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PLANNING COMMISSION MEETING AGENDA REGULAR MEETING

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

March 14, 2023

7:00 P.M.

Council Chambers

1. ROLL CALL
2. APPROVAL OF AGENDA
3. APPROVAL OF MINUTES – February 28, 2023
4. PUBLIC COMMENT – For Items Not on the Agenda

SPECIAL USE AND PRELIMINARY SITE PLAN APPROVAL

5. SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 2690 Crooks Road Apartments, East side of Crooks, South of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District.
6. SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 911 & 999 W. Big Beaver Mixed Use Development, Southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District.

OTHER ITEMS

7. PUBLIC COMMENT – For Items on the Agenda
8. PLANNING COMMISSION COMMENT
9. ADJOURN

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 February 28, 2023, in the Council Chamber of the Troy City Hall. Chair Lambert and Vice Chair Perakis presented opening remarks relative to the role of the Planning Commission and procedure of tonight’s meeting.

1. ROLL CALL

Present:

- Carlton M. Faison
- Tyler Fox
- Michael W. Hutson
- Tom Krent
- David Lambert
- Lakshmi Malalahalli
- Marianna Perakis
- John J. Tagle

Absent:

- Toby Buechner

Also Present:

- R. Brent Savidant, Community Development Director
- Julie Quinlan Dufrane, Assistant City Attorney
- Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

Resolution # PC-2023-02-015

- Moved by: Krent
- Support by: Fox

RESOLVED, To approve the Agenda as prepared.

- Yes: All present (8)
- Absent: Buechner

MOTION CARRIED

3. APPROVAL OF MINUTES – February 14, 2023

Resolution # PC-2023-02-016

- Moved by: Faison
- Support by: Hutson

RESOLVED, To approve the minutes of the February 14, 2023 Regular meeting as submitted.

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

MOTION CARRIED

4. PUBLIC COMMENT – For Items Not on the Agenda

There was no one present who wished to speak.

PRELIMINARY SITE PLAN APPROVAL

5. PRELIMINARY SITE PLAN REVIEW (File Number SP JPLN2022-0025) – Proposed Lange View Townhouses, Southeast corner of Livernois and Leetonia (4080 Livernois), Section 15, Currently Zoned NN Neighborhood Node (Node “H”) District

Mr. Savidant reviewed the Preliminary Site Plan application for Lange View Townhouses. He said the Planning Commission considered and postponed the item at their December 13, 2022 meeting so that the applicant could return with a three-dimensional (3D) modeling, provide appropriate building materials, redesign the building to take away the flatness of the face and show the screen wall between the residential property to the east and the property in question.

Mr. Savidant reported the applicant revised the architectural style of the homes and added front elevation details to reduce the massing of the building. He noted the application does not appear to address the screen wall along the east property line. Mr. Savidant showed the comparison of the architectural details from the 2022 application to the application under consideration this evening and said the features are more of a traditional design.

Mr. Savidant said the Planning Commission should consider in its deliberation the elevations, screen wall along the east property line, and if the application meets the Design Standards (Section 5.06.E) and the Site Plan Review Standards (Section 8.06).

Discussion among administration and Planning Commission:

- Curb cuts on Livernois.
 - Vehicular direction.
 - New cuts to meet Oakland County standards.
 - Potential widening of Livernois.
- Confirmation of proposed number of units (9).

Applicant Gary Abitheira addressed the traditional architectural features and dimensional offset of units. Mr. Abitheira said they have discussed with the neighbors to the east alternative methods for screening residential and it is the neighbor’s wish to install a concrete wall.

There was discussion, some comments related to:

- Alternative methods to screen residential.
- Home ownership; lease-to-own option.

Chair Lambert opened the floor for public comment. Acknowledging there was no one present who wished to speak, Chair Lambert closed the floor for public comment.

Resolution # PC-2023-02-017

Moved by: Malalahalli

Seconded by: Tagle

RESOLVED, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for the proposed Lange View Townhouses, 9 units, located on the Southeast corner of Livernois and Leetonia (4080 Livernois), Section 15, Zoned NN (Neighborhood Node “H”) District, be granted, subject to the following:

1. The applicant provides a screen wall per the Zoning Ordinance requirements.

Yes: All present (8)

Absent: Buechner

MOTION CARRIED

OTHER ITEMS

6. **POTENTIAL PLANNED UNIT DEVELOPMENT (PUD) APPLICATION** – Concept Plan Discussion, East of Livernois, North of Square Lake (PIN 88-20-03-301-088, 88-20-03-301-025, -024, -023), Section 35, Currently Zoned NN (Neighborhood Node “Q”), and R-1B (One Family Residential) Districts

Mr. Savidant said the applicant is back in front of the Planning Commission this evening for feedback on a potential Planned Unit Development application. He reported no action on the item would be taken this evening.

