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PLANNING COMMISSION
MEETING AGENDA
REGULAR MEETING

David Lambert, Chairman, Marianna Perakis, Vice Chairman
Toby Buechner, Carlton Faison, Michael W. Hutson, Tom Krent,
Lakshmi Malalahalli, Sadek Rahman and John J. Tagle

October 25, 2022 **7:00 P.M.** **Council Chambers**

1. ROLL CALL

2. APPROVAL OF AGENDA

3. APPROVAL OF MINUTES – September 27, 2022

4. PUBLIC COMMENT – For Items Not on the Agenda

PRELIMINARY SITE PLAN REVIEW

5. PRELIMINARY SITE PLAN REVIEW (SP JPLN2022-0021) - Proposed Forum Flats 200-unit residential development, South side of Kirts, West of Livernois (295 Kirts; PIN 88-20-28-252-016), Section 28, Currently Zoned BB (Big Beaver) District

OTHER ITEMS

6. PUBLIC COMMENT – For Items on the Agenda

7. PLANNING COMMISSION COMMENT

8. ADJOURN

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NOTICE:*People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk by e-mail at clerk@troymi.gov or by calling (248) 524-3317 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations*

Televised Live, Government Channel WTRY (10 WideOpenWest and 17 Comcast) Replayed Wednesdays 3:00 pm, 6:00 pm and 11:00 pm

Chair Lambert called the Regular meeting of the Troy City Planning Commission to order at 7:00 p.m. on September 27, 2022, in the Council Chamber of the Troy City Hall. Chair Lambert presented opening remarks relative to the role of the Planning Commission and procedure of tonight's meeting.

1. ROLL CALL

Present:
Toby Buechner
Carlton M. Faison
Michael W. Hutson
Tom Krent
David Lambert
Lakshmi Malalahalli
Marianna Perakis
Sadek Rahman
John J. Tagle

Also Present:
R. Brent Savidant, Community Development Director
Ben Carlisle, Carlisle Wortman Associates
Julie Quinlan Dufrane, Assistant City Attorney
Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

Ms. Perakis asked to add Planning Commission Comment as Agenda item #7.

Resolution # PC-2022-09-052
Moved by: Perakis
Support by: Krent

RESOLVED, To approve the Agenda as revised.

Yes: All present (9)

MOTION CARRIED

3. APPROVAL OF MINUTES – September 13, 2022

There was a brief discussion on the Village of Troy PUD application as relates to:
- The wording of Resolution # PC-2022-09-051 to postpone item.
- Scheduling of Public Hearing.

Resolution # PC-2022-09-053
Moved by: Buechner
Support by: Rahman

RESOLVED, To approve the minutes of the September 13, 2022 Regular meeting as submitted.

Yes: Buechner, Hutson, Krent, Lambert, Malalahalli, Perakis, Rahman, Tagle
Abstain: Faison

MOTION CARRIED

4. PUBLIC COMMENT – For Items Not on the Agenda

There was no one present who wished to speak.

PLANNED UNIT DEVELOPMENT

5. PLANNED UNIT DEVELOPMENT (File Number PUD 2020-0018) – Revised Concept Development Plan for Long Lake and Crooks Masterplan Development, Northwest Corner of Long Lake and Crooks, Section 8, Currently Zoned O (Office) District

Mr. Carlisle gave a brief background of the proposed Planned Unit Development (PUD) application and identified some of the changes since last reviewed at the August 9, 2022 Planning Commission Regular meeting.

- Reconfigured residential building at northwest corner, moved building parallel to Corporate Drive.
- Reconfigured hotel/restaurant building at southwest corner, moved building parallel to Corporate Drive, located parking in rear.
- Added another retail/restaurant building, moved retail/restaurant buildings to front on Long Lake, parking in rear.
- Reconfigured internal pedestrian grid system and outdoor seating plaza area between two main retail/restaurant buildings on Long Lake.
- Significant addition to the central gathering space, dedicated green space and functional usable open space.
- Added green “street” and “boulevard” that bisects site north/south, east/west.
- Added pedestrian amenities and grid system to connect with pedestrian amenities.
- Reduced size of sculpture garden located next to wetland, added parking.
- Expanded open space and natural features area on the north end of site.
- Added small retail zone on ground level of parking deck.

Anthony Antone of Kojoian introduced project team members in the audience; Randy Wertheimer of Hunter Pasteur Homes, Chris Beck of Gensler, Chris Kojoian of Kojoian and Tyler Tennent of Dawda Mann PLC.

Mr. Antone said the team wants to make sure they are on the right track and is asking for the Board's feedback again before coming forward with the Concept Development Plan. He said "The Great Lawn" area would be an all-season gathering place with diverse amenities, identifying at this time an ice-skating rink, pickleball courts and bocce ball.

Board members complimented the team on the plan revisions and expressed overall satisfaction of the plan.

Some items Board members asked the project team to consider:

- Prepare a brochure/pamphlet to illustrate the community gathering space.
- Food trucks; parking, competition with on-site restaurants.
- Seasonal gathering space; functionality.
- Add gardens, play structure.
- Location of pickleball courts and outdoor exercise stations.
- Parking.
    - Applicant advised boulevard offers on-street parallel parking.
    - Parking deck and office tower; levels of parking.
    - Shared parking.
    - Review of parking at each development phase.
- Retail/restaurant buildings; facilitation of loading/unloading and waste management.
- Provide a 'grand' and 'eye-catching' entrance to development.
- Hub for public transportation.

Mr. Savidant reviewed the PUD approval process.

Ms. Dufrane stated the elements of the PUD agreement encompass details relating to development phasing and open space.

Chair Lambert opened the floor for public comment.

Wei Cao, 6816 Vernmoor; addressed retail/restaurant portion of development, suggested smaller storefront retail/restaurants.

Chair Lambert closed the floor for public comment.

Mr. Antone said the market would drive tenancy of the project. He said a combination of larger and smaller retail/restaurant store fronts would be appealing.

OTHER ITEMS

6. PUBLIC COMMENT – For Items on the Agenda

There was no one present in the audience who wished to speak.

7. PLANNING COMMISSION COMMENT

There were general comments, some relating to:

- Meeting schedule.
- Term expirations, reappointments.
- Agenda format; review of Bylaws.

8. ADJOURN

The Regular meeting of the Planning Commission adjourned at 7:57 p.m.

Respectfully submitted,

_____

David Lambert, Chair

_____

Kathy L. Czarnecki, Recording Secretary

https://d.docs.live.net/2f7ed4fe5f664ea8/Documents/Kathy/COT Planning Commission Minutes/2022/2022 09 27 Draft.docx

DATE: October 21, 2022

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW (SP JPLN2022-0021) - Proposed Forum Flats 200-unit residential development, South side of Kirts, West of Livernois (295 Kirts; PIN 88-20-28-252-016), Section 28, Currently Zoned BB (Big Beaver) District

The petitioner Cypress Partners, Inc. submitted the above referenced Preliminary Site Plan application. The applicant intends to convert a vacant 3-story office building to a 90-unit apartment building and construct two 55-unit apartment buildings in the parking lot south of the building.

Use of the parcel is controlled by the Use Group Table 5.04.C-1. The parcel is within the BB (Big Beaver) Zoning District and classified as Site Type B and Street Type C. This classification permits multi-family residential by right.

Note: A recent Zoning Ordinance text amendment recommended by the Planning Commission amended the BB district to permit multi-family residential subject to special use approval, however this amendment only applied to Street Types A and B.

The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City's Planning Consultant, summarizes the application. CWA prepared the report with input from various City departments including Planning, Engineering, Public Works and Fire. City Management supports the findings of fact contained in the report and recommends approval of the project, as noted.

Attachments:

1. Maps.
2. Use Group Table (Chapter 39 Zoning Ordinance).
3. Report prepared by Carlisle/Wortman Associates, Inc.
4. Preliminary Site Plan.
5. Revised Parking Study, prepared by F&V, dated September 27, 2022.
6. Traffic and Parking Review Memorandum, prepared by OHM dated October 19, 2021.

G:\SITE PLANS\SP JPLN2022-0021 FORUM FLATS\PC Memo 10 25 2022.docx

PROPOSED RESOLUTION

PRELIMINARY SITE PLAN REVIEW (SP JPLN2022-0021) - Proposed Forum Flats 200-unit residential development, South side of Kirts, West of Livernois (295 Kirts; PIN 88-20-28-252-016), Section 28, Currently Zoned BB (Big Beaver) District

Resolution # PC-2022-10-
Moved by:
Seconded by:

RESOLVED, The Planning Commission hereby approves a reduction in the total number of required parking spaces for the proposed Forum Flats residential development to 308 when a total of 366 spaces are required on the site based on the off-street parking space requirements for multi-family residential. This 58-space reduction is sufficient to meet parking demands based on landbanked parking provided on the site; and,

BE IT FINALLY RESOLVED, That Preliminary Site Plan Approval for the proposed Forum Flats 200-unit residential development, South side of Kirts, west of Livernois, Section 28, Currently Zoned BB (Big Beaver) District, be (granted, subject to the following conditions):

1. Update landscape plan to show landscaping in landbanked parking area above underground stormwater detention prior to Final Site Plan Approval.
2. Provide grasscrete parking areas to replace turf grass in landbanked areas.
3. Provide cut sheet of the proposed lighting fixtures prior to Final Site Plan Approval.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons:_____)

Yes:
No:
Absent:

MOTION CARRIED / FAILED

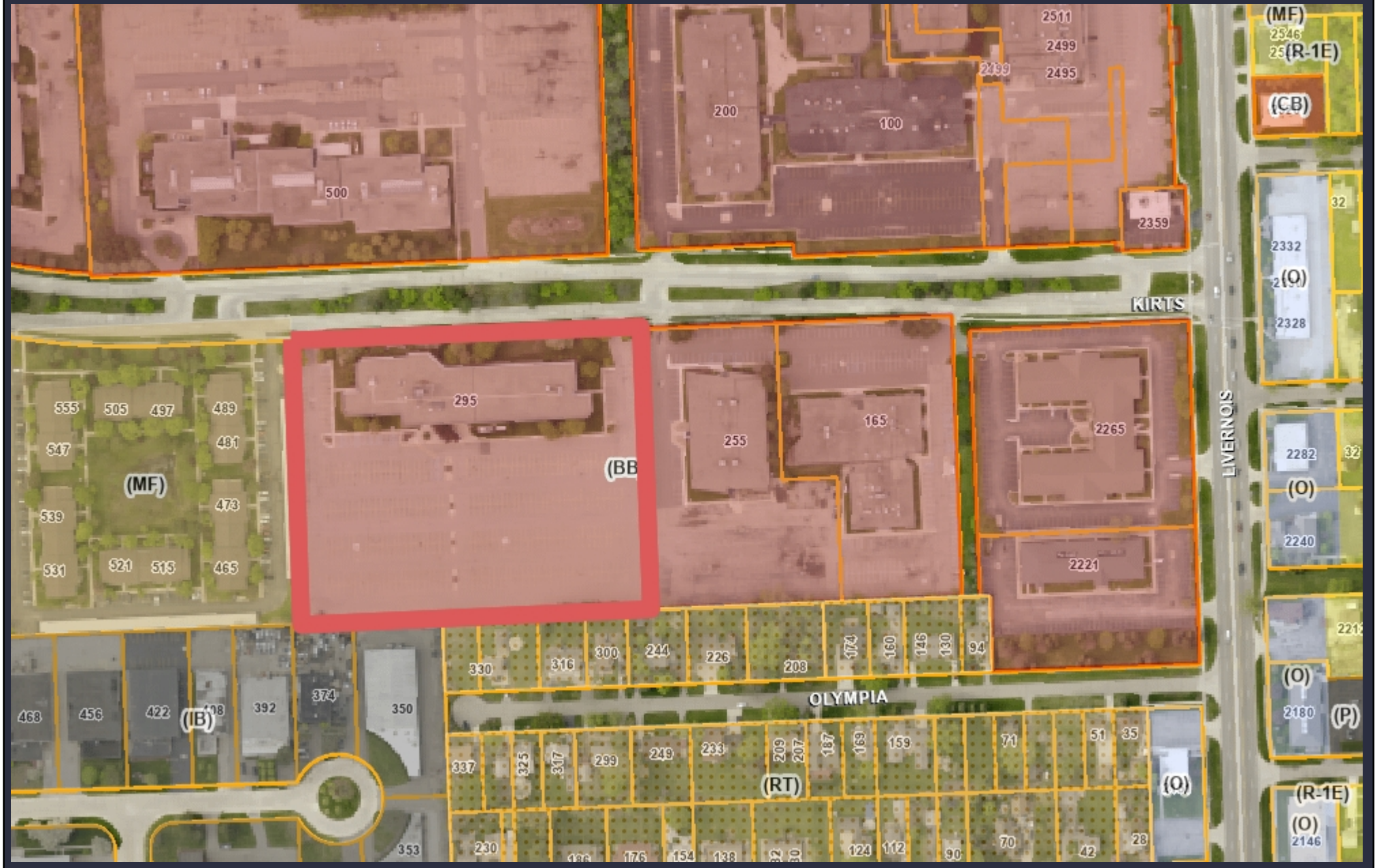
G:\SITE PLANS\SP JPLN2022-0021 FORUM FLATS\Proposed Resolution 2022 10 25.doc

GIS Online

594 0 297 594 Feet

Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

GIS Online



594 0 297 594 Feet

Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

Table 5.04.C-1
Use Groups Permitted

Use Group (Table 5.03-1)	Site Type BB:A: Major Sites			Site Type BB:B: Medium Sites			Site Type BB:C: Minor Sites		
	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C: Collectors	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C:	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C:
1 Residential	NP	NP	NP	NP	NP	NP	NP	NP	NP
2 Residential/Lodging	UP/S	UP/S	P	UP/S	UP/S	P	UP/S	UP/S	P
3 Office/Institution	P	P	P	P	P	P	P	P	P
4* Auto/Transportation	NP	NP	NP	NP	NP	NP	NP	NP	NP
5 Retail/Entertainment/ Service**	P	P	P	P	P	P	P	P	P
6 Misc. Commercial	NP	NP	NP	NP	NP	NP	NP	NP	NP
7 Industrial	NP	NP	NP	NP	NP	NP	NP	NP	NP

P - Permitted Use Groups
UP / S – Permitted use groups in upper stories for portion of building that fronts on public right of way / Special Use Approval required for any portion of the building that does not front on a public right of way.
UP - Permitted Use Groups in Upper Stories Only
S - Special Use Approval Groups
NP - Prohibited Use Groups

Table 5.04.C-2
Building Forms Permitted

Building Forms	Site Type BB:A: Major Sites			Site Type BB:B: Medium Sites			Site Type BB:C: Minor Sites		
	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C: Collectors	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C: Collectors	Street Type BB:A: Big Beaver	Street Type BB:B: Arterials	Street Type BB:C: Collectors
A: Small, single-purpose, out buildings	P[1]	P	P	P[1]	P	P	P	P	P
B: Small, multi-tenant commercial with mixed use	P[1]	P	P	S	P	P	P	P	P
C: Attached residential or live/work	S	S	S	P	P	P	P	P	P
D: Multi-story mixed use, medium density	P	P	P	P	P	P	P	P	P
E: Large format commercial	P	P	S	P	P	S	NP	NP	NP
F: Large format mixed-use	P	P	S	P	P	S	NP	NP	NP

[1] Permitted only when located in an outlot of a Building Form D, E, or F project in a separate parcel, or within a designated outlot that remains part of the primary parcel.

P - Permitted Building Form
S - Special Approval Building Form
NP - Prohibited Building Form

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: September 6, 2022
September 27, 2022
October 18, 2022

Preliminary Site Plan Review
For
City of Troy, Michigan

Applicant: Cypress Partners

Project Name: Forum Flats

Location: 295 Kirts Boulevard

Zoning: BB, Big Beaver

Action Requested: Preliminary Site Plan

SITE DESCRIPTION

An application has been submitted to convert an existing office building on Kirts Boulevard to 90 apartments and construct two additional apartment buildings, 55 units each, in the associated parking lots. The unit breakdown is as follows:

	Studio	1 Bedroom	2 Bedroom	Total
Existing Building	12	54	24	90
New Building 1	11	32	12	55
New Building 2	11	32	12	55
Total	**34**	**118**	**48**	**200**

Other improvements and amenities include:

- Façade improvements to existing building
- Outdoor patio and pool
- Landscape improvements
- Onsite stormwater management

- Open space amenity including dog run

Site Location:

Proposed Uses of Subject Parcel:

Existing building to be converted to 90 multiple family units and two new building to include 55 multi-family dwelling units each.

Current Zoning:

The property is currently zoned BB, Big Beaver Form Based District

Surrounding Property Details:

Direction	Zoning	Use
North	BB, Big Beaver	Office
South	IB, Industrial and Business, and RT, One-family residential attached	Light Industrial and single-family residential
East	BB, Big Beaver	Office
West	Multiple Family Residential	Multiple Family Residential

NATURAL FEATURES

The site has been graded and improved for an office building and an associated parking lot.

Items to be addressed: *None.*

SITE ARRANGEMENT

The two new four-story buildings will be placed to the south (rear) of the existing three-story building. The applicant proposes a large open space amenity in between the two new buildings that includes dog run and common open space.

Access will remain with one point of access on Kirts Boulevard. The buildings will share parking, with proposed carports lining the eastern, southern, and western property lines.

Items to be addressed: *None.*

AREA, WIDTH, HEIGHT, SETBACKS

Table 5.03.B.3, Building Form C, Standards Applicable to All Districts of the Zoning Ordinance establishes the dimensional requirements for the BB, Neighborhood Node. The requirements of Building form C and the proposed dimensions are shown in the following table.

	Required	Provided	Compliance
Front (Crooks)	10-foot build-to-line	+/-20 feet	Existing
Side (east)	N/A, building may be placed up to property line	87-feet	Complies

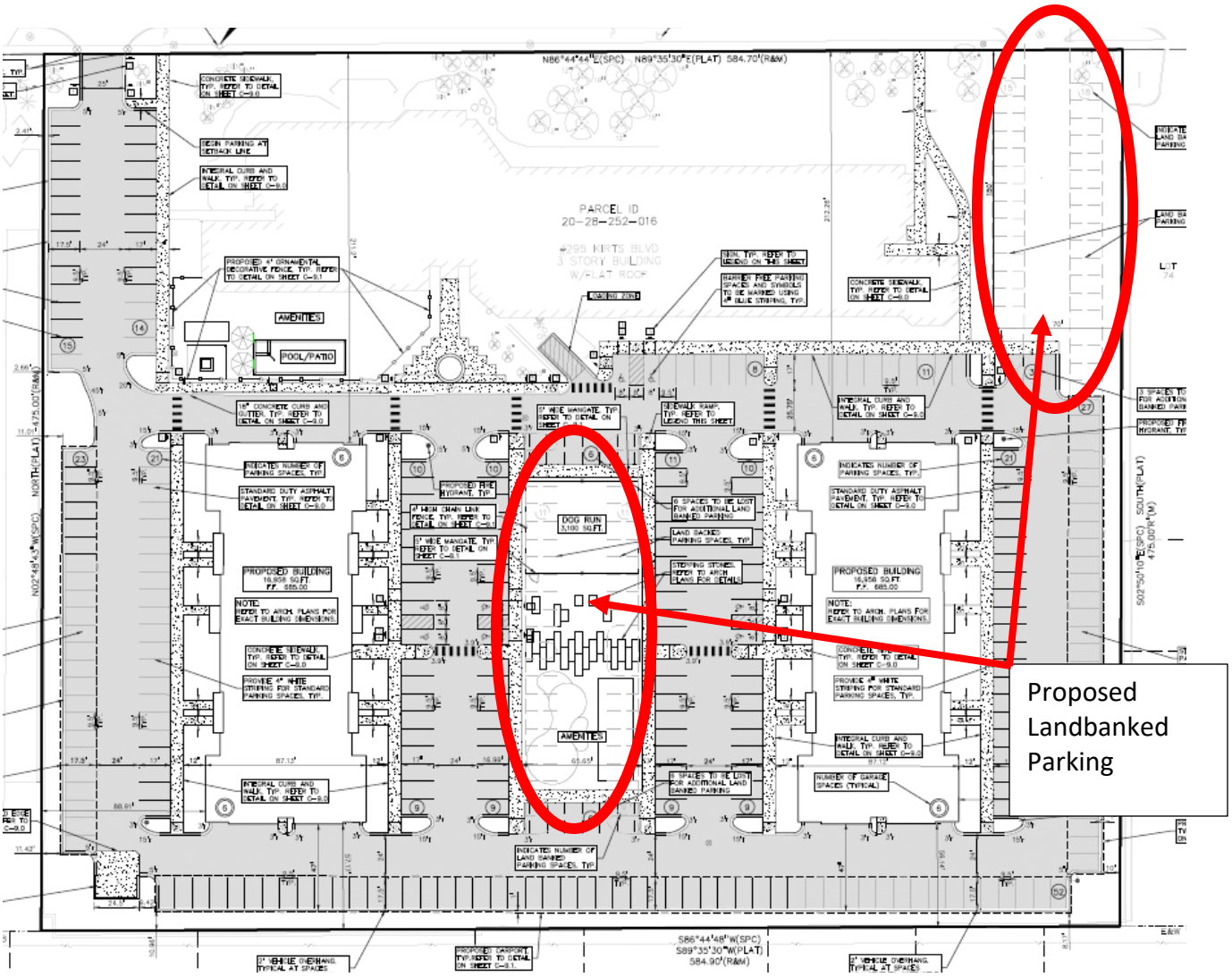
Side (west)	N/A, building may be placed up to property line	88-feet	Complies
Rear (South)	30-foot minimum setback	56-feet	Complies
Building Height	4 stories-55 feet.	4 stories- 44-feet to top of roof, and 52.5-feet to parapet	Complies
Lot Coverage (Building)	30%	28.33%	Complies
Minimum Open Space	20%	22.68%	Complies
Parking Location	Cannot be located in front yard	Parking lots not in front yard	Complies

PARKING

Section 13.06.G of the Zoning Ordinance requires:

	Required	**Provided**
Residential (General): 2 spaces per unit / 1 space per studio	34 studios: 34 spaces 166 units = 322 spaces	284 at-grade 24 in garage 58 proposed landbanked
Total	**366 spaces**	**308 built spaces + 58 proposed landbanked**

By ordinance the applicant is required to provide 366 spaces. They are providing 308 built spaces plus a proposed 58 landbanked spaces. Landbank parking allows for designating a portion of the site that would be required for parking to be held and preserved as open space, rather than constructed as parking. The proposed landbanked parking is located to the east of the existing building, above the underground detention, and in the central amenity area. Please note that if all site parking were needed, the central amenity area would be converted to parking.



The applicant is providing a parking ratio of 1.54 spaces per unit. OHM has reviewed the parking and has provided a memo for the Planning Commission review.

Planning Commission may grant parking reduction if they support the justification for the reduction. Planning Commission may want to consider conditioning landbank approval on the use of grasscrete parking areas to replace turf grass.

Items to be Addressed: *Planning Commission to consider the use of landbanked parking, and the potential loss of the central site amenity if landbanked parking is constructed.*

TRAFFIC

The applicant did not provide a parking study but provided a trip generation estimate. OHM has reviewed the trip generation and does not object. The trip generation tables provided show

that the proposed multi-family use in three buildings is expected to generate less traffic than the existing single office building if fully occupied.

Items to be addressed: *None*

LANDSCAPING

A landscaping plan has been provided on Sheet L101. The following table discusses the development's compliance with the landscape requirements set forth in Section 13.02.

