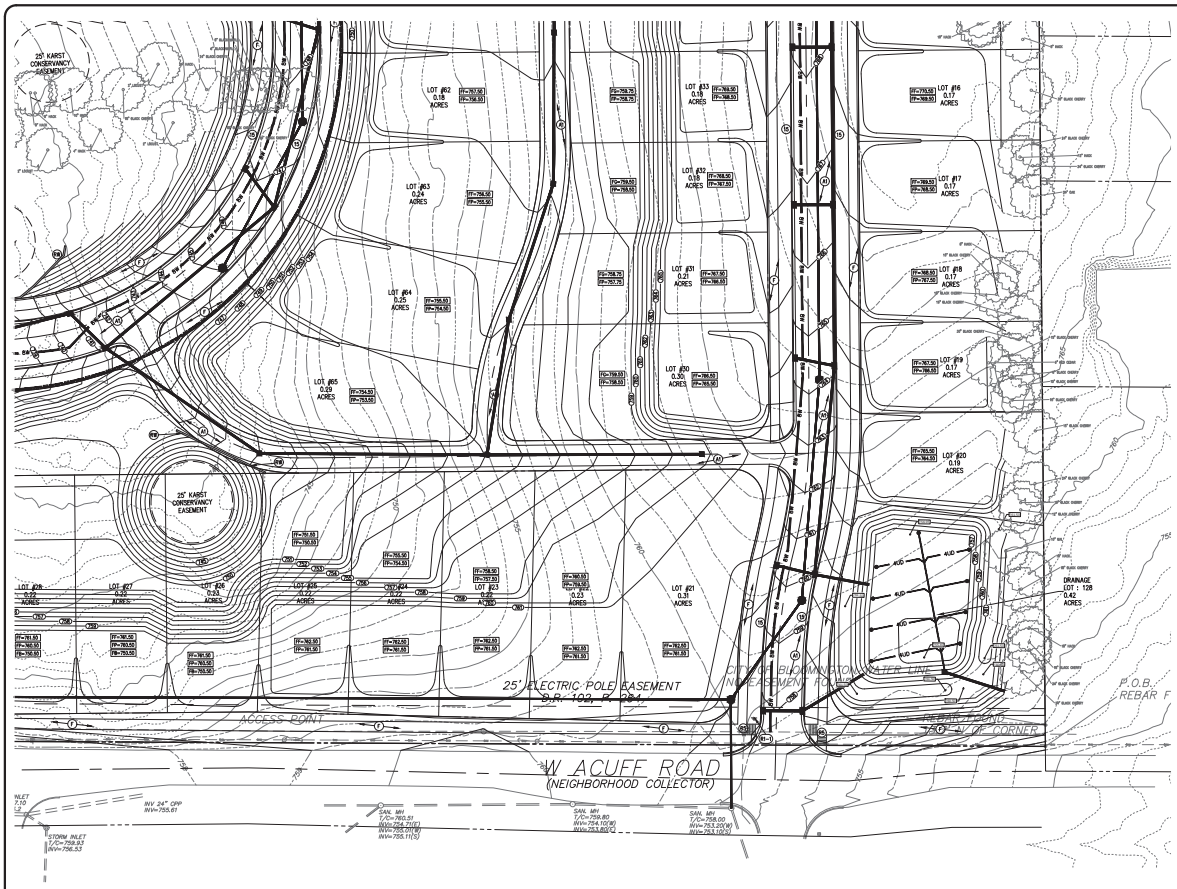

EXISTING LEGEND

- EXISTING FENCE — X X X
- EXISTING WATER LINE — W
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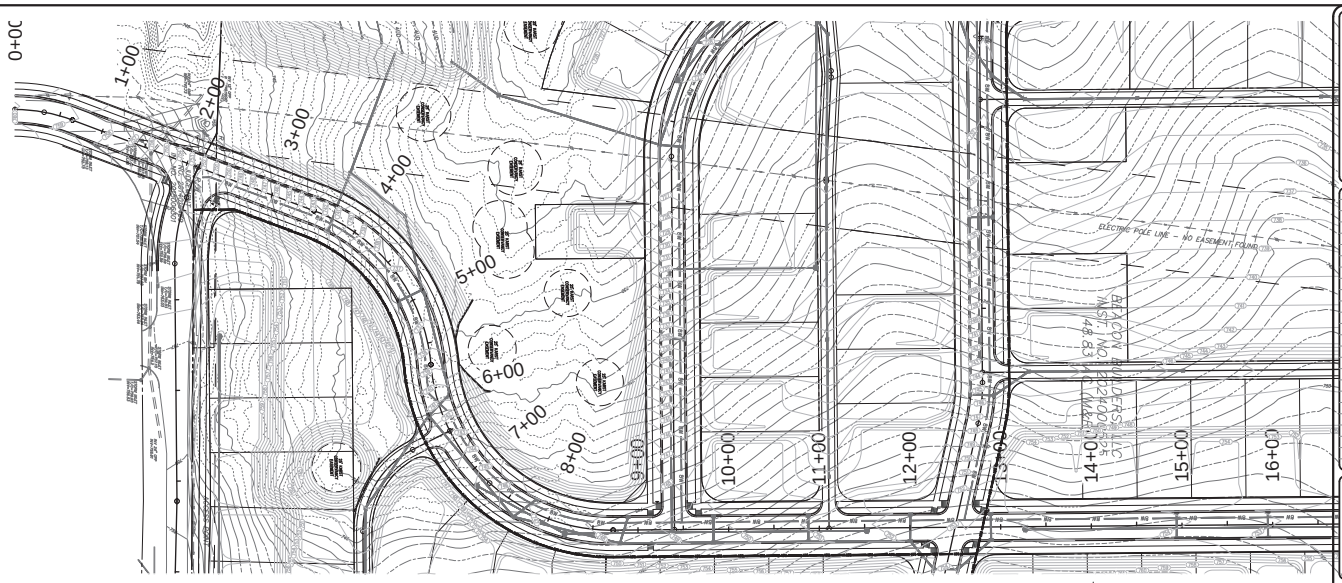
BYNUM FANYO & ASSOCIATES, INC.
ARCHITECTURE
CIVIL ENGINEERING
PLANNING
528 north walnut street
(812) 332-8030
bloomington, indiana
(812) 339-2990 (fax)

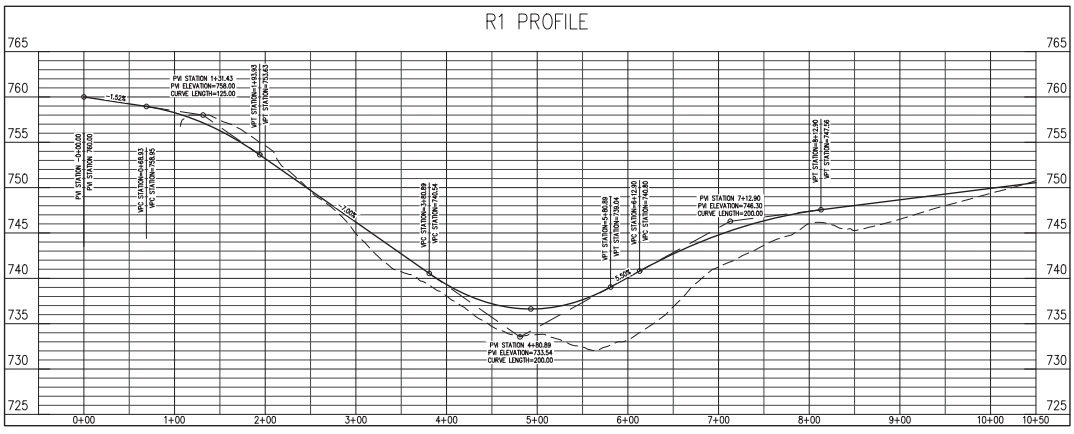
certified by:

PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD. W ACUFF RD. N KINSER PIKE.
BLOOMINGTON, IN 47404

title: ENLARGED SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C308
project no.: 402334





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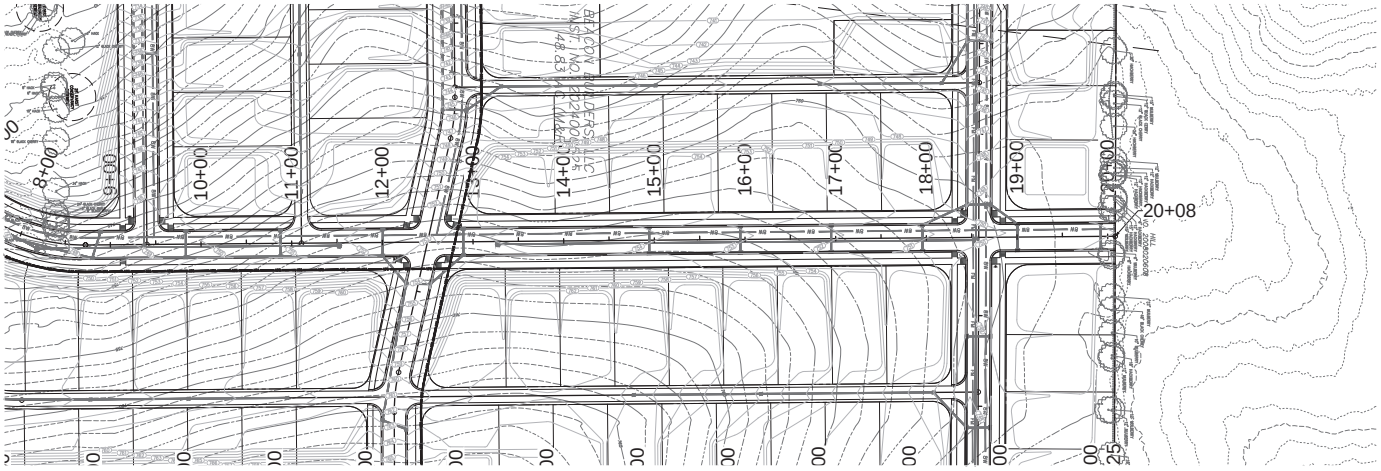
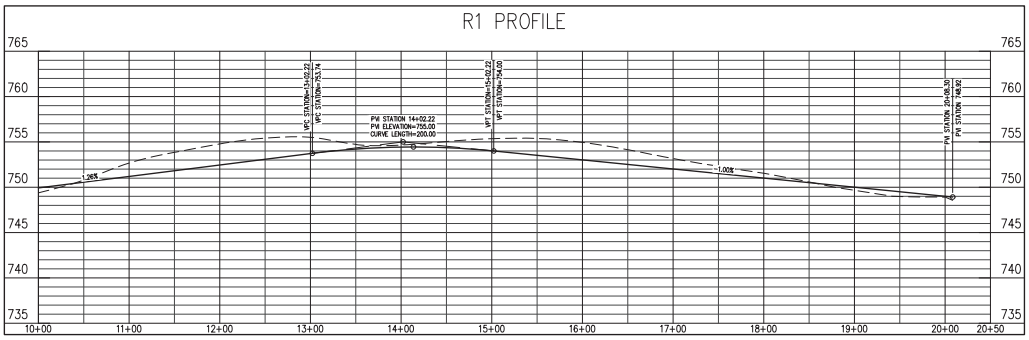
PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD. W AGUFF RD. N KINSER PIKE.
BLOOMINGTON, IN 47404

title: R1 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C401
project no.: 402334





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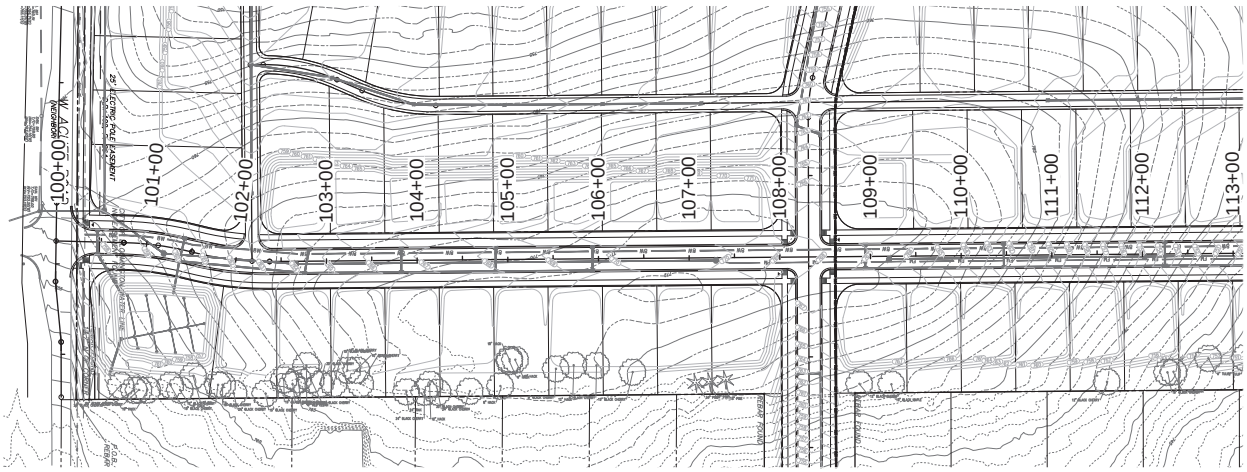
BLOOMINGTON, IN 47404

title: R1 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C402
project no.: 402334



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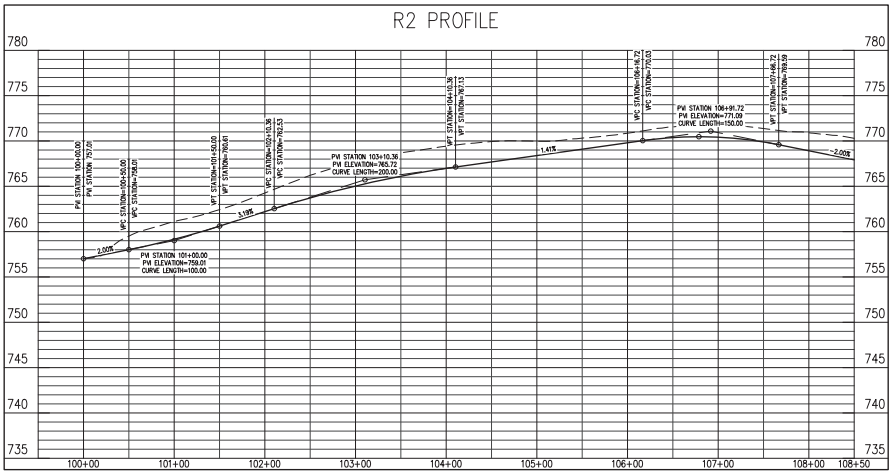

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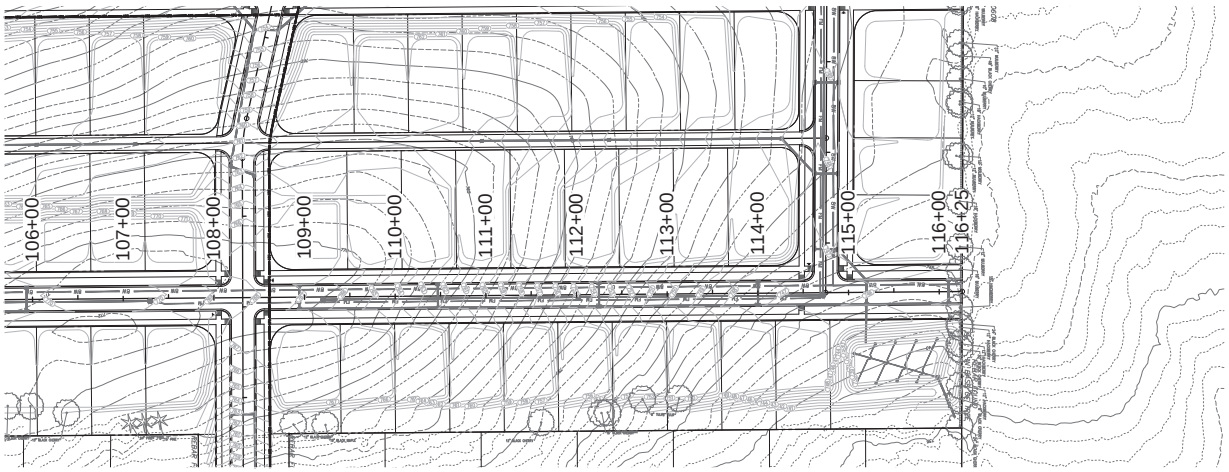
N PROW RD. W ACUFF RD. N KINSER PIKE.
BLOOMINGTON, IN 47404

title: R2 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C403
project no.: 402334



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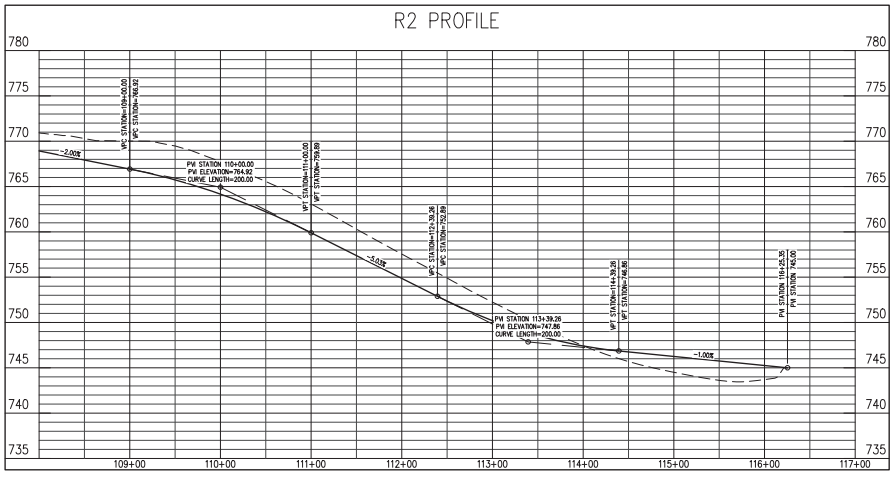

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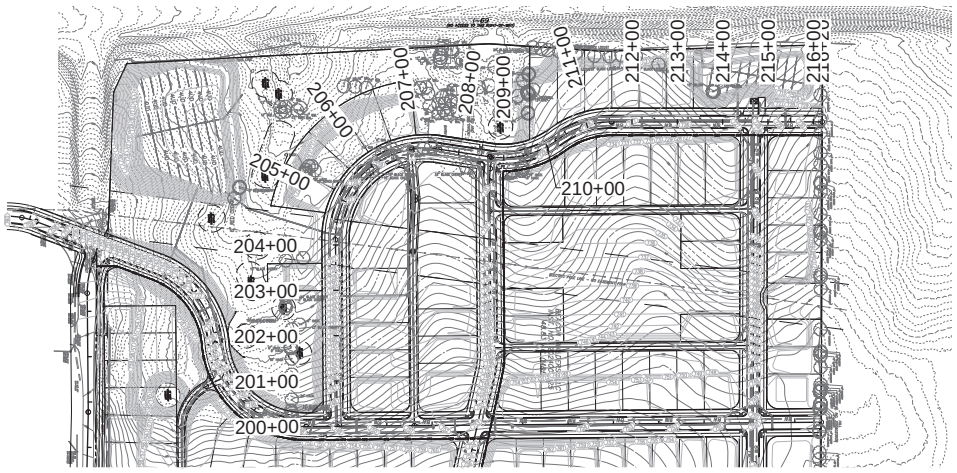
BLOOMINGTON, IN 47404

title: R2 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C404
project no.: 402334



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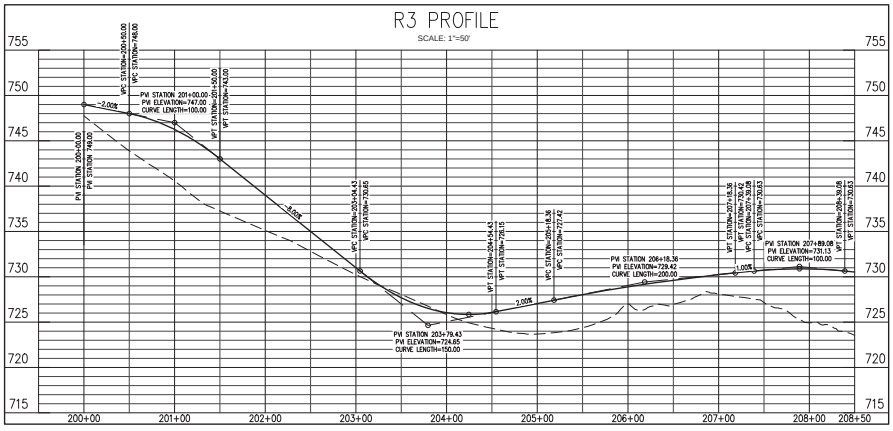

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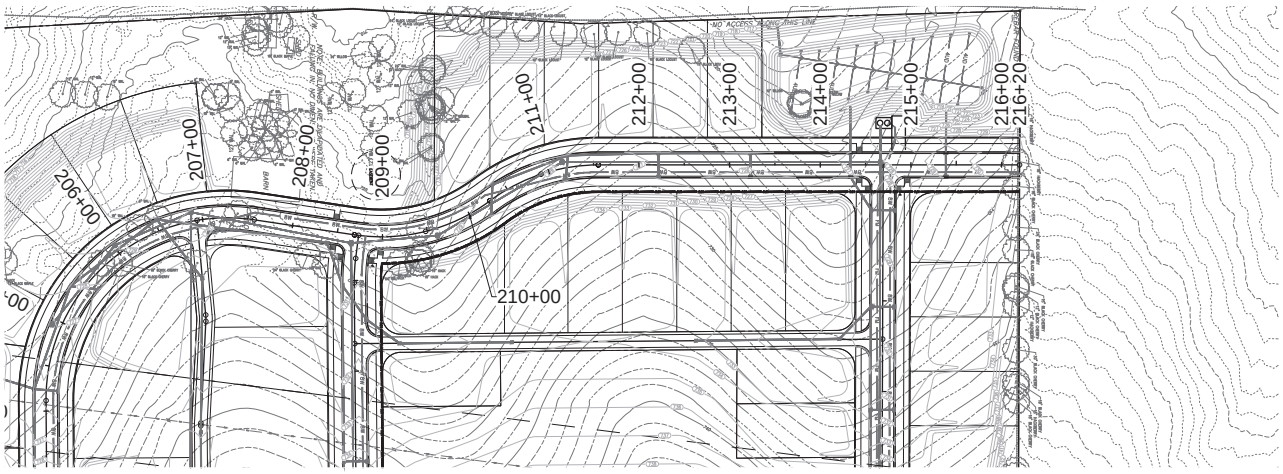
PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD. W ACUFF RD. N KINSER PIKE.
BLOOMINGTON, IN 47404

title: R3 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C405
project no.: 402334



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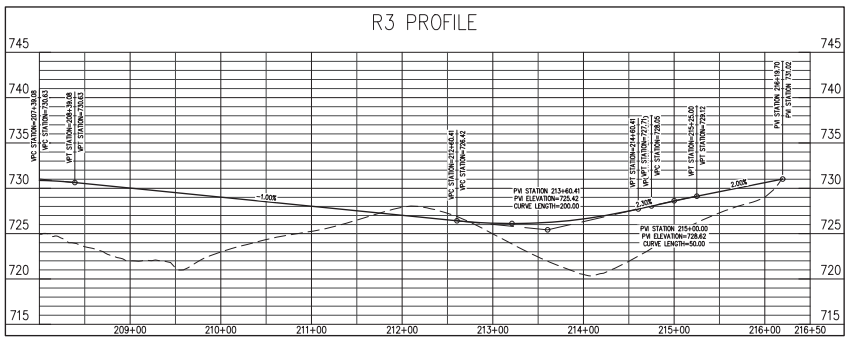

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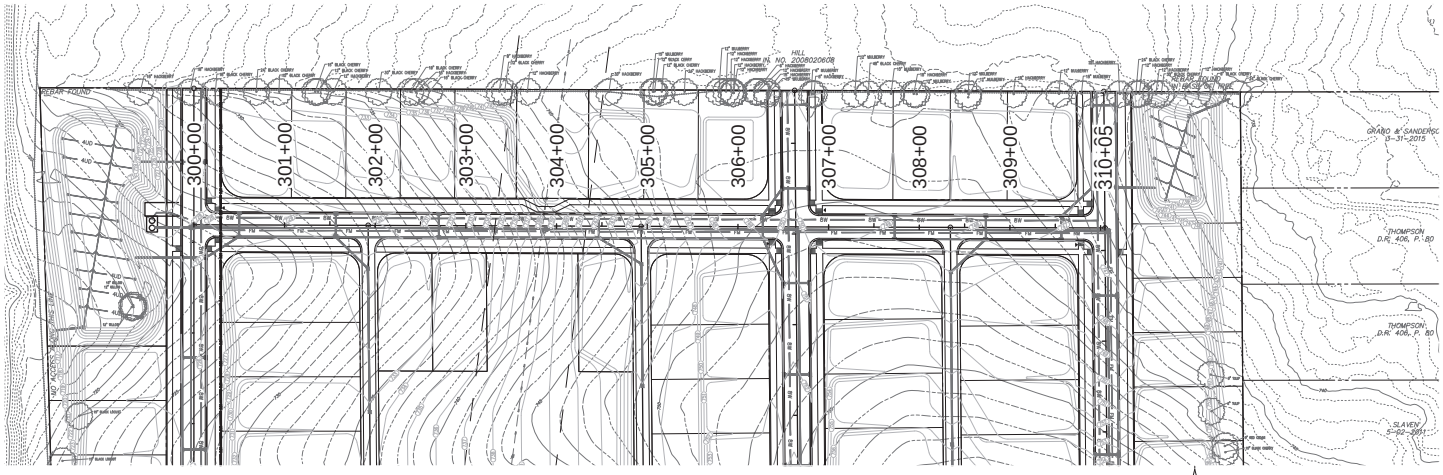
BLOOMINGTON, IN 47404

title: R3 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C406
project no.: 402334



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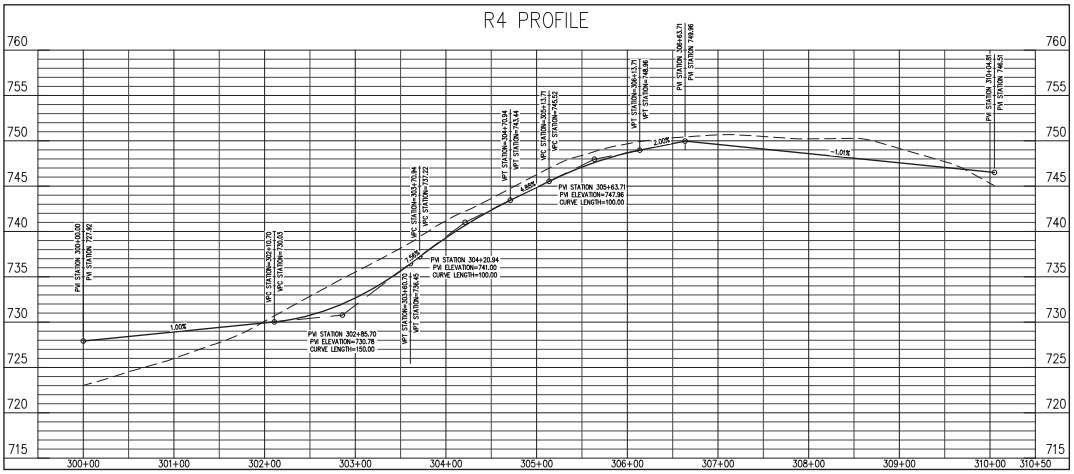

R5 PROFILE

NOTE TO CONTRACTOR

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PROPOSED
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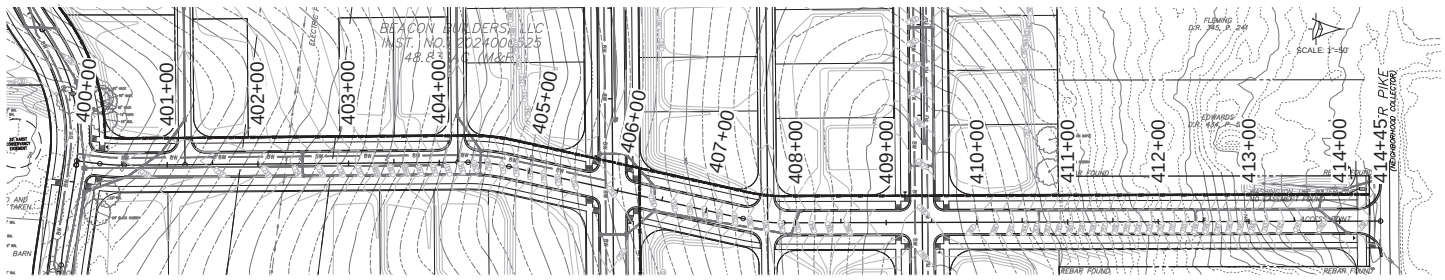
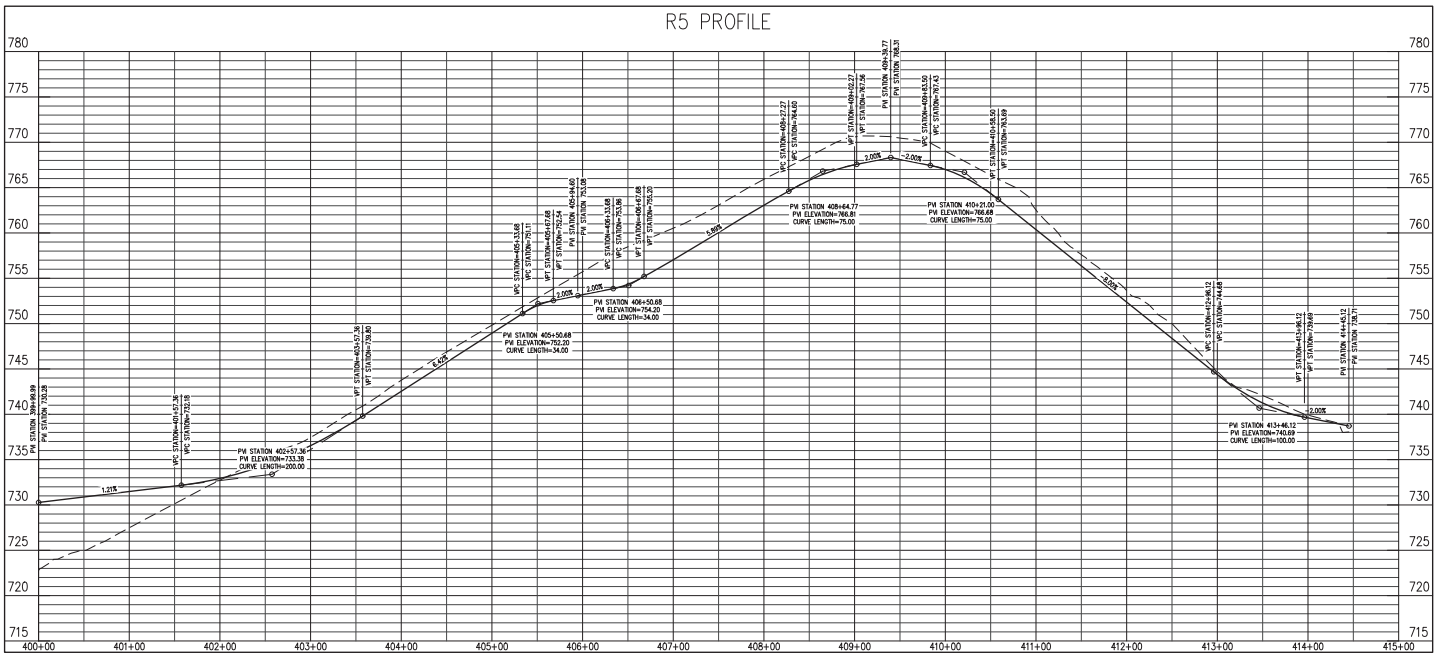
BLOOMINGTON, IN 47404

title: R4 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C407
project no.: 402334





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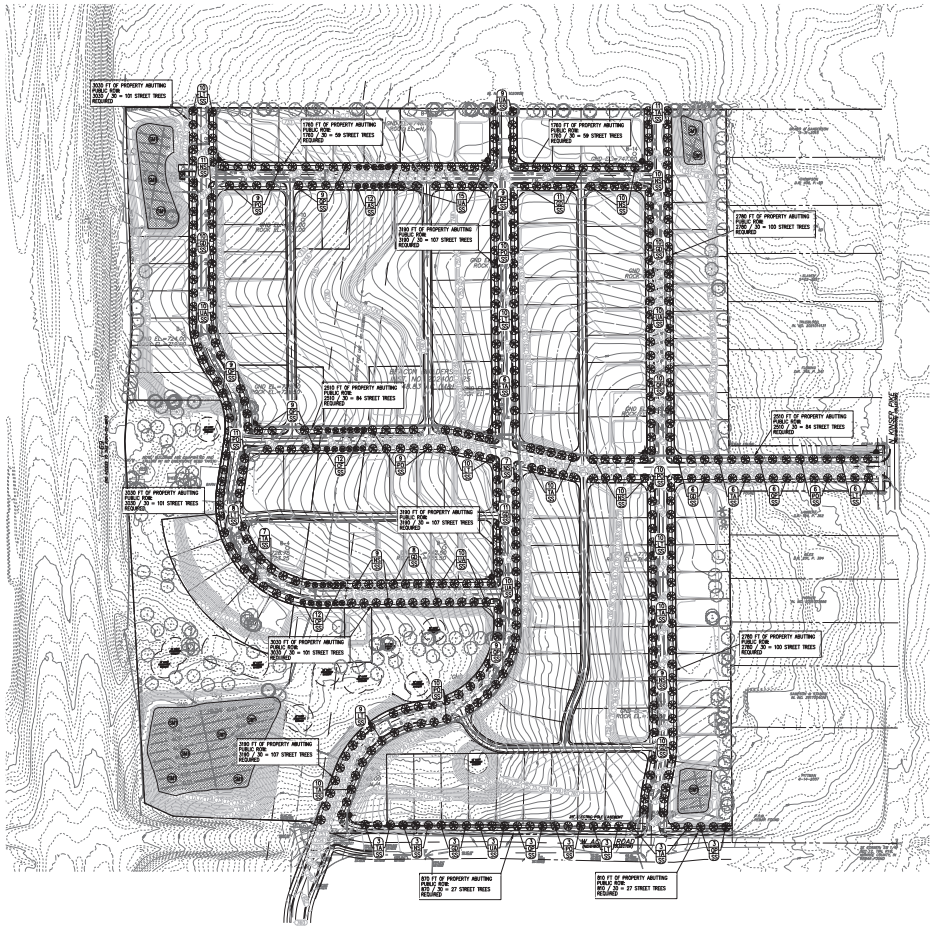
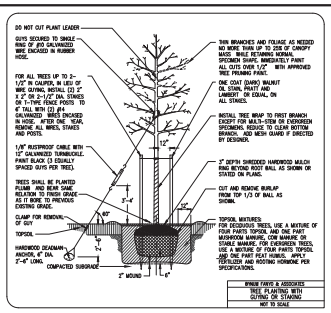
BLOOMINGTON, IN 47404

title: R5 PLAN AND PROFILE

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C408
project no.: 402334





SW1 NATIVE GRASS/FORB SEED MIX.

CAREX BANKII	FRINGED SEDGE	4 OUNCES/ACRE
ELYMUS HYSTRIX	BOTTLEBRUSH WILD RYE	16 OUNCES/ACRE
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	32 OUNCES/ACRE
PANICUM VIRGATUM	SWITCHGRASS	4 OUNCES/ACRE
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	32 OUNCES/ACRE
SORGASTRUM NUTANS	INDIAN GRASS	8 OUNCES/ACRE
ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 OUNCE/ACRE

*FOLLOW SITE AND SEED BED PREPARATION, SEEDING AND MAINTENANCE NOTES AS SHOWN IN THE 'MS' DETAIL FOR PERMANENT SEEDING. SUBSTITUTE SEED WITH SW1 SEED MIXTURE.

PLANT INVENTORY

	KEY	BOTANICAL NAME	COMMON NAME	SIZE & CONDITION	SPACING	TOTAL QTY
STREETSCAPE	TA	TILIA AMERICANA	AMERICAN LINDEN	2" CAL., B & B	SEE PLAN	66
	RS	ROBINIA SYLVATICA	BLACKISH	2" CAL., B & B	SEE PLAN	69
	GD	GYMNOCLADUS DIOICUS	KENTUCKY COFFEE TREE	2" CAL., B & B	SEE PLAN	69
	UA	ULMUS AMERICANA	AMERICAN ELM	2" CAL., B & B	SEE PLAN	67
	QP	QUERCUS PHELLOS	WILLOW OAK	2" CAL., B & B	SEE PLAN	67
	PO	PLATANUS OCCIDENTALIS	SYCAMORE	2" CAL., B & B	SEE PLAN	68
	LT	LIRIODENDRON TULIPIFERA	TULIP TREE	2" CAL., B & B	SEE PLAN	66
	AS	ACER SACCHARUM	APOLLO MAPLE	2" CAL., B & B	SEE PLAN	12
	CF	CORNUS FLORIDA	FLOWERING DOGWOOD	2" CAL., B & B	SEE PLAN	12
	CP	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	2" CAL., B & B	SEE PLAN	12

(QTY) PLANT QUANTITY
PLANT KEY DESIGNATION
REQUIREMENT DESIGNATION

SS = STREETSCAPE AREA PLANTINGS

PROPOSED LIGHTING LOCATION - REFER TO THE SITE LIGHTING PLAN FOR MORE INFORMATION AND SPECIFICATIONS

2 SMALL/MEDIUM TREES SUBSTITUTED FOR LARGE STREET TREES WHEN LOCATED WITHIN ELECTRIC EASEMENT BOUNDS

SCALE: 1"=100'

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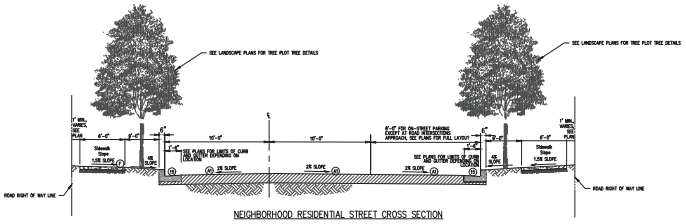
certified by:

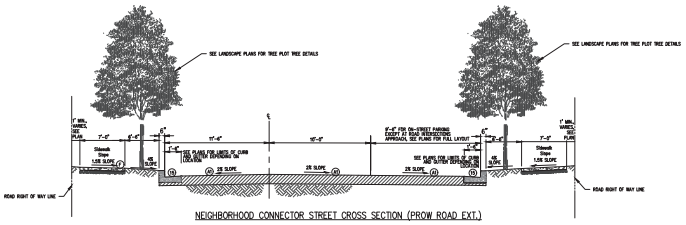
PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD. W ACUFF RD. N KINSER PIKE
BLOOMINGTON, IN 47404

title: SITE PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C301
project no.: 402334



NEIGHBORHOOD RESIDENTIAL STREET CROSS SECTION



NEIGHBORHOOD CONNECTOR STREET CROSS SECTION (PROW ROAD EXT.)

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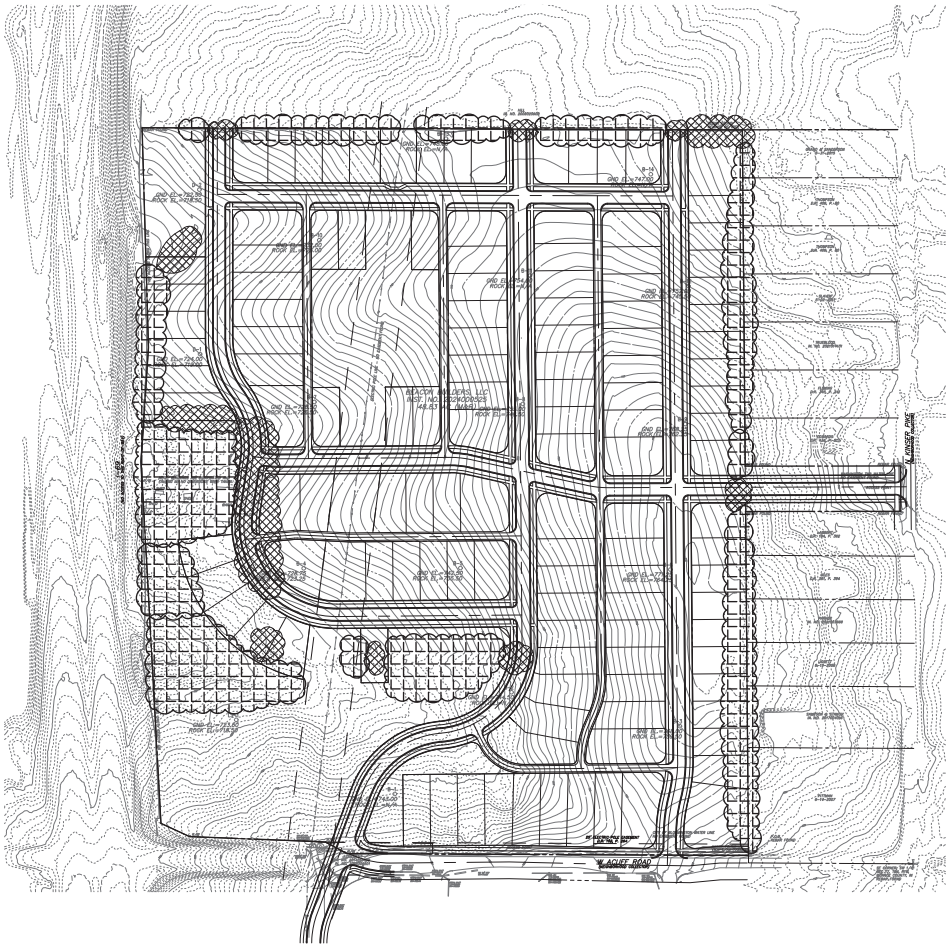
certified by:

PROPOSED
KINSER RIDGE SUBDIVISION
N PROW RD / W ACUFF RD, N KINSER PIKE,
BLOOMINGTON, IN 47404

title: ROAD CROSS SECTION DETAILS

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C602
project no.: 402334



SCALE: 1"=100'

TOTAL LOT AREA: 2127035 SQ. FT.

BASELINE CANOPY AREA: 445157 SQ. FT.
(21% OF TOTAL AREA)

CANOPY TO BE REMOVED: 84928 SQ. FT.
(19% OF BASELINE CANOPY)

CANOPY LEGEND

CANOPY TO REMAIN

CANOPY TO BE REMOVED

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BLOOMINGTON, IN 47404

title: CANOPY EXHIBIT

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C1001
project no.: 402334

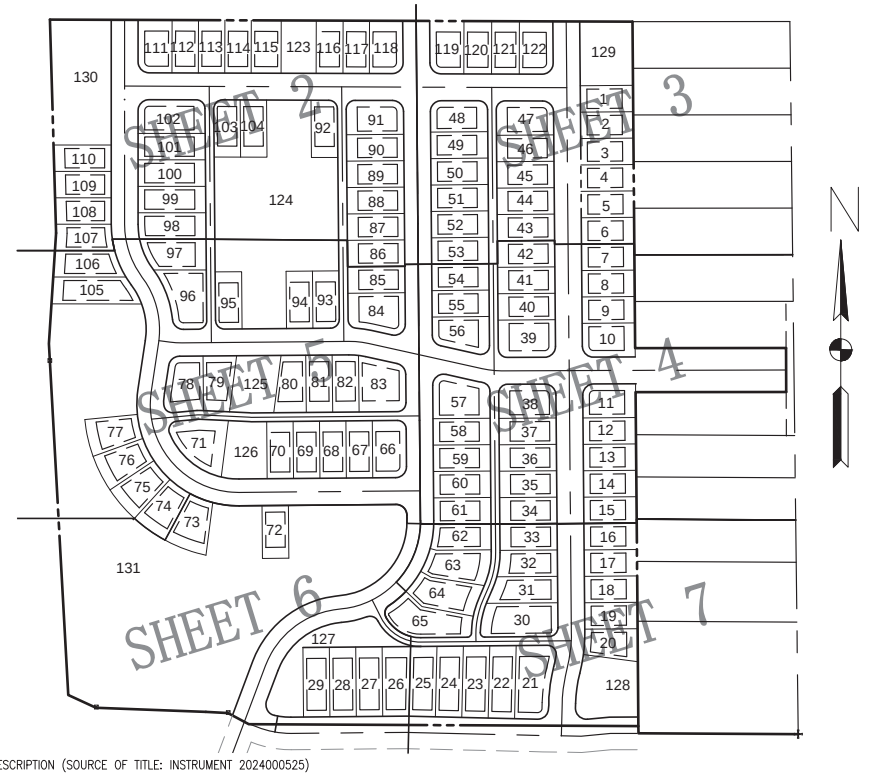
KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP

SHEET INDEX

SCALE: 1"=200'



PROJECT LOCATION

VICINITY MAP

(NOT TO SCALE)

OWNER/SUBDIVIDER/DEVELOPER	
NAME:	BEACON BUILDERS
ADDRESS:	P.O. BOX 78483 INDIANAPOLIS, IN 46278
TELEPHONE:	317-258-0140

DESIGN PROFESSIONALS	
NAME:	BYNUM FANYO & ASSOCIATES, INC.
ADDRESS:	528 NORTH WALNUT STREET BLOOMINGTON, INDIANA 47404
TELEPHONE:	812-332-8030

DESIGN PROFESSIONALS

DESCRIPTION (SOURCE OF TITLE: INSTRUMENT 2024000525)

A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Beginning at a point which is 363.00 feet West and 16.50 feet North of the Southeast corner of the said quarter, said point being on the North right-of-way of the Park School Road; thence North for a distance of 778.35 feet; thence South 88 degrees 48 minutes 47 seconds East for a distance of 346.50 feet and to the West right-of-way of Kinser Pike; thence North over and along the West right-of-way of Kinser Pike, for a distance of 100.00 feet; thence North 88 degrees 48 minutes 47 seconds West for a distance of 346.50 feet; thence North for a distance of 741.30 feet and to an established fence line; thence Westerly over and along the said fence line by the following courses and distances: North 89 degrees 5 minutes 5 seconds West for a distance of 300.00 feet; thence North 88 degrees 54 minutes 32 seconds West for a distance of 467.87 feet; thence North 88 degrees 55 minutes 33 seconds West for a distance of 531.78 feet; South 86 degrees 48 minutes 48 seconds West for a distance of 239.67 feet, South 89 degrees 29 minutes 41 seconds West for a distance of 131.56 feet; thence North 87 degrees 28 minutes 18 seconds West for a distance of 633.36 feet and to an existing stone fence; said fence being the accepted boundary between Section 17 and Section 18; thence South 0 degrees 15 minutes 11 seconds East over and along the said stone fence for a distance of 1378.00 feet; thence continuing South 0 degrees 15 minutes 11 seconds East for a distance of 231.27 feet and to a stone marking the Southwest corner of said quarter; thence South 88 degrees 50 minutes 11 seconds East over and along the North right-of-way line of the Park School Road for a distance of 2296.74 feet and to the place of beginning, containing 85.242 acres, more or less.

EXCEPTING THEREFROM: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the Southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the point of beginning of this description, which point is on the north boundary of a county road (also known as the Park School Road); (1) thence North 65 degrees 34 minutes 05 seconds East 55.25 feet; (2) thence South 89 degrees 15 minutes 30 seconds East 200.00 feet; (3) thence North 32 degrees 50 minutes 30 seconds East 82.68 feet; (4) thence North 8 degrees 01 minute 30 seconds West 386.59 feet; (5) thence North 4 degrees 41 minutes 36 seconds East 267.30 feet; (6) thence North 2 degrees 49 minutes 50 seconds West 568.50 feet; (7) thence Northerly 284.83 feet along an arc to the right and having a radius of 3,964.72 feet and subtended by a long chord having a bearing of North 0 degrees 46 minutes 21 seconds West and a length of 284.77 feet to a north line of the owners' land; (8) thence South 89 degrees 26 minutes 50 seconds East 320.03 feet along said north line; (9) thence Southerly 265.94 feet along an arc to the left and having a radius of 3,644.72 feet and subtended by a long chord having a bearing of South 0 degrees 44 minutes 25 seconds East and a length of 265.86 feet; (10) thence South 2 degrees 49 minutes 50 seconds East 218.50 feet; (11) thence South 4 degrees 00 minutes 44 seconds West 251.79 feet; (12) thence South 2 degrees 49 minutes 50 seconds East 800.00 feet; (13) thence South 65 degrees 18 minutes 35 seconds East 69.49 feet; (14) thence South 86 degrees 58 minutes 04 seconds East 250.20 feet; (15) thence South 89 degrees 15 minutes 30 seconds East 50.00 feet; (16) thence South 64 degrees 05 minutes 05 seconds East 55.25 feet to the north boundary of said County Road (also known as the Park School Road); (17) thence North 89 degrees 15 minutes 30 seconds West 1,000.00 feet along said north boundary to the point of beginning and containing 11.775 acres, more or less.

EXCEPTING THEREFROM:

24.54 acres lying west of State Road 37 all in a part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, and being more particularly described as follows:

Commencing at a rebar found at the Southeast corner of the Southwest Quarter of said Section; thence along the south line of said Section the following two (2) courses: 1) NORTH 88 degrees 57 minutes 35 seconds West 1327.81 feet to a 5/8 inch rebar found; thence NORTH 88 degrees 47 minutes 39 seconds West 1341.98 feet to a stone found at the Southwest corner of the Southwest Quarter of said Section and also being the Point of Beginning; thence NORTH 00 degrees 44 minutes 47 seconds East along the west line of Section 17 1609.27 feet to a 5/8 inch rebar with cap; thence SOUTH 89 degrees 03 minutes 31 seconds East 646.16 feet to a 5/8 inch rebar with cap set on the west right-of-way of State Road 37; thence along said west right-of-way the following seven (7) courses: 1) 286.34 feet along a 3964.71 foot non-tangent curve to the left whose chord bears SOUTH 00 degree 20 minutes 14 seconds East 286.27 feet to a 5/8 inch rebar with cap; thence 2) SOUTH 02 degrees 24 minutes 00 seconds East 568.52 feet to a 5/8 inch rebar with cap; thence 3) SOUTH 05 degrees 07 minutes 26 seconds West 267.30 feet to a 5/8 inch rebar with cap; thence 4) SOUTH 07 degrees 46 minutes 31 seconds East 385.81 feet to a post; thence 5) SOUTH 33 degrees 19 minutes 16 seconds West 83.48 feet to a post; thence 6) NORTH 89 degrees 12 minutes 46 seconds West 200.14 feet to a concrete right-of-way marker; thence 7) SOUTH 65 degrees 21 minutes 34 seconds West 55.96 feet to a concrete right-of-way marker found on the north right-of-way of Acuff Road; thence the following two (2) courses along said right-of-way: 1) NORTH 88 degrees 18 minutes 11 seconds West 211.11 feet to a 5/8 inch rebar with cap; thence 42.70 feet along a 326.24 foot radius non-tangent curve to the left whose chord bears SOUTH 69 degrees 00 minutes 10 seconds West 42.67 feet to a 5/8 inch rebar set on the south line of Section 17; thence NORTH 88 degrees 47 minutes 39 seconds West along said south line 173.18 feet to the POINT OF BEGINNING, containing 24.54 acres, more or less.

The above-described tract of real estate and exceptions therefrom having been surveyed by Todd M. Borgman, Indiana Registered Land Surveyor Number LS21200021, dated February 25, 2019, recorded August 23, 2019, as Instrument Number 2019012164, in the office of the Recorder of Monroe County, Indiana, are now more particularly described as follows:

A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West in Monroe County, Indiana, and being more particularly described as follows:

COMMENCING at a rebar found at the southeast corner of the Southeast Quarter of said Section; thence NORTH 88 degrees 57 minutes 35 seconds West along the south line of said Section 363.04 feet; thence NORTH 00 degrees 15 minutes 16 seconds West 16.33 feet to a 5/8" rebar with cap set on the north right-of-way of Acuff Road at the Point of Beginning; thence NORTH 88 degrees 59 minutes 10 seconds West along the north right-of-way of Acuff Road 885.48 feet to a concrete right-of-way marker found; thence the following seven (7) courses along the east right-of-way of State Road 37: 1) NORTH 61 degrees 03 minutes 06 seconds West 53.77 feet to a right-of-way marker found; thence 2) NORTH 86 degrees 21 minutes 56 seconds West 50.29 feet to a right-of-way marker found; thence 3) NORTH 87 degrees 04 minutes 05 seconds West 249.89 feet; thence 4) NORTH 64 degrees 30 minutes 36 seconds West 69.45 feet to a post; thence 5) NORTH 02 degrees 24 minutes 00 seconds West 799.56 feet; thence 6) NORTH 04 degrees 26 minutes 34 seconds East 251.79 feet to a 5/8" rebar with cap; thence 7) NORTH 00 degrees 55 minutes 31 seconds West 485.25 feet to a 5/8" rebar with cap; thence leaving said east right-of-way South 89 degrees 03 minutes 31 seconds East 1323.93 feet to a 5/8" rebar with cap; thence SOUTH 00 degrees 15 minutes 16 seconds West 742.00 feet to a 5/8" rebar with cap; thence NORTH 89 degrees 17 minutes 20 seconds East 342.85 feet to a 5/8" rebar with cap set on the west right-of-way of Kinser Pike; thence SOUTH 00 degrees 34 minutes 12 seconds West along said west right-of-way 100.00 feet to a 5/8" rebar with cap; thence SOUTH 89 degrees 20 minutes 17 seconds West 342.30 feet to a 5/8" rebar with cap; thence SOUTH 00 degrees 15 minutes 16 seconds West 758.90 feet to the POINT OF BEGINNING, containing 48.83 acres, more or less.

ALSO CONVEYING:
An easement in and to the following described real estate, to-wit: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the north boundary of a County Road (also known as the Park School Road); thence South 89 degrees 15 minutes 30 seconds East 1,000.00 feet along said north boundary; thence North 64 degrees 05 minutes 05 seconds West 55.25 feet; thence North 89 degrees 15 minutes 30 seconds West 50.00 feet; thence North 66 degrees 58 minutes 04 seconds West 250.20 feet; thence North 65 degrees 18 minutes 35 seconds West 69.49 feet; thence North 2 degrees 49 minutes 50 seconds West 530.00 feet to the point of beginning of this description; thence North 2 degrees 49 minutes 50 seconds West 90.00 feet; thence South 71 degrees 01 minute 45 seconds East 26.93 feet; thence South 2 degrees 49 minutes 50 seconds East 80.00 feet; thence South 87 degrees 10 minutes 10 seconds West 25.00 feet to the point of beginning and containing 0.049 acres, more or less, for the purpose of the removal of a building which encroaches upon the lands herein conveyed in fee simple, which easement will revert to the grantors upon the completion of said building removal and the legal release of this easement in the office of the Recorder of the aforesaid County.

ALSO CONVEYING:
An easement in and to the following described real estate, to-wit: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the Southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the north boundary of a County Road (also known as the Park School Road); thence North 65 degrees 34 minutes 05 seconds East 55.25 feet; thence South 89 degrees 15 minutes 30 seconds East 50.00 feet to the point of beginning of this description; thence North 0 degrees 44 minutes 30 seconds East 20.00 feet; thence South 89 degrees 15 minutes 30 seconds East 50.00 feet; thence South 0 degrees 44 minutes 30 seconds West 20.00 feet; thence North 89 degrees 15 minutes 30 seconds West 50.00 feet to the point of beginning and containing 0.029 acres, more or less, for the purpose of constructing a driveway for service to the grantors private property, which easement will revert to the grantors upon the completion of the above designated project.

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

PROFORMA FOR REVIEW ONLY

Prepared by:

Charles D. Graham
Registration No. LS29500014

I affirm under penalties of perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

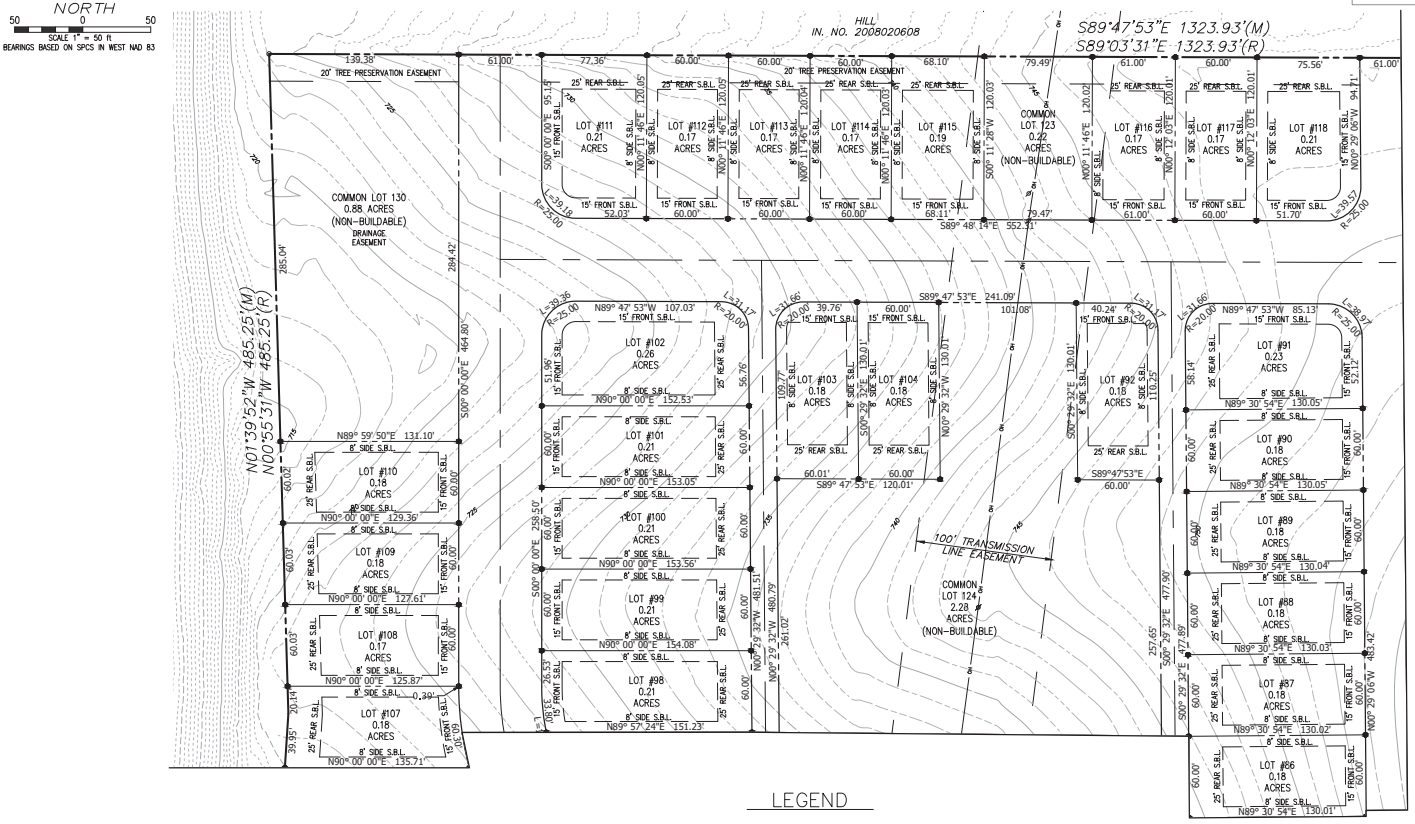
402365

BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404
Phone (812)332-8030 Fax (812)339-2990

SHEET 2 OF 8

KINSER RIDGE PRELIMINARY PLAT

RECORDER STAMP



LEGEND

WATER LINE	W
OVERHEAD ELECTRIC LINE	OH
BOUNDARY LINE	
LOT LINE	
EASEMENT LINE	
SET BACK LINE	
ROAD CENETERLINE	
REBAR SET "BFA 9500014"	●
REBAR FOUND	○
CONCRETE R/W MARKER FOUND	☒

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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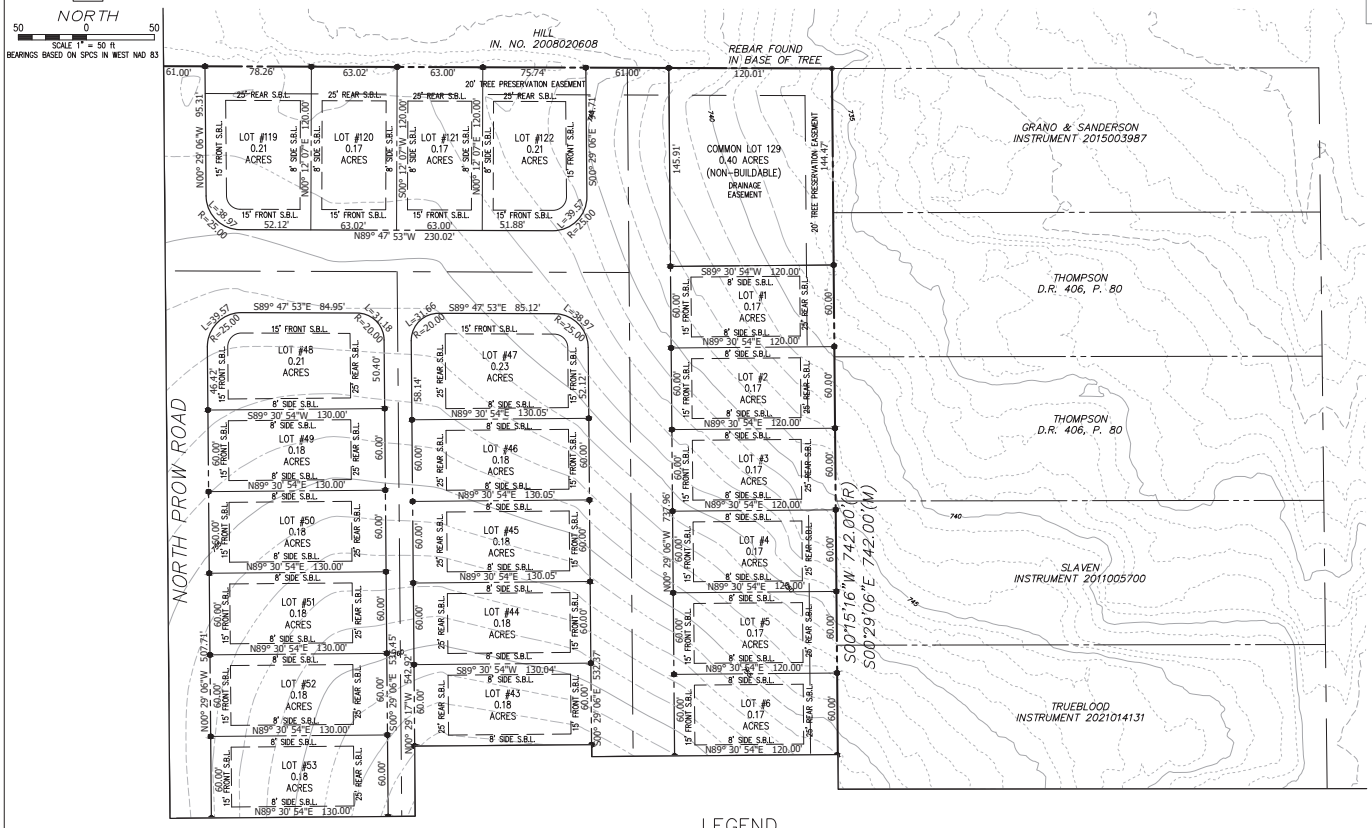
SHEET 3 OF 8

KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP



LEGEND

WATER LINE	W
OVERHEAD ELECTRIC LINE	OH
BOUNDARY LINE	
LOT LINE	
EASEMENT LINE	
SET BACK LINE	
ROAD CENETERLINE	
REBAR SET "BFA 9500014"	●
REBAR FOUND	○
CONCRETE R/W MARKER FOUND	⊠

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

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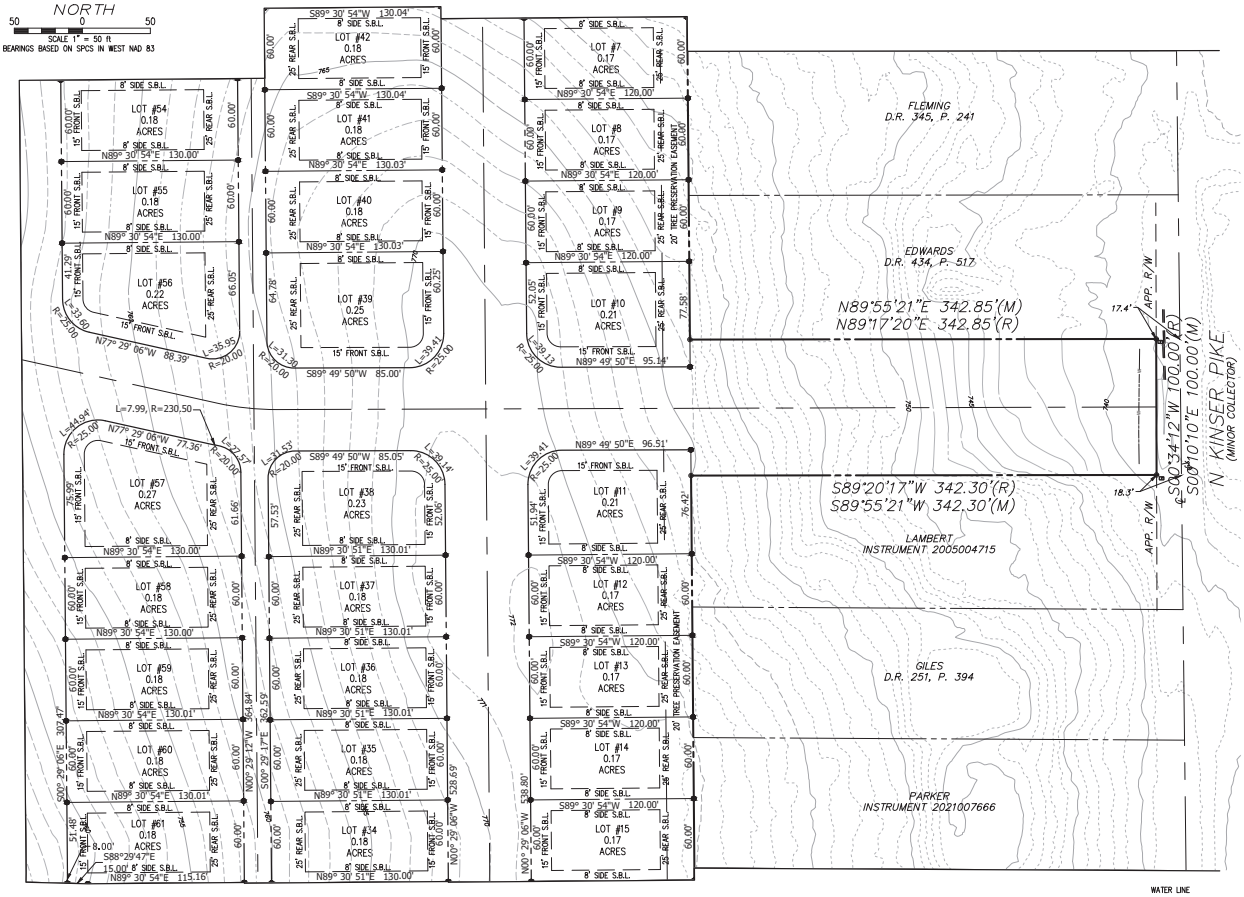
SHEET 4 OF 8

KINSER RIDGE PRELIMINARY PLAT

RECORDER STAMP



EASEMENT DEFINITIONS:

Sanitary Sewer Easement:

Shall allow the City Utilities Department exclusive access for installation, maintenance, repair, or removal of sanitary sewer facilities.
Encroachment by other utilities is prohibited, unless such encroachment is approved by the City Utilities Department in conjunction with the primary plat. Upon written permission from the City Utilities Department, encroachments may be permitted after the recording of the secondary plat.
Trees and structures including, but not limited to, buildings, fences, retaining walls, and light fixtures, shall not be located within sanitary sewer easements.
Grading activity shall be prohibited within sanitary sewer easements without written permission from the City Utilities Department.

Drainage Easement:

Shall be required for any surface swales or other minor drainage improvements that are intended to serve the lots on which they are located.
Shall prohibit any alteration or structure within the easement that would hinder or redirect flow.
Shall provide that the owner of the lot on which the easement is placed shall be responsible for maintenance of the drainage features within such easement.
Shall be enforceable by the City Utilities Department and by owners of properties that are adversely affected by conditions within the easement.
Shall allow the City Utilities Department to enter upon the easement for the purpose of maintenance, to charge the costs of such maintenance to the responsible parties, to construct drainage facilities within the easement, and to assume responsibility for the drainage features at its discretion.

Karst Conservancy Easement:

Prohibits any land-disturbing activities, including the placement of a fence, within the easement area. Mowing is allowed within the easement area.
Allows the removal of dead or diseased trees that pose a safety risk or impede drainage as well as allowing the removal of exotic or invasive species, only after first obtaining written approval from the Planning and Transportation Department.
Grants the city the right to enter the property to inspect the easement and alter or repair the karst feature.
All Karst Conservancy Easements shall be identified with public signs located along the boundary of the easement. Public signs shall be placed at intervals of no more than 200 feet, and each public sign shall be a maximum of one and one-half square feet in area. A minimum of one public sign is required, regardless of easement size. The property owner shall be responsible for installing and maintaining required signage.
Any use of pesticides, herbicides, or fertilizers is prohibited within the easement area.
Allows, in cases where removal of exotic or invasive species is proposed, the restoration of disturbed areas with native plant material. Written approval from the Planning and Transportation Department is required prior to any proposed restoration.

Tree Preservation Easement:

Prohibits the removal of any tree over six inches dbh within the easement area.
Allows the removal of dead or diseased trees that pose a safety risk as well as allowing the removal of exotic or invasive species, only after first obtaining written approval from the Planning and Transportation Department.
All tree preservation easements shall be identified with public signs located along the boundary of the easement. Public signs shall be placed at intervals of no more than 200 feet, and each public sign shall be a maximum of one- and one-half square feet in area. A minimum of one
public sign is required, regardless of easement size. The property owner shall be responsible for installing and maintaining required signage.
Allows, in cases where removal of exotic or invasive species is proposed, the restoration of disturbed areas with native plant material. Written approval from the Planning and Transportation Department is required prior to any proposed restoration.

Other Easements:

Other easements may be required by the Plan Commission to preserve features or functions unique to a given property and shall be defined on the recorded plat.