Mr. Savidant provided a brief background on the application. He addressed the proposed mix of housing types, preservation of two homes historic in nature and a previously approved 14 unit attached townhome project on the southern portion of the site. He compared the revisions to the application since last presented to the Planning Commission at its July 26, 2022 meeting. Mr. Savidant said the applicant reduced both the building height and proposed number of units, added a duplex type of housing, and added an internal park.

Mr. Savidant asked the Planning Commission to consider in its discussion:

1. Has the revised plan addressed the concerns of the Planning Commission?
2. Is the proposed plan consistent with the Master Plan?
3. Does the Planning Commission support the proposed mix of housing types? Are there additional housing types that the Planning Commission thinks should be considered?
4. Is the proposed plan consistent with the PUD Standards?

5. Are there site plan changes that the applicant should consider?
6. Are there other considerations that should be discussed with the applicant?

Mr. Savidant addressed the Square Lake and Livernois Neighborhood Node revised Master Plan statement.

Discussion among administration and Planning Commission:

- EVA (emergency vehicular access) on site.
- Potential to add another access to site.
- Fire Department review; EVA, emergency vehicular turnaround, fire protection for all units.
- Preservation of two historic homes in nature on site.
 - Homes not listed on the historic home registry.
 - Preservation/maintenance per PUD Agreement.
- Vacant PNC Bank building, as relates to future use in NN zoning district.

Applicant Gary Abitheira addressed access points, reduction in building height and number of units and the addition of green space. Mr. Abitheira said the two historic homes proposed to be preserved were built in 1910 and are beautiful and in great condition. He said the development offers a mix of housing types, open space, and substantial guest parking. He said they plan to lease-to-own the units and preserve the historic nature of the two homes.

There was discussion, some comments related to:

- Walkability of site.
- Potential traffic congestion at intersection(s), especially during school hours.
- Architectural features of historic homes in relation to new units.
- Environmental sustainability.
- Preservation/maintenance of historic homes as relates to PUD Agreement.
- Guest parking, as relates to front entrances of duplexes.
- Two car garages will be provided for all units.
- Application as relates to the PUD Standards.

Chair Lambert acknowledged there was no one present in the audience to speak on the item.

The applicant was encouraged to identify how the application meets the PUD Standards and to take into consideration sustainable resources.

7. PUBLIC COMMENT – For Items on the Agenda

There was no one present who wished to speak.

8. PLANNING COMMISSION COMMENT

There were general comments, some relating to:

- Consideration/flexibility in requiring sustainable resources in application review process.
- Status of Master Plan in approval process.
- Review of Bylaws.
- Oakland County park plan near Turtle Woods development.

Mr. Savidant announced that:

- The City Council approved the Planned Unit Development application for the Village of Troy PUD located on the south side of Long Lake and west of Rochester by a 6- 0 vote at their February 27, 2023 meeting.
- The proposed Concept Development Plan for Long Lake and Crooks Masterplan Development will be on a future City Council agenda.

9. ADJOURN

The Regular meeting of the Planning Commission adjourned at 8:20 p.m.

Respectfully submitted,

David Lambert, Chair

Kathy L. Czarnecki, Recording Secretary

[https://d.docs.live.net/2f7ed4fe5f664ea8/Documents/Kathy/COT Planning Commission Minutes/2023/2023 02 28 Draft.docx](https://d.docs.live.net/2f7ed4fe5f664ea8/Documents/Kathy/COT%20Planning%20Commission%20Minutes/2023/2023%2002%2028%20Draft.docx)

ITEM #5

DATE: March 9, 2023

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 2690 Crooks Road Apartments, East side of Crooks, South of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District.

The petitioner Tower Construction, LLC submitted the above referenced Special Use Approval and Preliminary Site Plan Approval application to convert an existing 4-story office building into 62 residential units and construct a new 5-story, 94-unit multiple-family residential building on the parcel.

The owner of this property is the same owner as 911 and 999 W. Big Beaver, the other development project on the January 10, 2023 agenda.

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. Report prepared by Carlisle/Wortman Associates, Inc.
3. Memo from City Traffic Consultant OHM, dated March 7, 2022.
4. Parking Study from Fleis & Vandenbrink, dated February 8, 2023.
5. Minutes from January 10, 2023 Planning Commission Regular meeting (excerpt).
6. Site Plan.

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PROPOSED RESOLUTION

SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 2690 Crooks Road Apartments, East side of Crooks, South of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District.