	Required:	Provided:	Compliance:
Greenbelt Planting			
Kirts: 1 tree every 30 feet	585 / 30 = 20	20, mix of new and existing	Complies
Parking Lot Landscaping			
1 tree per every 8 parking spaces	295 spaces / 8 = 37 trees	37	Complies, with Planning Commission approval of parking reduction
Transition			
Screening between land uses: Large evergreen every 10 feet or small ever 3 feet, or 6 foot wall or fence	Screening along South and West property line	South: existing 6-foot wall and landscaping West: existing 6-foot fence	Compliant
Overall			
Site landscaping: A minimum of twenty percent (20%) of the site area shall be comprised of landscape material. Up to twenty-five percent (25%) of the required landscape area may be brink, stone, pavers, or other public plaza elements, but shall not include any parking area or required sidewalks.	20%	Applicant notes 36.9%	Complies

The applicant proposes a long run of carports along the east, south, and western property line, without any breaks for landscaping. However, there are buffer strips with trees and other plant material between each carport and abutting properties to the west and south. In addition, the applicant should update the landscape plan to show landscaping in landbanked parking area above underground stormwater detention. Color renderings were provided for this open space area however the landscape plan needs to be amended to reflect this design.

Transformer / Trash Enclosure:

The applicant has indicated one outdoor trash enclosure. The applicant proposes to screen it with a masonry wall, wooden gate, and evergreens.

***Items to be Addressed**: 1. Update landscape plan to show landscaping in landbanked parking area above underground stormwater detention*

PHOTOMETRICS

The applicant has provided a photometric plan. The applicant is proposing 19 pole lights, 22 under car port lights, 24 bollard lights, and 30 buildings lights. Photometrics need ordinance requirements but the applicant did not provide cut sheet of the proposed fixtures.

***Items to be Addressed:** Provide cut sheet of the proposed fixtures.*

FLOOR PLAN AND ELEVATIONS

The building was constructed in 1986 and pre-dates the BB (Big Beaver) Zoning District. A transparency calculation was provided for the north side of the renovated building facing Kirts (54%) and south side of the building facing the parking lot (44%). Both elevations comply with BB Big Beaver Zoning District transparency requirements. The elevations provided show that the applicant intends to refresh the building with new windows and paint.

The rear buildings are four-stories and include a mix of stone, brick, and Hardie board siding. The proposed color mix includes light grey, dark grey, and tan.

The applicant should describe how the material selection, color selection, and architectural style of the two new buildings compliment or support the existing building.

***Items to be Addressed:** 1). Applicant should describe how the material selection, color selection, and architectural style of the two new buildings compliment or support the existing building.*

DESIGN STANDARDS AND SITE PLAN REVIEW STANDARDS

The Big Beaver design standards provide the Planning Commission with direction when reviewing the proposed design features of this development.

Façade Variation.

The maximum linear length of an uninterrupted building façade facing public streets and/or parks shall be thirty (30) feet.

Pedestrian Access / Entrance.

a. *Primary Entrance: The primary building entrance shall be clearly identifiable and useable and located in the front façade parallel to the street.*

b. Pedestrian Connection. The pedestrian connection shall be fully paved and maintained surface not less than five (5) feet in width.

c. Additional Entrances. In addition to the primary façade facing front façade and/or the right-of-way, if a parking area is located in the rear or side yard, must also have a direct pedestrian access to the parking area that is of a level of materials quality and design emphasis at least equal to that of the primary entrance.

Ground Story Activation.

The first floor of any front façade facing a right-of-way shall be no less than fifty (50) percent windows and doors, and the minimum transparency for facades facing a side street, side yard, or parking area shall be no less than 30 percent of the façade. Transparency alternatives are permitted up to 80% of the 50% total along the front of buildings, and up to 100% of the sides of buildings. The minimum transparency requirement shall apply to all sides of a building that abut an open space, including a side yard, or public right-of-way. Transparency requirements shall not apply to sides which abut an alley.

Transitional Features

a. *Transitional features are architectural elements, site features, or alterations to building massing that are used to provide a transition between higher intensity uses and low- or moderate-density residential areas. These features assist in mitigating potential conflicts between those uses. Transitional features are intended to be used in combination with landscape buffers or large setbacks.*

Site Access and Parking

a. *Required Parking. Off-street parking shall be provided in accordance with the standards set forth in Article 13, Site Design Standards.*

b. *Location.*
    I. *When parking is located in a side yard (behind the front building line) but fronts on the required building line, no more than fifty (50) percent of the total site's linear*

feet along the required building line or one hundred (100) feet, whichever is less, shall be occupied by parking.

II. *For a corner lot, shall be no more than fifty (50) percent of the site's cumulative linear feet along the required building lines or one hundred (100) feet, whichever is less, shall be occupied by parking. The building shall be located in the corner of the lot adjacent to the intersection.*

III. *For a double frontage lot or a lot that has frontage on three (3) streets, the cumulative total of all frontages occupied by parking shall be no more than sixty-five (65) percent of the total site's linear feet along a required building line or one hundred and twenty-five (125) feet, whichever is less.*

IV. *Where off-street parking is visible from a street, it should be screened in accordance with the standards set forth in Section 13.02.C.*

Site Plan review standards provide the Planning Commission with direction when reviewing the proposed site plan and design features of this development.

Section 8.06 outlines Site Plan Review Design Standards.

1. *Development shall ensure compatibility to existing commercial districts and provide a transition between land uses.*
    a. *Building design shall enhance the character of the surrounding area in relation to building and parking placement, landscape and streetscape features, and architectural design.*
    b. *Street fronts shall provide a variety of architectural expression that is appropriate in its context and prevents monotony.*
    c. *Building design shall achieve a compatible transition between areas with different height, massing, scale, and architectural style.*

2. *Development shall incorporate the recognized best architectural building design practices.*
    a. *Foster a lasting impact on the community through the provision of high quality design, construction, and detailing.*
    b. *Provide high quality, durable materials, such as but not limited to stone, brick, glass, and metal. E.I.F.S. or material equivalent shall only be used as an accent material.*
    c. *Develop buildings with creativity that includes balanced compositions and forms.*
    d. *Design roofs that are appropriate to the architectural style of the building and create an appropriate visual exterior mass of the building given the context of the site.*

e. *For commercial buildings, incorporate clearly defined, highly visible customer entrances using features such as canopies, porticos, arcades, arches, wing walls, ground plane elements, and/or landscape planters.*
f. *Include community amenities that add value to the development such as patio/ seating areas, water features, art work or sculpture, clock towers, pedestrian plazas with park benches or other features located in areas accessible to the public.*

3. *Enhance the character, environment and safety for pedestrians and motorists.*
    a. *Provide elements that define the street and the pedestrian realm.*
    b. *Create a connection between the public right of way and ground floor activities.*
    c. *Create a safe environment by employing design features to reduce vehicular and pedestrian conflict, while not sacrificing design excellence.*
    d. *Enhance the pedestrian realm by framing the sidewalk area with trees, awnings, and other features.*
    e. *Improve safety for pedestrians through site design measures.*

SUMMARY

As part of the deliberation, the Planning Commission should consider:

1. *The use of landbanked parking, and the potential loss of the central site amenity if landbanked parking is constructed.*
2. *Planning Commission should determine whether the design standards and site plan standards been met.*
3. *Update landscape plan to show landscaping in landbanked parking area above underground stormwater detention prior to Final Site Plan Approval.*
4. *Consider conditioning landbank approval on the use of grasscrete parking areas to replace turf grass.*
5. *Provide cut sheet of the proposed lighting fixtures prior to Final Site Plan Approval.*
6. *Applicant should describe how the material selection, color selection, and architectural style of the two new buildings compliment or support the existing building.*

Sincerely,

Benjamin R. Carlisle

CARLISLE/WORTMAN ASSOC., INC.
Benjamin R. Carlisle, LEED AP, AICP

Forum Flats

295 Kirts Blvd Troy, MI 48084

Owner

MF Focus Troy LLC
280 W. Maple Rd. Sutie 230
Birmingham, MI 48009

Architect

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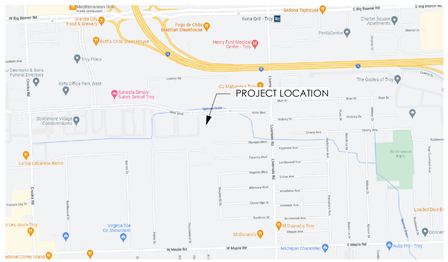
P.248.414.9270.
F.248.414.9275

Civil Engineer

PEA Group
1849 Pond Run
Auburn Hills, MI 48326
P.248.689.9090

Traffic Engineer

Fleis & VandenBrink
27725 Stansbury St #195
Farmington Hills, MI 48334
P.248.536.0080



North

Location Map
NTS

General Sheet Index

Sheet No	Title	08.12.22 SPA	09.26.22 REV SPA
G.001	Cover Sheet	•	•

Civil Sheet Index

Sheet No.	Title	08.12.22 SPA	09.26.22 REV SPA
C-1.0	Topographic Survey	•	•
C-3.0	Preliminary Site Plan	•	•
C-4.0	Preliminary Grading Plan	•	•
C-6.0	Preliminary Utility Plan	•	•
C-9.0	Notes and Details - 1	•	•
C-9.1	Notes and Details - 2	•	•
L-1.0	Landscape Plan	•	•
L-2.1	Landscape Specifications	•	
L-2.2	Landscape Specifications	•	
L-1.1	Landscape Details		•
T-1.0	Tree Preservation and Removal Plan		•

Architectural Sheet Index

Sheet No	Title	08.12.22 SPA	09.26.22 REV SPA
A.100	Existing Building - First Floor Plan	•	•
A.101	Existing Building - Second Floor Plan	•	•
A.102	Existing Building - Third Floor Plan	•	•
A.103	Apartment Buildings B & C - Floor Plans	•	•
A.104	Apartment Buildings B & C - Floor Plans	•	•
A.200	Existing Buildling - Elevations	•	•
A.201	Existing Building - Material Board	•	•
A.202	Apartment Buildings B & C - Elevations	•	•
A.203	Apartment Buildings B & C - Material Board	•	•
A.204	Aerial Renderings	•	•
A.205	Perspective Renderings	•	•
A.206	Amenity Renderings	•	

KRIEGER KLATT ARCHITECTS
2120 E. 11 Mile Rd. | Royal Oak, MI 48067
P: 248.414.9270 **F:** 248.414.9275
www.kriegerklatt.com

Client:
MF Focus Troy LLC
280 W. Maple Rd Suite 230
Birmingham, MI 48009

Project:
Forum Flats
295 Kirts Blvd
Troy, MI 48084

Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

STATE OF MICHIGAN
JASON P. KRIEGER
ARCHITECT
No. 53578
REGISTERED
LICENSED ARCHITECT

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:
Cover Sheet

Project Number:
21-123

Scale:

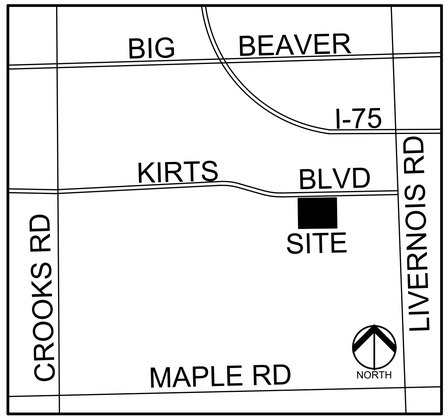
Sheet Number:
G.001

PRELIMINARY SITE - CONSTRUCTION PLANS

FORUM FLATS

TROY, MICHIGAN 48084

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL



LOCATION MAP
NO SCALE

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	TOPOGRAPHIC SURVEY
C-3.0	PRELIMINARY SITE PLAN
C-4.0	PRELIMINARY GRADING PLAN
C-6.0	PRELIMINARY UTILITY PLAN
C-9.0	NOTES AND DETAILS - 1
C-9.1	NOTES AND DETAILS - 2
L-1.0	PRELIMINARY LANDSCAPE PLAN
L-1.1	LANDSCAPE DETAILS
T-1.0	TREE PRESERVATION AND REMOVAL PLAN

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MICHIGAN 48009
CONTACT: JEFF BUCK
EMAIL: JBUCK@CYRESSPARTNERS.BIZ

CIVIL ENGINEER

PEA GROUP
2430 ROCHESTER COURT, STE. 100
TROY, MI 48083-1872
CONTACT: STEVEN A. SORENSEN, PE
PHONE: 844.813.2949
EMAIL: SSORENSEN@PEAGROUP.COM

ARCHITECT

KRIEGER KLATT
2120 EAAST ELEVEN MILE ROAD
ROYAL OAK, MI 48067
CONTACT: BRODRICK BROZOWSKI
PHONE: 248.414.9270
EMAIL: BRODRICK@KREIGERKLATT.COM

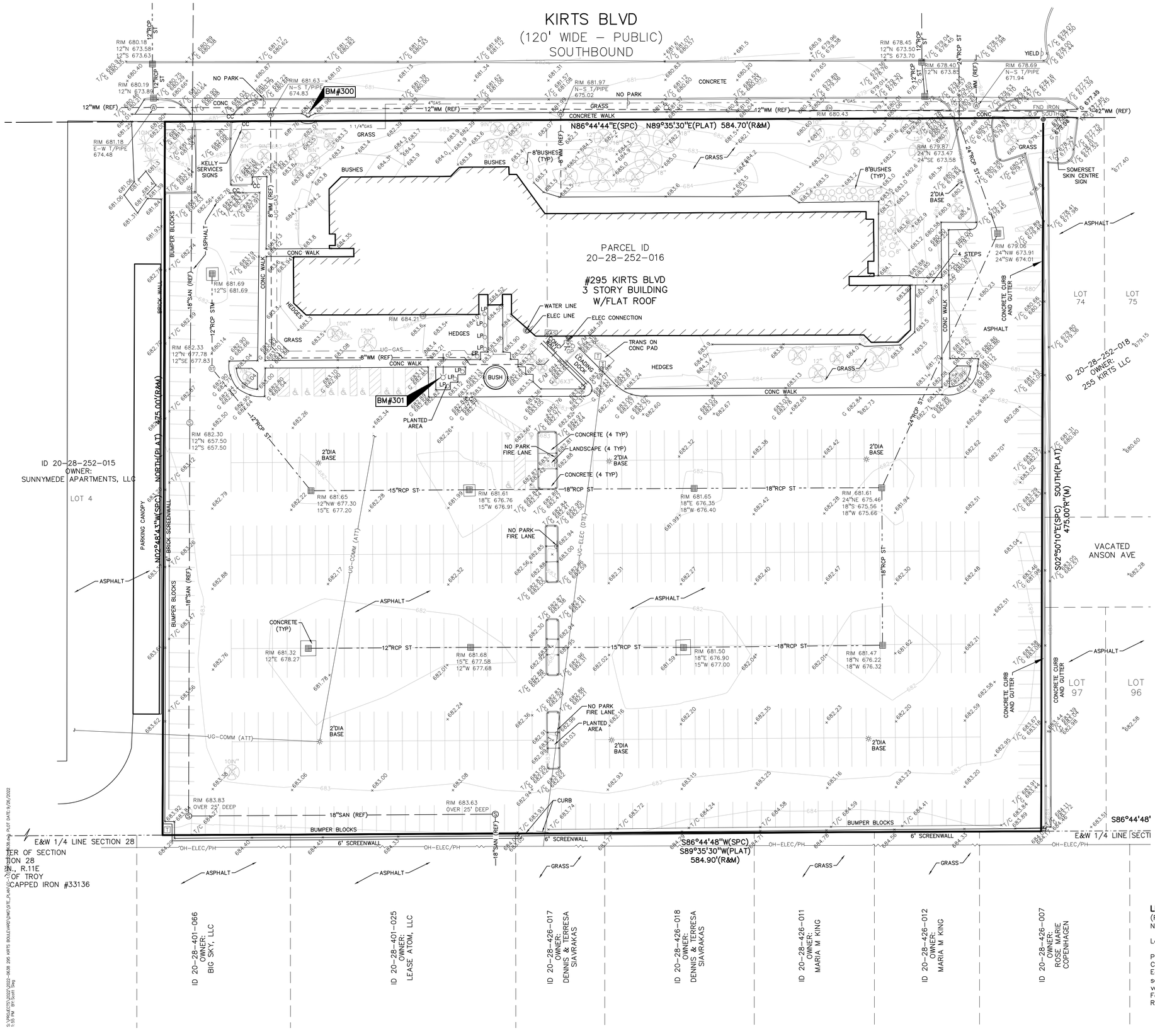
LANDSCAPE ARCHITECT

PEA GROUP
7927 NEMCO WAY, STE. 115
BRIGHTON, MI 48116
CONTACT: JANET EVANS, PLA
PHONE: 844.813.2949
EMAIL: JEVANS@PEAGROUP.COM

PEA GROUP

REVISIONS	
DESCRIPTION	DATE
ORIGINAL ISSUE DATE	9/12/2022
REV. PER AGENCY COMMENTS	9/26/2022

NOT FOR CONSTRUCTION



LEGEND:

- EX. OH. ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- EX. MAILBOX, SIGN & LIGHTPOLE
- EX. FENCE
- EX. GUARD RAIL
- EX. SPOT ELEVATION
- EX. CONTOUR
- EX. WETLAND

- IRON FOUND / SET
- NAIL FOUND / NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND / SET
- SECTION CORNER FOUND
- R M C — RECORDED / MEASURED / CALCULATED

REFERENCE DRAWINGS

WATER MAIN	CITY OF TROY, GIS ONLINE MAP, DATED 6-1-22
SANITARY SEWER	CITY OF TROY, GIS ONLINE MAP, DATED 6-1-22
STORM SEWER	CITY OF TROY, GIS ONLINE MAP, DATED 6-1-22
ELECTRIC	DTE ELECTRIC FACILITY MAP #316-386, DATED 6-13-22
TELEPHONE	ATT, TICKET 2022053102010 PROJECT, PG A1, DATED 6-6-22
GAS	CONSUMERS ENERGY QUARTER SECTION MAP #02-61-28-1, DATED 3-18-21 CONSUMERS ENERGY, GAS SERVICE EXTENSION, DATED 9-4-86
CATV	WOW CABLE, PREPARED BY DEAN McCOMBS, DATED 6-6-22
FLOOD PLAIN	FEMA F.I.R.M. MAP #26125C0627F

TOPOGRAPHIC AND BOUNDARY SURVEY DISCLAIMER:

TOPOGRAPHIC AND BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, EXISTING ELEVATIONS, EXISTING PHYSICAL FEATURES AND STRUCTURES WAS PROVIDED BY ABC COMPANY, INC.

PEA GROUP WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS/OMISSIONS RESULTING FROM SURVEY INACCURACIES.

FLOODPLAIN NOTE:

BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26125C0627F, DATED SEPTEMBER 29, 2006.

BENCHMARKS
(GPS DERIVED - NAVD88)

BM #300
ARROW ON HYDRANT, SOUTH SIDE OF KIRTS BLVD, ±50' NORTHWEST FROM THE NORTHWEST BUILDING CORNER.
ELEV. - 683.87

BM #301
ARROW ON HYDRANT.
ELEV. - 685.44

LEGAL DESCRIPTION
(Per First American Title Insurance Company Commitment No. NCS–1129116–MICH, Commitment Date March 11, 2022)

Land in the City of Troy, Oakland County, MI, described as follows:

Part of the Northeast 1/4 of Section 28, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan, more particularly described as East 8.12 feet of Lot 4, all of Lots 5 and 6, except North 35 feet of said Lots taken for Morse Avenue, (now Kirts Boulevard) also all of vacated Virgilia Avenue adjacent to Lots 5 and 6, Royal Ridge Little Farms, as recorded in Liber 21 of Plats, Page 17, Oakland County Records.

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN — JAMES — SCHULTZ — License No. 39605 — PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
TOPOGRAPHIC SURVEY

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-1.0

S:\PROJECTS\2022\2022-0638 295 KIRTS BOULEVARD\DWG\SITE_PLAN.dwg PLOT DATE: 9/26/2022 1:55 PM BY: Scott Swig

KIRTS BLVD
(120' WIDE – PUBLIC)
SOUTHBOUND

EXISTING FIRE HYDRANT
BM#300
EXISTING FIRE HYDRANT
N86°44'44"E(SPC) N89°35'30"E(PLAT) 584.70'(R&M)
TAPER CURB TO 0" HEIGHT AT SIDEWALK, TYP.
SIGN, TYP. REFER TO LEGEND ON THIS SHEET.
CONCRETE SIDEWALK, TYP. REFER TO DETAIL ON SHEET C-9.0
BEGIN PARKING AT SETBACK LINE
INTEGRAL CURB AND WALK, TYP. REFER TO DETAIL ON SHEET C-9.0
18" CONCRETE CURB AND GUTTER, TYP. REFER TO DETAIL ON SHEET C-9.0
2' VEHICLE OVERHANG. TYPICAL AT SPACES ADJACENT TO GREENBELT.
STANDARD DUTY ASPHALT PAVEMENT, TYP. REFER TO DETAIL ON SHEET C-9.0
PROVIDE 4" WHITE STRIPING FOR STANDARD PARKING SPACES, TYP.
PROPOSED 4' ORNAMENTAL DECORATIVE FENCE, TYP. REFER TO DETAIL ON SHEET C-9.1
AMENITIES
POOL/PATIO
PARCEL ID
20-28-252-016
#295 KIRTS BLVD
3 STORY BUILDING
W/FLAT ROOF
LOADING ZONE
SIGN, TYP. REFER TO LEGEND ON THIS SHEET.
BARRIER FREE PARKING SPACES AND SYMBOLS TO BE MARKED USING 4" BLUE STRIPING, TYP.
CONCRETE SIDEWALK, TYP. REFER TO DETAIL ON SHEET C-9.0
INDICATES NUMBER OF LAND BANKED PARKING SPACES, TYP.
LAND BACKED PARKING SPACES, TYP.
3 SPACES TO BE LOST FOR ADDITIONAL LAND BANKED PARKING
PROPOSED FIRE HYDRANT, TYP.
INTEGRAL CURB AND WALK, TYP. REFER TO DETAIL ON SHEET C-9.0
18" CONCRETE CURB AND GUTTER, TYP. REFER TO DETAIL ON SHEET C-9.0
5' WIDE MANGATE, TYP. REFER TO DETAIL ON SHEET C-9.1
SIDEWALK RAMP, TYP. REFER TO LEGEND THIS SHEET.
INDICATES NUMBER OF PARKING SPACES, TYP.
STANDARD DUTY ASPHALT PAVEMENT, TYP. REFER TO DETAIL ON SHEET C-9.0
PROPOSED FIRE HYDRANT, TYP.
4' HIGH CHAIN LINK FENCE, TYP. REFER TO DETAIL ON SHEET C-9.1
5' WIDE MANGATE, TYP. REFER TO DETAIL ON SHEET C-9.1
DOG RUN
3,100 SQ.FT.
6 SPACES TO BE LOST FOR ADDITIONAL LAND BANKED PARKING
LAND BACKED PARKING SPACES, TYP.
STEPPING STONES. REFER TO ARCH PLANS FOR DETAILS
PROPOSED BUILDING
16,958 SQ.FT.
F.F. 685.00
NOTE:
REFER TO ARCH. PLANS FOR EXACT BUILDING DIMENSIONS.
CONCRETE SIDEWALK, TYP. REFER TO DETAIL ON SHEET C-9.0
PROVIDE 4" WHITE STRIPING FOR STANDARD PARKING SPACES, TYP.
AMENITIES
INTEGRAL CURB AND WALK, TYP. REFER TO DETAIL ON SHEET C-9.0
6 SPACES TO BE LOST FOR ADDITIONAL LAND BANKED PARKING
NUMBER OF GARAGE SPACES (TYPICAL)
INDICATES NUMBER OF LAND BANKED PARKING SPACES, TYP.
PROPOSED CARPORT, TYP. REFER TO DETAIL ON SHEET C-9.1.
STANDARD DUTY ASPHALT PAVEMENT, TYP. REFER TO DETAIL ON SHEET C-9.0
18" CONCRETE CURB AND GUTTER, TYP. REFER TO DETAIL ON SHEET C-9.0
2' VEHICLE OVERHANG. TYPICAL AT SPACES ADJACENT TO GREENBELT.
PROVIDE THICKENED EDGE ASPHALT, TYP. REFER TO DETAIL ON SHEET C-9.0
DOUBLE DUMPSTER ENCLOSURE. REFER TO DETAIL ON SHEET C-9.1
PROPOSED CARPORT, TYP. REFER TO DETAIL ON SHEET C-9.1.
2' VEHICLE OVERHANG. TYPICAL AT SPACES ADJACENT TO GREENBELT.
PROPOSED CARPORT, TYP.REFER TO DETAIL ON SHEET C-9.1.
2' VEHICLE OVERHANG. TYPICAL AT SPACES ADJACENT TO GREENBELT.
STANDARD DUTY ASPHALT PAVEMENT, TYP. REFER TO DETAIL ON SHEET C-9.0
18" CONCRETE CURB AND GUTTER, TYP. REFER TO DETAIL ON SHEET C-9.0
2' VEHICLE OVERHANG. TYPICAL AT SPACES ADJACENT TO GREENBELT.
PROPOSED FIRE HYDRANT, TYP.
PROPOSED CARPORT, TYP.REFER TO DETAIL ON SHEET C-9.1.
LOT 4
LOT 74
LOT 75
LOT 97
LOT 96
N02°48'43"W(SPC) NORTH(PLAT) 475.00'(R&M)
S02°50'10"E(SPC) SOUTH(PLAT) 475.00'(M)
S86°44'48"W(SPC) S89°35'30"W(PLAT) 584.90'(R&M)
S86°44'48"W(SF
E&W 1/4 LINE SECTION 28
E&W 1/4 LINE SECTION 2
TER OF SECTION
TION 28
N., R.11E
OF TROY
CAPPED IRON #33136
FND

LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY / R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY / HEAVY DUTY / DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTI
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SITE DATA TABLE:

SITE AREA: 6.38 ACRES (277,777 SF.) NET AND GROSS

ZONING: BB - BIG BEAVER ROAD (FORM BASED)

PROPOSED USE: MULTI-FAMILY (66,492 SF)

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 55 FT.(4 STORIES)
PROPOSED BUILDING HEIGHT = 4 STORY

TOTAL BUILDING FOOTPRINT AREA = 66,492 SF.
BUILDING LOT COVERAGE = 23.94%

OPEN SPACE = 95,479 SF OR 34.37%

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
FRONT (NORTH)	10'	211.2'
SIDE (EAST)	NOT REQUIRED	87.55'
SIDE (WEST)	NOT REQUIRED	88.91'
REAR (SOUTH)	30'	56.14'

PARKING CALCULATIONS:
MULTI-FAMILY RESIDENTIAL = 1 SPACE PER EFFICIENCY DWELLING
2 SPACES PER EACH DWELLING UNIT

PROPOSED STUDIO DWELLINGS = 34 UNITS (34 PARKING SPACES)
PROPOSED 1-2 BR DWELLINGS = 166 UNITS (332 PARKING SPACES)

TOTAL PARKING REQUIRED = 34 + 332 = 366 SPACES

TOTAL PROPOSED PARKING SPACES:

SURFACE SPACES = 284 SPACES
GARAGE SPACES = 24 SPACES

TOTAL PROVIDED = 308 SPACES

PARKING RATIO: 308 SPACES/200 UNITS = 1.54 SPACES/UNIT

LAND BANKED SPACES PROVIDED = 73 SPACES (MINUS 15 SPACES LOST) = 58 TOTAL ADD.

TOTAL PROVIDED INCLUDING LAND BANKED =366 SPACES (INCLUDES 8 ADA SPACES)

SITE SOILS INFORMATION:
ACCORDING TO THE USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY FOR OAKLAND COUNTY, THE SITE CONSISTS OF THE FOLLOWING SOIL TYPES:

31B - METEA LOAMY SAND, 0 TO 6 PERCENT SLOPES
41B - AQUENTS, SANDY, LOAMY, UNDULATING
52A - SELFRIDGE LOAMY SAND, 0 TO 3 PERCENT SLOPES

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	Ⓡ
SIDEWALK RAMP 'TYPE P'	Ⓟ
CURB DROP ONLY	Ⓧ

REFER TO LATEST MDOT R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	1
'STOP' SIGN	2
'BARRIER FREE PARKING' SIGN	3
'VAN ACCESSIBLE' SIGN	4
'CROSSWALK' SIGN	5
'NO PARKING LOADING ZONE' SIGN	R

REFER TO DETAIL SHEET FOR SIGN DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JAMES B. BUTLER
License No. 39605
PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS

REV. PER AGENCY COMMENTS	9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
PRELIMINARY SITE PLANS

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-0638 295 KIRTS BOULEVARD\DWG\SITE_PLAN.dwg, 2.1" Pad, BY: Scott Sieg, PLOT DATE: 10/19/2022

KIRTS BLVD
(120' WIDE – PUBLIC)
SOUTHBOUND

N86°44'44"E(SPC) N89°35'30"E(PLAT) 584.70'(R&M)

PARCEL ID
20-28-252-016

#295 KIRTS BLVD
3 STORY BUILDING
W/FLAT ROOF

PROPOSED BUILDING
16,958 SQ.FT.
F.F. 685.00

PROPOSED BUILDING
16,958 SQ.FT.
F.F. 685.00

AMENITIES

POOL/PATIO

DOG RUN
3,100 SQ.FT.

AMENITIES

DETENTION BASIN

ID 20-28-252-015
OWNER:
SUNNYMEDE APARTMENTS, LLC
LOT 4

ID 20-28-252-018
OWNER:
255 KIRTS LLC

LOT 74

LOT 75

LOT 97

LOT 96

VACATED
ANSON AVE

N02°48'43"W(SPC) NORTH(PLAT) 475.00'(R&M)

S02°50'10"E(SPC) SOUTH(PLAT) 475.00'R"(M)

S86°44'48"

S86°44'48"W(SPC)
S89°35'30"W(PLAT)
584.90'(R&M)

E&W 1/4 LINE SECTION 28

E&W 1/4 LINE SECTI

TER OF SECTION
TION 28
N., R.11E
OF TROY
CAPPED IRON #33136

'ARKING LOT

ID 20-28-401-066
OWNER:
BIG SKY, LLC

ID 20-28-401-025
OWNER:
LEASE ATOM, LLC

ID 20-28-426-017
OWNER:
DENNIS & TERRESA
SIAVRAKAS

ID 20-28-426-018
OWNER:
DENNIS & TERRESA
SIAVRAKAS

ID 20-28-426-011
OWNER:
MARIA M KING

ID 20-28-426-012
OWNER:
MARIA M KING

ID 20-28-426-007
OWNER:
ROSE MARIE
COPENHAGEN

GRADING LEGEND:

- EXISTING SPOT ELEVATION
- 622.50 — PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
- 670 — EXISTING CONTOUR
- 922 — PROPOSED CONTOUR
- PROPOSED REVERSE GUTTER PAN
- PROPOSED RIDGE LINE
- PROPOSED SWALE/DITCH

ABBREVIATIONS

T/C = TOP OF CURB	G = GUTTER GRADE
T/P = TOP OF PAVEMENT	F.G. = FINISH GRADE
T/S = TOP OF SIDEWALK	R/M = RIM ELEVATION
T/W = TOP OF WALL	B/W = BOTTOM OF WAL

REFER TO GRADING NOTES ON SHEET C-9.0

RETAINING WALL NOTE:

TOP OF WALL (T/W) AND BOTTOM OF WALL (B/W) GRADES ARE THE FINISH GRADE AT THE TOP AND BOTTOM OF THE RETAINING WALL, NOT ACTUAL TOP AND BOTTOM OF THE WALL STRUCTURE.

EARTHWORK BALANCING NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

BENCHMARKS
(GPS DERIVED - NAVD88)

BM #300
ARROW ON HYDRANT, SOUTH SIDE OF KIRTS BLVD, ±50' NORTHWEST FROM THE NORTHWEST BUILDING CORNER.
ELEV. - 683.87

BM #301
ARROW ON HYDRANT.
ELEV. - 685.44

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NORTH

0 15 30 60
SCALE: 1" = 30'

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280 WEST MAPLE RD, STE 230
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PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

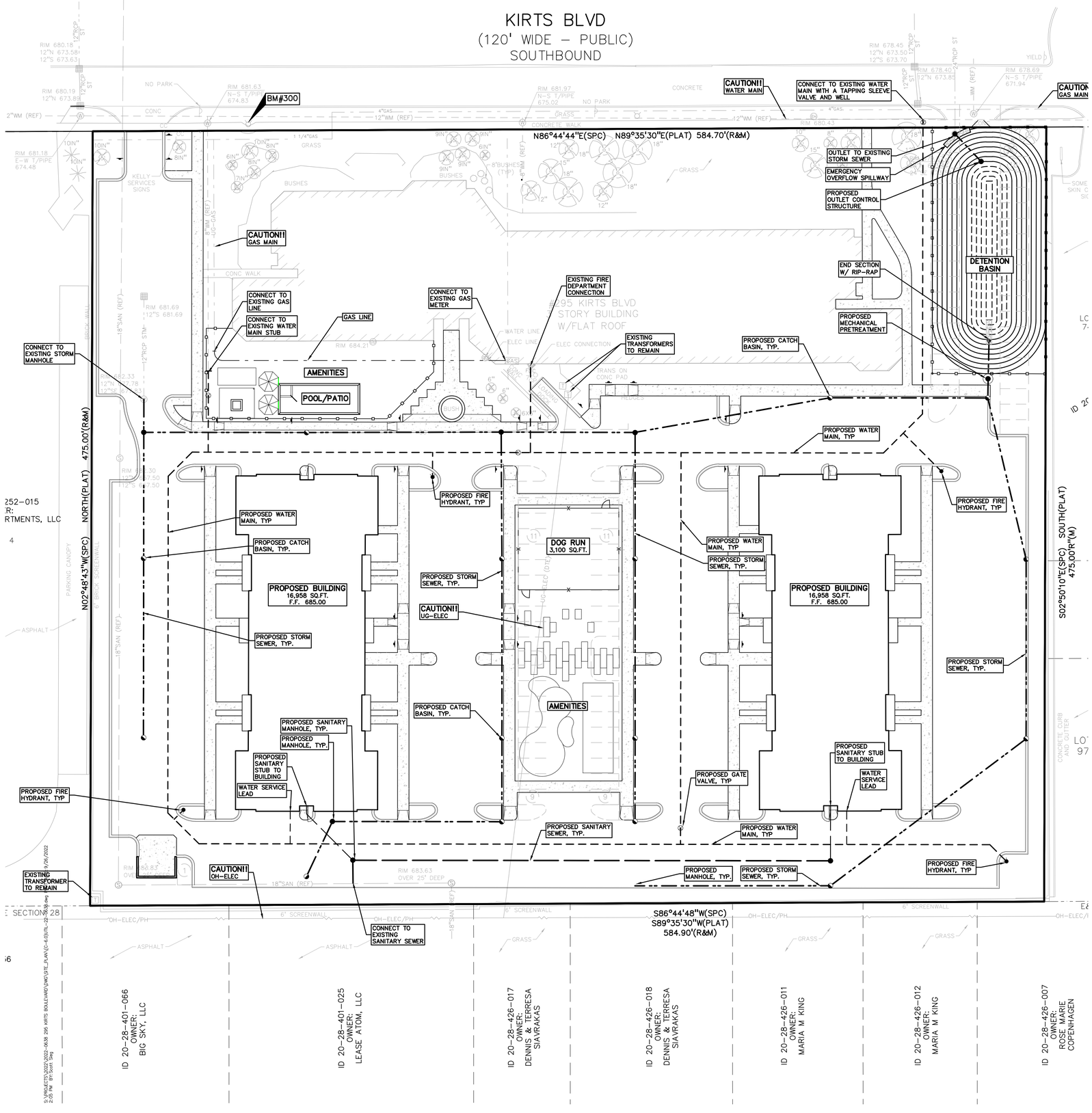
ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
PRELIMINARY GRADING PLAN

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-4.0

NOT FOR CONSTRUCTION



Site Drainage Data				
Select County:	Oakland			
Existing				
Natural Greenspace area:	0.00	acre	C =	0.25
Select NCRS Soil type:	C			
Improved Greenspace area:	1.08	acre	C =	0.25
Select NCRS Soil type:	C			
Wooded Area:	0.00	acre	C =	0.25
Select NCRS Soil type:	C			
Impervious Area:	5.30	acre	C =	0.95
Greenbelt Area:	1.08	acre	C =	0.25
Total Area (A):	6.38	acre		
Weighted Coefficient of Runoff (C):		0.83		
Proposed				
Natural Greenspace area:	0.00	acre	C =	0.25
Select NCRS Soil type:	C			
Improved Greenspace area:	1.98	acre	C =	0.25
Select NCRS Soil type:	C			
Wooded Area:		acre	C =	0.25
Select NCRS Soil type:	C			
Impervious Area:	4.40	acre	C =	0.95
Greenbelt Area:	1.98	acre	C =	0.25
Total Area (A):	6.38	acre		
Weighted Coefficient of Runoff (C):		0.73		
Rainfall Intensity				
Flood Control Time of Concentration, Tc =	28.00	min		

Rainfall Intensity		
Time of Concentration (T_C)	28.00	min
Since 15<Tc<60, use intensity equation		
I1 = 30.2 /[(T + 9.17)^.81]	1.61	in/hr
I10 = 60 / [(T + 9.17)^.81]	3.21	in/hr
I100 = 83.3/[(T + 9.17)^.81]	4.45	in/hr
CPVC: Channel Protection Volume Control Volume		
Vcpvc = (4719)CA	21,978	cf
CPRC: Channel Protection Rate Control Volume: Extended Detention		
VED= (6897)CA	32,122	cf
CPRC Allowable Outlet Rate		
$Q_{VED} = V_{ED} / (48*60*60)$	0.19	cfs
Water Quality Control		
Forebay Volume = (545)CA	2,538	cf
Forebay Release Rate: QVF = VF/(48*60*60)	0.015	cfs
100-Year Allowable Outlet Rate		
Since 2<A<100, Qvrr = 1.1055-0.206xln(A)		
Q_{VRR} =	0.72	cfs/ac
100-Year Peak Allowable Discharge		
$Q_{100P} = Q_{VRR}(A)$	4.62	cfs
100-Year Runoff Volume		
V100R = (18,985)CA	88,421	cf
100-Year Peak Inflow		
$Q_{100IN} = C(I_{100})A$	20.73	cfs
Storage Curve Factor (Vs/Vr)		
R = 0.206-0.15 x ln(Q100P/Q100IN)	0.431	
100-Year Storage Volume		
Vs = R(V100R)	38,109	cf
No infiltration will be provided, so no CPVC deduction is taken.		
V100 = Vs	38,109	cf
V_{flood} must be larger or equal to V_{ED} :		
Is V_{100} >= V_{ED} ?	Yes	
V_{flood} =	38,109	cf

Design Requirements for	WQU 3	
Weighted Runoff Coefficient (C) =	0.73	
WQU Tributary Area (A) =	6.38	
WQU Time of Concentration (T_C) =	34.50	min
(from Storm Sewer Calculations)		
Mechanical Separator Sizing		
I1 = 30.2 /[(T + 9.17)^.81]	1.42	in/hr
I10 = 60 / [(T + 9.17)^.81]	2.82	in/hr
Treatment Flow Rate		
$Q_{WQ} = C(I_1)A$	6.61	cfs
Bypass Flow Rate		
10 Year Peak Inflow: Q_{10IN} =	13.13	cfs
Select Unit:	CS-8	
Selected Unit Treatment Flow Rate:	7.20	cfs
Selected Unit Bypass Flow Rate:	call Contech	cfs

UTILITY LEGEND:

- EX. OH. ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- PROPOSED WATER MAIN
- PROPOSED HYDRANT AND GATE VALVE
- PROPOSED TAPPING SLEEVE, VALVE & WELL
- PROPOSED POST INDICATOR VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY CLEANOUT & MANHOLE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER CLEANOUT & MANHOLE
- PROPOSED CATCH BASIN, INLET & YARD DRAIN

Design Requirements			
CPVC Storage Volume: V_{CPVR} =	NA	cf	
CPVC Storage Outflow Rate: Q_{CPVR} =	NA	cfs	
CPRC Extended Detention: V_{ED} =	32,122	cf	
CPRC Allowable Outlet Rate: Q_{VED} =	0.19	cfs	
100-Year Storage Volume, V_{100D} =	38,109	cf	
100-Year Allowable Outlet Rate: Q_{VRR} =	0.72	cfs	
100 Year Peak Inflow: Q_{100IN} =	20.73	cfs	

Detention Basin			
CPRC Storage Elevation:	678.88	32,122	cf
100-yr Storage Elevation:	679.56	38,109	cf

Elev. (ft)	Area (sf)	Vol. (cf)	Total Vol. (cf)
673.00	2,887	0	0
674.00	3,674	3,281	3,281
675.00	4,517	4,096	7,376
676.00	5,416	4,967	12,343
677.00	6,373	5,895	18,237
678.00	7,386	6,880	25,117
679.00	8,455	7,921	33,037
680.00	9,581	9,018	42,055

Bottom Elevation of Pond: 669.00

Detention Basin Outlet Control Structure		
CPRC Volume	32,122	cf
Q_{VED} Release Rate:	0.19	cfs
Detention Outlet Elevation:	673.00	
V_{ED} Storage Elevation:	678.88	
Avg. Head over Orifice (Hw):	2.94	ft
Area of Orifice (A):	0.0218	sf
A=Q_{ED}/(0.62*SQRT(2*g*Hw)		
Outlet Hole Diameter:	2	in
Restriction Hole Area:	0.0218	sft
Number of Restriction Holes:	1	
Total Restriction Hole Area:	0.0218	sft
Actual Discharge (Q)	0.186	cfs
Q = 0.62 * A * (2 * G * Hw)^0.5		
Drain Time:	47.95	hrs
Allowable Pump Flow Rate:	0.19	cfs
100-year Volume	38,109	cf
Q_{VRR} Release Rate:	0.72	cfs
V_{100D} Storage Elevation:	679.56	
Flow through Q_{CPVR} Orifice at this head:	0.28	cfs
Q_{VED} Allowed:	0.45	cfs
Avg. Head over Q_{VED} Orifice:	0.34	ft
Area of Orifice (A):	0.1539	sf
A=Q_{ED}/(0.62*SQRT(2*g*Hw)		
Outlet Hole Diameter:	5.25	in
Restriction Hole Area:	0.1503	sft
Number of Restriction Holes:	1	
Total Restriction Hole Area:	0.1503	sft
Actual Discharge (Q)	0.44	cfs
Q = 0.62 * A * (2 * G * Hw)^0.5		
Drain Time:	14.84	hrs
Allowable Pump Flow Rate:	0.72	cfs

Emergency Overflow Spillway		
Required Flow Capacity, Q_{100IN} =	20.73	cfs
Depth of Water over Spillway (H):	0.50	ft
Width of Spillway (W):	18	ft
Actual Capacity:	21.43	cfs
Uses Cipoletti Weir Equation (Q=3.367 * W* H^3/2)		

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN · JAMES P. BURTON · License No. 39605 · PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE NOT GUARANTEED TO BE ACCURATE OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

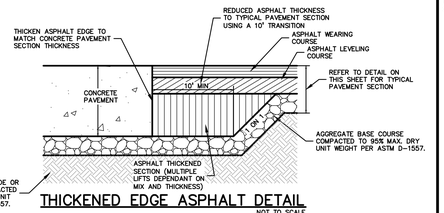
ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
PRELIMINARY UTILITY PLAN

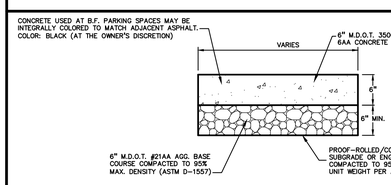
PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-6.0

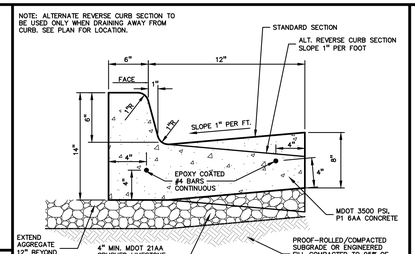
NOT FOR CONSTRUCTION



THICKENED EDGE ASPHALT DETAIL
NOT TO SCALE

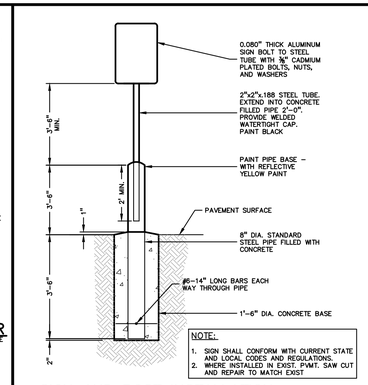


DET 9 BARRIER FREE PARKING SPACE ALTERNATE CONCRETE PAVEMENT DETAIL
NOT TO SCALE



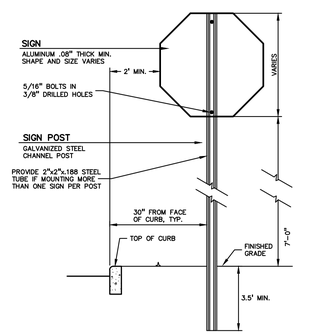
NOTE:
PROVIDE CONTROL JOINTS IN CURB AT 10' O.C. PROVIDE EXPANSION JOINT AND JOINT SEALANT AT END OF RADIUS RETURNS PER MDOT AND ACA STANDARDS. PROVIDE EXPANSION JOINTS AND JOINT SEALANT WHERE CURBS ABUT STRUCTURES.

18"x6" STANDARD CONCRETE CURB AND GUTTER
NOT TO SCALE

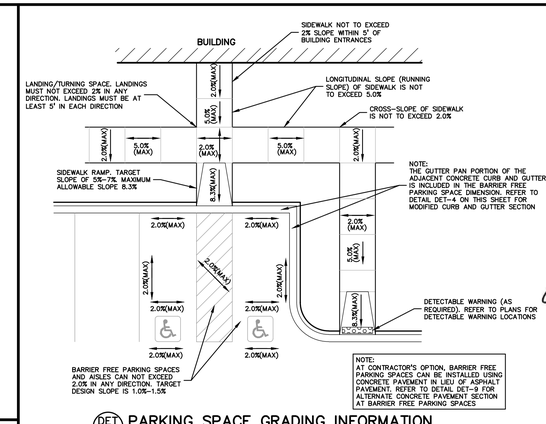


NOTE:
1. SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.
2. WHERE INSTALLED IN EXIST. PVMT. SAW CUT AND REPAIR TO MATCH EXIST

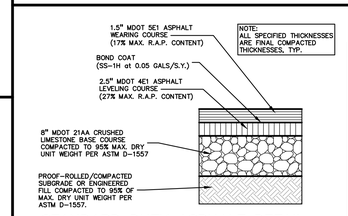
SIGN AND POST INSTALLATION IN PAVED AREAS
NOT TO SCALE



SIGN AND POST INSTALLATION IN LANDSCAPED AREAS
NOT TO SCALE



DET 10 PARKING SPACE GRADING INFORMATION
NOT TO SCALE

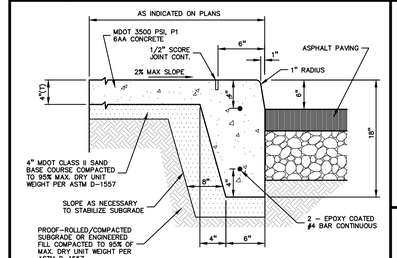


NOTE:
ALL SPECIFIED THICKNESSES ARE FINAL COMPACTED THICKNESSES, TYP.