LEGEND

WATER LINE	W
OVERHEAD ELECTRIC LINE	OH
BOUNDARY LINE	
LOT LINE	
EASEMENT LINE	
SET BACK LINE	
ROAD CENETERLINE	
REBAR SET "BFA 9500014"	●
REBAR FOUND	○
CONCRETE R/W MARKER FOUND	⊠

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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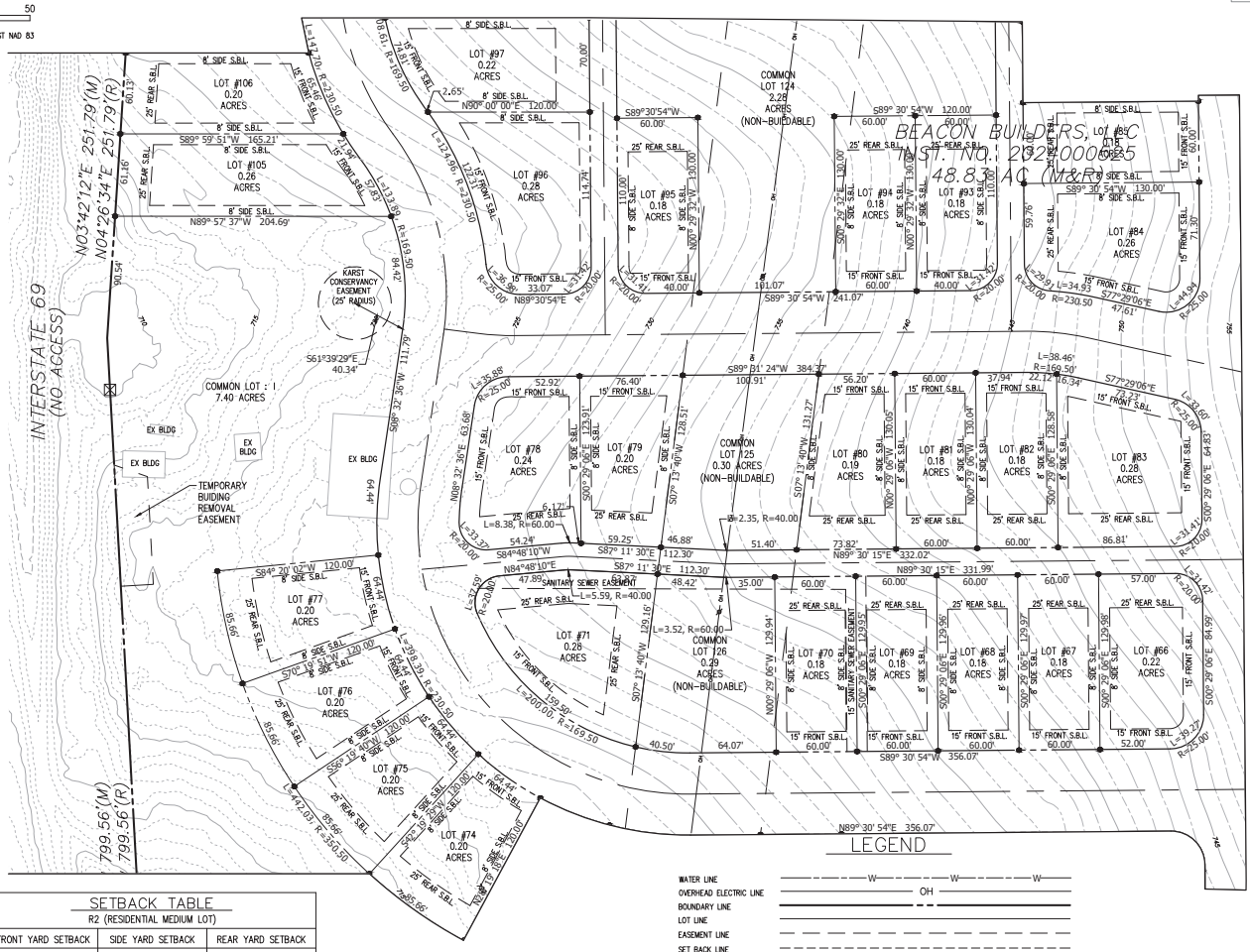
SHEET 5 OF 8

KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP



SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

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15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

LEGEND

- WATER LINE
- OVERHEAD ELECTRIC LINE
- BOUNDARY LINE
- LOT LINE
- EASEMENT LINE
- SET BACK LINE
- ROAD CENETERLINE
- REBAR SET "BFA 9500014"
- REBAR FOUND
- CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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SHEET 6 OF 8

KINSER RIDGE

PRELIMINARY PLAT

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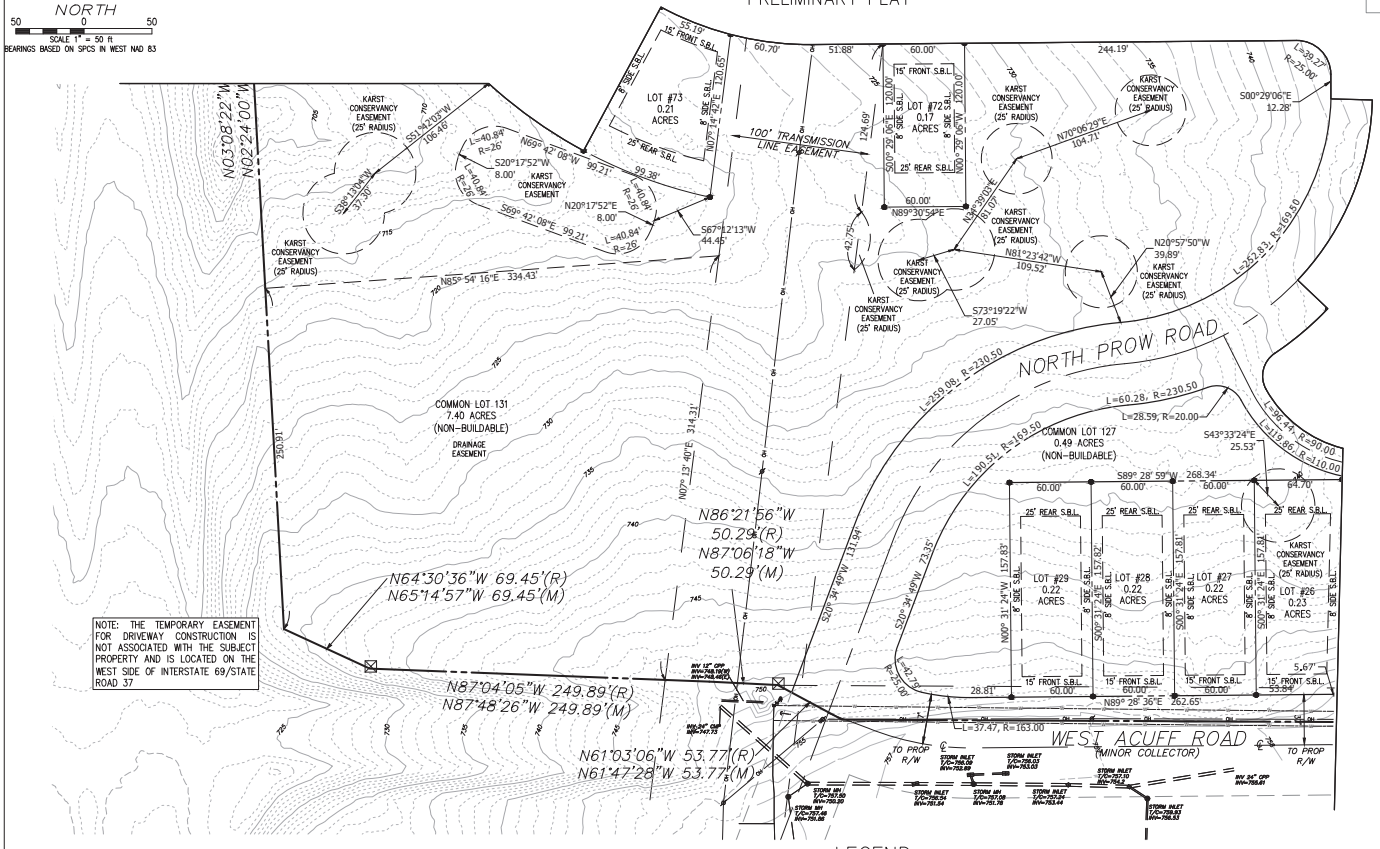

NOTE: THE TEMPORARY EASEMENT FOR DRIVEWAY CONSTRUCTION IS NOT ASSOCIATED WITH THE SUBJECT PROPERTY AND IS LOCATED ON THE WEST SIDE OF INTERSTATE 69/STATE ROAD 37

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

LEGEND

- WATER LINE
- OVERHEAD ELECTRIC LINE
- BOUNDARY LINE
- LOT LINE
- EASEMENT LINE
- SET BACK LINE
- ROAD CENETERLINE
- REBAR SET "BFA 9500014"
- REBAR FOUND
- CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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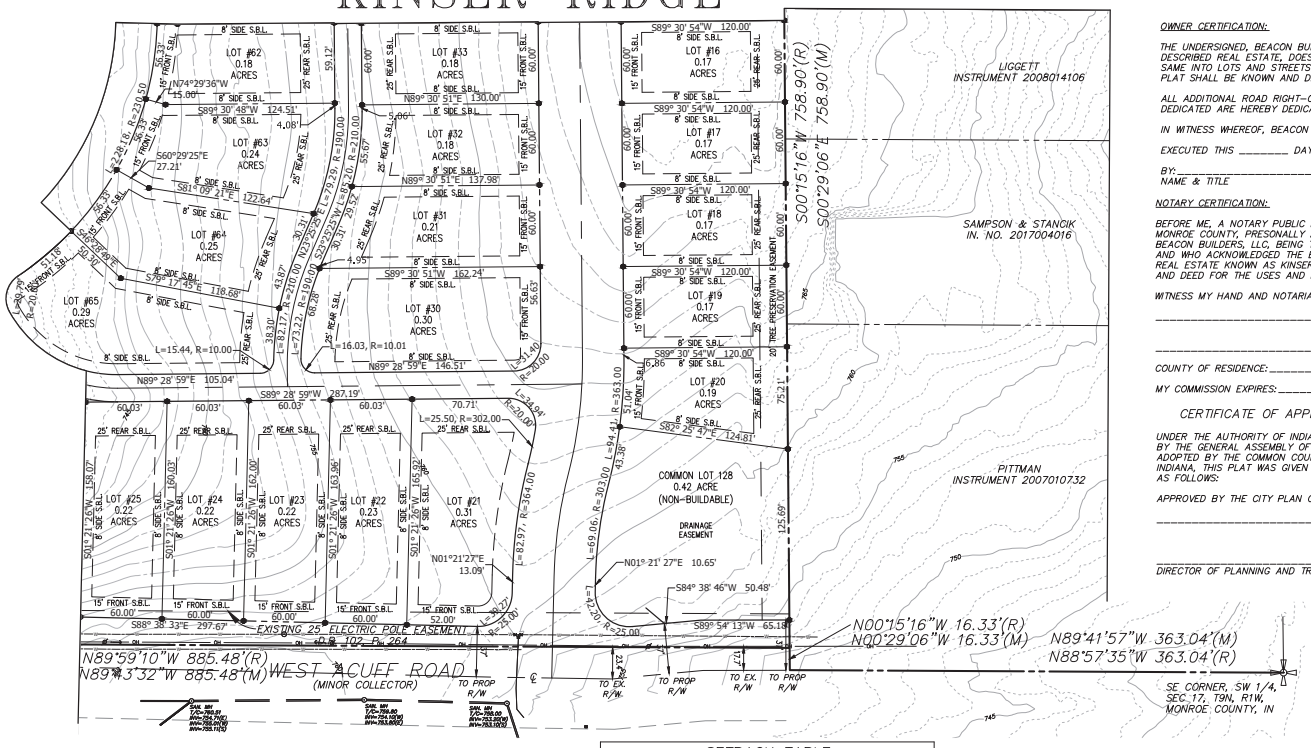
KINSER RIDGE PRELIMINARY PLAT

RECORDER STAMP



OWNER CERTIFICATION:

THE UNDERSIGNED, BEACON BUILDERS, LLC, BEING THE OWNER OF THE ABOVE DESCRIBED REAL ESTATE, DOES HEREBY LAYOFF, PLAT AND SUBDIVIDE THE SAME INTO LOTS AND STREETS IN ACCORDANCE WITH THIS PLAT. THIS WITHIN PLAT SHALL BE KNOWN AND DESIGNATED AS BAXTER VILLAGE.

ALL ADDITIONAL ROAD RIGHT-OF-WAYS SHOWN AND NOT PREVIOUSLY DEDICATED ARE HEREBY DEDICATED TO THE PUBLIC.

IN WITNESS WHEREOF, BEACON BUILDERS, LLC HAS HEREUNTO

EXECUTED THIS _____ DAY OF _____, 20___

BY:_____
NAME & TITLE

NOTARY CERTIFICATION:

BEFORE ME, A NOTARY PUBLIC IN AND FOR THE STATE OF INDIANA AND MONROE COUNTY, PRESONALLY APPEARED _____, AGENT OF BEACON BUILDERS, LLC, BEING THE OWNER OF THE DESCRIBED REAL ESTATE AND WHO ACKNOWLEDGED THE EXECUTION OF THE FOREGOING PLAT FOR THE REAL ESTATE KNOWN AS KINSER RIDGE SUBDIVISION, AS HIS VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES THEREIN EXPRESSED.

WITNESS MY HAND AND NOTARIAL SEAL THIS_____DAY OF

_____, 20___.

_____, NOTARY PUBLIC

COUNTY OF RESIDENCE:_____

MY COMMISSION EXPIRES:_____

CERTIFICATE OF APPROVAL OF PLAN COMMISSION

UNDER THE AUTHORITY OF INDIANA CODE 36-7-4 700 SERIES, ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF INDIANA AND ORDINANCE ADOPTED BY THE COMMON COUNCIL OF THE CITY OF BLOOMINGTON, INDIANA, THIS PLAT WAS GIVEN APPROVAL BY THE CITY OF BLOOMINGTON AS FOLLOWS:

APPROVED BY THE CITY PLAN COMMISSION AT A MEETING HELD:

_____

_____
DIRECTOR OF PLANNING AND TRANSPORTATION

EASEMENT NOTES:

DRAINAGE EASEMENT

1. Shall be required for any surface swales or other minor drainage improvements that are intended to serve the lots on which they are located.
2. Shall prohibit any alteration within the easement that would hinder or redirect flow.
3. Shall provide that the owner of the lot on which the easement is placed shall be responsible for maintenance of the drainage features within such easement.
4. Shall be enforceable by the City Utilities Department and by owners of properties that are adversely affected by conditions within the easement.
4. Shall allow the City Utilities Department to enter upon the easement for the purpose of maintenance, to charge the costs of such maintenance to the responsible parties, to construct drainage facilities within the easement, and to assume responsibility for the drainage features at its discretion.

UTILITY EASEMENT

1. Shall allow both private and public utility providers access associated with the installation, maintenance, repair, or removal of utility facilities.
2. Prohibits the placement of any unauthorized obstruction within the easement area unless authorized by the City Utilities Department and the easement holder(s).

SETBACK TABLE		
R2 (RESIDENTIAL MEDIUM LOT)		
FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

SURVEYOR'S CERTIFICATE:

THIS SURVEY WAS PERFORMED UNDER THE DIRECTION OF THE UNDERSIGNED, AND TO THE BEST OF THIS SURVEYOR'S KNOWLEDGE AND BELIEF WAS EXECUTED ACCORDING TO SURVEY REQUIREMENTS IN 865 IAC 1-12 FOR THE STATE OF INDIANA.
DATED THIS_____ DAY OF_____, 20___.

PROFORMA FOR REVIEW ONLY

Prepared by:

Charles D. Graham
Registration No. LS29500014

I affirm under penalties of perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

FOR SURVEYOR'S REPORT PLEASE REFER TO RETRACEMENT SURVEY RECORDED AT INSTRUMENT 2024007657 IN THE OFFICE OF THE RECORDER OF MONROE COUNTY, INDIANA

FLOOD NOTE: According to FEMA Flood Insurance Rate Map (FIRM) this real estate is part of Community-Panel Number: 18105C 0133D, Effective Date: December 17, 2010. This property is located in Zone X, an area of minimal flood hazard.

LEGEND

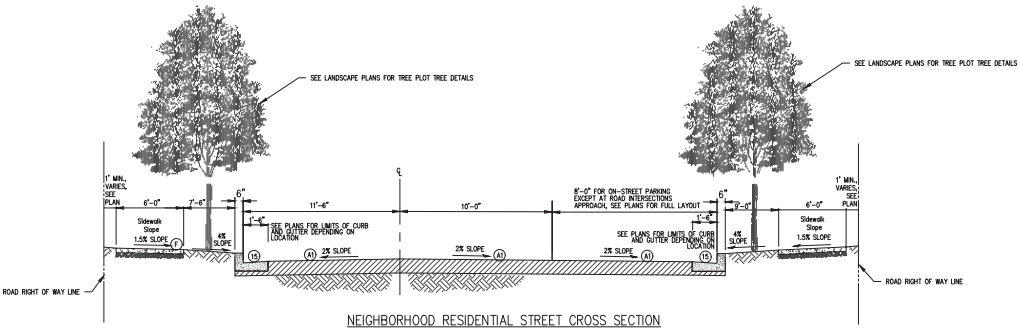
WATER LINE
OVERHEAD ELECTRIC LINE
BOUNDARY LINE
LOT LINE
EASEMENT LINE
SET BACK LINE
ROAD CENTERLINE
REBAR SET "BFA 9500014"
REBAR FOUND
CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION
Part of SW 1/4, Section 17, Township 9 North, Range 1 West

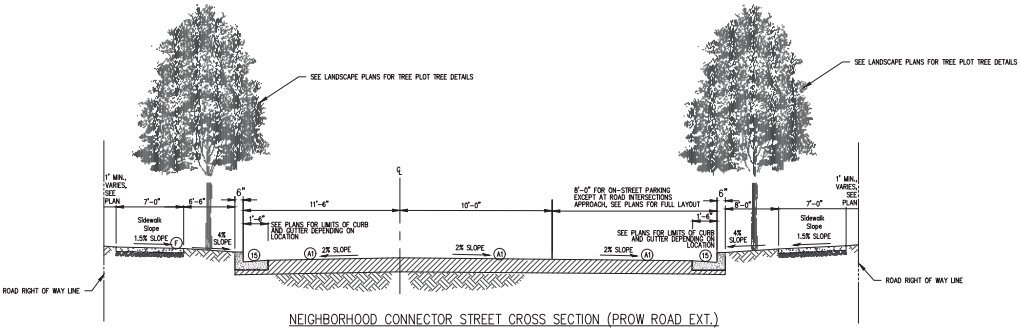
Date:06/21/2024

402365

BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404
Phone (812)332-8030 Fax (812)339-2990



NEIGHBORHOOD RESIDENTIAL STREET CROSS SECTION



NEIGHBORHOOD CONNECTOR STREET CROSS SECTION (PROW ROAD EXT.)

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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Phone (812)332-8030 Fax (812)339-2990

Post-Construction Stormwater Quality BMP Operations and Maintenance Manual

For:

Kinser Ridge Subdivision

N Kinser Pike, N Prow Rd, W Acuff Rd
Bloomington, Indiana 47404

BFA Project No.: 402365

Prepared For:
Beacon Builders, LLC. (Bill Evans)
PO Box 78483
Indianapolis, IN 46278

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Date:
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Project Narrative

The project consists of an extension of Prow Road, and three new neighborhood residential roads to accommodate the development of 122 lots to the standards of the R2 zoning parameters outlined in the City of Bloomington's UDO. This development also includes proposed landscaping, five stormwater quality/detention ponds, and accompanying drainage ways. The development site is located northwest of the intersection of West Acuff Road and North Kinser Ridge.

The above-mentioned stormwater quality/detention ponds and drainage ways are the site's post-construction BMPs along with proposed landscaping and vegetative areas in and out of the pond/bio-retention facilities. Said BMPs are in the northeast, northwest, southeast, and southwest corners of the site, as well as a small detention facility to the east, north of the road which attaches to Kinser Pike. For actual locations see plan sheets at the end of this manual. Potential areas for harmful discharges to stormwater quality/detention ponds include pollutants from proposed roadways. This O/M will be for the maintenance of these BMPs.

BMP Owner Contact Information:

Beacon Builders, LLC. (Bill Evans)
PO Box 78483
Indianapolis, IN 46278
Phone: 317-871-1204

Definitions

Best Management Practice (BMP):
Best Management Practices, refer to structural or non-structural measures designed to improve stormwater quality and reduce stormwater runoff rates flowing downstream from this site.

Rural subdivision stormwater runoff contains many types and forms of pollutants. When compared to stormwater run-off from pre-developed conditions, high concentrations and some contaminants that are not naturally present in surface runoff from undeveloped lands are found. Runoff from undeveloped watersheds contain metals, nutrients, sediment particles, oxygen-demanding compounds, and other constituents. Once developed, constituent loads increase because surface runoff volumes increase and the sources of many of these pollutants also increase. Supplemental applications of compounds, such as fertilizers, tend to increase the availability of some pollutants to stormwater runoff. BMPs are implemented into project design to offset the effects of these pollutants.

BMP Owner:
The owner of the BMP, typically the property owner or developer. The BMP owner may also be the owner of the property in the case of long-term residential owned properties or an agreed upon HOA that maintains long-term BMPs on the property.

Stormwater Quality/Detention Pond:
Stormwater quality/detention ponds are areas where excess stormwater is stored or temporarily held while slowly draining to the site outfall. Stormwater quality/detention basins allow said pollutants to settle out before reaching the site outfall.

Inspections

Routine inspections and maintenance are the responsibility of the BMP owner. The BMP owner shall be financially responsible for any maintenance or repairs required by the City or its representatives during City inspections. The approval maintenance plan and inspection forms provided with this manual should be used as guidance for performing maintenance activities. Completed inspection forms must be maintained by the BMP owner and produced upon request by the City. The City must be notified of any changes in BMP ownership, major repairs or BMP failure in writing within 30 days. The letter should be addressed to:

City of Bloomington Utilities Department
Stormwater Inspector
600 East Miller Drive
Bloomington, IN 47401
Ph: (812) 339-1444

The City and/or its authorized representative has the right to enter the property to inspect BMPs. In the event that the City finds a BMP in need of maintenance or repair, the City will notify the BMP owner of the necessary maintenance or repairs and give the landowner a timeframe for completing the maintenance or repairs. If the maintenance or repairs are not completed within the designated timeframe, the City may perform the maintenance or repairs and bill the BMP owner for the cost of the work.

Inspection & Maintenance Activities

Refer to the checklist provided with this manual for operation, maintenance, repair and inspection of the BMP. The checklist is for the use of the BMP owner in performing routine inspections. The City may perform annual inspections of BMP's using a similar checklist. The BMP owner must maintain and update the BMP operations and maintenance plan.

BMP owners must routinely inspect BMPs to verify that all BMP components are functioning as designed and are not in danger of failing. All BMPs need maintenance to function as water quality and quantity facilities. Maintenance can range from dredging sediment out of the treatment area to cleaning out the underdrain piping.

The BMP owner agrees to the maintenance and inspection programs attached with this manual. Inspections must be documented on the inspection forms included in this Operation and Maintenance Manual.

Here are the guidelines for maintenance required within the pond areas:

The owner is required to inspect the sand filter strips, underdrains, plantings, and earthen dams once a month for the first 3 years, then semi-annually after the third year. If any damage that has caused functionality to cease to these features then repairs or replacement shall be immediate. The underdrains and sand filter strips/filter fabric shall be replaced as detailed in this O/M Manual if functionality has ceased even after cleaning them out. Functionality has ceased if the pooled water in the facilities does not drain within 24 hours of no additional rain events.

Sediment levels within the basin area shall also be monitored to not be allowed to accumulate to a depth above the 8" mark located on the permanent 2" diameter aluminum sediment stake. When sediment accumulates to the 8" mark then said sediment shall be removed and properly disposed to restore the pond or bio-swale to its design capacity.

Also, landscaping within the site's pond areas shall remain in healthy growing conditions with the following landscaping maintenance notes:

Landscaping:

Once the site has been established all landscape maintenance will be provided by the Owner. The use of fertilizers and pesticides shall be used sparingly on the site. Pesticides may only be used for the removal of invasive species, and preferred be completed by OISC-certified pesticide applicators.

The following is a listing of routine landscaping tasks and their maintenance frequency.

Task	Frequency
Mowing & Trimming (outside of pond areas)	Bi-Weekly
Mowing & Trimming (within pond areas)	Once in Spring ONLY (Plantings within bio-swale area require to be a natural growth without being mowed except once in spring)
Tree Pruning	Yearly
Turf & Vegetative Bio-Filter reseeding without bare spots	As needed to maintain mature turf

Water Quality Pond Seeding –

Species	Application Rate
Carex Frankii (Frank's Sedge)	4 ounces/acre
Elymus Riparius (Riverband Wild Rye)	16 ounces/acre
Elymus Cirginicus (Virginia Wild Rye)	32 ounces/acre
Panicum Virgatum (Switchgrass)	4 ounces/acre
Schizachyrium Scoparium (Little Bluestem)	32 ounces/acre
Sorghastrum Nutans (Indian Grass)	8 ounces/acre
Aster Novae-Angliae (New England Aster)	1 ounce/acre

Spill Kit:

The BMP owner shall have a spill kit stored within the equipment storage area at all times.

BMP Owner Acknowledgment

This Operation and Maintenance Manual is in possession of the City of Bloomington Utilities Department Stormwater Inspector (CBU) and serves to ensure the longevity and adequate functioning of said BMP's owned by Beacon Builders, LLC. (Bill Evans) or owner of property in perpetuity. By submitting this Operation and Maintenance Manual to CBU with plans to maintain said BMP's, the BMP owner agrees to follow and abide by the inspection schedule and maintenance activities listed in this manual. The BMP owner is responsible for any additional maintenance and/or repair activities to maintain the function and longevity of the BMP(s). Any modifications to permanent BMP(s) in this manual, up to and including of removal of any infrastructure, requires approval by the City of Bloomington MS4 Coordinator, and may require Drainage Board approval. All responsibilities for inspection and maintenance of the BMP as well as any other responsibilities and obligations which shall be borne by the owner, Beacon Builders, LLC. (Bill Evans), shall also be borne by any successors in interest to the property including any HOA organization that represents the owner in responsibility to maintain the property and drainage facilities.

_____ _____

BMP Owner Signature: Date

_____

Printed

Kinser Ridge Subdivision
Sediment Basin Operation, Maintenance and Management Inspection Checklist

Location: _____
Date: _____ Time: _____
Inspector: _____ Title: _____
Signature: _____

Refer to Exhibits 1 and 2
S = Satisfactory
U = Unsatisfactory

Maintenance Item	S or U	Comments	Recommended Maintenance Procedure
1. Pooling Area & Embankement			
Signs of soil erosion			For stubborn areas use erosion control matting and reseed.
Animal burrows			Contact the Animal Control specialist for animal removal procedures.
Embankement cracking, bulging or settling			Some is expected during droughts. Repair with soil, erosion control mat and reseed.
Embankement free of woody vegetation			Remove any trees or shrubs growing within the pond basin area.
Embankement leaking			Contact the BMP owner. Owner to contact the engineer.
Depth of sediment at sediment outlet control riser			Remove sediment after 8" accumulation to maintain original detail depth - see details of ponds and location map
2. Emergency Spillway			
Rock rip-rap condition			Redistribute rip rap to evenly cover the overflow area from the spillway along flowline.
Emergency spillway clear of obstructions			Remove trash, debris and small woody plants between pond spillway and along flowline.
3. Perforated Pipe Riser			
Pipe riser condition			Excessive fading of the riser around the top may indicate a weakening of the pipe. Replace pipe riser.
Pipe riser blockage			Remove trash and debris from the top of and within the riser.
InDOT crushed stone surround			The stone acts as a filter. If the stone is caked with soil then it will not filter. Replace the stone.

PLAT COVENANTS, RESTRICTIONS AND EASEMENTS FOR KINSER RIDGE SUBDIVISION

The undersigned, Beacon Builders LLC, (the "Developer") owner of the real estate shown and described herein hereby certifying that it has laid off, platted, and subdivided, and does hereby lay off, plat, and subdivide said real estate in accordance with this plat and certificate. This subdivision shall be known as "Kinser Ridge" containing 124 lots in three (3) sections and is an addition to the City of Bloomington in Monroe County, Indiana. In addition to the covenants and restrictions hereinafter set forth and contained in this plat, the real estate described in this plat is also subject to an existing Power line in favor of Duke Energy, Instrument No._____ Indiana Recorder's office as set forth in the Declaration Any conflicting covenant or restriction contained in this plat shall govern and control to the extent only of an irreconcilable conflict with any of the covenants and restrictions contained in the Declaration, it being the intent hereof that all such covenants and restrictions shall be applicable to said real estate to the greatest extent possible. All the terms, provisions, covenants, conditions, and restrictions contained in the Declaration are hereby incorporated herein by reference. To provide adequate protection to all present and future owners of lots in this subdivision, the following covenants, restrictions, and limitations are hereby imposed upon and shall run with the land included in this subdivision and shall be binding upon the Developer and anyone at any time owning any part or portion of such land.

1. ZONING. All lots in this subdivision shall be for R-2 zoning residential purposes only.

2. MINIMUM LIVING SPACE REQUIREMENTS. The minimum square footage of living space of Dwelling Units shall be, exclusive of porches, patios, basements, and garages are as follows: not less than 1,400 square feet of ground floor living area for a one-story single-family dwelling. A home with two or more stories, the ground floor shall be a minimum of 650 square feet and not less than 1,400 square feet of total living area.

3. EXTERIOR HOME ARCHITECTURAL REQUIREMENT. A minimum of 50% of the front first floor of each home excluding openings shall be constructed of hard scape materials. The maximum height of materials shall be four (4') feet above brick ledge.

4. Garage Requirement. All houses shall have, as a minimum, an attached, enclosed, or detached, enclosed 1 or 2 bay garage.

5. DRIVEWAYS. All proposed driveways to be constructed within the Kinser Ridge shall be made of concrete.

6. DEDICATION. The streets and sidewalks, if not heretofore dedicated, are hereby dedicated to public use.

7. RESIDENTIAL SET-BACKS. Building set-back lines are hereby established as shown on this plat, between which lines and the property lines of the streets no building or structure (except walls and fences to the extent permitted hereby or by the Declaration), shall be erected or maintained. No buildings, structures or other improvements shall be erected closer to any side lot line of any lot than 10 feet. The front facing garages of the homes shall be constructed 25' behind the front right-of-way line. Homes with garages at the rear of the home shall be a minimum of 15' the front setback line. The rear of the home

shall be located 25’ from the rear line of the individual lot or current zoning requirements. The rear setback line is shown on said plat of Kinser Ridge.

8. Mailboxes. The Owner shall have installed upon occupancy of a new home, and maintain in good condition thereafter, a mailbox which shall be in accordance with the design, type, color and location required by Developer or the Association from time-to-time to maintain uniformity of appearance throughout the Community.

9. Antennas. No exterior antennas, aerials, satellite dishes, or other apparatus larger than one meter in diameter and intended for the reception of television, radio or satellite or other signals of any kind shall be placed, allowed, or maintained upon any portion of any Lot. Any such antennas, aerials, satellite dishes or other such apparatus that do not exceed one meter in diameter shall be permitted on a Lot only if such will be aesthetically concealed by landscaping or otherwise and shall be installed so as not to constitute a nuisance or offensive effect on other Lot Owners. No radio or television signals, nor electromagnetic radiation, shall be permitted to originate from any Lot which may unreasonably interfere with the reception of television or radio signals within the Community, provided however that the developer and/or the Association shall have the right, without obligation, to erect an aerial, satellite dish, or other apparatus or master antenna or cable system for the benefit of all or a portion of the Property, should any such master system or systems be utilized by the Association and require any such exterior apparatus.

10. Signs. No permanent signs of any kind shall be erected within the Community, except standard real estate “for sale” signs, entry and directional signs installed by the Developer and such signs as may be required by legal proceedings. No business signs, flags, banners, or similar Items advertising or providing directional Information shall be erected by any Owner. If permission is granted to any Person to erect a sign, including name and address signs within the Community, the HAO reserves the right to determine the size and composition of such a sign as it, in its sole discretion, deems appropriate.

11. Parking and Prohibited Vehicles.

(a) Parking. On-street parking per City of Bloomington regulations

(b) No Owners or other occupants of any portion of the Community shall repair or restore any vehicles of any kind upon or within any portion of the Common Areas

(c) Prohibited Vehicles. Tractors, mobile homes, recreational vehicles, trucks weighing in excess of three-quarters of a ton, trailers (either with or without wheels), campers, camper trailers, boats and other watercraft, and boat trailers shall be parked only in enclosed garages or areas, if any, designated by the Board. Stored vehicles and vehicles which are obviously inoperable or do not have current operating licenses shall not be permitted on the Property except within enclosed garages. Notwithstanding the foregoing, service and delivery vehicles may be parked in the Property during daylight hours for such period as is reasonably necessary to provide service or to make a delivery to a Lot or the Common Areas, and boats, boat trailers, campers and motor homes may be parked for a maximum of 24 hours at one time for the purpose of preparation or loading. Any vehicles parked in violation of this Section or parking rules promulgated by the HOA may be towed.

12. Sidewalks, all lots shall have sidewalk(s) of concrete along the entire side(s) of the lot facing any street. The sidewalk shall be built to City of Bloomington specifications. Additionally, the sidewalk must

be completed prior to occupancy of the residence, and the builder is responsible for construction of the sidewalk.

13. Kinser Ridge contains a dedicated greens space "Common Areas" consisting of a drainage basins and naturally wooded area ("Preserved Woods"). That area is intended to remain a natural vegetative area for the use and enjoyment of the owners of lots within Kinser Ridge. Kinser Ridge Homeowners Association may remove dead and dying trees, remove invasive plants, and deaden and remove vines. However, owners may not clear other trees within the Preserved Woods.

14. No septic systems will be allowed. Dwellings must be connected to the City of Bloomington' sanitary sewer system prior to occupancy.

15. No commercial signage may be placed on any lot at any time except for a reasonably sized sign advertising the lot or dwelling for sale. The developer, Beacon Builders and its assignees, are exempt from this requirement while any lots owned by it are left unsold. In addition, Beacon Builders may, at its sole discretion, while any lots owned by it are left unsold, allow others to place larger signs that are approved by Beacon Builders.

16. Garage sale, rummage sale, yard sale or other similar advertising signs may not be placed on a lot for more than seven (7) days in any calendar year.

17. Fences are to be limited to the side or back yards (that is, they cannot extend past the adjacent rear of the house). Only vinyl fences, decorative metal fences and chain link fences are allowed. If the fence is a chain link fence, it must be either black or brown in color and not over forty-eight (48) inches tall. Any other fencing must not exceed seventy-two (72) inches. Vinyl fences must white. Decorative metal fences may be black. Homeowners desiring to install a fence must complete the Kinser Ridge Design Review Application Form for Fences and **the fence must be approved by the Design Review Committee before installation begins.** The Design Review Committee will relay its decision regarding the approval by way of a signed Design Review Approval Form within thirty (30) days of receiving the Design Review Application. The City of Bloomington has ordinances that apply to fences, and it is the homeowner's responsibility to be sure that these regulations are met.

18. The city of Bloomington Utilities shall be the residential water supply.

19. All utilities must be placed underground.

20. Animals and Pets. No animals, livestock or poultry of any kind shall be raised, bred, or kept on any portion of the Property, except that dogs, cats or other usual and common household pets may be permitted on a Lot subject to rules and regulations adopted by the Association through its Board. Poultry may be permitted at the discretion of Board with a planned area on a lot after being reviewed. However, those pets which are permitted by any Owner or occupant to roam free, or, in the sole discretion of the Association, endanger the health, make objectionable noise, or constitute a nuisance or inconvenience to the Owners of other Lots or the Owner or any portion of the Community, shall be removed from the Community upon request of the Board. If the Owner fails to honor such request, the Board, in its discretion, may have the pet removed. No pets shall be kept, bred, or maintained for commercial purposes. Dogs shall always whenever they are outside be confined on a leash held by a responsible

person. No pet shall be permitted to leave its excrement on any portion of the Common Areas, and the Owner of such pet shall immediately remove the same.

21. Storage Tanks. No outside fuel storage tanks about or below the ground shall be placed in this subdivision.

22. Lot Maintenance, Outbuildings and Basketball Goals. All lots on which construction has begun must be mowed and maintained by lot owner. After construction, the structure, grounds, and recreational equipment shall be maintained in a neat and attractive manner. Firewood shall be kept behind the residence and stacked in a neat manner. Brightly colored plastic tarps cannot be used to cover items outdoors. Outbuildings or outside storage units or accessory buildings must be similar to primary residence. Basketball goals are permitted

23. Nuisances. No noxious or offensive trade shall be permitted upon any lot in this subdivision, nor shall anything be done thereon which may be a nuisance or annoyance to the neighborhood. No refuse will be maintained on the lot. Garbage and trash shall be kept in containers which are not visible from the street, except on collection day.

24. Lakes and Water Bodies. All lakes, ponds and streams within the Property, if any, shall be aesthetic amenities only and no other use thereof including without limitation, fishing (except from the bank as allowed by the Homeowners Association), swimming, boating, playing or use of personal flotation devices, shall NOT be permitted. The Homeowners Association shall not be responsible for any loss, damage, or injury to any person or property arising out of the authorized or unauthorized use of lakes, ponds, or streams within the Property. No docks, piers or other structures shall be constructed on or over any body of water within the Property.

25. EASEMENTS. See recorded plat and City of Bloomington specifications

"Access Easement". The strips of ground or areas indicated as "Access Easement" (A.E.) are reserved for the use of the Kinser Ridge Homeowners Association and the City of Bloomington for limited access to the Pond Maintenance Easements, and said access being limited to that necessary to utilize said Lake Maintenance Easements (defined below):; no permanent or other structures are to be erected or maintained upon said strips or areas of land; owners of lots in this subdivision shall take title to their lots subject to said easement rights.

26. STORM DRAINAGE MAINTENANCE. The maintenance of the storm drainage system for this subdivision by the Homeowners Association shall include but shall not be limited to the maintenance of all detention areas, inlet structures, open ditches, pipes, swales, and paved swales. The costs and expenses of such maintenance of the storm drainage system shall be assessed as part of the general assessment against the owners of all lots in this subdivision as provided in the Declaration and shall be secured by a lien against all lots in this subdivision. Sump pumps, gravity drains and other drains serving individual residences on lots shall outfall only into drainage swales or storm structures included in the storm drainage system for the subdivision.

27. DRAINAGE SWALES. Drainage swales (ditches or drainage detention areas) on dedicated easements or side yards are not to be altered, dug out, filled in, tile, or otherwise changed. Property owners must maintain these swales as sodded grass across or other non-eroding surfaces. Water from roofs or parking areas must be contained on the property long enough so that tis drainage swales or ditches will not be damaged by such water. Any property owners altering, changing, or damaging these drainage swales or ditches will be held responsible for such action and will be given 10 days noticed by

certified mail to repair said damage after which time, if no action is taken, the Homeowners Association will cause said repairs to be accomplished and the statement for costs of the said repairs will be sent to the affected property owner for immediate payment and such costs will constitute a lien on the property owner's lot until paid.

28. OBSTRUCTIONS. No wall, hedge or shrub plantings which obstructs sight lines at elevations between 2½ and 10 feet above the street shall be placed or permitted to remain on any corner lot within the triangular area formed by the street property lines and a line connecting points 35 feet from the intersection of said street lines, or in the case of a rounded property corner from the intersection of the street lines extended. The same sight line limitations shall apply to any lot within 10 feet from the intersection of a street line with the edge of driveway pavement. No tree shall be permitted to remain within such distances of such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines. No driveway shall be located within 40 feet of the intersection of two street lines.

29. SALES OFFICE. To the extent deemed necessary or desirable by Developer, Developer shall be permitted to place sales offices and construction, development, marketing, and maintenance of the subdivision on any unsold lot or on any Common Area in the subdivision until 180 days following the sale, closing and deed transfer to a lot owner other than Developer of the last lot in the subdivision.

30. COVENANTS APPURTENANT TO LAND. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five (25) years from the date these covenants are recorded, at which time said covenants shall be automatically extended for successive periods of ten (10) years each, unless at any time after fifteen (15) years a majority of the then owners of the lots in this subdivision agree to change (or terminate) said covenants in whole or in part and on the condition that an instrument to that effect signed by the lot owners voting in favor of change has been recorded; provided, however, that no change or termination of said covenant shall affect any easement hereby created or granted unless all persons entitled to the beneficial use of such easement shall consent thereto. Notwithstanding the foregoing, Covenant #4 above and any covenant established for the benefit of the City of Bloomington may not be discontinued by a vote of the owners of the lots in this subdivision.

31. Homeowners Association. The Owners of any lot subject to these Restrictions, by acceptance of a deed conveying title thereto, or the execution of a contract for the purchase thereof, whether from the Developer or a subsequent Owner of such lot, shall accept such deed and execute such contracts subject to each Restriction and agreement herein contained. By acceptance of such deed or execution of such contract, the Owner acknowledges the rights and powers of the Developer and of Centennial Community Homeowners Association ("Homeowners Association or Association"') and the Umbrella Association (including automatic membership therein by all lot owners) with respect to these Restrictions, and also, for themselves, their heirs, personal representatives, successors and assigns, such Owners covenant and agree and consent to and with the Developer, the Associations and to and with the Owners and subsequent owners of each of the lots affected by these Restrictions to keep, observe, comply with and perform such Restrictions and agreements.

The Homeowners Association may be managed by the Developer or its designated agent until such time as eighty (80) percent (%) of the lots are transferred from the Developer to an original owner. After such time as the Developer no longer owns a minimum of eighty (80) percent (%) of the lots, the Homeowners Association shall hire a professional property management firm to assist with the management, administration, operation, and maintenance of the subdivision. The beginning HOA fees are $250

annually and collected at the time of closing with the builder/developer. No proration of the fee shall be made. The opening HOA fees shall be consistent with all homeowners.

32. ENFORCEMENT WAIVER. Enforcement shall be by proceedings at law or in equity against the person or persons violating or attempting to violate any covenant either to restrain violation or to recover damages. Invalidation of any one of these covenants by judgment or court order shall in no way affect any of the other provisions which shall remain in full force and effect. Failure to enforce any specific requirement of the covenant shall not be considered as a waiver to enforce any covenant herein, thereafter. Notwithstanding the foregoing, any violation of these covenants or the Declaration may be waived by a majority (80%) of the then owners of the lots in this subdivision.

33. AMENDMENTS AND SUPPLEMENTS. Developer hereby reserves the right, from time to time and at any time, to modify, supplement or amend these easements, covenants and restrictions, without the consent of any owner of party in interest, if Developer records the modification in the Office of the Recorder of Johnson County, Indiana, and the modification is for any one or more of the following purposes: (1) to extend the provisions of these easements, covenants and restrictions to bind and benefit the Annexed Real Estate and the owner(s) of a lot within the Annexed Real Estate; (ii) to clarify, further define or limit any easement, or otherwise exercise any rights reserved herein; or (iii) to change the substances of one or more covenants, conditions, terms or provisions hereof provided that such change (A) does not materially increase the obligation(s) of any owner under any covenant, condition, term or provision without such owner's consent or (B) is necessary to comply with a bona fide governmental requirement, including applicable laws, ordinances, regulations or orders of any municipality or court having jurisdiction.

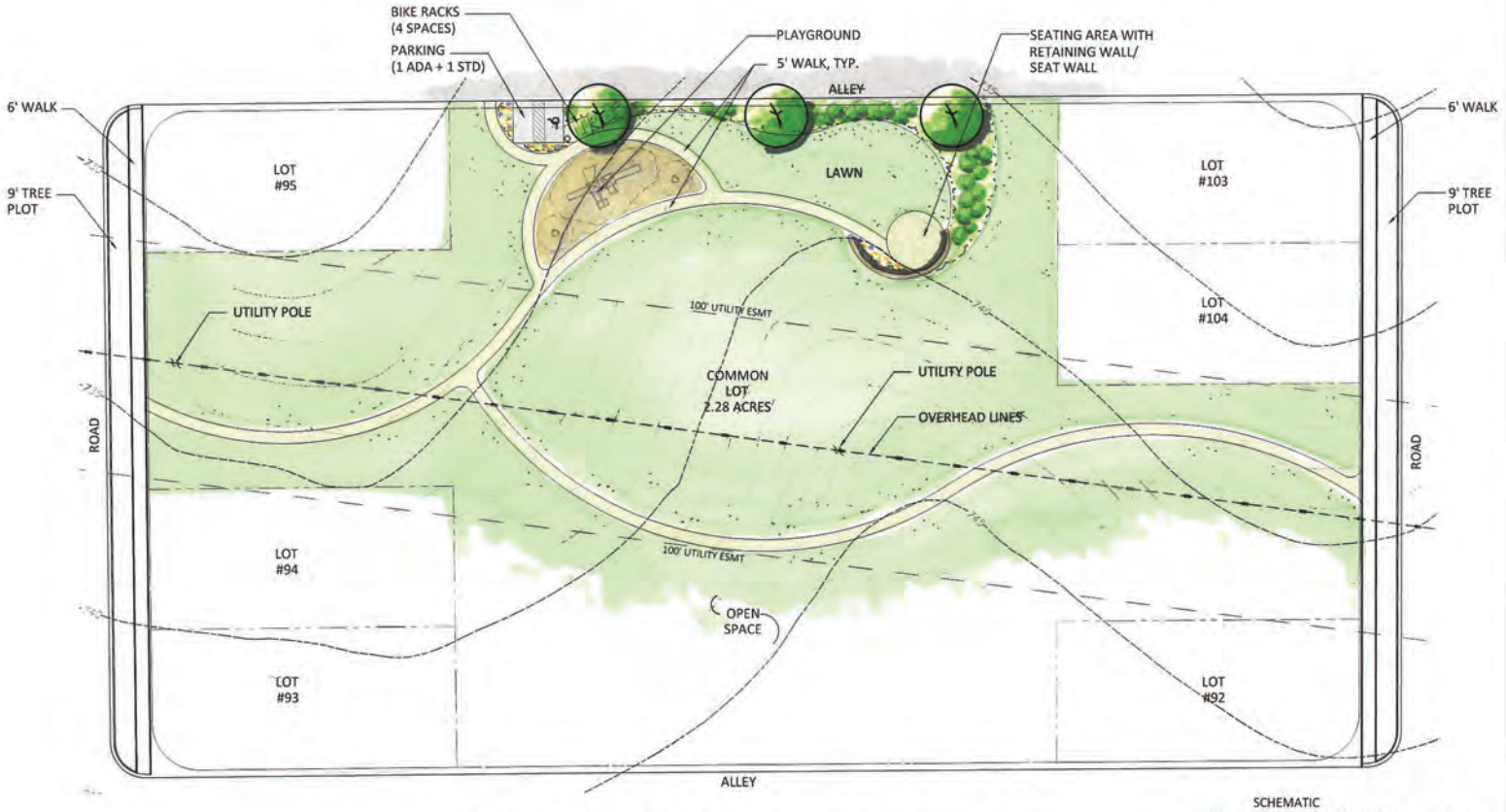
34. Additional City of Bloomington Covenants and Restrictions. Pursuant to the Zoning Code of the City of Bloomington and the July 8th, 2024 Unified Development Ordinance, shall be adhered to and are required to be shown on the accompanying plat. *There are situations and instances where the Declarations of Covenants, Conditions and Restrictions and the covenants hereto before may be in conflict*. The most restrictive shall apply.

IN WITNESS WHEREOF, the undersigned, as the owner of the above-described real estate, has hereunto caused its name to be subscribed this _____ day of _____, 2024.

BEACON BUILDERS LLC.

By:_____

Jason Smith, Owner



springpoint
ARCHITECTS

KINSER RIDGE SUBDIVISION

POCKET PARK

BLOOMINGTON, INDIANA

SCHEMATIC

A SITE PLAN

SCALE: 1"=40'-0"

NORTH

AUGUST 2024

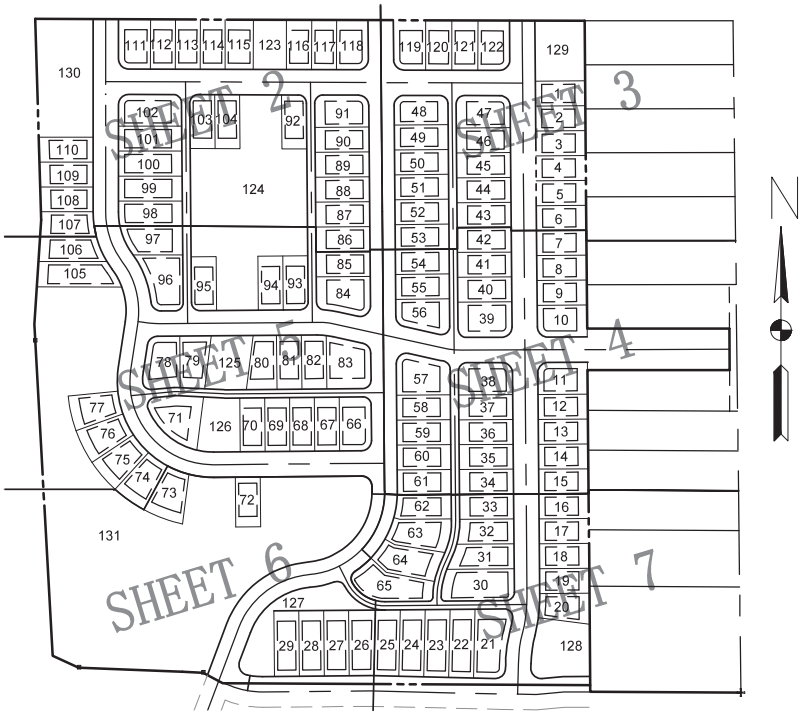
KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP

SHEET INDEX

SCALE: 1"=200'



PROJECT LOCATION

VICINITY MAP

(NOT TO SCALE)

OWNER/SUBDIVIDER/DEVELOPER

NAME: BEACON BUILDERS
ADDRESS: P.O. BOX 78483
INDIANAPOLIS, IN 46278
TELEPHONE: 317-258-0140

DESIGN PROFESSIONALS

NAME: BYNUM FANYO & ASSOCIATES, INC.
ADDRESS: 528 NORTH WALNUT STREET
BLOOMINGTON, INDIANA 47404
TELEPHONE: 812-332-8030

DESIGN PROFESSIONALS

DESCRIPTION (SOURCE OF TITLE: INSTRUMENT 2024000525)

A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Beginning at a point which is 363.00 feet West and 16.50 feet North of the Southeast corner of the said quarter, said point being on the North right-of-way of the Park School Road; thence North for a distance of 778.35 feet; thence South 88 degrees 48 minutes 47 seconds East for a distance of 346.50 feet and to the West right-of-way of Kinser Pike; thence North over and along the West right-of-way of Kinser Pike, for a distance of 100.00 feet; thence North 88 degrees 48 minutes 47 seconds West for a distance of 346.50 feet; thence North for a distance of 741.30 feet and to an established fence line; thence Westerly over and along the said fence line by the following courses and distances: North 89 degrees 5 minutes 5 seconds West for a distance of 300.00 feet; thence North 88 degrees 54 minutes 32 seconds West for a distance of 467.87 feet; thence North 88 degrees 55 minutes 33 seconds West for a distance of 531.78 feet; South 86 degrees 48 minutes 48 seconds West for a distance of 239.67 feet, South 89 degrees 29 minutes 41 seconds West for a distance of 131.56 feet; thence North 87 degrees 28 minutes 18 seconds West for a distance of 633.36 feet and to an existing stone fence; said fence being the accepted boundary between Section 17 and Section 18; thence South 0 degrees 15 minutes 11 seconds East over and along the said stone fence for a distance of 1378.00 feet; thence continuing South 0 degrees 15 minutes 11 seconds East for a distance of 231.27 feet and to a stone marking the Southwest corner of said quarter; thence South 88 degrees 50 minutes 11 seconds East over and along the North right-of-way line of the Park School Road for a distance of 2296.74 feet and to the place of beginning, containing 85.242 acres, more or less.

EXCEPTING THEREFROM: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the Southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the point of beginning of this description, which point is on the north boundary of a county road (also known as the Park School Road); (1) thence North 65 degrees 34 minutes 05 seconds East 55.25 feet; (2) thence South 89 degrees 15 minutes 30 seconds East 200.00 feet; (3) thence North 32 degrees 50 minutes 30 seconds East 82.68 feet; (4) thence North 8 degrees 01 minute 30 seconds West 386.59 feet; (5) thence North 4 degrees 41 minutes 36 seconds East 267.30 feet; (6) thence North 2 degrees 49 minutes 50 seconds West 568.50 feet; (7) thence Northerly 284.83 feet along an arc to the right and having a radius of 3,964.72 feet and subtended by a long chord having a bearing of North 0 degrees 46 minutes 21 seconds West and a length of 284.77 feet to a north line of the owners' land; (8) thence South 89 degrees 26 minutes 50 seconds East 320.03 feet along said north line; (9) thence Southerly 265.94 feet along an arc to the left and having a radius of 3,644.72 feet and subtended by a long chord having a bearing of South 0 degrees 44 minutes 25 seconds East and a length of 265.86 feet; (10) thence South 2 degrees 49 minutes 50 seconds East 218.50 feet; (11) thence South 4 degrees 00 minutes 44 seconds West 251.79 feet; (12) thence South 2 degrees 49 minutes 50 seconds East 800.00 feet; (13) thence South 65 degrees 18 minutes 35 seconds East 69.49 feet; (14) thence South 86 degrees 58 minutes 04 seconds East 250.20 feet; (15) thence South 89 degrees 15 minutes 30 seconds East 50.00 feet; (16) thence South 64 degrees 05 minutes 05 seconds East 55.25 feet to the north boundary of said County Road (also known as the Park School Road); (17) thence North 89 degrees 15 minutes 30 seconds West 1,000.00 feet along said north boundary to the point of beginning and containing 11.775 acres, more or less.

EXCEPTING THEREFROM:

24.54 acres lying west of State Road 37 all in a part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, and being more particularly described as follows:

Commencing at a rebar found at the Southeast corner of the Southwest Quarter of said Section; thence along the south line of said Section the following two (2) courses: 1) NORTH 88 degrees 57 minutes 35 seconds West 1327.81 feet to a 5/8 inch rebar found; thence NORTH 88 degrees 47 minutes 39 seconds West 1341.98 feet to a stone found at the Southwest corner of the Southwest Quarter of said Section and also being the Point of Beginning; thence NORTH 00 degrees 44 minutes 47 seconds East along the west line of Section 17 1609.27 feet to a 5/8 inch rebar with cap; thence SOUTH 89 degrees 03 minutes 31 seconds East 646.16 feet to a 5/8 inch rebar with cap set on the west right-of-way of State Road 37; thence along said west right-of-way the following seven (7) courses: 1) 286.34 feet along a 3964.71 foot non-tangent curve to the left whose chord bears SOUTH 00 degree 20 minutes 14 seconds East 286.27 feet to a 5/8 inch rebar with cap; thence 2) SOUTH 02 degrees 24 minutes 00 seconds East 568.52 feet to a 5/8 inch rebar with cap; thence 3) SOUTH 05 degrees 07 minutes 26 seconds West 267.30 feet to a 5/8 inch rebar with cap; thence 4) SOUTH 07 degrees 46 minutes 31 seconds East 385.81 feet to a post; thence 5) SOUTH 33 degrees 19 minutes 16 seconds West 83.48 feet to a post; thence 6) NORTH 89 degrees 12 minutes 46 seconds West 200.14 feet to a concrete right-of-way marker; thence 7) SOUTH 65 degrees 21 minutes 34 seconds West 55.96 feet to a concrete right-of-way marker found on the north right-of-way of Acuff Road; thence the following two (2) courses along said right-of-way: 1) NORTH 88 degrees 18 minutes 11 seconds West 211.11 feet to a 5/8 inch rebar with cap; thence 42.70 feet along a 326.24 foot radius non-tangent curve to the left whose chord bears SOUTH 69 degrees 00 minutes 10 seconds West 42.67 feet to a 5/8 inch rebar set on the south line of Section 17; thence NORTH 88 degrees 47 minutes 39 seconds West along said south line 173.18 feet to the POINT OF BEGINNING, containing 24.54 acres, more or less.

The above-described tract of real estate and exceptions therefrom having been surveyed by Todd M. Borgman, Indiana Registered Land Surveyor Number LS21200021, dated February 25, 2019, recorded August 23, 2019, as Instrument Number 2019012164, in the office of the Recorder of Monroe County, Indiana, are now more particularly described as follows:

A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West in Monroe County, Indiana, and being more particularly described as follows:

COMMENCING at a rebar found at the southeast corner of the Southeast Quarter of said Section; thence NORTH 88 degrees 57 minutes 35 seconds West along the south line of said Section 363.04 feet; thence NORTH 00 degrees 15 minutes 16 seconds West 16.33 feet to a 5/8" rebar with cap set on the north right-of-way of Acuff Road at the Point of Beginning; thence NORTH 88 degrees 59 minutes 10 seconds West along the north right-of-way of Acuff Road 885.48 feet to a concrete right-of-way marker found; thence the following seven (7) courses along the east right-of-way of State Road 37: 1) NORTH 61 degrees 03 minutes 06 seconds West 53.77 feet to a right-of-way marker found; thence 2) NORTH 86 degrees 21 minutes 56 seconds West 50.29 feet to a right-of-way marker found; thence 3) NORTH 87 degrees 04 minutes 05 seconds West 249.89 feet; thence 4) NORTH 64 degrees 30 minutes 36 seconds West 69.45 feet to a post; thence 5) NORTH 02 degrees 24 minutes 00 seconds West 799.56 feet; thence 6) NORTH 04 degrees 26 minutes 34 seconds East 251.79 feet to a 5/8" rebar with cap; thence 7) NORTH 00 degrees 55 minutes 31 seconds West 485.25 feet to a 5/8" rebar with cap; thence leaving said east right-of-way South 89 degrees 03 minutes 31 seconds East 1323.93 feet to a 5/8" rebar with cap; thence SOUTH 00 degrees 15 minutes 16 seconds West 742.00 feet to a 5/8" rebar with cap; thence NORTH 89 degrees 17 minutes 20 seconds East 342.85 feet to a 5/8" rebar with cap set on the west right-of-way of Kinser Pike; thence SOUTH 00 degrees 34 minutes 12 seconds West along said west right-of-way 100.00 feet to a 5/8" rebar with cap; thence SOUTH 89 degrees 20 minutes 17 seconds West 342.30 feet to a 5/8" rebar with cap; thence SOUTH 00 degrees 15 minutes 16 seconds West 758.90 feet to the POINT OF BEGINNING, containing 48.83 acres, more or less.

ALSO CONVEYING:
An easement in and to the following described real estate, to-wit: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the north boundary of a County Road (also known as the Park School Road); thence South 89 degrees 15 minutes 30 seconds East 1,000.00 feet along said north boundary; thence North 64 degrees 05 minutes 05 seconds West 55.25 feet; thence North 89 degrees 15 minutes 30 seconds West 50.00 feet; thence North 66 degrees 58 minutes 04 seconds West 250.20 feet; thence North 65 degrees 18 minutes 35 seconds West 69.49 feet; thence North 2 degrees 49 minutes 50 seconds West 530.00 feet to the point of beginning of this description; thence North 2 degrees 49 minutes 50 seconds West 90.00 feet; thence South 71 degrees 01 minute 45 seconds East 26.93 feet; thence South 2 degrees 49 minutes 50 seconds East 80.00 feet; thence South 87 degrees 10 minutes 10 seconds West 25.00 feet to the point of beginning and containing 0.049 acres, more or less, for the purpose of the removal of a building which encroaches upon the lands herein conveyed in fee simple, which easement will revert to the grantors upon the completion of said building removal and the legal release of this easement in the office of the Recorder of the aforesaid County.

ALSO CONVEYING:
An easement in and to the following described real estate, to-wit: A part of the Southwest Quarter of Section 17, Township 9 North, Range 1 West, Monroe County, Indiana, described as follows: Commencing at the Southwest corner of said quarter section; thence South 89 degrees 15 minutes 30 seconds East 424.25 feet along the south line of said quarter section; thence North 0 degrees 44 minutes 30 seconds East 16.50 feet to the north boundary of a County Road (also known as the Park School Road); thence North 65 degrees 34 minutes 05 seconds East 55.25 feet; thence South 89 degrees 15 minutes 30 seconds East 50.00 feet to the point of beginning of this description; thence North 0 degrees 44 minutes 30 seconds East 20.00 feet; thence South 89 degrees 15 minutes 30 seconds East 50.00 feet; thence South 0 degrees 44 minutes 30 seconds West 20.00 feet; thence North 89 degrees 15 minutes 30 seconds West 50.00 feet to the point of beginning and containing 0.029 acres, more or less, for the purpose of constructing a driveway for service to the grantors private property, which easement will revert to the grantors upon the completion of the above designated project.

SETBACK TABLE R2 (RESIDENTIAL MEDIUM LOT)		
FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

PROFORMA FOR REVIEW ONLY

Prepared by:

Charles D. Graham
Registration No. LS29500014

I affirm under penalties of perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

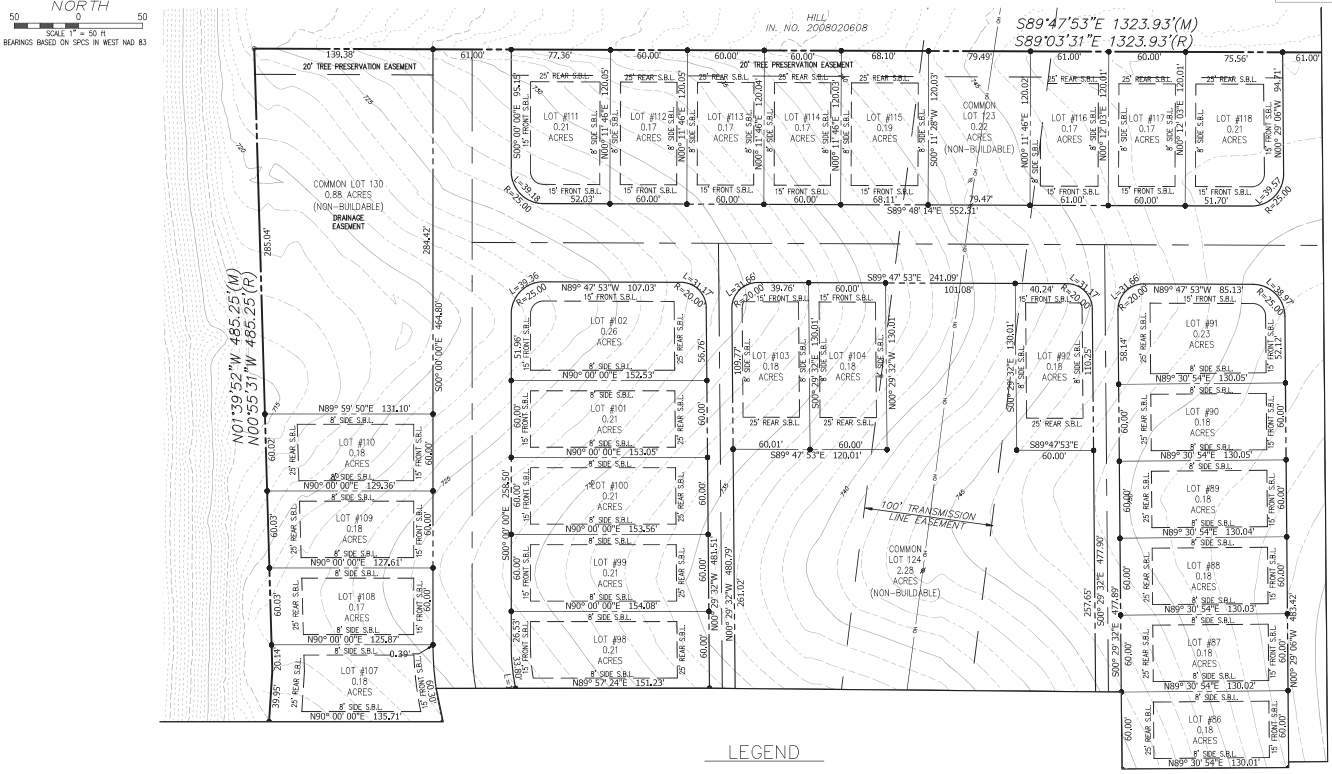
402365

BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404
Phone (812)332-8030 Fax (812)339-2990

SHEET 2 OF 8

KINSER RIDGE PRELIMINARY PLAT

RECORDER STAMP



LEGEND

WATER LINE	W
OVERHEAD ELECTRIC LINE	OH
BOUNDARY LINE	
LOT LINE	
EASEMENT LINE	
SET BACK LINE	
ROAD CENETERLINE	
REBAR SET "BFA 9500014"	●
REBAR FOUND	○
CONCRETE R/W MARKER FOUND	⊠

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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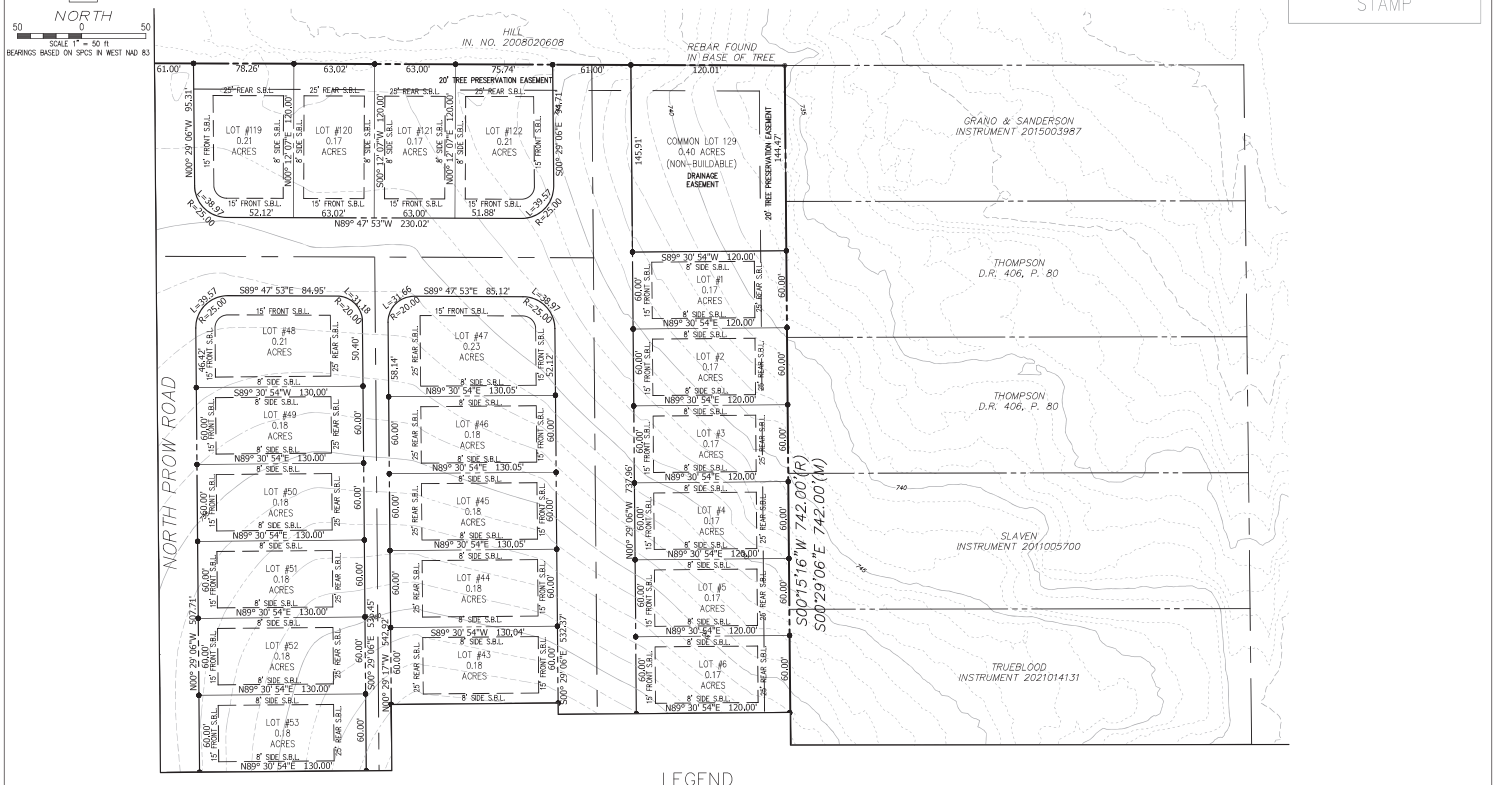
SHEET 3 OF 8

KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP



LEGEND

WATER LINE	W
OVERHEAD ELECTRIC LINE	OH
BOUNDARY LINE	
LOT LINE	
EASEMENT LINE	
SET BACK LINE	
ROAD CENETERLINE	
REBAR SET "BFA 9500014"	●
REBAR FOUND	○
CONCRETE R/W MARKER FOUND	⊠

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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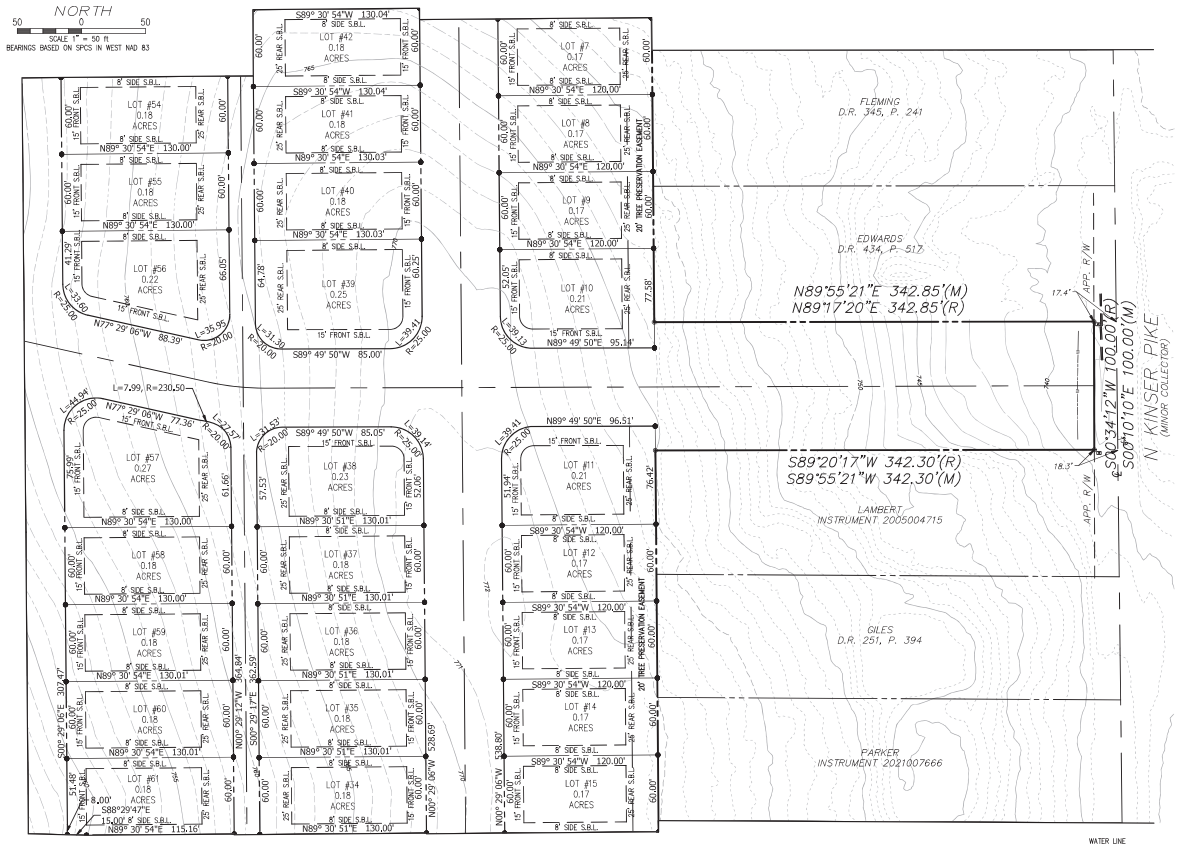
SHEET 4 OF 8

KINSER RIDGE PRELIMINARY PLAT

RECORDER STAMP



SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

EASEMENT DEFINITIONS:

Sanitary Sewer Easement:

Shall allow the City Utilities Department exclusive access for installation, maintenance, repair, or removal of sanitary sewer facilities.
Encroachment by other utilities is prohibited, unless such encroachment is approved by the City Utilities Department in conjunction with the primary plat. Upon written permission from the City Utilities Department, encroachments may be permitted after the recording of the secondary plat.
Trees and structures including, but not limited to, buildings, fences, retaining walls, and light fixtures, shall not be located within sanitary sewer easements.
Grading activity shall be prohibited within sanitary sewer easements without written permission from the City Utilities Department.

Drainage Easement:

Shall be required for any surface swales or other minor drainage improvements that are intended to serve the lots on which they are located.
Shall prohibit any alteration or structure within the easement that would hinder or redirect flow.
Shall provide that the owner of the lot on which the easement is placed shall be responsible for maintenance of the drainage features within such easement.
Shall be enforceable by the City Utilities Department and by owners of properties that are adversely affected by conditions within the easement.
Shall allow the City Utilities Department to enter upon the easement for the purpose of maintenance, to charge the costs of such maintenance to the responsible parties, to construct drainage facilities within the easement, and to assume responsibility for the drainage features at its discretion.

Karst Conservancy Easement:

Prohibits any land-disturbing activities, including the placement of a fence, within the easement area. Mowing is allowed within the easement area.
Allows the removal of dead or diseased trees that pose a safety risk or impede drainage as well as allowing the removal of exotic or invasive species, only after first obtaining written approval from the Planning and Transportation Department.
Grants the city the right to enter the property to inspect the easement and alter or repair the karst feature.
All Karst Conservancy Easements shall be identified with public signs located along the boundary of the easement. Public signs shall be placed at intervals of no more than 200 feet, and each public sign shall be a maximum of one and one-half square feet in area. A minimum of one public sign is required, regardless of easement size. The property owner shall be responsible for installing and maintaining required signage.
Any use of pesticides, herbicides, or fertilizers is prohibited within the easement area.
Allows, in cases where removal of exotic or invasive species is proposed, the restoration of disturbed areas with native plant material. Written approval from the Planning and Transportation Department is required prior to any proposed restoration.

Tree Preservation Easement:

Prohibits the removal of any tree over six inches dbh within the easement area.
Allows the removal of dead or diseased trees that pose a safety risk as well as allowing the removal of exotic or invasive species, only after first obtaining written approval from the Planning and Transportation Department.
All tree preservation easements shall be identified with public signs located along the boundary of the easement. Public signs shall be placed at intervals of no more than 200 feet, and each public sign shall be a maximum of one- and one-half square feet in area. A minimum of one
public sign is required, regardless of easement size. The property owner shall be responsible for installing and maintaining required signage.
Allows, in cases where removal of exotic or invasive species is proposed, the restoration of disturbed areas with native plant material. Written approval from the Planning and Transportation Department is required prior to any proposed restoration.

Other Easements:

Other easements may be required by the Plan Commission to preserve features or functions unique to a given property and shall be defined on the recorded plat.