Resolution # PC-2023-03-

Moved by:

Seconded by:

RESOLVED, The Planning Commission hereby approves shared parking between 911 & 999 W. Big Beaver Road and 2690 Crooks Road; and,

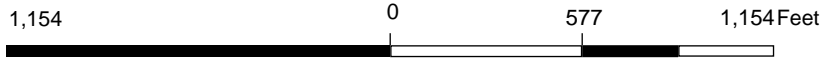
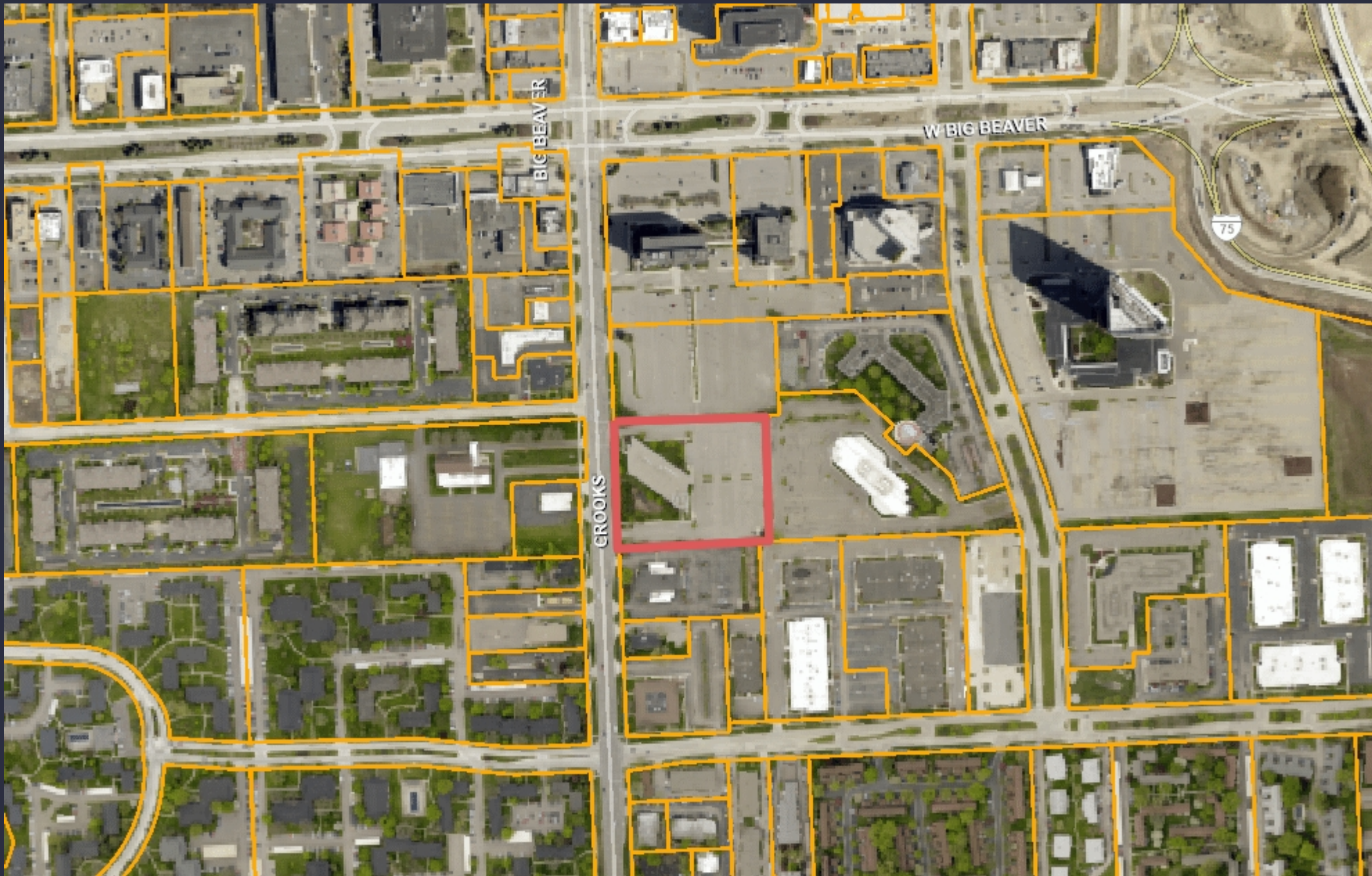
RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed 911 & 999 W. Big Beaver Mixed Use Development, southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District, be (granted, subject to the following conditions):

1. Update Table of Land Use and Zoning calculations provided on sheet C-3 of the plan set.
2. Address OHMs comment.
3. Provide trash enclosure screening details that comply with section 13.02.
4. Provide a shared parking agreement to the satisfaction of the City Attorney.