STANDARD DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE

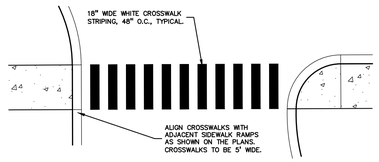
AGGREGATE BASE NOTE:
THIS PAVEMENT SECTION DESIGN ASSUMES THE USE OF MDOT 21AA CRUSHED LIMESTONE BASE MATERIAL THAT MEETS THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION SECTION 902 FOR AGGREGATES. IF CRUSHED CONCRETE AGGREGATE BASE IS PROPOSED IN LIEU OF THE SPECIFIED CRUSHED LIMESTONE MATERIAL, PEA GROUP WILL REQUIRE A MINIMUM 25% INCREASE IN BASE THICKNESS. HOWEVER, IF TESTING DOCUMENTATION IS PROVIDED TO PEA GROUP THAT SHOWS THAT THE CRUSHED CONCRETE MATERIAL MEETS ALL REQUIREMENTS OF MDOT SPECIFICATION SECTION 902, THEN THE 25% INCREASE IN THICKNESS MAY BE REEVALUATED.

ASPHALT MATERIAL NOTES:
HOT-MIX ASPHALT MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) MUST MEET MDOT SPECIAL PROVISION 12SP501(E). THE BINDER GRADE FOR THIS WORK IS PG64-28. IF ASPHALT MIXES CONTAINING RAP ARE TO BE SUPPLIED FOR THIS PROJECT, THE ASPHALT BINDER MUST BE REVISED PER MDOT "TIER 1" OR "TIER 2" REQUIREMENTS (RAP CONTENT UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT ACCEPTABLE ON THIS PROJECT. AN ASPHALT MIX DESIGN FOR ALL SPECIFIED MIXES SHOULD BE FORWARDED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION



CONTRACTION JOINTS TO BE 1/4 DEEP. SPACED AT INTERVALS TO MATCH SIDEWALK WIDTH (SAWCUT). 1/2-INCH PRE-MOLDED FILLER EXPANSION JOINTS WITH JOINT SEALANT SHALL BE PLACED ONLY WHERE SIDEWALK ABUTS A STRUCTURE.

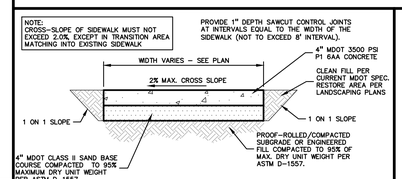
INTEGRAL CURB AND SIDEWALK
NOT TO SCALE



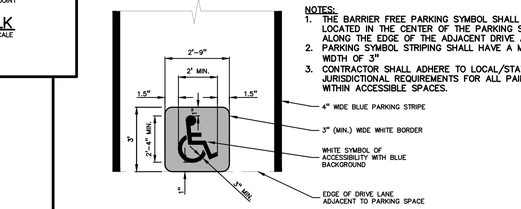
STRIPED CROSSWALK DETAIL
NOT TO SCALE

NOTE:
CROSS-SLOPE OF SIDEWALK MUST NOT EXCEED 2.0% EXCEPT IN TRANSITION AREA MATCHING INTO EXISTING SIDEWALK

PROVIDE 1" DEPTH SAWCUT CONTROL JOINTS AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK (NOT TO EXCEED 8' INTERVAL).



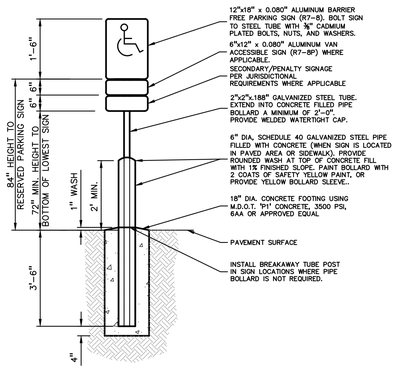
CONCRETE SIDEWALK
NOT TO SCALE



NOTES:
1. THE BARRIER FREE PARKING SYMBOL SHALL BE LOCATED IN THE CENTER OF THE PARKING SPACE AND ALONG THE EDGE OF THE ADJACENT DRIVE AISLE, TYP.
2. PARKING SYMBOL STRIPING SHALL HAVE A MINIMUM WIDTH OF 3"
3. CONTRACTOR SHALL ADHERE TO LOCAL/STATE JURISDICTIONAL REQUIREMENTS FOR ALL PAINTING WITHIN ACCESSIBLE SPACES.

DET 7 BARRIER FREE PARKING SYMBOL DETAIL (INTERNATIONAL SYMBOL OF ACCESSIBILITY)
NOT TO SCALE

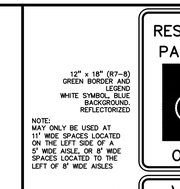
BARRIER FREE SIGN NOTES:
1. ONE SIGN IS REQUIRED AT EACH BARRIER FREE PARKING SPACE.
2. ALL SIGNS SHALL COMPLY WITH THE LATEST STANDARDS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
3. WHEN TWO BARRIER FREE PARKING SPACES ARE ADJACENT AND FACING EACH OTHER, TWO SIGNS ARE REQUIRED, BUT CAN BE MOUNTED ON THE SAME POST.
4. SIGN POSTS SHALL BE 2" NOM. SQUARE 14-GAUGE GALVANIZED STEEL TUBE WITH 7/16" HOLES AT 1" CENTERS. POSTS SHALL TELESCOPE INSIDE ANCHOR POSTS A MINIMUM OF 12".
5. ANCHOR POSTS SHALL BE 2.25" NOM. SQUARE 12-GAUGE GALVANIZED STEEL POST, A MINIMUM OF 3 FEET LONG.
6. IF THESE NOTES AND DETAILS CONFLICT WITH LOCAL CODES AND ORDINANCES, THE STRICTER REQUIREMENT SHOULD BE USED.
7. ALTERNATE MATERIALS MAY BE USED IF IN COMPLIANCE WITH A.D.A. GUIDELINES AND LOCAL REQUIREMENTS.



DET 1 BARRIER FREE SIGN AND POST DETAIL
NOT TO SCALE

12" x 18" (R7-8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

DET 2 BARRIER FREE PARKING SIGN DETAIL
NOT TO SCALE

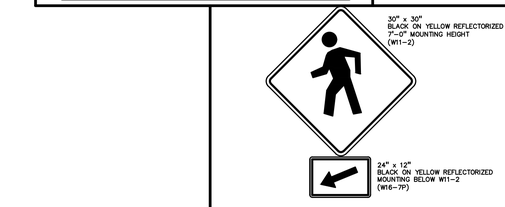


12" x 18" (R7-8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

NOTE:
MAY ONLY BE USED AT 11' WIDE SPACES LOCATED ON THE LEFT SIDE OF A 5' WIDE AISLE, OR 8' WIDE SPACES LOCATED TO THE LEFT OF 8' WIDE AISLES

6" x 12" (R7-8P) GREEN BORDER AND LEGEND REFLECTORIZED

DET 3 VAN ACCESSIBLE PARKING SIGN DETAIL
NOT TO SCALE

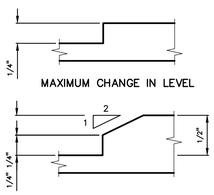


CROSSWALK SIGN DETAIL
NOT TO SCALE

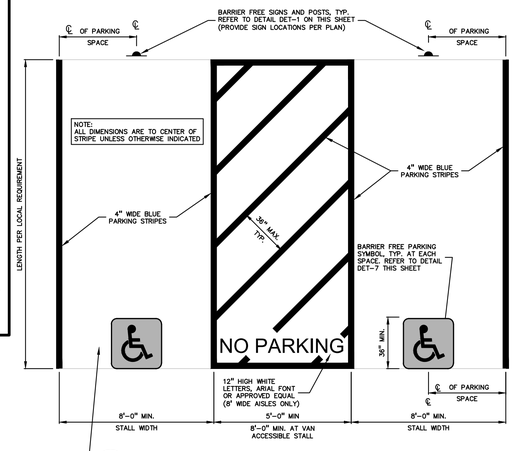
STOP SIGN DETAIL
NOT TO SCALE

FIRE LANE SIGNS: APPROVED "NO PARKING FIRE LANE" SIGN MUST BE INSTALLED AND MAINTAINED IN COMPLIANCE WITH THE CRITERIA SET FORTH IN THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SOME OF THE CRITERIA IS AS FOLLOWS: (TROY CITY CODE CHAPTER 106)
- SIGN SHALL BE RED LETTERING ON WHITE BACKGROUND AND SHALL READ, "FIRE LANE, NO PARKING, NO STOPPING, NO STANDING, TOW AWAY ZONE"
- SIGNS SHALL BE SPACED NO FURTHER THAN 100 FEET APART.
- SIGNS SHALL BE INSTALLED AT A RIGHT ANGLE 90° TO CURB
- SIGN SHALL BE SEVEN (7) FEET FROM THE BOTTOM OF SIGN TO GRADE
- SIGNS SHALL BE DOUBLE FACED WHERE THE POSSIBILITY EXIST FOR LEFT WHEEL TO CURB PARKING.
- SIGNS SHALL BE 12 INCES IN WIDTH AND 18 INCHES IN HEIGHT.

CITY OF TROY FIRE LANE SIGN DETAIL
NOT TO SCALE



DET 8 BARRIER FREE SURFACE CHANGE IN LEVEL TOLERANCE
NOT TO SCALE



DET 6 ALTERNATE BARRIER FREE PARKING STALL DETAIL
NOT TO SCALE

GENERAL BARRIER FREE NOTES:

THE FOLLOWING NOTES PROVIDE AN OUTLINE OF SOME OF THE REQUIREMENTS CONTAINED WITHIN THE "STANDARDS FOR ACCESSIBLE DESIGN – AMERICANS WITH DISABILITIES ACT 2010", AND "ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES", ICC/ANSI A117.1–2009. THE CONTRACTOR IS RESPONSIBLE FOR ALL OF THE REQUIREMENTS PRESENTED WITHIN THESE DOCUMENTS, WHICH ARE AVAILABLE IN FULL UPON REQUEST.

1. AN ACCESSIBLE ROUTE CONSISTS OF WALK SURFACES, CURB RAMPS AND RAMPS. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES, ACCESSIBLE PASSENGER LOADING ZONES, PUBLIC STREETS AND SIDEWALKS, AND PUBLIC TRANSPORTATION STOPS TO THE BUILDING OR FACILITY ENTRANCE THEY SERVE.
2. THE RUNNING SLOPE OF ALL WALKING SURFACES SHALL NOT EXCEED 5% (1:20) AND THE CROSS-SLOPE SHALL NOT EXCEED 2% (1:48).
3. WALKING SURFACES MUST BE LEVEL WITH PERMITTED VERTICAL CHANGES IN LEVEL NOT TO EXCEED 1/4", OR BEVELED CHANGES IN LEVEL NOT TO EXCEED 1/2". REFER TO DETAIL DET–8 THIS SHEET. ANY CHANGE IN LEVEL GREATER THAN 1/2" MUST BE RAMPED.
4. TURNING SPACES ALONG ACCESSIBLE ROUTES MUST BE AT LEAST 5 FEET WIDE IN ALL DIRECTIONS AND NOT EXCEED 2% SLOPE (1:48) IN ANY DIRECTION.
5. ACCESSIBLE ROUTES WILL BE DESIGNED TO BE A MINIMUM OF 5 FEET WIDE. THE MINIMUM CLEAR WIDTH IS 3 FEET.
6. RAMPS ALONG ACCESSIBLE ROUTES WILL HAVE A RUNNING SLOPE GREATER THAN 5% (1:20) AND LESS THAN 8.3% (1:12).
7. THE CROSS–SLOPE OF RAMP RUNS SHALL NOT EXCEED 2% (1:48)
8. THE MINIMUM CLEAR WIDTH OF ANY RAMP IS 36 INCHES.
9. THE MAXIMUM RISE FOR ANY RAMP (NOT INCLUDING CURB RAMPS) SHALL NOT EXCEED 30 INCHES. LANDINGS ARE REQUIRED AT THE TOP AND BOTTOM OF EACH RAMP. LANDINGS SHALL HAVE A CROSS–SLOPE NOT EXCEEDING 2% (1:48), SHALL BE 5 FEET LONG AND AT LEAST AS WIDE AS THE RAMP CLEAR WIDTH. IF THERE IS A CHANGE OF DIRECTION AT A LANDING, THEN THE LANDING MUST BE AT LEAST 5 FEET WIDE AND 5 FEET LONG.
10. HANDRAILS ARE REQUIRED FOR ANY RAMP (NOT INCLUDING CURB RAMPS) WITH A RISE GREATER THAN 6 INCHES. ALL HANDRAILS ARE REQUIRED TO HAVE EDGE PROTECTION UNLESS ADJOINING ANOTHER ACCESS POINT OR IF THE VERTICAL DROP–OFF AT THE EDGE OF THE RAMP DOES NOT EXCEED 1/2" IN 10 FEET. EDGE PROTECTION CAN BE PROVIDED BY MEANS OF A 4" MIN. CURB OR BARRIER.
11. CURB RAMPS ALONG ACCESSIBLE ROUTES SHALL NOT RISE MORE THAN 6 INCHES, NOR BE STEEPER THAN 8.3% (1:12). APPROACHING SLOPES TO THE RAMP CANNOT EXCEED 5%, WHICH INCLUDES SIDEWALKS, PAVEMENT, GUTTERS ETC.
12. IF CURB RAMP SIDES ARE FLARED, THE FLARES SHALL NOT BE STEEPER THAN 10% (1:10).
13. LANDINGS ARE REQUIRED AT THE TOP OF ALL CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE A MINIMUM OF 36" AND WILL BE AS WIDE AS THE CURB RAMP.
14. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.
15. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS.
16. WHERE DETECTABLE WARNING IS REQUIRED AT CURB RAMPS, THE DETECTABLE WARNING SHALL BE 24" MINIMUM IN DEPTH AND SHALL EXTEND THE FULL WIDTH OF THE RAMP. THE DETECTABLE WARNING SHALL BE LOCATED SO THE EDGE NEAREST THE CURB IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE.
17. ACCESSIBLE PARKING SPACES ON SITE SHALL BE PROVIDED AS REQUIRED IN SECTION 502 OF THE A.D.A. IF THE SITE HAS MORE THAN ONE PARKING *FACILITY*, EACH *FACILITY* IS REQUIRED TO MEET THESE REQUIREMENTS SEPARATELY. THE REQUIRED NUMBER OF SPACES SHALL BE BASED ON THE TOTAL NUMBER OF PARKING SPACES IN EACH PARKING FACILITY ON SITE.
18. FOR EVERY SIX OR FRACTION OF SIX ACCESSIBLE PARKING SPACES, ONE VAN ACCESSIBLE SPACE SHALL BE PROVIDED.
19. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE FROM PARKING TO A BUILDING ENTRANCE. IF THERE IS MORE THAN ONE ACCESSIBLE ENTRANCE, PARKING SHALL BE DISPERSED ALONG THE SHORTEST ACCESSIBLE ROUTE TO THE ACCESSIBLE ENTRANCES.
20. BARRIER FREE CAR PARKING SPACES SHALL BE A MINIMUM OF 8 FEET WIDE WITH AN ACCESS AISLE 5 FEET WIDE MINIMUM. VAN ACCESSIBLE PARKING SPACES SHALL BE AT LEAST 11 FEET WIDE WITH A 5' WIDE ACCESS AISLE. VAN ACCESSIBLE SPACES ARE ALSO ACCEPTABLE WITH AN 8 FOOT WIDTH AND 8 FOOT WIDE ACCESS AISLE. THE ACCESS AISLE IN ALL CASES MUST EXTEND THE FULL LENGTH OF THE PARKING SPACE.
21. SURFACE SLOPES WITHIN THE PARKING SPACES AND AISLES SHALL NOT EXCEED 2% (1:48)
22. ACCESSIBLE AREAS INCLUDING PARKING SPACES, AISLES AND PATHWAYS, REQUIRE A MINIMUM VERTICAL CLEARANCE OF 98 INCHES.
23. ACCESSIBLE PARKING SPACES ARE REQUIRED TO BE IDENTIFIED BY SIGNS. THE SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. VAN PARKING SPACES ARE REQUIRED TO BE DESIGNATED AS "VAN ACCESSIBLE". REFER TO DETAILS ON THIS SHEET.
24. ACCESSIBLE STAIRS SHALL HAVE A UNIFORM RISER HEIGHT AND UNIFORM TREAD DEPTH. RISERS SHALL BE 4 INCHES MINIMUM AND 7 INCHES MAXIMUM. TREADS SHALL BE AT LEAST 11 INCHES IN DEPTH. OPEN RISERS ARE NOT PERMITTED.

S:\PROJECTS\2022\2022-0638 205 WITS BOULEVARD\CIVIL\SITE_PLAN\C-9.0DETAILS-22-0638.dwg PLOT DATE: 9/29/2022 1:56 PM SWS

PEA GROUP
t: 844.813.2949
www.peagroup.com
STATE OF MICHIGAN JAMES P. BUTLER License No. 39605 PROFESSIONAL ENGINEER

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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

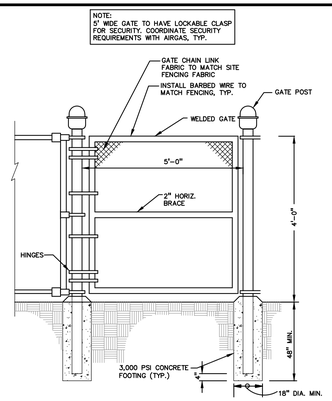
ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
NOTES AND DETAILS - 1

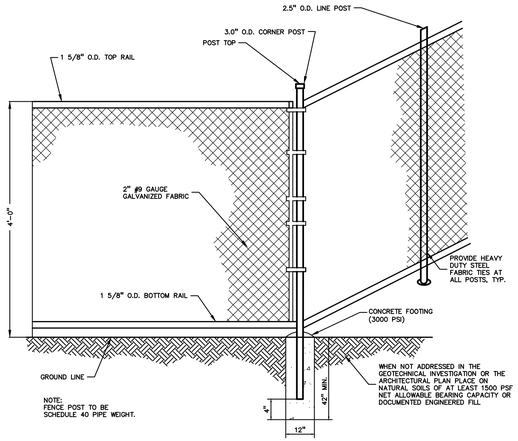
PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-9.0

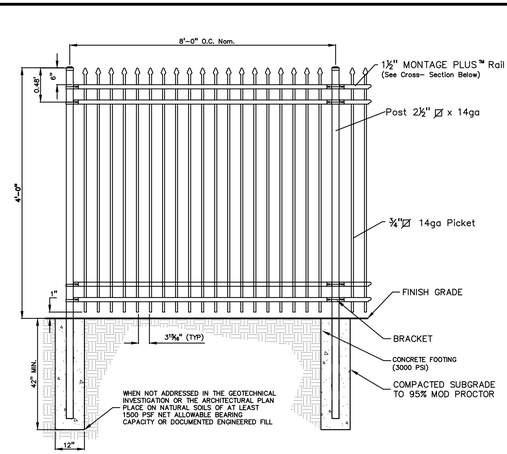
NOT FOR CONSTRUCTION



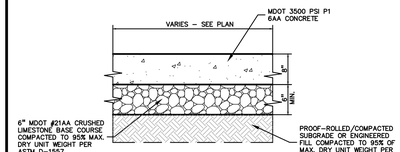
5' WIDE CHAIN LINK ACCESS GATE
NOT TO SCALE



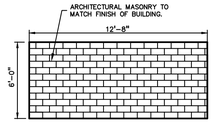
CHAIN LINK FENCE DETAIL
NOT TO SCALE



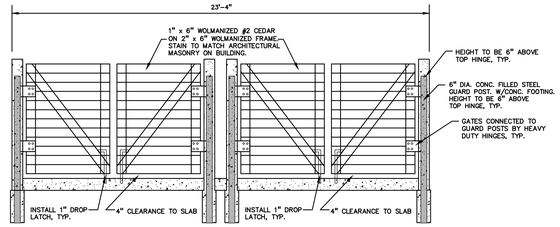
ORNAMENTAL FENCE DETAIL
NOT TO SCALE



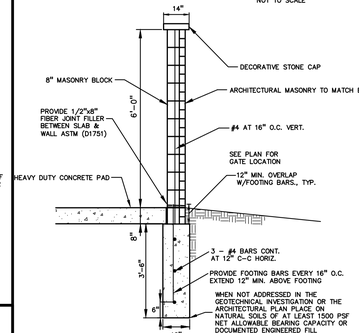
HEAVY DUTY CONCRETE PAD DETAIL
NOT TO SCALE



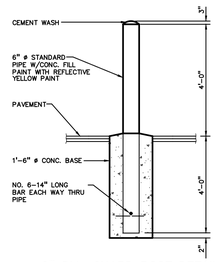
SIDE ELEVATION
NOT TO SCALE



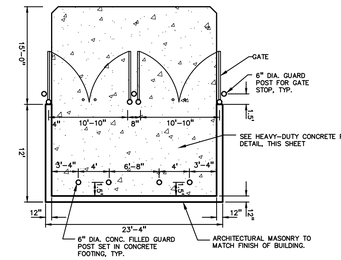
FRONT ELEVATION
NOT TO SCALE



DUMPSTER ENCLOSURE WALL CROSS SECTION
NOT TO SCALE

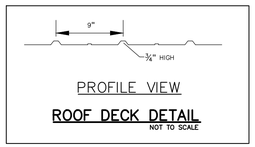


6" DIA. GUARD POST DETAIL
NOT TO SCALE

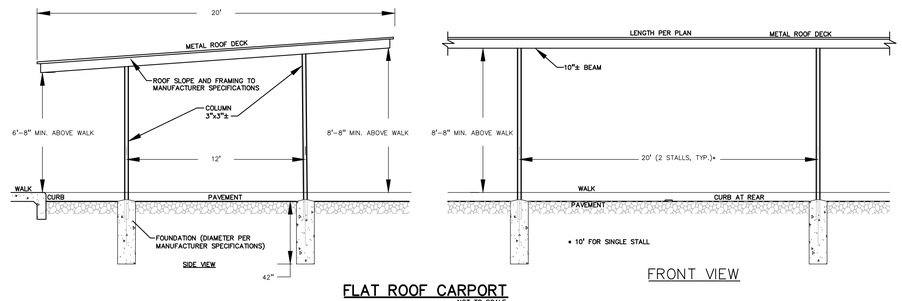


DOUBLE DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

DOUBLE TRASH ENCLOSURE DETAILS
NOT TO SCALE



ROOF DECK DETAIL
NOT TO SCALE



FLAT ROOF CARPORT
NOT TO SCALE

PEA GROUP
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STATE OF MICHIGAN
JAMES P. BURTON
License No. 6201039605
PROFESSIONAL ENGINEER