LEGEND

WATER LINE —W— —W— —W—
OVERHEAD ELECTRIC LINE —OH—
BOUNDARY LINE
LOT LINE
EASEMENT LINE
SET BACK LINE
ROAD CENETERLINE
REBAR SET "BFA 950001#"
REBAR FOUND
CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION
Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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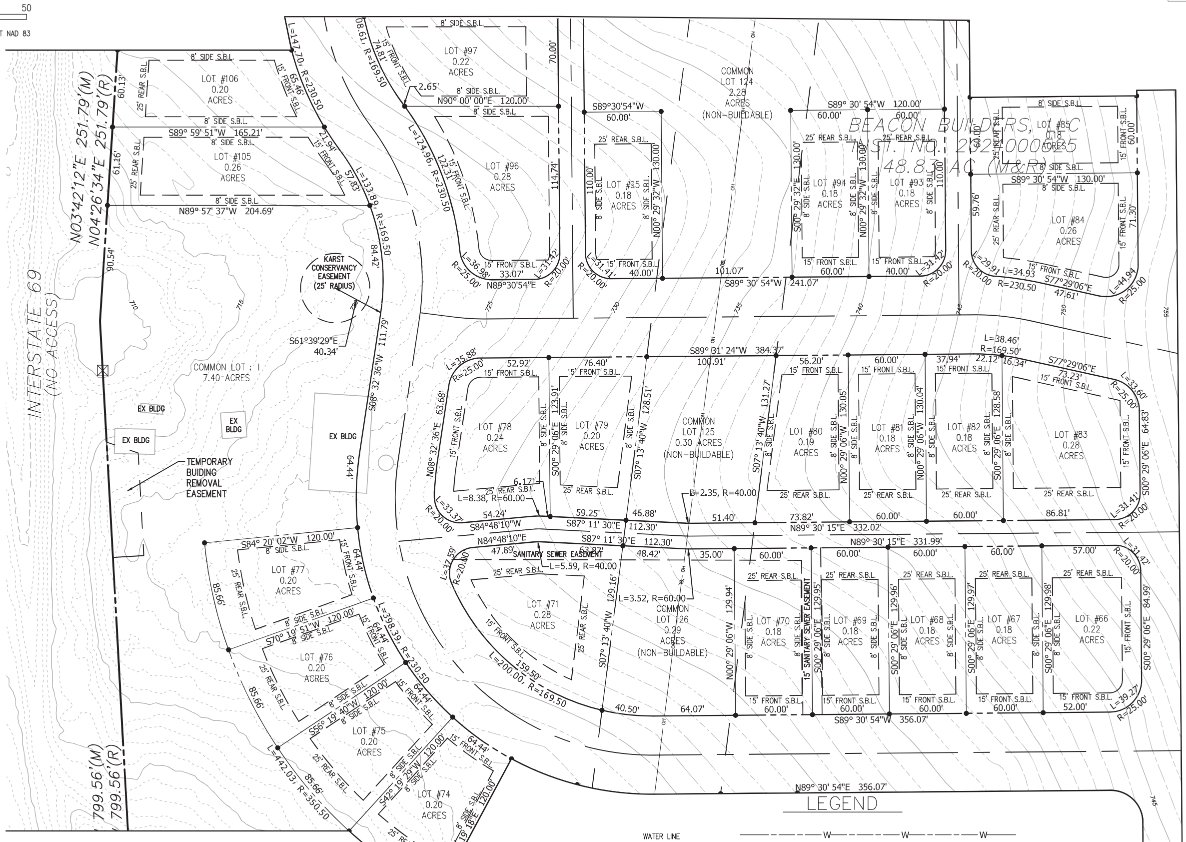
KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP

NORTH

SCALE 1" = 50 ft
BEARINGS BASED ON SPCS IN WEST NAD 83



SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

LEGEND

- WATER LINE
- OVERHEAD ELECTRIC LINE
- BOUNDARY LINE
- LOT LINE
- EASEMENT LINE
- SET BACK LINE
- ROAD CENETERLINE
- REBAR SET "BFA 9500014" ●
- REBAR FOUND ○
- CONCRETE R/W MARKER FOUND ☒

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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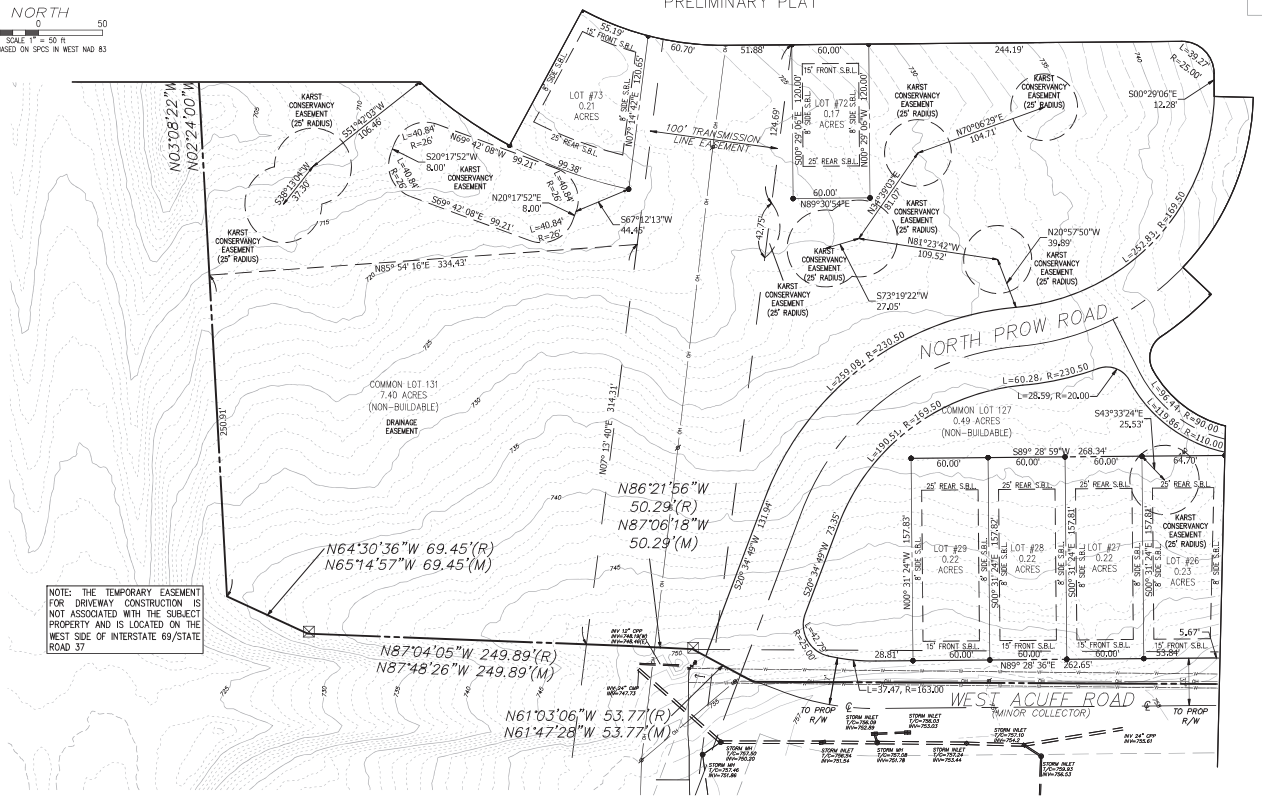
SHEET 6 OF 8

KINSER RIDGE

PRELIMINARY PLAT

RECORDER STAMP



SETBACK TABLE		
R2 (RESIDENTIAL MEDIUM LOT)		
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15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

LEGEND

- WATER LINE
- OVERHEAD ELECTRIC LINE
- BOUNDARY LINE
- LOT LINE
- EASEMENT LINE
- SET BACK LINE
- ROAD CENTERLINE
- REBAR SET "BFA 9500014"
- REBAR FOUND
- CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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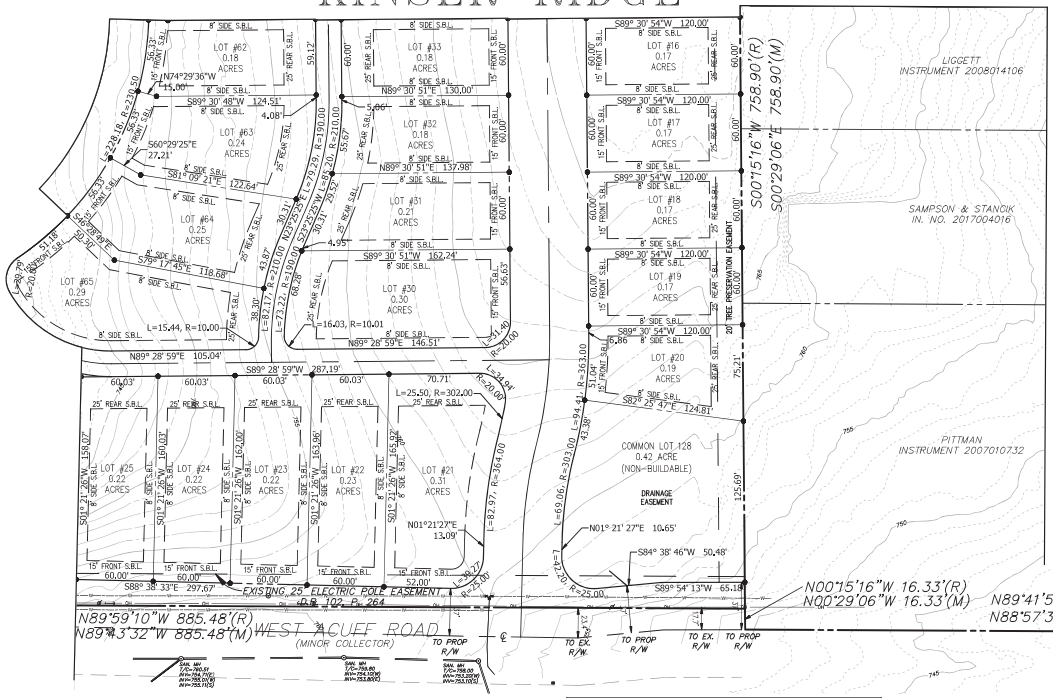
SHEET 7 OF 8

KINSER RIDGE PRELIMINARY PLAT



RECORDER STAMP

OWNER CERTIFICATION:

THE UNDERSIGNED, BEACON BUILDERS, LLC, BEING THE OWNER OF THE ABOVE DESCRIBED REAL ESTATE, DOES HEREBY LAYOFF, PLAT AND SUBDIVIDE THE SAME INTO LOTS AND STREETS IN ACCORDANCE WITH THIS PLAT. THIS WITHIN PLAT SHALL BE KNOWN AND DESIGNATED AS BAXTER VILLAGE.

ALL ADDITIONAL ROAD RIGHT-OF-WAYS SHOWN AND NOT PREVIOUSLY DEDICATED ARE HEREBY DEDICATED TO THE PUBLIC.

IN WITNESS WHEREOF, BEACON BUILDERS, LLC HAS HEREUNTO

EXECUTED THIS _____ DAY OF _____, 20____

BY:_____
NAME & TITLE

NOTARY CERTIFICATION:

BEFORE ME, A NOTARY PUBLIC IN AND FOR THE STATE OF INDIANA AND MONROE COUNTY, PRESONALLY APPEARED _____, AGENT OF BEACON BUILDERS, LLC, BEING THE OWNER OF THE DESCRIBED REAL ESTATE AND WHO ACKNOWLEDGED THE EXECUTION OF THE FOREGOING PLAT FOR THE REAL ESTATE KNOWN AS KINSER RIDGE SUBDIVISION, AS HIS VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES THEREIN EXPRESSED.

WITNESS MY HAND AND NOTARIAL SEAL THIS_____DAY OF

_____, 20____.

_____, NOTARY PUBLIC

COUNTY OF RESIDENCE:_____

MY COMMISSION EXPIRES:_____

CERTIFICATE OF APPROVAL OF PLAN COMMISSION

UNDER THE AUTHORITY OF INDIANA CODE 36-7-4 700 SERIES, ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF INDIANA AND ORDINANCE ADOPTED BY THE COMMON COUNCIL OF THE CITY OF BLOOMINGTON, INDIANA, THIS PLAT WAS GIVEN APPROVAL BY THE CITY OF BLOOMINGTON AS FOLLOWS:

APPROVED BY THE CITY PLAN COMMISSION AT A MEETING HELD:

_____

_____
DIRECTOR OF PLANNING AND TRANSPORTATION

EASEMENT NOTES:

DRAINAGE EASEMENT

1. Shall be required for any surface swales or other minor drainage improvements that are intended to serve the lots on which they are located.
2. Shall prohibit any alteration within the easement that would hinder or redirect flow.
3. Shall provide that the owner of the lot on which the easement is placed shall be responsible for maintenance of the drainage features within such easement.
4. Shall be enforceable by the City Utilities Department and by owners of properties that are adversely affected by conditions within the easement.
4. Shall allow the City Utilities Department to enter upon the easement for the purpose of maintenance, to charge the costs of such maintenance to the responsible parties, to construct drainage facilities within the easement, and to assume responsibility for the drainage features at its discretion.

UTILITY EASEMENT

1. Shall allow both private and public utility providers access associated with the installation, maintenance, repair, or removal of utility facilities.
2. Prohibits the placement of any unauthorized obstruction within the easement area unless authorized by the City Utilities Department and the easement holder(s).

SETBACK TABLE

R2 (RESIDENTIAL MEDIUM LOT)

FRONT YARD SETBACK	SIDE YARD SETBACK	REAR YARD SETBACK
15' FROM R-O-W	8'	25'
25' FROM R-O-W (FRONT LOADING GARAGE OR CARPORT)	10' FOR EACH STORY ABOVE GROUND FLOOR	

SURVEYOR'S CERTIFICATE:

THIS SURVEY WAS PERFORMED UNDER THE DIRECTION OF THE UNDERSIGNED, AND TO THE BEST OF THIS SURVEYOR'S KNOWLEDGE AND BELIEF WAS EXECUTED ACCORDING TO SURVEY REQUIREMENTS IN 865 IAC 1-12 FOR THE STATE OF INDIANA.
DATED THIS_____ DAY OF_____, 20___.

PROFORMA FOR REVIEW ONLY

Prepared by:

_____
Charles D. Graham
Registration No. LS29500014
I affirm under penalties of perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

FOR SURVEYOR'S REPORT PLEASE REFER TO RETRACEMENT SURVEY RECORDED AT INSTRUMENT 2024007657 IN THE OFFICE OF THE RECORDER OF MONROE COUNTY, INDIANA

FLOOD NOTE: According to FEMA Flood Insurance Rate Map (FIRM) this real estate is part of Community-Panel Number: 18105C 0133D, Effective Date: December 17, 2010. This property is located in Zone X, an area of minimal flood hazard.

LEGEND

WATER LINE
OVERHEAD ELECTRIC LINE
BOUNDARY LINE
LOT LINE
EASEMENT LINE
SET BACK LINE
ROAD CENTERLINE
REBAR SET "BFA 9500014"
REBAR FOUND
CONCRETE R/W MARKER FOUND

KINSER RIDGE SUBDIVISION
Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

402365

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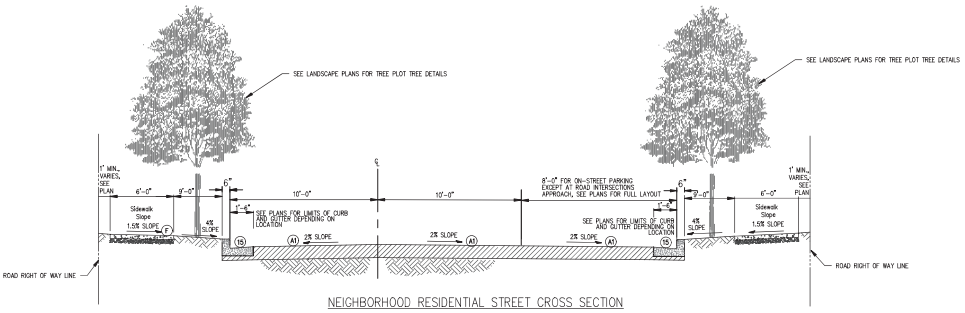
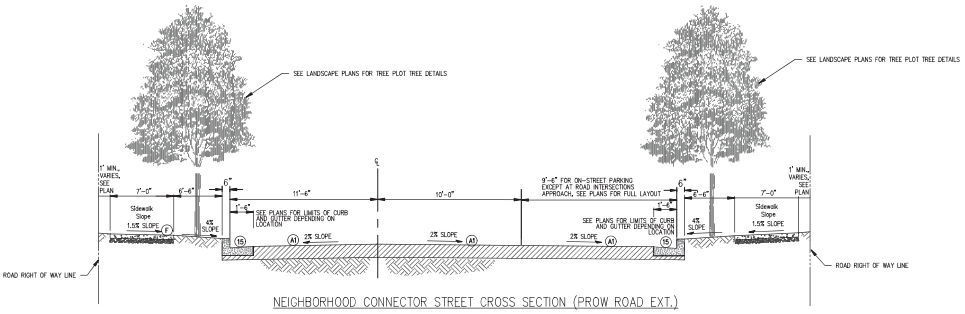


NEIGHBORHOOD RESIDENTIAL STREET CROSS SECTION



NEIGHBORHOOD CONNECTOR STREET CROSS SECTION (PROW ROAD EXT.)

KINSER RIDGE SUBDIVISION

Part of SW 1/4, Section 17, Township 9 North, Range 1 West

Date:06/21/2024

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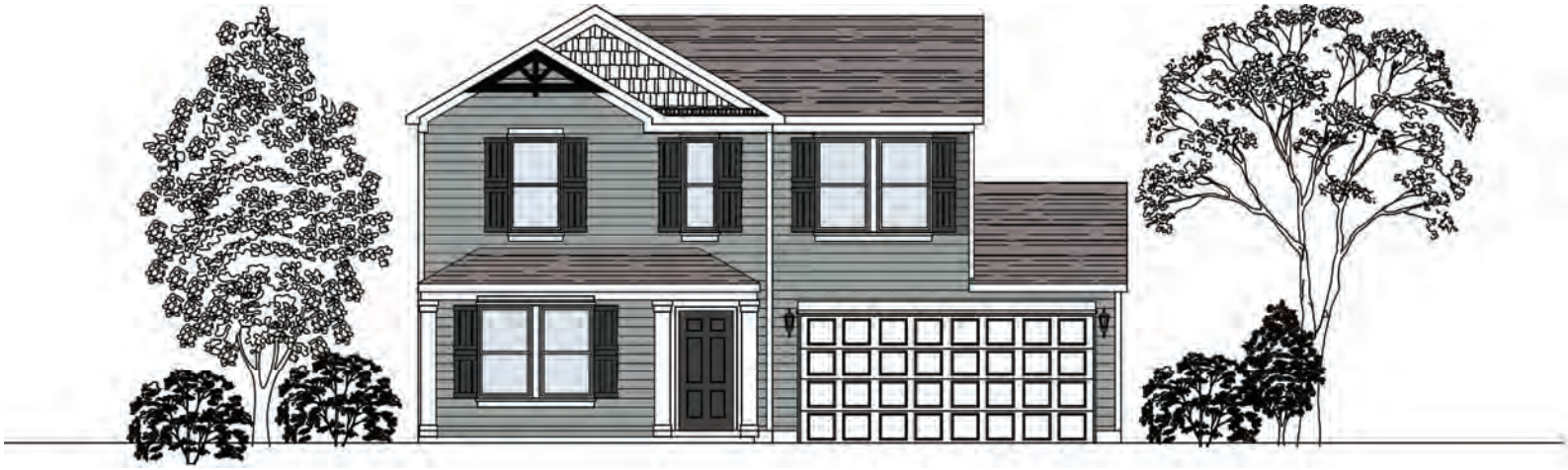

Old Indiana Queen Brick

Lighthouse Red Siding

White Trim

Dark Grey Door

BEACON BUILDERS

The1880 Elevation 4

Richmond Red Siding

Ashbury Brick

White Trim

Cream Door

BEACON BUILDERS

2060 Elevation 1

The 2082

Ashbury Brick

Regatta Blue Siding

White Trim

Dark Grey Door

BEACON BUILDERS

The 2286 Elevation 2

Signature Blend Brick

Rain Forest Siding

White Trim

Dark Brown Door

BEACON BUILDERS

The 2552 Elevation 2

BLOOMINGTON

Eric Greulich <greulice@bloomington.in.gov>

Fwd: [Planning] DP-27-24/Plat2024/07/0034 Kinser Ridge

Melissa Hirtzel <hirtzelm@bloomington.in.gov> Tue, Aug 20, 2024 at 2:51 PM
To: Eric Greulich <greulice@bloomington.in.gov>, Planning Department <planning@bloomington.in.gov>

Hi Eric,

Figured this should go to you!

Thank you!

Melissa Hirtzel
Office Manager,
Planning & Transportation
hirtzelm@bloomington.in.gov
812.349.3424 Office
bloomington.in.gov

---------- Forwarded message ---------
From: **Edwards, Mary L** <maredwar@iu.edu>
Date: Tue, Aug 20, 2024 at 2:45 PM
Subject: [Planning] DP-27-24/Plat2024/07/0034 Kinser Ridge
To: planning@bloomington.in.gov <planning@bloomington.in.gov>
Cc: scanlanj@bloomington.in.gov <scanlanj@bloomington.in.gov>, Edwards, Michael L <miledwar@iu.edu>

Hello,

My husband and I would like to express our great concern regarding the easement on Kinser Pike being used as an access street for the new Kinser Ridge addition. We were initially told they would have to use this easement so there would be two points of access for the new addition but we learned at the meeting on August 12th they now plan to put two entrances on the south side (Acuff and Prow) so we'd like the Planning Commission to revisit the need for this third one on Kinser Pike. Although a traffic study was done on this area, it was done after both the IU academic year had ended and more importantly after the Monroe County School system ended regular classes for summer break which means none of the traffic volume created by Bloomington High School North was included or any of the other local schools such as Tri North Middle School, Arlington Elementary and Marlin Elementary. In addition, although the speed limit for Kinser Pike is 30 mph, anyone who lives on this street can tell you the majority of cars go much faster than that which makes pulling out in blind areas difficult at least and dangerous in some situations. On any given day we see high school track teams running along Kinser, bicycles going in both directions (both residents of the area and college teams who are out training) all while regular traffic is coming and as well as large dump trucks, FedEx, Amazon, US Postal Mail (all daily), trash trucks and even semi's at times.

One other note of concern is the large amount of wildlife in this area that uses this easement as a pass-through from one location to another, including deer, coyotes, foxes and many other smaller animals because it's the only non-residential east/west lot in this neighborhood. We realize this isn't probably a high priority for the Planning Commission but it's just another challenging issue for traffic on Kinser Pike each day. We are very concerned that having a street which accesses 100+ homes, here in this location, could be very hazardous.

We'd like to know the official justification for the Kinser Pike access (something was mentioned at the meeting about the fire department but that no one had actually checked with them). We are not advocating for additional stop signs or a stoplight but would instead like to eliminate the planned access entirely.

We appreciate your time and consideration of our concerns. Please let us know if there is another email we should be sending this to.

Sincerely,

Mike and Mary Edwards
4125 N Kinser Pike

Rebecca Pittman
1002 West Acuff Road
Bloomington, IN 47404
August 24, 2024

Dear City of Bloomington Planning and Transportation Department,

I'm writing in regards to the proposed subdivision, Kinser Ridge at 1030 West Acuff Road. My husband Jack and I have several questions and concerns about this proposed development. We would like our questions to be answered and our concerns to be addressed/considered by Bloomington's planning department.

We know the city planners desire more affordable housing in Bloomington, and while at first glance this development may seem like a contributing solution, we don't believe these homes will be that affordable in the end. The base price of the proposed homes sounds reasonable, but once upgrades are factored in, and these all-electric homes are built, they will not be nearly as affordable as proposed (To our knowledge, natural gas is not going to be offered at Kinser Ridge, yet it is nearby and accessible, and would be much more economical). In addition, homeowners will be paying city property taxes, which are much higher than the taxes in other areas of Monroe County.

Houses on Kinser Pike to which this proposed subdivision would back up are well-established homes with sizable lots, and this area has a rural feel. If this subdivision is built, It makes sense to us to have the houses in phase 1 and 2 also be on sizable lots, not the tiny ones being proposed. This would be more complementary and extend the rural, more established feel of this neighborhood. In our opinion, the lots near Highway 69 by the overhead power lines will be much less desirable for obvious reasons. These lots could be smaller and more reasonably priced, which might be more enticing for some to purchase. We question whether these lots will sell at all given the noise factor from the highway and the obtrusive and unsightly power line.

Since we live on the corner of Acuff Road and Kinser Pike, we have great concerns about the TWO public street connectors to Acuff Road being mere yards from each other. The connector with Rosewood Drive will turn the Ridgewood subdivision into a thoroughfare for people trying to find a faster way to access Kinser Pike. Given the connector to Prow Road, we question whether the connector to Rosewood Drive is smart or even necessary.

The above concern leads right to the HUGE traffic issue the proposed Kinser Ridge subdivision will create. A traffic study was conducted on May 29, 2024, but it could have been in NO way adequate or realistic since neither MCCSC or IU was in session at the time. Traffic on Acuff Road and Kinser Pike is already extremely heavy and backs up quickly all the time, and the addition of vehicles from another 122 houses is going to greatly increase the traffic and cause accidents. Because of BHSN and Meadows Hospital, Acuff Road and Kinser Pike are already heavily traveled. I travel Prow Road to Arlington Road every weekday because I teach in Ellettsville, and traffic is always backed up. It is equally as backed up if I travel Kinser Pike to the by-pass. Moreover, the subdivision street connector to Kinser Pike is in a very dangerous location. It is incredibly difficult to see over the rise there, and drivers frequently speed down Kinser Pike. Accidents will undoubtedly occur.

My husband and I also have concerns about the water runoff from this development. The proposed plan had a detention pond right behind our property, but we question the adequacy of it to deal with the water that runs along Acuff Road to our storm drain at the corner near Kinser Pike, especially after a heavy rain. For years we have dealt with a huge amount of runoff, and we have asked the city multiple times about installing a rain gutter down the north side of Acuff Road, but the most we've ever received is some gravel along the road, which eventually just washes down to the storm drain. With this proposed Kinser Ridge development, there is going to be concrete sidewalks installed that simply end, and we doubt the proposed detention pond will be adequate to solve the runoff issue when inevitable heavy rains come. If this issue is not addressed and rectified at the time of construction, we will be left dealing with it on our own later, and that seems grossly unfair.

In addition to the rain gutter, there have been questions about whether the subdivision's sidewalk along Acuff Road will extend down to Kinser Pike making this entire area more pedestrian friendly. This of course would mean construction of the sidewalk extension would be on our property. We feel if there is going to be a sidewalk, it needs to be constructed at the same time as the sidewalk at Kinser Ridge so it is continuous. Otherwise, if this sidewalk is left for later time, any plans we have for landscaping and beautification will be on hold. We don't want to do anything in this area of our yard just to have it ripped up in the future. We also question whether a sidewalk can actually be installed on the north side of Acuff Road due to the main water line which runs along there. If the builder or the city isn't willing to continue the sidewalk down Acuff Road, or it is not possible to install one at all, then we feel the sidewalk at Kinser Ridge should be stopped at Rosewood Drive and a pedestrian flasher installed, so people can cross the street and walk down the sidewalks that are already running behind the condos on Acuff Road.

Finally, I am listing some additional questions, as well as asking for some further considerations here.

- Is the city going to mow and maintain these green spaces/common areas in the proposed Kinser Ridge subdivision? If there is a playground installed as was mentioned in the hearing on August 12, 2024, will the city maintain this as well?

- If this subdivision is built, we feel that native plants and trees should be planted around all the detention ponds.

- We also would like all the tree lines to be preserved with as much undergrowth left as possible to provide privacy–ONLY existing dead trees be removed.

We greatly appreciate the planning department's attention to the matters I have mentioned in this letter. We ask that you please answer our questions and consider the issues I have brought up before granting approval of the Kinser Ridge subdivision.

Sincerely,

Rebecca Pittman

Case # ZO-30-24 Memo

To: Bloomington Plan Commission

From: Jackie Scanlan, AICP Development Services Manager

Date: October 7, 2024

Re: Text Amendments to Unified Development Ordinance: Returned from Council

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The Plan Commission heard case ZO-30-24 on August 12, 2024 and sent the petition to the Common Council with positive recommendation. The petition were amended by the Common Council at its September 18, 2024 Regular Session, and is being returned to the Plan Commission. A memo from the Common Council describing the amendment, which was to amend an additional reference to 18 percent slope to 25 percent slope, is attached.

City of Bloomington
Office of the Common Council

September 20, 2024

City of Bloomington Plan Commission
401 North Morton Street, Room 160
P.O. Box 100
Bloomington, IN 47402

Dear Plan Commissioners,

This letter is being written pursuant to I.C. 36-7-4-607(e), which requires the Council, in the event it amends a proposal to amend the text of the City's zoning ordinance, to return the proposal and the amendment(s) to the Plan Commission, with a statement of reasons for the amendment(s). On August 14, 2024, the Common Council received ce1tification of the Plan Commission's action on proposals to amend certain provisions of the Unified Development Ordinance, which came forward as:

- Ordinance 2024-17 - To Amend Title 20 (Unified Development Ordinance) of the Bloomington Municipal Code -Re: Amendments and updates related to grading permit and alignment with Title 13 and BMC 20.04 related to steep slopes

At a Regular Session on September 18, 2024, the Common Council approved of the ordinance listed above with one amendment, all by a vote of 8-0. Attached to this correspondence are copies of the following records:

- Ordinance 2024-17, signed by the Council President;
- Attachment A to this ordinance, consisting of Z0-30-24, the proposal forwarded to the Council by the Plan Commission;
- Attachment B to this ordinance, consisting of the relevant Council amendment to the proposal, which includes a written statement of the reasons for the amendment.

The Council extends its deep appreciation for the work of the Plan Commissioners and staff on these items and is looking forward to your response to these proposed amendments. Please forward any questions to your staff and your attorney.

Sincerely,

I Piedmont-Smith

Isabel Piedmont-Smith, President
Bloomington Common Council

Passed 8-0

ORDINANCE 2024-17
TO AMEND TITLE 20 (UNIFIED DEVELOPMENT ORDINANCE)
OF THE BLOOMINGTON MUNICIPAL CODE –
Re: Amendments and updates related to grading permit and alignment with Title 13 and BMC 20.04 related to steep slopes

WHEREAS, the Common Council, by its Resolution 18-01, approved a new Comprehensive Plan for the City of Bloomington, which took effect on March 21, 2018; and

WHEREAS, thereafter the Plan Commission initiated and prepared a proposal to repeal and replace Title 20 of the Bloomington Municipal Code, entitled "Unified Development Ordinance" ("UDO"); and

WHEREAS, on December 18, 2019 the Common Council passed Ordinance 19-24, to repeal and replace the UDO; and

WHEREAS, on January 14, 2020 the Mayor signed and approved Ordinance 19-24; and

WHEREAS, on April 15, 2020, the Common Council passed Ordinance 20-06 and Ordinance 20-07; and

WHEREAS, on April 18, 2020, the Unified Development Ordinance became effective; and

WHEREAS, on August 12, 2024, the Plan Commission voted to favorably recommend this amendment proposal to the Common Council, after providing notice and holding public hearings on the proposal as required by law; and

WHEREAS, the Plan Commission certified this amendment proposal to the Common Council on August 14, 2024; and

WHEREAS, in preparing and considering this proposal, the Plan Commission and Common Council have paid reasonable regard to:

1) the Comprehensive Plan;
2) current conditions and character of current structures and uses in each district;
3) the most desirable use for which land in each district is adapted;
4) the conservation of property values throughout the jurisdiction; and
5) responsible development and growth;

NOW, THEREFORE, BE IT HEREBY ORDAINED BY THE COMMON COUNCIL OF THE CITY OF BLOOMINGTON, MONROE COUNTY, INDIANA, THAT:

SECTION I. Title 20 of the Bloomington Municipal Code, entitled "Unified Development Ordinance", is amended.

SECTION II. An amended Title 20, entitled "Unified Development Ordinance", including other materials that are incorporated therein by reference, is hereby adopted. Said replacement ordinance consists of the following documents which are attached hereto and incorporated herein:

1. The Proposal forwarded to the Common Council by the Plan Commission with a favorable recommendation, consisting of:
   (A) ZO-30-24 (hereinafter "Attachment A")
   (B) Any Council amendments thereto ("Attachment B")

SECTION III. The Clerk of the City is hereby authorized and directed to oversee the process of consolidating all of the documents referenced in Section II into a single text document for codification.

SECTION IV. Severability. If any section, sentence, or provision of this ordinance, or the application thereof to any person or circumstances shall be declared invalid, such invalidity shall not affect any of the other sections, sentences, provisions, or applications of this ordinance which can be given effect without the invalid provision or application, and to this end the provisions of

this ordinance are declared to be severable.

SECTION V. This ordinance shall be in full force and effect from and after its passage by the Common Council and approval by the Mayor.

PASSED AND ADOPTED by the Common Council of the City of Bloomington, Monroe County, Indiana, upon this 18 day of September, 2024.

_____
ISABEL PIEDMONT-SMITH, President
Bloomington Common Council

ATTEST:

_____
NICOLE BOLDEN, Clerk
City of Bloomington

PRESENTED by me to Mayor of the City of Bloomington, Monroe County, Indiana, upon this _____ day of _____, 2024.

_____
NICOLE BOLDEN, Clerk
City of Bloomington

SIGNED AND APPROVED by me upon this __ day of _____, 2024.

_____
KERRY THOMSON, Mayor
City of Bloomington

SYNOPSIS

This petition contains amendments throughout Title 20 related to changes to the grading permit and other erosion control regulations and amendments to 20.04 related to steep slopes to align with State regulations.

****ORDINANCE CERTIFICATION****

In accordance with IC 36-7-4-604 I hereby certify that the attached Ordinance Number 2024-17 is a true and complete copy of Plan Commission Case Number ZO-30-24 which was given a recommendation of approval by a vote of 8 Ayes, 0 Nays, and 0 Abstentions by the Bloomington City Plan Commission at a public hearing held on August 12, 2024.

Date: August 14, 2024

D-H-

David Hittle, Secretary
Plan Commission

Received by the Common Council Office this _____ day of _____, 2024.

Nicole Bolden, City Clerk

Appropriation Ordinance # _____ Fiscal Impact Statement Ordinance # _____ Resolution # _____

Type of Legislation:

Appropriation	End of Program	Penal Ordinance
Budget Transfer	New Program	Grant Approval
Salary Change	Bonding	Administrative Change
Zoning Change	Investments	Short-Term Borrowing
New Fees	Annexation	Other

If the legislation directly affects City funds, the following must be completed by the City Controller:

Cause of Request:

Planned Expenditure	_____	Emergency	_____
Unforeseen Need	_____	Other	_____

Funds Affected by Request:

Fund(s) Affected		
Fund Balance as of January 1	$	$
Revenue to Date	$	$
Revenue Expected for Rest of year	$	$
Appropriations to Date	$	$
Unappropriated Balance	$	$
Effect of Proposed Legislation (+/-)	$	$
Projected Balance	$	$

Signature of Controller

Will the legislation have a major impact on existing City appropriations, fiscal liability or revenues?

Yes _____ No XX

If the legislation will not have a major fiscal impact, explain briefly the reason for your conclusion.

Approval of case ZO-30-24 amends the Unified Development Ordinance (UDO), with amendments and updates related to alignment with Bloomington Municipal Code Title 13 and House Enrolled Act 1108, by the Bloomington Plan Commission. This ordinance is in accordance with Indiana Code 36-7-4-600.

If the legislation will have a major fiscal impact, explain briefly what the effect on City costs and revenues will be and include factors which could lead to significant additional expenditures in the future. Be as specific as possible. (Continue on second sheet if necessary.)

Case # ZO-30-24 Memo

To: Bloomington Common Council

From: Jackie Scanlan, AICP Development Services Manager

Date: August 14, 2024

Re: Text Amendments to Unified Development Ordinance

The Plan Commission heard case #ZO-30-24 on August 12, 2024 and voted to send the petition to the Common Council with a positive recommendation with a vote of 8-0. The report and documents submitted to the Plan Commission by the Planning and Transportation Department are below.

The Planning and Transportation Department proposes an update to the Unified Development Ordinance (UDO), Title 20 of the Bloomington Municipal Code, in order to address two legislative changes that affect this Title.

Title 13 was approved by the Bloomington Common Council on May 8, 2024 and signed into law by Mayor Thomson on May 13, 2024. Title 13 went into effect on July 1, 2024. Title 13, Stormwater, addresses stormwater permitting requirements enacted by the Indiana Department of Environmental Management. Stormwater management was previously, in part, regulated by Title 20. This Ordinance seeks to amend Title 20 in order to align it with approved Title 13. The changes to Title 20 include a removal of the grading permit and a reconfiguration of permitting the rest of the site improvements, including parking, landscaping, bicycle parking, etc. that were previously reviewed for permitting in through the grading permit process. There are also updates in the parking section related to stormwater treatment in parking lots, as well as the removal of the Erosion and Siltation section. All items removed from Title 20 are now covered by the permitting process in Title 13.

The second legislative change was approved by the State of Indiana legislature and is related to steep slope regulation. The regulations related to development on steep slopes is contained within Title 20. This Ordinance seeks to amend Title 20 in order to align it with the new State regulations. Title 20 is proposed to change the outlying slope percentage from 18 percent to less than 25 percent.

BLOOMINGTON
INDIANA

UNIFIED DEVELOPMENT ORDINANCE

CLARION

McBrideDALE CLARION

Effective Date: April 18, 2020

Last Amended Date: June 6, 2024

(b) Effect of Change in the Law after Filing of Complete Petition

(1) For any petition filed with the city prior to the effective date of this UDO for any permit or approval listed in Section20.01.040(b)(3), the effect of any change in the applicable law after submittal of such petition but prior to the grant or denial of the permit or approval sought shall be governed by the transition rules of the prior zoning ordinance that was in effect on the date of petition submittal.

(2) Whenever a complete petition is filed with the city on or after the effective date of this UDO for any of the permits or approvals listed in Section 20.01.040(b)(3), the grant or denial of such permit or approval, and the grant or denial of any secondary, additional or related permit or approval required by the city with respect to the general subject matter of the first complete petition, shall be governed by the statutes, ordinances, rules, development standards, and regulations applicable to the property in question ("Requirements") that were in effect at the time of the first complete petition, for the time periods listed in Section 20.01.040(b)(4), notwithstanding any change in such requirements that occurs after such first petition but prior to the grant or denial of such permit or approval, except as otherwise provided herein.

(3) The permits and approvals covered by this section are:

(A) Section 20.06.050(a) (Site Plan Review);

(B) Section 20.06.050(b) (Conditional Use Permit);

(C) Section 20.06.060(b) (Primary Plat);

(D) Section 20.06.060(c) (Secondary Plat);

(E) Section 20.06.050(e) (Site Development Permit~~Grading Permit~~);

(F) Section 20.06.050(f) (Certificate of Zoning Compliance);

(G) Section 20.06.070(c) (Rezoning to Planned Unit Development).

(4) The requirements in effect at the time of the first complete petition submittal for a permit or approval described in Section 20.01.040(b)(2) shall continue to govern such first complete petition and any secondary, additional or related permits described in that subsection for a period of at least three years from the date of the first complete petition. If no construction or other activity to which the permit or approval relates is commenced within that three-year period, then after that period the renewal of any expired permit, and the grant or denial of any new petition for any secondary, additional or related permit, shall be governed by then current regulations if the Planning and Transportation Director, based upon advice from the City Legal Department, determines that such action is lawful and does not deprive the owner or petitioner of any vested right. Moreover, if construction or other activity to which the permit or approval relates is not completed within 10 years of the date upon which such construction or other activity commenced, then after that period the renewal of any expired permit, and the grant or denial of any new petition for any secondary, additional or related permit, shall be governed by then current regulations if the Planning and Transportation Director, based upon advice from the City Legal Department, determines that such action is lawful and does not deprive the owner or petitioner of any vested right.

(5) Where a permit or approval is rendered pursuant to this section, any construction, use or other activity authorized by such permit or approval shall be treated as lawfully nonconforming to the extent such activity does not conform to the current requirements of this UDO and shall be subject to the provisions of Section 20.06.090 (Nonconformities).

Communication facilities	Communication facilities are exempt from height restrictions, subject to the limitations of 20.03.030(f)(1) (Communication Facility).

No building or structure or part of a building or structure shall exceed the maximum building height within any zoning district unless authorized in Table 04-7, or elsewhere in this UDO.

(g) Building Floor Plate

(1) The area of the lot covered by the primary building shall be included in the calculation of building floor plate in all districts.

(2) The area of a lot covered by accessory buildings, parking garages, carports, and utility and storage sheds shall not be included in this calculation.

(h) Minor Modification

Minor modifications to some of the dimensional standards in this section may be available through the Minor Modification process in Section 20.06.080(a) (Minor Modification), which may be approved by staff during the petition process without the need to apply for a variance, provided that the criteria in Section 20.06.080(a) are met.

20.04.030 Environment

(a) Purpose

The Bloomington area is characterized by a wide variety of environmental features that affect the way land is developed. These features include karst geology (sinkholes, caves, springs, etc.), wetland areas, steep slopes, mature tree stands, and water resources such as lakes, streams and other surface watercourses. It is prudent and necessary that every area that becomes the subject of a petition for development be routinely scrutinized for the presence of environmental features in order to protect and enhance these environmental features and help mitigate the climate and extinction emergencies as well as the public health, ecology, and welfare.

(b) Applicability

Compliance with this Section 20.04.030 (Environment) shall be required pursuant to Section 20.04.010 (Applicability) and the specific applicability criteria established in Sections 20.04.030(c) through 20.04.030(j)~~20.04.030(j)~~.

(c) Steep Slopes

(1) Applicability

This section shall apply to all land-disturbing activities on properties that contain naturally occurring steep or excessive slopes.

(2) Slope Measurement

For the purposes of this section, the percent slope shall be calculated by dividing the number of feet of elevation change between the top and toe of the slope in question by the horizontal distance of the slope in question, then multiply by 100 to acquire a percent figure.

(3) Easements

All slope areas required to be preserved subject to this section shall be placed within conservation easements pursuant to the standards of Section 20.05.040 (Easements).

(4) Excessive Slopes

Areas of land where the pre-development slopes are 25 percent or greater~~greater than 18 percent~~ shall not be disturbed for any improvements with the exception of utility lines.

(5) Steep Slopes

Any development on slopes between 12 percent and less than 25~~18~~ percent shall be allowed a maximum disturbance of 50 percent of the total slope area. Priority for slope preservation shall be given to slope areas that exhibit one or more of the following characteristics:

(A) Presence of highly erodible soils as identified in the Web Soil Survey produced by the National Cooperative Soil Services and operated by the USDA Natural Resources Conservation Service;

(B) Adjacent to slopes of greater than 18 percent;

(C) Adjacent to water resources;

(D) Adjacent to other environmental features that are required to be preserved as part of this UDO; or

(E) Presence of tree cover on 50% or more of the surface area of the slope.

(6) Construction Measures

Any development on slopes between 12 percent and 18 percent shall incorporate construction measures such as retaining walls and walkout basements as well as current preferred practices for erosion control measures during construction, as provided in ~~Section 20.04.030(d)(3)(A)~~Title 13 (Stormwater) of the Bloomington Municipal Code.

(7) Street Grades

Arterial and collector streets shall not exceed grades of six percent and local streets or alleys shall not exceed grades of eight percent unless the petitioner demonstrates that steeper grades will minimize disturbances to existing topography.

(8) Street Design

All drives and streets shall follow the topography with a minimum of cutting and filling.

(9) Soil Constraints

When unstable or contaminated soils are found, the effect of cutting and filling, alterations to slope, and the stabilization measures required to either avoid or address unstable or contaminated soils shall be minimized to the maximum extent practicable, given the soil condition to be avoided or mitigated.

(10) Overlapping Preservation Areas

Where acreage set aside to fulfill the conservation or buffer requirements in Section 20.04.030(d)~~20.04.030(e)~~, Section 20.04.030(f)~~20.04.030(g)~~, Section 20.04.030(g)~~20.04.030(h)~~, and Section 20.04.030(h)~~20.04.030(i)~~ also meets the requirements for steep slope preservation under this section, such acreage shall be counted toward fulfillment of all applicable requirements.

(d) Siltation and Erosion Prevention

(1) Applicability

(A) This subsection applies to any land development or land-disturbing activities that include one or more of the following conditions:

i. That disturbs a ground surface of 2,500 square feet or more;

ii. That involves excavation or filling of dirt, sand, or clean fill, including but not limited to single-family development;

iii. That involves street, highway, or bridge construction, enlargement, relocation or reconstruction; or

iv. That involves the laying, repairing, replacing, or enlarging of an underground pipe, facility, or any utility.

(B) All municipal government departments, including the City Utilities Department, shall comply with this section.

(2) Compliance with Other Regulations Also Required

Compliance with the requirements set out in this section shall not relieve any person of the independent obligation to comply with all applicable standards and practices set out in Indiana Administrative Code, 327 IAC 15 (Article 15), regarding stormwater runoff; the Indiana Stormwater Quality Manual developed by the Indiana Department of Environmental Management (IDEM); all applicable provisions of Title 10 (Wastewater) of the Bloomington Municipal Code regarding stormwater runoff; and all applicable rules, regulations, standards and specifications of the City Utilities Department regarding stormwater management practices.

(3) Erosion and Pollutant Control Requirements

(A) Current Preferred Practices

All sites undergoing land disturbing activities, regardless of size, shall prevent the erosion of sediment or any other contaminant off site or conveyed into any bodies of water, either by wind or water. All land disturbing activities shall be protected by current preferred practices (CPP) including, but not limited to silt or erosion-control fences, filter socks, straw bales, sedimentation basins, articulated concrete blocks, mechanically stabilized earth, storm grate filters, or erosion control mats.

(B) Environmental Features

For land-disturbing activities that occur adjacent to environmentally sensitive areas including but not limited to steep slopes, sinkholes, floodplain, and riparian buffers; redundant erosion control measures, such as additional barriers and reduced timelines for soil stabilization, shall be required, as determined by the Planning and Transportation Director.

(C) Waste and Material Disposal

Waste and unused building materials (e.g., garbage, debris, cleaning wastes, concrete waste, wastewater, toxic materials or hazardous materials) shall be properly disposed of in facilities labeled and designed for the containment of those materials while minimizing air, soil, and water pollution to the maximum degree practicable.

~~(D) **Tracking**~~

~~Each site shall have sediment control devices or crushed stone streets, access drives, and parking areas of sufficient size and thickness to prevent sediment from being tracked onto public or private streets. Such areas shall be maintained at sufficient size and thickness throughout the duration of the construction activity on site. Any sediment that leaves the site is a violation of this UDO.~~

~~(E) **Drain Inlet Protection**~~

~~All storm inlets shall be protected with best management practices meeting accepted design criteria, standards and specifications.~~

~~(F) **Sediment Control**~~

~~Sediment shall be controlled and contained on site, and control measures shall prevent damage to existing vegetation or pavement.~~

~~(G) **Ground Cover**~~

~~Vacant land held for development shall be planted with grass or other vegetative ground cover that complies with Section 20.04.080(l) (Vacant Lot Landscaping).~~

~~(H) **Inspection**~~

~~All erosion control measures shall be installed by the developer and inspected and approved by the City Planning and Transportation Department before land-disturbing activity may take place. Where applicable, developers shall follow their self-monitoring inspection program throughout construction as outlined in Bloomington Municipal Code Section 10.21.070(r).~~

~~(I) **Finished Grade**~~

~~Disturbed areas that are at finished grade with installed utilities shall be permanently seeded or mulched within seven days.~~

~~(J) **Unfinished Grade**~~

~~Areas that have undergone land-disturbing activities and are not yet at finished grade, and that have no construction activity for 15 days or more, shall be established with temporary vegetation, seed, and/or straw, or other measures approved by the City.~~

~~(K) **Soil Stockpiles**~~

~~All soil stockpiles shall be protected by erosion control barriers and areas that remain inactive for seven days or more shall be seeded, covered, or protected.~~

~~(L) **Plastic Netting**~~

~~Under no circumstances shall plastic netting or plastic mesh be used on site for any type of landscaping or erosion control.~~

~~(M) **Single-Family Lots**~~

~~Single-family lots that remain inactive for 15 days or more shall be established with temporary vegetation.~~

~~(N) Channelized Runoff~~

~~Channelized runoff from off-site areas passing through a construction site shall be diverted around disturbed areas. Sheet flow runoff from off-site areas shall also be diverted around disturbed areas. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.~~

~~(O) Sequence of Land-Disturbing Activity~~

~~Land-disturbing activity shall be performed in a construction sequence that minimizes the area of bare soil exposed at any one time. Construction sequencing shall be subject to the approval of the City Planning and Transportation Department.~~

~~(e)~~(d) Drainage

(1) Applicability

All proposed site plans submitted for approval, under the provisions of this UDO, shall provide for the collection and management of all surface water drainage.

(2) Exemption

The construction of single-family, duplex, triplex, fourplex, Mobile home, and manufactured home dwellings on existing lots of record where fully engineered drainage infrastructure is in place prior to occupancy of the home shall be exempt from the requirements of this Section 20.04.030 (Environment).

~~(3) Drainage Plan~~

~~All grading permit petitions shall include the submittal of a drainage plan to the City Utilities Department. The drainage plan shall include, but not be limited to, the following items:~~

~~(A) Complete construction plan showing all proposed detention and retention facilities, swales, and drainage structures.~~

~~(B) All proposed piping including size and location of proposed stormwater lines, as well as plan and profile drawings for all proposed improvements.~~

~~(C) Complete and accurate stormwater calculations justifying methodology of the drainage plan in compliance with City Utilities Department standards.~~

~~(4) Stormwater Mitigation Requirements~~

~~Drainage facilities shall be provided to control runoff from all upstream drainage areas and from all areas within the site to a location adequate to receive such runoff, and shall:~~

~~(A) Be designed and constructed in accordance with City Utilities Department standards.~~

~~(B) Be durable, easily maintained, retard sedimentation, and retard erosion, not endanger the public health and safety, and not cause significant damage to property.~~

~~(C) Be sufficient to accept runoff from the site after development and the present water runoff from all areas upstream to achieve discharge rates meeting City Utilities Department standards.~~

~~(D) Provide stormwater runoff quality mitigation in compliance with City Utilities Department standards.~~

~~(5)~~(3) Poorly Drained Sites

Development proposed for sites that are adjacent to a floodplain area, located in an area with converging drainage flows, located in an area characterized by documented drainage problems, or located in an area with closed, depressed contour lines as shown on the City's GIS maps shall be subject to a higher level of drainage plan review. Site plans for these areas shall submit documentation that finished floor elevations of structures shall be at least two feet above areas that would be flooded during a one hundred-year storm event.

~~(6)~~(4) Dry Hydrants

Any development that incorporates a retention pond with a standing pool of water of at least 10,000 cubic feet in volume shall provide a dry hydrant that meets the specifications of the National Fire Protection Association (NFPA) Standard on Water Supplies for Suburban and Rural Fire Fighting, NFPA 1142 Chapter 9 (2001 Edition), or any subsequent amendment thereto.

~~(f)~~(e) Riparian Buffers

(1) Applicability

(A) This subsection shall apply to all land development activities on properties that are contiguous with or contain intermittent or perennial streams. However, lots of record of less than one-half acre in size shall not be subject to 20.04.030(e)(6)~~20.04.030(f)(6)~~ (Intermediate Zone) nor 20.04.030(e)(7)~~20.04.030(f)(7)~~ (Fringe Zone) of this section.

(B) Any new, non-single-family development that is exempt from providing riparian buffer zones as outlined in 20.04.030(e)(1)~~20.04.030(f)(1)~~, shall provide at least a 25-foot wide streamside buffer zone in compliance with the design standards of 20.04.030(e)(5)~~20.04.030(f)(5)~~. Additionally, two of the following best management practices, including plans for post-installation maintenance of such practices, shall be incorporated into the site design:

i. Use of 100 percent native vegetation;

ii. Use of permeable pavement for 100 percent of all the on-site parking areas;

iii. Biofiltration swales; or

iv. 50 percent vegetated roof.

(2) Adjacent Properties

Where intermittent or perennial streams are present on adjacent properties, and where required buffer zones for such streams would extend onto the subject property, the buffer zones required by this subsection (e)~~(f)~~ shall be established.

(3) Easements

All riparian buffer zones required to be preserved subject to this subsection (e)~~(f)~~ shall be placed within riparian buffer easements pursuant to the standards of Section 20.05.040 (Easements).

(4) Graduated Buffer Zones

All intermittent or perennial streams shall be protected by a riparian buffer composed of three distinct zones. These zones shall be defined as:

(A) Streamside Zone (Zone 1).

The primary function of the streamside zone is to ensure stream-bank stabilization.

(B) **Intermediate Zone (Zone 2)**

The primary function of the intermediate zone is to protect soil particles that trap nutrients and chemicals.

(C) **Fringe Zone (Zone 3).**

The primary function of the fringe zone is to filter runoff, and to maximize infiltration, water storage, and nutrient absorption.

(5) **Streamside Zone Design**

The streamside zone (Zone 1) shall be designed as follows:

(A) **Location**

Immediately adjacent to the stream channel.

(B) **Buffer Width**

The width of this zone shall be a minimum of 25 feet on each side of the stream, measured from the centerline of the stream.

(C) **Vegetation Requirements**

All vegetative cover within this zone shall consist of undisturbed, existing vegetation, except that invasive and nonnative plants may be removed with permission from the Planning and Transportation Department. In cases where little or no existing vegetation is present, only native, water tolerant species shall be planted. Acceptable species for planting within buffer zones are listed in Section 20.04.080(d) (Permitted Plant Species). Plant spacing and density for new vegetation within buffer zones shall comply with current preferred practices for each plant type.

(D) **Disturbance Activities**

Only the following land disturbance activities may be allowed within this zone, subject to approval of the City Planning and Transportation Department:

i. Utility installation; if no alternative location is available;

ii. Street crossings, where necessary to achieve connectivity;

iii. Bicycle and/or pedestrian crossings, where necessary to achieve connectivity;

iv. Connector path and multi-use trail constructed with a permeable surface.

(6) **Intermediate Zone Design**

The intermediate zone (Zone 2) shall be designed as follows:

(A) **Location**

Immediately outside the streamside zone (Zone 1).

(B) **Buffer Width**

The required width shall be a minimum 25 feet on each side, measured perpendicularly from the outer boundary of Zone 1.

(B) Temporary vegetation, sufficient to stabilize the soil, may be required on all disturbed areas as needed to prevent soil erosion. New plantings shall be given sufficient water and protection to ensure reestablishment.

(C) In order to ensure vegetative diversity, a minimum of nine different plant species shall be used within the overall riparian buffer area. At least three of these species shall be trees selected from Section 20.04.080(d) (Permitted Plant Species).

(D) No alteration to the shoreline or bed of a stream or creek shall be made unless written approval is obtained from the appropriate governmental agencies. Alterations subject to this requirement include, but are not limited to, filling, damming, or dredging of a stream, creek, ditch, or wetland.

(9) Riparian Buffer Maintenance

Management of riparian buffers shall be limited to the minimum necessary, with no alterations of forest understory, except for the removal of nonnative or invasive species. Limited mowing may occur in Zone 3 but shall be prohibited in Zones 1 and 2.

~~(g)~~(f) Karst Geology

(1) Applicability

(A) This section shall apply to all land-disturbing activities on properties that contain surface and subsurface karst features.

(B) In the event an undetected karst feature is formed on a developed lot or parcel, the Planning and Transportation Director may authorize emergency remediation measures subject to guidance from the City Senior Environmental Planner.

(2) Adjacent Properties

Where surface or subsurface karst features are present on adjacent properties, and where required conservation areas for such karst features would extend onto the subject property, the buffer zones required by this subsection (f)~~(g)~~ shall be established.

(3) Compound Karst Features

For the purposes of this subsection, compound karst features shall be defined as any two or more karst features where the last closed contour of the features are located within 100 feet of each other. The outer boundary of the compound karst feature shall be drawn by connecting the last closed contour at its widest point of each individual karst feature with a tangential line.

(4) Karst Conservancy Easement (KCE)

All karst features shall be protected by Karst Conservancy Easements (KCE). Such easements shall be established in accordance with the following standards:

(A) No land-disturbing activity, permanent or temporary structures, or the placement of any fill material shall be allowed within a KCE.

(B) The outer perimeter of the KCE shall be protected with silt fencing and/or tree protection fencing during the entire period of construction.

(C) For all individual karst features, the KCE shall encompass the entire feature and all of the area within 25 feet horizontally from the last closed contour line of the feature. The last closed contour line shall be as shown on the City's geographic information system (GIS) using a contour interval of two feet. When the City has reason to doubt the accuracy of the GIS data, the City shall use field verification to determine the location of the last closed contour.

(D) For all compound karst features, the KCE shall encompass the entire outer boundary of the compound karst feature as defined in 20.04.030(f)(3)~~20.04.030(g)(3)~~ above and all of the area within 25 feet horizontally from the outer boundary of the compound karst feature.

(5) Setback

No structures shall be located within 10 feet of a Karst Conservancy Easement.

(6) Stormwater Discharge

Stormwater discharge into a karst feature shall not be increased over, or substantially reduced below its pre-development rate.

(7) Stormwater Detention

Karst Conservancy Easements shall not be used for stormwater detention. Drainage shall be designed to route runoff through vegetative filters or other filtration measures before entering a karst feature.

(8) Disturbance

No land-disturbing activity, mowing, or temporary or permanent structure shall be allowed within the sinkhole nor within 25 feet of the last closed contour of the sinkhole.

(9) Spring or Cave Entrances

Spring or cave entrances shall not be modified except for the placement of a gate to prevent human access.

~~(h)~~(g) Wetlands

(1) Applicability

This section shall apply to all land-disturbing activities on properties containing wetlands.

(2) Adjacent Properties

Where wetlands are present on adjacent properties, and where required buffer areas for such wetlands would extend onto the subject property, the buffer zones required by this subsection (g)~~(h)~~ shall be established.

(3) Compliance with Other Regulations Also Required

In addition to the standards of this UDO, all determined and delineated jurisdictional wetlands subject to disturbance shall be governed by Indiana Department of Natural Resources (DNR), Indiana Department of Environmental Management (IDEM), and Army Corps of Engineers regulations.

(4) Disturbance

No land-disturbing activity, mowing, or temporary or permanent structure shall be allowed within 25 feet of a wetland.

(5) Wetland Conservancy Easement

A wetland buffer area extending 25 feet from a delineated wetland shall be placed within a conservancy easement consistent with the standards of Section 20.05.040 (Easements) and shall be protected with silt fencing, tree protection fencing, or both, during the entire period of construction.

(6) Draining

Draining of a delineated wetland is prohibited.

(7) Stormwater Discharge

Stormwater discharge into a wetland shall not be increased over, or substantially reduced below, its preexisting rate.

~~(i)~~(h) Tree and Forest Preservation

(1) Applicability

This section shall apply to all land-disturbing activities on properties containing closed-canopy wooded areas.

(2) Retention of Existing Canopy

The following table shall be used to determine the minimum amount of existing vegetation canopy that must be retained during land-disturbance activity.

Table 04-8: Minimum Required Vegetation Canopy

Baseline Canopy Cover	Retained Canopy Cover
80—100%	0.50 × Baseline canopy cover
60—79%	0.60 × Baseline canopy cover
40—59%	0.70 × Baseline canopy cover
20—39%	0.80 × Baseline canopy cover
0—19%	0.90 × Baseline canopy cover

Example:

For a property of 20 acres with 50 percent canopy cover (i.e., 10 acres), a development would be required to maintain at least seven acres (10 acres × 0.70) of canopy cover.

(3) Preference to Stands of Vegetation

The retention standards outlined above shall be applied to retain high-quality stands of native trees, undisturbed woodlands, and corridors of contiguous vegetation in priority over individual specimen trees, or younger stands of vegetation. No more than 10 percent of the canopy retention standard shall be met by preserving individual trees not included within preferred wooded areas as defined in this subsection (h)~~(i)~~. Where individual specimen trees are to be preserved, preference shall be given to protecting heritage trees that are of particular value due to their type, size or age.

(4) Smaller Parcels

For parcels of land less than two acres, the preservation standards in Table 04-8: Minimum Required Vegetation Canopy, may be altered by the City Planning and Transportation Director to allow preservation of individual specimen trees or tree lines along property borders in lieu of the minimum required vegetation canopy.

(5) Overlapping Preservation Areas

Where acreage set aside to fulfill the conservation or buffer requirements found in 20.04.030(c), 20.04.030(d)~~20.04.030(e)~~, 20.04.030(f)~~20.04.030(g)~~, and 20.04.030(g)~~20.04.030(h)~~ also meets the requirements for tree and forest preservation under 20.04.030(h)(2)~~20.04.030(i)(2)~~, such acreage shall be counted toward fulfillment of all applicable requirements.

(6) Conservancy or Tree Preservation Easement

Where contiguous areas of at least 8.712 square feet (0.20 acres) of tree cover are required to be preserved, a conservancy and/or tree preservation easement shall be required per Section 20.05.040 (Easements). The edges of such easements shall be delineated 10 feet beyond the driplines of the trees to be preserved.

(7) Tree Protection During Construction

A tree protection zone shall be installed per Section 20.04.080(c)(3) and inspected by the Planning and Transportation Department prior to any land-disturbing activities. The tree protection zone and the tree protection barrier shall remain undamaged and unmoved during the entire duration of construction. If a petitioner believes the conditions of a tree protection zone cannot be established, they shall contact the Planning and Transportation Department and the Urban Forester in order to develop an individual plan for tree protection.

~~(j)~~(i) Lake Watershed Areas

(1) Applicability

This section shall apply to all land-disturbing activities on properties located within the watersheds of Lake Monroe and Griffy Lake as delineated on the City's geographic information system (GIS).

(2) Exception

Single-family, duplex, triplex, fourplex, mobile home, and manufactured home dwellings on existing lots of record shall not be subject to the requirements of this section.

(3) Geotechnical Report

When required by the Planning and Transportation Director, based on potential development impacts, site plans, subdivision plats, and Planned Unit Development plans shall include a report prepared by a geotechnical consultant that addresses soil stabilization, erosion/siltation control and stormwater runoff quality. The geotechnical consultant who prepares the required report shall be a licensed professional engineer.

(4) Site Design

Site design shall locate structures and land-disturbing activities so as to avoid tree concentrations. Streets, parking areas, and building pads shall conform closely to existing contours and minimize grading.

(h) Adjustments to Maximum Parking Allowance

No use shall provide vehicle parking spaces in an amount exceeding the maximum established in Table 04-10: Maximum Vehicle Parking Allowance, unless approved by the City Planning and Transportation Department based on the following:

(1) The proposed development has unique or unusual characteristics that typically do not apply to comparable developments, uses, or combinations of uses, such as high sales volume per floor area or low parking turnover, that create a parking demand that exceeds the maximum ratio;

(2) The petitioner submits a parking demand study demonstrating that anticipated off-street vehicle parking demand for the proposed development, use, or combination of uses will be more than that calculated from Table 04-10: Maximum Vehicle Parking Allowance, and the City Planning and Transportation Department determines that the information and assumptions used in the study are reasonable and that the study accurately reflects maximum reasonably anticipated off-street vehicle parking demand for the proposed development, use, or combination of uses; and

(3) Any parking provided above the maximum required in Table 04-10: Maximum Vehicle Parking Allowance, is constructed in a parking structure or with approved pervious surfaces.

(i) Vehicle Parking Location and Design

(1) Applicability

The standards in 20.04.060(i) shall apply to all surface and aboveground vehicle parking and maneuvering areas.

(2) Location

(A) Generally

i. All parking spaces required to serve buildings or uses erected or established after the effective date of this ordinance shall be located on the same lot as the building or use served, unless otherwise allowed pursuant to 20.04.060(g)(1).

ii. Parking areas shall be designed to ensure safe and easy ingress, egress, and movement through the interior of the lot.

~~iii. For surface parking lots with 100 or more parking spaces, landscaped biodetention areas located below the surface level of the parking spaces, shall be provided on the interior of the parking lot to help direct traffic flow and to provide landscaped areas within such lots.~~

~~iv.~~iii. No park strip shall be used for parking unless otherwise approved by the City Planning and Transportation Department based on considerations of pedestrian and traffic safety, visual appearance, and buffering.

~~v.~~iv. All parking shall comply with parking landscape standards in Section 20.04.080 (Landscaping, Buffering, and Fences).

~~vi.~~v. For single-family, duplex, triplex, fourplex, mobile home, and manufactured home residential uses, Parking shall be prohibited within the setback between the street and the building except on a driveway that meets the provisions of this Section 20.04.060.

~~vii.~~vi. No commercial vehicles or trailers shall be parked overnight at a residence unless that home is occupied by the business owner or employee.

(B) If the petitioner can provide different acceptable standards based on a professionally recognized source of parking lot design, the City Planning and Transportation Department may approve alternative standards pursuant to the minor modification process outlined in Section 20.06.080(a) (Minor Modification).

(4) Stacked Parking

Stacked parking arrangements are permitted.

(5) Back-out Parking

(A) Generally

All on site vehicle parking areas shall be designed to avoid the need for vehicles to back onto public streets when exiting the parking space, unless otherwise stated in this UDO.

(B) Exceptions

Single-family, duplex, triplex, and fourplex uses in any zoning district shall be permitted to back-out directly onto an alley or a public street, other than an arterial street.

(C) Back-out Parking Waiver

Back-out parking within the required side or rear setback may be allowed onto adjacent alleys subject to the following standards:

i. The lot in question does not exceed 20,000 feet in area;

ii. A maximum of eight back-out parking spaces are permitted per site; and

iii. Parking shall directly access an improved alley.

(6) Stormwater Drainage

~~(A) Parking lots shall be constructed such that all surface water is directed into an approved landscape bumpout, island, or endcap per Section 20.04.080(h)(2) (Landscape Bumpouts, Islands, and Endcaps). Stormwater run-off that cannot be directed into approved landscape bumpouts, islands, or endcaps shall be treated using one or more of the best management practices prescribed in Section 20.04.060(i)(6)(E) or directed into the stormwater drainage system.~~

~~(B)~~(A) Water draining from a parking lot shall not flow across a sidewalk.

~~(C)~~(B) ~~Stormwater drainage plans for off-street parking lots shall be reviewed and approved by the City~~.

~~(D)~~(C) All parking lots, excluding drives that do not afford direct access to abutting parking spaces, shall have a slope of five percent or less.

~~(E) For all new parking lots containing 12 or more spaces, the following best management practices shall be used to improve stormwater infiltration and water quality:~~

~~i. Permeable pavement materials shall be installed. If such materials are the only practice employed from this list, then they shall cover at least 25 percent of the total parking lot area; or~~

~~ii. Treatments such as culvert outfalls, bioretention basins, or vegetated swales designed to the specifications of City of Bloomington Utilities shall be installed; or~~

~~iii. Other combinations of best management practices for stormwater infiltration and water quality subject to approval by the City of Bloomington Planning and Transportation and Utilities Departments.~~

(7) Surface Material

(A) Except for dwelling, single family (detached), dwelling, single-family (attached), dwelling, duplex, dwelling, triplex, and dwelling, fourplex residences or as stated in subsection (6) above, or an exception is provided elsewhere in this UDO, all areas used for parking shall be hard surface of concrete, asphalt, brick pavers, or other approved material. Where crushed stone parking surfaces are approved, they shall be contained within a raised, permanent border.

(B) All new driveway aprons onto a street shall be surfaced with concrete. Enlargement or modification of an existing driveway shall require the driveway apron to be surfaced with concrete, except that the driveway apron for a single-family, duplex, triplex, or fourplex use on a local street may use asphalt or concrete.

(C) Areas using permeable parking pavers shall not count towards impervious surface calculations.

(D) Except for single-family, duplex, triplex, fourplex, mobile home, and manufactured home residential uses, and display areas for vehicle sales and rental uses, all off-street parking spaces shall be striped or otherwise designated to clearly mark each space.

(E) All driving lanes and parking aisles in parking lots shall be curbed, unless an alternative design allowing for adequate stormwater management is approved.

(8) Electric Vehicle Charging

Parking areas with 50 or more parking spaces shall provide a minimum of one parking space dedicated to electric vehicles for every 25 parking spaces provided on site. The provision of three or fewer electric vehicle parking spaces shall not count toward the maximum allowed number of parking spaces. The provision of four or more electric vehicle parking spaces shall count toward the maximum allowed number of parking spaces. The electric vehicle parking space shall be:

(A) Located on the same lot as the principal use;

(B) Signed in a clear and conspicuous manner, such as special pavement marking or signage, indicating exclusive availability to electric vehicles; and

(C) Outfitted with a standard electric vehicle charging station.

(9) Parking Area Landscaping

All development shall comply with Section 20.04.080(h).

(10) Parking Area Lighting

All development shall comply with Section 20.04.090.

(11) Pedestrian and Bicycle Circulation

All development shall comply with Section 20.04.050.

(j) Loading Area Location and Design

(1) Applicability

This Section 20.04.060(j) shall apply to all loading areas.

(4) Vehicles and Trailers

Except for uses where auto repair is authorized, the parking of vehicles or trailers of any type without current license plates or in an inoperable condition shall be prohibited for periods in excess of 30 days, unless such vehicle or trailer is completely enclosed within a building or within an approved Salvage or Scrap Yard.

(5) Storage, Occupancy, or Similar Uses

Vehicles, campers or tractor/trailers of any type shall not be used for the purpose of storage, occupancy, or similar use.

(o) On-street Parking Standards for Private Streets

The following standards related to on-street parking apply to all developments where the City has approved the use of private streets that have not been dedicated to the City.

(1) No Parking Signs

Any side of a street where parking is not permitted shall be clearly delineated with yellow curbs or no parking signs noting such restrictions.

(2) Bump-outs

(A) Bump-outs may be required at street intersections where on-street parking is used. Where required, bump-outs shall use a six-inch standing curb, unless the City determines that a curb and gutter is required based on considerations of public safety, utility design, or site constraints.

(B) Bump-outs shall be designed to extend a minimum of eight feet from the curb line and may not reduce the travel lane widths below the standards of the Transportation Plan. The City may allow alternative bump-out widths based on considerations of public safety, utility design, or site constraints.

~~(C) Curbing may include cuts for water runoff collection into approved swale or the like to improve water quality.~~

~~(D)~~(C) Bump-outs shall be installed at angles greater than 90 degrees away from the street curb to facilitate street maintenance and shall use designs approved by the Transportation and Traffic Engineer based on considerations of pedestrian and traffic safety and efficient maintenance.

(p) Outdoor Storage

(1)

In all zoning districts, except for the MI zoning district, outdoor storage of equipment, materials, waste or scrap materials, and pallets is prohibited. Shipping containers, cargo containers, and portable on-demand storage units may not be used for long-term storage, and may only be located on a lot or parcel:

(A) To provide storage for construction projects during the period of an approved construction project on the same lot or parcel; or

(B) During the process of being loaded or unloaded, the duration of which may not exceed 72 consecutive hours.

(C) Vehicular and Pedestrian Movement

Plant materials shall be located to avoid interference with vehicular and pedestrian movement and shall not project over sidewalks, paths, or trails below a height of eight feet. Plant materials shall not project over street curbs or pavement within rights-of-way or access easements below a height of 15 feet.

(D) Vision Clearance

Landscape materials shall be located to avoid interference with visibility per Section 20.04.050(c)(4) (Vision Clearance Triangle).

(E) Green Infrastructure

All green infrastructure facilities, including detention basins, bioswales, and raingardens shall be planted with only native seed and/or plugs.

(F) Installation Prior to Occupancy

All landscaping required by the approved site plan shall be installed and inspected prior to issuance of a recommendation for final occupancy, unless an extension is approved by the Planning and Transportation Department for weather-related or unique circumstances.

(2) Plant Material Standards

(A) Live Plantings

All plant material shall be living and healthy. Dead, ailing, diseased or artificial plants shall not be recognized as contributing to required landscape treatments.

(B) Species Identification

New plantings shall have species identification tags on the plant or paid purchase identification labels on the plants during the final inspection. A receipt with purchase order for plantings may be submitted prior to inspection in lieu of tags or labels on site.

(C) Prohibited Plant Species

Species identified as invasive, detrimental, or noxious shall not be planted under any circumstances and will not be counted toward landscape requirements. Unless specifically approved by the City Urban Forester or Senior Environmental Planner, the use of columnar trees is not allowed.

(D) Species Diversity

i. On sites that require an aggregate total of 20 or more new trees, any given genus of tree shall be limited to a maximum of 20 percent of the total number of newly planted trees on site.

ii. Where shrubs are required to be planted, up to 15 percent of the total number of required shrubs may be substituted with perennial forb species, graminoids, or ferns. This does not apply to shrubs required as part of a landscape buffer requirement per Section 20.04.080(g). Any substituted plants used toward parking lot perimeter requirements shall be species that typically grow to be at least four feet in height, and shall be maintained in accordance with Section 20.04.120(a)~~20.04.120(b)~~ (Landscaping).

(E) New Planting Sizes

The following minimum sizes shall apply to all required plant material:

i. Deciduous Trees

All newly planted deciduous trees shall be at least two-inch caliper.

ii. Evergreen Trees

All newly planted evergreen trees shall be at least six feet in height.

iii. Shrubs

Shrubs shall be at least three-gallon container size and a minimum of 18 inches in height.

(F) Substitution

i. Public Art

The Planning and Transportation Department may allow up to five percent of the minimum landscape area requirement to be replaced with public art. Public art shall not replace required buffer yard landscaping as required by Section 20.04.080(g) or required parking lot landscaping required by Section 20.04.080(h) and shall not count towards impervious surface area on the lot.

ii. Existing Vegetation

1. The City Planning and Transportation Department may permit the substitution of required on-site landscape excluding street tree requirements with existing vegetation provided that the existing vegetation is in good health and quality and is found on the permitted plant list in this UDO.
2. Vegetation preserved to meet the requirements of Section 20.04.030(h)~~20.04.030(i)~~, (Tree and Forest Preservation), may be substituted for required landscaping, provided it meets the requirements of Section 20.04.080(c)(2).
3. Existing vegetation listed in Section 20.04.080(d), shall be credited towards required landscaping based on the following values:

   [a] **Deciduous Trees**

   A credit of one tree per every four inches DBH of an existing qualified deciduous tree is earned. No single existing tree shall count towards more than four individual required trees.

   [b] **Evergreen Trees**

   A credit of one tree per every 12 feet in height of an existing qualified evergreen tree is earned. No single existing tree shall count towards more than three individual required trees.

   [c] **Shrubs**

   A credit of one shrub per every one existing qualified shrub is earned.

(G) Ground Cover

i. Except in the PO zoning district, turf grass and other vegetative ground cover shall be used for all landscaped areas, except as listed below. Crushed rock or gravel is not allowed as ground cover.

ii. **Type**

A minimum of 75 percent of the required trees shall be large, canopy trees.

iii. **Location**

Trees shall be planted within 10 feet of the parking lot edge.

(C) **Shrubs**

i. **Number**

Parking lot perimeter areas shall contain a minimum of three shrubs per one parking space.

ii. **Location**

Shrubs shall be planted within five feet of the parking lot edge. In situations where there is a sidewalk immediately adjacent to a parking area, the required shrubs must be within 5' of the edge of the sidewalk.

iii. **Height**

Shrubs planted in parking lot perimeter areas shall be selected from species that grow to a minimum height of four feet.

(2) **Landscape Bumpouts, Islands, and Endcaps**

(A) **Number**

Parking lots with 12 or more parking spaces shall provide one landscape bumpout, island, or endcap per every 10 parking spaces.

(B) **Minimum Area**

The width and length of each required landscape bumpout, island, or endcap shall be equal to the width and length of the adjacent parking space.

(C) **Minimum Planting**

Each landscape bumpout, island, or endcap shall contain at least one large canopy tree and four shrubs or native grasses. Where a bumpout, island, or endcap area is equal to the width and length of two parking spaces, a minimum of two large canopy trees and eight shrubs or native grasses shall be provided. Required trees within bumpouts, islands, or endcaps do not count toward required street tree totals, required parking lot perimeter area tree totals, or required interior plantings tree totals.

(D) **Stormwater Filtration**

Parking lot bumpouts, islands, or endcaps shall be installed ~~lower than the parking surface to allow stormwater run-off to enter the bumpout, island, or endcap for natural treatment and filtration. Any parking areas with curbing shall incorporate gaps to allow stormwater to enter the bumpout, island, or endcap.~~in order to meet Title 13 (Stormwater) of the Bloomington Municipal Code.

(E) **Placement**

Landscape bumpouts, islands, or endcaps shall be installed to control vehicular circulation and define major drives. Such islands shall be placed at intervals of no more than 10 consecutive spaces.

i. One floor of building height, not to exceed 12 feet, beyond the maximum primary structure height established for the zoning district where the project is located, as identified in Section 20.04.020 (Dimensional Standards).

ii. Projects that qualify for the affordable housing incentives in Section 20.04.110(c) (Affordable Housing) in addition to the sustainable development incentive in 20.04.110(d)(2) shall be eligible for the additional incentive height described in Section 20.04.110(c)(5)(B)iv).