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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

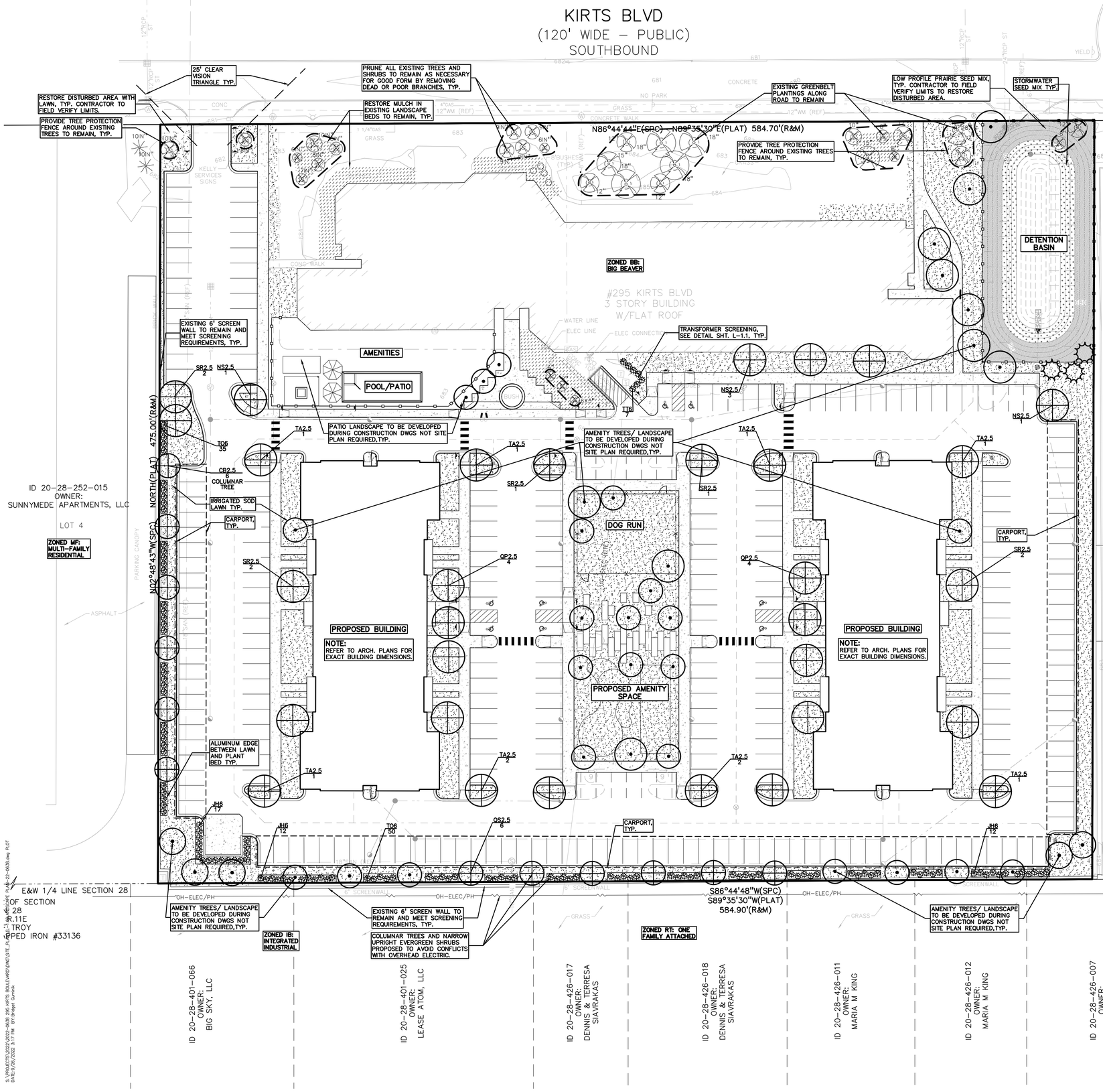
DRAWING TITLE
NOTES AND DETAILS - 2

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-9.1

NOT FOR CONSTRUCTION

KIRTS BLVD
(120' WIDE – PUBLIC)
SOUTHBOUND



KEY:

- = PARKING LOT TREES
- = ADDITIONAL BUFFER AMENITY TREES NOT SITE PLAN REQUIRED
- = EXISTING TREE TO REMAIN WITH TREE PROTECTION FENCING
- =NARROW/UPRIGHT EVERGREEN
- = RESTORE MULCH BED
- = IRRIGATED SOD LAWN, TYP.
- = RESTORE DISTURBED LAWN, TYP.
- = LOW PROFILE PRAIRIE SEED MIX
- = STORMWATER SEED MIX

LANDSCAPE CALCULATIONS:

PER CITY OF TROY ZONING ORDINANCE; BB–BIG BEAVER FORMED BASE DISTRICT, SITE TYPE B, ROAD TYPE C

PARKING LOT LANDSCAPING
REQUIRED: 1 TREE / 8 PARKING SPACES
284 SURFACE PARKING SPACES + 58 LANDBANK= 342 / 8 = 43 TREES

PROVIDED: 43 DEC TREES

GREENBELT AT KIRTS BLVD
REQUIRED: 1 TREE / 30 LF OF FRONTAGE
584.7 LF / 30 = 19.49 TREES

PROVIDED: 20 TREE PRESERVATION CREDITS USED TOWARD GREENBELT REQUIREMENT, EXISTING TREES AND GREENBELT TO REMAIN

SCREENING BETWEEN CONFLICTING LAND USES
REQUIRED: LANDSCAPE SCREENING OF 6–8' WALL OR FENCE

PROVIDED: PROPOSED NARROW/UPRIGHT EVERGREENS, UPRIGHT DEC. TREES AND EXISTING 6' WALL ON SOUTH AND WEST PROPERTY LINES

GENERAL SITE LANDSCAPE
REQUIRED: 20% OF SITE AREA SHALL BE LANDSCAPE MATERIAL
277,724 SQ FT • 20% = 55,544.93 SQ FT

PROVIDED: 75,163 SQ FT OF SOFT–SCAPE (LAWN & PLANT BEDS)
(36.9% SOFT–SCAPE PROVIDED)

REPLACEMENT TREES
REQUIRED: 50% DBH REPLACEMENT ON WOODLAND TREES, 100% DBH REPLACEMENT ON LANDMARK TREES

PROVIDED: NO REPLACEMENT TREES NECESSARY PER TREE PRESERVATION CALCULATIONS, SINCE A TREE CREDIT EXISTS. SEE TREE PLAN (T–1.0)

GENERAL PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING SITE CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, PLAN SHALL GOVERN QUANTITIES. CONTACT LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION MAY BE LOCATED BY CALLING MISS DIG 1–800–482–7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES ON THE JOB AND SHALL REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.
3. ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1. GRADE.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK.
5. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
6. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
7. ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
8. ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
9. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
10. ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
11. NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES.
12. ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
13. IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
14. ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PRE EMERGENT, SEE SPECIFICATIONS. SHREDDED PALETTE AND DYED MULCH WILL NOT BE ACCEPTED.
15. ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED TOPSOIL.
16. SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENTS, PLANTING PROCEDURES AND WARRANTY STANDARDS.
17. FOR NON–LAWN SEED MIX AREAS, AS NOTED ON PLAN, BRUSH MOW ONCE SEASONALLY FOR INVASIVE SPECIES CONTROL.
18. CONTRACTOR SHALL NOT INSTALL PLANTS UNDER BUILDING OVERHANG AND SHALL NOTIFY LANDSCAPE ARCHITECT IF DRAWINGS CONFLICT WITH BUILDING OVERHANGS.
19. TREES SHALL NOT CONFLICT/ BLOCK PROPOSED REGULATORY/ DIRECTION SIGNAGE, MONUMENT SIGNS, ADDRESS OR LIGHT POLES. SHIFT TREES AS NECESSARY TYP.

PLANT LIST FOR L-1.0

PARKING TREE PLANT LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC	NATIVE
6	CB2.5	Frans Fontaine European Hornbeam	*Carpinus betulus 'Fran Fontaine'*	2.5" Cal.	B&B	N
5	NS2.5	Black Gum	*Nyssa sylvatica*	2.5" Cal.	B&B	Y
6	QS2.5	Streetspire Oak	*Quercus alba 'JFS-KW1QX' (columnar)*	2.5" Cal.	B&B	Y
8	QP2.5	Regal Prince Oak	*Quercus robur x bicolor 'Long'*	2.5" Cal.	B&B	Y
8	SR2.5	Japanese Tree Lilac	*Syringa reticulata 'Ivory Silk'*	2.5" Cal.	B&B	N
10	TA2.5	American Sentry Linden	*Tilia americana 'American Sentry'*	2.5" Cal.	B&B	Y
43	TOTAL DECIDUOUS TREES					

SHRUB PLANT LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC	NATIVE
41	JH6	Hetz Columnar Juniper	*Juniperus chinensis 'Hetzii Columnaris'*	6'	B&B	N
85	TO6	Emerald Green Arborvitae	*Thuja occidentalis 'Smaragd'*	6'	B&B	Y
7	TT6	Techny Arborvitae	*Thuja occidentalis 'Techny'*	6'	B&B	Y
133	TOTAL SHRUBS					

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1390
REGISTERED LANDSCAPE ARCHITECT

NORTH

0 15 30 60
SCALE: 1" = 30'

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MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
PRELIMINARY LANDSCAPE PLAN

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	JMS
DES.	JLE

DRAWING NUMBER:
L-1.0

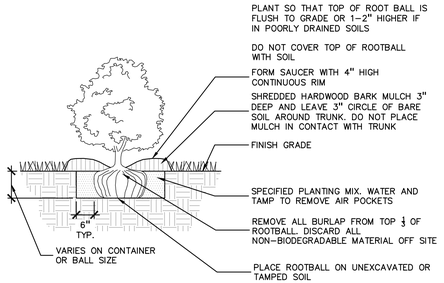
S:\PROJECTS\2022\2022-0638 (KIRTS BOULEVARD)\DWG\SITE_PLAN\L-1.0 PRELIMINARY LANDSCAPE PLAN.dwg PLOT DATE: 9/26/2022 3:17 PM BY: Bridget Gorsha

Low-profile Prairie Seed Mix
CARDNO 574-586-2412
cardnonativeplantnursery.com

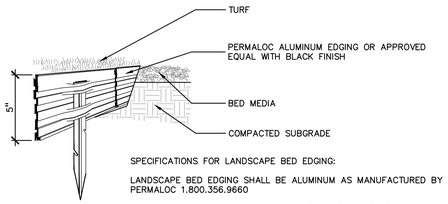
Botanical Name	Common Name	PLS Ounces/Acre
Permanent Grasses:		
Bouteloua curtipendula	Side Oats Grama	16.00
Carex spp.	Prairie Carex Mix	4.00
Elymus canadensis	Canada Wild Rye	32.00
Koeleria pyramidata	June Grass	1.00
Panicum virgatum	Switch Grass	1.00
Schizachyrium scoparium	Little Bluestem	36.00
		90.00
Temporary Cover:		
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
		460.00
Forbs:		
Amorpha canescens	Lead Plant	0.50
Anemone cylindrica	ThimbleWeed	0.50
Asclepias syriaca	Common Milkweed	2.00
Asclepias tuberosa	Butterfly MilkWeed	2.00
Baptisia alba	White Wild Indigo	2.00
Chamaecrista fasciculata	Partridge Pea	12.00
Coreopsis lanceolata	Sand Coreopsis	5.00
Coreopsis palmata	Prairie Coreopsis	1.00
Dalea candida	White Prairie Clover	1.50
Dalea purpurea	Purple Prairie Clover	1.50
Desmanthus illinoensis	Illinois Sensitive Plant	3.00
Echinacea purpurea	Broad-Leaved Purple Coneflower	7.00
Eryngium yuccifolium	Rattlesnake Master	3.00
Lespedeza capitata	Round-Head Bush Clover	2.00
Liatris aspera	Rough Blazing Star	0.50
Lupinus perennis	Wild Lupine	4.00
Monarda fistulosa	Wild Bergamot	0.75
Oligoneuron rigidum	Stiff Goldenrod	1.00
Parthenium integrifolium	Wild Quinine	1.00
Penstemon digitalis	Foxglove Beard Tongue	0.50
Penstemon hirsutus	Hairy Beard Tongue	0.50
Pycnanthemum virginianum	Common Mountain Mint	1.00
Ratibida pinnata	Yellow Coneflower	4.00
Rudbeckia hirta	Black-Eyed Susan	5.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Silphium terebinthinaceum	Prairie Dock	0.50
Solidago speciosa	Showy Goldenrod	0.50
Symphyotrichum ericoides	Heath Aster	0.25
Symphyotrichum laeve	Smooth Blue Aster	1.00
Symphyotrichum novae-angliae	New England Aster	0.50
Tradescantia ohiensis	Common Spiderwort	0.75
Verbena stricta	Hoary Vervain	1.00
Vernonia spp.	Ironweed (Various Mix)	1.75
Veronicastrum virginicum	Culvers Root	0.25
	Total	**68.75**

Stormwater Seed Mix
CARDNO 574-586-2412
cardnonativeplantnursery.com

Botanical Name	Common Name
Permanent Grasses/Sedges/Rushes:	
Bolboschoenus fluviatilis	River Bulrush
Carex cristatella	Crested Oval Sedge
Carex lurida	Bottlebrush Sedge
Carex vulpinoidea	Brown Fox Sedge
Elymus virginicus	Virginia Wild Rye
Glyceria striata	Fowl Manna Grass
Juncus effusus	Common Rush
Leersia oryzoides	Rice Cut Grass
Panicum virgatum	Switch Grass
Schoenoplectus tabernaemontani	Softstem Bulrush
Scirpus atrovirens	Dark Green Rush
Scirpus cyperinus	Wool Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs & Shrubs:	
Alisma spp.	Water Plantain (Various Mix)
Asclepias incarnata	Swamp Milkweed
Bidens spp.	Bidens (Various Mix)
Helenium autumnale	Sneezeweed
Iris virginica	Blue Flag
Lycopus americanus	Common Water Horehound
Mimulus ringens	Monkey Flower
Oligoneuron riddellii	Riddell's Goldenrod
Penthorum sedoides	Ditch Stonecrop
Polygonum spp.	Pinkweed (Various Mix)
Rudbeckia subtomentosa	Sweet Black-Eyed Susan
Rudbeckia triloba	Brown-Eyed Susan
Sagittaria latifolia	Common Arrowhead
Senna hebecarpa	Wild Senna
Symphyotrichum novae-angliae	New England Aster
Thalictrum dasycarpum	Purple Meadow Rue



4 SHRUB PLANTING DETAIL
SCALE: 1" = 2'–0"



SPECIFICATIONS FOR LANDSCAPE BED EDGING:

LANDSCAPE BED EDGING SHALL BE ALUMINUM AS MANUFACTURED BY PERMALOC 1.800.356.9660

8' OR 16' SECTIONS SHALL BE USED WITH ONE STAKE PER 38" OF EDGING

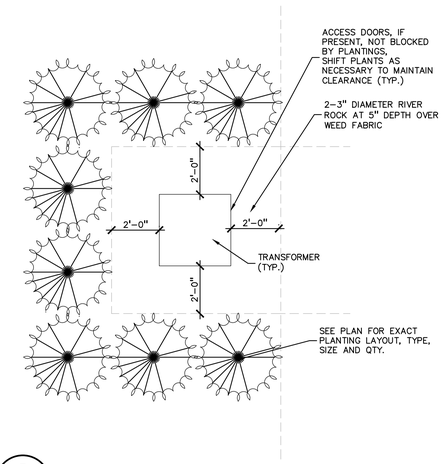
EDGING SHALL BE 4/4" THICK X 4" DEPTH WHEN ADJ. TO MULCH AND 3/4" THICK X 5" DEPTH WHEN ADJ. TO ROCK, FINISH: BLACK DURAFLEX MEETING AAMA 2603

STAKE SHALL SECURELY ENGAGE EDGING AND SHALL BE ENTIRELY BELOW TOP SURFACE OF EDGING

EDGING SHALL HAVE A MINIMUM OF 2" OF INTERLOCKING OVERLAP BETWEEN SECTIONS

INSTALL AS PER MANUFACTURER'S SPECIFICATIONS WITH TOP OF EDGING 1/2"–3/4" ABOVE COMPACTED FINISH GRADE. FINISH GRADE TO BE COMPACTED ON BOTH SIDES OF EDGING TO MAINTAIN STABILITY

3 ALUMINUM EDGE DETAIL
SCALE: 1/2" = 1'–0"



5 TRANSFORMER SCREENING DETAIL– FOR ACCESS REF. ONLY
SCALE: 1" = 3'–0"

TREE PROTECTION WILL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE

NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN; INCLUDING, BUT NOT LIMITED TO PLACING SOLVENTS, BUILDING MATERIAL, CONSTRUCTION EQUIPMENT OR SOIL DEPOSITS WITHIN DRIP LINES

GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES

DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE

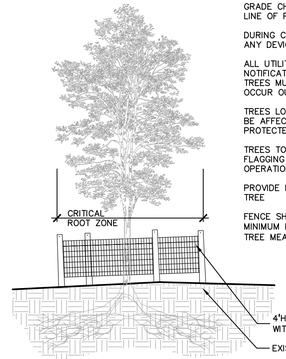
ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING

TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED

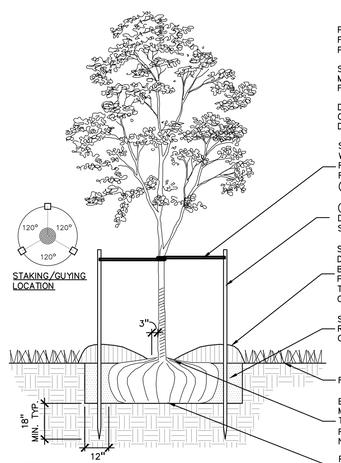
TREES TO BE PRESERVED SHALL BE IDENTIFIED WITH FLAGGING PRIOR TO THE TREE CLEARING OPERATIONS

PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE

FENCE SHALL BE PLACED IN A CIRCLE WITH A MINIMUM RADIUS OF 1' PER 1" DIAMETER OF THE TREE MEASURED AT 4.5' ABOVE GROUND



2 TREE PROTECTION DETAIL
SCALE: 1" = 3'–0"



1 DECIDUOUS TREE PLANTING DETAIL
SCALE: 1" = 3'–0"

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PEA GROUP
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www.peagroup.com

STATE OF MICHIGAN – JANET L. EVANS – LANDSCAPE ARCHITECT – NO. 1390 – REGISTERED – JANET L. EVANS

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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

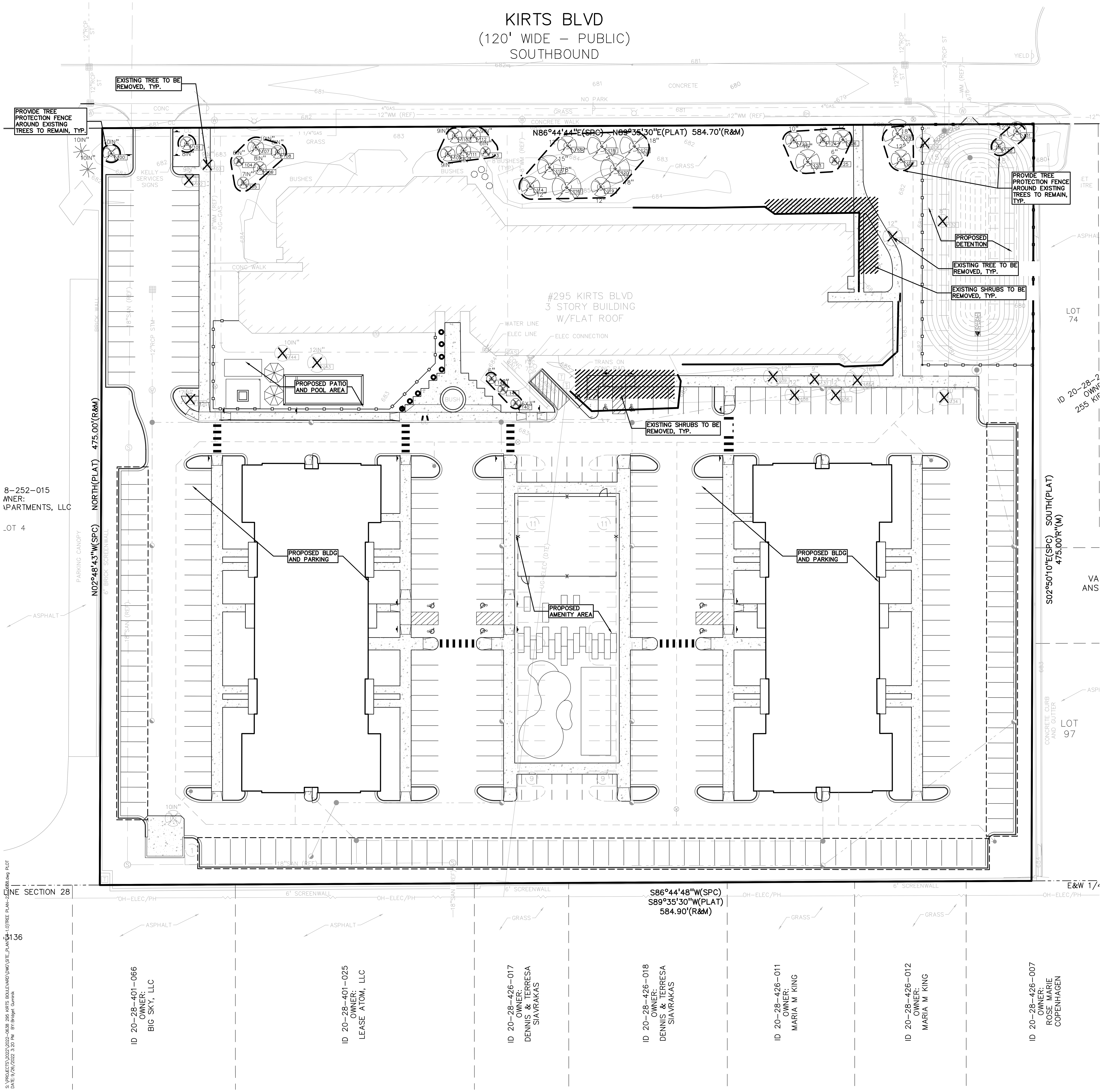
REVISIONS	
REV. PER AGENCY COMMENTS	9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
LANDSCAPE DETAILS

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	JMS
DES.	JLE

DRAWING NUMBER:
L-1.1



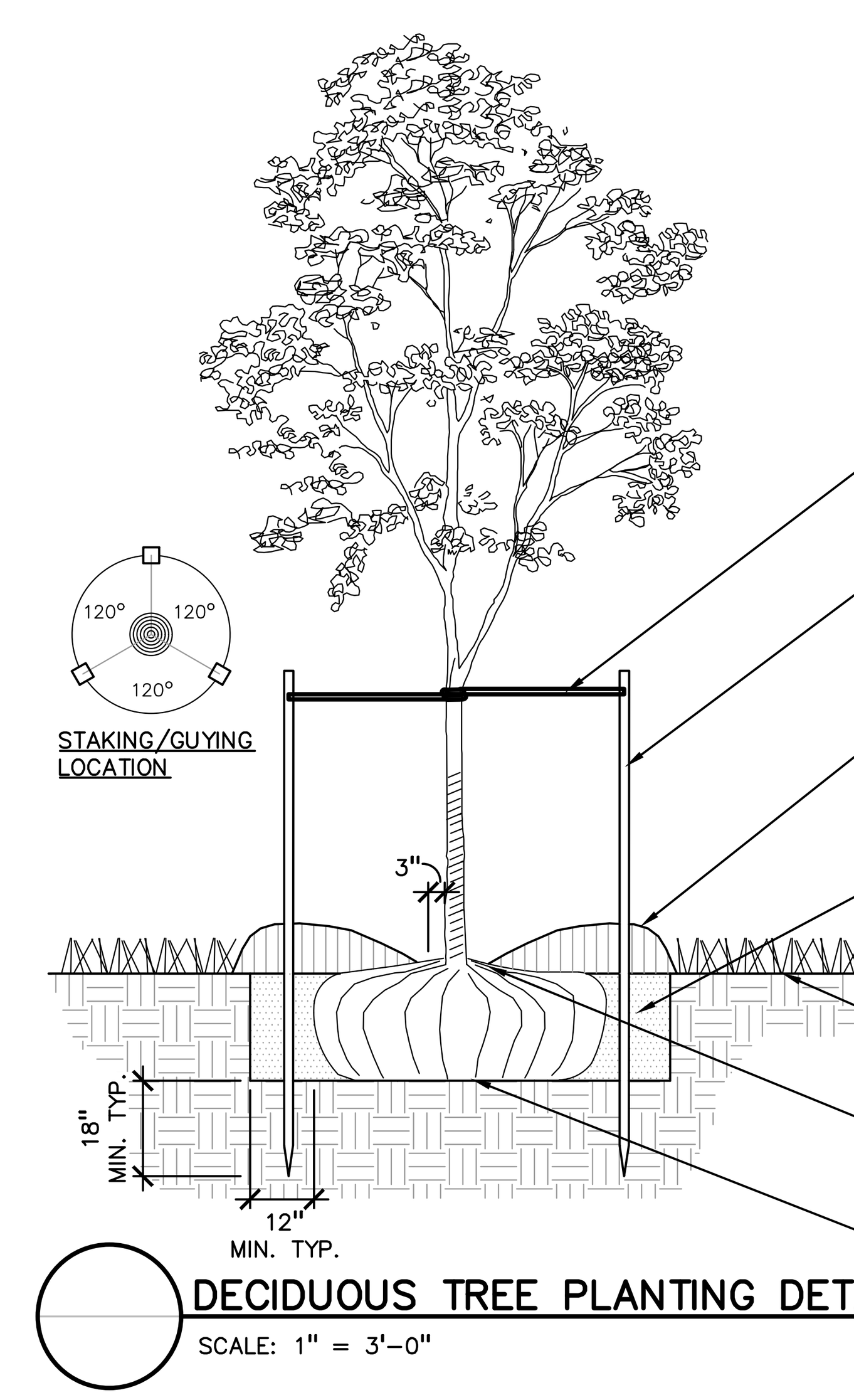
KEY:

- = EXISTING TREE TO REMAIN WITH TREE PROTECTION FENCING (130)
- = EXISTING TREE TO BE REMOVED (130)
- = EXISTING SHRUBS TO BE REMOVED

TREE INVENTORY/PRESERVATION CALCULATIONS

WOODLAND TREES				
WOODLAND TREES REMOVED:	16	(REPLACE AT 50% OF REMOVED DBH)		
152" DBH x 0.5 =		**76"**	REPLACEMENT	
WOODLAND TREES SAVED:	22	(CREDIT OF 2X DBH)		
206" DBH x 2 =		**412"**	CREDIT	
76	-	412	=	-336
0	**DBH REQUIRED FOR WOODLAND REPLACEMENT**			
LANDMARK TREES				
LANDMARK TREES REMOVED:	1	(REPLACE AT 100% OF REMOVED DBH)		
16" DBH x 1 =		**16"**	REPLACEMENT	
LANDMARK TREES SAVED:	7	(CREDIT OF 2X DBH)		
117" DBH x 2 =		**234"**	CREDIT	
16	-	234	=	-218
0	**TOTAL DBH REQUIRED FOR REPLACEMENT**			

TAG	CODE	DBH	COMMON NAME	LATIN NAME	COND	COMMENTS	CLASS	SAVE / REMOVE	ON-SITE	REPLACE
100	DT	10	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
101	DT	8	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
102	DT	9	MAPLE	ACER SP	FAIR	WL	WOODLAND	R	Y	REPLACE
103	DT	9	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
104	DT	6	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
105	DT	7	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
106	DT	8	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
107	DT	10	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
108	DT	8	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
109	DT	9	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
110	DT	9	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
111	DT	9	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
112	DT	9	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
113	DT	6	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
114	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
115	DT	15	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
116	DT	18	MAPLE	ACER SP	GOOD	LM	LANDMARK	S	Y	-
117	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
118	DT	18	MAPLE	ACER SP	GOOD	LM	LANDMARK	S	Y	-
119	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
120	DT	18	MAPLE	ACER SP	GOOD	LM	LANDMARK	S	Y	-
121	DT	18	MAPLE	ACER SP	GOOD	LM	LANDMARK	S	Y	-
122	DT	10	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
123	DT	15	CRABAPPLE	MALUS SP	GOOD	LM	LANDMARK	S	Y	-
124	DT	8	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
125	DT	6	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	S	Y	-
126	DT	12	CRABAPPLE	MALUS SP	GOOD	LM	LANDMARK	S	Y	-
127	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
128	DT	18	MAPLE	ACER SP	GOOD	LM	LANDMARK	S	Y	-
129	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
130	DT	8	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
131	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	S	Y	-
132	DT	8	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
133	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
134	DT	10	MAPLE	ACER SP	FAIR	WL	WOODLAND	R	Y	REPLACE
135	DT	16	MAPLE	ACER SP	GOOD	LM	LANDMARK	R	Y	REPLACE
136	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
137	DT	9	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
138	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
139	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
140	DT	6	CRABAPPLE	MALUS SP	GOOD	WL X3	WOODLAND	R	Y	REPLACE
141	DT	6	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	R	Y	REPLACE
142	DT	6	CRABAPPLE	MALUS SP	GOOD	WL	WOODLAND	R	Y	REPLACE
143	DT	12	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
144	DT	10	MAPLE	ACER SP	GOOD	WL	WOODLAND	R	Y	REPLACE
145	DT	7	MAPLE	ACER SP	FAIR	WL	WOODLAND	R	Y	REPLACE



PLANT SO THAT TOP OF ROOT BALL IS FLUSH TO GRADE OR 1-2" HIGHER IF IN POORLY DRAINED SOILS

SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER

DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD, BROKEN BRANCHES AS DIRECTED BY LANDSCAPE ARCHITECT

STAKE JUST BELOW BRANCHES WITH 2"-3" WIDE NYLON OR PLASTIC STRAPS. CONNECT FROM TREE TO STAKE AND ALLOW FOR FLEXIBILITY. REMOVE AFTER (1) ONE YEAR. (DO NOT USE WIRE & HOSE)

(3) THREE 2"X2" HARDWOOD STAKES DRIVEN A MIN. OF 18" DEEP FIRMLY INTO SUBGRADE PRIOR TO BACKFILLING

SHREDDED HARDWOOD BARK MULCH TO DRIPLINE. 3" DEEP AND LEAVE 3" CIRCLE OF BARE SOIL AROUND TREE TRUNK. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK. FORM SAUCER WITH 4" HIGH CONTINUOUS RIM

SPECIFIED PLANTING MIX, WATER & TAMP TO REMOVE AIR POCKETS, AMEND SOIL PER SITE CONDITIONS & TREE REQUIREMENTS

FINISH GRADE

EXPOSE ROOT FLARE OF TREE. CONTRACTOR MAY HAVE TO REMOVE EXCESS SOIL FROM TOP OF ROOTBALL. REMOVE ALL BURLAP FROM TOP ⅓ OF ROOTBALL. DISCARD ALL NON-BIODEGRADABLE MATERIAL OFF SITE

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL

DECIDUOUS TREE PLANTING DETAIL

SCALE: 1" = 3'-0"

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STATE OF MICHIGAN · JANET L. EVANS · LANDSCAPE ARCHITECT · NO. 1390 · REGISTERED LANDSCAPE ARCHITECT

NORTH

0 15 30 60
SCALE: 1" = 30'

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CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

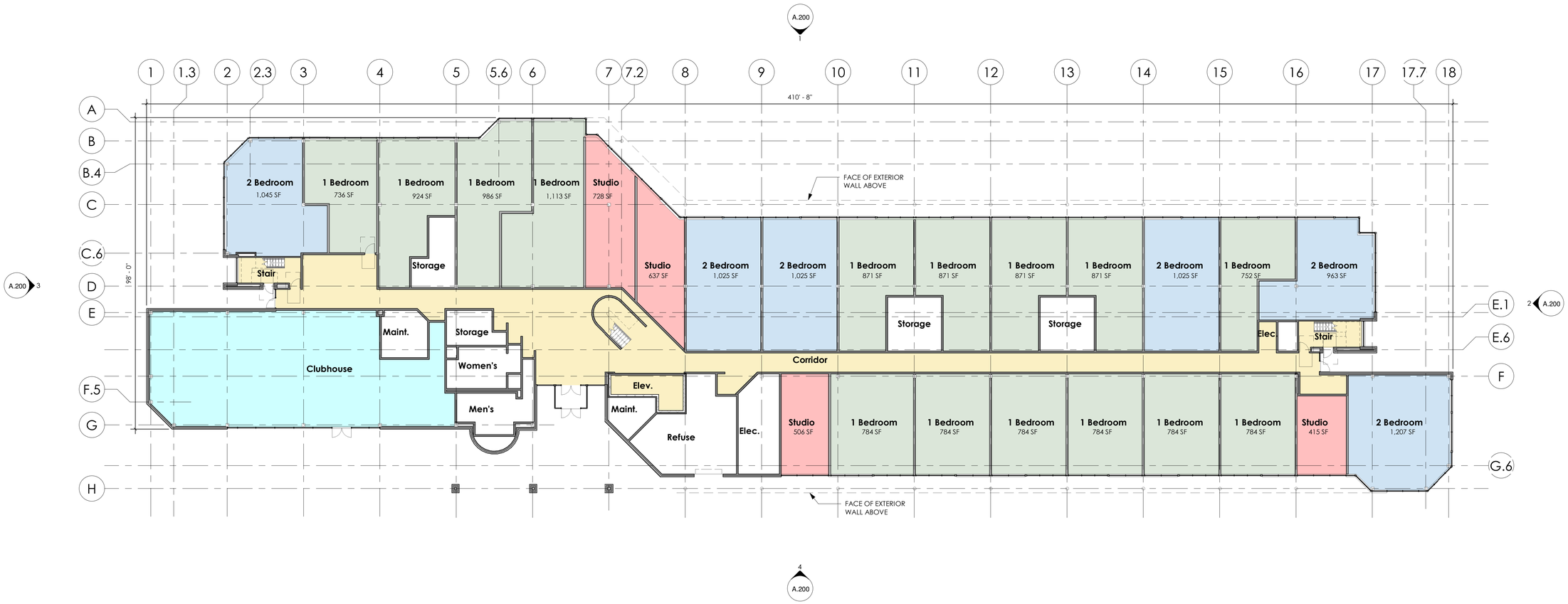
DRAWING TITLE
TREE PRESERVATION AND REMOVAL PLAN

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	JMS
DES.	JLE

DRAWING NUMBER:
T-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-0638 295 KIRTS BOULEVARD\DWG\SITE_PLAN\(T-1.0)TREE PLAN-22-0638.dwg PLOT
DATE: 9/26/2022 3:20 PM BY: Bridget Guminik



First Floor Plan

1/16" = 1'-0"

EXISTING BUILDING				
UNIT TYPE	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL
FIRST FLOOR	04	15	06	**25**
SECOND FLOOR	05	20	08	**33**
THIRD FLOOR	03	19	10	**32**
TOTAL	**12**	**54**	**24**	**90**
RATIO	**13.3%**	**60.0%**	**26.7%**	**100%**

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Client:
MF Focus Troy LLC
280 W. Maple Rd Suite 230
Birmingham, MI 48009

Project:
Forum Flats
295 Kirts Blvd
Troy, MI 48084

Issued	Description	By
02.11.22	Concept Plan	
06.07.22	Rev 1	
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:
North

Sheet Title:
Existing Building - First Floor Plan

Project Number:
21-123

Scale:
As indicated

Sheet Number:
A.100

Second Floor Plan

1/16" = 1'-0"

EXISTING BUILDING				
UNIT TYPE	STUDIO	1 BEDROOM	2 BEDROOM	**TOTAL**
FIRST FLOOR	04	15	06	**25**
SECOND FLOOR	05	20	08	**33**
THIRD FLOOR	03	19	10	**32**
TOTAL	**12**	**54**	**24**	**90**
RATIO	**13.3%**	**60.0%**	**26.7%**	**100%**

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Issued	Description	By
02.11.22	Concept Plan	
06.07.22	Rev 1	
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

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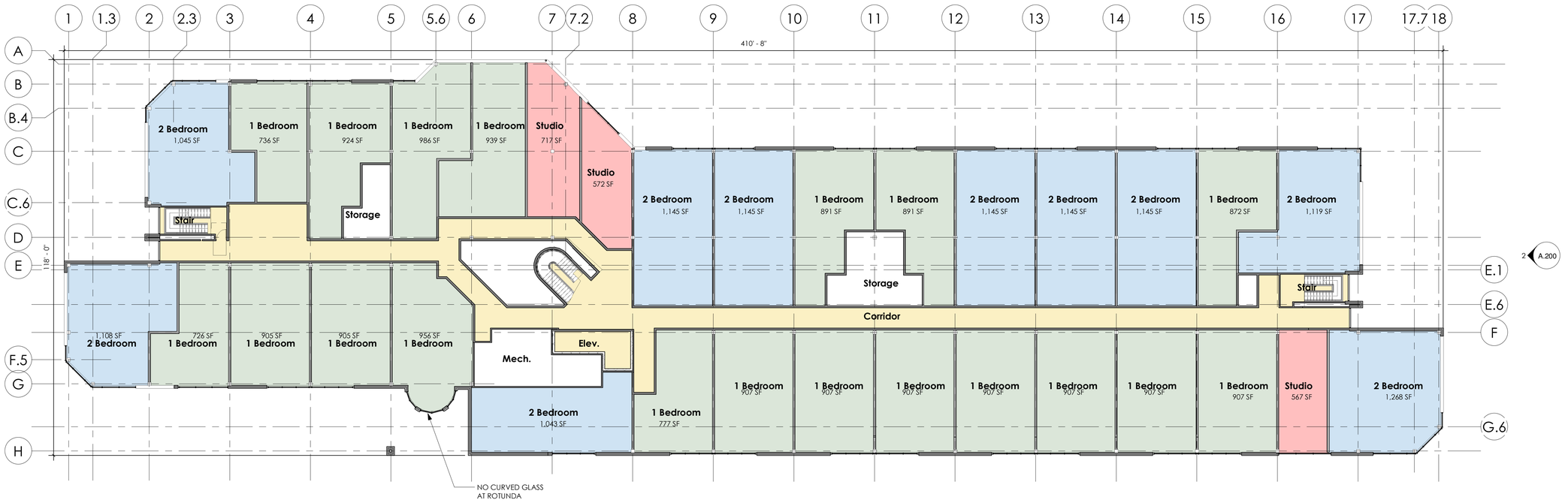
North Arrow:
North

Sheet Title:
Existing Building - Second Floor Plan

Project Number:
21-123

Scale:
As indicated

Sheet Number:
A.101



Third Floor Plan

1/16" = 1'-0"

EXISTING BUILDING				
UNIT TYPE	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL
FIRST FLOOR	04	15	06	**25**
SECOND FLOOR	05	20	08	**33**
THIRD FLOOR	03	19	10	**32**
TOTAL	**12**	**54**	**24**	**90**
RATIO	**13.3%**	**60.0%**	**26.7%**	**100%**

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Issued	Description	By
06.07.22	Rev 1	
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:

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North Arrow:

Sheet Title:

Existing Building - Third Floor Plan

Project Number:

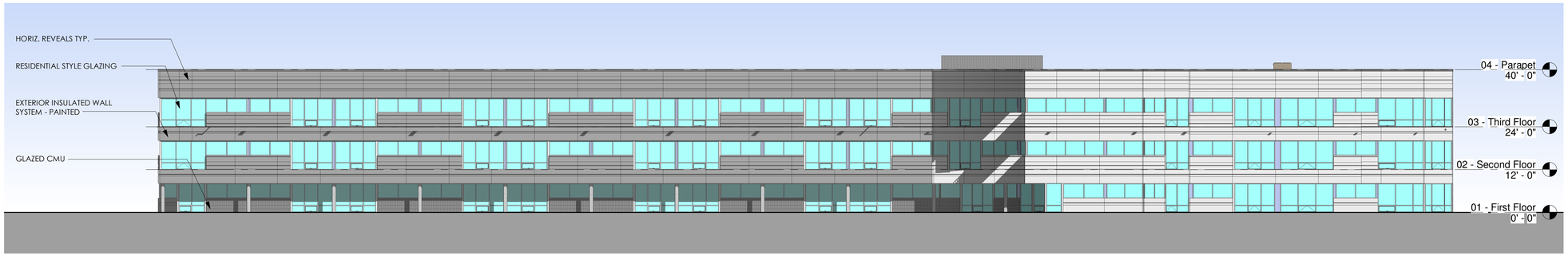
21-123

Scale:

As indicated

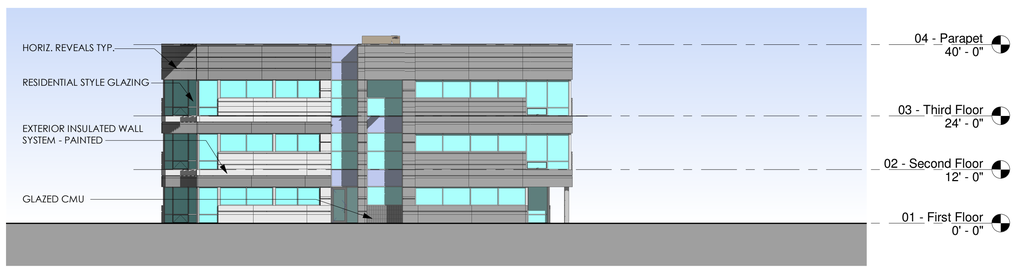
Sheet Number:

A.102



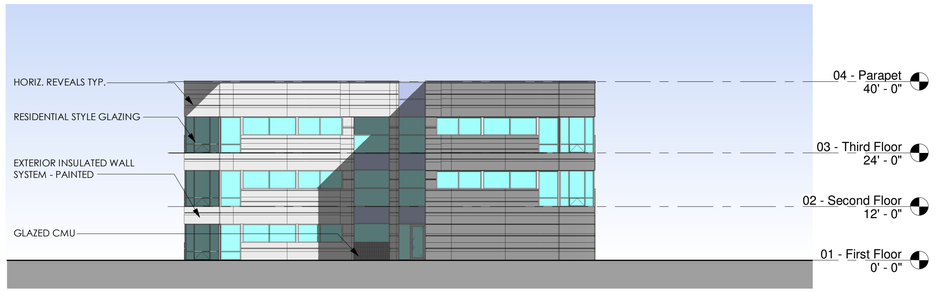
TRANSPARENCY CALC:
7,842 SF TRANSPARENCY / 14,507 TOTAL SF = **54% TRANSPARENCY**

1 A.100 Front (North) Elevation
1/16" = 1'-0"



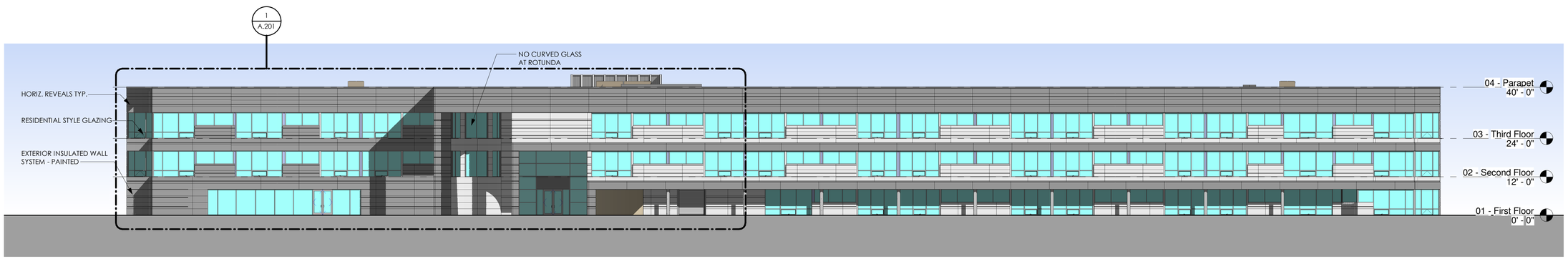
TRANSPARENCY CALC:
1,620 SF TRANSPARENCY / 3,638 TOTAL SF = **45% TRANSPARENCY**

2 A.100 Left (East) Elevation
1/16" = 1'-0"



TRANSPARENCY CALC:
1,462 SF TRANSPARENCY / 3,680 TOTAL SF = **40% TRANSPARENCY**

3 A.100 Right (West) Elevation
1/16" = 1'-0"



TRANSPARENCY CALC:
7,166 SF TRANSPARENCY / 16,426 TOTAL SF = **44% TRANSPARENCY**

4 A.100 Rear (South) Elevation
1/16" = 1'-0"

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Birmingham, MI 48009

Project:
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295 Kirts Blvd
Troy, MI 48084

Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:
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North Arrow:

Sheet Title:
Existing Buildling - Elevations

Project Number:
21-123

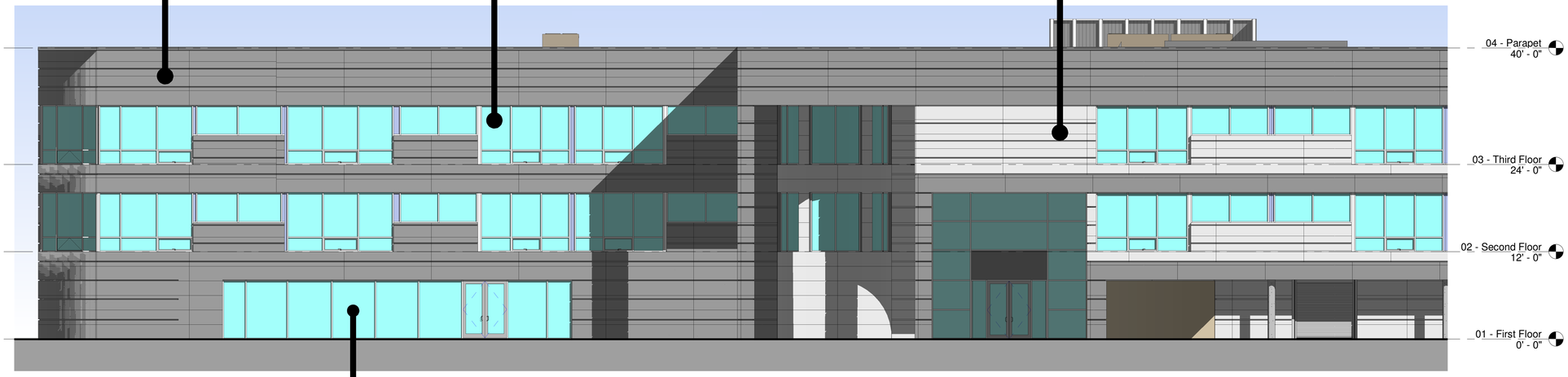
Scale:
1/16" = 1'-0"