20.04.120 Operation and Maintenance

~~(a) Siltation and Erosion~~

~~(1) Sedimentation basins and other control measures necessary to meet the requirements of Section 20.04.030(d) (Siltation and Erosion Prevention) shall be maintained by the property owner during construction.~~

~~(2) Any site stabilization measures shall be maintained by the property owner in perpetuity.~~

~~(3) Sediment shall be removed to maintain a depth of three feet.~~

~~(b)~~(a) Landscaping

Developers and their successors in interest shall be responsible for the regular maintenance of all landscaping elements in perpetuity. Failure to maintain all landscaping is a violation of this UDO. Specifically:

(1) All plant material, including plant material on vegetated roofs, shall be maintained alive, healthy, and free from disease and pests;

(2) All landscape structures including, but not limited to, vegetated roof infrastructure, raised landscape planters, fences, and walls shall be repaired or replaced periodically to maintain a structurally sound and aesthetic condition;

(3) Ground cover shall be maintained in compliance with Title 6 (Health and Sanitation) of the Bloomington Municipal Code; and

(4) Public sidewalks shall be maintained in compliance with Title 12 (Streets, Sidewalks, and Storm Sewers) of the Bloomington Municipal Code.

~~(c)~~(b) Outdoor Lighting

All lighting fixtures that are required to be shielded shall be installed and maintained so that they maintain compliance with all standards for shielded fixtures as specified in this Section 20.04.090 (Outdoor Lighting).

~~(d)~~(c) Signs

All signs and components thereof shall be kept in good repair and in safe, clean, neatly painted, and working condition.

20.05.040 Easements

(a) Applicability

All proposed plats submitted for approval under the provisions of this Chapter 20.05: (Subdivision Standards) shall comply with the standards in this Section 20.05.040.

(b) General Standards

(1) All easements and corresponding utility location plans shall be approved prior to the approval of the plat.

(2) All necessary easements shall be clearly identified on secondary plats and shall be recorded per processes as defined within Chapter 20.06: (Administration & Procedures), and shall include a definition consistent with Section 20.05.040(e).

(3) All proposed plats shall clearly identify all existing easements on the property, including dimensions, bearings, and recorded instrument numbers.

(4) Signs shall not be located within utility easements unless the sign is a public sign authorized by Section 20.04.100(c)(2)(A) (Public Signs), and is further authorized by the city.

(5) Each easement shall allocate sufficient areas for the utilities, infrastructure, amenities, or features that are the subject of the easement, including but not limited to drainage, utilities, tree preservation, environmental conservation, pedestrian access, vehicular access, and transit facilities, wherever necessary.

(c) Environmental Features

The following environmental features that are determined to not be developable per Section 20.04.030 (Environment) shall be placed within the appropriate easements on the secondary plat or set aside in easements on a deed where no plat is required or proposed, as identified in Section 20.04.030 (Environment).

(1) All areas of excessive slope as defined in Section 20.04.030(c) (Steep Slopes).

(2) All karst features and their required buffer zones as defined in Section 20.04.030(f)~~20.04.030(g)~~ (Karst Geology).

(3) All required riparian buffer areas as defined in Section 20.04.030(e)~~20.04.030(f)~~ (Riparian Buffers).

(4) All areas within regulatory floodways and flood fringes as defined in Section 20.04.040 (Floodplain).

(5) All delineated wetlands and required wetland buffer areas as defined in Section 20.04.030(g)~~20.04.030(h)~~ (Wetlands).

(6) All trees required to be preserved by Section 20.04.030(h)~~20.04.030(i)~~ (Tree and Forest Preservation).

(d) Maintenance

(1) For features required to be in an easement, maintenance shall generally be the responsibility of the lot owner, except as expressly provided otherwise in this UDO or in the development approval.

iii. Slope

The man-made slopes within the detention facility shall not exceed a four to one ratio.

iv. Perimeter Access

1. A buffer area around the full circumference of the facility of at least 25 feet from the top of bank shall be available as open space.
2. This open space (facility and buffer area) shall be planted and maintained as usable area. This includes use of prairie grasses, native species, native ground cover, or lawn grass. Tree planting shall not be within the basin area or on the slopes of the bank.

(D) Regulated Floodplain

The regulated floodplain of any stream, regulated drain, or river shall count toward the open space requirements.

(E) Other

Other common areas set aside to meet open space requirements.

(h) Storm Water

(1) Applicability

All proposed subdivisions submitted for approval, under the provisions of this UDO, shall provide for the collection and management of all surface water drainage.

(2) Drainage Plan

All subdivision requests shall include the submittal of a drainage plan to the City Utilities Department, and are subject to the requirements of Title 13 (Stormwater) of the Bloomington Municipal Code. ~~The drainage plan shall include, but not be limited to, the following items:~~

~~Complete grading plan showing all proposed detention and retention facilities, swales, and drainage structures;~~

~~All proposed piping including size and location of proposed stormwater lines, as well as plan and profile drawings for all proposed improvements;~~

~~Complete and accurate stormwater calculations justifying methodology of the drainage plan in compliance with City Utilities Department standards; and~~

~~The finish floor elevation of all proposed structures.~~

~~Stormwater Mitigation Requirements~~

~~Drainage facilities shall be provided to control runoff from all upstream drainage areas and from all areas within the proposed subdivision to a location adequate to receive such runoff. Furthermore, drainage facilities shall:~~

~~Be designed and constructed in accordance with City Utilities Department standards.~~

~~Be durable, easily maintained, retard sedimentation, and retard erosion. Facilities shall not endanger the public health and safety or cause significant damage to property.~~

~~Be sufficient to accept runoff from the site after development and the present water runoff from all areas upstream to achieve discharge rates meeting City Utilities Department standards.~~

~~Provide stormwater runoff quality mitigation in compliance with City Utilities Department standards.~~

(3) Common Area

Engineered and built drainage improvements, including but not limited to detention and retention facilities, for subdivisions shall be contained within common areas. Such improvements shall be constructed and maintained according to City Utilities Department standards~~, and a Facilities Maintenance Plan shall be required pursuant to the Administrative Manual.~~

(4) Easements

Features and improvements shall be located within easements where required, in accordance with the Administrative Manual and this UDO.

(i) Flood Damage Mitigation

All subdivision proposals shall:

(1) Be consistent with the need to minimize flood damage.

(2) Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

(3) Have adequate drainage provided to reduce exposure to flood hazards.

(j) Streets and Rights-of-Way

(1) Applicability

All developments submitted for subdivision approval shall allocate adequate areas for new streets in conformity with this UDO and Transportation Plan.

(2) Private Streets

(A) Unless approved by the Plan Commission and the Board of Public Works, private streets are not permitted. All proposed streets shall have right-of-way dedicated as indicated on the Transportation Plan.

(B) All private streets shall be constructed to the public street standards established in this UDO and other applicable City standards.

(3) Dedication of Right-of-Way

In developments that adjoin or include existing streets that do not conform to the minimum right-of-way dimensions as established in the Transportation Plan, the petitioner shall dedicate additional width along either one or both sides of such streets in order to bring them up to standards.

(4) Construction and Installation Standards for Streets

(A) All street improvements are to be designed, constructed and installed per the City Planning and Transportation Department Standards and Specifications.

(B) Any new development that includes the construction of a new or widened public street shall be required to install underground telecommunications conduit to extend the City's fiber optic network, known as the Bloomington Digital Underground (BDU). Conduit installation shall be in accordance with BDU specifications and permit requirements of the City of Bloomington. This requirement shall not apply if the Planning and Transportation Director determines that the installation of underground telecommunications conduit is not necessary after review by the City's Director of Information and Technology Services.

(A) Primary plats;

(B) Secondary plats;

(C) Requests for vacation of plats or parts of plats.

(2) Procedures

The Plat Committee shall review and hear petitions pursuant to procedures adopted by the Plan Commission by rule.

20.06.030 Summary Table of Review Procedures

Table 06-1 lists the development petitions authorized by this UDO, whether public notice is required, whether pre-submittal activities are required, and the role of City review and decision-making bodies.

Table 06-1: Summary Table of Review Procedures

R = Review and Recommendation D = Decision A = Appeal * = Public Hearing Required

Procedure	UDO Section	Public Notice			Pre-Submittal Activities			Review and Decision-Making Bodies						
		Published	Mailed	Posted	Pre-Submittal Meeting	DRC Meeting	Neighborhood Meeting	Staff	Plan Commission	Plat Committee	Board of Zoning Appeals	Common Council	Hearing Officer	Historic Preservation Commission
Development Permits and Procedures														
Site Plan Review, Minor	20.06.050(a)				✓			D	A					
Site Plan Review, Major	20.06.050(a)	✓	✓	✓	✓	✓	✓	R	D*					
Conditional Use Permit	20.06.050(b)	✓	✓	✓	✓			R			D*/A		D*	
Demolition Delay Permit	20.06.050(c)			✓	✓			R						D
Floodplain Development Permit	20.06.050(d)							D						
Site Development~~Grading~~ Permit	20.06.050(e)							D						
Certificate of Zoning Compliance	20.06.050(f)							D						
Certificate of Occupancy	20.06.050(g)							D						
Certificate of Final Acceptance	20.06.050(h)							D						
Certificate of Nonconforming Use	20.06.050(i)							D						
Sign Permit	20.06.050(j)							D						
Temporary Use Permit	20.06.050(k)							D						
Easements	20.06.050(l)	See 20.06.050(l) (Easements)												
Subdivision Procedures														
Primary Plat	20.06.060(b)	✓	✓	✓	✓	✓		R	D*/A	D*				

Table 06-1: Summary Table of Review Procedures

R = Review and Recommendation D = Decision A = Appeal * = Public Hearing Required

Procedure	UDO Section	Public Notice			Pre-Submittal Activities			Review and Decision-Making Bodies						
		Published	Mailed	Posted	Pre-Submittal Meeting	DRC Meeting	Neighborhood Meeting	Staff	Plan Commission	Plat Committee	Board of Zoning Appeals	Common Council	Hearing Officer	Historic Preservation Commission
Secondary Plat	20.06.060(c)							R / D	D/A	D				
Vacating Plat	20.06.060(d)	✓	✓	✓	✓	✓		R	D*/A	D*				
Plan/Ordinance Amendments														
Comprehensive Plan Amendment	20.06.070(a)	✓						R	R*			D*		
Zoning Map Amendment	20.06.070(b)	✓	✓	✓	✓	✓	✓	R	R*			D*		
Rezoning to Planned Unit Development (PUD)	20.06.070(c)	✓	✓	✓	✓	✓	✓	R	R*			D*		
Zoning Text Amendment	20.06.070(d)	✓	✓		✓			R	R*			D*		
Flexibility and Relief Procedures														
Minor Modification	20.06.080(a)				✓			As required for associated petition						
Variance	20.06.080(b)	✓	✓	✓	✓			R			D*/A		D*	
Administrative Interpretation	20.06.080(c)							D			A			
Administrative Appeal	20.06.080(d)	✓	✓					R			D*			

20.06.040 Common Review Procedures

(a) General

(1) The common review procedures in this Section 20.06.040 provide the foundation for specific review and approval procedures identified in Section 20.06.050 through Section 20.06.080. The common review procedures are illustrated in Figure 06.04-1. Tailored versions of this illustration appear in each of the specific petition types.

(2) Not all common review procedures apply to every development petition type. Sections 20.06.050 through Section 20.06.080 identify how these common review procedures are applied to specific petition types, and identify additional procedures and requirements beyond the common review procedures.

iv. Creation or expansion of any vehicular parking area.

(B) Activities Exempt from Site Plan Review

Site plan review is not required for the following activities, but such activities shall be subject to the standards of this UDO and building permit review:

i. Construction of a single-family detached, duplex, triplex, or fourplex dwelling on a single lot, additions to such dwellings, an accessory dwelling unit, and structures accessory to such dwellings; and

ii. Construction or erection of accessory buildings, fences, hedges, or walls; and

iii. Interior tenant alterations or improvements that do not increase parking requirements or alter exterior building appearances.

iv. Projects that fall below the thresholds for minor site plan review in Section 20.06.050(a)(2)(C)i).

~~v. Activities that require a grading permit but do not require any site improvements.~~

(C) Thresholds for Minor and Major Site Plan Review

Site plan review is conducted by the Planning and Transportation Director or the Plan Commission, based on the thresholds below:

i. Minor Site Plan Review

Minor site plan review is required for any of the following activities unless that activity is exempt from the site plan process under Section 20.06.050(a)(2)(B), or the project meets or exceeds the thresholds requiring major site plan review under Section 20.06.050(a)(2)(C)ii:

1. A change in use that involves or requires site improvements;
2. Any expansion, alteration, or modification of a lawful nonconforming site feature or building that meets or exceeds the thresholds established in Section 20.06.090(f)(2) (Limited Compliance), and falls below the thresholds for major site plan review in Section 20.06.050(a)(2)(C)(ii).
3. Development that contains 20,000 square feet or less of new non-residential gross floor area;
4. Development that contains 50 dwelling units or less;
5. The alteration of any vehicular parking area;
6. Petitions for a site development ~~grading~~ permit ~~where site improvements are required~~; or
7. Projects that qualify for affordable housing incentives and/or sustainable development incentives established in Section 20.04.110 (Incentives), provided that, if located adjacent to one or more lots in an R1, R2, R3, or R4 district or such project does not contain more than 75 dwelling units.

ii. Major Site Plan Review

Major site plan approval is required for any project that meets or exceeds the following criteria, unless otherwise exempted from site plan review under Section 20.06.050(a)(2)(B):

(C) Staff Review and Action

i. Generally

1. The Planning and Transportation Director shall review the minor site plan petition and approve, approve with conditions, or deny the petition in accordance with Section 20.06.040(d) (Staff Review and Action), based on the general approval criteria in Section 20.06.040(d)(6)(B) (General Compliance Criteria).
2. Alternatively, the Planning and Transportation Director may refer the petition to the Plan Commission pursuant to Section 20.06.040(d)(2) (Petition Routing).

ii. Commitments

The Planning and Transportation Director may allow or require the owner of a parcel of real property to make a written commitment concerning use and/or development of that parcel in connection with approval of a site plan pursuant to Section 20.06.040(d)(8) (Commitments).

iii. Additional Review for Drainage and Floodplain

Any projects that are determined by the Planning and Transportation Department to be located within an identified floodway, flood fringe, or within the floodplain shall also meet the criteria in Section 20.04.040 (Floodplain).

(D) Post-Decision Actions and Limitations

Post-decision actions and limitations in Section 20.06.040(h) shall apply with the following modifications:

i. Notification of Findings

The Planning and Transportation Director shall make and sign written findings concerning each decision to approve or disapprove a minor site plan, and such written findings shall be made available to the petitioner.

ii. Expiration of Approval

Approval of a minor site plan shall be effective for a maximum period of one year unless, upon petition by the petitioner, the Planning and Transportation Director grants an extension during that one year period and pursuant to Section 20.06.040(h)(1) (Expiration of Approval). A site plan approval will be considered expired if no Site Development Permit has been approved related to the site plan within the one year period or the approved extended time period. Or, in the case where no Site Development Permit is required, no Certificate of Zoning Compliance for a building permit on the site plan has been approved related to the approval within the one year period, or the approved extended time period.

iii. Modification or Amendment of Approval

An approved minor site plan may be modified or amended in accordance with Section 20.06.040(h)(3) (Modification or Amendment of Approval).

(D) Scheduling and Notice of Public Hearings

The major site plan petition shall be scheduled for a public hearing before the Plan Commission and noticed in accordance with 20.06.040(e) (Scheduling and Notice of Public Hearings).

(E) Review and Decision

i. Generally

The Plan Commission shall review the major site plan petition and approve, approve with conditions, or deny the petition in accordance with Section 20.06.040(g) (Review and Decision), based on the general approval criteria in Section 20.06.040(d)(6)(B) (General Compliance Criteria).

ii. Commitments

The Plan Commission may allow or require the owner of a parcel of real property to make a written commitment concerning use and/or development of that parcel in connection with approval of a site plan pursuant to Section 20.06.040(d)(8) (Commitments).

iii. Additional Review for Drainage and Floodplain

Any projects that are determined by the Planning and Transportation Department to be located within an identified floodway, flood fringe, or within the floodplain shall also meet the criteria in Section 20.04.040 (Floodplain).

(F) Post-Decision Actions and Limitations

Post-decision actions and limitations in Section 20.06.040(h) shall apply with the following modifications:

i. Notification of Findings

The Plan Commission shall make written findings concerning each decision to approve or disapprove a major site plan, and such findings shall be made available to the petitioner.

ii. Expiration of Approval

Approval of a major site plan shall be effective for a maximum period of one year unless, upon petition by the petitioner, the Plan Commission grants an extension during that one year period and pursuant to Section 20.06.040(h)(1) (Expiration of Approval). A site plan approval will be considered expired if no Site Development~~Grading~~ Permit has been approved related to the site plan within the one year period or the approved extended time period. Or, in the case where no Site Development~~Grading~~ Permit is required, no Certificate of Zoning Compliance for a building permit on the site plan has been approved related to the approval within the one year period, or the approved extended time period.

iii. Modification or Amendment of Approval

An approved major site plan may be modified or amended in accordance with Section 20.06.040(h)(3) (Modification or Amendment of Approval).

(2) Applicability

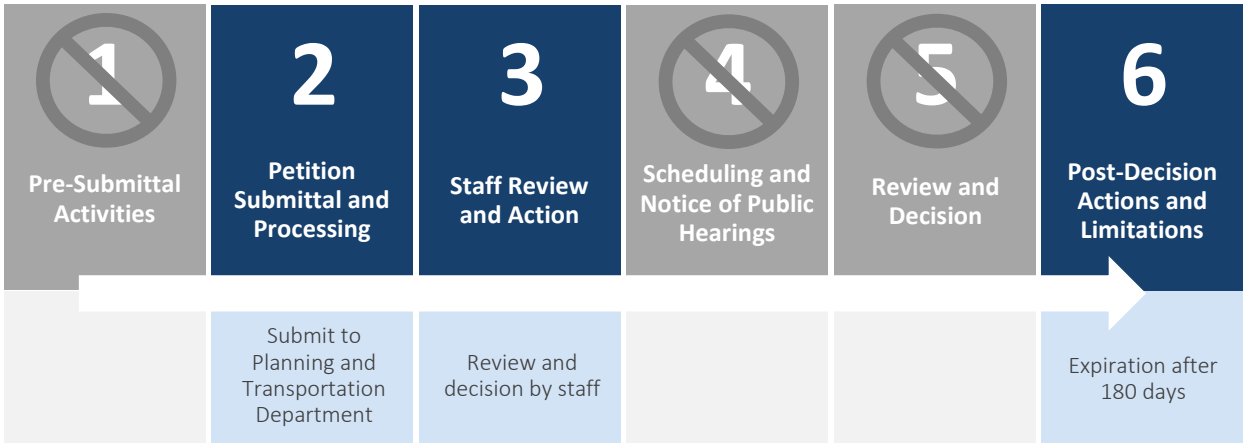
(A) No development shall occur in any special flood hazard area (SFHA) and known flood prone areas, unless a required stormwater management~~grading~~ permit per Title 13 (Stormwater) of the Bloomington Municipal Code for such activity has been issued. In cases where a stormwater management permit is not required, no development shall occur unless a site development permit has been issued.

(B) Compliance with the standards in this UDO shall not relieve any person of the independent obligation to comply with all applicable standards and practices established in federal and state law and all other applicable rules, regulations, standards and specifications of the City regarding development within a floodplain.

(3) Floodplain development permit Review Process

Figure 06.05-6 identifies the applicable steps from 20.06.040 (Common Review Procedures) that apply to floodplain development permit review. Additions or modifications to the common review procedures are noted below.

Figure 06.05-5: Summary of Floodplain development permit Procedure



(A) Petition Submittal and Processing

The floodplain development permit petition shall be submitted, accepted, and revised, and may be withdrawn, in accordance with Section 20.06.040(c) (Petition Submittal and Processing) with the following modifications:

i. Petition Submittal Requirements

The petition shall include, but not be limited to, the following documents:

1. A description of the proposed development;
2. Location of the proposed development sufficient to accurately locate property and structure(s) in relation to existing roads and streams;
3. A legal description of the property site;
4. A site development plan showing existing and proposed development locations and existing and proposed land grades;
5. Elevation of the top of the planned lowest floor (including basement) of all proposed buildings. Elevation should be in NAVD 88 or NGVD;

iv. Revocation of Permits

1. The Floodplain Administrator may revoke a permit or approval, issued under the provisions of this UDO, in cases where there has been any false statement or misrepresentation as to the material fact in the application or plans on which the permit or approval was based.
2. The Floodplain Administrator may revoke a permit upon determination that the construction, erection, alteration, repair, moving, demolition, installation, or replacement of the structure for which the permit was issued is in violation of, or not in conformity with, the provisions of this UDO.

(e) Site Development~~Grading~~ Permit

(1) Purpose

The site development~~grading~~ permit procedure is intended to ~~mitigate the environmental impact of site development and to protect the water quality of the City of Bloomington, Monroe County, and surrounding areas, and to~~ provide a mechanism to ensure compliance with this UDO by providing a thorough permitting and inspection process for all site development~~grading~~ activities.

(2) Applicability

No site development~~land-disturbing~~ activity shall occur on platted or unplatted lands in any zoning district, unless a site development~~grading~~ permit for such activity has been issued.

(A) Exemptions

~~i. Land-disturbing activity covering an area less than 2,500 square feet;~~

i. Site development~~Land-disturbing~~ activity on lots containing the uses: dwelling, single-family (attached); dwelling, single-family (detached); dwelling, duplex; dwelling, triplex; or dwelling, fourplex~~.~~.

ii. Site development activity containing only new buildings or changes, alterations, or additions to an existing building, with no additional improvements required.

iii. Site development activity containing only new signs, or changes, alterations, or additions to a sign.

~~ii.~~iv. Site development activity containing related to an approved temporary use.

~~Land-disturbing activity solely for new foundations for buildings or additions with a footprint of 5,000 square feet or less.~~

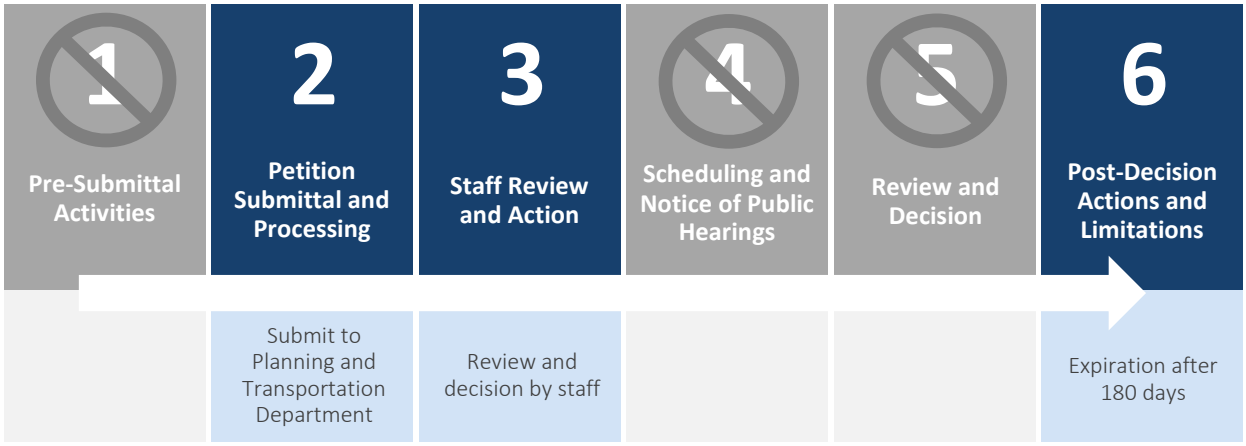
~~(B) Additional Requirements~~

~~Compliance with the standards in this UDO shall not relieve any person of the independent obligation to comply with all applicable standards and practices set out in Indiana Administrative Code, 327 IAC 15-5, and 327 IAC 15-13, regarding stormwater runoff associated with construction activity; the Indiana Stormwater Quality Manual developed by the Indiana Department of Environmental Management; all applicable provisions of Title 10 (Wastewater) of the Bloomington Municipal Code regarding stormwater runoff; and all applicable rules, regulations, standards and specifications of the City Utilities Department regarding stormwater management practices.~~

(3) Site Development~~Grading~~ Permit Review Process

Figure 06.05-6 identifies the applicable steps from 20.06.040 (Common Review Procedures) that apply to site development~~grading~~ permit review. Additions or modifications to the common review procedures are noted below.

Figure 06.05-6: Summary of Site Development~~Grading~~ Permit Procedure



(A) Petition Submittal and Processing

The site development~~grading~~ permit petition shall be submitted, accepted, and revised, and may be withdrawn, in accordance with Section 20.06.040(c) (Petition Submittal and Processing) with the following modifications:

i. Petition Submittal Requirements

The petition shall include, but not be limited to, the following documents:

1. Verification of site plan approval when such approval is required;
2. ~~1.~~ Construction plan including all proposed site improvements;
3. ~~2. Estimate prepared by a licensed engineer of erosion control features for erosion control measures based on fair-market price;~~
3. Topography of the site - proposed and existing two-foot contours;
4. Identification of environmental features, including but not limited to karst, water, trees, and steep slopes.

(B) Staff Review and Action

The planning and transportation staff shall review the site development~~grading~~ permit petition and approve, approve with conditions, or deny the petition within 20 working days of the receipt of a complete petition and all supportive documents in accordance with Section 20.06.040(d) (Staff Review and Action), based on the general approval criteria in 20.06.040(d)(6)(B) (General Compliance Criteria) and the following specific approval criteria.

i. Construction Plan

The construction plans shall include all required and proposed environmental protections including but not limited to: tree protection zones, easements and setbacks from environmental features and conservation areas; as well as all required and proposed site improvements. The requirements are further detailed in the Administrative Manual.~~As required by Title 10 (Wastewater), of the Bloomington Municipal Code, a construction plan including the stormwater pollution prevention plan for the site shall be approved by the appropriate local, state, and federal authorities prior to the issuance of a grading permit.~~

ii. Planned Unit Development Approval

An approved final plan shall be in place prior to the issuance of a grading permit.

iii. Stormwater Permit

If required by Title 13 (Stormwater) in the Bloomington Municipal Code, petitioner must submit an application for a stormwater management permit to the City of Bloomington Utilities Department at the time of application for the site development permit.

(C) Post-Decision Actions and Limitations

Post-decision actions and limitations in Section 20.06.040(h) shall apply with the following modifications:

i. Duration

1. Site development~~Grading~~ permits shall be valid for a period of 180 days, as measured from the date on the certificate of zoning compliance or run concurrently with the building permit or other construction authorizations, whichever is longer.
2. At the written request of the petitioner, the city may extend the period one or more times for up to a maximum of an additional 180 days. ~~The city may require additional erosion control measures as a condition of the extension if they are necessary to meet the requirements of this UDO.~~

ii. Changes or Amendments

1. The petitioner may submit revisions or amendments to an approved site development~~grading~~ permit for consideration by the local, state, and federal authorities having jurisdiction. A revision or amendment to an approved site development~~grading~~ permit shall only be authorized upon review and approval by all the local, state, and federal authorities having jurisdiction.
2. Changes to the site development~~grading~~ permit shall be approved in writing.

~~iii. Financial Bond Required~~

~~1. In conjunction with the approval of grading permit, the petitioner shall provide a financial guarantee for erosion control measures, by performance bond or an irrevocable, unconditional, acceptable letter of credit issued by a financial institution acceptable to the City, that all erosion control measures required under the provisions of this UDO and Planning and Transportation Department requirements shall be completed.~~

~~2. If the City draws on the erosion control bond to stabilize and reestablish the site, either the erosion control estimate prepared by the licensed engineer or the documented actual dollar per acre amount for reestablishment of the site, whichever is greater, shall be used.~~

~~3. The posting of a performance guarantee is not required when the petitioner is the City of Bloomington.~~

(f) Certificate of Zoning Compliance

(1) Purpose

The Certificate of Zoning Compliance procedure is intended to provide a mechanism for City staff to ensure that the establishment of and alterations to uses, sites, and structures conform to the standards of this UDO.

(2) Applicability

(A) Generally

i. A Certificate of Zoning Compliance shall be required for any of the following activities:

1. Alteration, erection, construction, reconstruction, division, enlargement, demolition, partial demolition or moving of any building, structure, sign, or mobile home;
2. Establishment of a use or change in use to another use (see Section 20.06.090(c)(2) (Change in Use);
3. Enlargement in the area used for any use or relocation of a use to another portion of a lot, site, or building;
4. Site~~Grading,~~ development, improvement, or other alteration of land, including paving or the establishment of drives or parking areas, or any other land distributing activity.
5. Tree removal requests that decrease the baseline canopy cover shall follow the procedures outlined in Section 20.06.050(a) (Site Plan Review), and shall comply with the requirements of Section 20.04.030(h)~~20.04.030(i)~~ (Tree and Forest Preservation).
6. Any action that would result in partial or complete demolition of any exterior portion of a building or structure that is listed as "Outstanding," "Notable," or "Contributing" on the City of Bloomington Survey of Historic Sites and Structures as the same may be amended or replaced ("Historic Survey"). Such action shall be subject to the procedures outlined in Section 20.06.050(c) (Demolition Delay Permit). An accessory building or structure not attached to the principal building or structure upon the listed parcel shall not be considered "listed" within the meaning of this UDO unless the accessory building or structure is of the same era of construction as the principal building or structure, as determined by the staff. Such determination shall be based upon resources that may include but shall not be limited to Sanborn Company Fire Insurance maps, visual inspection of the accessory building or structure, and records and expertise of Historic Preservation Commission or its staff.

1. Construction under a valid site development~~grading~~ permit or building permit has commenced and is ongoing; or
2. Upon petition, the Planning and Transportation Director grants an extension pursuant to Section 20.06.040(h)(1) (Expiration of Approval).

(g) Certificate of Occupancy

(1) Purpose

The Certificate of Occupancy procedure is intended to provide a mechanism for City staff to ensure that the establishment of and alterations to uses, sites, and structures conform to the standards of this UDO.

(2) Applicability

(A) Generally

A Certificate of Occupancy shall be obtained prior to a building or structure being occupied or used in each of the following situations, except for detached single-family dwellings:

i. Occupancy or use of any new building or structure;

ii. Re-use or re-occupancy of any existing building or structure that requires either a permit from the County Building Department or a Certificate of Zoning Compliance from the Planning and Transportation Department;

iii. Addition to any existing building or structure. Parts of the existing building or structure not included in the addition may continue to be occupied or used.

(B) Certificate of Occupancy Required

If a certificate of occupancy is required pursuant to subsection (A) above, it is unlawful and a violation of this UDO for anyone to occupy or use a building or structure, or to cause, suffer or permit another to occupy or use a building or structure, until a temporary or final Certificate of Occupancy has been granted. Any violation of this provision shall be subject to a stop work order, mitigation, and/or fines and penalties as specified in Section 20.06.100 (Enforcement and Penalties).

(3) Certificate of Occupancy Review Process

iii. More than a 10 percent change to the proportion of housing types;

iv. Substantial increase in the building envelope;

v. More than a one percent reduction of proposed open space;

vi. Changes in functional uses of open space, where such change constitutes an intensification of open space usage;

vii. Substantial change in the ratio of off-street parking spaces to use;

viii. Substantial changes in standards, continuity, or general location of roads, utilities, or stormwater management features; or

ix. Substantive changes in the covenants, conditions and restrictions, or other governing agreements, that affect any matter regulated by this UDO.

ii. Final Plan

1. Effect of Approval

[a] No permit of any kind shall be issued for any purpose within a Planned Unit Development zoning district except in accordance with the approved final plan. Any material deviation from the final plan is subject to appropriate enforcement action.

[b] No permit of any kind shall be issued until the final plan has been approved.

2. Duration

[a] Abandonment

The final plan shall be considered abandoned if no site development~~grading~~ permits or building permits have been obtained and are still valid for the area contained in the final plan within three years after final plan approval has been granted, or if such permits have been obtained but are no longer valid per the terms of this UDO.

[b] Extension

An extension, not to exceed 12 months, may be granted by the Plan Commission for good cause shown. The Plan Commission may grant one 12-month extension.

3. Changes or Amendments

[a] Minor Changes

The Planning and Transportation Director may approve minor changes to an approved final plan, if the changes do not change the concept or intent of the development, without a public hearing or public notice as authorized by rule of the Plan Commission. Such decisions shall be subject to appeal pursuant to Section 20.06.070(c)(3)(E)ii.4). This shall include the following:

i. Minor changes in the location and siting of buildings and structures;

ii. Changes in height of less than one story, but not over eight feet in any case;

[h] The safety of access to the property in times of flood for ordinary and emergency vehicles.

[i] The expected height, velocity, duration, rate of rise, and sediment of transport of the floodwaters at the site.

[j] The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

2. **Review Criteria**

The Board of Zoning Appeals or the Hearing Officer may grant a floodplain variance if, after a public hearing, it makes findings of fact in writing, that there is:

[a] A showing of good and sufficient cause;

[b] A determination that failure to grant the variance would result in exceptional hardship;

[c] A determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and

[d] A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud or victimization of the public, or conflict with existing laws or ordinances;

iii. Commitments

1. The Board of Zoning Appeals or the Hearing Officer may allow or require the owner of a parcel of real property to make a written and recorded zoning commitment concerning use and/or development of that parcel in connection with approval of a variance pursuant to Section 20.06.040(d)(8) (Commitments).
2. Upon approval of a determinate sidewalk variance, the Planning and Transportation Department staff shall prepare a zoning commitment indicating that the determinate sidewalk variance was approved, and that future installation of sidewalk may be required. The petitioner shall record the zoning commitment in the Monroe Office of the Monroe County Recorder before a certificate of zoning compliance is issued.
3. If the owner of a parcel of real estate fails to accept a condition imposed, or to make a commitment allowed or required, by the Hearing Officer, then the owner's petition shall be considered withdrawn or, if requested by the owner, shall be transferred to the Board of Zoning Appeals.

(F) Post-Decision Actions and Limitations

i. Effect of Approval

1. The granting of a variance from the development standards authorizes the development and establishes the terms of use.
2. Variances are also subject to site plan requirements, all necessary permits and approvals, and other applicable requirements. All required permits shall be obtained before any site development~~grading~~, construction, or use commences.

(2) Any violation as defined herein is hereby declared a common and public nuisance, and any person who is a responsible party as defined in Section 20.06.100(e) with respect to such violation shall, in addition to any other penalty or remedy provided herein, be liable for maintaining a common and public nuisance.

(3) Any violation shall be subject to the penalties and remedies provided in this Section 20.06.100, and the City shall have recourse to any remedy available in law or equity.

(4) Each day that any violation continues shall be considered a separate violation for purposes of the penalties and remedies specified in this chapter. A violation continues to exist until corrected. Correction includes, but is not limited to:

(A) Cessation of an unlawful practice;

(B) Removal of a building, structure, or other improvement;

(C) Faithful or otherwise-approved restoration or replacement of a building, structure, site or natural feature;

(D) Any other remedy specified in this UDO; and/or

(E) Other remedy acceptable to the City.

(5) The City Legal Department may institute appropriate action to impose and collect fines and/or other penalties; to enforce or defend any action taken pursuant to Section 20.06.100(e)(5); and to prevent, enjoin, abate, remove or correct any violation of or noncompliance with this UDO or any condition, requirement, or commitment established in connection with this UDO or any development approval hereunder.

(6) In addition to all other penalties and remedies provided for herein, if a building or structure is demolished (which shall include partial demolition) in violation of Section 20.06.050(c) (Demolition Delay Permit), then, for a period of two years following such demolition, no new certificate of zoning compliance authorizing any use or any release of a building or demolition permit shall be issued for any activity upon the lot of record upon which the building or structure was located, or any adjoining lot of record under common ownership or control, except for an approved restoration or replacement of the demolished building or structure, or as otherwise agreed to by the City or ordered by the Court in enforcement proceedings. The Planning and Transportation Director shall be authorized to execute and record in the Office of the Monroe County Recorder a sworn statement containing these restrictions upon the properties affected thereby.

(7) In addition to all other penalties and remedies provided for herein, where the violation is removal of one or more trees contrary to Section 20.04.030(h)~~20.04.030(i)~~ (Tree and Forest Preservation), the responsible party shall be required to meet the following requirements:

(A) Replace the removed trees with healthy trees of similar species.

i. The aggregate caliper of replacement trees shall equal the aggregate caliper of removed trees. Determination of total caliper to be replaced shall be made by the Planning and Transportation Director.

ii. The size of replacement trees shall be the largest reasonably available which can either be planted or transplanted from another location.

*** Amendment Form ***

Ordinance #: 2024-17
Amendment #: Am 01
Submitted By: Cm. Piedmont-Smith
Date: September 18, 2024

Proposed Amendment: (additions are shown in **bold**, deletions are shown in ~~strikethrough~~)

The proposal forwarded to the Common Council by the Plan Commission and attached to Ordinance 2024-17 as "Attachment A" (ZO-30-24) shall be amended as follows (only affected portions of the proposal are shown below):

1.

20.04.030 Environment

(c) **Steep Slopes**

(6) **Construction Measures**

Any development on slopes ~~between~~ 12 percent **or greater** ~~and~~ **but** ~~18~~ **less than 25** percent shall incorporate construction measures such as retaining walls and walkout basements as well as current preferred practices for erosion control measures during construction, as provided in Title 13 (Stormwater) of the Bloomington Municipal Code.

Synopsis

This amendment is sponsored by Councilmember Piedmont-Smith and applies the construction measures requirements in Bloomington Municipal Code Title 13 to slopes of at least 12 percent but less than 25 percent, rather than slopes between 12 and 18 percent, to correct a staff oversight when revising the ordinance to comply with the new state statute.

09/18/24 Regular Session Action: 8-0 (Flaherty absent)

Case # MP-38-24 Memo

To: Bloomington Plan Commission

From: Planning and Transportation Department
Ryan Robling, Planning Services Manager

Date: October 7, 2024

RE: Amendment to the City of Bloomington's Transportation Plan in order to incorporate the Safe Streets and Roads for All (SS4A) Safety Action Plan.

On April 9th, 2024, the Common Council unanimously passed Resolution 2024-07, establishing the goal of zero traffic deaths and serious injuries on the City of Bloomington's roadways by 2039. The resolution also called for the adoption of a Safe Streets and Roads for All (SS4A) Safety Action Plan to guide future investments and infrastructure improvements on the City's roadways.

This Safety Action Plan (SAP) is Bloomington's roadmap to achieving our ambitious vision and should be used by City staff, elected officials, community advocates, businesses, and all Bloomington residents committed to safer streets. This Plan includes four major sections:

- Finding Our Focus. In creating this Safety Action Plan, the City of Bloomington is joining Cities across the country and the world in working to eliminate serious injuries and fatalities from our roadways. This section introduces the concepts of Vision Zero and the Safe Systems approach, solidifies the relationship between safer streets and equity, and reviews past efforts in the region to improve roadways safety.
- Setting the Stage. This section provides an overview of what has historically happened and what is currently happening on our roadways, and how existing policies, programs, and projects impact people throughout the region. This section includes both quantitative and qualitative information about current conditions with a crash data analysis and information gathered through extensive public engagement efforts.
- Getting to ZERO. This section lays out programs, policies, and projects that aim to eliminate serious injuries and fatalities on Bloomington's streets by 2039. This section also outlines how these elements should be prioritized in order to be efficient, opportunistic, and effective.
- Tracking Progress. This section outlines how the City will measure whether our roadways are becoming safer for all using performance measures, annual reporting, and a crash data dashboard.

As an amendment to the Transportation Plan, the Plan Commission will review the SAP and determine consistency with the already adopted Comprehensive and Transportation Plans. The

Plan Commission will make a recommendation and forward the SAP to City Council. Then, City Council will review the SAP through its adoption process.

City of Bloomington
Safe Streets and Roads for All
Safety Action Plan

DRAFT

October 2024

DISCLAIMER: *Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information and on existing conditions that are subject to change. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein.*

Table of Contents

List of Abbreviations and Acronyms

ACS: American Community Survey

DUI: Driving Under the Influence

FHWA: Federal Highway Administration

FI: Fatal or Injury (all injury severities)

FSI: Fatal or Serious Injury

HIN: High Injury Network

HRN: High Risk Network

INDOT: Indiana Department of Transportation

PCSi: Proven Safety Countermeasure initiative

PHB: Pedestrian Hybrid Beacon

RRFB: Rectangular Rapid Flashing Beacon(s)

SRTS: Safe Routes to School

USDOT: United States Department of Transportation

VPD: Vehicles Per Day

VRU: Vulnerable Road User (includes Pedestrian or Bicyclists)

Acknowledgements

Bloomington City Staff

Ryan Robling, Planning Services Manager
Karina Pazos, Long Range Planner
Hank Duncan, Bicycle and Pedestrian Coordinator
Andrew Cibor, City Engineer

Community Advisory Committee

Ann Edmonds, Bicycle & Pedestrian Safety Commission
Ben Dalton, Parking Commission
Casey Guarino, Council for Community Accessibility
Emma Williams, Human Rights Commission
Greg Alexander, Traffic Commission
Jaclyn Ray, Bicycle & Pedestrian Safety Commission
Jillian Kinzie, Plan Commission, MPO Policy Committee
Kate Rosenbarger, City Council District II Representative
Sarah Ryterband, Traffic Commission, MPO Citizens Advisory Committee

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Dean Chamberlain, Project Manager
Jaz Warren, Equity Framework Lead and Planner
Drew Parker, Deputy Project Manager
Sara Schooley, Engagement Lead and Plan Compilation
Sarah Skolaski, Designer and Outreach Support
Cassandra Slack, Report Design and Layout

Bloomington is committed to making our streets safer for everybody

The City of Bloomington is a City with vibrant neighborhoods, diverse and hardworking residents, a large university, and a thriving downtown. While Bloomington already has a lot to offer residents and is continually attracting new ones, we know that there is still work to do to make our roadways safer for all those that travel on our roadways, whether on foot, bike, in a vehicle, or on transit.

Between the years 2019-2023, there were 10,391 crashes on Bloomington's streets; 443 of these crashes resulted in either a life-changing injury or death. These crashes, notably, are more than a statistic to track. These crashes forever impact families, friends, and neighbors throughout Bloomington. As a community, we do not accept these crashes as status quo. We are ready to commit to being a better and safer community. We are ready to change.

This Safety Action Plan (SAP) documents what is happening now and what we commit to do to increase the safety for everybody on all of Bloomington's streets. This plan includes implementable recommendations that we will carry out with community partners and advocates. This plan is our roadmap to our main priority - achieving the goal of zero deaths or serious injuries on our roads by 2039.

We are committed to safer streets in Bloomington. Join us.

Sincerely,

BACKGROUND

This Safety Action Plan (SAP) is Bloomington's roadmap to achieving our ambitious vision and should be used by City staff, elected officials, community advocates, businesses, and all Bloomington residents committed to safer streets. This Plan includes four major sections:

- **Finding Our Focus.** In creating this Safety Action Plan, the City of Bloomington is joining Cities across the country and the world in working to eliminate serious injuries and fatalities from our roadways. This section introduces the concepts of Vision Zero and the Safe Systems approach, solidifies the relationship between safer streets and equity, and reviews past efforts in the region to improve roadways safety.
- **Setting the Stage.** This section provides an overview of what has historically happened and what is currently happening on our roadways, and how existing policies, programs, and projects impact people throughout the region. This section includes both quantitative and qualitative information about current conditions with a crash data analysis and information gathered through extensive public engagement efforts.
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- **Tracking Progress.** This section outlines how the City will measure whether our roadways are becoming safer for all using performance measures, annual reporting, and a crash data dashboard.

FINDING OUR FOCUS

Bloomington is joining an ever-growing number of cities throughout the county and world who are committed to eliminating transportation-related fatalities and serious injuries on their streets. This momentum started with the Vision Zero movement and is founded in the Safe Systems Approach.

Vision Zero

Vision Zero is a values-based philosophy that was developed in Sweden in the late 1990s that states that traffic deaths and serious injuries in our transportation systems are avoidable and unacceptable. The Vision Zero movement is one of the first large-scale efforts to look at traffic crashes as a systemic issue, versus blaming individual users. Vision Zero also pivoted from the acceptance of death and serious injuries as just the “cost” of having an efficient transportation system to stating that absolutely nobody should be killed or injured on our streets due to traffic-related causes.

While the Bloomington SAP is not, officially, a Vision Zero effort, much of this plan, its content, and recommendations align with Vision Zero philosophies and actions. More information about Vision Zero can be found at https://visionzeronetwork.org/.

Safe Systems Approach

The Safe Systems approach is founded in the belief that humans are human - people will not always behave perfectly, won't always follow the rules, and may make bad decisions on the roadways. The Safe Systems approach confronts this reality by creating a multi-faceted system that acknowledges the many contributors to roadway safety outcomes – safe road users, post-crash care, safe roads, safe vehicles, and safe speeds – and works to create safety in redundancy.

This redundant approach means that even if one of these players "fails," there will be multiple other players ready and waiting to ensure that the situation remains safe. For example, if an individual chooses to drive at excessive speeds, the design of the roadway (narrow lanes, separation between vehicles and pedestrians, speed humps, etc.) or other factors will keep all roadway users safe.

The Safe Systems Approach has six key principles:

1. Death and serious injury are unacceptable. Although no crashes are desired, the Safe System approach focuses on eliminating crashes where people die or are seriously injured.

2. **Humans make mistakes.** There is no perfect person, so human error should be expected and anticipated. Human mistakes should not result in life-changing injuries or death.

3. Humans are vulnerable. Human bodies are subject to the laws of physics. They can only withstand so much force before a serious injury or death occurs.

4. **Responsibility is shared.** Eliminating deaths and serious injuries on our roadways is a team effort. Elected officials, planners, engineers, vehicle designers, and people traveling need to work together to create a safe roadway network.

5. **Safety is proactive.** Planners, engineers, and roadway designers know the factors that make streets safe or unsafe – a crash should not need to happen to prove that an area is unsafe. Best practices and research should be used to proactively identify and address dangerous locations.

6. **Redundancy is crucial.** Even if one part of the transportation system fails, redundancy will be in place to make sure the transportation system stays safe for all users.

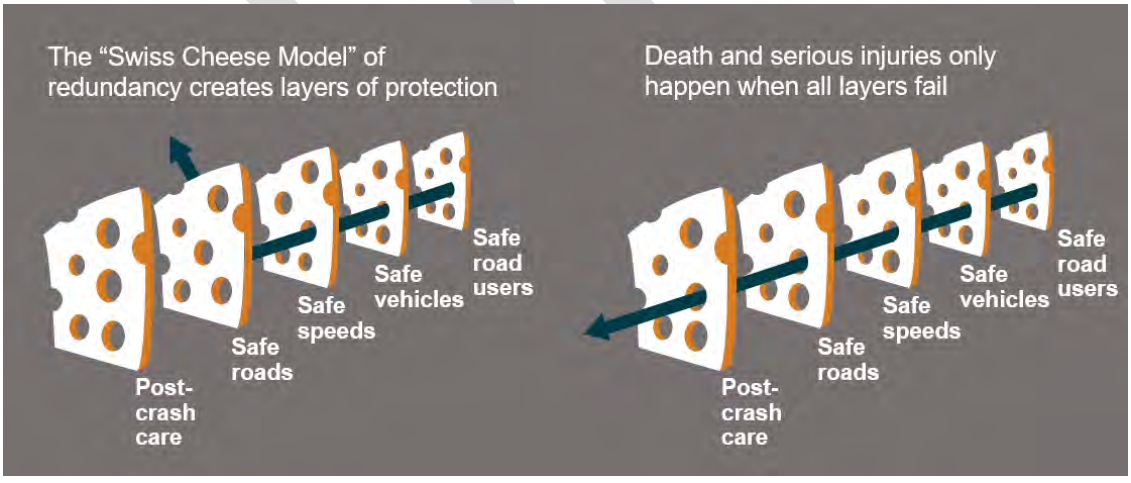


Figure 1. "Swiss Cheese Model" of crash causation, Source: FHWA

Road Safety and Equity

Transportation is a key element of people's daily lives that not only allows them to access their day-to-day needs and activities, but also serves as a place for the community to gather and socially interact. Additionally, transportation systems are complex and comprehensive, often overlapping with other systems, such as housing, land use, law enforcement, and climate efforts.

Policies and practices surrounding these systems can create inequitable transportation access for BIPOC communities, those who are low income, and other marginalized groups, often due to a lack of representation and institutional power. Decades of racist policies and planning practices have long-standing and detrimental impacts to these communities in cities across the country.

These practices have led specific demographic groups to disproportionately suffer the burdens of transportation systems. Some of these burdens include higher exposure to pollution, public health and climate impacts, higher concentrations of traffic crashes, service gaps and inadequate infrastructure, and divisive highway construction. Local governments, like Bloomington, are responsible for reversing these practices and implementing planning practices and policies that respond to the needs of all people.

In developing this Plan, the City was intentional in ensuring the process used and the recommendations that were developed for the plan support the creation of a future equitable transportation network. Specifically, the planning process and the resulting plan was founded in the following principles:

- **Communities of Interest should participate in and influence transportation decision-making and outcomes.** Communities of Interest are defined as areas with populations that have a higher density of eight equity indicators: BIPOC, low-income households, people with disabilities, people with low English proficiency, children, elderly adults, students, and limited vehicle access.
- **One's race, income, physical ability, gender, age, and other demographic characteristics should not determine their safe access** to jobs, healthcare, childcare, education, public amenities, recreation, and quality food.
- **A person's race, income, physical ability, gender, age, and other demographic characteristics should not correlate with negative transportation-related outcomes** related to health, safety, or climate.
- **The way a person gets around (mode) should not correlate with negative safety or health outcomes, disproportionate climate impacts, or limited access to opportunities.** Planning, maintenance, and funding efforts for different transportation modes, like walking, bicycling, micromobility, driving, carpooling, or public transportation should be prioritized in Communities of Interest first while considering community goals and overall system needs.
- **Safe and adequate sidewalks, bikeways, and trails should be accessible for and welcoming** to people of all cultural backgrounds, ages, and to people with disabilities.
- **Public investments, safety improvements, and other transportation policies and programs in areas vulnerable to displacement should be paired with anti-displacement strategies** to empower residents to stay in their homes, encourage small businesses to remain in place, and strengthen the character of the community or neighborhood.

More information about how and why equity is foundational to this Safety Action Plan can be found in Appendix X. Safe Streets for All Equity Framework.

What We've Already Done

This plan is a major step in demonstrating the City of Bloomington's commitment to safer streets for all its residents. That said, this is not the first time the City or the region has created a plan, actions, policies, or programs that address roadway safety. The following table highlights many of Bloomington's past efforts and the roadway safety topics they touched upon.

Table 1: Summary of Actions and Considerations within Reviewed Documents

Document Name	Safety Vision or Goals	Safety Data	Safety Actions	Equity	Roadway Design/ Countermeasures	Projects/ Priority Corridors	Funding/ Implementation
City of Bloomington Transportation Plan	✓	✓	✓	✓	✓	✓	✓
City of Bloomington Comprehensive Plan	✓		✓	✓			
City of Bloomington Climate Action Plan	✓		✓	✓	✓		✓
City of Bloomington Bicycle and Pedestrian Transportation and Greenways System Plan	✓	✓	✓	✓	✓	✓	✓
Bloomington, Indiana TDM Program Plan					✓		✓
City of Bloomington Right-of-Way Use					✓		
City of Bloomington Design Standards Manual					✓		
City of Bloomington Capital Improvement							✓
City of Bloomington Zoning Districts							
City of Bloomington Unified Development Ordinance					✓		
City of Bloomington Boards and Commissions Structure							
City of Bloomington Traffic Calming and Greenways Program	✓	✓	✓	✓	✓	✓	✓
City of Bloomington Scooter Guidelines	✓		✓			✓	
City of Bloomington Sidewalk Repair Assistance Program	✓		✓			✓	✓
BMCMPO Transportation Improvement Program					✓	✓	✓
BMCMPO Complete Streets Policy	✓		✓	✓	✓		✓
Indiana Safe Routes to School Guidebook	✓	✓	✓	✓	✓		✓

SETTING THE STAGE

There are many factors that contribute to how safe a City's streets are – design, operation, and user behaviors all play important roles and must be understood in order to make them better. This section describes the results of these factors on Bloomington's roads today using both quantitative and qualitative measures – a crash analysis and extensive public feedback, respectively. These methods were used to understand what the data says about what's happening on our streets, as well as what people think is happening and their thoughts on how to make the situation safer for everybody.

Crash Analysis

Crash data is one of the best tools we have to understand how and where people are severely injured or killed while traveling on Bloomington's streets. If the crash is reported to police, a report is generated that details crash characteristics like the location, contributing crash factors, and demographic information such as the gender and age of those involved.

The crash analysis conducted for Bloomington used data from the Indiana Department of Transportation (INDOT) for the most recent five years (2019 through 2023). It should be noted that while the data is the best available, it represents crashes that are reported to local law enforcement agencies, which makes it an incomplete picture because some crashes may not be reported (due to avoiding interactions with law enforcement, especially for those with past negative interactions with police, such as People of Color). Additionally, the report may not be accurate – severity may be underreported because the reporter may not have medical training, and some factors (such as speed or the reasons for the crash) are challenging to determine after the crash has happened. That said, crash data, while imperfect, is a valuable starting point in understanding current conditions. The following are key takeaways from Bloomington's crash analysis.

Vehicle-only crashes are the most common, but the risk or serious injury of death is much higher for crashes involving people walking, biking, or rolling. Only 4% of total crashes involve somebody walking, biking, or rolling, but over 38.5% of fatal crashes and 24% of serious injury crashes involve people using these modes.

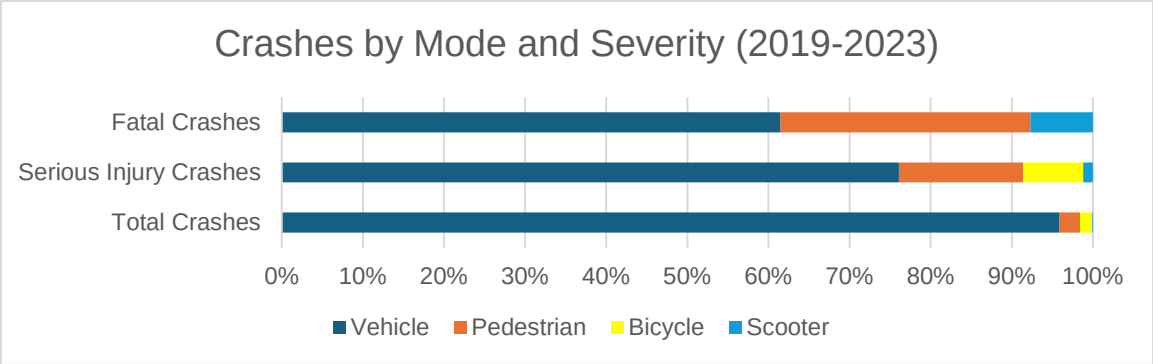


Figure 2. Crashes by Mode and Severity, 2019-2023

The majority of fatal or serious injury crashes occurred on arterial street and state highways. There were 262 fatal or serious injury crashes on arterial streets or state highways (59% of all fatal or serious injury crashes) Arterial streets and state highways make up only 20% of the city's roadway mileage. Figure 9 shows the classification of all streets in Bloomington for reference.

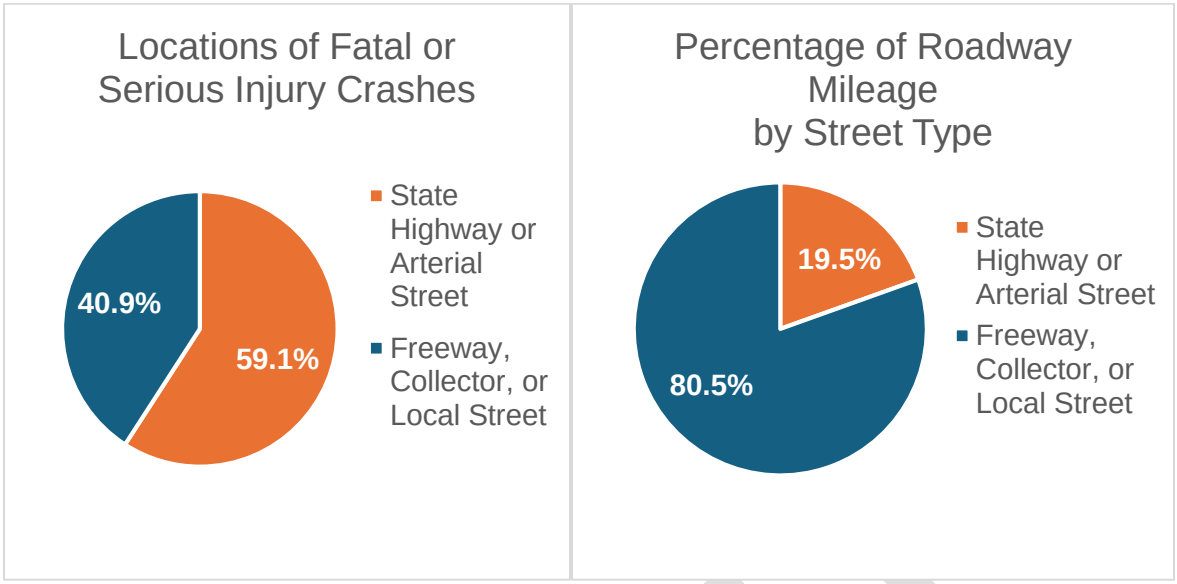


Figure 3. Percentage of Streets by Type of Street/Highway

Figure 4. Percentage of FSI Crashes by Type of Street/Highway

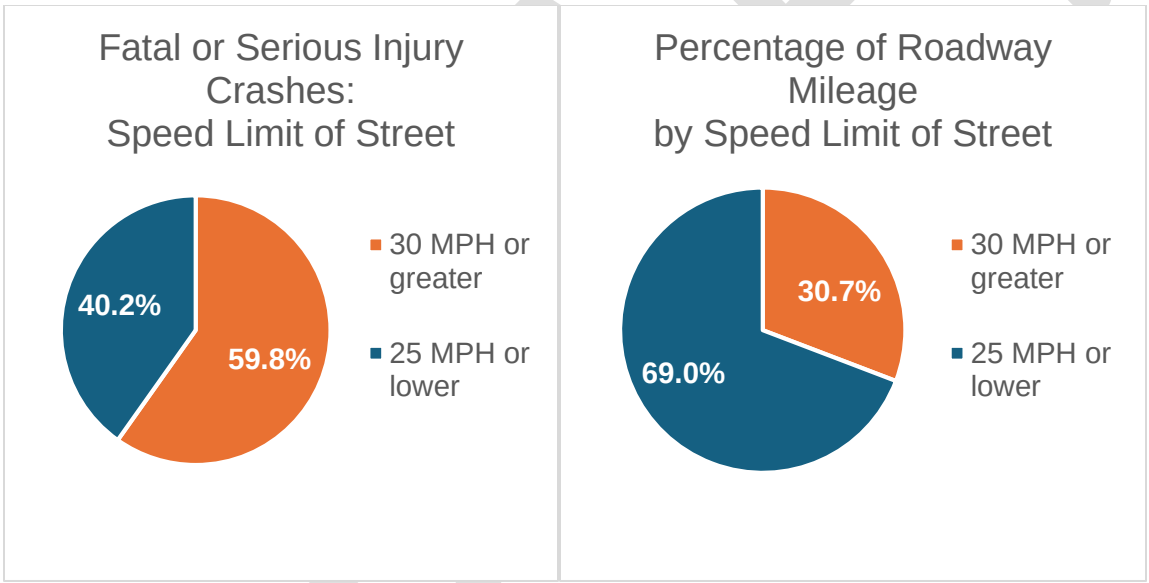
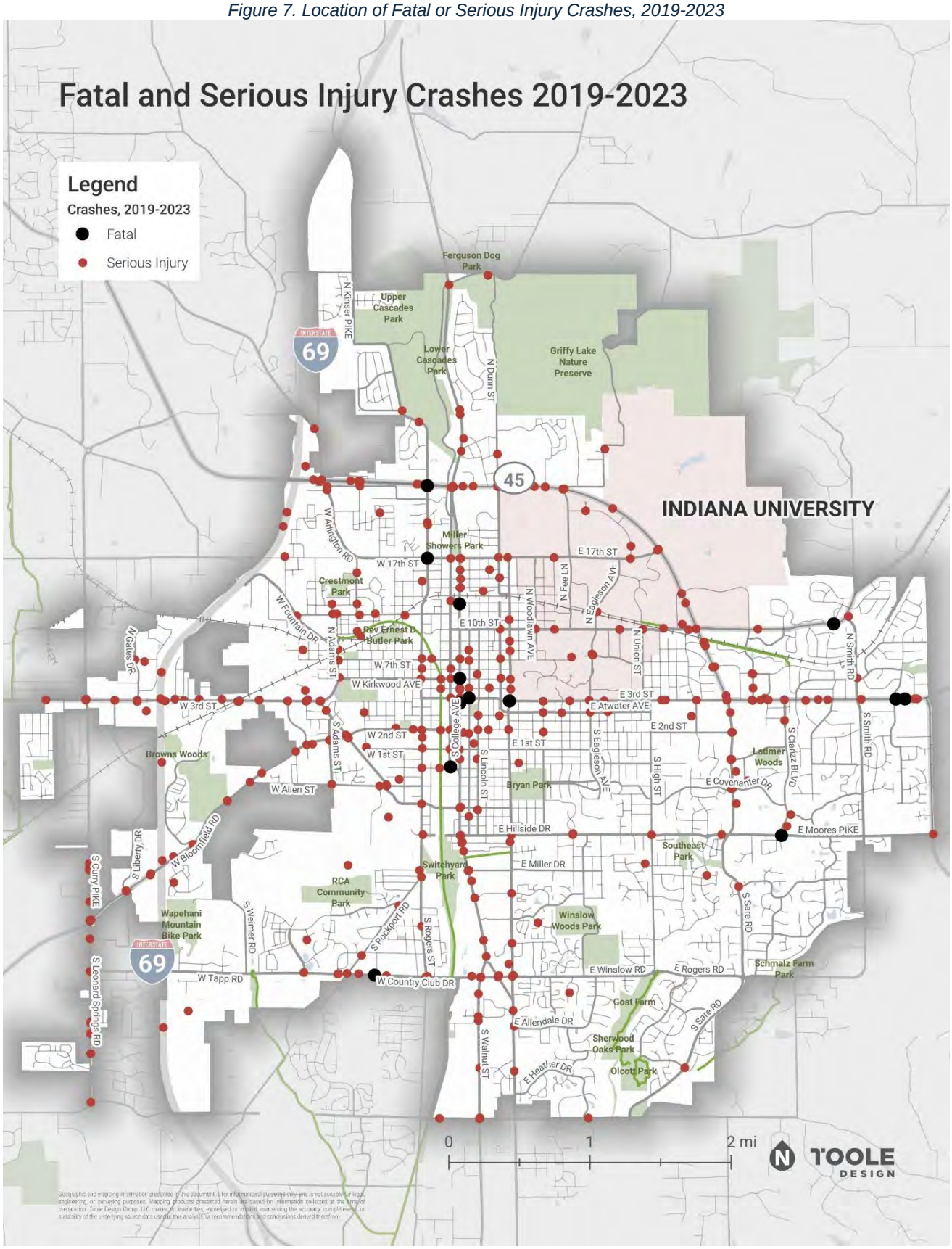


Figure 5. Percentage of Streets by Speed Limit

Figure 6. Percentage of FSI Crashes by Speed Limit

DRAFT October 2024

Figure 7. Location of Fatal or Serious Injury Crashes, 2019-2023



The streets in Bloomington with the largest clusters of fatal and serious injury crashes are:

- State Highway 45/46 (aka the Bypass)
- West 3rd Street
- East 3rd Street
- North Kinser Pike
- College Avenue
- Walnut Street
- South College Mall Road
- West Country Club Road/East Winslow Drive
- North and South Indiana Avenue

These streets tend to have speed limits of 30, 35, 40, or 45 MPH and tend to have four or more lanes if they are two-way or two or more lanes if they are one-way. All of these streets are either INDOT state highways or city-owned arterials. Figure 8 and Figure 9 on the following pages show the speed limit and functional class of streets in Bloomington.

Figure 8. Speed Limits of Streets in Bloomington

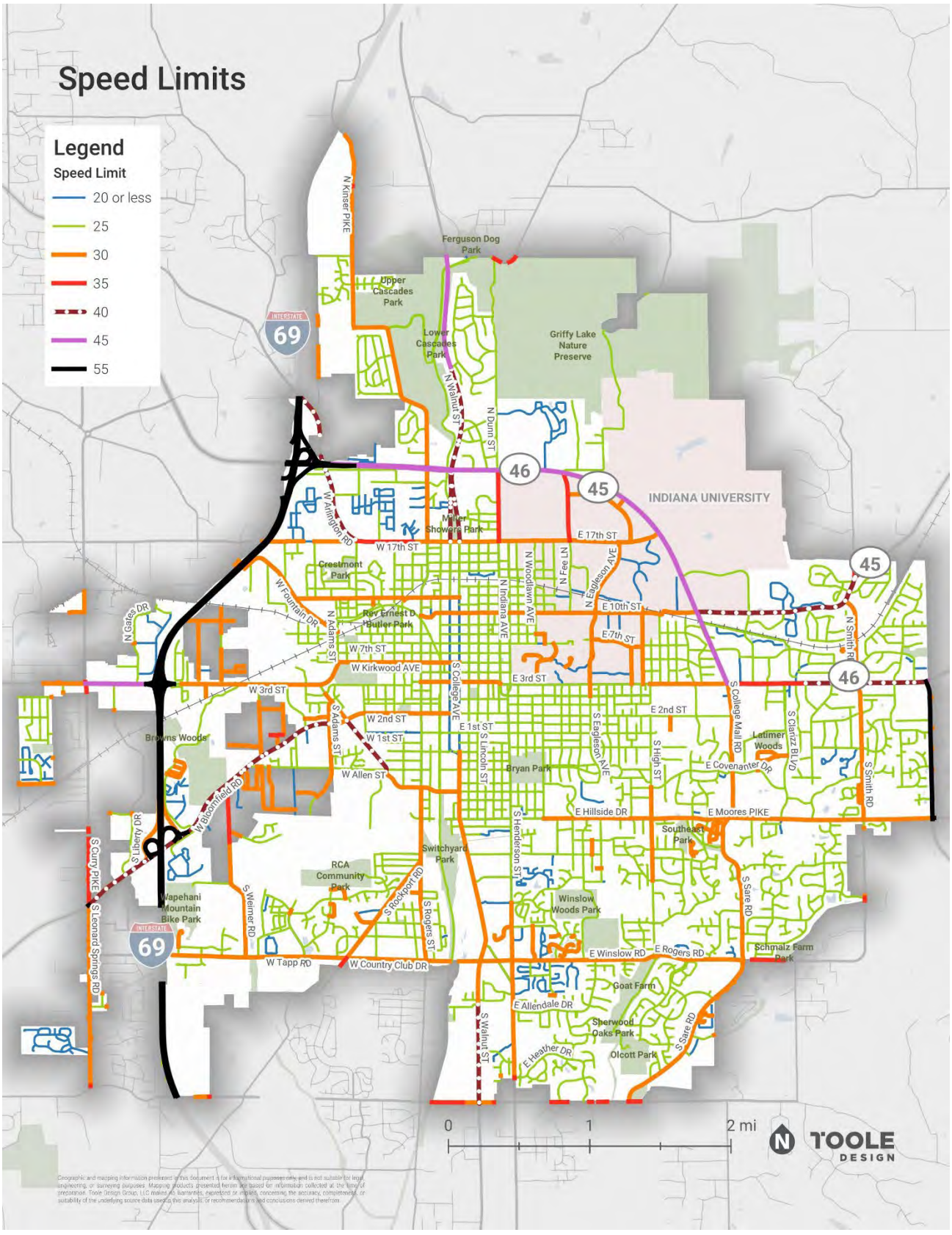
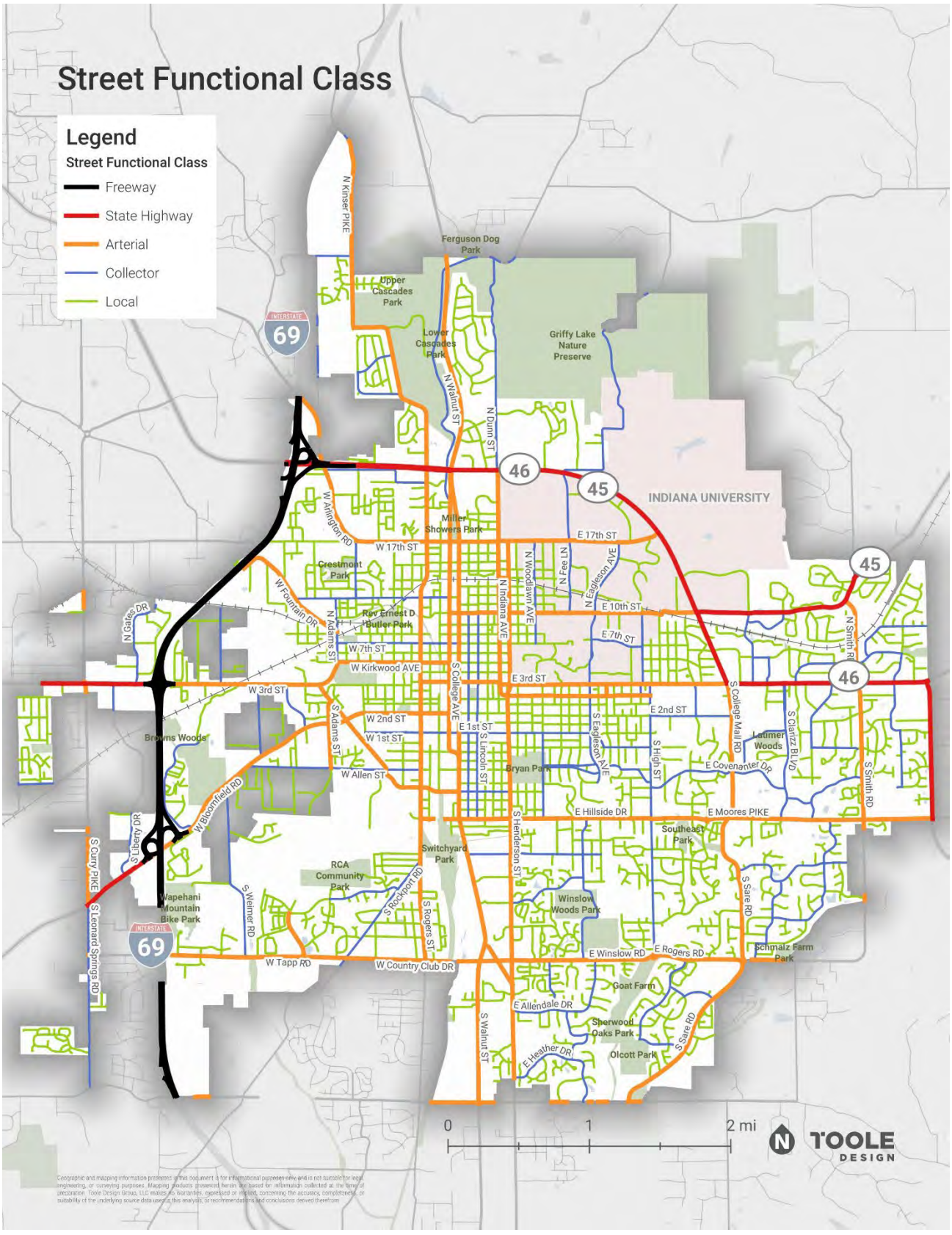


Figure 9. Functional Class of Streets in Bloomington



Rear-end and right angle crashes ("T-bone crashes") are the leading fatal and serious injury crash types for people driving on Bloomington's streets. "Failure to Yield the Right of Way" was the most common leading contributing factor for these same crashes. For crashes involving pedestrians or people riding scooters, "other" is the most common listed crash type. This crash type typically has more detailed information listed in the narrative of the crash report, however, this data was not available in the crash dataset used for analysis.

Figure 10. Crash Type by Mode of Travel for Fatal and Serious Injury Crashes, 2019-2023

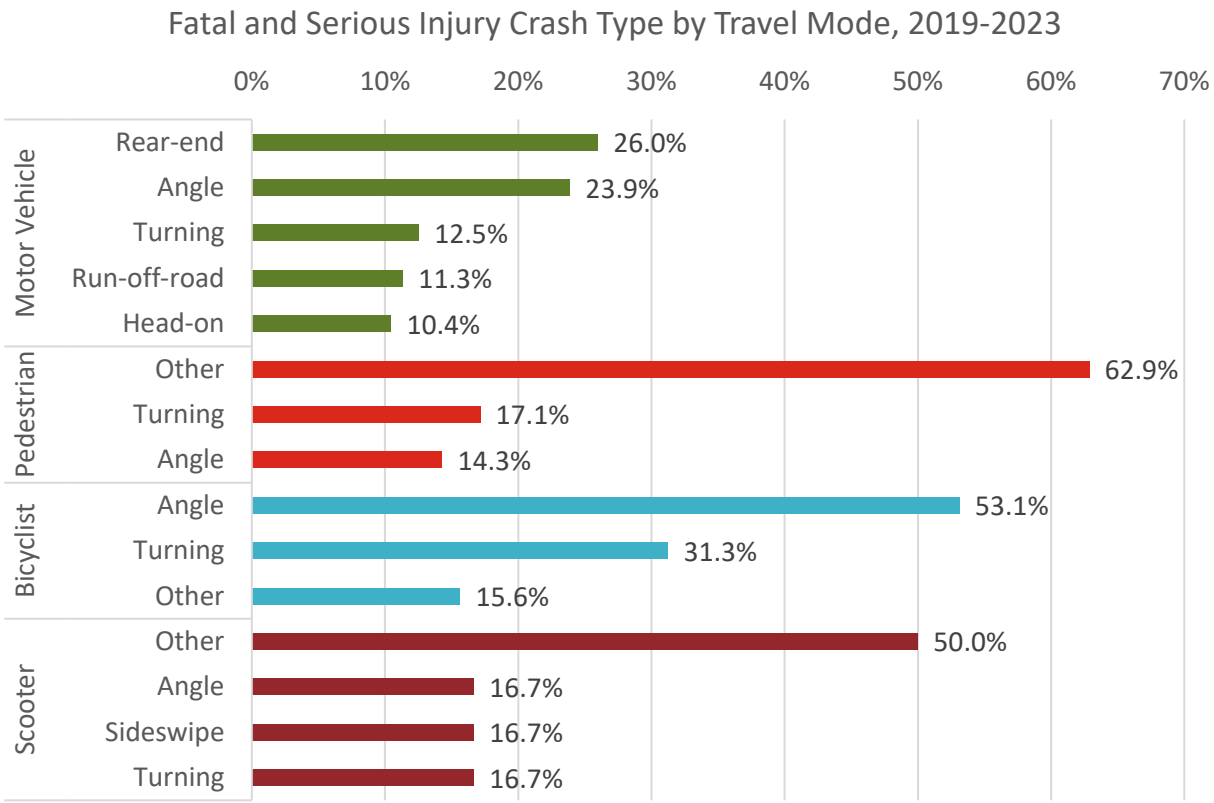
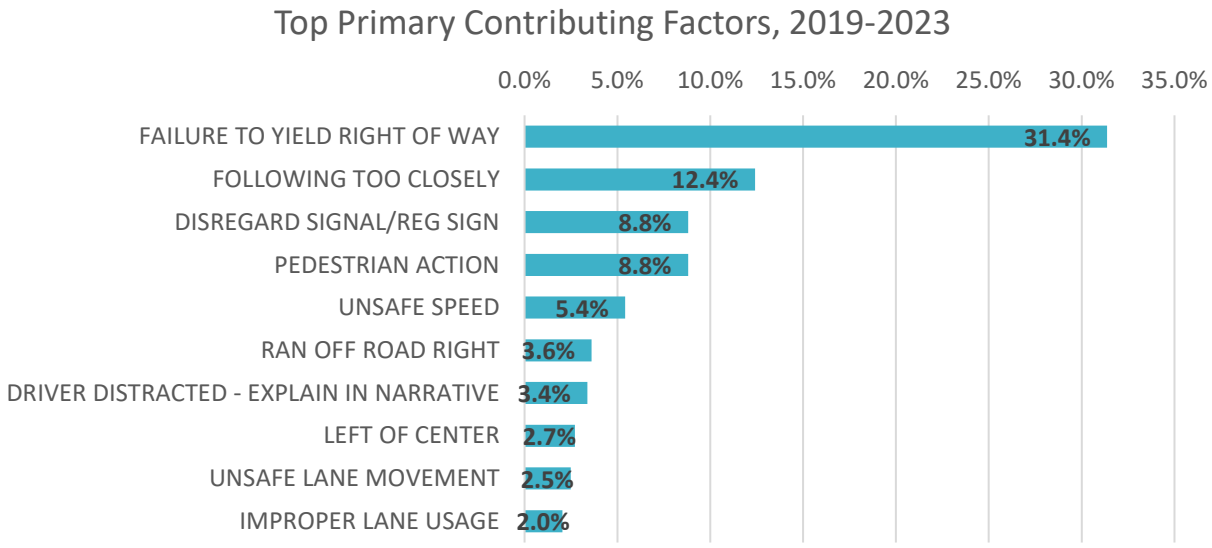
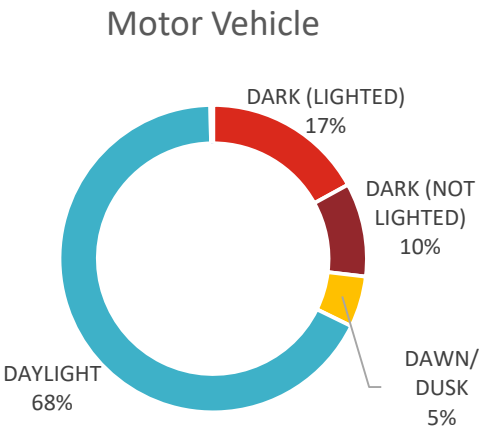
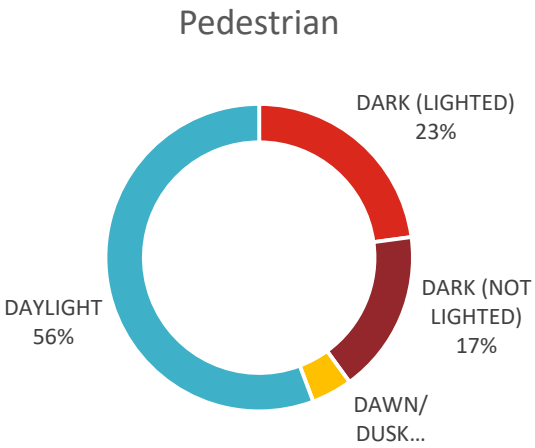


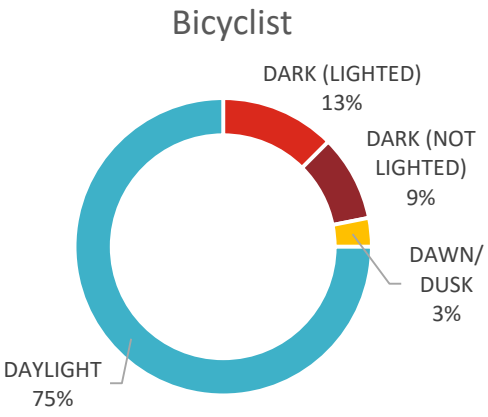
Figure 11. Top Primary Contributing Factors for Fatal and Serious Injury Crashes, 2019-2023

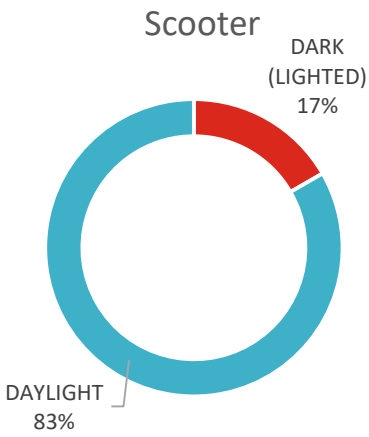


40% of fatal and serious injury crashes that involved a pedestrian were at night. This follows national crash trends in which darkness commonly elevates risk, especially for pedestrians, due to reduced visibility and increased vehicle speeds at night, among other reasons.









High Injury Network

The City of Bloomington developed a High Injury Network to determine where to focus transportation safety projects in the future in order to reach zero fatal or serious injury crashes.

A High Injury Network is a map of streets that have the highest frequency of fatal and serious injury crashes. These locations are candidates for safety improvements as part of a data-driven, reactive safety program. By targeting these high injury locations with the safe systems approach, we can be sure that our investments will produce strong results for our road users.

Method

The crash dataset used to create the High Injury Network was fatal and serious injury (FSI) crashes from the years 2019 through 2023. Roads were analyzed using a sliding window-type analysis approach with a step size of 0.1 miles and a window size of 0.5 miles, producing smoothed crash frequencies. Crashes which occurred near intersections were assigned to all intersection approaches within 10 meters to account for corridors patterns that traverse intersections.

Results

All analysis results are summarized in the following maps. Each map below visualizes the top 15% of crash locations based on their respective scores. The scores are calculated for the 2019 through 2023 study period, summarizing the total number of crashes on each roadway segment as follows:

- All Mode FSI Crash Score: Total number of fatal or serious injury crashes of any mode. (Figure 12)
- Motor Vehicle FSI Crash Score: Total number of fatal or serious injury crashes involving only motor vehicles. (Figure 13)
- Pedestrian FSI Crash Score: Total number of fatal or serious injury crashes involving pedestrians. (Figure 14)
- Bicyclist FSI Crash Score: Total number of fatal or serious injury crashes involving bicyclists. (Figure 15)
- Scooter FSI Crash Score: Total number of fatal or serious injury crashes involving people riding scooters. (Figure 16)
- Vulnerable Road User FSI Crash Score: Total number of fatal or serious injury crashes involving pedestrians and bicyclists (Figure 17)

Some of the top High Injury Network corridors include:

- State Route 45/46
- East 3rd Street
- West 3rd Street
- Walnut Street
- College Avenue
- West Country Club Drive

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Figure 12. High Injury Network - All Modes

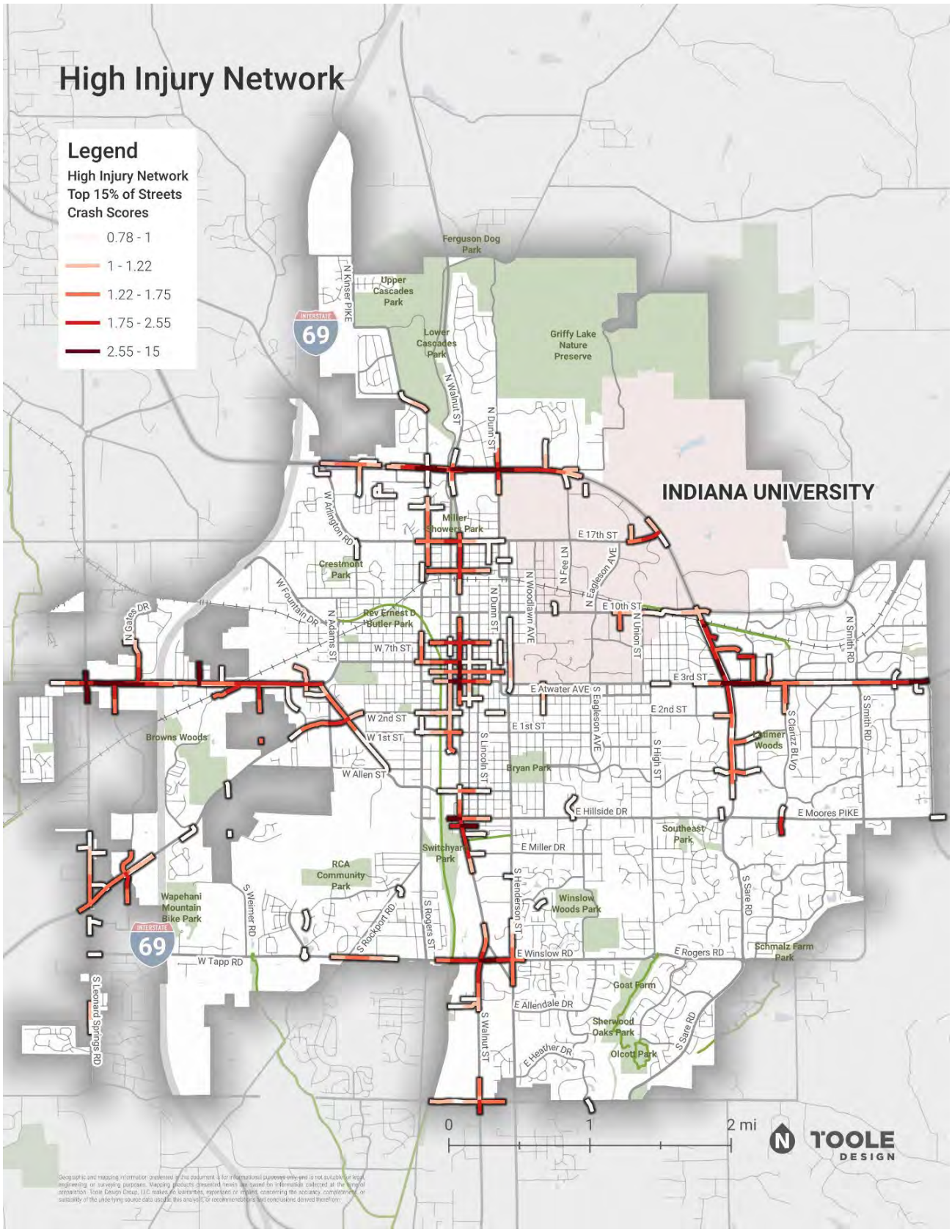

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Figure 13. High Injury Network - Motor Vehicle Crashes

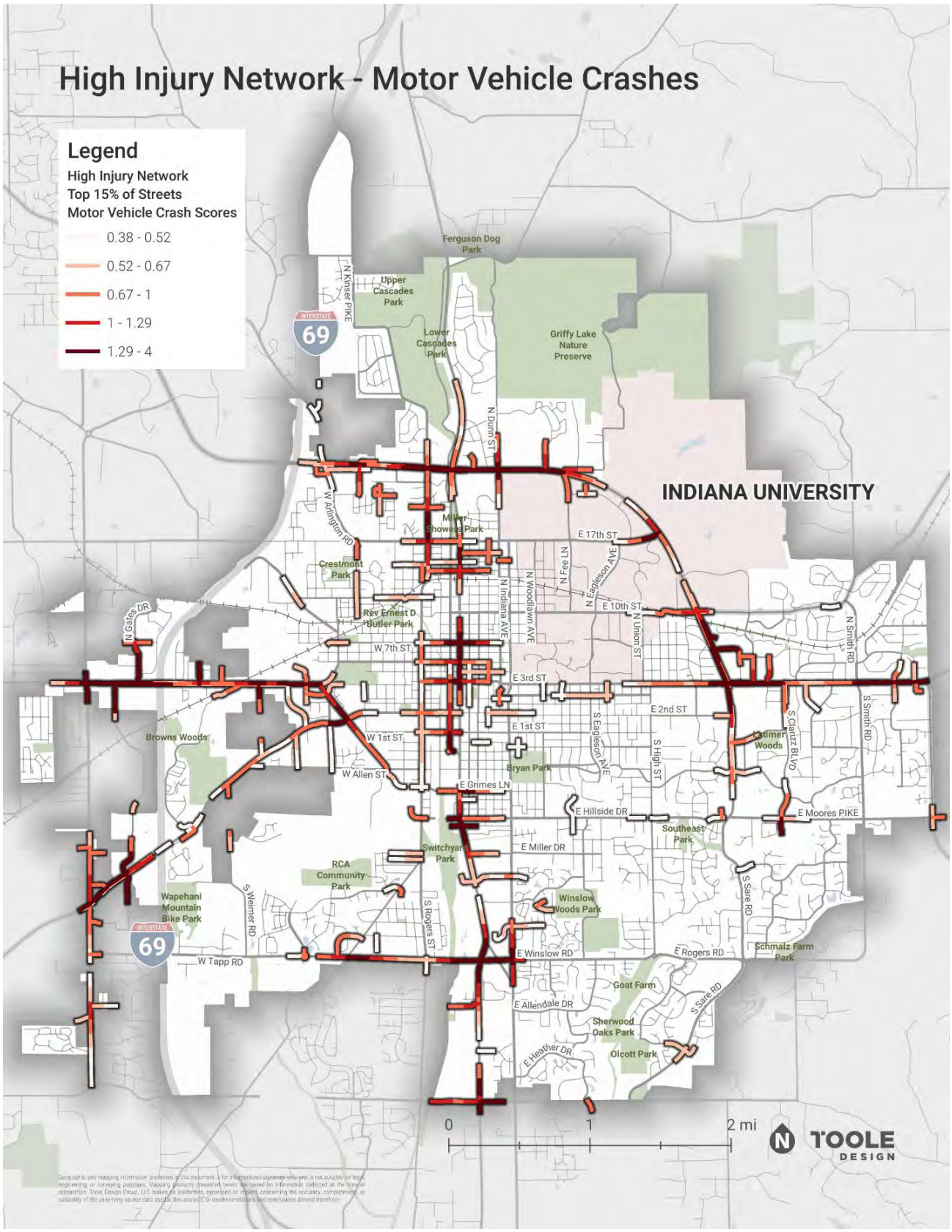

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Figure 14. High Injury Network - Pedestrian Crashes

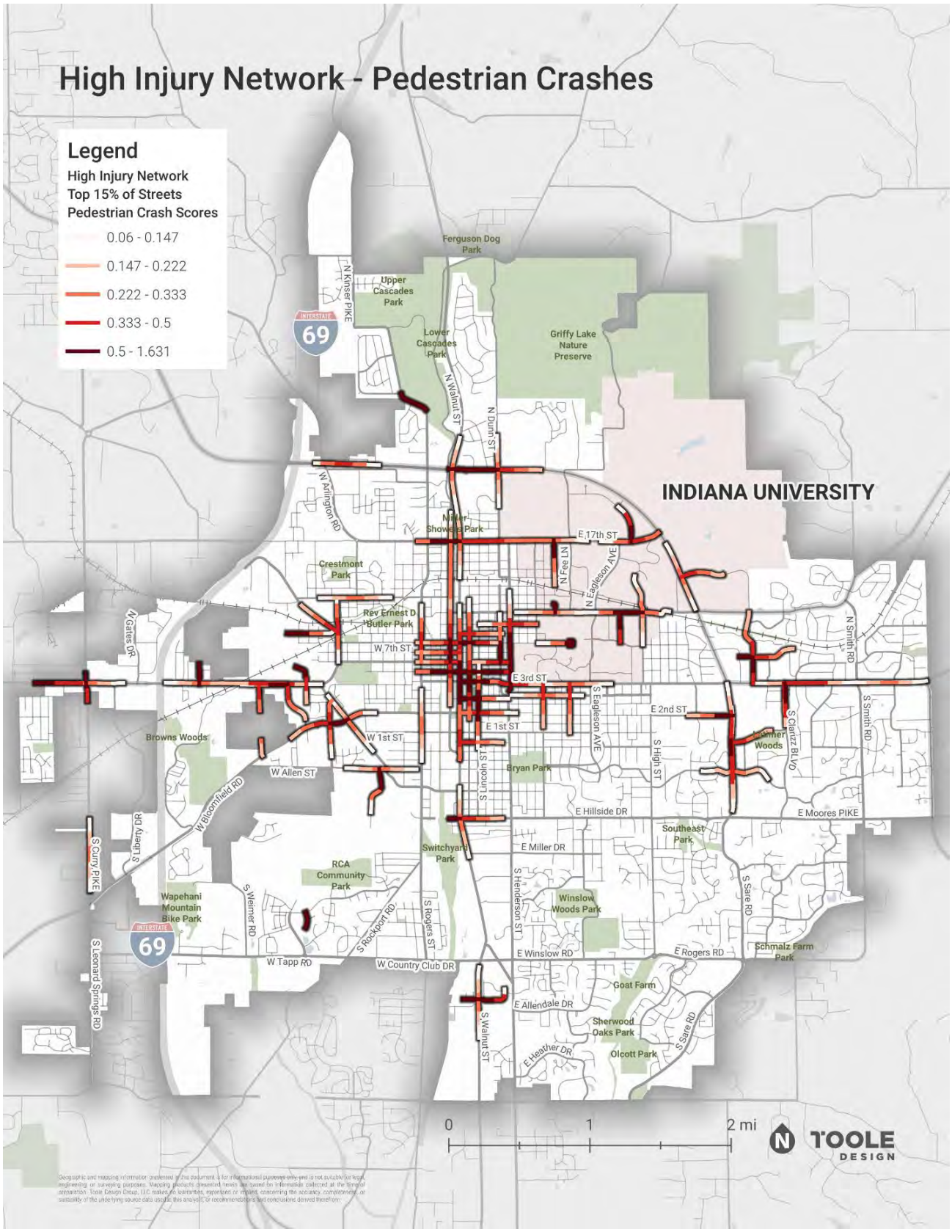

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Figure 15. High Injury Network - Bicyclist Crashes

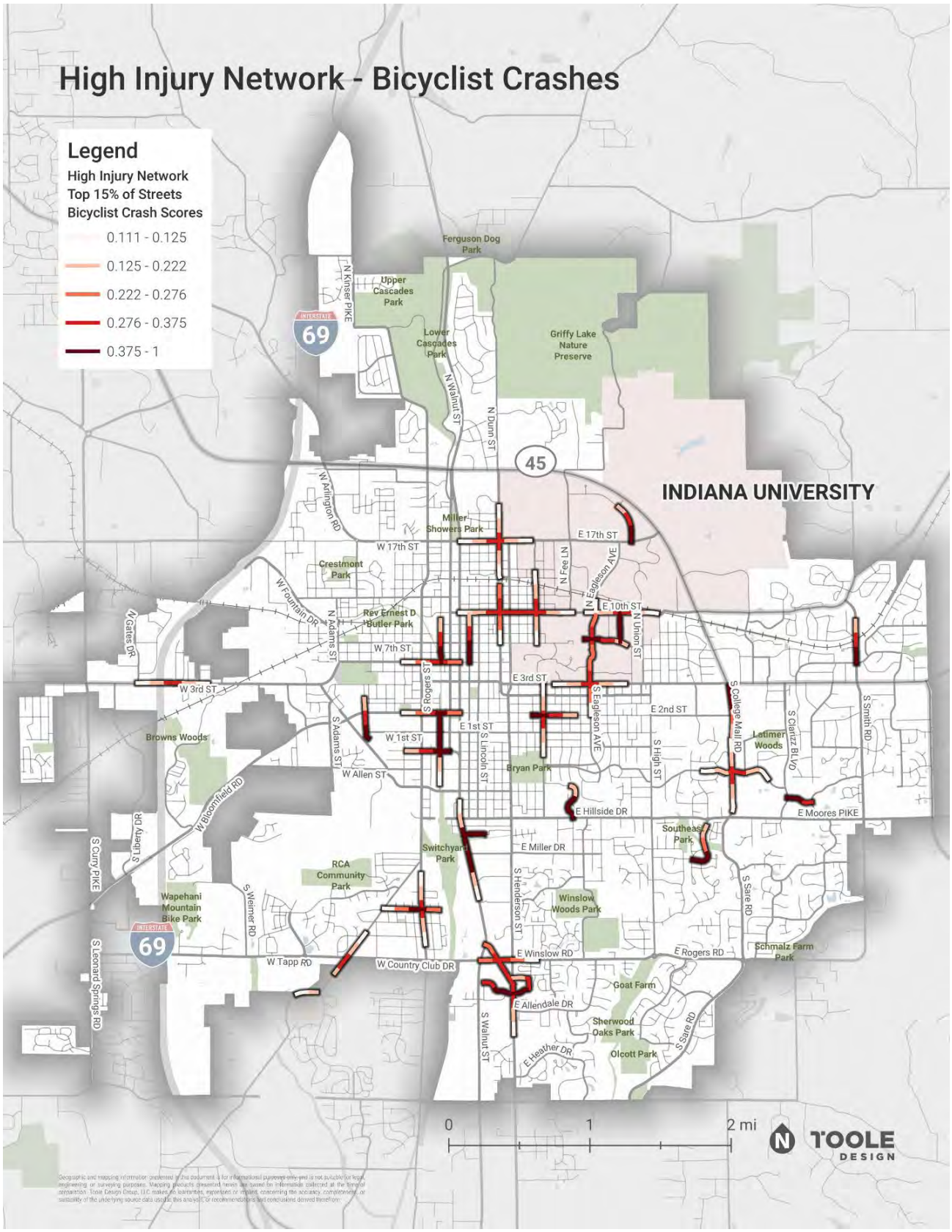

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Figure 16. High Injury Network - Scooter Crashes

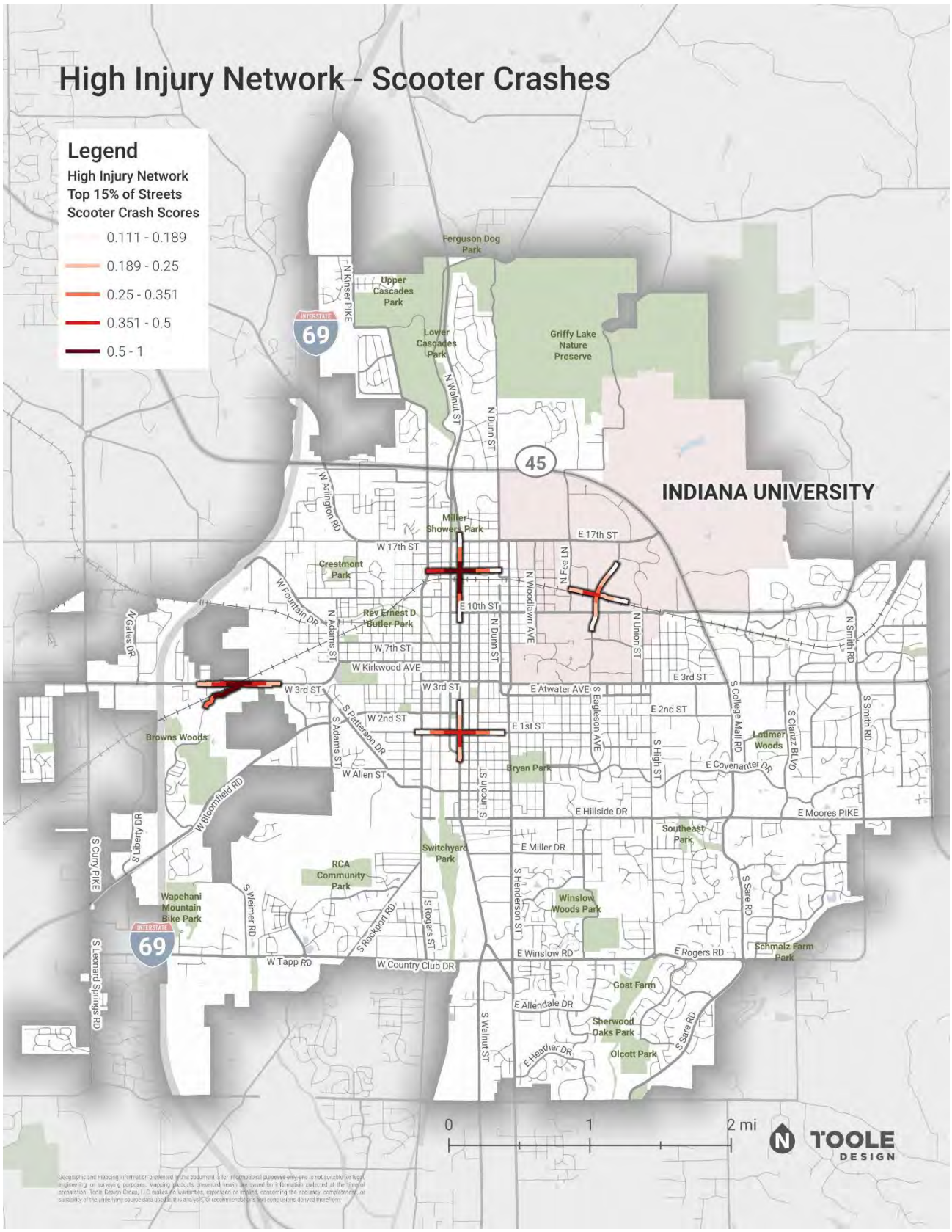

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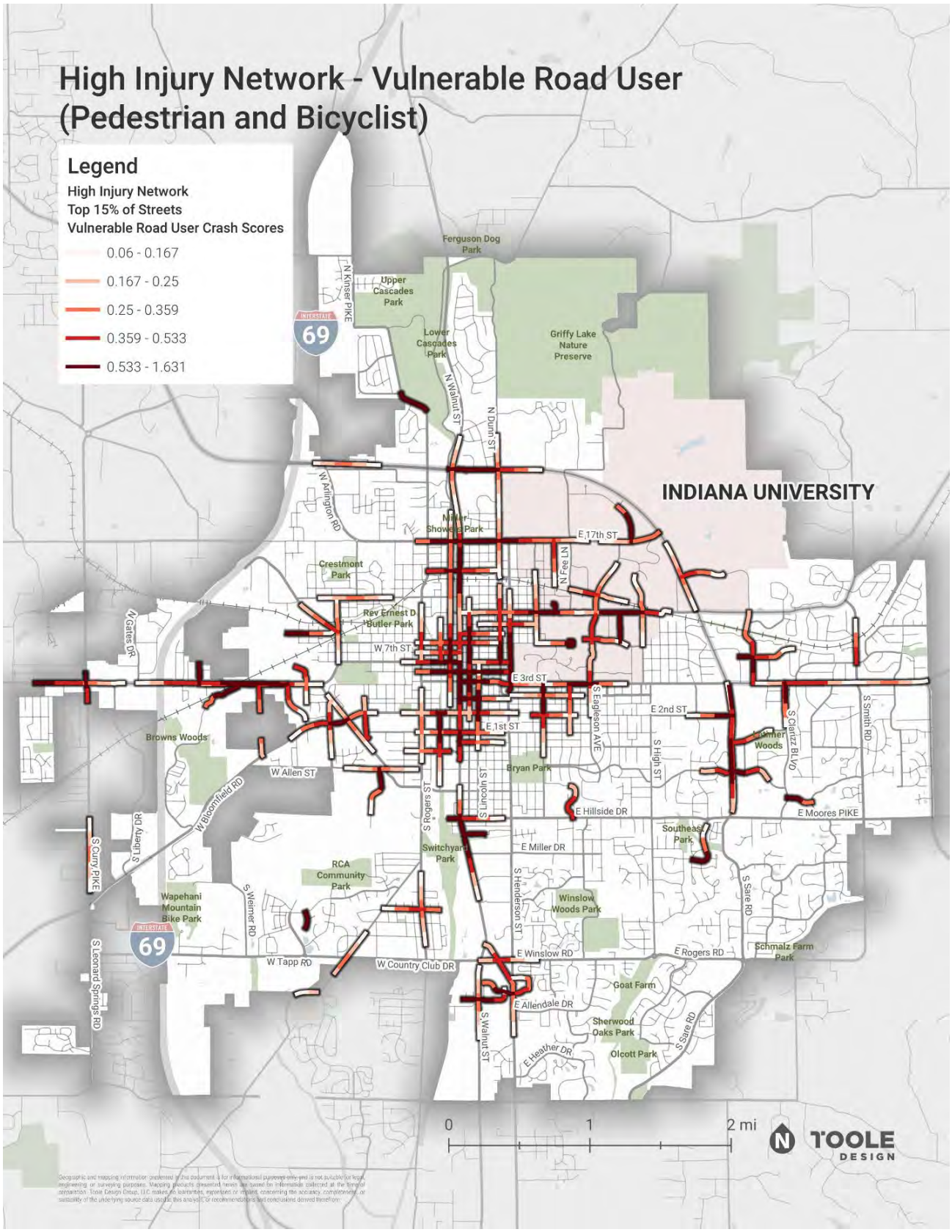
Figure 17. High Injury Network - Vulnerable Road Users (Pedestrian and Bicyclist)



High Risk Network

In addition to the High Injury Network analysis, which looks backwards in time at the locations of crashes historically, the City of Bloomington also developed a High Risk Network (HRN). High Risk Network analysis highlights roads that have similar designs, land use patterns, or population characteristics with roads on the High Injury Network. In other words, the High Risk Network is a proactive, systemic assessment of where fatal and serious injuries are likely to occur in the region. These roads are candidates for safety improvement as part of a data-driven, proactive safety program. This is a key aspect of the Systemic Safety Approach which requires agencies to think critically about where crashes could occur in the future based on systemic risk – even if very few or no severe crashes have occurred in those locations in the past.

Method

For this High Risk Network analysis, roadways were analyzed using the facility profile analysis methodology, which identifies unique combinations of roadway design and contextual attributes which correlate with elevated crash risk. The analysis produces a risk score for each roadway segment based on the frequency of crashes observed at similar facilities across the study area, representing the average number of crashes at comparable facilities during the study period. All facilities are categorized into one of five tiers based on their relative risk score, namely *Critical*, *High*, *Medium*, *Low*, and *Minimal*. Attributes considered in the analysis include:

- **Roadway Class:** Major Road (functional class of minor arterial and above or major/primary local roads) or Minor Road (all others).
- **Lane Configuration:** Two-lane or Multilane.
- **Setting:** Urban or Rural context.
- **Traffic Volume:** Average annual daily traffic (<1,000 vehicles per day (vpd), 1,000-10,000 vpd, or 10,000+ vpd).
- **Speed Category:** Posted speed limit (≤30 MPH, 35-45 MPH, or 50+ MPH).
- **Percent Zero Vehicle Households:** Percent of households within the census block group which have zero vehicles.
- **Percent of Residents in Poverty:** Percent of population within the census block group at or below 2X the poverty level.
- **Percent Younger Residents:** Percent of population within the census block group below the age of 18.
- **Percent Older Residents:** Percent of population within the census block group age 65 years or older.
- **Percent Disabled Residents:** Percent of population within the census block group with a disability.
- **Housing Cost Burden:** Percent of households within the census block group which spend more than 30% of income on housing.
- **Transportation Access:** Equitable Transportation Communities data transportation access subcomponent score.

Results

The analysis results are shown in a map in Figure 18. This map visualizes the *Critical* and *High* tier facilities. These streets have a higher average fatal and serious injury crash per mile rate than other streets in Bloomington.

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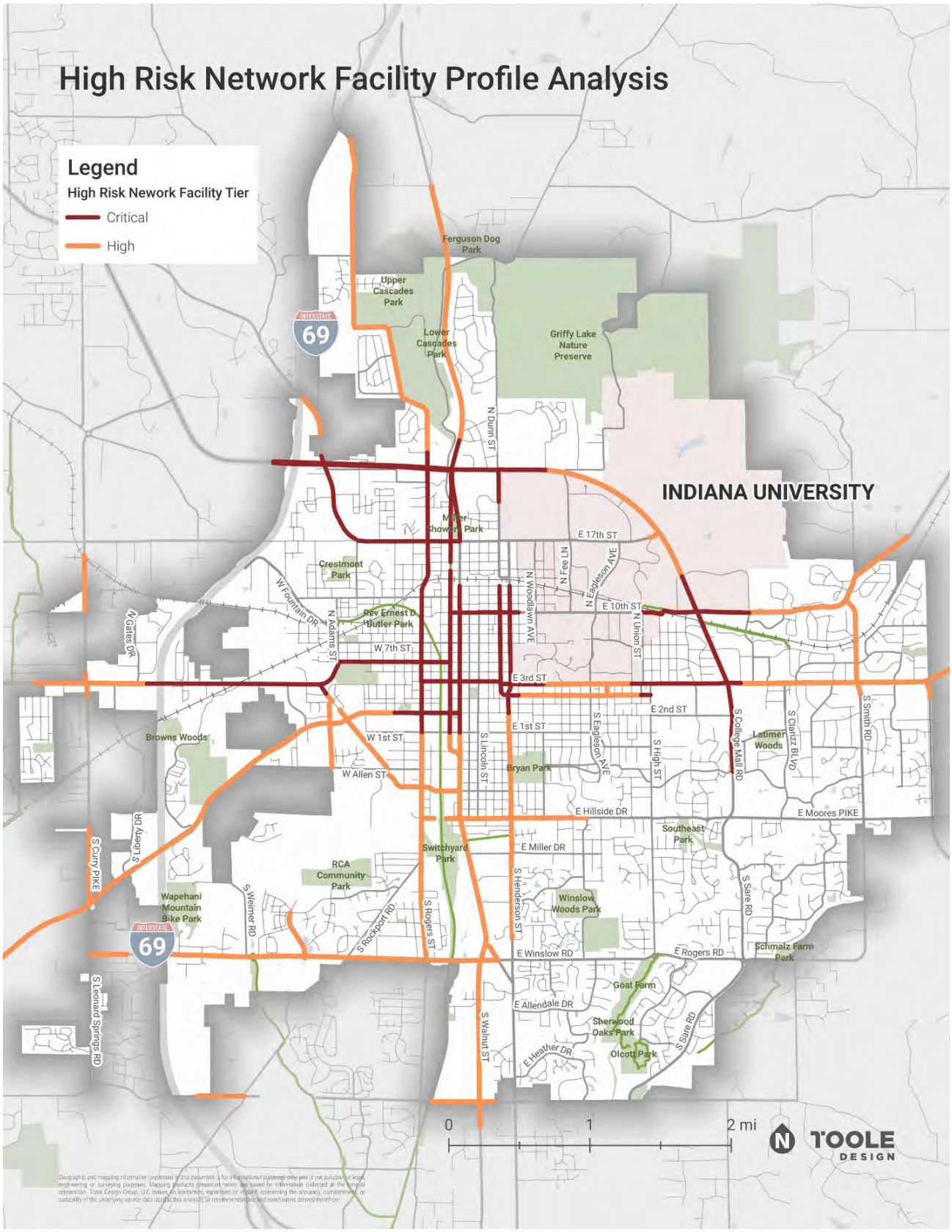
Figure 18. High Risk Network - Facility Profile Analysis



Voices of Bloomington

People's feelings and opinions around street safety are formed through a combination of personal experience, conversations and stories within their communities, and perceptions. It's invaluable to understand these feeling and thoughts about street safety because any recommendation or project that results from this plan will aim to not only factually improve the safety of Bloomington's streets, but also increase people's feelings of safety as they walk, bike, drive, or take transit around the city.

A wide variety of public engagement opportunities were provided to gather residents' thoughts and opinions on transportation safety in Bloomington as part of this project. Over 400 residents submitted more than 1,000 unique responses via an interactive webmap, and nearly 2,000 additional residents participated in a one-week citywide public participation blitz that included 13 pop-up stations, three evening events, eight classroom visits, walking tours, and public meetings at various locations throughout the City. These strategies were designed to hear from a wide variety of Bloomington's residents, with intentional efforts made to get feedback from those that are overrepresented in traffic crashes but often underrepresented in public engagement efforts – youth and seniors, low-income individuals, people who walk and bike, and People of Color.

This public outreach was complemented by a project steering committee that was made up of members of different City commissions (Plan, Parking, Community Accessibility, Human Rights, Bicycle and Pedestrian Safety, and Traffic), City Council, and MPO staff. Project staff meet with this group regularly during the project at key decision points to get feedback and recommendations for going forward. More detail on the engagement efforts can be found in Appendix X.

While the project team had various conversations on a wide array of topics during our engagement effort, a few important themes stood out that were invaluable as we created this plan's recommendations:

- **Distracted driving and people driving too fast were, by far, the top two factors that make people feel unsafe on Bloomington's streets.** These factors were followed by people not yielding at intersections and the lack of safe places for bicyclists. It should be noted, however, that different locations resulted in different distributions of responses. For example, at a pop-up held at Tri-North Middle School, a much higher percent of participants selected "fear of physical or verbal harassment" as one of their top concerns. This variation is likely due to middle school students mostly being on foot, bike, or scooter and, in general, feeling threatened by adults.

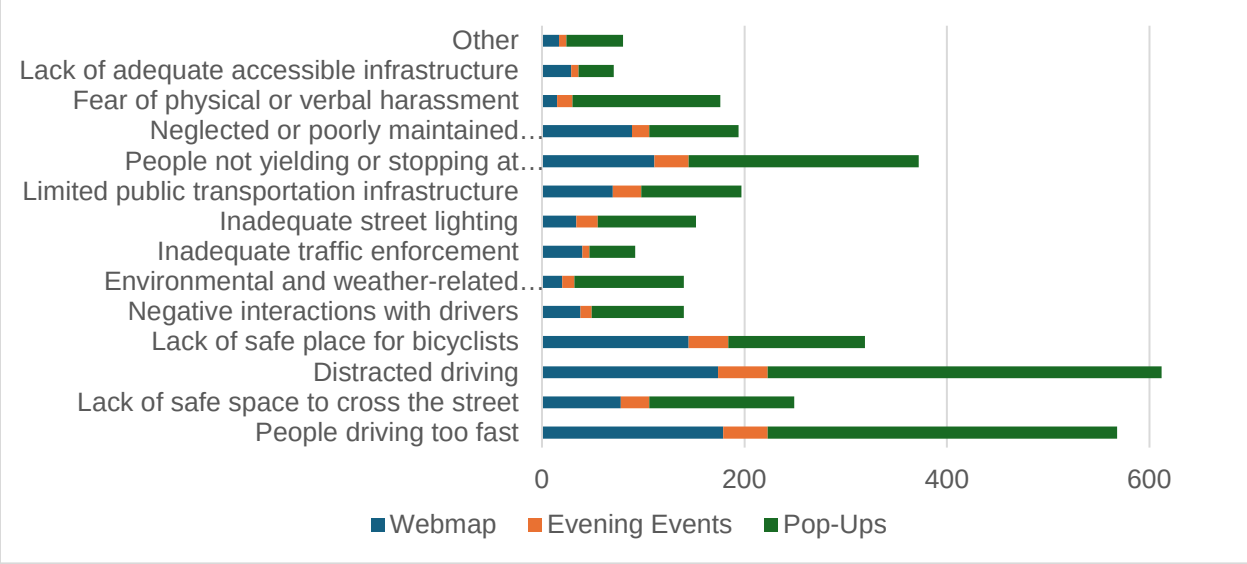


Figure 19. Responses to "What are the top three things that make you feel unsafe on Bloomington's Streets?"

- **Residents think is it very important to invest in a safe and comfortable transportation system. Nearly all participants answered** “very important” to our posed question. Very few selected “not important” as their answer.

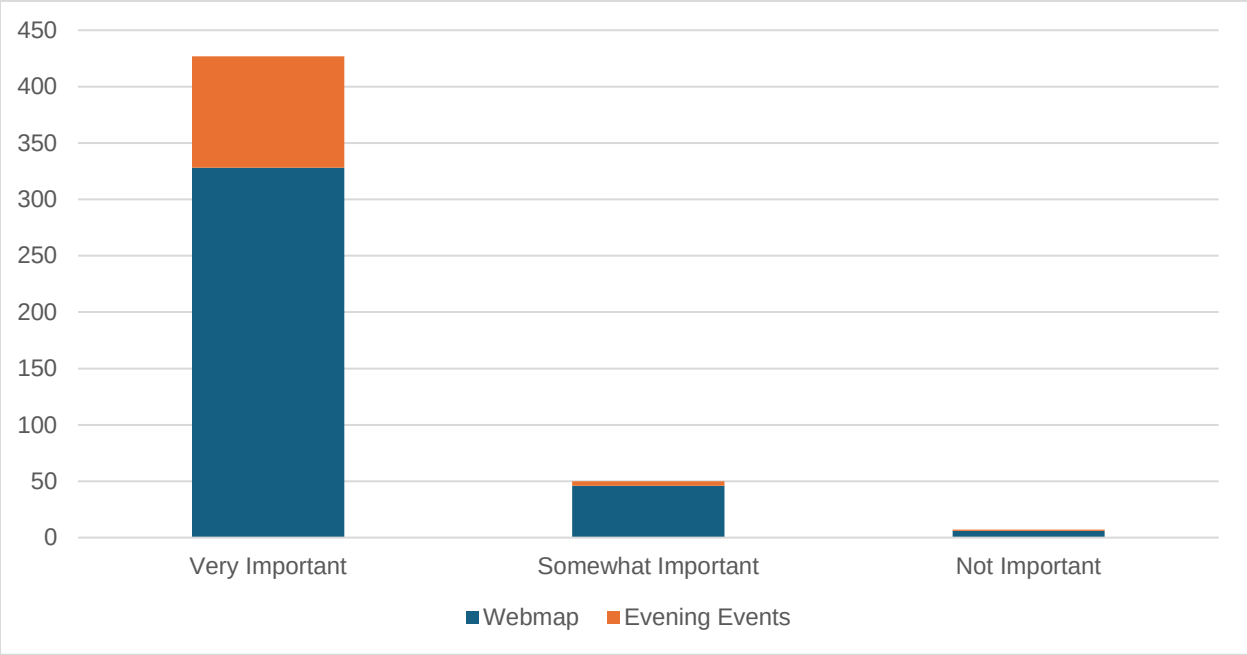


Figure 20. Reponses to "How important do you think it is to invest in a safe and comfortable transportation system in Bloomington?"

- **Most residents are willing to make trade-offs for the sake of safety.** That said, many participants admitted that they don’t usually drive at or below the speed limit which shows that people are in support of safety, in theory, but may need more than a speed limit to encourage them to drive at safe speeds.

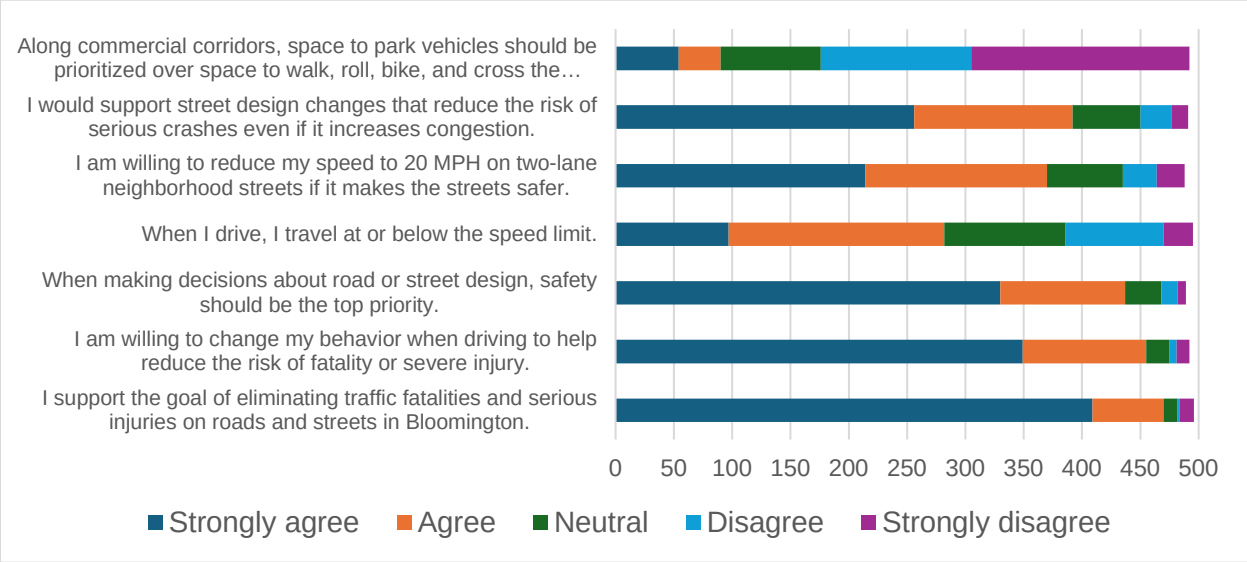


Figure 21. Results to tradeoff questions

- **The feelings of safety differ dramatically depending on how one navigates the City**. In general, respondents felt safe while driving or on transit. Walking was the next “safest,” with a very small amount of respondents saying it feels “very unsafe.” Feelings of safety dramatically dropped from there with less than a quarter of people feeling safe while biking or in a wheelchair. Notably, nobody responded that they felt “very safe” on a scooter.

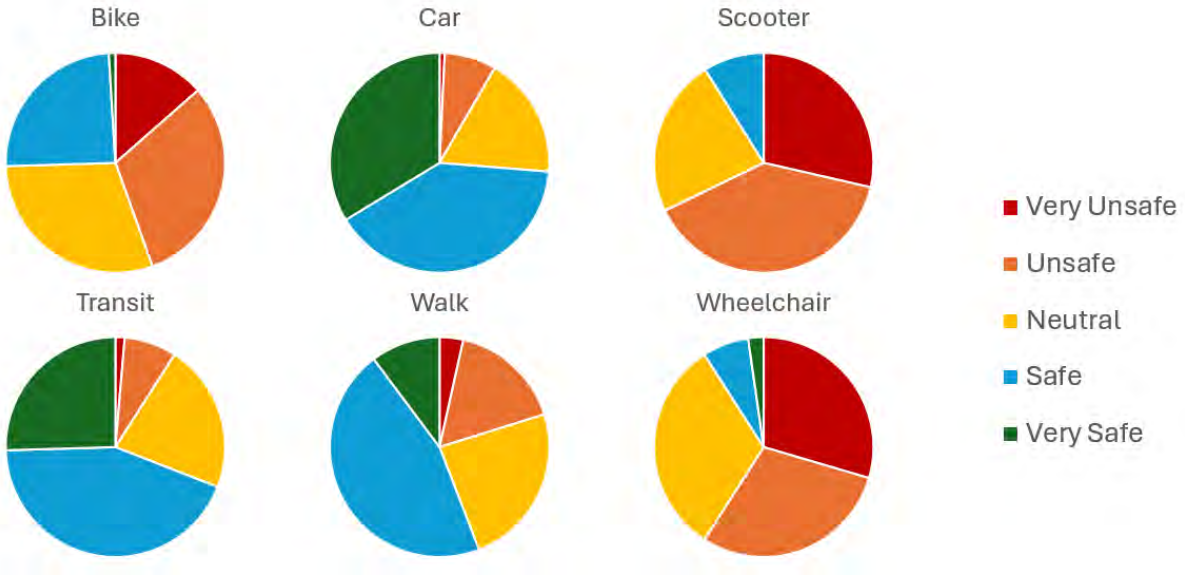


Figure 22. Responses to "Generally, how safe do you feel traveling around Bloomington walking, rolling, biking, scooting, driving, or taking transit?"

- **More separation between modes makes everybody feel safer.** Respondents that walk or bike want more separation between them and vehicles, better maintained facilities, and more sidewalks, bicycle lanes, or trails in the community. For people biking, more secure bicycle parking and better wayfinding were also common selections. For pedestrians, participants selected better lighting and more accessible infrastructure as items that would make them feel safer.

  Interestingly, participants selected “more space separating people bicycling from car traffic” and “better road maintenance” as the top two items that would make them feel safer while driving, which is nearly identical to the responses of pedestrians and bicyclists. Reducing driving speeds using speed bumps or lane reductions, and better or more visible signs were the next most common answers.
  For transit riders (which had less responses than questions for walking, rolling, biking, and driving), participants highlighted improvements at transit stops, especially adding more pedestrians’ crossings and/or signals near stops. Adding more shelters was the second most common choice, followed by the desire to increase lighting around transit stops.

What would make you feel safer when walking or rolling?	
More space separating people walking from car traffic	402
More sidewalks or trails	267
Better maintenance of sidewalks and trails	241
Better lighting of sidewalks, trails, and roads	176
More accessible infrastructure (curb-ramps, wheelchair access, wider sidewalks, etc.)	113
Additional signs or signals at intersections	94
Additional police presence	51
Other	48
Better wayfinding so I know where to go	21

What would make you feel safer when biking?	
More space separating people bicycling from car traffic	243
More bicycle lanes or trails in the community	236

Better maintenance of bicycle lanes and trails	136
More secure bicycle parking	91
Additional signs or signals at intersections	82
Better lighting of trails and roads	73
Other	44
Better wayfinding so I know where to go	26
Additional police presence	19

What would make you feel safer when driving?

Better road maintenance	235
More space separating people bicycling from car traffic	219
Increased street lighting	153
Reducing driving speeds using speed bumps or reducing the number of lanes	134
Lowering speed limits	130
Better or more visible signs so I know where to go	106
Other	78
Additional police presence	64
Increasing the number of traffic signals	36

What would make you feel safer when taking transit?

Adding more shelters at transit stops	151
Increasing lighting around transit stops	145
Having more pedestrian crossings and/or signals near transit stops	133
More route information so I know where to go	117

- **The presence of walking and cycling facilities, such as sidewalks, bicycle lanes, and crossings, make a location feel safe. Fast driving speeds are the top reason areas feel unsafe.** Respondents feel safe near the B-Line Trail or 7-Line, and other places where there are many other pedestrians and bicyclists (e.g. Switchyard Park, Bryan Park, Kirkwood St.). Respondents identified arterial and collector roadway segments, such as College Avenue, Walnut Street, and East 3rd Street where a higher degree of bicycle and pedestrian traffic occurs, particularly adjacent to downtown and Indiana University, as areas where they feel unsafe.

Table 2. Summary of safe and unsafe location webmap attributes

"This Location is Safe Because"	Count	"This Location is Unsafe Because"	Count
There are bicycle lanes or space for bicyclists	79	People drive too fast	392
There are sidewalks	74	Drivers do not pay attention	324
There are a lot of other people walking or biking	66	There are no safe places for people walking, biking, or rolling to cross the street	219
People drive at the speed limit or slower	41	There are no bicycle lanes or space for bicyclists	189
There are safe crossings	40	There are no or inadequate sidewalks	189
Drivers are paying attention	35	Other (please specify below)	185
There is good lighting at night for pedestrians or bicyclists	22	There are too many cars on the road	177
Other (please specify below)	18	I have experienced personal safety or harassment at this location	110

"This Location is Safe Because"	Count	"This Location is Unsafe Because"	Count
		There is not enough lighting at night for pedestrians or bicyclists	84
		There is not enough lighting at night for driving	45
Total	**375**	**Total**	**1,914**

GETTING TO ZERO

It's one thing to know what the issues are and where they are happening. It's another thing to know what to do and how to act. Bloomington is ready to act.

This section outlines the commitments the City of Bloomington will do to make our streets safer for everybody. The actions are organized into five categories:

- Communication and Integration into Existing City Business.
- Design Standards and Data.
- Project Programming, Development, and Funding.
- Government Committees and Structure.
- Project Prioritization.

The tables on the following pages have prioritized the actions associated with these categories into three timeframes:

1. Immediate or Short Term (2024-2026)
2. Medium Term (2027-2034)
3. Long Term (2035-2039)

Each action includes an interim goal year, identified lead(s), and resources needed to complete the action. These actions and strategies should be reviewed and revised regularly to ensure that the Bloomington's goal to eliminate fatal and serious injury roadway crashes by 2039 will be achieved.

These strategies and implementation actions will only occur when and where appropriate based on further analysis, engineering design, and environmental assessment. Implementation will also be dependent on staffing, financial, partnership development, and other constraints so while the City will make every effort to implement that following actions, other contributing factors will need to be accounted for.

Immediate or Short Term Action Items (2024-2026)

Communication and Integration Into Existing City Business

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
CI1	Integrate language that communicates safety goals into policy and City processes, such as public outreach, enforcement, development review, street design and planning, and other areas where safety may not be currently prioritized	2025 (development), Ongoing (implementation)	All departments	None
CI2	Update existing plans to incorporate data from and/or attach the SS4A Action Plan	2025	Planning	None
CI3	Establish regular targeted outreach to various neighborhoods and civic groups to collect feedback on transportation safety issues and progress (examples include neighborhood groups, advocacy organizations, IU students and staff, religious organizations)	2025 (development), Ongoing (implementation)	Planning	Planning staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
CI4	Utilize existing events to promote safety messaging and collect feedback (examples include Bloomington Community Farmers' Market, annual City festivals)	2025 (development), Ongoing (implementation)	Planning	Planning staff
CI5	Develop a Community Engagement Plan (CEP) for safety projects that includes set goals, engagement strategies, community partners, engagement timelines, and methods for integrating feedback into the project. Establish a scale to determine dollar amount or impact level that requires certain engagement strategies.	2025 (development), Ongoing (implementation)	Planning	Planning staff
CI6	Establish a system to communicate materials to the public virtually (via website, social media, email newsletter, etc.), printed (at daily destinations, in the right-of-way, at public buildings, etc.), and in media (newspapers, online alternative news sources, television, radio, etc.) to all types of transportation users. Materials should be provided in English and Spanish at a minimum and should consider translation into other languages as needed.	2025 (development), Ongoing (implementation)	Planning	Planning staff
CI7	Consider creation of a program to involve community members, groups, and organizations in conducting and participating in engagement efforts. Consider establishing community ambassadors to employ for engagement efforts and establish funding source to provide fair compensation and necessary resources for ambassadors.	2026 (development), Ongoing (implementation)	Planning, Advisory Transportation Commission	Funding, Planning staff
CI8	Invest in a public communication campaign, focusing on shifting culture towards multimodal travel and educating transportation users about safety in all modes of travel. Includes education about crash factors, safety data, benefits aside from traffic safety (such as physical health, personal safety, air quality, economic and health disparities, etc.). Also includes information and training to local media around understanding crash data, minimizing victim blaming, and high-level understanding of SS4A efforts.	2026 (development), Ongoing (implementation)	Planning	Funding, Planning staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
CI9	Collaborate with local groups and advocates for walking, biking, and vulnerable road user groups to expand the reach of SS4A efforts. Includes collaboration with these groups to host events that promote and advocate for walking, rolling, biking, and taking transit.	2025 (development), Ongoing (implementation)	Planning	Funding, Planning staff

Design Standards and Data

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
DS1	Develop and/or revise City standard details for driveways, sidewalks, bikeways, etc. that integrate Safe Systems approach design principles and details	2025	Planning, Engineering	Planning and Engineering Staff
DS2	Encourage testing of new safety countermeasures and monitor before/after condition data, lessons learned, feedback received, and best practices.	Immediate (ongoing)	Engineering	None
DS3	Revise (as appropriate) land use and zoning to promote redevelopment and new development that complements slow vehicle speeds, encourages trips outside of personal vehicles (e.g., providing covered bike parking), and funds adjacent transportation safety projects.	2025	Planning	Planning staff
DS4	Establish a policy that states that safety improvements take priority over motor vehicle operations and capacity.	2024	Planning	None
DS5	Develop or invest in a system to collect vehicle speed data throughout the City	2026 (development), Ongoing (implementation)	Engineering, Police	Funding; Engineering and/or Police staff
DS6	Identify criteria or universal adoption of installation of “No Turn on Red”, Leading Pedestrian/Bicycle Intervals, Rest-In-Red, and Pedestrian Scramble crossings, prioritizing implementation on the HPN and other high pedestrian areas	2025	Engineering	Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
DS7	Analyze sight distance and visibility of all roadway users at intersections and midblock crossings. Adopt policies to remove features that obstruct visibility at these locations and prohibit such obstructions from being constructed at new locations.	2026	Planning, Engineering	Planning and/or Engineering staff
DS8	Establish truck turning standards (design and control vehicles) based on reasonable truck usage and assess existing intersections to determine locations of oversized curb radii.	2026	Engineering	Engineering staff
DS9	Incorporate speed and other safety analysis data into transportation elements of future planning efforts.	2025 (development), Ongoing (implementation)	Planning	Planning staff
DS10	Improve access to and understanding of crash data by working with departments to improve the quality and consistency of police crash data; study the intersection of crash data and EMS, hospital, and trauma registry data for crash connections; and work with community partners to access detailed crash data.	2026	Planning, Police	Planning and Police staff
DS11	Conduct before and after analysis of safety improvements to assess effectiveness and refine future applications	2025 (development), Ongoing (implementation)	Engineering	Engineering staff
DS12	Assess quantitative data (design changes, past crashes, multimodal capacity counts, speed data, turning movement counts, transit boarding and alighting surveys, reduction in greenhouse gas emissions, air quality, tree canopy, high heat intensity areas, etc.) and qualitative data (intercept surveys, public surveys, walk audits, focus groups, surveys to identify commute mode, etc.) regularly to determine whether actions taken are meeting safety and other goals	Ongoing	Engineering, Planning	Funding; Engineering and/or Planning staff

Project Programming, Development, and Funding

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF1	Require an analysis of potential alternatives for all transportation facility projects (public or private led) that includes Safe Systems approach, Vision Zero, Complete Streets, and Safe Routes to School analysis for all studied alternatives. Document this analysis in a Safe Systems design alternatives report to include within a project's Engineer's Report (or similar) that is included in the project review and approvals process.	2025 (development), Ongoing (implementation)	Planning, Engineering	Planning and Engineering Staff
PDF2	Establish permanent local funding for safety and speed studies, low-cost implementation projects, and regular maintenance of safety infrastructure	2025 (development), Ongoing (implementation)	Planning, Engineering, Public Works	Funding
PDF3	Audit existing, ongoing, and/or planned projects within the City and integrate SS4A guidance into planning and design changes if necessary.	2024	Planning, Engineering	Outside audit team, funding
PDF4	Using city data and public input, identify sidewalk and/or bikeway facility gaps and known/perceived safety issues and barriers (e.g., unsafe crossings, lack of separation from vehicles, utility poles in travelled way, lack of lighting, etc.)	2025	Planning	Planning staff
PDF5	Develop a prioritization system for safety improvements within a half mile of schools (public and private) considering highest walking and bicycling demand, student engagement, the HPN, and Priority Neighborhoods	2025	Planning	Planning staff
PDF6	Develop a Safe Routes to School Program to analyze school catchment areas, advance grant applications for infrastructure or education projects, and coordinate or deliver educational programming.	2025	Planning	Planning staff
PDF7	Continue to progress toward mode shift targets in the Climate Action Plan and update targets as needed to support the zero deaths/serious injuries goal	2025	Planning	Planning staff
PDF8	Update ADA Transition Plan self-evaluation and incorporate changes due to adoption of PROWAG	2026	Engineering	Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF9	Develop policies that maximize co-benefits beyond traffic safety, such as supporting public health by encouraging active transportation, improving climate impacts by expanding green space and green infrastructure, reducing heat intensity areas by incorporating vegetation and street trees, and addressing income disparities by improving multimodal connections in low-income areas.	2026	Planning	Planning staff
PDF10	Increase funding and resources for the Sidewalk Repair Assistance Program, Traffic Calming Programs, and other safety improvements.	2025 (development), Ongoing (implementation)	Planning	Funding
PDF11	Evaluate the application records and project selection process to ensure equity in the Sidewalk Repair Assistance, Traffic Calming, and other programs. Conduct outreach to confirm Priority communities have the resources to apply to these programs, and provide resources as needed to address any barriers or shortfalls for these communities.	2025 (development), Ongoing (implementation)	Planning	Funding, Planning staff
PDF12	Develop process and funding opportunities to support a community-led safety implementation program, prioritizing the HPN, Priority Neighborhoods, and school areas. Projects should address safety for all users, especially vulnerable roadway users, and include (to the extent practical) art, low-cost/rapid implementation projects, communication campaigns, discussion groups, and educational programs. Establish an existing committee to oversee this program.	2026 (development), Ongoing (implementation)	Planning, Engineering	Funding, Planning and/or Engineering staff
PDF13	Establish and implement a transparent Capital Improvement Program funding programming process for infrastructure investment projects, which prioritizes investment in transportation safety projects.	2025 (development), Ongoing (implementation)	Administration, Engineering	Administration and/or Engineering staff
PDF14	Explore implementing a 20-mph City-wide speed limit.	2025	Engineering	None
PDF15	Explore implementing slower speed limits adjacent to schools and within neighborhood slow zones.	2025	Engineering	None

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF16	Consider passing local ordinances for authorization of automated speed enforcement and red light enforcement for immediate effect when state law authorizes such enforcement.	2025	Planning	None
PDF17	Provide incentives for people to take transit to events, including free or reduced fares.	2026 (development), Ongoing (implementation)	Transit	Funding
PDF18	Continue to promote walking, biking, and transit use among City employees through workplace programs, outreach, and incentives	2025 (development), Ongoing (implementation)	Administration	Funding
PDF19	Encourage employers to subsidize transit costs or incentivize active transportation for employees	2025 (development), Ongoing (implementation)	Planning	Planning staff
PDF20	Study proactive expansion, reduced headways (e.g., change service from hourly to every 15 or 30 minutes), increased service on nights and weekends, and investments in transit reliability to promote transit ridership	2026	Transit	Funding; Transit staff
PDF21	Modify existing fatal crash analysis structure as follows: - Include serious injury crashes - Include Engineering, Police, Planning, and community members from emergency response, medical, and public health sectors - Meets monthly on a regular schedule to review contributing factors - Provides succinct report of conditions leading to the crash and strategies that could be implemented within 30 days of the monthly meeting to City Council and to the board or commission identified in GCS1.	2024 (development), Ongoing (implementation)	Engineering	Engineering, Planning, Police staff
PDF22	Identify state, federal, and MPO funding sources that can be utilized to undertake design and construction for safety improvements. Consider creating a position within the MPO focused on identifying grant funds for capital planning and programming.	2024	Planning, Engineering	Planning and/or Engineering staff

Government Committees and Structure

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
GCS1	Create an Advisory Transportation Commission whose role is to review and approve all transportation facility projects.	2024	Planning	None
GCS2	Require the Advisory Transportation Commission to review all transportation facility projects (private or public led) for Safe Systems approach principles (see item PDF1).	2024 (development), Ongoing (implementation)	Planning, Engineering	None
GSC3	Train all planning, engineering, and other appropriate staff in Safe Systems Approach topics to ensure culture of safety among City staff charged with implementation of the adopted goal.	2026 (development), Ongoing for new hires (implementation)	Planning, Engineering	Training resources
GSC4	Prepare an annual report highlighting progress made toward zero deaths/serious injuries goal. Present to City Council, Advisory Transportation Commission, and post in an easily-accessible location on the City's website	2025 (development), Ongoing (implementation)	Engineering	None
GSC5	Develop list of City advocacy items targeted toward state decision-makers (examples include support for automated speed enforcement camera authorizing legislation, automated red light enforcement authorizing legislation, and expansion of extraterritorial zoning to include approval of transportation facility construction standards) and pursue lobbying or other advocacy for these items	2024 (development), Ongoing (implementation)	Planning	None

Project Prioritization

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP1	Undertake corridor-wide safety analysis and project planning efforts on at least 4 High Priority Network corridors and complete College/Walnut corridor study. Suggest prioritizing the following corridors: • E/W 3rd Street (Jackson Street to SR 46)/Atwater Avenue (Dunn Street to Mitchell Street) • College Mall Road (E 3rd Street to Covenanter Drive) • W 3rd Street (I-69 to Kirkwood Avenue) • Kirkwood Avenue (Adams Street to Indiana Avenue)	2026	Planning, Engineering	Funding, Planning and/or Engineering staff
PP2	Study, design, and implement rapid-implementation, low-cost safety countermeasures at (at least) half of the intersections shown on the HIN that are under the City's jurisdiction	2026	Engineering	Funding, Engineering staff
PP3	Pursue funding (or procure locally), and design permanent safety countermeasure implementation for up to 50 intersections by the interim goal year. Construct if funding source allows by the interim goal year.	2026	Engineering	Funding, Engineering staff
PP4	Inform INDOT of their transportation facilities on the HIN/HRN, and establish lines of communication with INDOT to progress safety studies on their corridors within the City limits.	2025	Planning or Engineering	None
PP5	Using city data and public input, develop prioritization plan for eliminating sidewalk and/or bikeway gaps and reducing of barriers to use (see PDF4)	2025	Planning	Planning staff
PP6	Implement design and construction projects to close 10% of sidewalk and/or bikeway gaps and barriers annually starting in 2026 (see PP5)	2026-2035	Engineering	Funding, Engineering staff
PP7	Work in conjunction with schools (public and private) to install at least one safety project per year within a half mile of a school (in addition to other action plan items) (see PDF5).	2026-2039	Planning, Engineering	Funding, Planning and/or Engineering staff
PP8	Continue implementing ADA Transition Plan and connect ADA improvements to safety best practices	2024-2026	Engineering	Funding, Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP9	Implement annual program for addressing sight distance issues, such as removal of vegetation or utility poles. Use public input from *uReport* to supplement known issues.	2026-2039	Engineering	Funding, Engineering staff
PP10	Implement lighting improvement program for intersection visibility and personal safety	2026-2039	Engineering	Funding, Engineering staff
PP11	Develop Road Safety Audit materials, checklists, etc. for use in execution of proactive and reactive Road Safety Audits for all transportation modes.	2025	Engineering	Engineering staff
PP12	Complete Road Safety Audits on an additional 5 corridors on the HPN apart from those undertaken as part of PP1	2026	Engineering	Funding, Engineering staff
PP13	Develop long-range Capital Improvement Plan through the zero deaths and serious injury goal year to coordinate safety improvements with infrastructure preservation, maintenance, and reconstruction projects to achieve future project cost savings.	2026	Planning, Engineering	Planning and/or Engineering staff

Medium Term Action Items (2027-2034)

Design Standards and Data

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
DS14	Catalyze redevelopment of land use along HPN corridors from unsupportive to supportive of safety enhancement and multimodal mobility.	2030 (first corridor), Ongoing thereafter	Planning	Funding; Planning staff
DS15	Reanalyze High Injury Network and High Risk Network every 5 years per SS4A program requirements to determine progress and reevaluate priorities for improvements.	2029, 2034	Engineering, Planning	Funding; Engineering and/or Planning staff

Project Programming, Development, and Funding

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF25	Coordinate and apply for outside funding to implement projects (state, federal, private, etc.).	Ongoing	Planning, Engineering	Planning and/or Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF26	Evaluate current staffing levels to plan, design, inspect, and administer safety implementation projects. Hire additional staff such as a Vision Zero Lead and Vision Zero Engineers/Planners to solely focus on implementing this plan.	2028	Planning, Engineering	Planning and/or Engineering staff

Project Prioritization

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP6	Implement design and construction projects to close 10% of sidewalk and/or bikeway gaps and barriers annually starting in 2026 (see PP5)	2026-2035	Engineering	Funding, Engineering staff
PP7	Work in conjunction with schools (public and private) to install at least one safety project per year within a half mile of a school (in addition to other action plan items) (see PDF5).	2026-2039	Planning, Engineering	Funding, Planning and/or Engineering staff
PP9	Implement annual program for addressing sight distance issues, such as removal of vegetation or utility poles.	2026-2039	Engineering	Funding, Engineering staff
PP10	Implement lighting improvement program for intersection visibility and personal safety	2026-2039	Engineering	Funding, Engineering staff
PP14	Undertake corridor-wide safety analysis and project planning efforts on remaining High Priority Network corridors at a rate of at least two per year but more if needed to meet interim completion year for all HPN corridors.	Ongoing until 2036	Planning, Engineering	Funding, Planning and/or Engineering staff
PP15	Study, design, and implement rapid-implementation, low-cost safety countermeasures at remaining intersections shown on the HIN that are under the City's jurisdiction	2028	Engineering	Funding, Engineering staff
PP16	Lead or coordinate with INDOT on corridor studies involving all INDOT-jurisdiction roadways on the HIN and/or HRN within City limits.	2030	Planning or Engineering	Planning and/or Engineering staff
PP17	Perform proactive Road Safety Audits on all streets not shown on the HPN.	2034	Engineering	Funding, Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP18	Plan, design, and construct longer-term, higher-cost projects along the HPN, specifically all of those with corridor studies undertaken as part of PP1 and some with corridor studies undertaken as part of PP14. Construct at least one relatively large, higher-cost project per year.	2030 (implementation of PP1 projects), 2039 (implementation of PP14 projects)	Engineering	Funding, Engineering staff
PP19	Revisit prioritization of improvements annually based on funding, design constraints, coordination with other projects, and reanalysis from DS15.	Ongoing	Planning, Engineering	Funding; Planning and/or Engineering staff

Long Term Action Items (2035-2039)

Design Standards and Data

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
DS14	Catalyze redevelopment of land use along HPN corridors from unsupportive to supportive of safety enhancement and multimodal mobility.	Ongoing	Planning	Funding; Planning staff
DS16	Confirm zero fatal and serious injury goal met or adjustment to goal. If goal not met, reanalyze and adjust action plan items as needed to support expedited progress toward new goal.	2039	Planning	None

Project Programming, Development, and Funding

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PDF25	Coordinate and apply for outside funding to implement projects (state, federal, private, etc.).	Ongoing	Planning, Engineering	Planning and/or Engineering staff

Project Prioritization

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP6	Implement design and construction projects to close 10% of sidewalk and/or bikeway gaps and barriers annually starting in 2026 (see PP5)	2026-2035	Engineering	Funding, Engineering staff

Number	Description	Interim Goal Year	Who Is Responsible	Addl. Resources Needed
PP7	Work in conjunction with schools (public and private) to install at least one safety project per year within a half mile of a school (in addition to other action plan items) (see PDF5).	2026-2039	Planning, Engineering	Funding, Planning and/or Engineering staff
PP9	Implement annual program for addressing sight distance issues, such as removal of vegetation or utility poles.	2026-2039	Engineering	Funding, Engineering staff
PP10	Implement lighting improvement program for intersection visibility and personal safety	2026-2039	Engineering	Funding, Engineering staff
PP14	Undertake corridor-wide safety analysis and project planning efforts on remaining High Priority Network corridors at a rate of at least two per year but more if needed to meet interim completion year for all HPN corridors.	Ongoing until 2036	Planning, Engineering	Funding, Planning and/or Engineering staff
PP16	Lead or coordinate with INDOT on corridor studies involving all INDOT-jurisdiction roadways on the HIN and/or HRN within City limits.	2030	Planning or Engineering	Planning and/or Engineering staff
PP17	Perform proactive Road Safety Audits on all streets not shown on the HPN.	2034	Engineering	Funding, Engineering staff
PP18	Plan, design, and construct longer-term, higher-cost projects along the HPN undertaken as part of PP14. Construct at least one relatively large, higher-cost project per year.	2030 (implementation of PP1 projects), 2039 (implementation of PP14 projects)	Engineering	Funding, Engineering staff
PP19	Revisit prioritization of improvements annually based on funding, design constraints, coordination with other projects, and reanalysis from DS15.	Ongoing	Planning, Engineering	Funding; Planning and/or Engineering staff
PP20	Lead or assist with planning, design, and construction of improvements to INDOT-jurisdiction roadways on the HIN/HRN.	2039	Planning, Engineering	Funding; Planning and/or Engineering staff

Safety Countermeasure Toolkit

To achieve zero roadway fatalities and serious injuries by 2039, the City of Bloomington will need to comprehensively address roadway safety issues in the region, starting with the priority roads in Figure 25. Priority Corridors for Safety Countermeasures. FHWA's Proven Safety Countermeasures are specific design or operational changes to streets that have been proven nationally to improve safety. Selection and design of safety countermeasures on every street project in the region should be decided through the lens of the Safe System Approach, so that if a crash occurs it will not result in a fatal or serious injury. Safety countermeasures should not be compromised or simplified during the design or construction phases. These modifications can reduce the level of safety for all road users.

Safety countermeasures are listed below along with hyperlinks to provide a more detailed description and effectiveness of the full safety countermeasure. A set of cut sheets describing each Safety Countermeasure are also included in Appendix XX: Safety Countermeasure Cut Sheets.

Speed Management

Appropriate Speed Limits for All Road Users

Speed Safety Cameras

Variable Speed Limits

Pedestrian/Bicyclist

Bicycle Lanes

Crosswalk Visibility Enhancements

Leading Pedestrian Interval

Medians and Pedestrian Refuge Islands in Urban and Suburban Areas

Pedestrian Hybrid Beacons

Rectangular Rapid Flashing Beacons (RRFB)

Road Diets (Roadway Reconfiguration)

Walkways

Roadway Departure

Enhanced Delineation for Horizontal Curves

Longitudinal Rumble Strips and Stripes on Two-Lane Roads

Median Barriers

Roadside Design Improvements at Curves

SafetyEdgeSM

Wider Edge Lines

Intersections

Backplates with Retroreflective Borders

Corridor Access Management

Dedicated Left- and Right-Turn Lanes at Intersections

Reduced Left-Turn Conflict Intersections

Roundabouts

Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

Yellow Change Intervals

Crosscutting

Lighting

Local Road Safety Plans

Pavement Friction Management

Road Safety Audit

High Risk Network Priority Corridors and Intersections

The actions defined in the previous sections will help to institutionalize the practices, policies, and programs that will make Bloomington's streets safer for all residents. These actions will be complemented by on-the-ground safety improvement projects that will be designed using Safe Systems principles and the Safety Countermeasures Toolkit, and informed by the crash factors we identified as part of our crash analysis and creation of the High Risk Network.