Sheet Number:
A.200

EXISTING INSULATED PANEL - PAINT
MANUF: SHERWIN WILLIAMS
COLOR: TBD

RESIDENTIAL WINDOWS
MANUF: WOJAN OR EQUAL
COLOR: BLACK

EXISTING INSULATED PANEL - PAINT
MANUF: SHERWIN WILLIAMS
COLOR: TBD



1 / A.200 Enlarged Elevation
1/8" = 1'-0"

STOREFRONT
MANUF: KAWNEER
COLOR: BLACK

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Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:
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North Arrow:

Sheet Title:
Existing Building - Material Board

Project Number:
21-123

Scale:
1/8" = 1'-0"

Sheet Number:
A.201

First Floor Plan

3/32" = 1'-0"

Second Floor Plan

3/32" = 1'-0"

UNIT MIX (NEW BUILDINGS)

UNIT TYPE	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL
FIRST FLOOR	02	08	00	**10**
SECOND FLOOR	03	08	04	**15**
THIRD FLOOR	03	08	04	**15**
FOURTH FLOOR	03	08	04	**15**
TOTAL	**11**	**32**	**12**	**55**
RATIO	**20.0%**	**58.2%**	**21.8%**	**100%**

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09.26.22	REV SPA	

Seal:

Note:

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North Arrow:

Sheet Title:

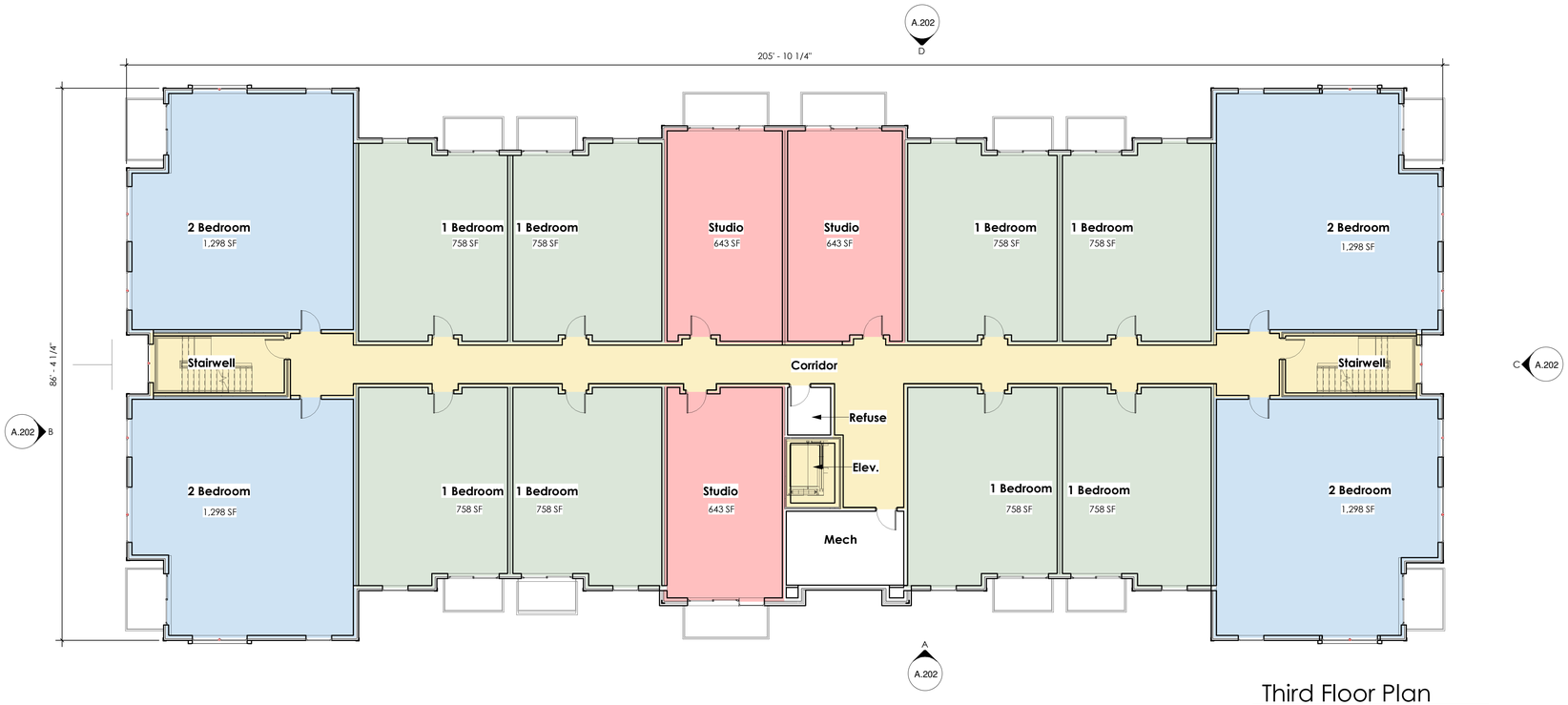
Apartment Buildings B & C Floor Plans

Project Number:

21-123

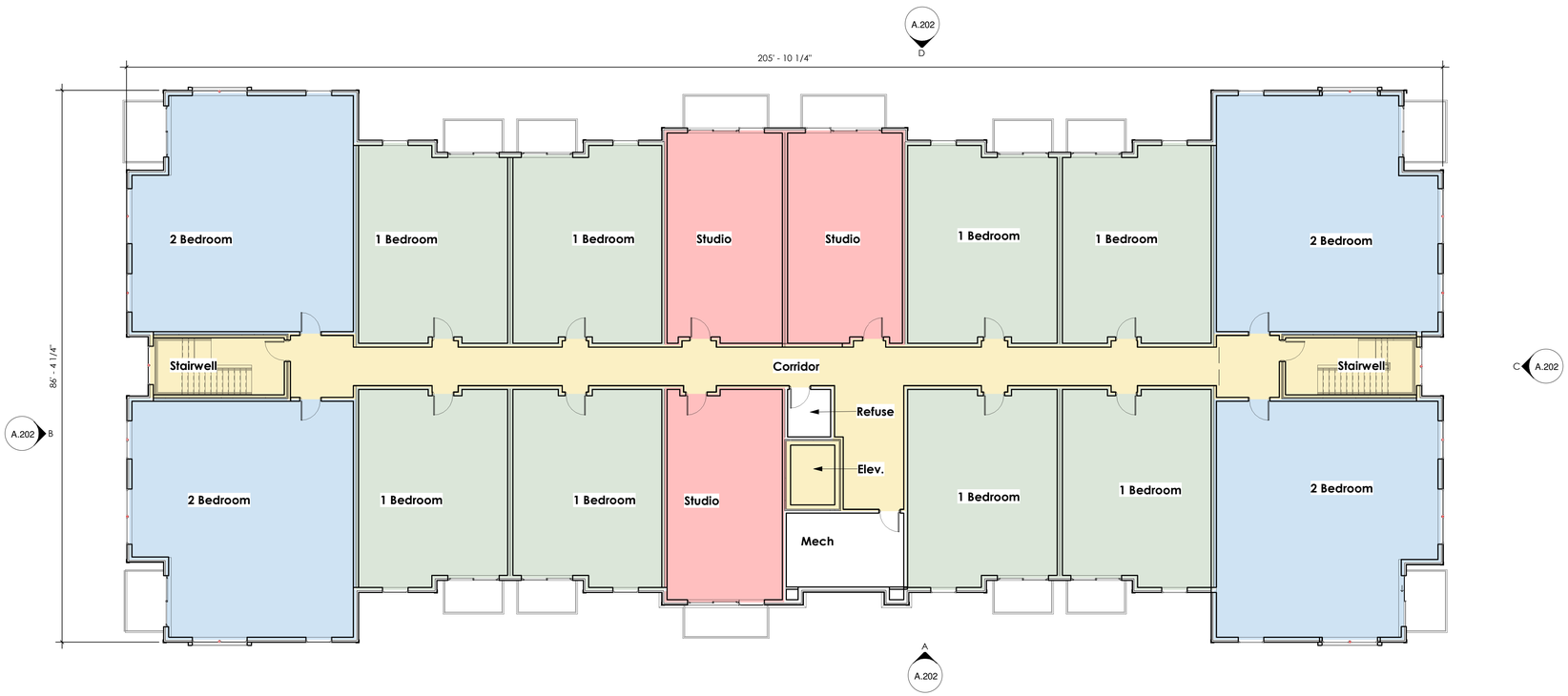
Sheet Number:

A.103



Third Floor Plan

3/32" = 1'-0"



Fourth Floor Plan

3/32" = 1'-0"

UNIT MIX (NEW BUILDINGS)				
UNIT TYPE	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL
FIRST FLOOR	02	08	00	10
SECOND FLOOR	03	08	04	15
THIRD FLOOR	03	08	04	15
FOURTH FLOOR	03	08	04	15
TOTAL	11	32	12	55
RATIO	20.0%	58.2%	21.8%	100%

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08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:
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North Arrow:

Sheet Title:
Apartment Buildings B & C - Floor Plans

Project Number:
21-123

Sheet Number:
A.104

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Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

TRANSPARENCY CALC:
2,798 SF TRANSPARENCY / 10,480 TOTAL SF = **28% TRANSPARENCY**

A A.103 Front Elevation (Entrance)
3/32" = 1'-0"

TRANSPARENCY CALC:
1,302 SF TRANSPARENCY / 4,510 TOTAL SF = **29% TRANSPARENCY**

B A.103 Side Elevation (Left)
3/32" = 1'-0"

TRANSPARENCY CALC:
1,302 SF TRANSPARENCY / 4,510 TOTAL SF = **29% TRANSPARENCY**

C A.103 Side Elevation (Right)
3/32" = 1'-0"

TRANSPARENCY CALC:
2,902 SF TRANSPARENCY / 10,480 TOTAL SF = **28% TRANSPARENCY**

D A.103 Rear Elevation
3/32" = 1'-0"

EXTERIOR MATERIAL

		X
M-1	DESCRIPTION: MANUF. STONE MANUF: SHOULDICE COLOR: CHAMOIS FINISH: TBD	
M-2	DESCRIPTION: LAP PANEL SIDING MANUF: JAMES HARDIE FINISH: SMOOTH COLOR: GRAY SLATE	
M-3	DESCRIPTION: LAP PANEL SIDING MANUF: JAMES HARDIE FINISH: SMOOTH COLOR: ARCTICE WHITE	
M-4	DESCRIPTION: WOOD PLANK CLADDING MANUF: TREX FINISH: TBD COLOR: ROPE SWING	
M-5	DESCRIPTION: HARDIE PANELING MANUF: TBD FINISH: TBD COLOR: TBD	

L1 - WALL MTD. SHIELDED WALL PACK

L2 - WALL MTD. UP-DOWN SCONCE

Seal:
STATE OF MICHIGAN
JASON P. KRIEGER
ARCHITECT
No. 53578
REGISTERED ARCHITECT

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:
Apartment Buildings B & C - Elevations

Project Number:
21-123

Sheet Number:
A.202

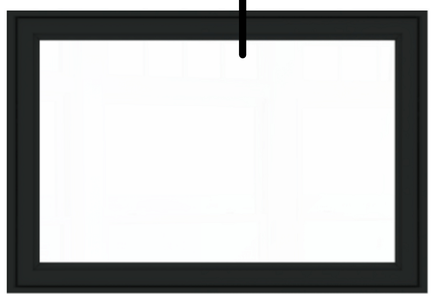
LAP SIDING
MANUF: JAMES HARDIE
COLOR: ARCTIC WHITE

EIFS PANEL
MANUF: TBD
COLOR: TBD

LAP SIDING
MANUF: JAMES HARDIE
COLOR: SMOOTH GRAY

WOOD PLANK CLADDING
MANUF: TREX
COLOR: ROPE SWING

1 A.202 Enlarged Elevation
1/8" = 1'-0"



VINYL RESIDENTIAL WINDOWS
MANUF: TBA
COLOR: BLACK

MANUF. STONE
MANUF: SHOULDICE
COLOR: CHAMOIS

STOREFRONT
MANUF: TBD
COLOR: BLACK

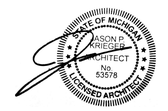
krieger klatt
ARCHITECTS
architecture interiors consulting
1412 E. 11 Mile Rd. | Royal Oak, MI 48067
P: 248.414.9270 **F:** 248.414.9275
www.kriegerklatt.com

Client:
MF Focus Troy LLC

Project:
Forum Flats
295 Kirts Blvd Troy, MI
48084

Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:



Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:
Apartment Buildings B & C - Material Board

Project Number:
21-123

Sheet Number:
A.203

KRIEGER KLATT ARCHITECTS

2120 E. 11 Mile Rd. | Royal Oak, MI 48067
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www.kriegerklatt.com

Client:

MF Focus Troy LLC

Project:

Forum Flats
295 Kirts Blvd
Troy, MI 48084

Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:

Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:

Aerial Renderings

Project Number:

21-123

Scale:

Sheet Number:

A.204

KRIEGER KLATT ARCHITECTS

2120 E. 11 Mile Rd. | Royal Oak, MI 48067
P: 248.414.9270 **F:** 248.414.9275
www.kriegerklatt.com

Client:

MF Focus Troy LLC

Project:

Forum Flats
*295 Kirts Blvd
Troy, MI 48084

Issued	Description	By
08.12.22	SPA	
09.26.22	REV SPA	

Seal:

Note:

Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:

Perspective Renderings

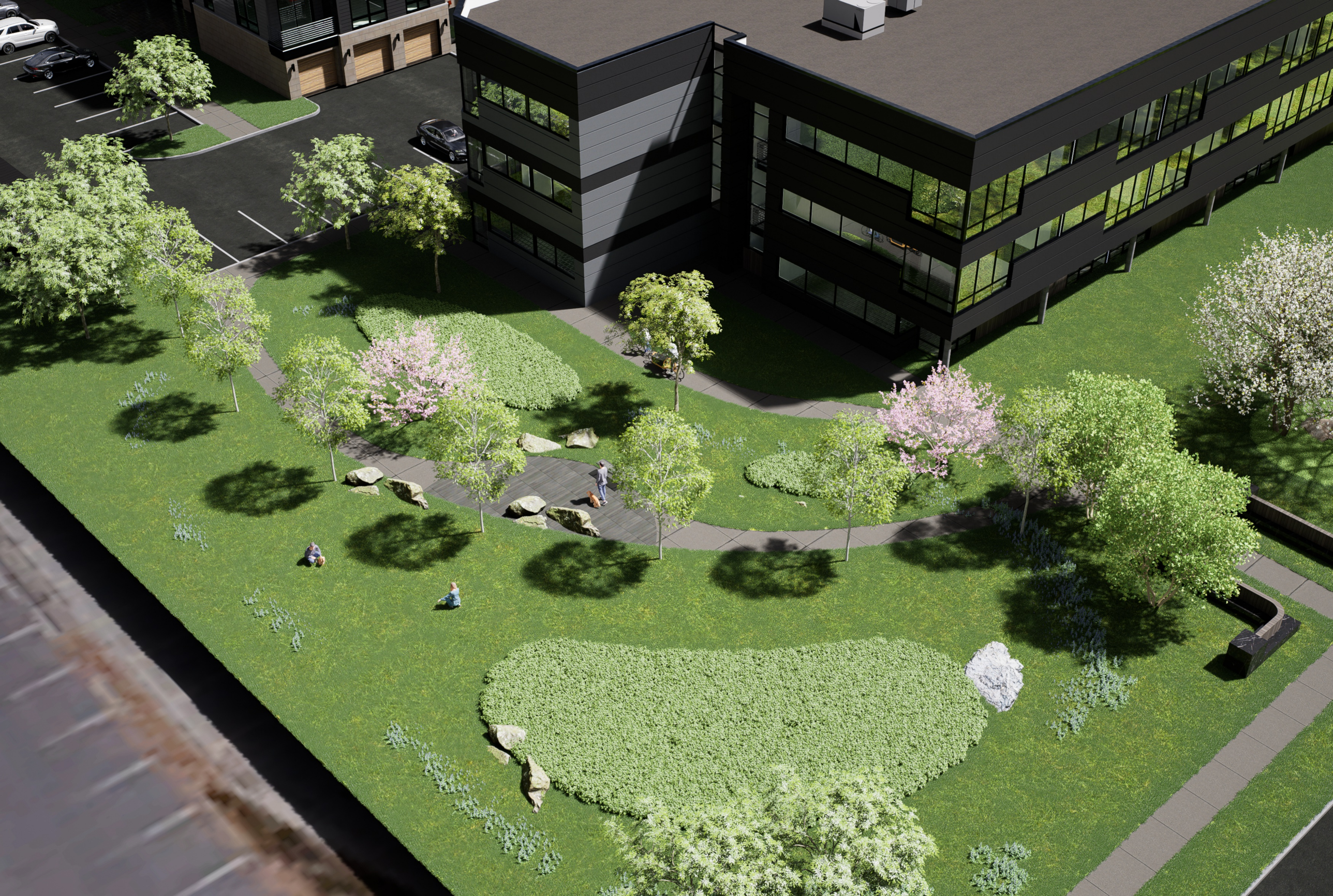
Project Number:

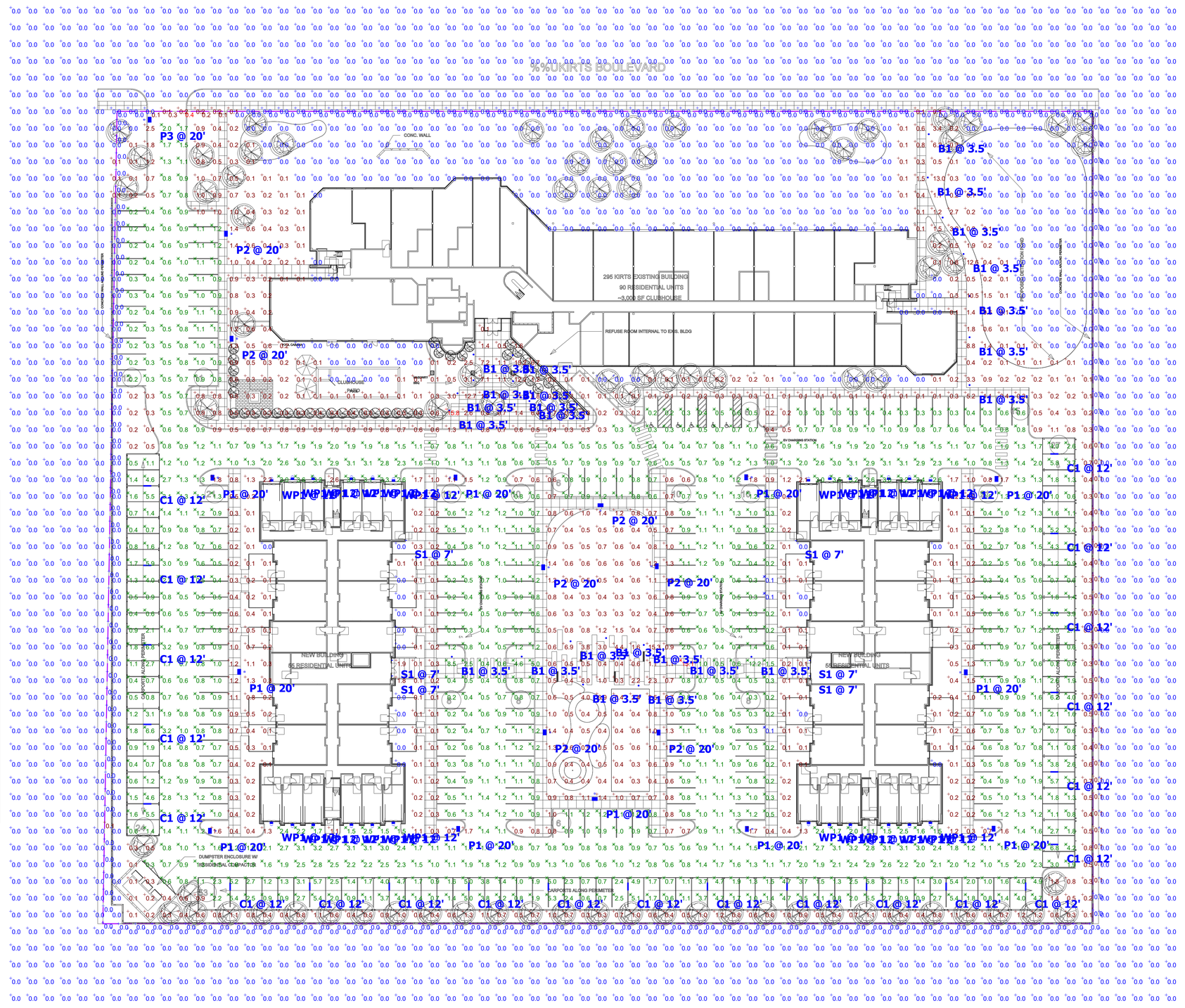
21-123

Scale:

Sheet Number:

A.205





Plan View
Scale - 1" = 30ft

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Lamp	Light Loss Factor
○	B1	24	BEGA LIGHTING	84610K4	LED	0.9
▯	C1	22	Lithonia Lighting	VAP FST 40K 80CRI	LED	0.9
▭ ▫	P1	11	Lithonia Lighting	DSX0 LED 40K MVOLT	LED	0.9
▭ ▫	P2	7	Lithonia Lighting	DSX0 LED 40K MVOLT	LED	0.9
▭ ▫	P3	1	Lithonia Lighting	DSX0 LED 40K MVOLT	LED	0.9
⌂	S1	6	BEGA LIGHTING	24 134K4	LED	0.9
⌂ ▭	WP1	24	Lithonia Lighting	WDGE2 LED 40K 80CRI	LED	0.9

General Note

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0", PROPERTY LINE SHOWN AT 5' - 0" AFG
3. LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

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

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

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

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

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

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

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Grade @ 0'	+	0.6 fc	15.8 fc	0.0 fc	N/A	N/A	0.0:1
Parking Lot	✳	1.4 fc	15.1 fc	0.1 fc	151.0:1	14.0:1	0.1:1
Property Line @ 5' AFG	+	0.0 fc	0.4 fc	0.0 fc	N/A	N/A	0.0:1

295 KIRTS
PHOTOMETRIC PLAN
PREPARED FOR: KRIEGER KLATT ARCHITECTS, INC.
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer
DS
Date
08/12/2022
Scale
Not to Scale
Drawing No.
#22-78955 V1

FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.

MEMO

VIA EMAIL mparks@cypresspartners.biz

To:	**MF Focus, LLC**
From:	**Julie Kroll, PE, PTOE** **Fleis & VandenBrink**
Date:	**September 27, 2022**
Re:	**Proposed Residential Development** **295 Kirts Boulevard, Troy, Michigan** **Revised Parking Study**

1 INTRODUCTION

This memorandum presents the results of the revised Parking Study for the proposed residential development project in the City of Troy, Michigan. The study was updated to reflect the evaluation of the 85% percentile parking demand for this site as calculated in accordance with ITE Parking Generation, 5th Edition.