Eventually, the City hopes to address all the High Risk Network issues with improved design and practices. But we need to start somewhere. Using information from the crash analysis, community input, and best practices, the following corridors were selected as "Priority Corridors," meaning the City will focus on improving these roadways in the near term.

Table 3. Highest Priority Corridors for Safety Countermeasures

Street	From	To
West 2nd Street	Rogers Street	Walnut Street
East 3rd Street	Rogers Street	State Route 46
West 3rd Street	Interstate 69	Kirkwood Avenue
East and West 4th Street	Rogers Street	Indiana Avenue
East and West 7th Street	Rogers Street	Woodlawn Avenue
College Avenue	State Route 45/46	East 2nd Street
College Mall Road	Covenanter Drive	State Route 46
Dunn Street	East 10th Street	East 3rd Street
Hillside Drive	Walnut Street	Maxwell Street
Indiana Avenue	East 3rd Street	East 17th Street
Kinser Pike/Madison Street	State Route 45/46	West 11th Street
Kirkwood Avenue	Adams Street	Indiana Avenue
Rogers Street	West 11th Street	West 2nd Street
North Walnut Street	State Route 45/46	East 2nd Street
South Walnut Street	E 2nd Street	Dodds Street
South Walnut Street	Dodds Street	Country Club Drive

Figure 25 and Figure 26 show the priority corridors and intersections grouped by highest, high, medium, and low priority. Streets that are a priority but are owned by INDOT are labeled "INDOT" jurisdiction. These streets will likely have a different process for implementing safety countermeasures than city-owned streets that requires additional coordination and time to implement.

Corridors and intersections not noted as high priority in the following figures should still be analyzed for safety improvements with other projects (such as pavement preservation or reconstruction projects) as they arise.

DRAFT October 2024

Figure 23. Priority Corridors for Safety Countermeasures

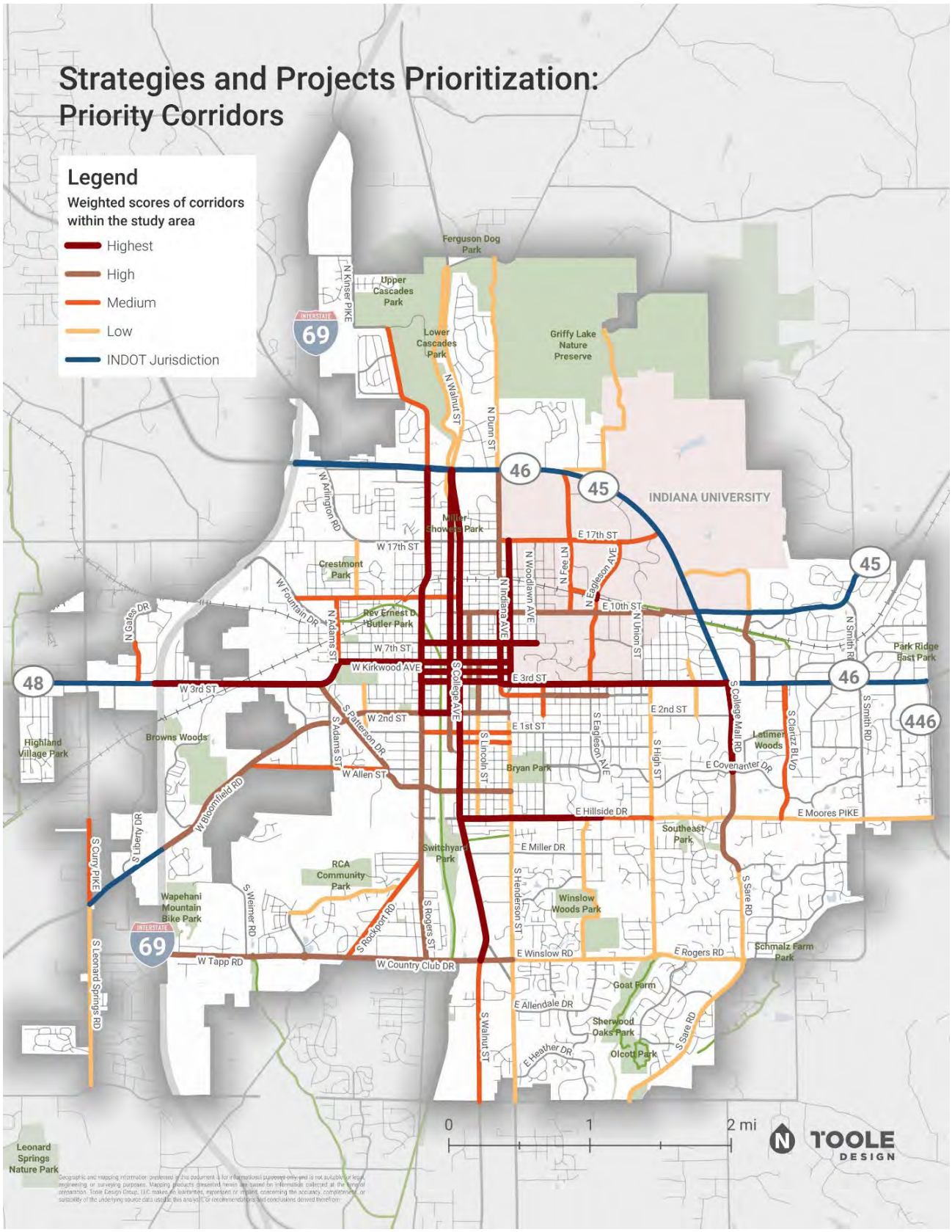


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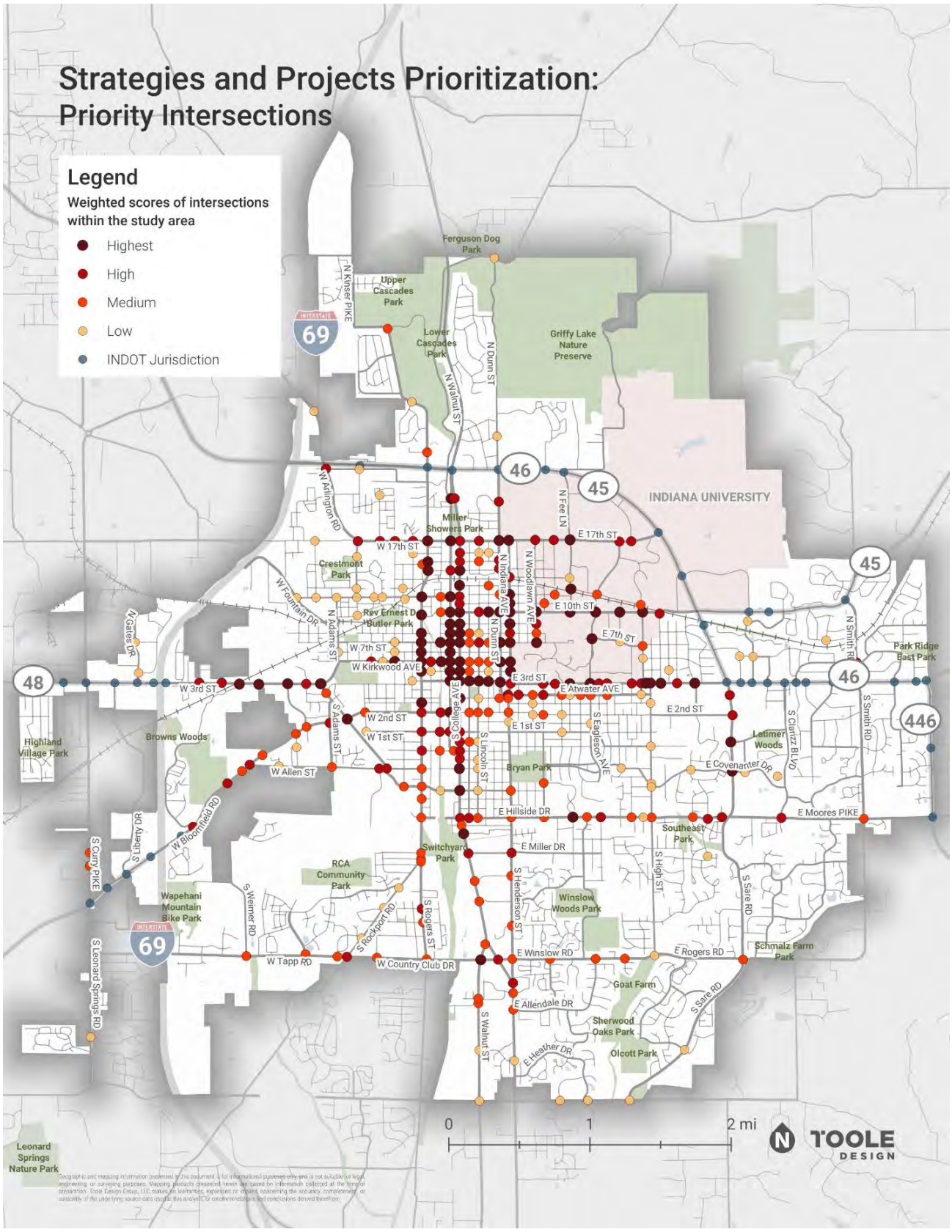
Figure 24. Priority Intersections for Safety Countermeasures



TRACKING PROGRESS AND MOVING FORWARD

This plan is full of actions, strategies, and projects that will help reduce fatal and serious injuries on Bloomington's roadways. However, this plan needs to be embraced, discussed, emphasized, implemented, and reinforced every day as decisions are made, projects are built, and people move around the community.

The actions, strategies, and projects described in this plan are a transformative step for Bloomington and may not come naturally or easily. Thus, is it important to track what is (and, perhaps, isn't) happening and how (or if) actions are resulting in safer streets so the plan can be modified to ensure success.

Performance Measures and Annual Reporting

It is essential that there are regular public conversations about Bloomington's roadway safety and progress toward zero deaths and serious injuries. To institutionalize these conversations, the City will produce an annual report that will be posted on their website and publicized through its main communication channels. The annual report should include the following performance measures, at minimum:

Performance Measure
Number of fatal and serious injury crashes
Number of fatal and serious injury crashes involving people walking, biking, or rolling
Number of crashes involving speeding
Number of crashes involving distracted driving
Number of crashes involving driving under the influence (DUI)
Number of rapid implementation intersection safety projects completed
Number of miles of speed management projects completed on HIN streets
Number of actions started
Number of actions completed
Locations and number of street segment and intersection improvements made on the High Priority Network
Locations and number of off-street segment improvements (sidewalks, multiuse paths, bike trails) made adjacent to the High Priority Network.
Number of road diet/road reconfiguration projects completed
Number of intersection reconstruction projects completed
Number of roundabouts completed
Dollar amount invested in infrastructure improvements along the High Priority Network as a percentage of all transportation projects.

This annual report should also include any information about how the city plans to revise their approach (if needed) based on the findings of the annual report.

Crash Data Dashboard

A crash data dashboard has been developed for Bloomington to help City staff, stakeholders, and residents easily see and understand crash trends, patterns, and factors around the City. The dashboard will help track progress towards Bloomington's goal of zero deaths and serious injuries by 2039 by providing data on what types of crashes are occurring, where and when they are occurring, and how performance measures are trending.

This dashboard will be updated annually to ensure that what is shown is reflective of the current situation. We encourage this dashboard to be used as an important tool in future conversations about roadway safety in Bloomington. The dashboard can be found at [placeholder].

Moving Forward

The creation of this plan was an extensive effort involving elected officials, City staff, Advisory Committees, advocates, community stakeholders, and Bloomington residents. The success of this plan will rely on all these groups and individuals to work together to meet our shared goal of eliminating fatalities on Bloomington's streets by 2039.

Let's continue this work together into the future. Advocating for and acting on roadway safety for all of Bloomington's residents is everybody's responsibility. Together, we will make our roads safer and save lives.

BLOOMINGTON PLAN COMMISSION **CASE #: SP-41-24**
STAFF REPORT **DATE: October 7, 2024**
Location: 113-115 E Kirkwood Ave

PETITIONER: Clearpath Services
121 E Kirkwood Ave, Suite 302 Bloomington, IN

CONSULTANTS: Christine Bartlett
403 E 6th Street Bloomington, IN

REQUEST: The petitioner is requesting major site plan approval for one 5-story mixed-use building in the courthouse square overly in the mixed-use downtown (MD-CS) zoning district. The project proposes to use the Affordable Housing and Sustainable Development Incentives.

BACKGROUND:

Area:	0.27 acres
Zoning:	Mixed-Use Downtown Courthouse Square Overlay (MD-CS)
Comp Plan Designation:	Downtown
Existing Land Use:	Surface Parking Lot
Proposed Land Use:	Restaurant / Dwelling, Multifamily
Surrounding Uses:	North – Dwelling, Multifamily, Restaurant
	West – Dwelling, Multifamily, Varied Retail, Restaurant
	East – Commercial, Office
	South – Community Center, Retail

REPORT: The petition site is located at 113/115 E. Kirkwood Avenue and is zoned Mixed-Use Downtown Courthouse Square Overlay (MD-CS). The property has frontage on E. Kirkwood Avenue and is roughly 0.27 acres. The site currently contains a surface parking lot, and has adjacent alleys on the north and west sides. There are no known sensitive or regulated environmental features within the petition site.

The petitioner is requesting major site plan approval to allow the construction of one 5-story 67,000 square foot mixed-use building. The building will contain a basement level with 26 parking spaces for use by both the commercial and residential uses in the building. The first floor will contain 8,000 square feet for a restaurant use, as well as space for a refuse area and alley service drop off in the back (north side). The second floor contains 5,000 square feet of continued restaurant space, with 6,175 square feet of separate office space in the back. Floors 3 through 5 contain 14 residential condominiums, 9 2-bed units and 5 3-bed units, intended for owner-occupancy.

The petitioner is requesting to be able to utilize both the Affordable Housing and the Sustainable Development Incentives outlined in Section 20.04.110(c) and (d). The petitioner seeks to utilize the 'Payment-in-Lieu" option found in 20.04.110(c)(7) of the Affordable Housing section and Option 2 of the Sustainable Development section found in 20.04.110(d)(2)(B). The approval of both incentives would also allow the petitioner to not be restricted in the size of the floor plate allowed, as well.

MAJOR SITE PLAN REVIEW 20.06.050(a)(2)(C)(ii): Major site plan approval is required for developments determined by the Planning and Transportation Director to require major site plan review due to unusual size, complexity, or the creating of potential significant unanticipated

impacts on the city of surrounding neighborhoods. This site received a similar site plan approval in 2018, as described in the petitioner's statement. That approval expired. The petitioner filed a new site plan approval request in 2022, and that petition is currently tabled. Because of the complexity of the site history, the previous Plan Commission appearances, and the need for variances at the site, the Department determined that this petition should appear at the Plan Commission.

DEVELOPMENT STANDARDS & INCENTIVES 20.04: The following UDO standards are required to be reviewed for all activities that require New Development approval.

Downtown Character Overlay Design:

Required Pedestrian Entrance: One entrance is required along the façade facing a public street. The entrance must contain a landscaped plaza with at least 3 amenities, for example benches, bike racks, planters, or public art. The primary pedestrian entrance is required to be recessed 4 feet and has required design elements including address and lighting. A condition of approval has been added for the design and addition of the entrance amenities.

Roof Design: The site utilizes a flat roof with parapet, which is permitted.

Windows and Doors: The MD-CS district requires facades along the ground floor to utilize 70% window and door space. The petitioner received a variance to allow for less with petition V-27-22. Windows on floors 2 and above must be between 20% and 70% coverage and must have a ratio for height at 1.5 times the width. The windows must have sills and lintels. The petition meets this requirement.

Belt Courses: The MD-CS requires belt coursing, as well as vertical banding, on all four sides of the building. A condition of approval has been added.

Articulation: The MD-CS allows for modules of 20-50 feet wide. Both modules meet this requirement. The Department will continue to work with the petitioner to improve the design of the ground floor of the west side of the building.

Material: In the MD-CS, all exterior finish materials shall have a non-reflective, low reflectance, or matte finish. The exterior of the building is predominantly brick with metal and limestone accents. The petition meets this requirement.

MD-CS Dimensional Standards:

Building setbacks: The front building range is 0 to 5 feet, with 90% of the façade required in this range. There are not side are rear yard setbacks required. The petition meets setback requirements.

Front parking setback (minimum): There is no surface parking in the petition and all interior parking is below grade. The petition meets this requirement.

Side/Rear parking setback (minimum): There are no exterior parking spaces and there are no setbacks from side or rear property lines applicable for parking within a building.

Impervious Surface Coverage: 100%. The petition meets this requirement.

Primary structure height: The maximum height allowed in the MD-CS is 3 stories or 40 feet. The incentives used allow for 3 additional stories. The petition meets the stories requirement. The additional floors allow for an additional 24 feet, for a total of 64 feet. The petitioner received a variance to build to 70.5 feet in height.

Environment: There are no known sensitive or regulated environmental features within the site.

Access and Connectivity:

Driveways and access: Vehicular access from Kirkwood Avenue is prohibited because of

improved alleys on the west and north sides. Vehicular access to the building will be derived from the alley that runs along the north of the property.

Pedestrian and Bicycle Circulation: Kirkwood Avenue at this location is classified as a Neighborhood Residential roadway and the Transportation Plan calls for a Shared Street typology. The Unified Development Ordinance (UDO) allows for the Planning and Transportation Director to determine whether or not continuation of the existing facilities is appropriate. The Department will work with the petitioner and the Engineering and Public Works Departments to determine what streetscape is most appropriate at this location.

Public Transportation: No new transportation stops are required or requested.

Vehicular Parking and Loading: Because the project is in the MD-CS district, there is a minimum number of vehicular parking spaces required. The project requires 24 parking spaces. 26 in total are provided for the residential and commercial uses. No vehicular parking is required for the commercial use. The project meets vehicular parking total requirements.

Bicycle Parking: A minimum of 5 bicycle parking spaces are required for the residential portion of the site, and a minimum of 1 bicycle parking spaces are required for the commercial portion, both based on the number of parking spaces provided on-site. All 6 spaces are required to be Class II covered bicycle parking. A condition of approval has been added.

Projects Abutting Historic Buildings: The building to the east of the site is listed at Notable in the Historic Sites and Structures survey. As a result, the building module closest to that structure can only be one story, or 14 feet, taller than the highest elevation of the historic structure. The petition meets this requirement.

Solar Ready Building Design: The petitioner must demonstrate compliance with this requirement, which can often best be done during building construction design. A condition of approval has been added.

Landscape, Buffering, and Fences: The site is allowed to be, and will be covered by improvements, no substantial landscaping will occur on-site.

Street Trees: The petition site is roughly 90 feet wide, requiring 3 street trees. Two mature street trees exist in front of the site. The petitioner is showing removal of those trees with replacements and one additional tree. The Department recommends retaining those trees if possible.

Outdoor Lighting: A lighting and photometric plan will be submitted at the Site Development Permit stage. No deviations from the lighting code are expected. A condition of approval has been added.

Incentives: The proposal is seeking Tier I Affordable Housing incentives through the 'payment-in-lieu' option. The petitioner will contribute $20,000 each for 15% of the total bedrooms proposed at the site, for a total of $99,000 for the 33 bedrooms. That number will be adjusted if the bed count changes. The proposal is also seeking the Sustainable Development Bonus, and proposes to achieve the requirements of the USGBC's LEED certification at a Silver Level. The incorporation of both of these incentives allows for no maximum floor plate, as well.

SITE PLAN REVIEW: The Plan Commission shall review the major site plan petition and approve, approve with conditions, or deny the petition in accordance with Section 20.06.040(g) (Review and Decision), based on the general approval criteria in Section 20.06.040(d)(6)(B) (General Compliance Criteria).

20.06.040(d)(6)(B) General Compliance Criteria

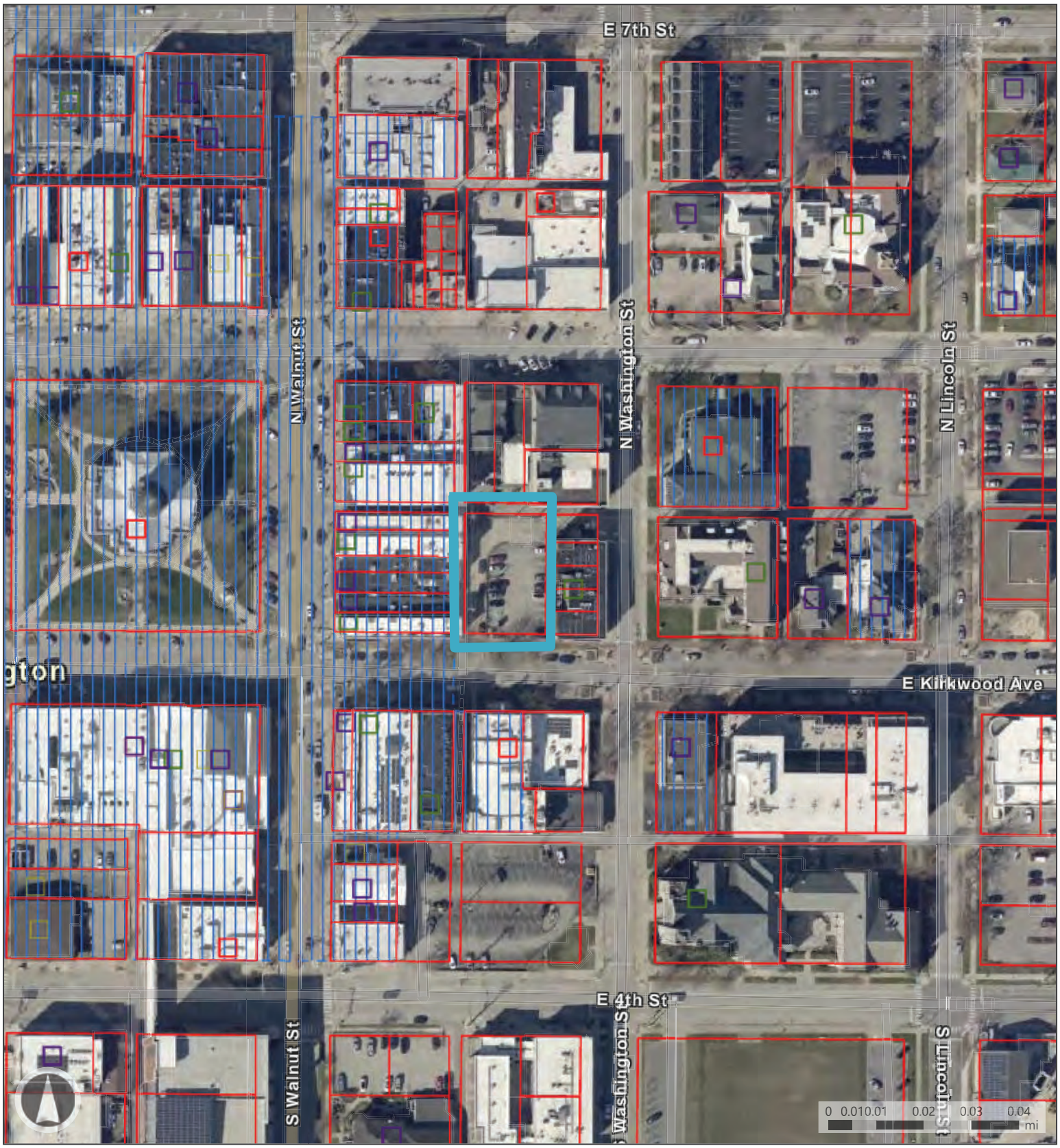
i. Compliance with this UDO
ii. Compliance with Other Applicable Regulations
iii. Compliance with Utility, Service, and Improvement Standards
iv. Compliance with Prior Approvals

PROPOSED FINDING: The proposed site plan with conditions is compliant with all of the standards of the UDO with the exception of those variances allowed related to height and first floor window coverage. The petition is compliant with the previous variance approvals. No other prior approvals for this property or other known applicable regulations are known. The petitioner will work with the City of Bloomington Utilities Department and must receive approval before permits will be issued.

CONCLUSION: The proposed site plan meets all of the requirements of the Unified Development Ordinance with the listed conditions of approval, variances received, and with utilization of Incentives for both Affordable Housing and Sustainable Development. The development of this property will allow for additional owner-occupied housing in the heart of downtown, the development of a surface parking lot into a community serving use and housing, as well as additional restaurant space in a highly trafficked downtown area.

RECOMMENDATION: The Planning and Transportation Department recommends that the Plan Commission approve the use of the Sustainable Development and Affordable Housing Incentives and adopt the proposed findings and approve SP-41-24 with the following conditions:

1. Proof of Silver level certification with the USGBC's rating system shall be submitted prior to recommendation of issuance of final occupancy.
2. The Payment-In-Lieu contribution shall be submitted prior to recommendation of issuance of final occupancy.
3. The petitioner shall submit proof of Solar Ready Design compliance with their application for a building permit.
4. The petitioner shall submit a photometric plan and lighting specifications with their application for the Site Development Permit.
5. The petitioner will amend the Site Plan before the Site Development Permit application in order to incorporate the following:
    a) Updated Pedestrian entrance to meet UDO requirements
    b) Updated elevations incorporating vertical banding and horizontal belt coursing where missing.
    c) Updated compliant bicycle parking.



Map Legend

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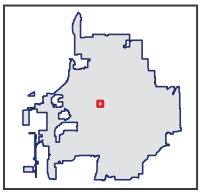
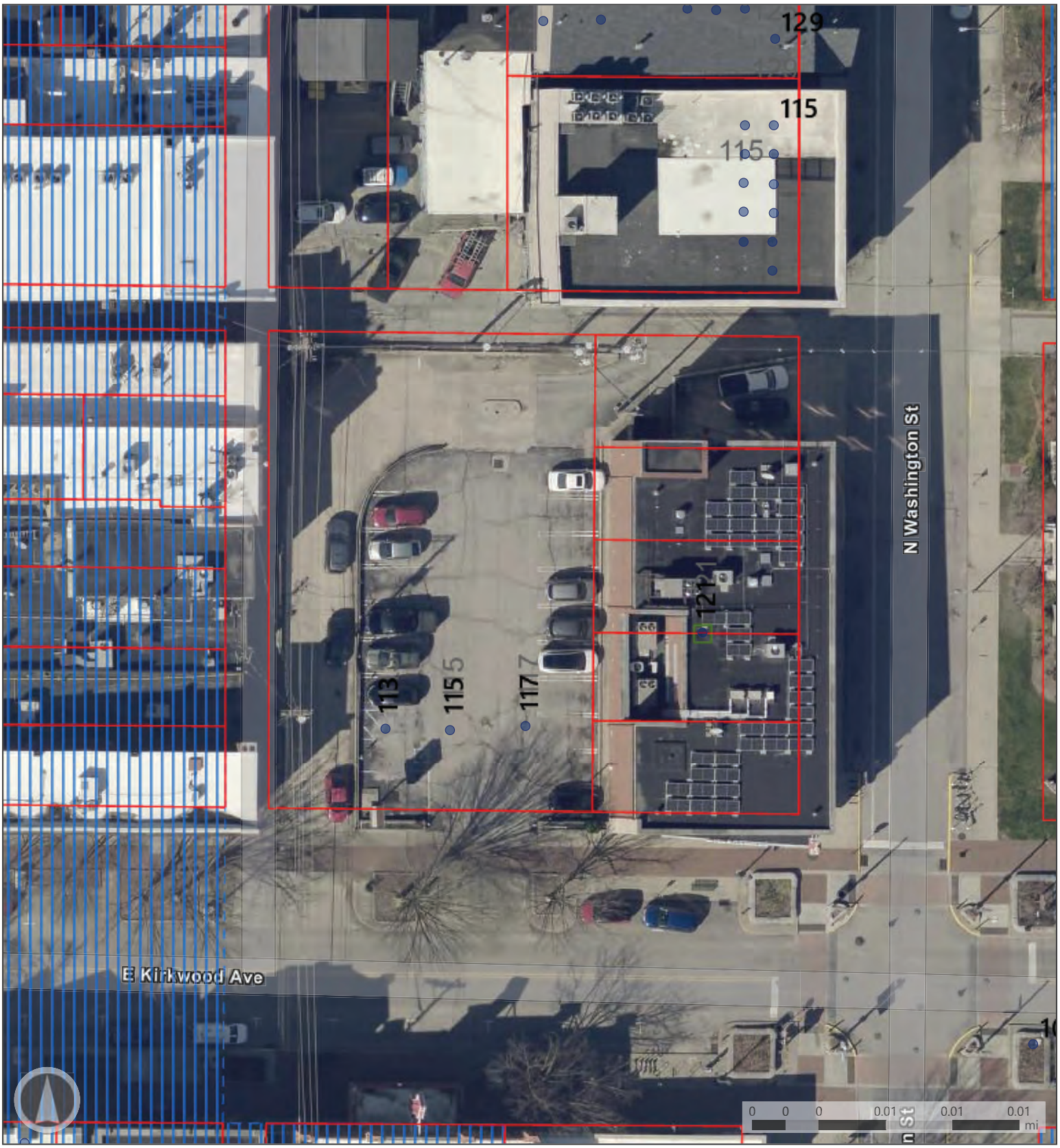
- **Rating**
  - Outstanding
  - Notable
  - Contributing
  - Non-Contributing
- Local Historic Districts
- Bloomington Municipal Boundary



City of Bloomington

Planning and Transportation Department



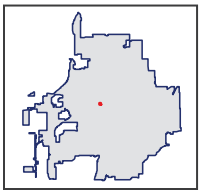
Map Legend

- Addresses
- Parcels

Rating

- Notable

- Local Historic Districts
- Bloomington Municipal Boundary



Created: 9/17/2024 *Map By:*

For use as map information only, information is NOT warranted.

121 E KIRKWOOD AVE | SUITE 302 | BLOOMINGTON, IN 47408
PHONE: 812.287.8596
RANDY@CLEARPATH-SERVICES.COM

PETITIONER'S STATEMENT

“Develop strategies to stabilize and diversify the Downtown residential population by identifying and encouraging missing housing forms in the Downtown area (such as row houses, condominiums and live/work space).”

V. A thriving city center that offers diverse residential housing, government services, specialized shopping, community-centered activities, and entertainment. More residential housing must be encouraged in the downtown area to insure continued demand for services in the city center. Attractive,

quality high-rise buildings, with parking, should be considered. Parking should be consolidated, and surface parking reduced and converted to high density residential uses. Public parks that are safe, well maintained, and offer recreation, sports, and leisure activities for our families should also be encouraged.

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Policy 2: Increase Residential Densities in the Urbanized Area As a counterbalance to policies that limit the spatial expansion of growth, denser infill development in areas that already contain City services must be encouraged. Increasing the density of residential development within the community can provide several benefits. Concentrating densities in certain areas allows others to be preserved as greenspace, a vital urban amenity. Further, as densities increase, the efficiency and quality of urban services can be improved, and public transit becomes a much more feasible service.

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Land Use: A mix of office, commercial, civic, high-density residential and cultural land uses are recommended for the downtown. New residential, retail, and office growth must be redirected to the downtown if Bloomington is to slow the sprawl at the city's edge. Several land-use policies are necessary to achieve the active and engaging downtown that is so important to this community.

- *The Downtown area should be targeted for increased residential density (100 units per acre) and for intensified usage of vacant and under-utilized buildings.*

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Residential Development Strategy Diverse housing options in downtown should be available in a range of product types and prices, including market rate and affordable categories. Construction of new residential units in mixed use complexes, as well as adaptive reuse of upper floors in older commercial buildings are envisioned. These product types should be promoted in the downtown area:

- *High amenity, market rate units, historic*
- *High amenity, market rate units, new*

Creating projects that combine these residential types is particularly encouraged.

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- *Projects which may need exemptions on some design requirements that fulfill other downtown goals (e.g. affordable housing, owner-occupied housing, base employment, etc.)*

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Residential/Commercial Density and Owner Occupancy: [illegible]

Height: [illegible]

Architecture/Materials: [illegible]

Building Height Step Down: [illegible]

Void-to-Solid Percentage: [illegible]

Solar Panels: [illegible]

Garage Entry: [illegible]

Zoning/Sustainable Incentive: [illegible]

[illegible]

Variances Sought: [illegible]

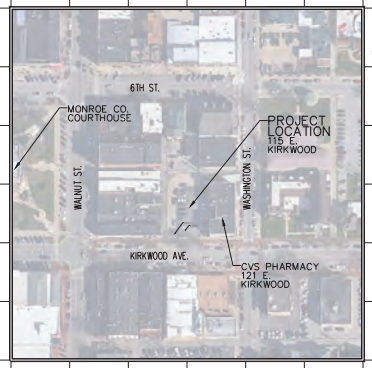
1. **Variance from Building Height Exceeding Allowable Height** [illegible]

[illegible]

PROPOSED:

ONE15 - LOFTS ON KIRKWOOD CONDOMINIUMS & RETAIL

115 EAST KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408



VICINITY/LOCATION MAP
SCALE: 1"=500'

UTILITY CONTACT INFORMATION

GAS	SEWER AND WATER	ELECTRIC
VECTREN	CITY OF BLOOMINGTON UTILITIES	DUKE ENERGY
205 S. MADISON ST.	600 E. MILLER DR.	1619 W. DEFFENBAUGH ROAD
BLOOMINGTON, IN 47401	BLOOMINGTON, IN 47402	KOKOMO, INDIANA 46902
DOUG ANDERSON (812)330-4009	NANCY AXSOM (812)349-3689	JIM SHIELDS (317)575-2071
TELEPHONE	**CABLE TELEVISION**	**UNDERGROUND UTILITY LOCATION**
AT&T	COMCAST	INDIANA UNDERGROUND
P.O. BOX 56	2450 SOUTH HENDERSON STREET	PLANT PROTECTION
BLOOMINGTON, IN 47402	BLOOMINGTON, IN 47404	1-(800)382-5544
BRENT McCABE (812)334-4521	SCOTT TEMPLETON (812)355-7822	

SHEET INDEX

SHEET NO.	SHEET NO.
C101	GENERAL NOTES & DETAILS
C201	MISCELLANEOUS DETAILS
C202	MISCELLANEOUS DETAILS
C301	DEMOLITION PLAN
C401	SITE PLAN (STREET LEVEL)
C402	SITE PLAN (GARAGE LEVEL)
C403	EROSION CONTROL PLAN
C501	PHASE I - MAINTENANCE OF TRAFFIC PLAN
C502	PHASE II - MAINTENANCE OF TRAFFIC PLAN

INDIANA
Know What's below. Call before you dig
811

DIAL '811' BEFORE YOU DIG
PER INDIANA STATE LAW IC8-1-26,
IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404 (812) 332-8030

architecture
civil engineering
planning

OWNER/DEVELOPER:
CUTTERS KIRWOOD 123, LLC
205 N. COLLEGE AVE.
BLOOMINGTON, IN 47404

THE CURRENT EDITION OF THE INDIANA DEPARTMENT OF TRANSPORTATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES & CITY OF BLOOMINGTON UTILITIES STANDARD SPECIFICATIONS IS TO BE USED WITH THESE PLANS

Certified By:

JEFFREY S. FANYO, P.E.
IND. REG. NO. 60018283

Revisions

115 E. KIRKWOOD CONDOMINIUMS & RETAIL
PROJECT NO. 401713

GENERAL NOTES

1. BOUNDARY AND TOPO BY BYNUM FANYO AND ASSOCIATES, 528 NORTH WALNUT STREET, BLOOMINGTON, INDIANA 47404. PHONE (812) 332-8030

2. DEVELOPER: CUTTERS KIRKWOOD 123, LLC, 205 N. COLLEGE AVE., BLOOMINGTON, IN 47404

3. PROJECT ADDRESS: 115 E. KIRKWOOD, BLOOMINGTON, INDIANA 47408.

4. ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.

5. ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

6. EXISTING UTILITIES ON SITE SHALL BE RELOCATED AS REQUIRED. CONTRACTOR SHALL PAY ALL COSTS ASSOCIATED WITH RELOCATION.

7. SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.

PARKING AND PAVEMENT NOTES

1. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC DEVICES, CURRENT EDITION AS AMENDED.

2. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS INDICATED OTHERWISE.

3. CONTRACTOR SHALL FURNISH AND INSTALL PAVEMENT MARKINGS AS SHOWN ON THE PLANS.

4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON THE SITE.

5. JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINTING TOOLS.

6. CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO INSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY AND AS DIRECTED BY INSPECTOR TO INSURE POSITIVE DRAINAGE. (TYPICAL AT ALL INTERSECTIONS).

7. CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY A.G.C. OF AMERICA, INC. AND THE HEALTH AND SAFETY REGULATIONS FOR CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR.

GRADING NOTES

1. CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING, OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH ALTERATION OF OR RELOCATION OF THE FACILITY.

2. BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. THE LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.

3. THESE DOCUMENTS ARE SCHEMATIC IN NATURE AND CANNOT SHOW EVERY ITEM NEEDED FOR A COMPLETE OPERATIONAL STORM SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATING STORM SYSTEM.

4. ALL FILL SHALL BE FREE OF VEGETABLE MATTER, RUBBISH, LARGE ROCK, AND OTHER DELETERIOUS MATERIAL. THE FILL MATERIAL SHOULD BE PLACED IN LAYERS NOT TO EXCEED SIX (6) INCHES IN LOOSE THICKNESS AND SHOULD BE SPRINKLED WITH WATER AS REQUIRED TO SECURE SPECIFIED COMPACTION. EACH LAYER SHOULD BE UNIFORMLY COMPACTED BY MEANS OF SUITABLE EQUIPMENT AS DICTATED BY THE TYPE OF FILL MATERIAL. UNDER NO CIRCUMSTANCES SHOULD A BULLDOZER OR SIMILARLY TRACKED VEHICLE BE USED AS COMPACTING EQUIPMENT. MATERIAL CONTAINING AN EXCESS OF WATER SHOULD BE SPREAD AND DRIED TO A MOISTURE CONTENT THAT WILL PERMIT PROPER COMPACTION. ALL FILL SHOULD BE COMPACTED TO THE SPECIFIED PERCENTAGE OF THE MAXIMUM DENSITY OBTAINED IN ACCORDANCE WITH ASTM DENSITY TEST D-698 (98 PERCENT OF MAXIMUM DRY DENSITY). IF THE SPECIFIED COMPACTION LIMITS ARE NOT MET, SUCH AREAS SHOULD BE REWORKED AND RETESTED AS REQUIRED UNTIL THE SPECIFIED LIMITS ARE REACHED.

ON-SITE UTILITY NOTES

1. ALL WATER PIPE 6" AND LARGER SHALL BE PRESSURE CLASS 350 DIP WATER PIPE CONFORMING TO ALL STATE AND LOCAL STANDARDS.

2. WATER MAIN FITTINGS 6" AND LARGER SHALL BE DUCTILE IRON CONFORMING TO AWWA/ANSI STANDARD SPECIFICATIONS C153/A21.53, LATEST REVISION.

3. 2" WATER MAINS SHALL BE SDR-21 (PR200) AND 4" PIPE MAY BE EITHER SDR-21 (PR200) OR C900 (DR-14).

4. MECHANICAL RESTRAINTS SHALL BE PROVIDED AT ALL FIRE LINE BENDS, OFFSETS, TEES, PLUGS, ETC...

5. ALL WATER LINE GATE VALVES OTHER THAN AIR RELEASE VALVES AND TAPPING VALVES SHALL BE CAST IRON BODY, FULLY BRONZE MOUNTED, WITH RESILIENT SEAT AND NON-RISING STEM AND SHALL BE MANUFACTURED BY M & H VALVE COMPANY, DARLING VALVE AND MANUFACTURING COMPANY, KENNEDY VALVE COMPANY, OR MUELLER COMPANY.

6. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED AND DISINFECTED BEFORE ACCEPTANCE. SEE SITE WORK SPECIFICATIONS.

7. WATER AND SANITARY SEWER MAINS SHALL HAVE A MINIMUM COVER OF 4'-0" ABOVE TOP OF PIPE.

8. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINE IS TEN FEET (10'). THE MINIMUM VERTICAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINE IS EIGHTEEN INCHES (18").

9. GRAVITY SANITARY SEWER PIPE 6" TO 15" SHALL BE CONSTRUCTED OF SDR-35 PVC.

10. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

11. SEE SITE SPECIFICATIONS FOR BACKFILLING AND COMPACTION REQUIREMENTS.

12. SITE CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THIS SYSTEM PRIOR TO INSTALLATION.

13. ALL WORK ON THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH SITE WORK SPECIFICATIONS.

14. ALL CATCH BASIN GRATE AND FRAMES ARE TO BE BY EAST JORDAN IRON WORKS.

14. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF UTILITY LINES ADJACENT TO THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD.

15. BUILDING CONTRACTOR SHALL PROVIDE & INSTALL A PERMANENT INDICATING VALVE 12" ABOVE THE FLOOR ON THE FIRE LINE AT THE TERMINATION POINT. THIS VALVE WILL BE USED TO HYDROSTATIC PRESSURE TEST AGAINST & WILL REMAIN AS PART OF THE SYSTEM ONCE ALL TESTING IS COMPLETED. THE FIRE LINE MAIN WILL NOT BE DISMANTLED FOR CONNECTION TO THE FIRE SUPPRESSION SYSTEM. SITE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FIRE MAIN WITH THE BUILDING CONTRACTOR.

16. ALL PROJECTS WILL REQUIRE A PRE-CONSTRUCTION MEETING WITH THE CITY OF BLOOMINGTON UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR AND/OR DEVELOPER MUST CONTACT TOM AXSOM AT (812)349-3633 TO SCHEDULE THE MEETING.

17. CONTRACTOR SHALL NOTIFY THE CITY OF BLOOMINGTON UTILITIES ENGINEERING DEPARTMENT ONE (1) WORKING DAY PRIOR TO CONSTRUCTION OF ANY WATER, STORM OR SANITARY SEWER UTILITY WORK. A CBU INSPECTOR MUST HAVE NOTICE SO WORK CAN BE INSPECTED, DOCUMENTED, AND PROPER AS-BUILT MADE. WHEN A CONTRACTOR WORKS WEEKENDS, A CBU DESIGNATED HOLIDAY, OR BEYOND NORMAL CBU WORK HOURS, THE CONTRACTOR WILL PAY FOR THE INSPECTOR'S OVERTIME. FOR CBU WORK HOURS AND HOLIDAY INFORMATION, PLEASE CONTACT THE CITY OF BLOOMINGTON UTILITIES ENGINEERING DEPARTMENT AT (812)349-3660.

LANDSCAPE NOTES

1. ALL PLANT MATERIAL SHALL ARRIVE ONSITE IN A HEALTHY, VIGOROUS CONDTION AND BE FREE OF PESTS AND DISEASE.

2. ALL PLANTS SHALL BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.

3. ALL TREES SHALL BE STRAIGHT-TRUNKED, FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.

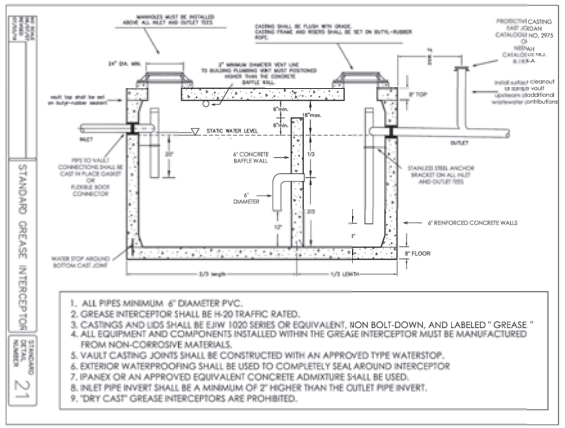
4. ALL TREES SHALL BE GUYED OR STAKED PLUMB AS SHOWN IN THE DETAILS.

5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION. PLANTING LOCATIONS MAY REQUIRE ADJUSTMENTS IN FIELD TO AVOID OVERHEAD AND UNDERGROUND UTILITIES.

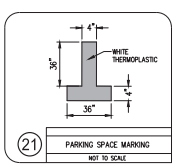
6. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF TOTAL ACCEPTANCE. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD.

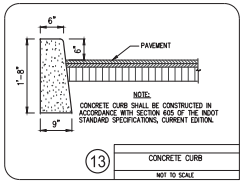
7. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST OR DRIP IRRIGATION SYSTEM PRIOR TO INSTALLATION. WATER ALL SPECIMENS WITHIN 24 HOURS OF PLANTING.

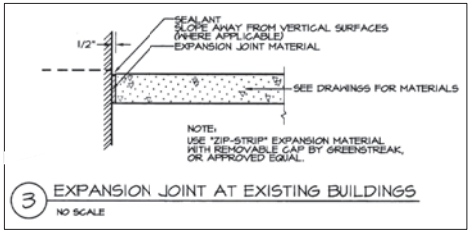
8. ANY NEW OR TRANSPLANTED PLANT MATERIAL WHICH DIES, TURNS BROWN OR DEFOLIATES PRIOR TO TOTAL ACCEPTANCE OF THE WORK SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY AND SIZE TO MEET ALL PLANT LIST SPECIFICATIONS.



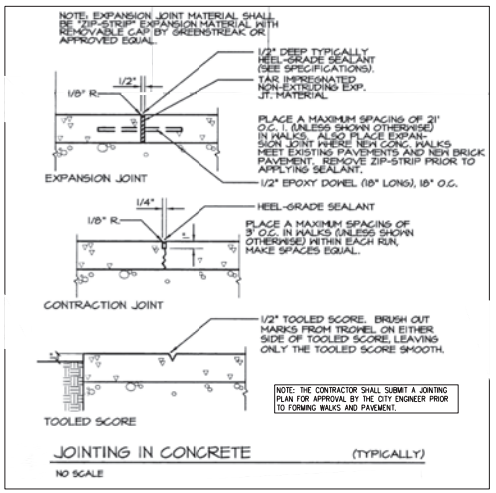
1. ALL PIPES MINIMUM 6" DIAMETER PVC.
2. GREASE INTERCEPTOR SHALL BE H-20 TRAFFIC RATED.
3. CASTINGS AND LIDS SHALL BE EJIW 1020 SERIES OR EQUIVALENT, NON BOLT-DOWN, AND LABELED " GREASE "
4. ALL EQUIPMENT AND COMPONENTS INSTALLED WITHIN THE GREASE INTERCEPTOR MUST BE MANUFACTURED FROM NON-CORROSIVE MATERIALS.
5. VAULT CASTING SHALL BE CONSTRUCTED WITH AN APPROVED TYPE WATERSTOP.
6. EXTERIOR WATERPROOFING SHALL BE USED TO COMPLETELY SEAL AROUND INTERCEPTOR
7. IPANEX OR AN APPROVED EQUIVALENT CONCRETE ADMIXTURE SHALL BE USED.
8. INLET PIPE INVERT SHALL BE A MINIMUM OF 2" HIGHER THAN THE OUTLET PIPE INVERT.
9. "DRY CAST" GREASE INTERCEPTORS ARE PROHIBITED.

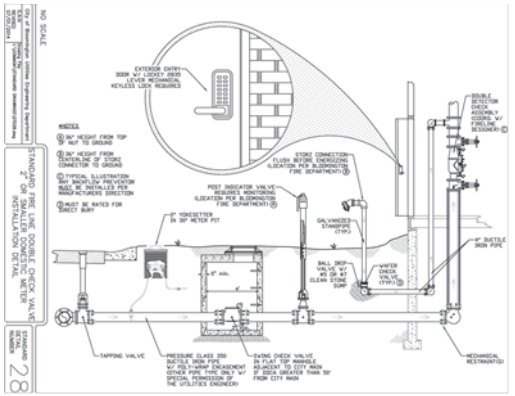


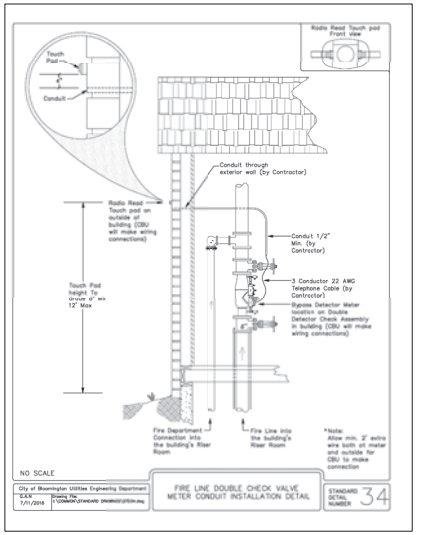


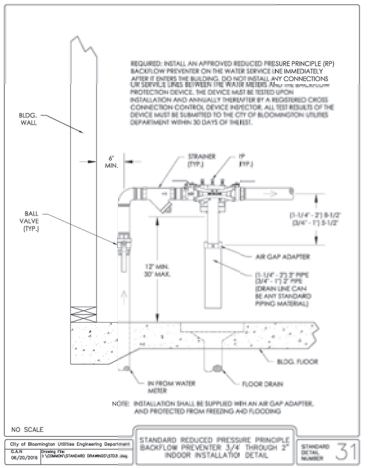


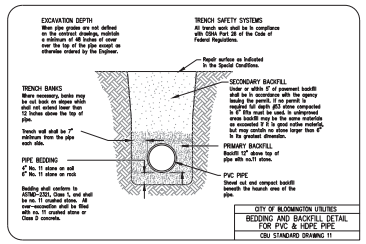
NOTE: THE EXPANSION JOINT AND JOINTING DETAILS SHOWN ON THIS SHEET WERE PROVIDED BY THE CITY OF BLOOMINGTON PLANNING & TRANSPORTATION DEPARTMENT.

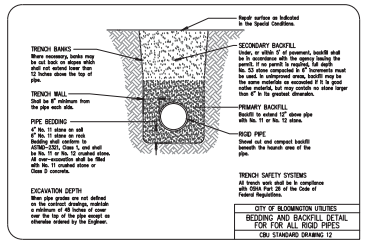












revisions:

certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

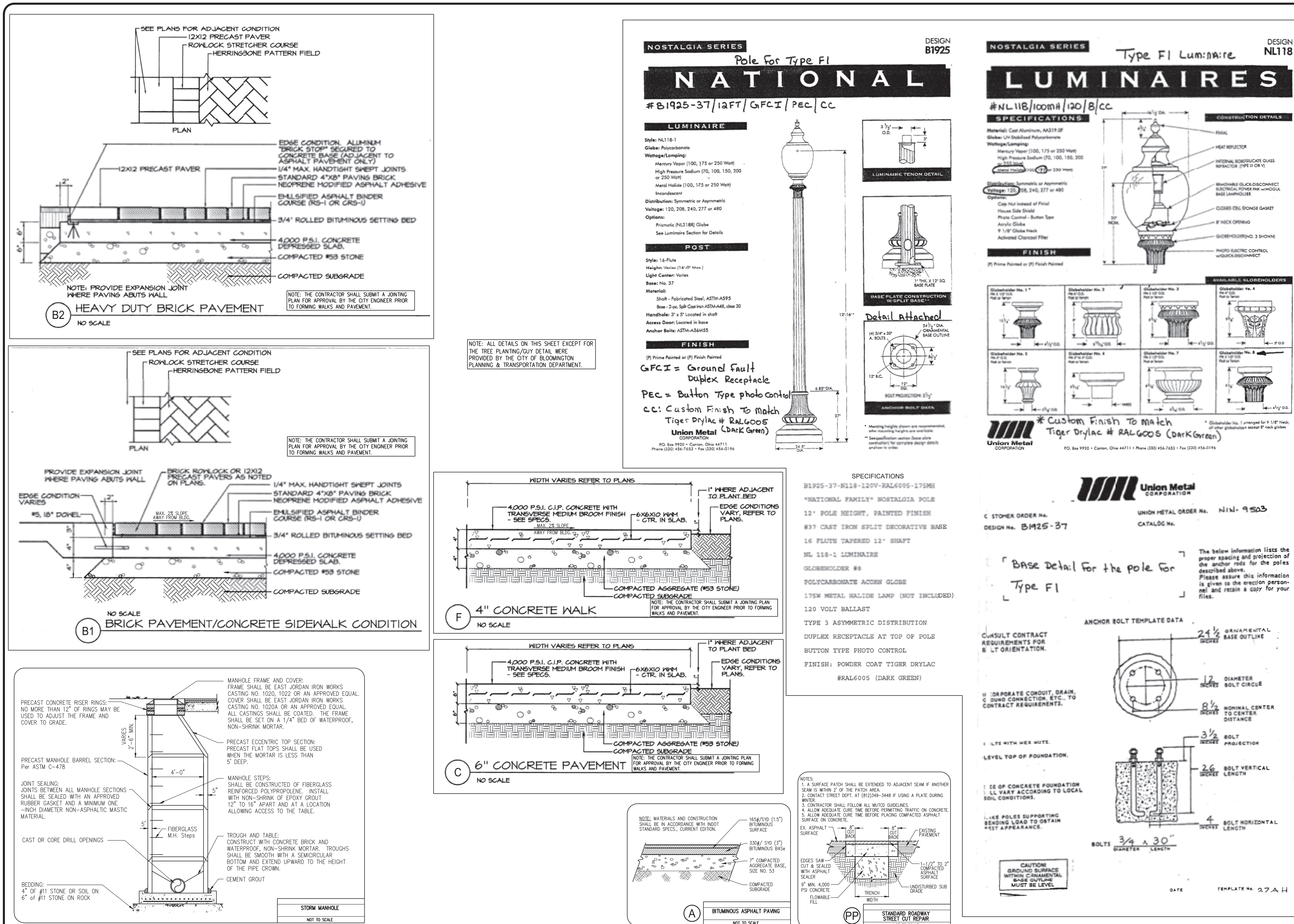
ARCHITECTURE
CIVIL ENGINEERING
PLANNING

BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
(812) 332-8030
bloomington, indiana
(812) 339-2990 (fax)

title: GENERAL NOTES & DETAILS

384

designed by: JBT
drawn by: JBT
checked by: JSF
sheet no: C101
project no.: 402436


SEE PLANS FOR ADJACENT CONDITION
12X12 PRECAST PAVER
ROWLOCK STRETCHER COURSE
HERRINGBONE PATTERN FIELD
PLAN
EDGE CONDITION. ALUMINUM "BRICK STOP" SECURED TO CONCRETE BASE (ADJACENT TO ASPHALT PAVEMENT ONLY)
1/4" MAX. HANDTIGHT SWEPT JOINTS
STANDARD 4"X8" PAVING BRICK
NEOPRENE MODIFIED ASPHALT ADHESIVE
EMULSIFIED ASPHALT BINDER COURSE (RS-1 OR CRS-1)
3/4" ROLLED BITUMINOUS SETTING BED
4,000 P.S.I. CONCRETE DEPRESSED SLAB.
COMPACTED #53 STONE
COMPACTED SUBGRADE
NOTE: PROVIDE EXPANSION JOINT WHERE PAVING ABUTS WALL
NOTE: THE CONTRACTOR SHALL SUBMIT A JOINTING PLAN FOR APPROVAL BY THE CITY ENGINEER PRIOR TO FORMING WALKS AND PAVEMENT.
B2 HEAVY DUTY BRICK PAVEMENT
NO SCALE
PROVIDE EXPANSION JOINT WHERE PAVING ABUTS WALL
BRICK ROWLOCK OR 12X12 PRECAST PAVERS AS NOTED ON PLANS.
EDGE CONDITION VARIES
#5, 18" DOWEL
MAX. 2% SLOPE AWAY FROM BLDG.
B1 BRICK PAVEMENT/CONCRETE SIDEWALK CONDITION
WIDTH VARIES REFER TO PLANS
4,000 P.S.I. C.I.P. CONCRETE WITH TRANSVERSE MEDIUM BROOM FINISH - SEE SPECS.
6X6X10 WWM - CTR. IN SLAB.
1" WHERE ADJACENT TO PLANT BED
EDGE CONDITIONS VARY, REFER TO PLANS.
COMPACTED AGGREGATE (#53 STONE)
COMPACTED SUBGRADE
F 4" CONCRETE WALK
C 6" CONCRETE PAVEMENT
MANHOLE FRAME AND COVER: FRAME SHALL BE EAST JORDAN IRON WORKS CASTING NO. 1020, 1022 OR AN APPROVED EQUAL. COVER SHALL BE EAST JORDAN IRON WORKS CASTING NO. 1020A OR AN APPROVED EQUAL. ALL CASTINGS SHALL BE COATED. THE FRAME SHALL BE SET ON A 1/4" BED OF WATERPROOF, NON-SHRINK MORTAR.
PRECAST CONCRETE RISER RINGS: NO MORE THAN 12" OF RINGS MAY BE USED TO ADJUST THE FRAME AND COVER TO GRADE.
PRECAST ECCENTRIC TOP SECTION: PRECAST FLAT TOPS SHALL BE USED WHEN THE MORTAR IS LESS THAN 5' DEEP.
PRECAST MANHOLE BARREL SECTION: Per ASTM C-478
JOINT SEALING: JOINTS BETWEEN ALL MANHOLE SECTIONS SHALL BE SEALED WITH AN APPROVED RUBBER GASKET AND A MINIMUM ONE -INCH DIAMETER NON-ASPHALTIC MASTIC MATERIAL.
MANHOLE STEPS: SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYPROPOLENE. INSTALL WITH NON-SHRINK OF EPOXY GROUT 12" TO 16" APART AND AT A LOCATION ALLOWING ACCESS TO THE TABLE.
FIBERGLASS M.H. Steps
CAST OR CORE DRILL OPENINGS
TROUGH AND TABLE: CONSTRUCT WITH CONCRETE BRICK AND WATERPROOF, NON-SHRINK MORTAR. TROUGHS SHALL BE SMOOTH WITH A SEMICIRCULAR BOTTOM AND EXTEND UPWARD TO THE HEIGHT OF THE PIPE CROWN.
CEMENT GROUT
BEDDING: 4" OF #11 STONE OR SOIL ON 6" of #11 STONE ON ROCK
STORM MANHOLE
NOT TO SCALE
NOTE: MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH INDOT STANDARD SPECS., CURRENT EDITION.
165#/SYD (1.5") BITUMINOUS SURFACE
330#/ SYD (3") BITUMINOUS BASe
7" COMPACTED AGGREGATE BASE, SIZE NO. 53
COMPACTED SUBGRADE
A BITUMINOUS ASPHALT PAVING
NOT TO SCALE
PP STANDARD ROADWAY STREET CUT REPAIR
NOT TO SCALE
NOSTALGIA SERIES
DESIGN B1925
Pole For Type F1
NATIONAL
#B1925-37/12FT/GFCI/PEC/CC
GFCI = Ground Fault Duplex Receptacle
PEC = Button Type photo control
CC: Custom Finish To Match Tiger Drylac # RAL6005 (Dark Green)
Detail Attached
Union Metal CORPORATION
DESIGN NL118
Type F1 Luminaire
LUMINAIRES
#NL118/100MH/120/8/CC
* Custom Finish To match Tiger Drylac # RAL6005 (Dark Green)
SPECIFICATIONS
B1925-37-N118-120V-RAL6005-175MH
"NATIONAL FAMILY" NOSTALGIA POLE
12' POLE HEIGHT, PAINTED FINISH
#37 CAST IRON SPLIT DECORATIVE BASE
16 FLUTE TAPERED 12' SHAFT
NL 118-1 LUMINAIRE
GLOBEHOLDER #8
POLYCARBONATE ACORN GLOBE
175W METAL HALIDE LAMP (NOT INCLUDED)
120 VOLT BALLAST
TYPE 3 ASYMMETRIC DISTRIBUTION
DUPLEX RECEPTACLE AT TOP OF POLE
BUTTON TYPE PHOTO CONTROL
FINISH: POWDER COAT TIGER DRYLAC #RAL6005 (DARK GREEN)
UNION METAL ORDER No. NIN-9503
DESIGN No. B1925-37
Base Detail For the pole For Type F1
ANCHOR BOLT TEMPLATE DATA
21 1/2 ORNAMENTAL BASE OUTLINE
12 DIAMETER BOLT CIRCLE
8 1/2 NOMINAL CENTER TO CENTER DISTANCE
3 1/2 BOLT PROJECTION
26 BOLT VERTICAL LENGTH
4 BOLT HORIZONTAL LENGTH
BOLTS 3/4 x 30"
CAUTION! GROUND SURFACE WITHIN ORNAMENTAL BASE OUTLINE MUST BE LEVEL
TEMPLATE No. 27AH

NOTE: ALL DETAILS ON THIS SHEET EXCEPT FOR THE TREE PLANTING/GUY DETAIL WERE PROVIDED BY THE CITY OF BLOOMINGTON PLANNING & TRANSPORTATION DEPARTMENT.

revisions:

BYNUM FANYO & ASSOCIATES, INC.
ARCHITECTURE
CIVIL ENGINEERING
PLANNING
528 north walnut street
bloomington, indiana
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(812) 339-2990 (Fax)

certified by:

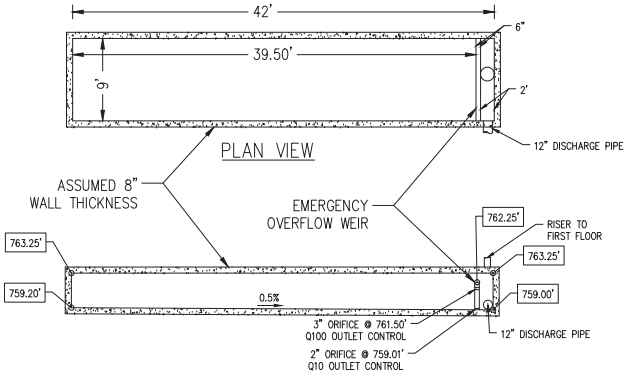
PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

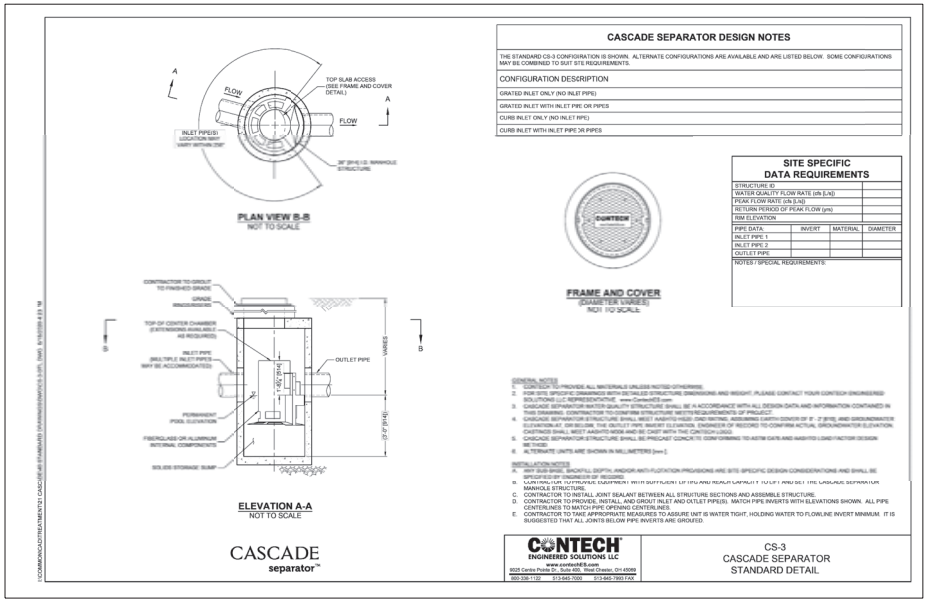
title: MISCELLANEOUS DETAILS

385

designed by: JB
drawn by: JBT
checked by: JSF
sheet no: C201
project no.: 402436

STORMWATER DETENTION CHAMBER DETAILS





revisions:

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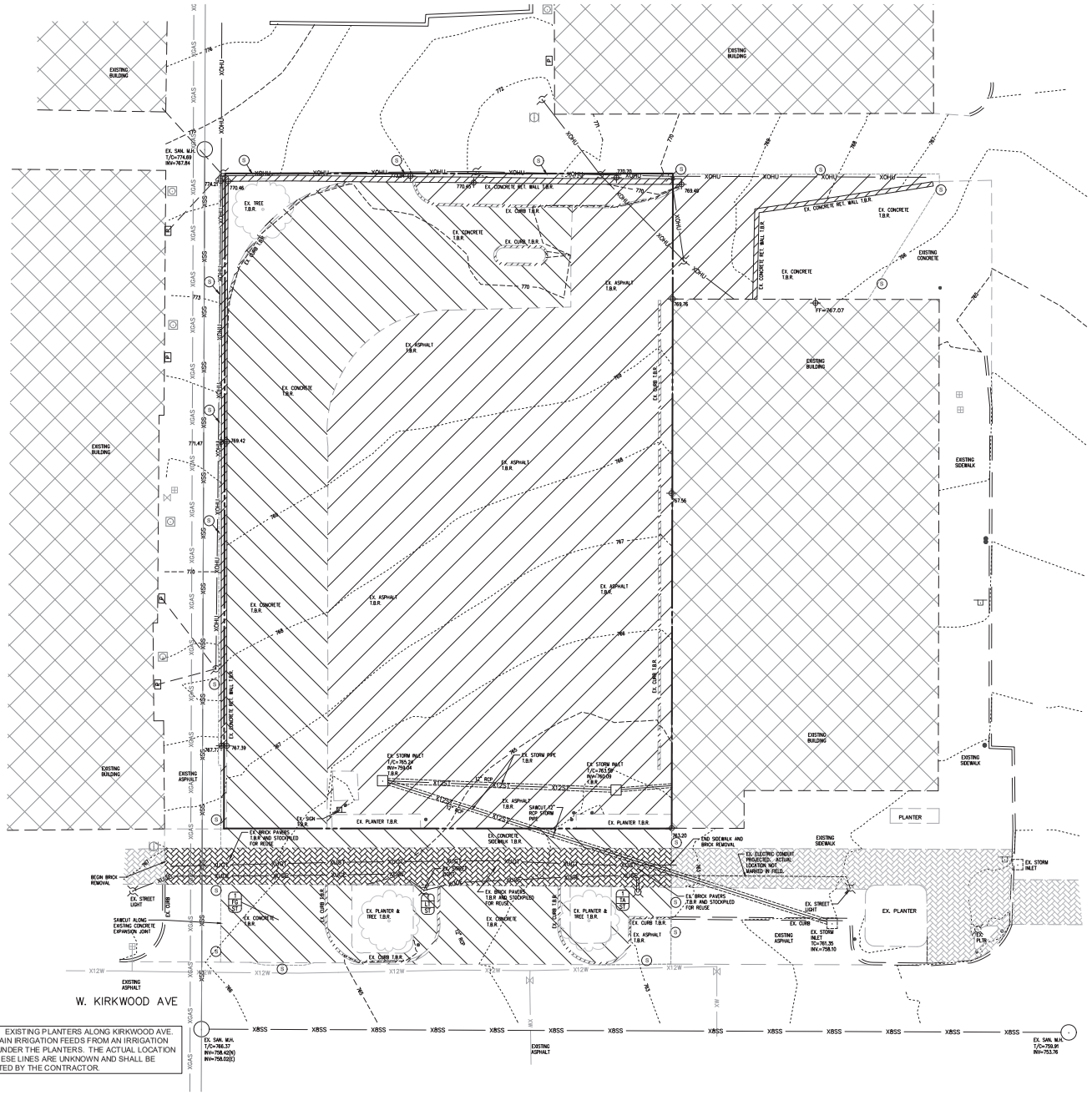
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: MISCELLANEOUS DETAILS

386

designed by: JBF
drawn by: TJN
checked by: JSF
sheet no: C202
project no.: 402436



NOTE: EXISTING PLANTERS ALONG KIRKWOOD AVE. CONTAIN IRRIGATION FEEDS FROM AN IRRIGATION LINE UNDER THE PLANTERS. THE ACTUAL LOCATION OF THESE LINES ARE UNKNOWN AND SHALL BE LOCATED BY THE CONTRACTOR.

EXISTING LEGEND

———	PROPERTY LINE
—x—	FENCE
—X6W—	6" WATER MAIN
---XXX---	CONTOUR & ELEVATION
—XBSS—	8" SANITARY SEWER MAIN
—XST—	STORM SEWER PIPE
—XOHE—	OVERHEAD ELECTRIC LINES
—XUGE—	UNDERGROUND ELECTRIC LINES
—XOHT—	OVERHEAD TELEPHONE LINES
—XUGT—	UNDERGROUND TELEPHONE LINE
—XGAS—	GAS LINE PIPE

DEMOLITION LEGEND

T.B.R.	TO BE REMOVED
T.R.U.	TO REMAIN UNDISTURBED
(S)	SAWCUT PAVEMENT

revisions:

SCALE: 1"=20'

BYNUM FANYO & ASSOCIATES, INC.
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certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: DEMOLITION PLAN

387

designed by: JBF
drawn by: JBT
checked by: JSF
sheet no: C301
project no.: 402436

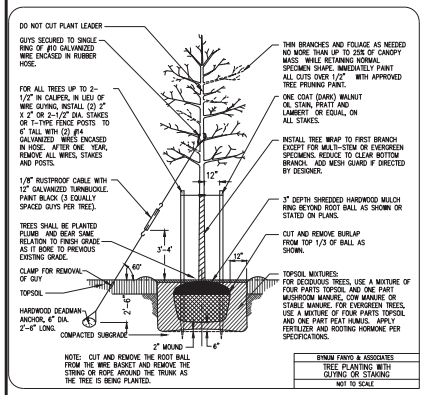
PLANT LIST

LARGE CANOPY DECIDUOUS TREES

LEGEND	KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE & CONDITION
	FG	FAGUS GRANDIFOLIA	AMERICAN BEECH	1	2" CAL., BALL AND BURLAP
	LT	LIRODENDRON TULIPIFERA	TULIP TREE	1	2" CAL., BALL AND BURLAP
	TA	TILIA AMERICANA	BASSWOOD	1	2" CAL., BALL AND BURLAP

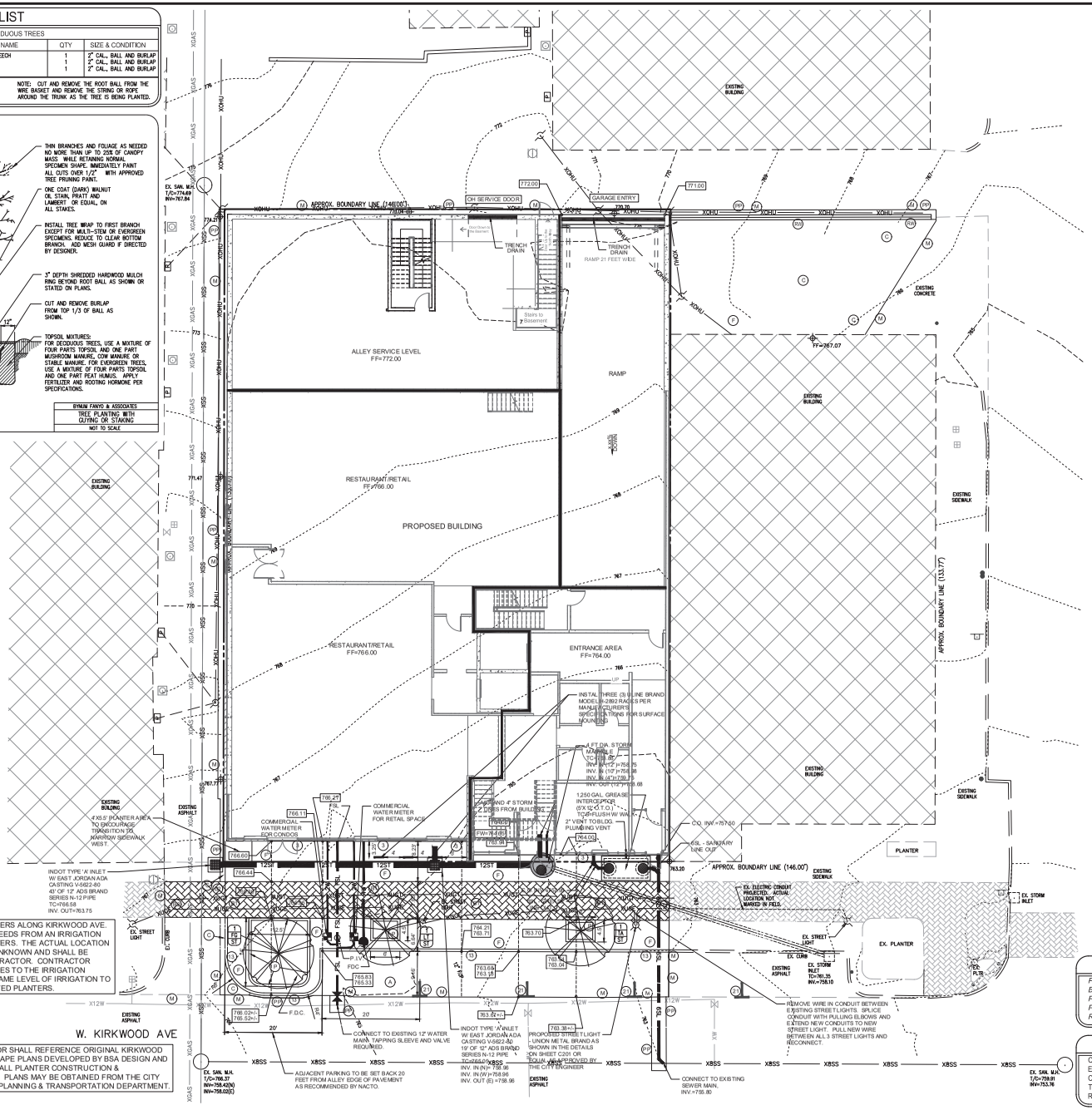
XX PLANT QUANTITY
YY PLANT TYPE
ST STREET TREE

NOTE: CUT AND REMOVE THE ROOT BALL FROM THE WIRE BASKET AND REMOVE THE STRING OR ROPE AROUND THE TRUNK AS THE TREE IS BEING PLANTED.



NOTE: CUT AND REMOVE THE ROOT BALL FROM THE WIRE BASKET AND REMOVE THE STRING OR ROPE AROUND THE TRUNK AS THE TREE IS BEING PLANTED.

BYNUM FANYO & ASSOCIATES
TREE PLANTING WITH GUYING OR STAKING
NOT TO SCALE



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NOTE: CONTRACTOR SHALL REFERENCE ORIGINAL KIRKWOOD AVENUE STREETSCAPE PLANS DEVELOPED BY BSA DESIGN AND DATED 3/19/99 FOR ALL PLANTER CONSTRUCTION & RECONSTRUCTION. PLANS MAY BE OBTAINED FROM THE CITY OF BLOOMINGTON PLANNING & TRANSPORTATION DEPARTMENT.

EXISTING LEGEND

- PROPERTY LINE
- FENCE
- 6" WATER MAIN
- CONTOUR & ELEVATION
- 8" SANITARY SEWER MAIN
- STORM SEWER PIPE
- OVERHEAD ELECTRIC LINES
- UNDERGROUND ELECTRIC LINES
- OVERHEAD TELEPHONE LINES
- UNDERGROUND TELEPHONE LINE
- GAS LINE PIPE

SITE LEGEND

- (A) BITUMINOUS PAVEMENT
- (B1) BRICK PAVEMENT/CONCRETE SIDEWALK CONDITION (RECYCLED FROM SIDEWALK DEMOLITION)
- (B2) HEAVY DUTY BRICK PAVEMENT
- (C) 6" CONCRETE PAVEMENT
- (EG) EXPANSION JOINT
- (CG) CONTRACTION JOINT
- (F) CONCRETE SIDEWALK
- (M) MATCH EXISTING CURB, SIDEWALK, PAVEMENT ELEVATIONS
- (P) RAISED PLANTER CONSTRUCTED OF RECYCLED LIMESTONE CURB FROM EXISTING PLANTERS. CURB SECTIONS MAY BE PURCHASED AS REQUIRED TO COMPLETE EACH PLANTER AND SHALL MATCH EXISTING STYLE.
- (PP) STANDARD ROAD PAVEMENT PATCH
- (R) SIDEWALK ADA ACCESSIBLE RAMP
- (RW) REINFORCED CONCRETE RETAINING WALL WITH STEEL PIPE GUARDRAIL - SEE DESIGN BY OTHERS
- (J) EXPANSION JOINT AT BUILDING
- (13) 6-IN WIDE CONCRETE CURB
- (21) THERMOPLASTIC PAVEMENT PARKING SPACE MARKING

UTILITY LEGEND

- 4W — 4" DIP WATERLINE (PRIVATELY OWNED)
- FSL — POLY-WRAPPED DIP FIRELINE TO BE SIZED BY FIRE SUPPRESSION ENGINEER (PRIVATELY OWNED)
- DSL — DOMESTIC WATER SERVICE LINE TO BE SIZED BY CITY OF BLOOMINGTON UTILITIES (PRIVATELY OWNED)
- WATER LINE GATE VALVE
- F.D.C. — FIRE DEPARTMENT "STORZ" CONNECTION
- P.I.V. — POST INDICATING VALVE
- 6SL — 6" SDR-35 PVC SANITARY SEWER LATERAL (PRIVATELY OWNED)
- ST — ADS BRAND SERIES N-12 HDPE STORM SEWER PIPE (PRIVATELY OWNED)
- RD — SDR-35 PVC BUILDING/DOWNSPOUT DRAIN PIPE (PRIVATELY OWNED)
- GAS — GAS SERVICE LINE
- ELEC — ELECTRIC SERVICE LINE

GRADING LEGEND

- XXX — ELEVATION CONTOUR
- XXX.XX — SPOT GRADE ELEVATION
- XXX.XX / XXX.XX — TOP OF CURB ELEVATION OVER PAVEMENT ELEVATION
- FF=XXX.XX — FINISH FLOOR ELEVATION
- FW=XXX.XX — FINISH WALK ELEVATION
- TC=XXX.XX — FINISH TOP OF CASTING

BOUNDARY NOTE

PROPERTY LINES ARE SHOWN FOR GRAPHIC PURPOSES ONLY. ONE BOUNDARY MONUMENT WAS FOUND IN THE FIELD. THE SURVEY PROVIDED TO BYNUM FANYO SHOWS 4 MONUMENTS FOUND. THE PROVIDED SURVEY DOES NOT SHOW ANY GEOMETRIC INFORMATION TO RECREATE THE LINES. ONLY PROPERTY LINE LENGTHS WERE PROVIDED.

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:

SCALE: 1"=10'

ARCHITECTURE
CIVIL ENGINEERING
PLANNING
BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
bloomington, indiana
(812) 332-8030
(812) 339-2990 (fax)

certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: SITE PLAN (STREET LEVEL)

388

designed by: JSF
drawn by: TJN
checked by: JSF
sheet no: C401
project no.: 402436

PLANT LIST

LARGE CANOPY DECIDUOUS TREES

LEGEND	KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE & CONDITION
	FG	FAGUS GRANDIFOLIA	AMERICAN BEECH	1	2" CAL., BALL AND BURLAP
	LT	LIRODENDRON TULIPIFERA	TULIP TREE	1	2" CAL., BALL AND BURLAP
	TA	TILIA AMERICANA	BASSWOOD	1	2" CAL., BALL AND BURLAP

XX PLANT QUANTITY
YY PLANT TYPE
ST STREET TREE

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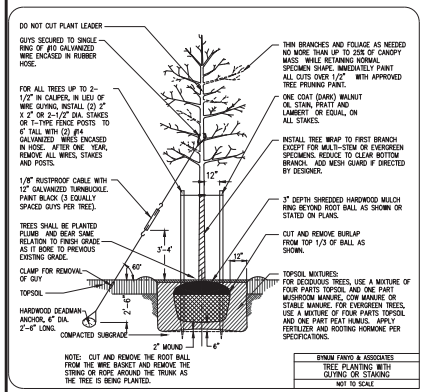

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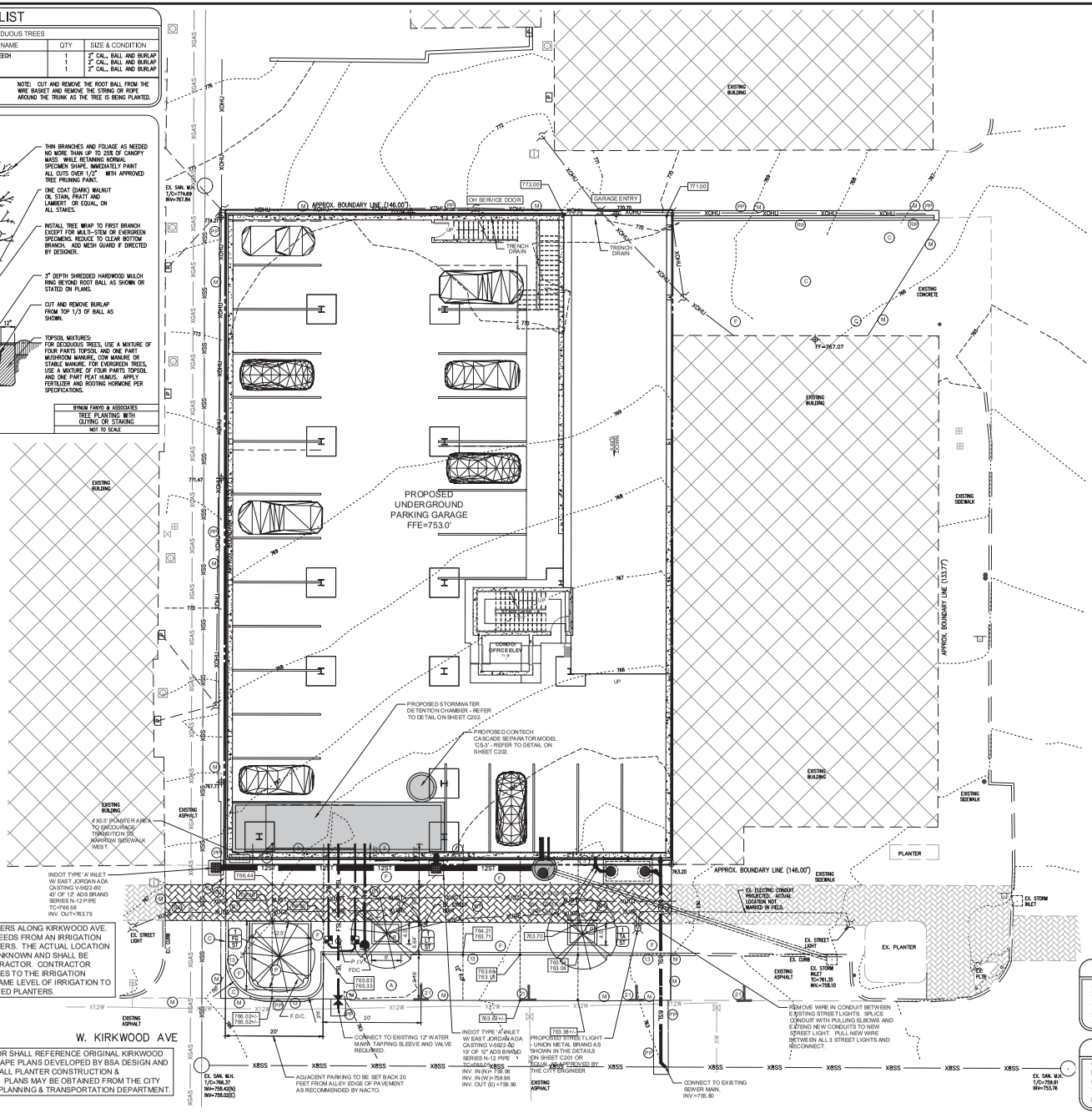
BYNUM FANYO & ASSOCIATES
TREE PLANTING WITH GUYING OR STAKING
NOT TO SCALE



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EXISTING LEGEND

	PROPERTY LINE
x	FENCE
X6W	6" WATER MAIN
XXX	CONTOUR & ELEVATION
XBSS	8" SANITARY SEWER MAIN
XST	STORM SEWER PIPE
XOHE	OVERHEAD ELECTRIC LINES
XUGE	UNDERGROUND ELECTRIC LINES
XOHT	OVERHEAD TELEPHONE LINES
XUGT	UNDERGROUND TELEPHONE LINE
XGAS	GAS LINE PIPE

SITE LEGEND

A	BITUMINOUS PAVEMENT
B1	BRICK PAVEMENT/CONCRETE SIDEWALK CONDITION (RECYCLED FROM SIDEWALK DEMOLITION)
B2	HEAVY DUTY BRICK PAVEMENT
C	6" CONCRETE PAVEMENT
EG	EXPANSION JOINT
CG	CONTRACTION JOINT
F	CONCRETE SIDEWALK
M	MATCH EXISTING CURB, SIDEWALK, PAVEMENT ELEVATIONS
P	RAISED PLANTER CONSTRUCTED OF RECYCLED LIMESTONE CURB FROM EXISTING PLANTERS. CURB SECTIONS MAY BE PURCHASED AS REQUIRED TO COMPLETE EACH PLANTER AND SHALL MATCH EXISTING STYLE.
PP	STANDARD ROAD PAVEMENT PATCH
R	SIDEWALK ADA ACCESSIBLE RAMP
RW	REINFORCED CONCRETE RETAINING WALL WITH STEEL PIPE GUARDRAIL - SEE DESIGN BY OTHERS
3	EXPANSION JOINT AT BUILDING
13	6-IN WIDE CONCRETE CURB
J1	THERMOPLASTIC PAVEMENT PARKING SPACE MARKING

UTILITY LEGEND

4W	4" DIP WATERLINE (PRIVATELY OWNED)
FSL	POLY-WRAPPED DIP FIRELINE TO BE SIZED BY FIRE SUPPRESSION ENGINEER (PRIVATELY OWNED)
DSL	DOMESTIC WATER SERVICE LINE TO BE SIZED BY CITY OF BLOOMINGTON UTILITIES (PRIVATELY OWNED)
	WATER LINE GATE VALVE
F.D.C.	FIRE DEPARTMENT "STORZ" CONNECTION
P.I.V.	POST INDICATING VALVE
6SL	6" SDR-35 PVC SANITARY SEWER LATERAL (PRIVATELY OWNED)
ST	ADS BRAND SERIES N-12 HDPE STORM SEWER PIPE (PRIVATELY OWNED)
RD	SDR-35 PVC BUILDING/DOWNSPOUT DRAIN PIPE (PRIVATELY OWNED)
GAS	GAS SERVICE LINE
ELEC	ELECTRIC SERVICE LINE

GRADING LEGEND

XXX	ELEVATION CONTOUR
XXX.XX	SPOT GRADE ELEVATION
XXX.XX / XXX.XX	TOP OF CURB ELEVATION OVER PAVEMENT ELEVATION
FF=XXX.XX	FINISH FLOOR ELEVATION
FW=XXX.XX	FINISH WALK ELEVATION
TC=XXX.XX	FINISH TOP OF CASTING

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revisions:

SCALE: 1"=10'

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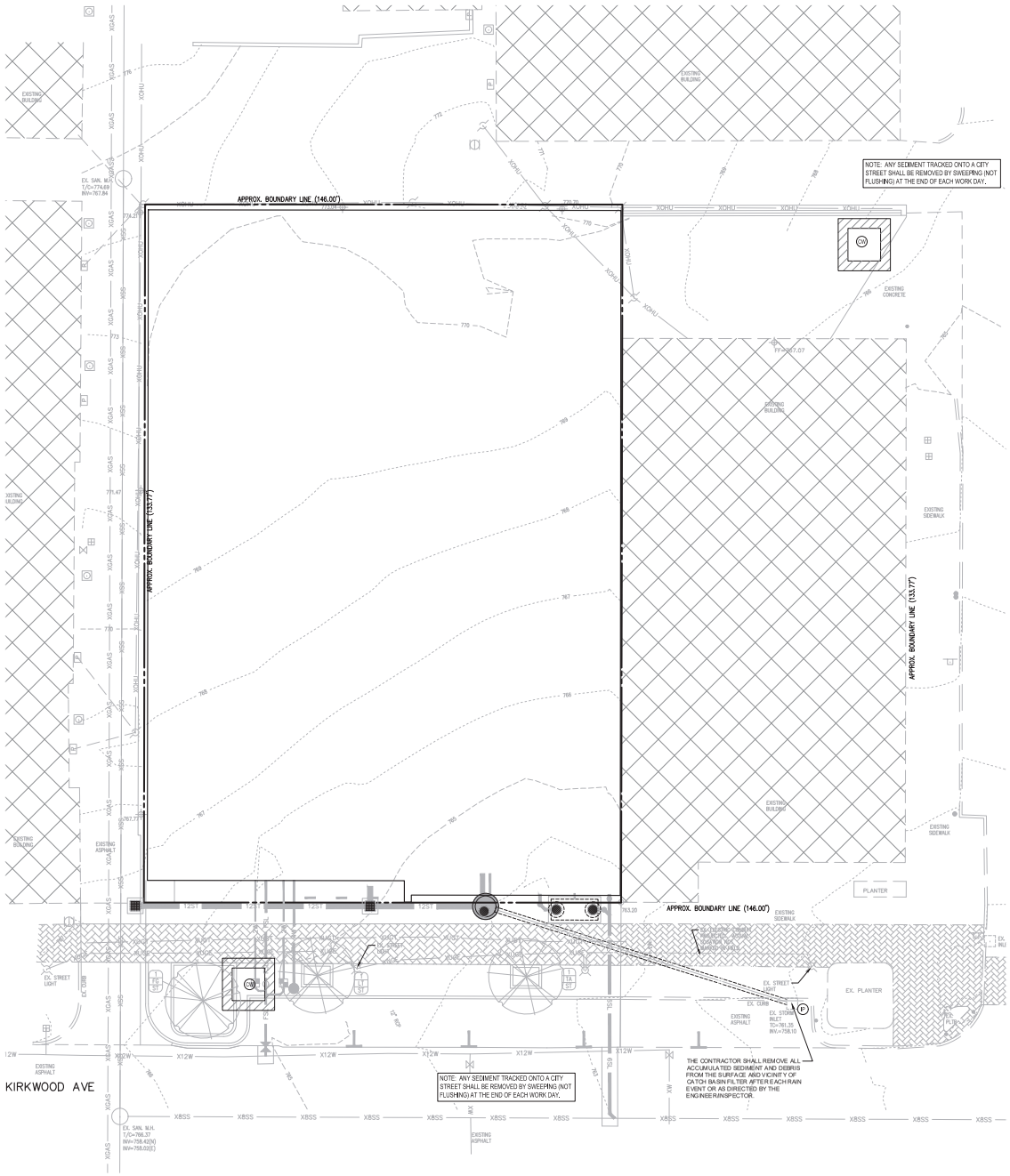
certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: SITE PLAN (GARAGE LEVEL)

389

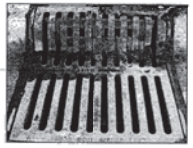
designed by: JSF
drawn by: TJN
checked by: JSF
sheet no: C402
project no.: 402436



TEMPORARY CURB & PAVED AREA INLET PROTECTION

Insert (Basket) Curb Inlet Protection

Insert (basket) curb inlet protection is a temporary sediment control measure consisting of a metal frame or basket that is used to support a geotextile fabric. The system is installed under the storm sewer grate.



Purpose

To minimize sediment from entering the storm sewer system while allowing runoff to enter the storm sewer system in the event of excessive storm events. This measure traps sediment associated with small storm events below the grade of the paved area. This measure does not place an obstruction in the street to trap sediment and is especially conducive to stages of construction when the public has access to the project site.

Note: **This measure should be used in conjunction with other sediment control measures.**

Specifications

Contributing Drainage Area:

One-quarter acre maximum.

Capacity

Runoff from a two-year frequency, 24-hour storm event entering a storm drain without bypass flow.

Location

- At curb inlets on paved roads and parking lots.
- Down grade from construction activities (e.g., individual home sites).

Materials

- Metal frame or basket with a top width and length such that the fabric fits into the inlet. (The frame is supported by the structural integrity of the storm sewer.)
- The metal frame or geotextile should be designed with a bypass to allow storm water to flow into the storm sewer system during excessive storm events.
- The system should be designed for ease of maintenance.
- Geotextile fabric.

Table 1. Geotextile Fabric Specifications

Physical Property	Woven	Non-Woven
Filtering Efficiency	85%	85%
UV Resistance (inhibitors and stabilizers to ensure six month minimum life at temperatures of 0°F to 120° F)	70%	85%
Tensile Strength at 20% Elongation: Standard Strength	35 lbs./linear inch	50 lbs./linear inch
Extra Strength	50 lbs./linear inch	70 lbs./linear inch
Slurry Flow Rate	0.3 gal./min./sq. ft.	4.5 gal./min./sq. ft.
Water Flow Rate	15 gal./min./sq. ft.	220 gal./min./sq. ft.

Installation

1. Remove the storm sewer grate and place the frame into the grate opening.
2. Place geotextile fabric into the frame and secure according to the manufacturer's recommendations.
3. Replace the storm sewer grate.

Maintenance

- Inspect daily.
- Remove accumulated sediment and debris after each storm event. Deposit sediment in an area where it will not re-enter the paved area or storm drains.
- Replace or clean geotextile fabric as needed.
- When the contributing drainage area has been stabilized, remove inlet protection.

EROSION CONTROL LEGEND

- (CW) CONCRETE WASHOUT AREA (TEMPORARY)
- (IP) INLET PROTECTION (TEMPORARY)

(CW) TEMPORARY CONCRETE WASHOUT AREA

REQUIREMENTS

Capacity: Temporary washout facilities shall be constructed above or below grade at the option of the contractor. Temporary washout facilities shall be constructed and maintained in sufficient quality and size to contain all liquid and concrete waste generated by washout operations.

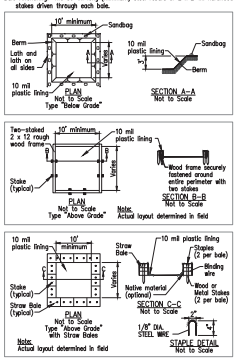
Type: Below grade concrete washout facilities are typical. Above grade facilities are used if excavation is not practical.

Location: Facilities shall be located a minimum of 50' from storm drain inlets, open drainage facilities, and water courses.

Plastic Lining Material: Minimum 10 mil polyethylene sheeting and should be free of holes, tears or other defects.

Straw Bale Dimensions: Approximately 14 in. x 18 in. x 36 in.

Bale Anchoring: Two 36-in. long (minimum) steel rebars or 2 x 2-in. hardwood stakes driven through each bale.



INSTALLATION

* Temporary concrete washout facilities shall be constructed as shown in the above details, and as described below. All temporary washout facilities shall have at minimum 10' width, 3' depth, and sufficient length to contain all liquid and concrete waste generated.

"Below Grade"

1. A pit shall be excavated with a minimum width of 10', depth of 3' and to contain all liquid and concrete waste generated.
2. The pit should be lined with a minimum 10 mil plastic lining which overhangs the pit rim by 5" in each direction.
3. Sandbags shall be placed on top of the plastic lining at 3' intervals along the rim of the excavated pit.
4. Lath and flagging shall be installed on all sides of the excavated pit to clearly mark its location.

"Above Grade"

1. A wood frame shall be constructed using two 2 x 12 boards staked on edge with a minimum width of 10' and length sufficient to contain all liquid and concrete waste generated.
2. The wood frame shall be securely fastened around the entire perimeter using steel rebar or 2 in. x 2 in. hardwood stakes.
3. The wood form shall be lined with 10 mil plastic sheeting which shall be attached to the outside face of the wood frame.

"Above Grade" with Straw Bales

1. Straw bales shall be arranged such that they create a basin with a minimum width of 10' and length sufficient to contain all liquid and concrete waste generated.
2. The straw bales shall be securely staked using steel rebar or 2 in. x 2 in. hardwood stakes. (two per bale)
3. The basin shall be lined with 10 mil plastic sheeting which is attached to the straw bales using 4" steel wire staples. (two per bale)

MAINTENANCE

* Temporary concrete washout facilities should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12 in. for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and disposed of.

* Washout facilities must be cleaned, or new facilities must be constructed ready for use once the washout is 75% full.

* At the conclusion of concrete construction activities the temporary concrete washout area shall be removed and returned to its original condition.

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:

SCALE: 1"=10'

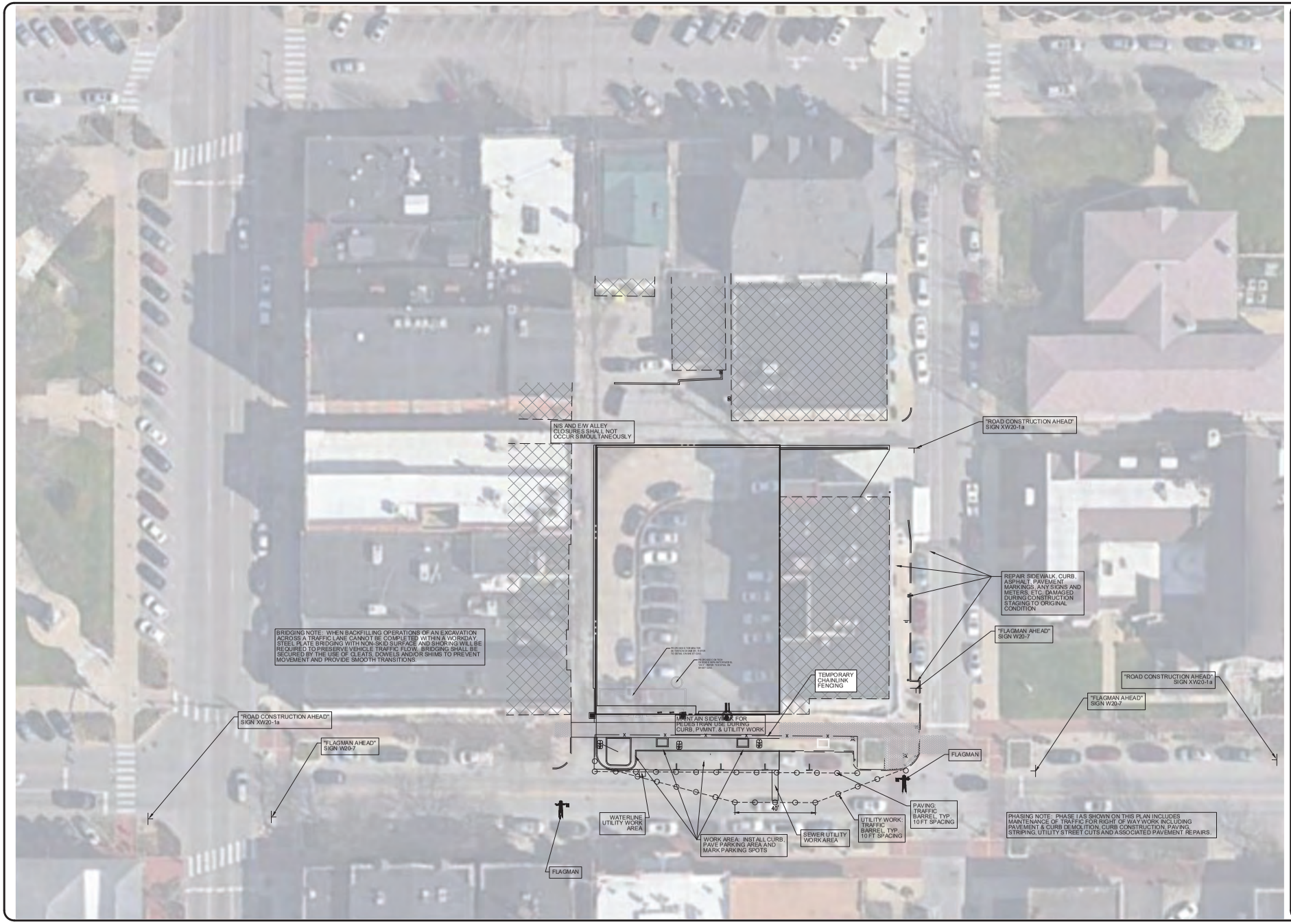
ARCHITECTURE
CIVIL ENGINEERING
PLANNING
BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
bloomington, indiana
(812) 332-8030
(812) 339-2990 (Fax)

certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: EROSION CONTROL PLAN

designed by: JBF
drawn by: JBT
checked by: JSF
sheet no: C403
project no.: 402436



revisions:

SCALE: 1"=20'

BYNUM FANYO & ASSOCIATES, INC.
ARCHITECTURE
CIVIL ENGINEERING
PLANNING
528 north walnut street
(812) 332-8030
bloomington, indiana
(812) 339-2990 (fax)

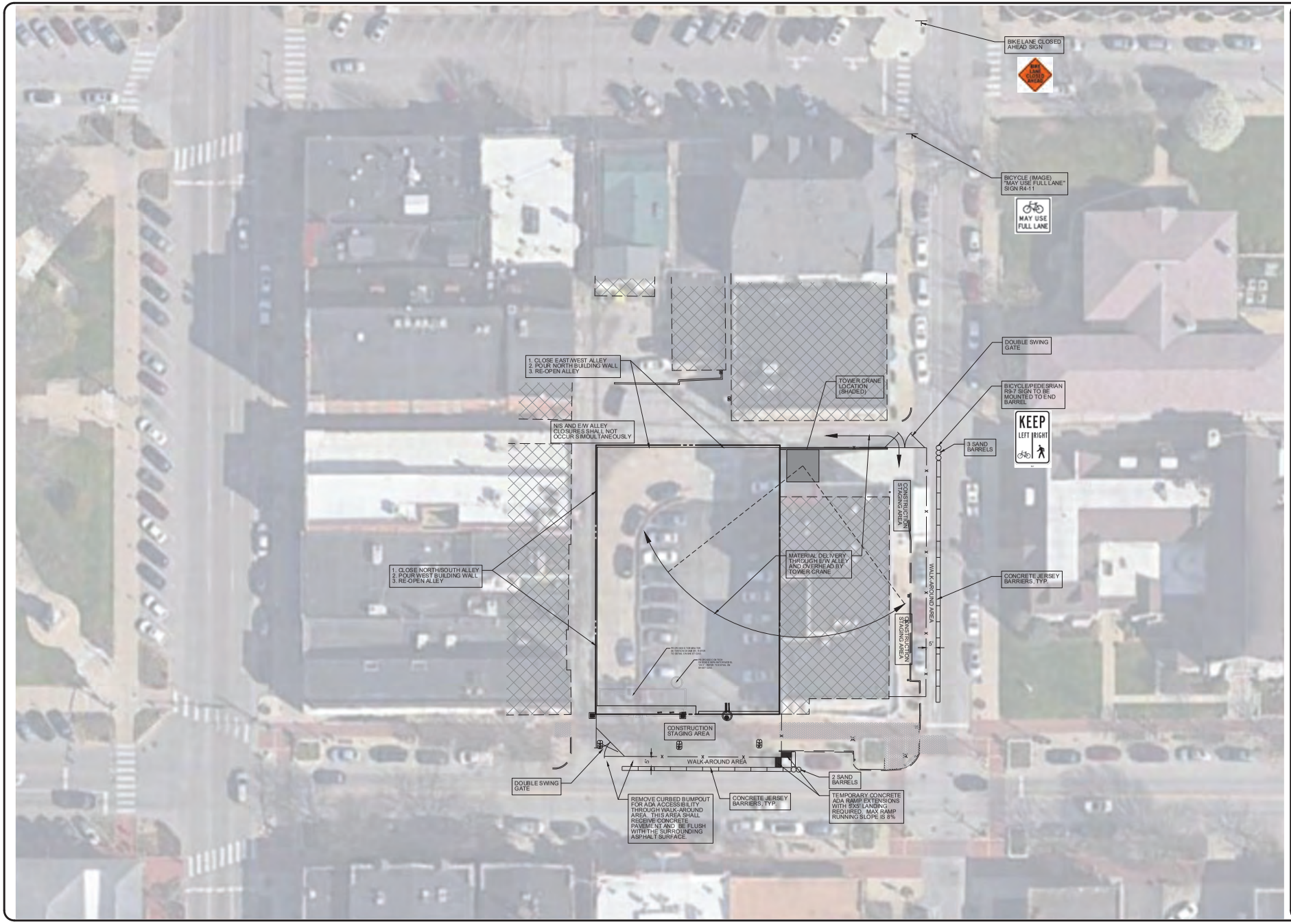
certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: PHASE I - MAINTENANCE OF TRAFFIC PLAN

391

designed by: JBT
drawn by: JBT
checked by: JSF
sheet no: C501
project no.: 402436



revisions:

SCALE: 1"=20'

BYNUM FANYO & ASSOCIATES, INC.
ARCHITECTURE
CIVIL ENGINEERING
PLANNING
528 north walnut street
bloomington, indiana
(812) 332-8030
(812) 339-2990 (fax)

certified by:

PROPOSED
ONE15 - LOFTS ON KIRKWOOD
CONDOMINIUMS & RETAIL
115 E. KIRKWOOD AVE.
BLOOMINGTON, INDIANA 47408

title: PHASE II - MAINTENANCE OF TRAFFIC PLAN

designed by: JBF
drawn by: JBT
checked by: JSF
sheet no: C502
project no.: 402436

1 3D Model

CONDOMINIUMS & RETAIL

115 East Kirkwood Avenue,
Bloomington, IN, USA

Architectural Drawings

Architectural Drawings Index	
Sheet Number	**Sheet Name**
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A002	3D Views
A003	3D Views
A101	Level-0
A102	Level-1
A103	Level-1 North Alley
A104	Level-2
A105	Level-3
A106	Level-4
A107	Level-5
A108	Level-6
A201	Front Elevation
A202	Back Elevation
A203	Right Elevation
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A205	Front Realistic Elevation
A206	Back Realistic Elevation
A207	Right Realistic Elevation
A208	Left Realistic Elevation
A301	Section 1
A302	Sections 2
A303	Sections 3
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A402	Level-2 Space Areas
A403	Level-3 Space Areas
A404	Level-4 Space Areas
A405	Level-5 Space Areas
A501	Door Schedules
A502	Windows Schedules
A503	Windows Schedules
Grand total: 35	

1 3D Model-A

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

3D View

Issue Date

Designed by
Designer

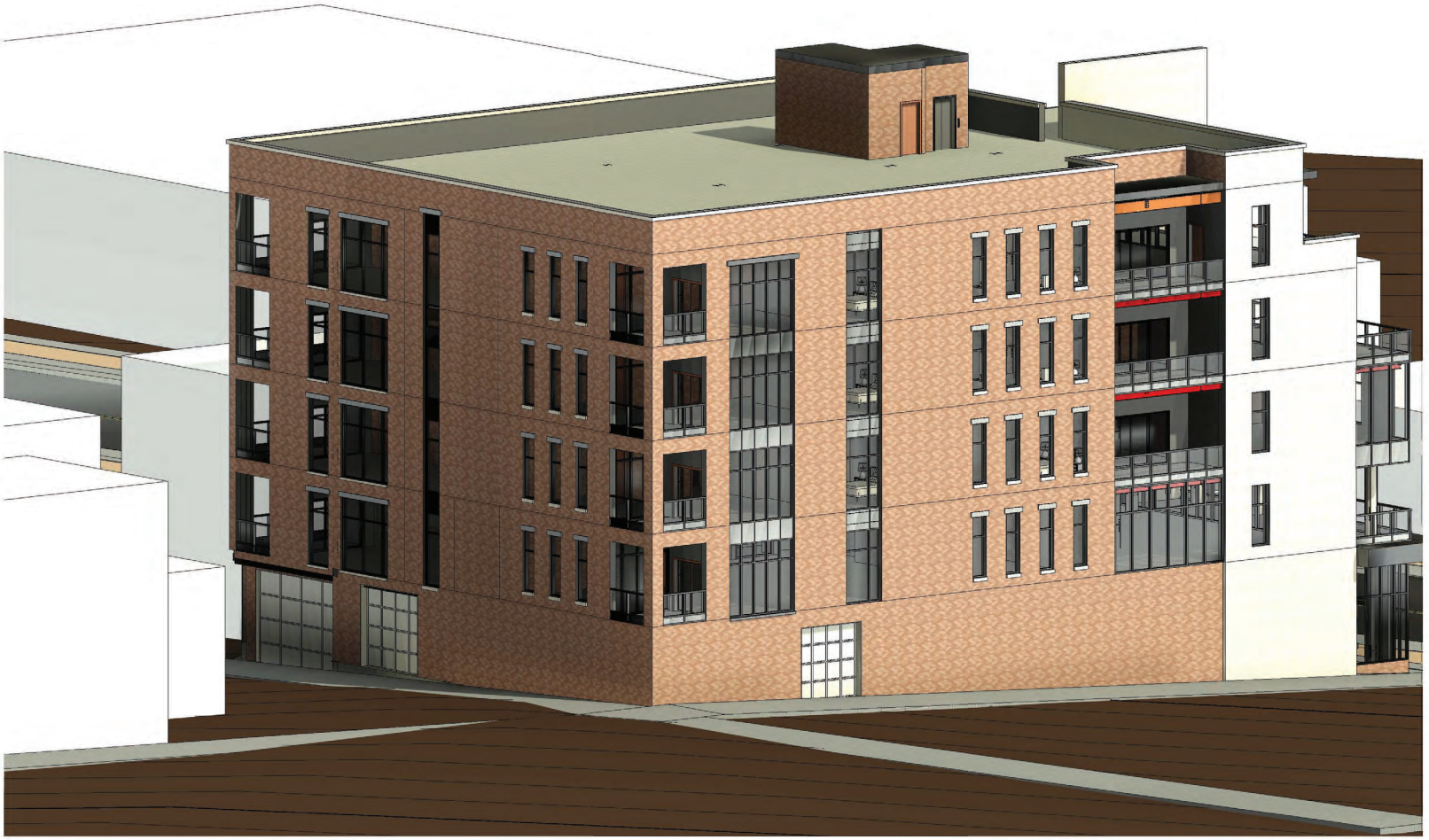
Job Number

Checked by
Checker

A001

Scale

6/25/2024 8:35:05 PM



1 3D Model-B

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

3D Views

Issue Date	Designed by: Designer
Job Number	Checked by: Checker

A002

Scale

6/25/2024 8:34:20 PM

1 3D Model-C

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

3D Views

Issue Date

Designed by
Designer

Job Number

Checked by
Checker

A003

Scale

6/25/2024 8:34:40 PM

6/20/2024 8:34:42 PM

GENERAL NOTES

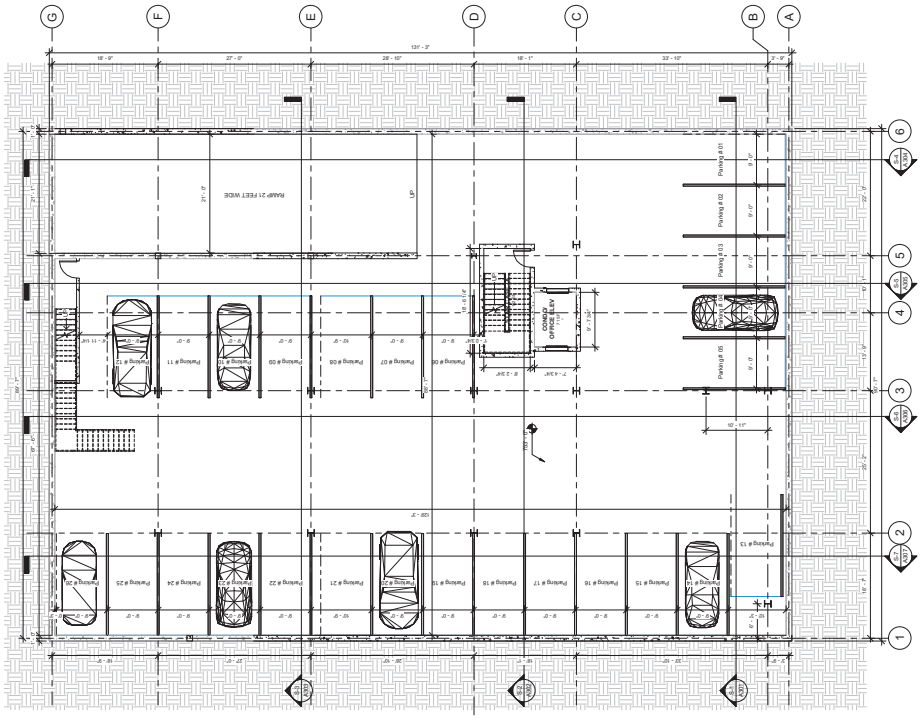
REFERENCE KEYNOTES

Date

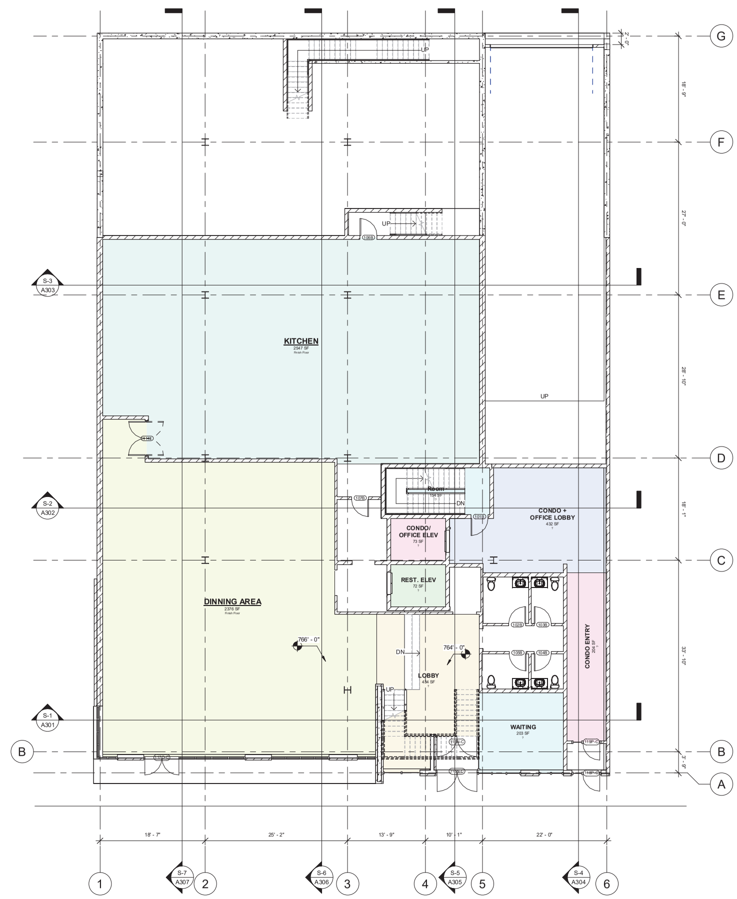
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA

Level-0

Designed by: Designer
Issue Date
Checked by: Checker
Job Number
A101
Scale: 1/8" = 1'-0"



1 Level-0
1/8" = 1'-0"



1 Level 1
1/8" = 1'-0"

Room Legend

- CONDO + OFFICE LOBBY
- CONDO ENTRY
- CONDO/ OFFICE ELEV
- DINNING AREA
- KITCHEN
- LOBBY
- REST. ELEV
- Room
- WAITING

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

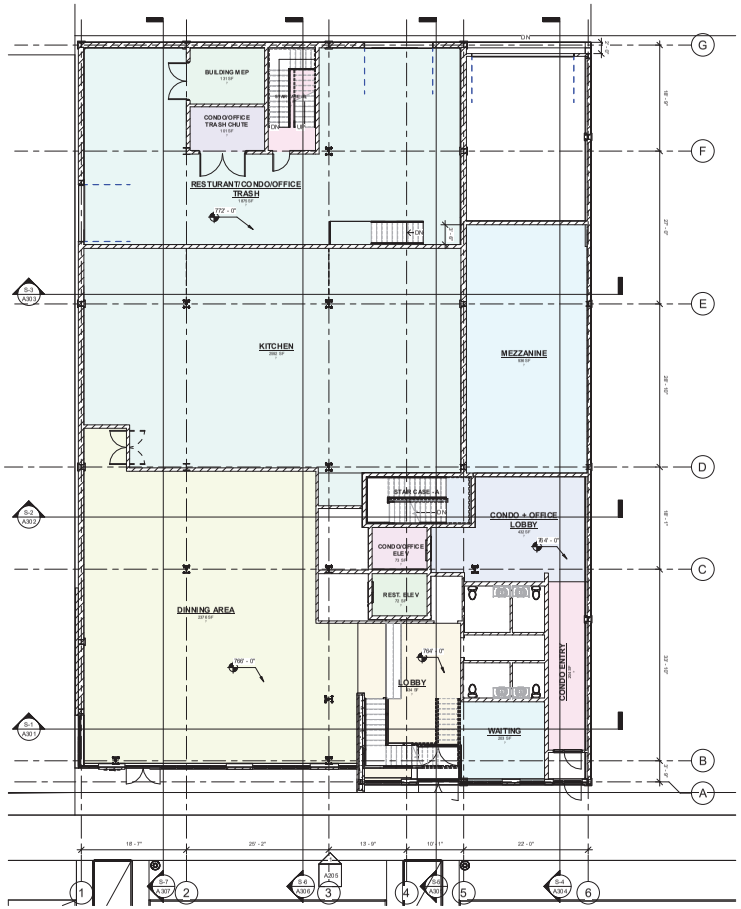
Level-1

Issue Date	Designed by Designer
Job Number	Checked by Checker

A102

Scale 1/8" = 1'-0"

6/20/2024 8:34:43 PM



Room Legend

- BUILDING MEP
- CONDO + OFFICE LOBBY
- CONDO ENTRY
- CONDO/ OFFICE ELEV
- CONDO/OFFICE ELEV
- CONDO/OFFICE TRASH CHUTE
- DINNING AREA
- KITCHEN
- LOBBY
- MEZZANINE
- REST. ELEV
- RESTURANT/CONDO/OFFICE TRASH
- Room
- STAIR CASE - A
- STAIR CASE - B
- WAITING

1 North Alley Level
1/8" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

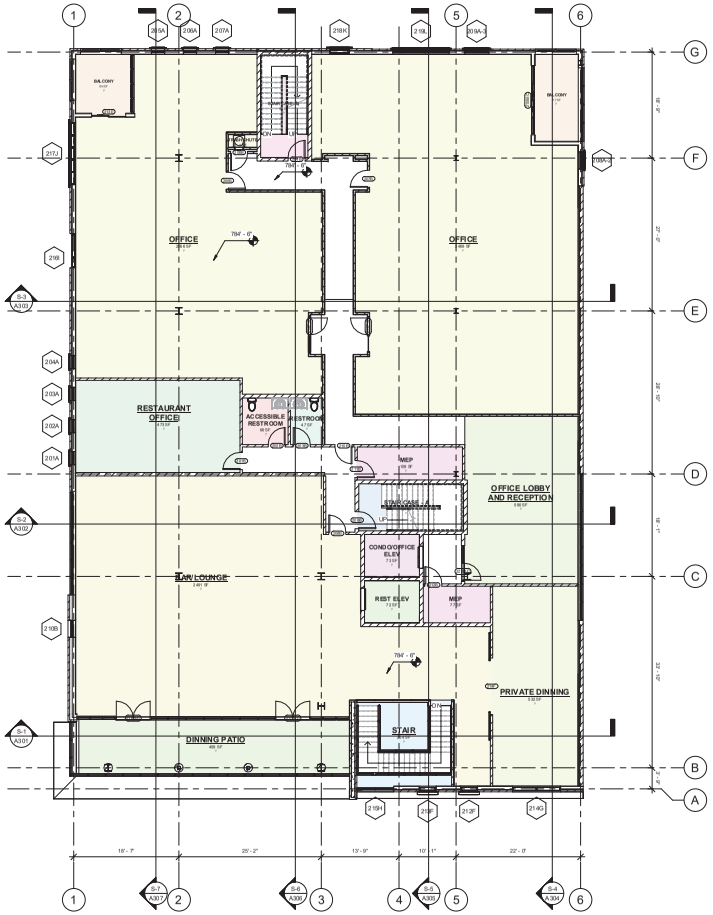
Level-1 North Alley

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A103

Scale: 1/8" = 1'-0"

6/20/2024 8:34:47 PM



Room Legend

- ACCESSIBLE RESTROOM
- BALCONY
- BAR/LOUNGE
- CONDO/OFFICE ELEV
- DINNING PATIO
- MEP
- OFFICE
- OFFICE LOBBY AND RECEPTION
- PRIVATE DINNING
- REST ELEV
- RESTAURANT OFFICE
- RESTROOM
- STAIR
- STAIR CASE - A
- STAIR CASE - B
- TRASH CHUTE

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-2

Issue Date

Designed by: Designer

Job Number

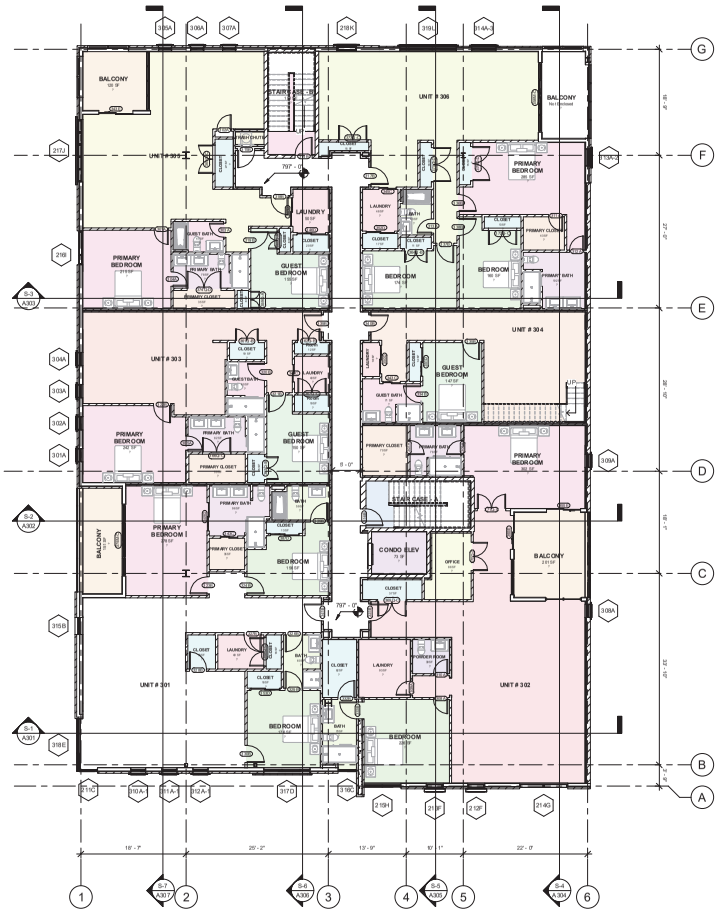
Checked by: Checker

A104

Scale: 1/8" = 1'-0"

1 Level 2
1/8" = 1'-0"

400



Room Legend

- BALCONY
- BATH
- BEDROOM
- CLOSET
- CONDO ELEV
- GUEST BATH
- GUEST BEDROOM
- LAUNDRY
- OFFICE
- POWDER ROOM
- PRIMARY BATH
- PRIMARY BEDROOM
- PRIMARY CLOSET
- Room
- STAIR CASE - A
- STAIR CASE - B
- TRASH CHUTE
- UNIT # 301
- UNIT # 302
- UNIT # 303
- UNIT # 304
- UNIT # 305
- UNIT # 306

1 Level 3
1/8" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-3

Issue Date

Designed by
Designer

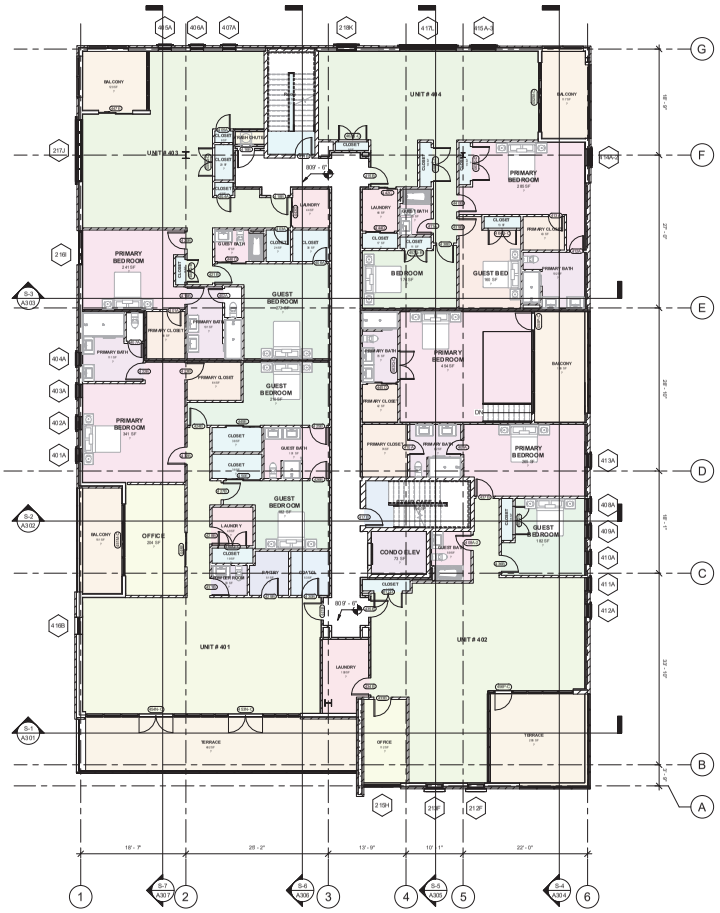
Job Number

Checked by
Checker

A105

Scale 1/8" = 1'-0"

6/25/2024 8:34:51 PM



Room Legend

- BALCONY
- BEDROOM
- CLOSET
- COAT CL
- CONDO ELEV
- GUEST BATH
- GUEST BED
- GUEST BEDROOM
- LAUNDRY
- OFFICE
- PANTRY
- POWDER ROOM
- PRIMARY BATH
- PRIMARY BEDROOM
- PRIMARY CLOSET
- Room
- STAIR CASE - A
- TERRACE
- TRASH CHUTE
- UNIT # 401
- UNIT # 402
- UNIT # 403
- UNIT # 404

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-4

Issue Date

Designed by: Designer

Job Number

Checked by: Checker

A106

Scale: 1/8" = 1'-0"

6/20/2024 8:34:53 PM

1 Level 4
1/8" = 1'-0"

GENERAL NOTES	REFERENCE KEYNOTES	Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA

Level-5

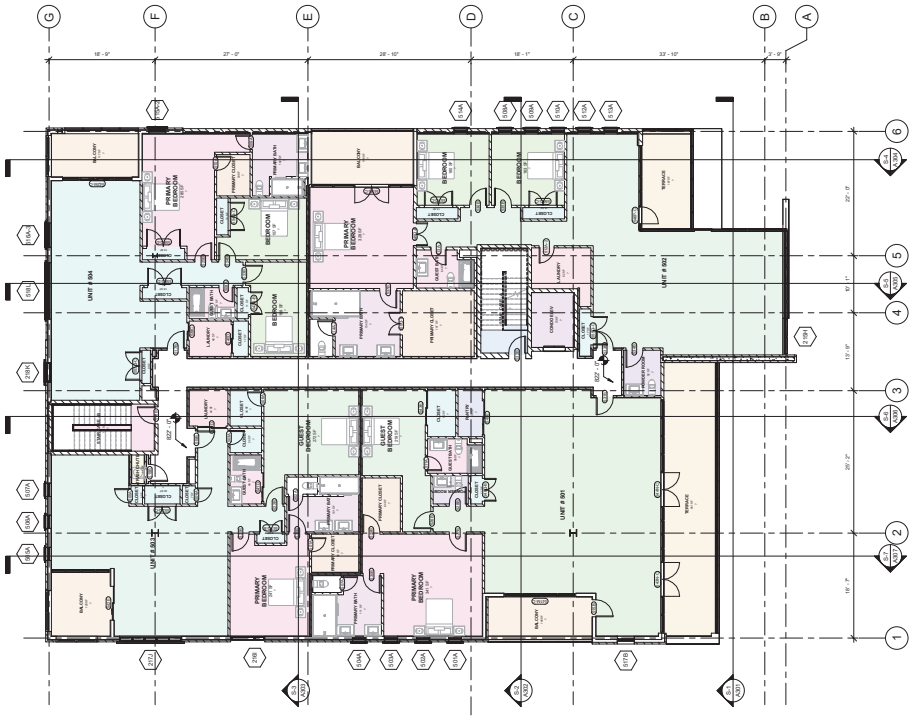
Issue Date | Designed by | Designer
Job Number | Checked by | Checker

A107

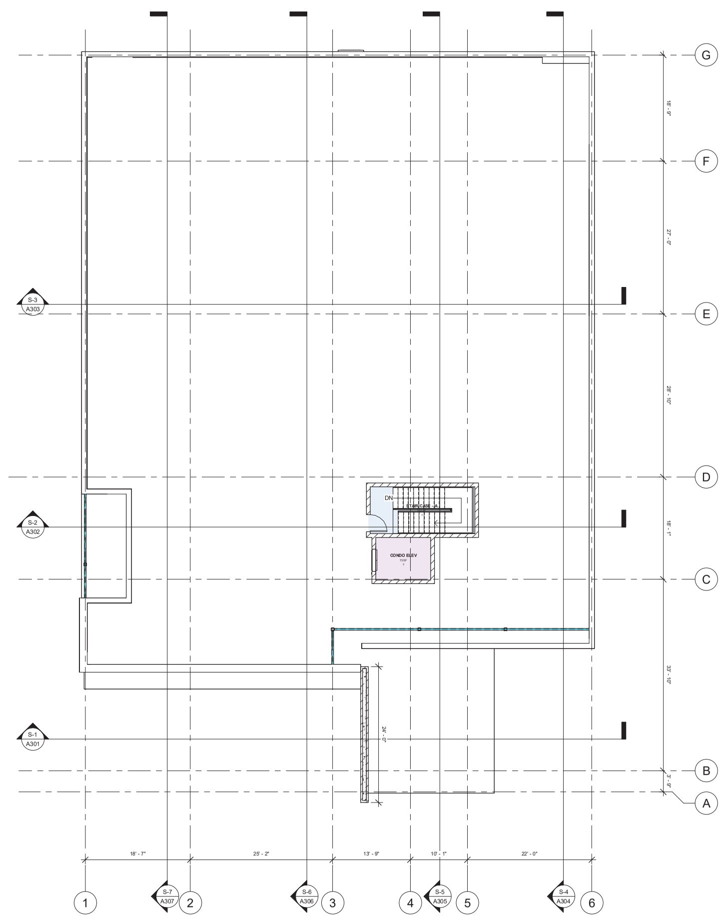
Scale: 1/8" = 1'-0"

Room Legend

- BALCONY
- BEDROOM
- CLOSET
- CONDO ELEV
- GUEST BATH
- GUEST BEDROOM
- LAUNDRY
- PANTRY
- POWDER ROOM
- PRIMARY BATH
- PRIMARY BEDROOM
- PRIMARY CLOSET
- STAIR CASE - A
- STAIR CASE - B
- TERRACE
- TRASH CHUTE
- UNIT # 501
- UNIT # 502
- UNIT # 503
- UNIT # 504



1 Level-5
1/8" = 1'-0"



Room Legend

- CONDO ELEV
- STAIR CASE - A

1 Level 6
1/8" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-6

Issue Date	Designed by Designer
Job Number	Checked by Checker

A108

Scale 1/8" = 1'-0"

6/20/2024 8:34:56 PM

GENERAL NOTES

REFERENCE KEYNOTES

Date

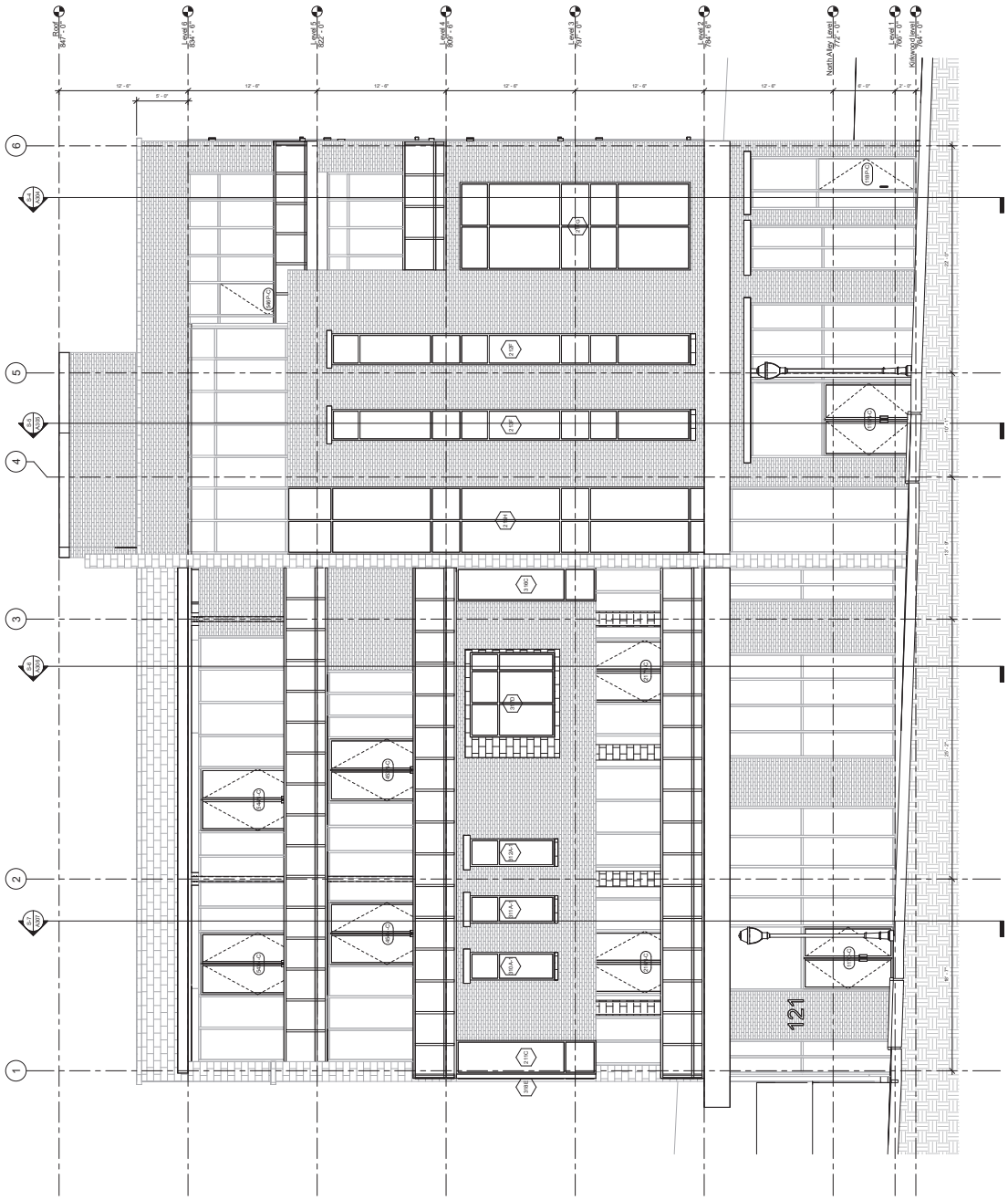
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

Front Elevation

Designed by
Issue Date
Designer
Checked by
Job Number
Checker

A201

Scale 1/4" = 1'-0"



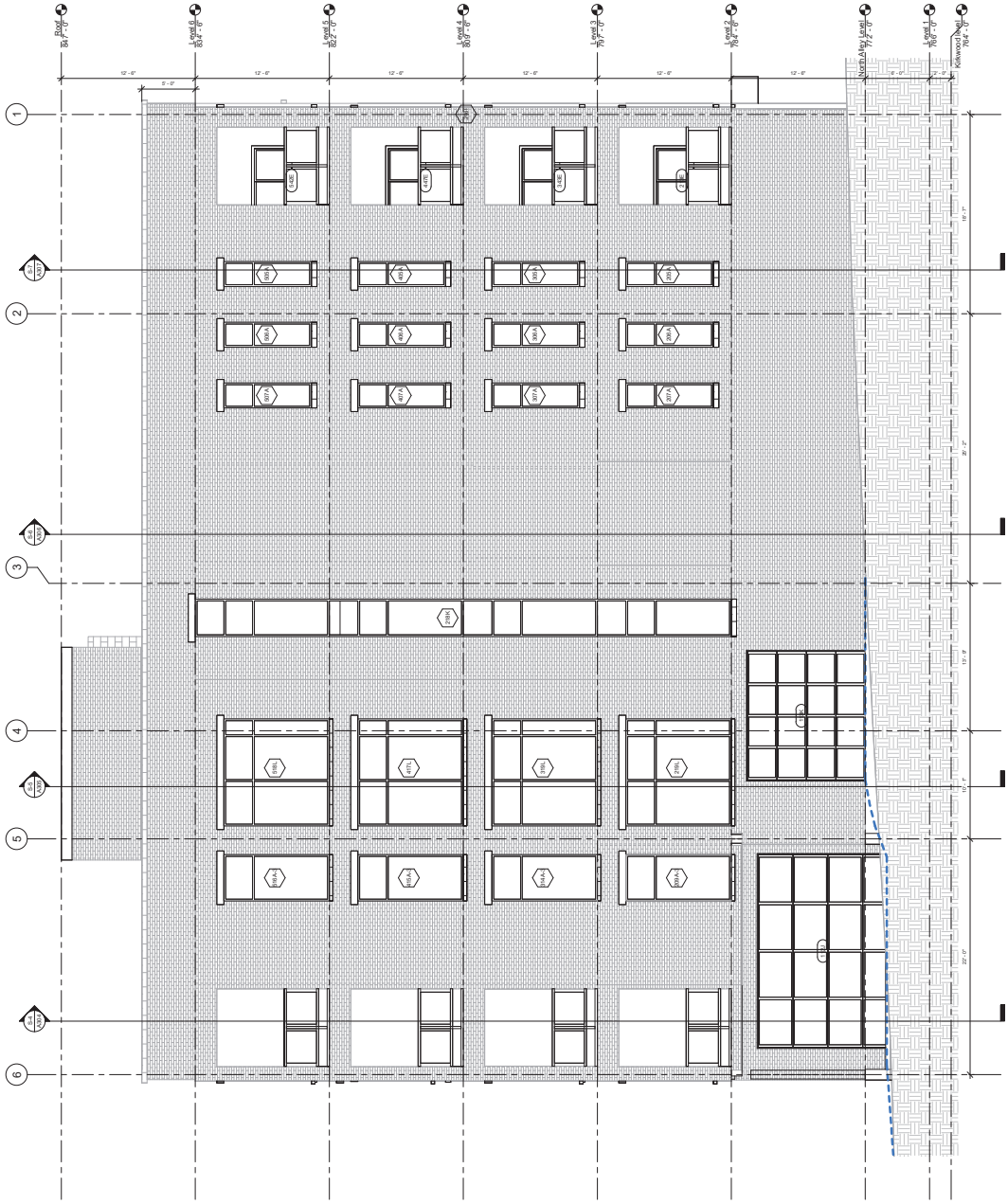
1 South
1/4" = 1'-0"

GENERAL NOTES	REFERENCE KEYNOTES	Date

NEW CONSTRUCTION FOR:
CONDOMINIUMS & RETAIL
LOCATED:
116 East Kirkwood Avenue Bloomington, IN, USA

Back Elevation

Designed by | Designer
Issue Date | Checked by | Checker
Job Number | A202
Scale: 1/4" = 1'-0"



1 North
1/4" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

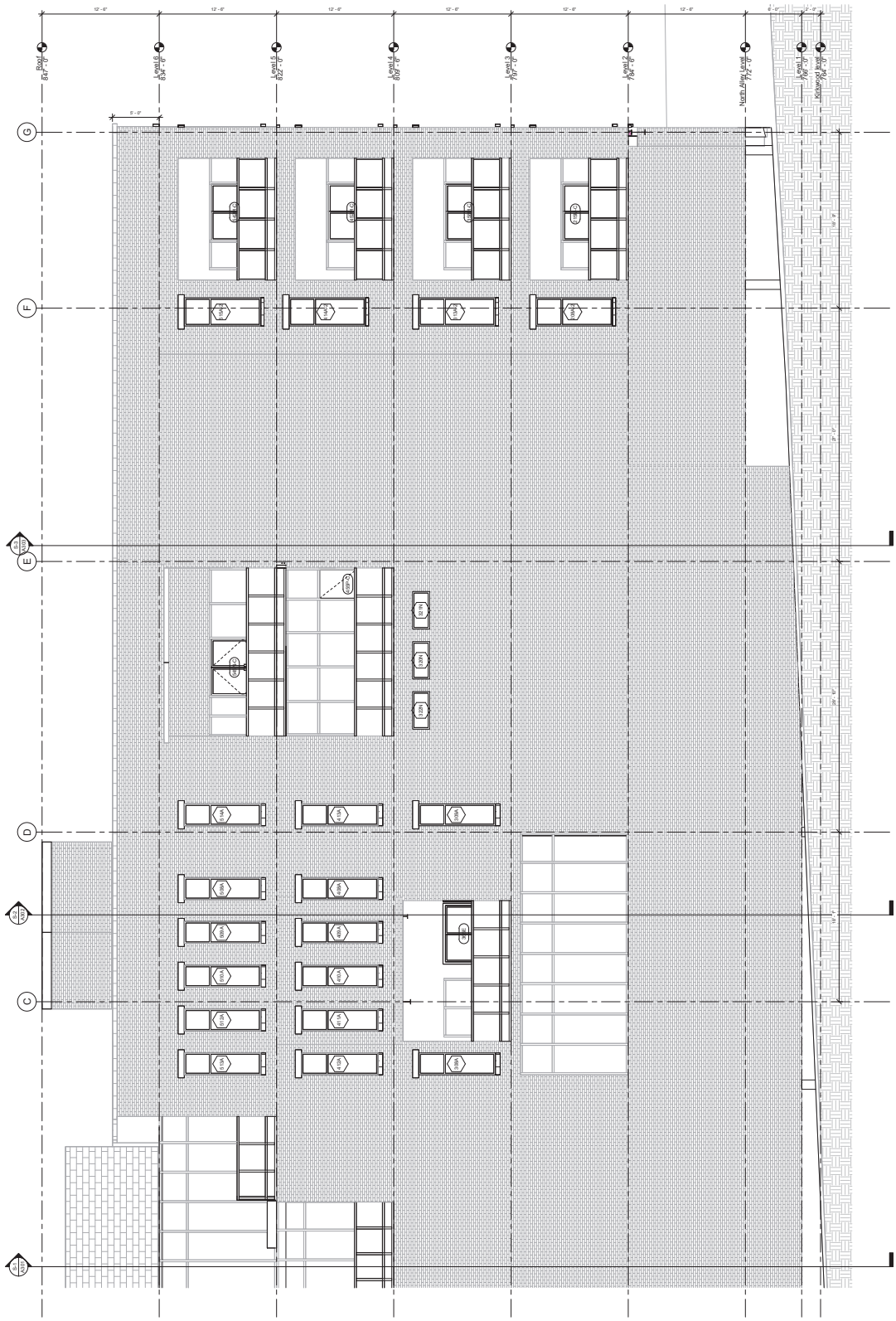
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA

Right Elevation

Issue Date
Job Number
Designed by
Checked by
Checked by

A203

Scale 1/4" = 1'-0"



1 East
1/4" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

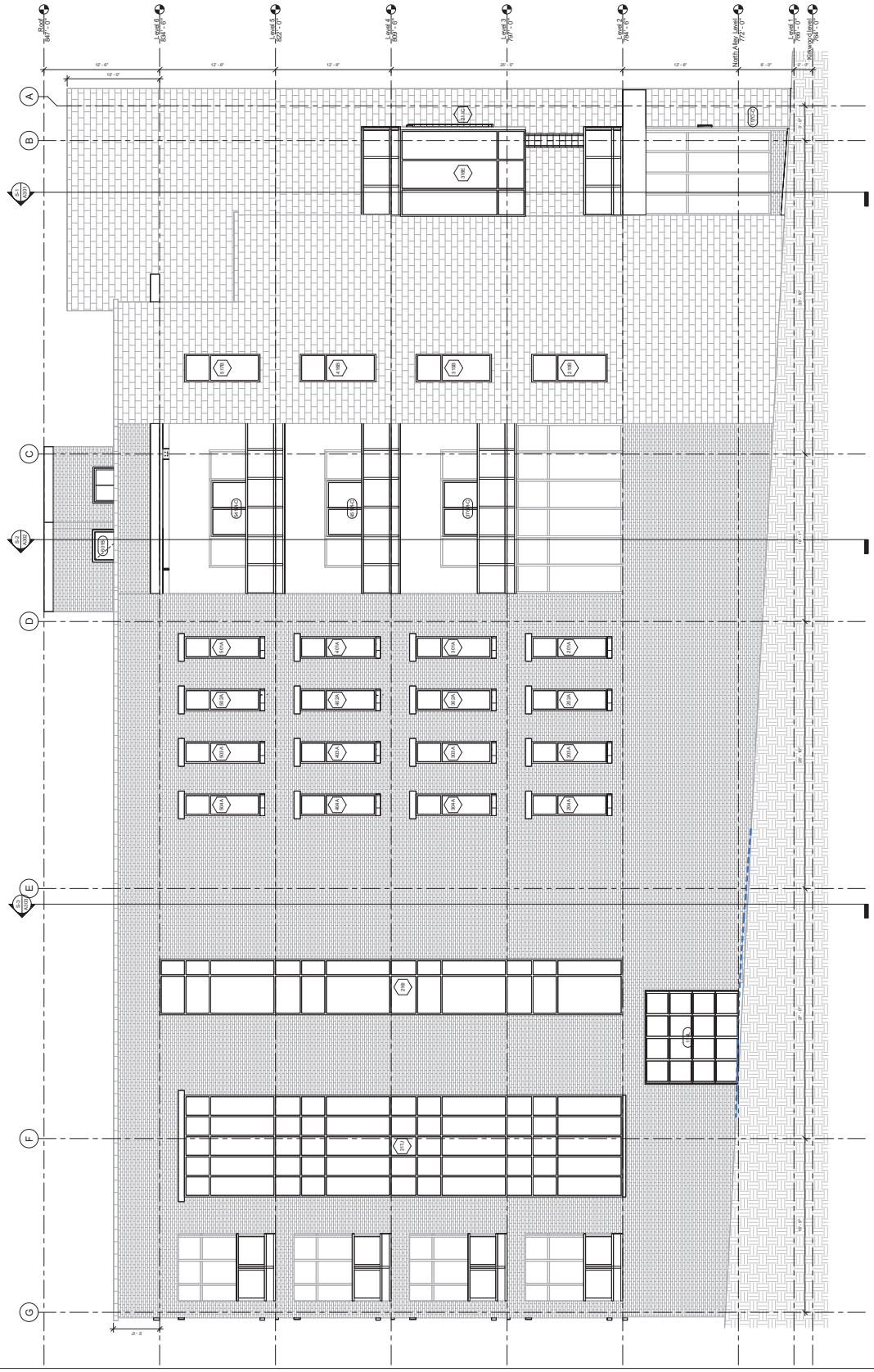
NEW CONSTRUCTION FOR:
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue Bloomington, IN, USA

Left Elevation

Designed by
Issue Date
Designer
Checked by
Job Number
Checker

A204

Scale: 1/4" = 1'-0"



1 West
1/4" = 1'-0"

GENERAL NOTES	REFERENCE KEYNOTES	Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
(LOCATED)
115 East Kirkwood Avenue Bloomington, IN, USA

Front Realistic Elevation

Designed by | Designer
Issue Date | Checked by | Checker
Job Number | A205
Scale 1/4" = 1'-0"

1 South Realistic Elevation
1/4" = 1'-0"

1 North Realistic Elevation
1/4" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Back Realistic Elevation

Issue Date	Designed by Designer
Job Number	Checked by Checker
A206	
Scale	1/4" = 1'-0"