The project site is located at 295 Kirts Boulevard, as shown in **Figure 1**. The proposed development includes the conversion of the existing office building into multi-family units, and the construction of two multi-family housing buildings within the existing parking lot. The purpose of this study is to provide a summary of the projected parking generation for the proposed development.

FIGURE 1: SITE LOCATION MAP

27725 Stansbury Boulevard, Suite 195
Farmington Hills, MI 48334
P: 248.536.0080
F: 248.536.0079
www.fveng.com

2 PARKING ANALYSIS

The proposed development plan was evaluated to determine the recommended number of parking spaces for the project in an effort to "right-size" the parking for this use. The City of Troy Zoning Ordinance was reviewed and is summarized in **Table 2**.

Table 2: City of Troy Parking Ordinance

Methodology	Land Use	Size	Independent Variable	Troy Zoning Ordinance	
				Parking Supply Requirements	Parking Supply (spaces)
Spaces per DU	Multiple-family residential	34	D. U.	1 space/efficiency unit	34
		166	D. U.	2 spaces/dwelling unit	332
				City of Troy Ordinance	**366**
				Proposed Parking Supply	**308**
				Land Banked	**58**
				Difference	**0**

A parking analysis is a two-step process. The first step in determining the parking needs for a development is to calculate the projected parking *demand*. Parking demand calculations determine how much parking will be generated by the development. Step two in the parking analysis process is to determine if the parking supply is adequate to accommodate the projected parking demand; if the parking supply is not adequate, recommendations are to be provided to accommodate the projected parking demand.

A parking lot is typically designed to accommodate 85-95% occupancy, depending on the proposed land use(s), layout, and parking management (self-parking, valet, etc.). As vehicles traversing through the parking lot search for the open spaces or wait for vehicles to exit, a buffer is provided between supply and demand that allows for easier turnover in the parking lot and less congestion. For parking lots with a higher turnover (such as grocery stores and restaurants), the parking occupancy percentage should be lower, and for parking lots with less turnover (office buildings and residential), the parking occupancy percentage can be higher.

2.1 PARKING DEMAND

The Institute of Transportation Engineers (ITE) *Parking Generation, 5th Edition* was used to determine the parking demand for this site. The ITE *Parking Generation* is an informational guide used by engineers and planners for the purposes of determining the parking demand associated with various land uses. The parking generation data included in *Parking Generation* are provided by various state and local government agencies, consulting firms, individual transportation professionals, universities, developers, associations, local sections, districts, and student chapters of ITE located throughout the U.S. The data is examined by ITE for validity and reasonableness before being entered into the comprehensive database. Therefore, the data presented by ITE in the *Parking Generation* provides a comprehensive average of parking demand for the various land uses throughout the country, and is a recommended resource for the calculation parking demand.

The proposed development includes a residential complex with three floors of residential units, and two buildings with four floors of residential units. The proposed development includes the following unit breakdown by building:

	Existing Building	*Proposed Buildings*	*Total*
Studio	12	22	***34***
One Bedroom	54	64	***118***
Two Bedroom	24	24	***48***
Total Units	*90*	*110*	***200***

The ITE *Parking Generation, 5th Edition* has data associated with this land use for urban/suburban, dense urban and center city core. Regarding parking generation, an urban/suburban area is defined by ITE as, "*an area of vehicle-centered access where nearly all person trips that enter or exit a development site are by personal*

passenger or commercial vehicle." Therefore, it was determined that this area of the City of Troy is a typical urban/suburban[1] environment and the parking demand calculations were based on this assumption.

ITE presents two methodologies for determining parking demand: total number of units and the number of beds per unit. The projected parking demand analysis for the site was performed using both methodologies, and it was determined that the parking demand by unit was higher than by bedroom. The higher parking demand was used in the analysis as summarized in **Table 2**. The comparison calculations are attached.

Table 2: ITE Parking Generation Parking Demand Summary

Methodology	Land Use	ITE Land Use Code	Size	Independent Variable	ITE Parking Generation 5th Edition			
					Peak Period 85 % Parking Demand Rates		Peak Parking Demand (spaces)	
					Weekday	Weekend	Weekday	Weekend
Spaces per DU	Multi-Family Housing: Low-Rise	220	90	Dwelling Unit	1.52 space/DU	1.66 space/DU	137	149
Spaces per DU	Multi-Family Housing: Mid-Rise	221	110	Dwelling Unit	1.47 space/DU	1.33 space/DU	162	146
						Total Parking Demand	**299**	**295**

2.2 PROPOSED PARKING SUPPLY

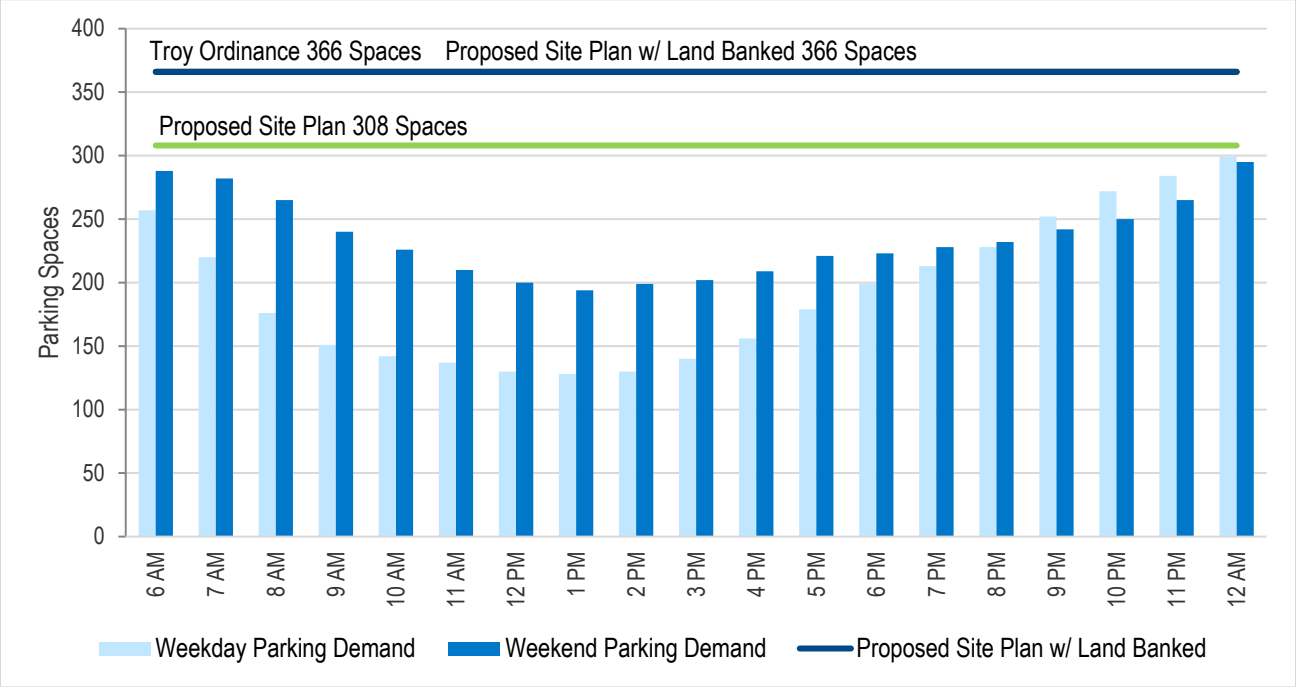
The projected parking demand calculated was compared to the proposed parking supply for this site to determine if there is adequate parking to accommodate the proposed operations. The highest daily parking demands for this development are expected to occur on the weekdays. However, there is essentially no difference in overnight peak parking demand on weekdays and weekends. The results of this analysis are summarized in **Table 3** and shown on **Chart 1**. The analysis shows that there will be adequate parking for the proposed development to accommodate the proposed use.

Table 3: Peak Hour Parking Analysis Summary

Methodology	Land Use	Size	Independent Variable	Troy Zoning Ordinance		Proposed Parking
				Parking Supply Requirements	Parking Supply (spaces)	Parking Supply (spaces)
Spaces per DU	Multiple-family residential	34	D. U.	1 space/efficiency unit	34	308
		166	D. U.	2 spaces/dwelling unit	332	
				Parking Supply	**366**	**308**
				Peak Parking Demand	**299**	**299**
				Projected Parking Surplus	**67**	**9**
				Total Parking Percent Occupancy	*82%*	***97%***
					Land Banked Parking	**58**
					Total Parking Supply w/ Land Banked Parking	**366**
					Projected Parking Surplus w/land banked	**67**
					Total Parking Percent Occupancy	***82%***

[1] The primary difference between urban/suburban, dense urban and city core is the presence of transit. ***General Urban/Suburban****-an area associated with almost homogeneous vehicle-centered access.* ***Dense Multi-Use Urban****— a fully developed area (or nearly so), with diverse and interacting complementary land uses, good pedestrian connectivity, and convenient and frequent transit.* ***Center City Core****— the downtown area for a major metropolitan region at the focal point of a regional light- or heavy-rail transit system.*

Chart 1: Daily Parking Analysis Summary



3 CONCLUSIONS

The conclusions of this study are as follows:

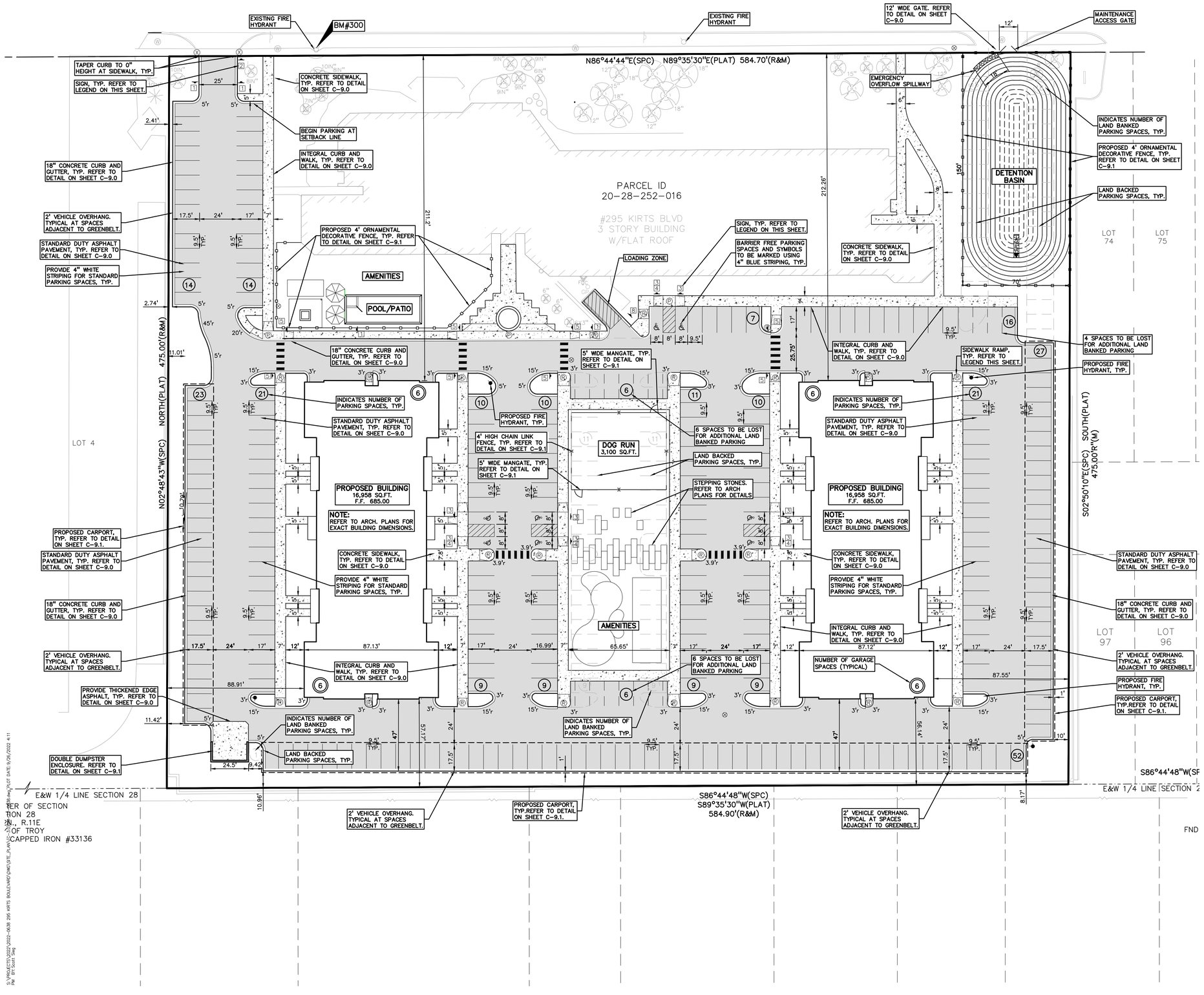
- The projected peak parking demand for this site is 299 parking spaces, and the proposed development plan includes 308 spaces, resulting in a peak occupancy of 97%. With the addition of land banked parking, the total parking supply at 366 will equal the ordinance requirements, with a projected peak occupancy at 82%.

Questions related to this memorandum, study, analysis, and results should be addressed to Fleis & VandenBrink.

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

Attached: Site Concept Plan
ITE LUC Descriptions
Parking Calculation Data Summaries

KIRTS BLVD
(120' WIDE – PUBLIC)
SOUTHBOUND



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY / R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY / HEAVY DUTY / DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTI
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SITE DATA TABLE:

SITE AREA: 6.38 ACRES (277,777 SF.) NET AND GROSS

ZONING: BB - BIG BEAVER ROAD (FORM BASED)

PROPOSED USE: MULTI-FAMILY (33,916 SF)

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 55 FT.(4 STORIES)
PROPOSED BUILDING HEIGHT = 4 STORY

TOTAL BUILDING FOOTPRINT AREA = 33,916 SF.

BUILDING LOT COVERAGE = 12.2%

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
FRONT (NORTH)	10'	211.2'
SIDE (EAST)	NOT REQUIRED	87.55'
SIDE (WEST)	NOT REQUIRED	88.91'
REAR (SOUTH)	30'	56.14'

PARKING CALCULATIONS:
MULTI-FAMILY RESIDENTIAL = 1 SPACE PER EFFICIENCY DWELLING
2 SPACES PER EACH DWELLING UNIT

PROPOSED STUDIO DWELLINGS = 34 UNITS (34 PARKING SPACES)
PROPOSED 1-2 BR DWELLINGS = 166 UNITS (332 PARKING SPACES)

TOTAL PARKING REQUIRED = 34 + 332 = 366 SPACES

TOTAL PROPOSED PARKING SPACES:

SURFACE SPACES = 284 SPACES
GARAGE SPACES = 24 SPACES

TOTAL PROVIDED = 308 SPACES

PARKING RATIO: 308 SPACES/200 UNITS = 1.54 SPACES/UNIT

LAND BANKED SPACES PROVIDED = 74 SPACES (MINUS 16 SPACES LOST) = 58 TOTAL ADD.

TOTAL PROVIDED INCLUDING LAND BANKED =366 SPACES (INCLUDES 8 ADA SPACES)

SITE SOILS INFORMATION:
ACCORDING TO THE USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY FOR OAKLAND COUNTY, THE SITE CONSISTS OF THE FOLLOWING SOIL TYPES:

31B - METEA LOAMY SAND, 0 TO 6 PERCENT SLOPES
41B - AQUENTS, SANDY, LOAMY, UNDULATING
52A - SELFRIDGE LOAMY SAND, 0 TO 3 PERCENT SLOPES

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	Ⓡ
SIDEWALK RAMP 'TYPE P'	Ⓟ
CURB DROP ONLY	Ⓧ

REFER TO LATEST MDOT R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	1
'STOP' SIGN	2
'BARRIER FREE PARKING' SIGN	3
'VAN ACCESSIBLE' SIGN	4
'CROSSWALK' SIGN	5
'NO PARKING LOADING ZONE' SIGN	8

REFER TO DETAIL SHEET FOR SIGN DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN JAMES P. BURTON License No. 39605 PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ARE NOT GUARANTEED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
MF FOCUS TROY, LLC
280 WEST MAPLE RD, STE 230
BIRMINGHAM, MI 48009

PROJECT TITLE
FORUM FLATS
TROY, MI 48084

REVISIONS
REV. PER AGENCY COMMENTS 9.26.22

ORIGINAL ISSUE DATE:
AUGUST 12, 2022

DRAWING TITLE
PRELIMINARY SITE PLANS

PEA JOB NO.	2022-0638
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-0638 295 KIRTS BOULEVARD\DWG\SITE_PLAN.dwg PLOT DATE: 9/26/2022 4:11 PM By: Scott Sieg

Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in British Columbia (CAN), California, Delaware, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, and Washington.

Source Numbers

188, 204, 237, 300, 305, 306, 320, 321, 357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076

Land Use: 221
Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

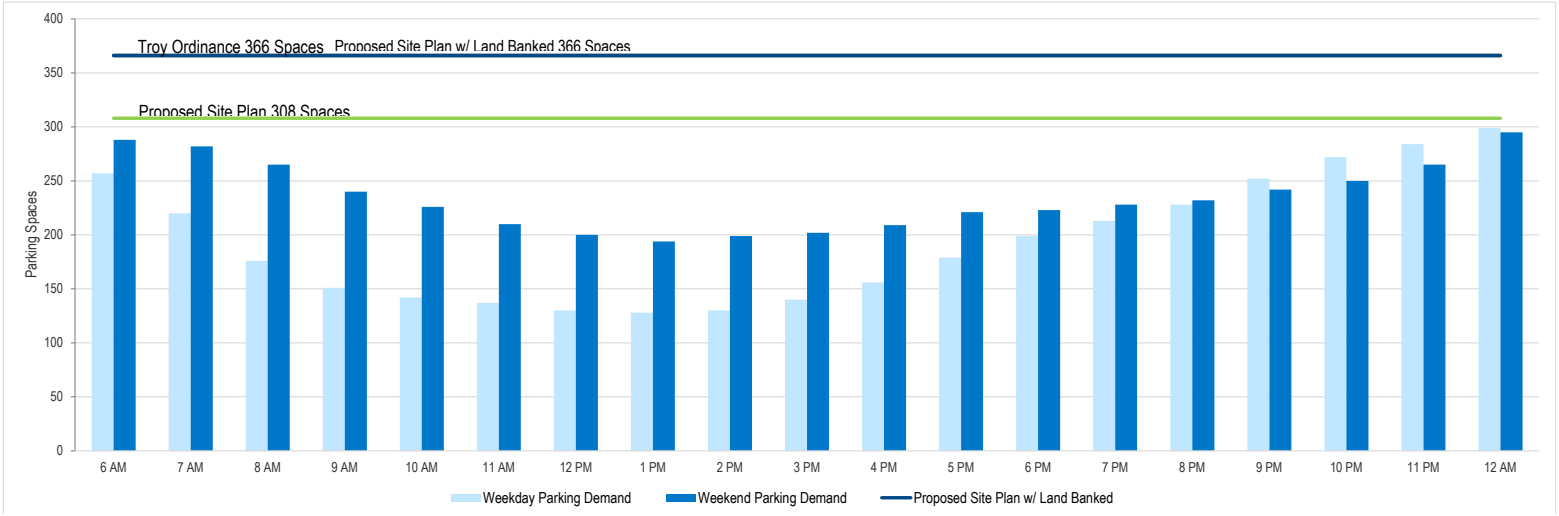
Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

From ITE Distributions

Weekday Parking Demand	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM
Weekday Parking Demand	*257*	*220*	*176*	*151*	*142*	*137*	*130*	*128*	*130*	*140*	*156*	*179*	*199*	*213*	*228*	*252*	*272*	*284*	*299*
Proposed Parking Supply	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308
Difference	51	88	132	157	166	171	178	180	178	168	152	129	109	95	80	56	36	24	9
Parking Lot Percent Occupancy	**83%**	**71%**	**57%**	**49%**	**46%**	**44%**	**42%**	**42%**	**42%**	**45%**	**51%**	**58%**	**65%**	**69%**	**74%**	**82%**	**88%**	**92%**	**97%**
Total Supply with Land Banked	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366
Difference	109	146	190	215	224	229	236	238	236	226	210	187	167	153	138	114	94	82	67
Parking Lot Percent Occupancy	**70%**	**60%**	**48%**	**41%**	**39%**	**37%**	**36%**	**35%**	**36%**	**38%**	**43%**	**49%**	**54%**	**58%**	**62%**	**69%**	**74%**	**78%**	**82%**

Weekend Parking Demand	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM
Weekend Parking Demand	*288*	*282*	*265*	*240*	*226*	*210*	*200*	*194*	*199*	*202*	*209*	*221*	*223*	*228*	*232*	*242*	*250*	*265*	*295*
Proposed Parking Supply	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308
Difference	20	26	43	68	82	98	108	114	109	106	99	87	85	80	76	66	58	43	13
Parking Lot Percent Occupancy	**94%**	**92%**	**86%**	**78%**	**73%**	**68%**	**65%**	**63%**	**65%**	**66%**	**68%**	**72%**	**72%**	**74%**	**75%**	**79%**	**81%**	**86%**	**96%**
Total Supply with Land Banked	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366
Difference	78	84	101	126	140	156	166	172	167	164	157	145	143	138	134	124	116	101	71
Parking Lot Percent Occupancy	**79%**	**77%**	**72%**	**66%**	**62%**	**57%**	**55%**	**53%**	**54%**	**55%**	**57%**	**60%**	**61%**	**62%**	**63%**	**66%**	**68%**	**72%**	**81%**



memorandum

Date: October 19, 2022

To: Bill Huotari, PE

From: Sara Merrill, PE, PTOE

Re: Forum Flats Residential Development
295 Kirts Boulevard

We have reviewed the site plan and traffic study for the proposed residential development for the City of Troy. The site is currently an existing office building. The development will convert the existing office building into multi-family residential as well as construct two additional multi-family buildings, with a total of 34 studio units and 166 one- or two-bedroom units. Site plans were prepared by Krieger Klatt Architects and PEA Group and dated October 18, 2022. A parking study was prepared by Fleis and Vandenbrink and dated September 27, 2022.

OHM acknowledges the parking study findings. Using national ITE parking generation data, the Applicant's study advocates constructing fewer parking spaces than required by ordinance, with the balance (the difference between the ordinance parking rate and what is proposed for construction) to be provided via land-banking for future parking.

OHM's comments are as follows:

1. Trip Generation: OHM does not object to the trip generation estimates provided. The trip generation tables provided show that the proposed multi-family use in three buildings is expected to generate less traffic than the existing single office building if fully occupied.

2. Parking Analysis:

    a. By City Ordinance, 366 spaces are required. The current plan provides 366 proposed parking spaces; 284 surface lot spaces, a further 24 spaces in garages (a total of 308 constructed spaces) and an additional 58 in land-banked parking space. The parking study determined the anticipated peak parking demand, based on ITE Parking Generation Manual 85th percentile rates, is 299 vehicles.

    b. There are two separate areas for land-banked parking, one located in greenspace to the east of the existing building with a net addition of 30 spaces, and another located in the central amenity area with an additional net 28 spaces. OHM notes that both proposed parking areas are readily convertible to parking. We note that should the full land-banked parking be required, the dog run and central park amenity would be eliminated. This becomes a policy question as to whether eliminating the amenity is acceptable if/when evidence of increased parking demand becomes evident.

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3. Site Plan:

   a. We recommend enhancing pedestrian connectivity by adding a sidewalk along the south side of the proposed buildings.

   b. Parking stalls must be a minimum of 17 feet in length when adjacent to 7 foot sidewalks.