6/20/2024 8:35:51 PM

GENERAL NOTES

REFERENCE KEYNOTES

Date

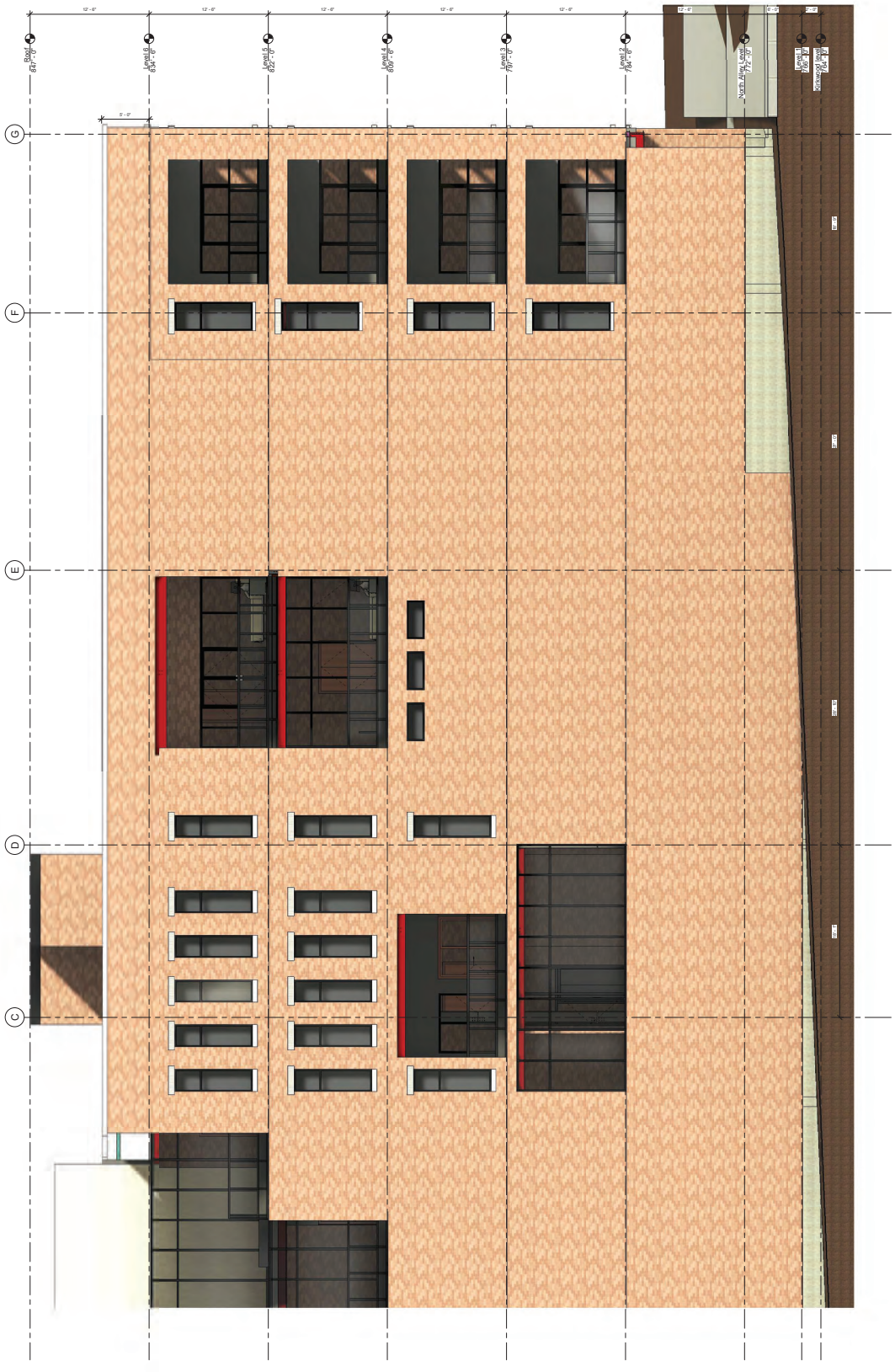
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
(LOCATED)
116 East Kirkwood Avenue Bloomington, IN, USA

Right Realistic Elevation

Designed by | Designer
Issue Date | Checked by | Checker
Job Number

A207

Scale 1/4" = 1'-0"



1 East Realistic Elevation
1/4" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

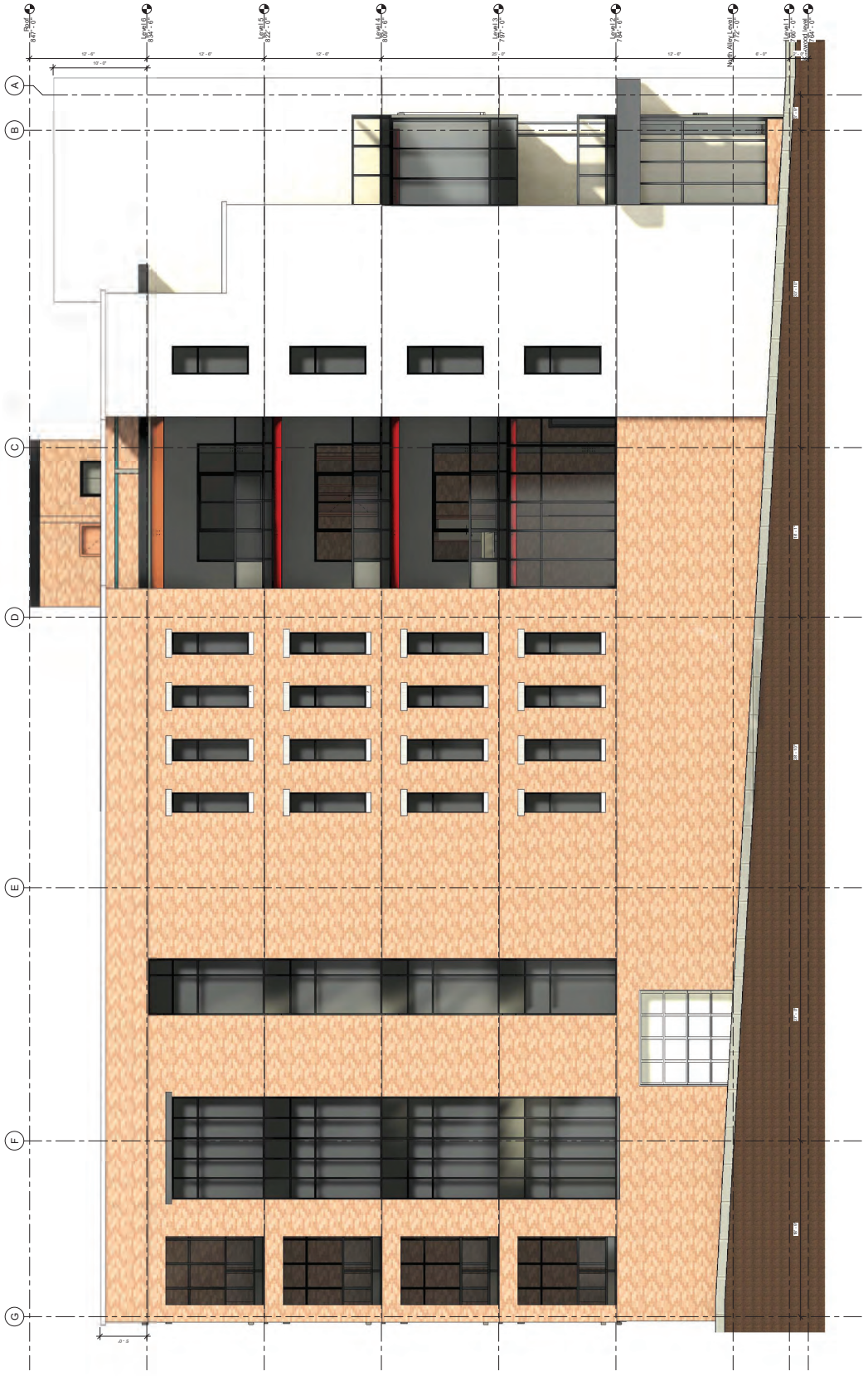
NEW CONSTRUCTION FOR:
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue Bloomington, IN, USA

Left Realistic Elevation

Designed by
Drawn by
Checked by
Issue Date
Job Number
Checker

A208

Scale 1/4" = 1'-0"



1 West Realistic Elevation
1/4" = 1'-0"

Room Legend

- BAR/LOUNGE
- BATH
- BEDROOM
- CONDO ENTRY
- DINNING AREA
- DINNING PATIO
- LOBBY
- OFFICE
- PRIVATE DINNING
- STAIR
- TERRACE
- UNIT # 302
- UNIT # 402
- UNIT # 502
- WAITING

Section 1
1/4" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Section 1

Issue Date	Designed by Designer
Job Number	Checked by Checker
A301	
Scale	1/4" = 1'-0"

6/20/2024 8:36:30 PM

Room Legend

- BALCONY
- BAR/LOUNGE
- BEDROOM
- CLOSET
- CONDO + OFFICE LOBBY
- DINNING AREA
- GUEST BEDROOM
- LAUNDRY
- OFFICE
- OFFICE LOBBY AND RECEPTION
- PRIMARY BATH
- PRIMARY BEDROOM
- Room
- STAIR CASE - A
- UNIT # 302
- UNIT # 401
- UNIT # 402
- UNIT # 501
- UNIT # 502

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

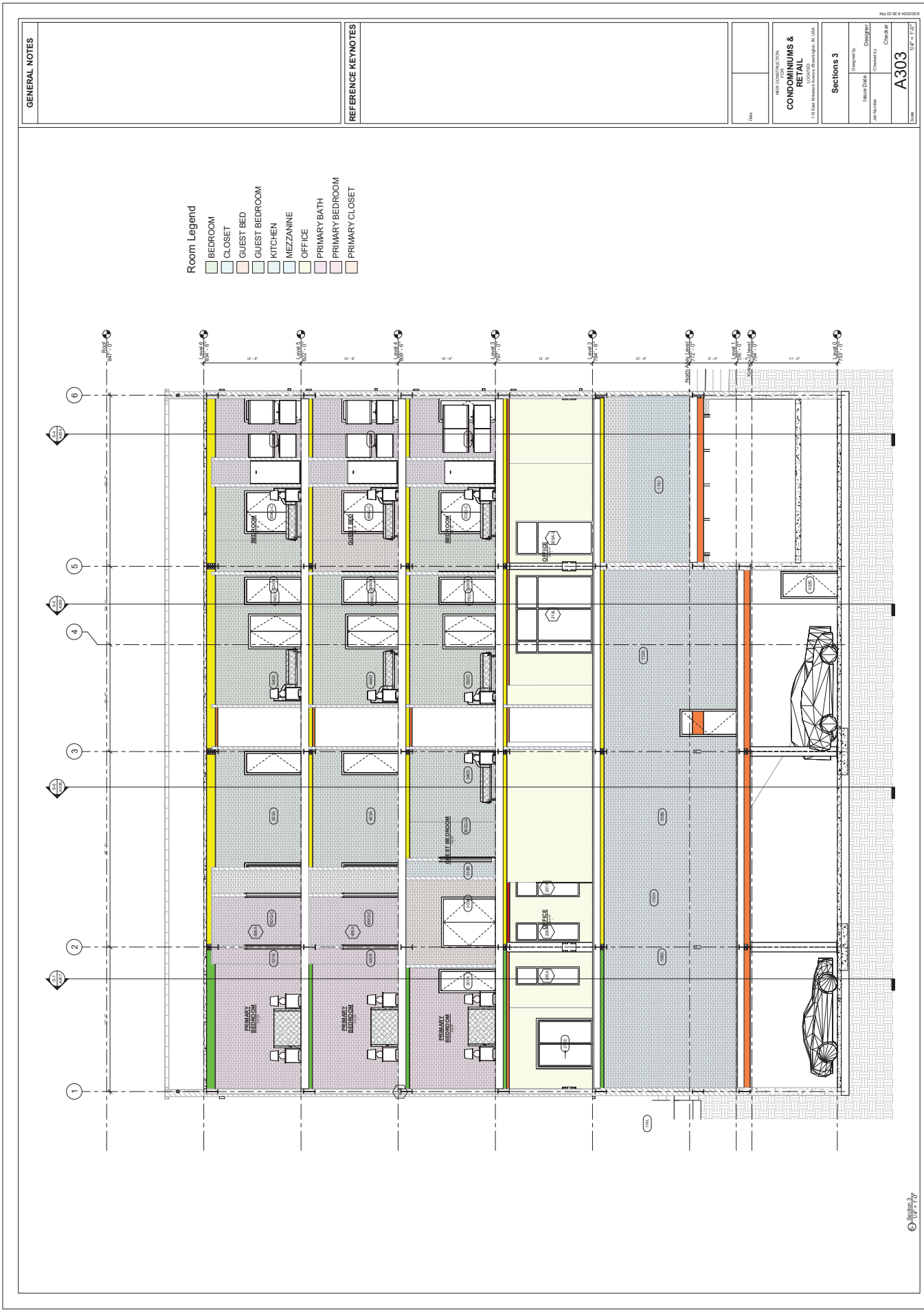
Sections 2

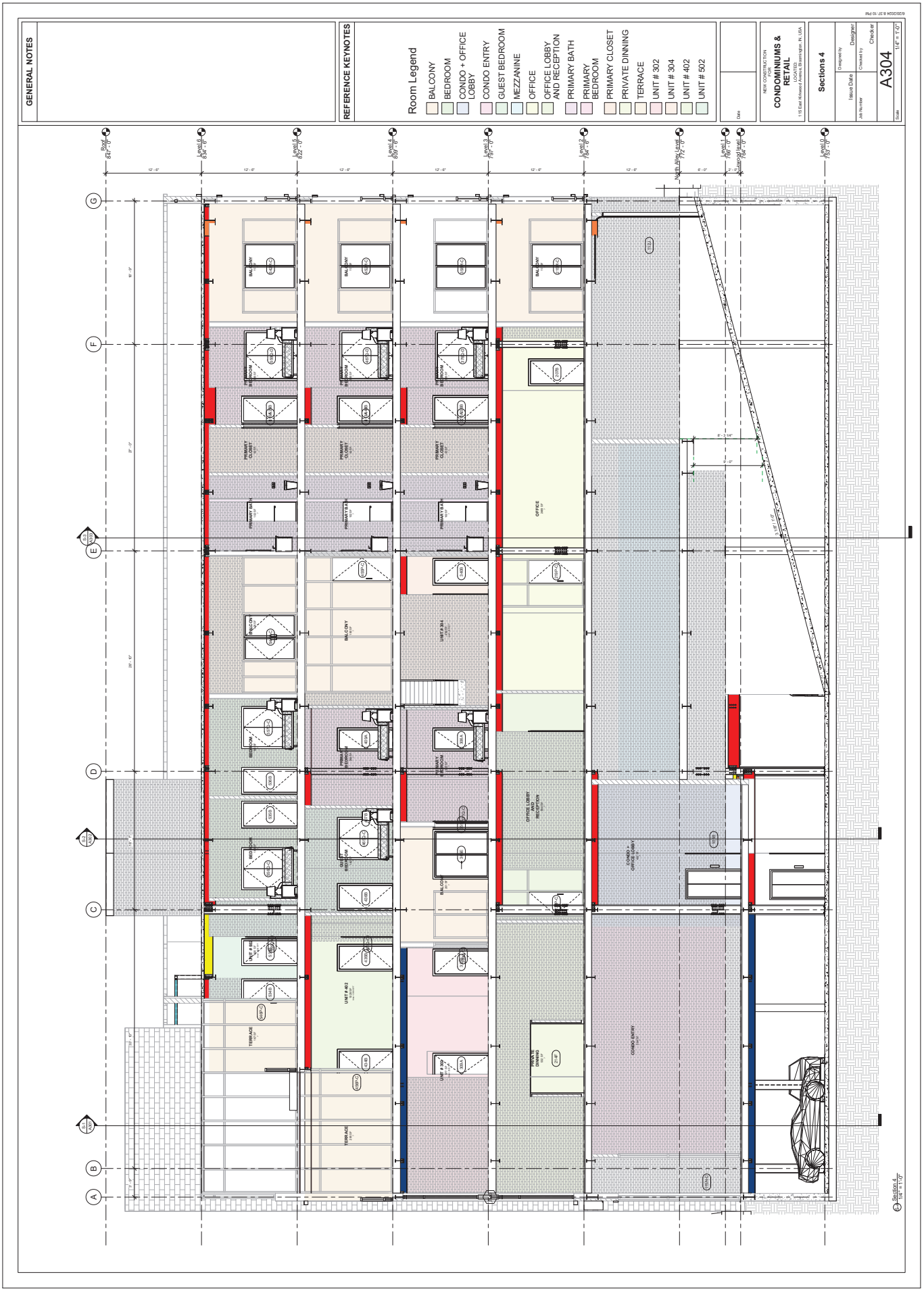
Issue Date
Designed by
Designer
Job Number
Checked by
Checker

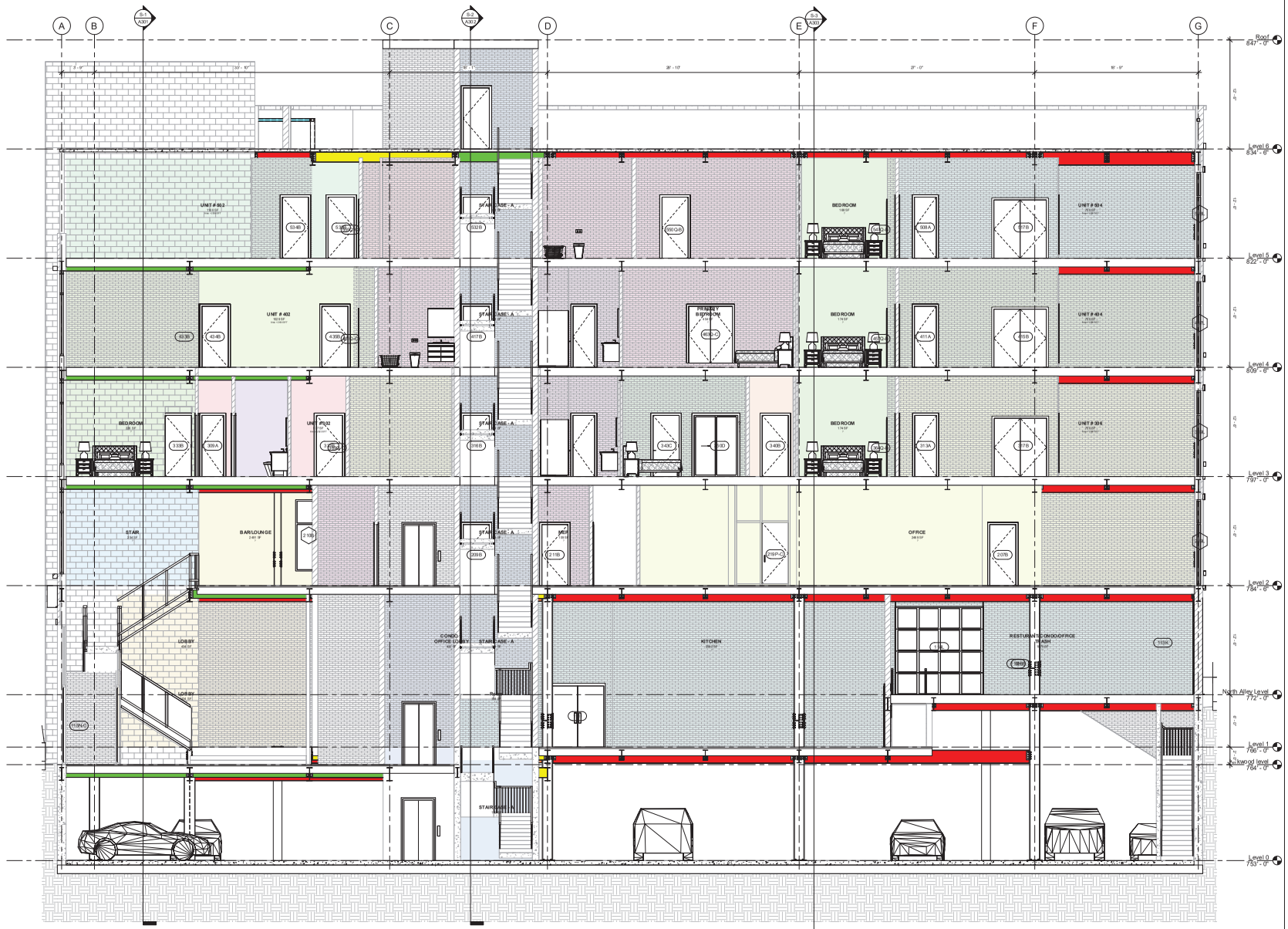
A302

Scale
1/4" = 1'-0"

6/20/2024 8:36:41 PM


GENERAL NOTES
REFERENCE KEYNOTES
Date
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA
Sections 3
Designed by
Issue Date
Designer
Job Number
Checked by
Checker
A303
Scale
1/4" = 1'-0"
Room Legend
BEDROOM
CLOSET
GUEST BED
GUEST BEDROOM
KITCHEN
MEZZANINE
OFFICE
PRIMARY BATH
PRIMARY BEDROOM
PRIMARY CLOSET
Section 3
1/4" = 1'-0"


GENERAL NOTES
REFERENCE KEYNOTES
Room Legend
BALCONY
BEDROOM
CONDO + OFFICE LOBBY
CONDO ENTRY
GUEST BEDROOM
MEZZANINE
OFFICE
OFFICE LOBBY AND RECEPTION
PRIMARY BATH
PRIMARY BEDROOM
PRIMARY CLOSET
PRIVATE DINNING
TERRACE
UNIT # 302
UNIT # 304
UNIT # 402
UNIT # 502
Date
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA
Sections 4
Designed by
Issue Date
Designer
Job Number
Checked by
Checker
A304
Scale
1/4" = 1'-0"
Roof 847' - 0"
Level 5 834' - 0"
Level 4 822' - 0"
Level 3 809' - 6"
Level 2 797' - 0"
Level 1 784' - 6"
North Alley Level 772' - 0"
Ground Level 760' - 0"
Level 0 748' - 0"
Section 4
1/4" = 1'-0"


A
B
C
D
E
F
G
Roof
847' - 0"
Level 6
834' - 6"
Level 5
822' - 0"
Level 4
809' - 6"
Level 3
797' - 0"
Level 2
784' - 6"
North Alley Level
772' - 0"
Level 1
766' - 0"
Kirkwood level
764' - 0"
Level 0
753' - 0"
UNIT # 502
UNIT # 402
UNIT # 304
UNIT # 204
UNIT # 104
BEDROOM
PRIMARY BATHROOM
STAIRCASE - A
BAR/LOUNGE
OFFICE
MEP
KITCHEN
RESTURANT/CONDO/OFFICE TRASH
CONDO OFFICE LOBBY
LOBBY
STAIR
Section 5
1/4" = 1'-0"
GENERAL NOTES
REFERENCE KEYNOTES
Date
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA
Sections 5
Issue Date
Designed by
Designer
Job Number
Checked by
Checker
A305
Scale
1/4" = 1'-0"
6/25/2024 8:37:26 PM

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Sections 6

Issue Date

Designed by
Designer

Job Number

Checked by
Checker

A306

Scale 1/4" = 1'-0"

6/25/2024 8:37:41 PM

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

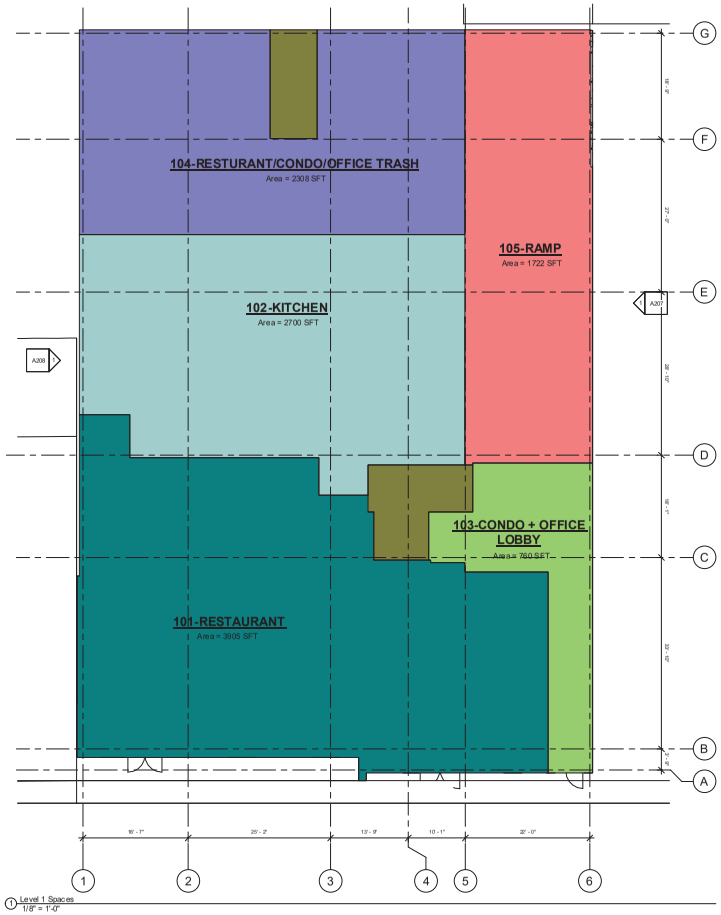
Sections 7

Issue Date	Designed by: Designer
Job Number	Checked by: Checker

A307

Scale 1/4" = 1'-0"

6/20/2024 8:37:52 PM



1 Level 1 Spaces
1/8" = 1'-0"

Level-1 Spaces

- 101- RESTAURANT = 3905 SFT
- 102- KITCHEN = 2700 SFT
- 103- CONDO + OFFICE LOBBY = 760 SFT
- 104- RESTURANT/CONDO/OFFICE TRASH = 2308 SFT
- 105- RAMP = 1722 SFT
- Level-1 Non Sellable Area = 397 SFT
- Commom Area of all Levels = 4570 SFT

Level-1 Spaces
1" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

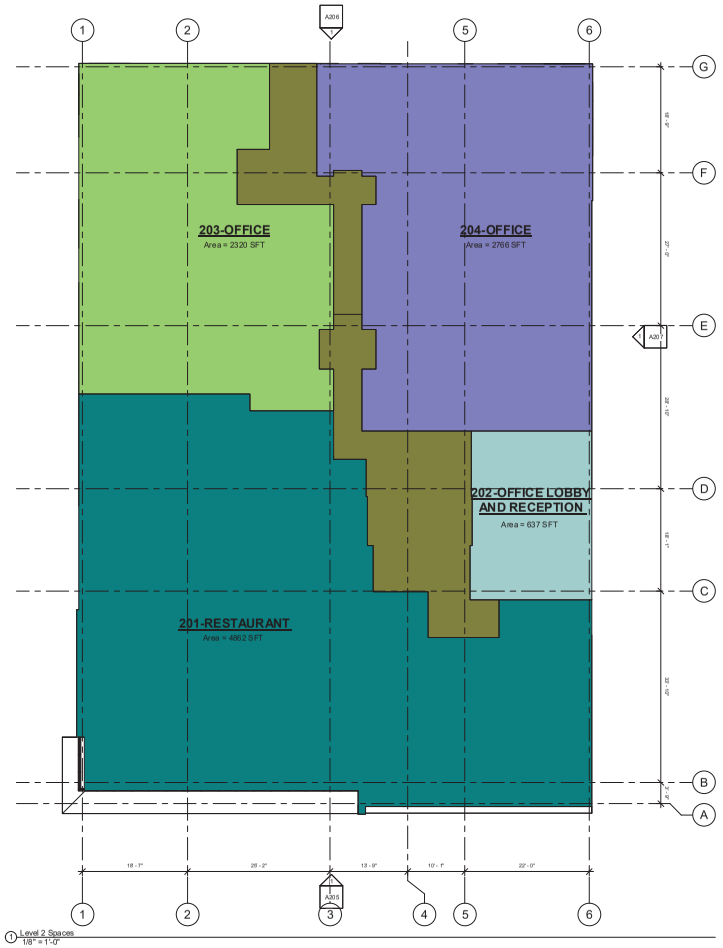
Level-1 Space Areas

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A401

Scale: As indicated

6/25/2024 4:37:56 PM



Level-2 Spaces

- 201- RESTAURANT = 4862 SFT
- 202- OFFICE LOBBY AND RECEPTION = 637 SFT
- 203- OFFICE = 2320 SFT
- 204- OFFICE = 2766 SFT
- Level-2 Non Sellable Area = 1196 SFT

Level-2 Spaces
1" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

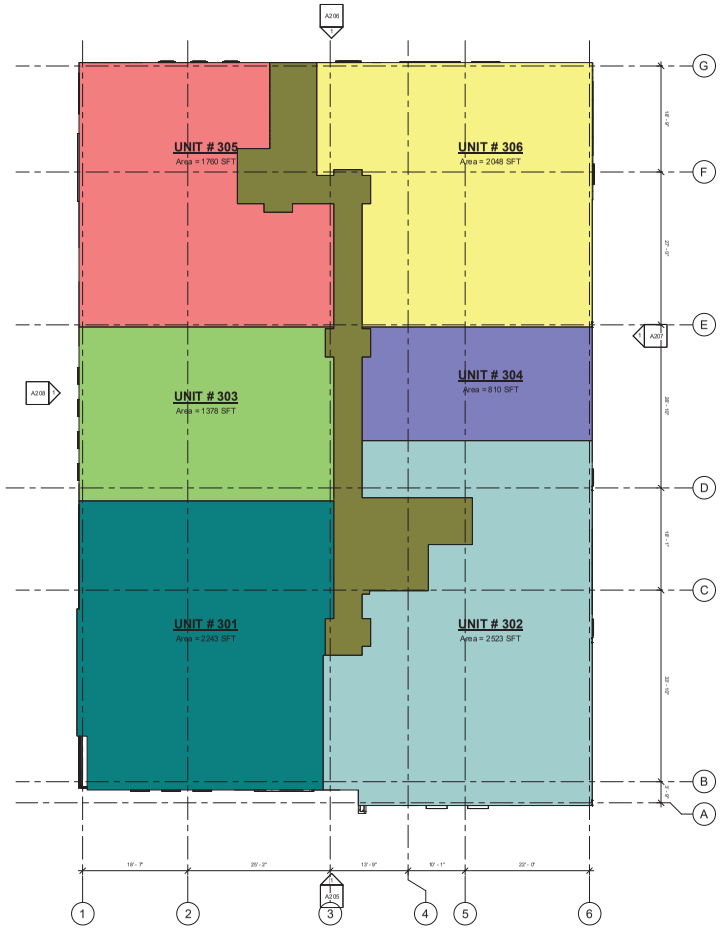
Level-2 Space Areas

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A402

Scale: As indicated

6/25/2024 4:37:08 PM



1 Level-3 Spaces
1/8" = 1'-0"

Level-3 Spaces

- UNIT- 301 = 2243 SFT
- UNIT- 302 = 2523 SFT
- UNIT- 303 = 1378 SFT
- UNIT- 304 = 810 SFT (1st FL)
- UNIT- 305 = 1760 SFT
- UNIT- 306 = 2048 SFT
- Non Sellable Area = 1014 SFT

Level-3 Spaces
1" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-3 Space Areas

Issue Date
Designed by
Designer
Job Number
Checked by
Checker

A403

Scale: As indicated

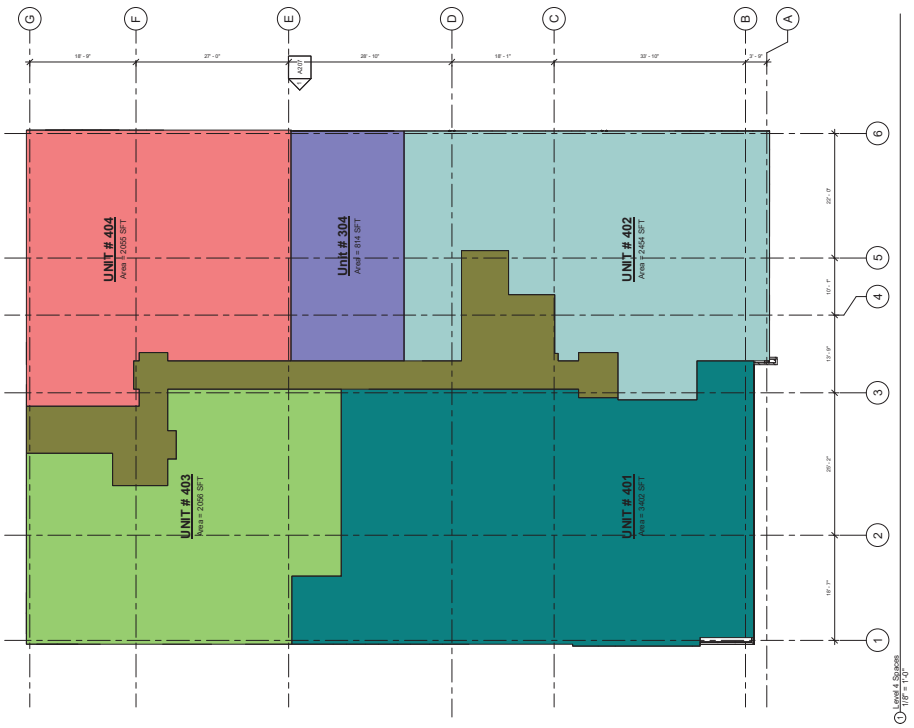
6/25/2024 8:38:01 PM

GENERAL NOTES	REFERENCE KEYNOTES	Date	NEW CONSTRUCTION FOR: CONDOMINIUMS & RETAIL LOCATED: 115 East Kirkwood Avenue Bloomington, IN, USA	Level-4 Space Areas	Designed by / Drawn by / Checked by / Checker / Issue Date / Job Number / Scale: As indicated	A404

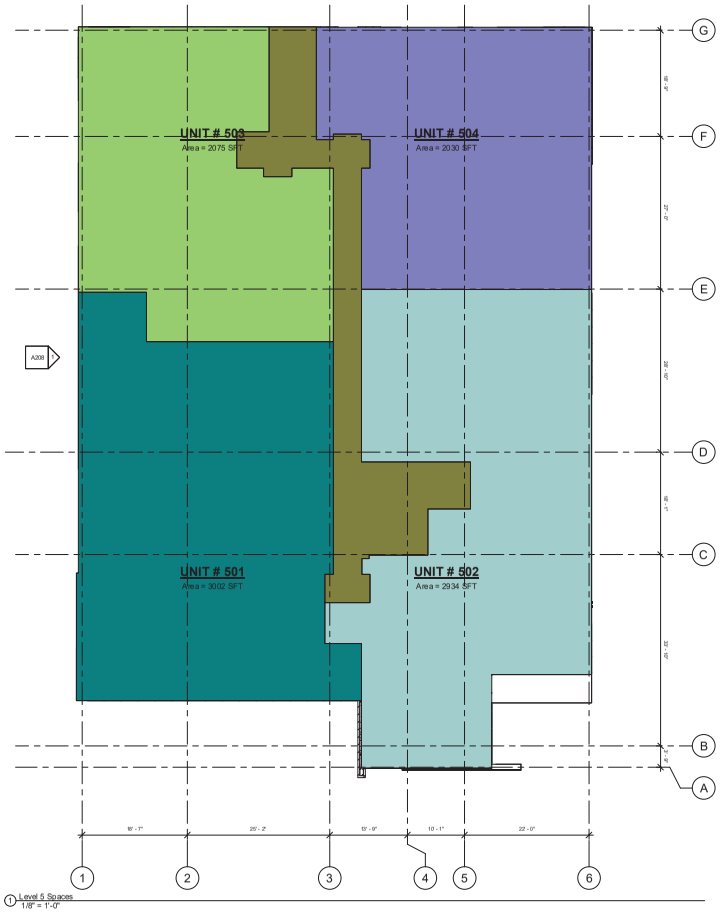
Level-4 Spaces

- UNIT - 401 = 3402 SFT
- UNIT - 402 = 2454 SFT
- UNIT - 403 = 2056 SFT
- UNIT - 304 = 814 SFT (2nd FL)
- UNIT - 405 = 2055 SFT
- Non Sellable Area = 1002 SFT

Level-4 Spaces
1" = 1'-0"



1 Level 4 Spaces
1/8" = 1'-0"



1 Level-5 Spaces
1/8" = 1'-0"

Level-5 Spaces

- UNIT- 501 = 3002 SFT
- UNIT- 502 = 2934 SFT
- UNIT- 503 = 2075 SFT
- UNIT- 504 = 2030 SFT
- Non Sellable Area = 961 SFT

Level-5 Spaces
1" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Level-5 Space Areas

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A405

Scale: As indicated

6/25/2024 8:38:06 PM

Door Schedule

Mark	Type	Level	Width	Height
001B	B	Level 0	3' - 0"	7' - 0"
002B	B	Level 0	3' - 0"	7' - 0"
101B	B	Kirkwood level	3' - 0"	7' - 0"
102B	B	Kirkwood level	3' - 0"	7' - 0"
103B	B	Kirkwood level	3' - 0"	7' - 0"
104B	B	Kirkwood level	3' - 0"	7' - 0"
105B	B	Kirkwood level	3' - 0"	7' - 0"
115N-C	N-C	Kirkwood level	7' - 0"	8' - 8 1/2"
116N-C	N-C	Kirkwood level	7' - 0"	8' - 8 1/2"
118P-C	P-C	Kirkwood level	3' - 0"	9' - 2 1/2"
119P-C	P-C	Kirkwood level	3' - 0"	9' - 2 1/2"
106B	B	Level 1	3' - 0"	7' - 0"
107B	B	Level 1	3' - 0"	7' - 0"
111I	I	Level 1	6' - 0"	7' - 0"
117O-C	O-C	Level 1	6' - 0"	8' - 8 1/2"
108B	B	North Alley Level	3' - 0"	7' - 0"
109G	G	North Alley Level	6' - 6"	7' - 0"
110H	H	North Alley Level	8' - 0"	7' - 0"
112J	J	North Alley Level	18' - 0"	13' - 0"
113K	K	North Alley Level	12' - 0"	11' - 0"
114L	L	North Alley Level	10' - 0"	10' - 0"
201B	B	Level 2	3' - 0"	7' - 0"
202B	B	Level 2	3' - 0"	7' - 0"
203B	B	Level 2	3' - 0"	7' - 0"
204B	B	Level 2	3' - 0"	7' - 0"
205B	B	Level 2	3' - 0"	7' - 0"
206B	B	Level 2	3' - 0"	7' - 0"
207B	B	Level 2	3' - 0"	7' - 0"
208B	B	Level 2	3' - 0"	7' - 0"
209B	B	Level 2	3' - 0"	7' - 0"
210B	B	Level 2	3' - 0"	7' - 0"
211B	B	Level 2	3' - 0"	7' - 0"
212B	B	Level 2	3' - 0"	7' - 0"
213E	E	Level 2	6' - 0"	7' - 0"
214F	F	Level 2	10' - 0"	7' - 0"
215M-C	M-C	Level 2	6' - 0"	6' - 9"
216N-C	N-C	Level 2	6' - 0"	11' - 1"
217N-C	N-C	Level 2	6' - 0"	11' - 1"
218P-C	P-C	Level 2	3' - 0"	7' - 0"
219P-C	P-C	Level 2	3' - 0"	7' - 0"
220P-C	P-C	Level 2	3' - 0"	7' - 0"
301A	A	Level 3	2' - 6"	7' - 0"
302A	A	Level 3	2' - 6"	7' - 0"
303A	A	Level 3	2' - 6"	7' - 0"
304A	A	Level 3	2' - 6"	7' - 0"
305A	A	Level 3	2' - 6"	7' - 0"
306A	A	Level 3	2' - 6"	7' - 0"
307A	A	Level 3	2' - 6"	7' - 0"
308A	A	Level 3	2' - 6"	7' - 0"
309A	A	Level 3	2' - 6"	7' - 0"
310A	A	Level 3	2' - 6"	7' - 0"
311A	A	Level 3	2' - 6"	7' - 0"
312A	A	Level 3	2' - 6"	7' - 0"
313A	A	Level 3	2' - 6"	7' - 0"
314B	B	Level 3	3' - 0"	7' - 0"
315B	B	Level 3	3' - 0"	7' - 0"
316B	B	Level 3	3' - 0"	7' - 0"
317B	B	Level 3	3' - 0"	7' - 0"
318B	B	Level 3	3' - 0"	7' - 0"
319B	B	Level 3	3' - 0"	7' - 0"
320B	B	Level 3	3' - 0"	7' - 0"
321B	B	Level 3	3' - 0"	7' - 0"
322B	B	Level 3	3' - 0"	7' - 0"
323B	B	Level 3	3' - 0"	7' - 0"
324B	B	Level 3	3' - 0"	7' - 0"
325B	B	Level 3	3' - 0"	7' - 0"
326B	B	Level 3	3' - 0"	7' - 0"
327B	B	Level 3	3' - 0"	7' - 0"
328B	B	Level 3	3' - 0"	7' - 0"
329B	B	Level 3	3' - 0"	7' - 0"
330B	B	Level 3	3' - 0"	7' - 0"
331B	B	Level 3	3' - 0"	7' - 0"
332B	B	Level 3	3' - 0"	7' - 0"
333B	B	Level 3	3' - 0"	7' - 0"
334B	B	Level 3	3' - 0"	7' - 0"
335B	B	Level 3	3' - 0"	7' - 0"
336B	B	Level 3	3' - 0"	7' - 0"
337B	B	Level 3	3' - 0"	7' - 0"
338B	B	Level 3	3' - 0"	7' - 0"
339B	B	Level 3	3' - 0"	7' - 0"

Door Schedule

Mark	Type	Level	Width	Height
340B	B	Level 3	3' - 0"	7' - 0"
341B	B	Level 3	3' - 0"	7' - 0"
342C	C	Level 3	3' - 0"	7' - 0"
343C	C	Level 3	3' - 0"	7' - 0"
343C	C	Level 3	3' - 0"	7' - 0"
345C	C	Level 3	3' - 0"	7' - 0"
346D	D	Level 3	5' - 0"	7' - 0"
347D	D	Level 3	5' - 0"	7' - 0"
387D	D	Level 3	5' - 0"	7' - 0"
349D	D	Level 3	5' - 0"	7' - 0"
350D	D	Level 3	5' - 0"	7' - 0"
351D	D	Level 3	5' - 0"	7' - 0"
352D	D	Level 3	5' - 0"	7' - 0"
353D	D	Level 3	5' - 0"	7' - 0"
343E	E	Level 3	6' - 0"	7' - 0"
355E	E	Level 3	6' - 0"	7' - 0"
365E	E	Level 3	6' - 0"	7' - 0"
376M-C	M-C	Level 3	6' - 0"	6' - 9"
358M-C	M-C	Level 3	6' - 0"	6' - 9"
359Q-A	Q-A	Level 3	3' - 0"	6' - 6"
360Q-A	Q-A	Level 3	3' - 0"	6' - 6"
361Q-B	Q-B	Level 3	4' - 0"	6' - 6"
362Q-B	Q-B	Level 3	4' - 0"	6' - 6"
363Q-B	Q-B	Level 3	4' - 0"	6' - 6"
364Q-B	Q-B	Level 3	4' - 0"	6' - 6"
365Q-C	Q-C	Level 3	5' - 0"	6' - 6"
366Q-C	Q-C	Level 3	5' - 0"	6' - 6"
367Q-C	Q-C	Level 3	5' - 0"	6' - 6"
368Q-C	Q-C	Level 3	5' - 0"	6' - 6"
369Q-C	Q-C	Level 3	5' - 0"	6' - 6"
370Q-C	Q-C	Level 3	5' - 0"	6' - 6"
371Q-C	Q-C	Level 3	5' - 0"	6' - 6"
372Q-C	Q-C	Level 3	5' - 0"	6' - 6"
373Q-C	Q-C	Level 3	5' - 0"	6' - 6"
374Q-D	Q-D	Level 3	6' - 0"	6' - 8"
375Q-D	Q-D	Level 3	6' - 0"	6' - 8"
376Q-D	Q-D	Level 3	6' - 0"	6' - 8"
401A	A	Level 4	2' - 6"	7' - 0"
402A	A	Level 4	2' - 6"	7' - 0"
403A	A	Level 4	2' - 6"	7' - 0"
404A	A	Level 4	2' - 6"	7' - 0"
405A	A	Level 4	2' - 6"	7' - 0"
406A	A	Level 4	2' - 6"	7' - 0"
407A	A	Level 4	2' - 6"	7' - 0"
409A	A	Level 4	2' - 6"	7' - 0"
410A	A	Level 4	2' - 6"	7' - 0"
411A	A	Level 4	2' - 6"	7' - 0"
412A	A	Level 4	2' - 6"	7' - 0"
413A	A	Level 4	2' - 6"	7' - 0"
408A-2	A-2	Level 4	2' - 8"	7' - 0"
414B	B	Level 4	3' - 0"	7' - 0"
415B	B	Level 4	3' - 0"	7' - 0"
416B	B	Level 4	3' - 0"	7' - 0"
417B	B	Level 4	3' - 0"	7' - 0"
418B	B	Level 4	3' - 0"	7' - 0"
419B	B	Level 4	3' - 0"	7' - 0"
420B	B	Level 4	3' - 0"	7' - 0"
421B	B	Level 4	3' - 0"	7' - 0"
422B	B	Level 4	3' - 0"	7' - 0"
423B	B	Level 4	3' - 0"	7' - 0"
424B	B	Level 4	3' - 0"	7' - 0"
425B	B	Level 4	3' - 0"	7' - 0"
426B	B	Level 4	3' - 0"	7' - 0"
427B	B	Level 4	3' - 0"	7' - 0"
428B	B	Level 4	3' - 0"	7' - 0"
429B	B	Level 4	3' - 0"	7' - 0"
430B	B	Level 4	3' - 0"	7' - 0"
431B	B	Level 4	3' - 0"	7' - 0"
432B	B	Level 4	3' - 0"	7' - 0"
433B	B	Level 4	3' - 0"	7' - 0"
434B	B	Level 4	3' - 0"	7' - 0"
435B	B	Level 4	3' - 0"	7' - 0"
436B	B	Level 4	3' - 0"	7' - 0"
437B	B	Level 4	3' - 0"	7' - 0"
438B	B	Level 4	3' - 0"	7' - 0"
439B	B	Level 4	3' - 0"	7' - 0"
440B	B	Level 4	3' - 0"	7' - 0"
441B	B	Level 4	3' - 0"	7' - 0"
442C	C	Level 4	3' - 0"	7' - 0"
443D	D	Level 4	5' - 0"	7' - 0"
444D	D	Level 4	5' - 0"	7' - 0"
445D	D	Level 4	5' - 0"	7' - 0"
446D	D	Level 4	5' - 0"	7' - 0"

Door Schedule

Mark	Type	Level	Width	Height
447E	E	Level 4	6' - 0"	7' - 0"
448E	E	Level 4	6' - 0"	7' - 0"
449E	E	Level 4	6' - 0"	7' - 0"
450E	E	Level 4	6' - 0"	7' - 0"
451M-C	M-C	Level 4	6' - 0"	6' - 9"
452M-C	M-C	Level 4	6' - 0"	6' - 9"
453N-C	N-C	Level 4	6' - 0"	11' - 1"
454N-C	N-C	Level 4	6' - 0"	11' - 1"
455P-C	P-C	Level 4	3' - 0"	7' - 8 1/2"
456P-C	P-C	Level 4	3' - 0"	9' - 2 1/2"
457Q-B	Q-B	Level 4	4' - 0"	6' - 6"
458Q-B	Q-B	Level 4	4' - 0"	6' - 6"
459Q-C	Q-C	Level 4	5' - 0"	6' - 6"
460Q-C	Q-C	Level 4	5' - 0"	6' - 6"
461Q-C	Q-C	Level 4	5' - 0"	6' - 6"
462Q-C	Q-C	Level 4	5' - 0"	6' - 6"
463Q-C	Q-C	Level 4	5' - 0"	6' - 6"
464Q-C	Q-C	Level 4	5' - 0"	6' - 6"
465Q-C	Q-C	Level 4	5' - 0"	6' - 6"
466Q-D	Q-D	Level 4	6' - 0"	6' - 8"
467Q-D	Q-D	Level 4	6' - 0"	6' - 8"
501A	A	Level 5	2' - 6"	7' - 0"
502A	A	Level 5	2' - 6"	7' - 0"
503A	A	Level 5	2' - 6"	7' - 0"
504A	A	Level 5	2' - 6"	7' - 0"
505A	A	Level 5	2' - 6"	7' - 0"
506A	A	Level 5	2' - 6"	7' - 0"
507A	A	Level 5	2' - 6"	7' - 0"
508A	A	Level 5	2' - 6"	7' - 0"
509A	A	Level 5	2' - 6"	7' - 0"
510A	A	Level 5	2' - 6"	7' - 0"
511A	A	Level 5	2' - 6"	7' - 0"
512A-2	A-2	Level 5	2' - 8"	7' - 0"
513A-2	A-2	Level 5	2' - 8"	7' - 0"
514A-2	A-2	Level 5	2' - 8"	7' - 0"
515B	B	Level 5	3' - 0"	7' - 0"
516B	B	Level 5	3' - 0"	7' - 0"
517B	B	Level 5	3' - 0"	7' - 0"
518B	B	Level 5	3' - 0"	7' - 0"
519B	B	Level 5	3' - 0"	7' - 0"
520B	B	Level 5	3' - 0"	7' - 0"
521B	B	Level 5	3' - 0"	7' - 0"
522B	B	Level 5	3' - 0"	7' - 0"
523B	B	Level 5	3' - 0"	7' - 0"
524B	B	Level 5	3' - 0"	7' - 0"
525B	B	Level 5	3' - 0"	7' - 0"
526B	B	Level 5	3' - 0"	7' - 0"
527B	B	Level 5	3' - 0"	7' - 0"
528B	B	Level 5	3' - 0"	7' - 0"
529B	B	Level 5	3' - 0"	7' - 0"
530B	B	Level 5	3' - 0"	7' - 0"
531B	B	Level 5	3' - 0"	7' - 0"
532B	B	Level 5	3' - 0"	7' - 0"
533B	B	Level 5	3' - 0"	7' - 0"
534B	B	Level 5	3' - 0"	7' - 0"
535B	B	Level 5	3' - 0"	7' - 0"
536B	B	Level 5	3' - 0"	7' - 0"
537B	B	Level 5	3' - 0"	7' - 0"
538C	C	Level 5	3' - 0"	7' - 0"
539D	D	Level 5	5' - 0"	7' - 0"
540D	D	Level 5	5' - 0"	7' - 0"
541D	D	Level 5	5' - 0"	7' - 0"
542E	E	Level 5	6' - 0"	7' - 0"
543E	E	Level 5	6' - 0"	7' - 0"
540E	E	Level 5	6' - 0"	7' - 0"
541M-C	M-C	Level 5	6' - 0"	6' - 9"
542M-C	M-C	Level 5	6' - 0"	6' - 9"
543N-C	N-C	Level 5	6' - 0"	11' - 1"
544N-C	N-C	Level 5	6' - 0"	11' - 1"
545N-C	N-C	Level 5	6' - 0"	6' - 9"
546P-C	P-C	Level 5	3' - 0"	9' - 2 1/2"
547Q-B	Q-B	Level 5	4' - 0"	6' - 6"
548Q-B	Q-B	Level 5	4' - 0"	6' - 6"
549Q-B	Q-B	Level 5	4' - 0"	6' - 6"
550Q-B	Q-B	Level 5	4' - 0"	6' - 6"
551Q-B	Q-B	Level 5	4' - 0"	6' - 6"
552Q-C	Q-C	Level 5	5' - 0"	6' - 6"
553Q-C	Q-C	Level 5	5' - 0"	6' - 6"
554Q-C	Q-C	Level 5	5' - 0"	6' - 6"
555Q-C	Q-C	Level 5	5' - 0"	6' - 6"
556Q-C	Q-C	Level 5	5' - 0"	6' - 6"
557Q-C	Q-C	Level 5	5' - 0"	6' - 6"
558Q-D	Q-D	Level 5	6' - 0"	6' - 8"
559Q-D	Q-D	Level 5	6' - 0"	6' - 8"
601B	B	Level 6	3' - 0"	7' - 0"

Grand total: 248

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Door Schedules

Issue Date | Designed by Designer
Job Number | Checked by Checker

A501

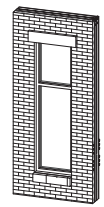
Scale

6/20/2023 8:36:07 PM

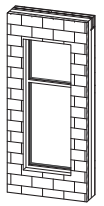
Window Schedule

Mark	Type	Level	Sill Height	Width	Height
201A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
202A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
203A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
204A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
205A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
206A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
207A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
208A-2	A-2	Level 2	1' - 8"	3' - 0"	8' - 2"
209A-3	A-3	Level 2	0' - 0"	4' - 4"	9' - 10"
210B	B	Level 2	1' - 8"	3' - 0"	8' - 2"
212F	F	Level 2	1' - 4"	3' - 0"	34' - 9"
213F	F	Level 2	1' - 4"	3' - 0"	34' - 9"
214G	G	Level 2	1' - 4"	8' - 6"	22' - 4"
215H	H	Level 2	-1' - 11"	6' - 6"	42' - 4"
216I	I	Level 2	0' - 0"	6' - 0"	50' - 0"
217J	J	Level 2	0' - 0"	11' - 0"	47' - 4"
218K	K	Level 2	0' - 0"	3' - 6"	50' - 0"
219L	L	Level 2	0' - 0"	10' - 0"	9' - 10"
301A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
302A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
303A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
304A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
305A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
306A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
307A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
308A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
309A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
310A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
311A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
312A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
313A-2	A-2	Level 3	1' - 8"	3' - 0"	8' - 2"
314A-3	A-3	Level 3	0' - 0"	4' - 4"	9' - 10"
315B	B	Level 3	1' - 8"	3' - 0"	8' - 2"
316C	C	Level 3	-2' - 0"	3' - 3"	13' - 6"
211C	C	Level 3	-2' - 0"	3' - 3"	13' - 6"
317D	D	Level 3	2' - 0"	8' - 2"	8' - 2"
318E	E	Level 3	-2' - 0"	9' - 4"	13' - 6"
319L	L	Level 3	0' - 0"	10' - 0"	9' - 10"
320N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
321N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
322N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
401A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
402A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
403A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
404A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
405A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
406A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
407A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
408A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
409A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
410A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
411A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
412A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
413A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
414A-2	A-2	Level 4	3' - 0"	3' - 0"	8' - 2"
415A-3	A-3	Level 4	0' - 0"	4' - 4"	9' - 10"
416B	B	Level 4	1' - 8"	3' - 0"	8' - 2"
417L	L	Level 4	0' - 0"	10' - 0"	9' - 10"
501A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
502A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
503A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
504A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
505A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
506A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
507A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
508A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
509A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
510A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
512A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
513A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
514A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
515A-2	A-2	Level 5	1' - 8"	3' - 0"	8' - 2"
516A-3	A-3	Level 5	0' - 0"	4' - 4"	9' - 10"
517B	B	Level 5	1' - 8"	3' - 0"	8' - 2"
518L	L	Level 5	0' - 0"	10' - 0"	9' - 10"

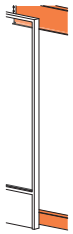
Grand total: 75



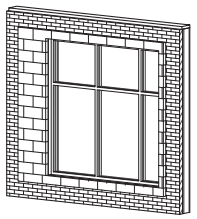
1 Window Type-A



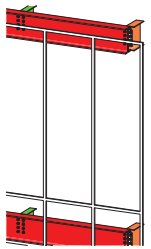
2 Window Type-B



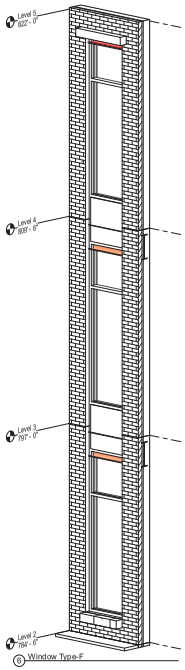
3 Window Type-C



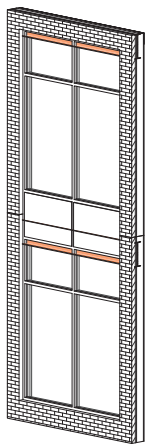
4 Window Type-D



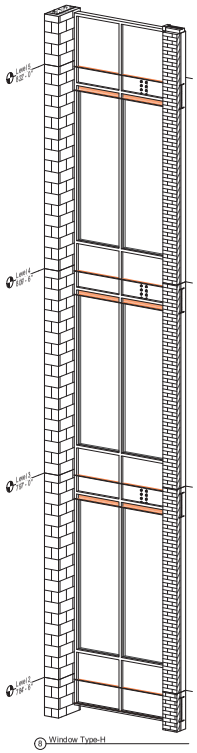
5 Window Type-E



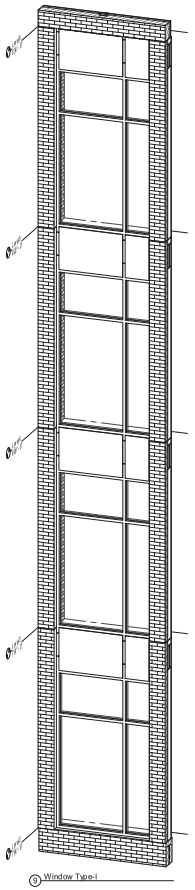
6 Window Type-F



7 Window Type-G



8 Window Type-H



9 Window Type-I

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Windows Schedules

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A502

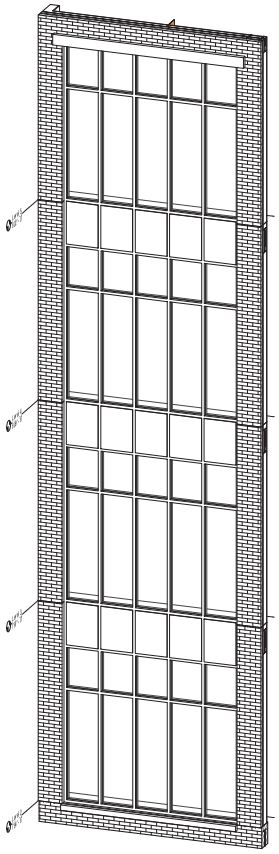
Scale

6/25/2024 8:38:10 PM

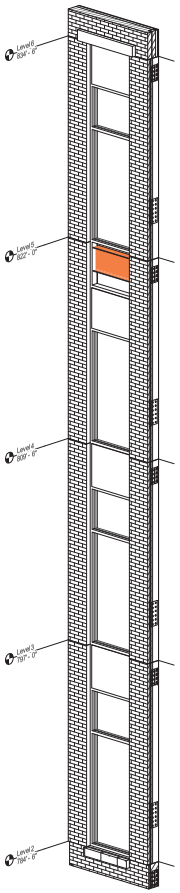
Window Schedule

Mark	Type	Level	Sill Height	Width	Height
201A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
202A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
203A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
204A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
205A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
206A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
207A	A	Level 2	1' - 8"	2' - 4"	8' - 2"
208A-2	A-2	Level 2	1' - 8"	3' - 0"	8' - 2"
209A-3	A-3	Level 2	0' - 0"	4' - 4"	9' - 10"
210B	B	Level 2	1' - 8"	3' - 0"	8' - 2"
212F	F	Level 2	1' - 4"	3' - 0"	34' - 9"
213F	F	Level 2	1' - 4"	3' - 0"	34' - 9"
214G	G	Level 2	1' - 4"	8' - 6"	22' - 4"
215H	H	Level 2	-1' - 11"	6' - 6"	42' - 4"
216I	I	Level 2	0' - 0"	6' - 0"	50' - 0"
217J	J	Level 2	0' - 0"	11' - 0"	47' - 4"
218K	K	Level 2	0' - 0"	3' - 6"	50' - 0"
219L	L	Level 2	0' - 0"	10' - 0"	9' - 10"
301A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
302A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
303A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
304A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
305A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
306A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
307A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
308A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
309A	A	Level 3	1' - 8"	2' - 4"	8' - 2"
310A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
311A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
312A-1	A-1	Level 3	2' - 0"	2' - 8"	8' - 2"
313A-2	A-2	Level 3	1' - 8"	3' - 0"	8' - 2"
314A-3	A-3	Level 3	0' - 0"	4' - 4"	9' - 10"
315B	B	Level 3	1' - 8"	3' - 0"	8' - 2"
316C	C	Level 3	-2' - 0"	3' - 3"	13' - 6"
211C	C	Level 3	-2' - 0"	3' - 3"	13' - 6"
317D	D	Level 3	2' - 0"	8' - 2"	8' - 2"
318E	E	Level 3	-2' - 0"	9' - 4"	13' - 6"
319L	L	Level 3	0' - 0"	10' - 0"	9' - 10"
320N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
321N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
322N	N	Level 3	8' - 8"	4' - 0"	1' - 10"
401A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
402A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
403A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
404A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
405A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
406A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
407A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
408A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
409A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
410A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
411A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
412A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
413A	A	Level 4	1' - 8"	2' - 4"	8' - 2"
414A-2	A-2	Level 4	3' - 0"	3' - 0"	8' - 2"
415A-3	A-3	Level 4	0' - 0"	4' - 4"	9' - 10"
416B	B	Level 4	1' - 8"	3' - 0"	8' - 2"
417L	L	Level 4	0' - 0"	10' - 0"	9' - 10"
501A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
502A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
503A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
504A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
505A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
506A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
507A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
508A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
509A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
510A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
512A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
513A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
514A	A	Level 5	1' - 8"	2' - 4"	8' - 2"
515A-2	A-2	Level 5	1' - 8"	3' - 0"	8' - 2"
516A-3	A-3	Level 5	0' - 0"	4' - 4"	9' - 10"
517B	B	Level 5	1' - 8"	3' - 0"	8' - 2"
518L	L	Level 5	0' - 0"	10' - 0"	9' - 10"

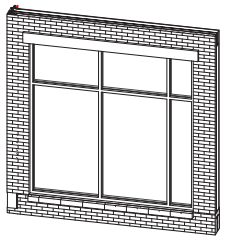
Grand total: 75



1 Window Type-J



2 Window Type-K



3 Window Type-L

4 Window Type-N

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue, Bloomington, IN, USA

Windows Schedules

Issue Date | Designed by: Designer
Job Number | Checked by: Checker

A503

Scale

6/25/2024 8:38:12 PM

GENERAL NOTES

REFERENCE KEYNOTES

Date

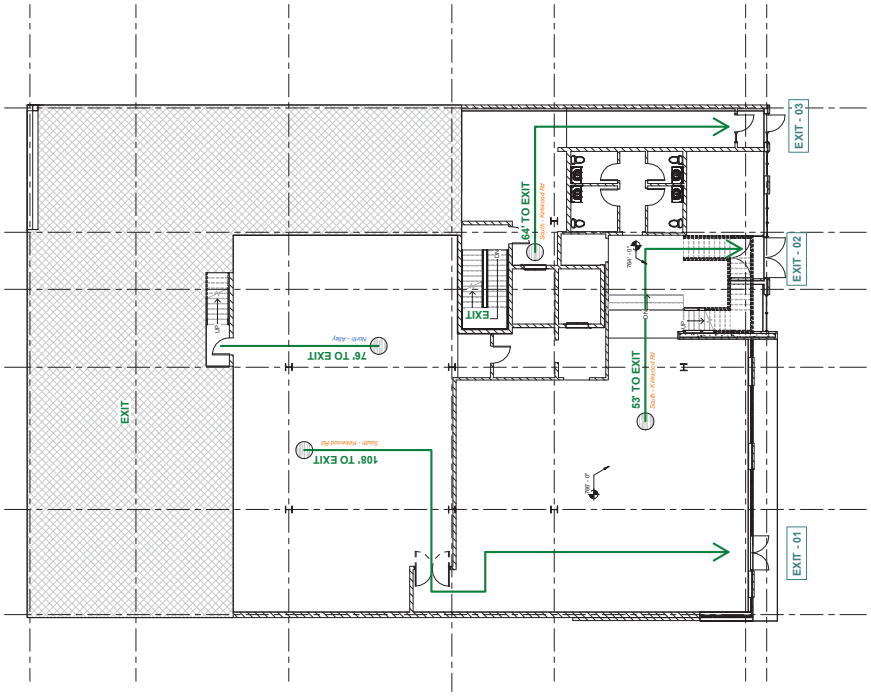
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA

Life Safety Plan

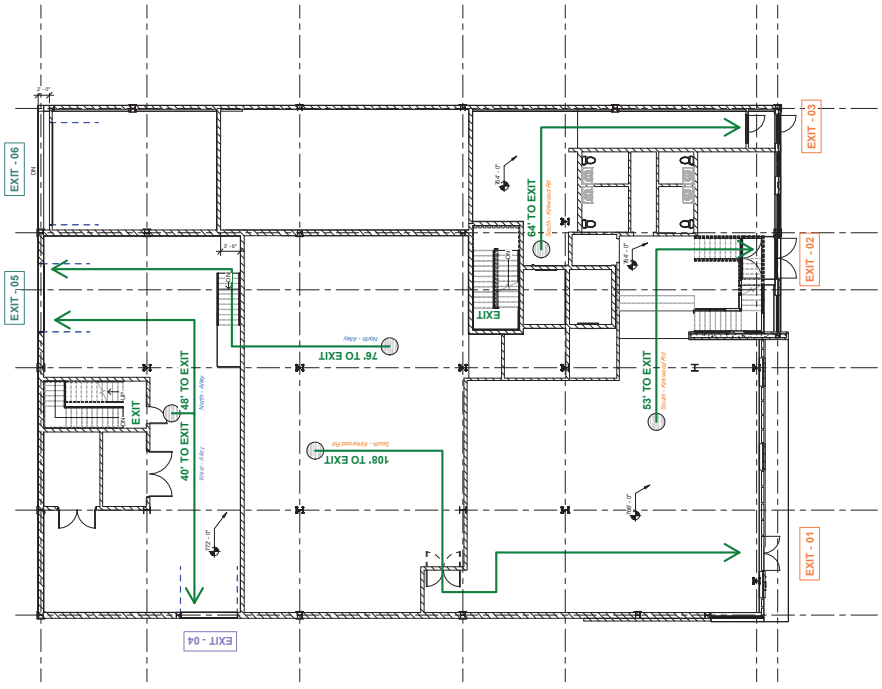
Issue Date
Job Number
Designed by
Checked by
Designer
Checker

SP101

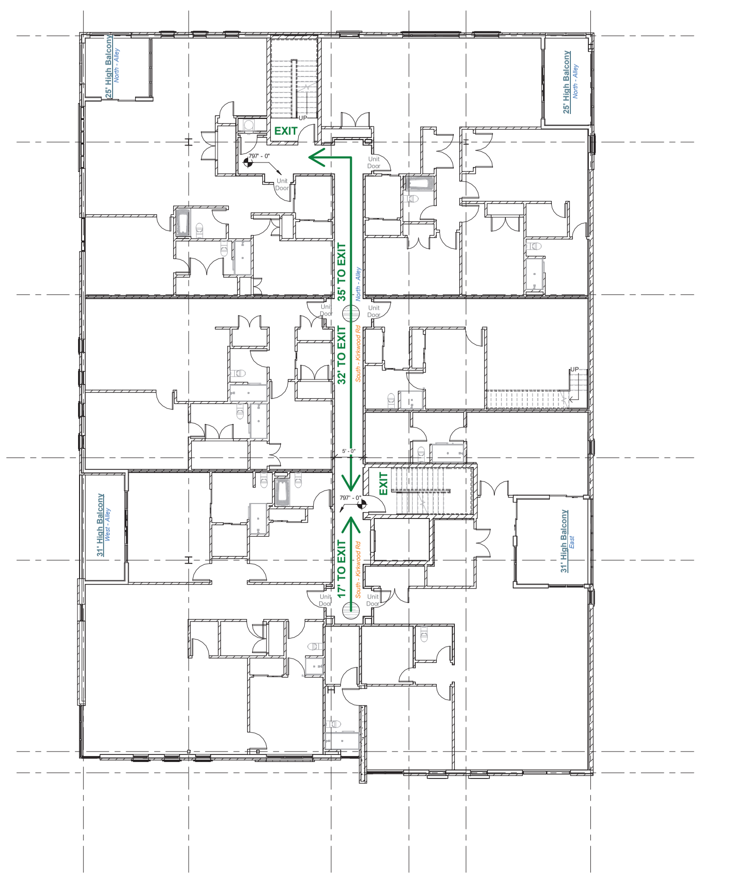
Scale 1/8" = 1'-0"



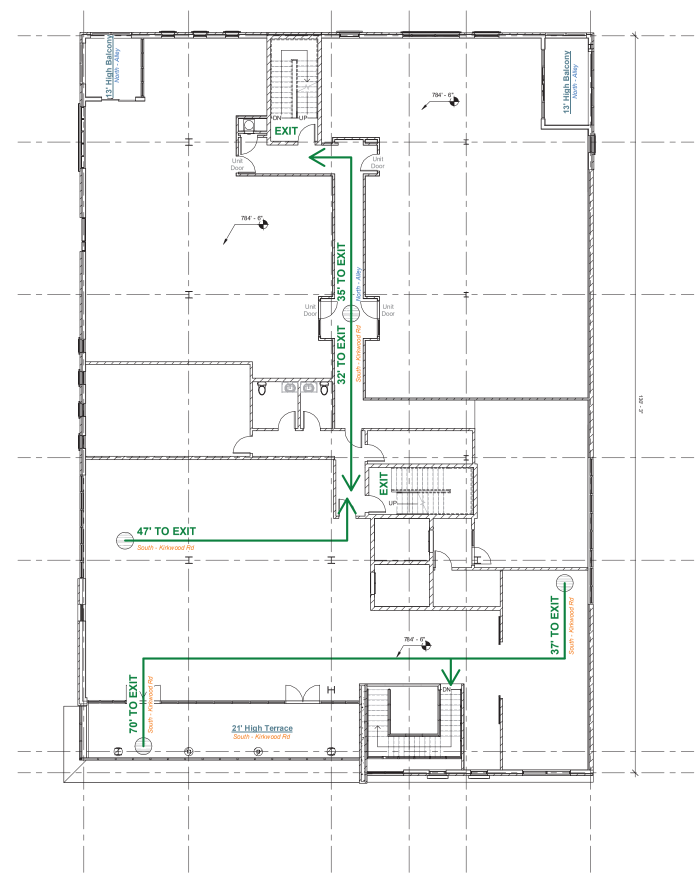
1 Level 1 - LIFE SAFETY PLAN
1/8" = 1'-0"



2 North Alley Level - LIFE SAFETY PLAN
1/8" = 1'-0"



② Level 3 - LIFE SAFETY PLAN
1/8" = 1'-0"



① Level 2 - LIFE SAFETY PLAN
1/8" = 1'-0"

GENERAL NOTES

REFERENCE KEYNOTES

Date

NEW CONSTRUCTION
FOR
CONDOMINIUMS & RETAIL
LOCATED:
115 East Kirkwood Avenue, Bloomington, IN, USA

Life Saftey Plan Level 2 & 3

Issue Date	Designed by Designer
Job Number	Checked by Checker

SP102

Scale 1/8" = 1'-0"

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GENERAL NOTES	REFERENCE KEYNOTES	Date

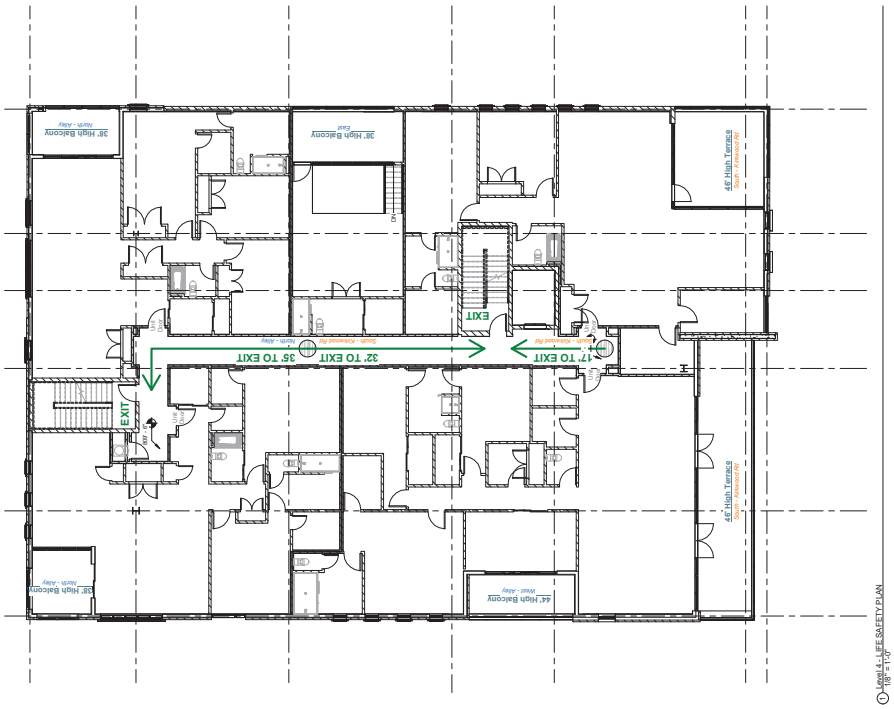
NEW CONSTRUCTION FOR
CONDOMINIUMS & RETAIL
LOCATED
115 East Kirkwood Avenue Bloomington, IN, USA

Life Saftey Plan Level 4 & 5

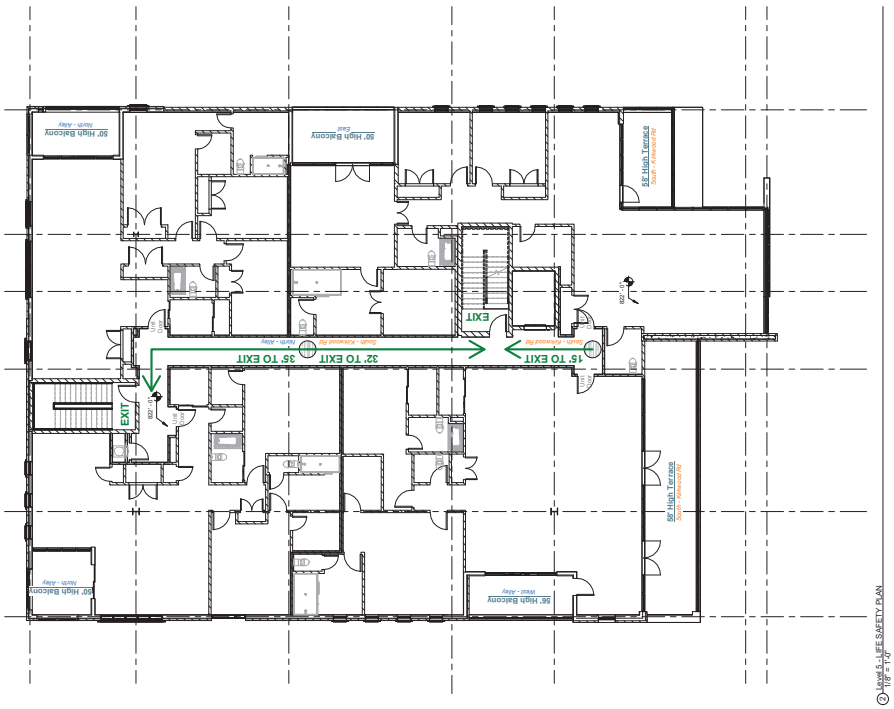
Issue Date | Designed by | Designer
Job Number | Checked by | Checker

SP103

Scale 1/8" = 1'-0"



1 Level 4 - LIFE SAFETY PLAN
1/8" = 1'-0"



2 Level 5 - LIFE SAFETY PLAN
1/8" = 1'-0"