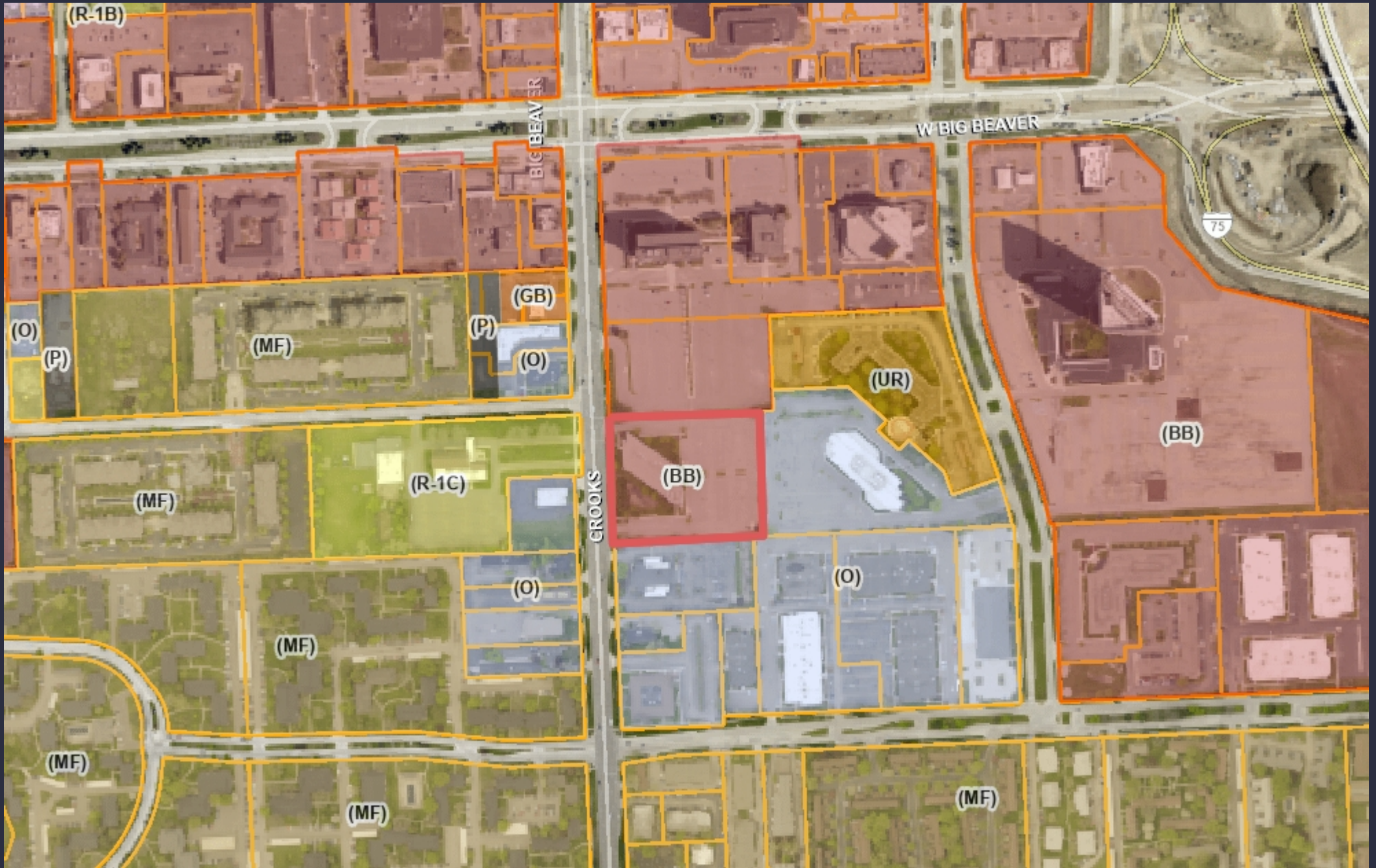
_____) or
 (denied, for the following reasons: _____) or
 (postponed, for the following reasons: _____)

Yes:
 No:
 Absent:

MOTION CARRIED / FAILED



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.



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Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: June 23, 2022
January 4, 2023
March 7, 2023

Preliminary Site Plan and Special Use Review For City of Troy, Michigan

Applicant: Jordan Jonna

Project Name: 2690 Crooks Road Multiple Family Residential

Location: 2690 Crooks Road

Plan Date: February 06, 2023

Zoning: BB, Big Beaver

Action Requested: Preliminary Site Plan and Special Use

SITE DESCRIPTION

An application has been submitted to repurpose the existing 4-story building on site (Lindsey Center) to create 62 units and construct a new 4-story 82-unit multiple-family residential building at 2960 Crooks Road, for a total of 144 units. The new building is located to the east (rear) of the existing four-story building. The area of the newly proposed 4-story building is currently a parking lot.

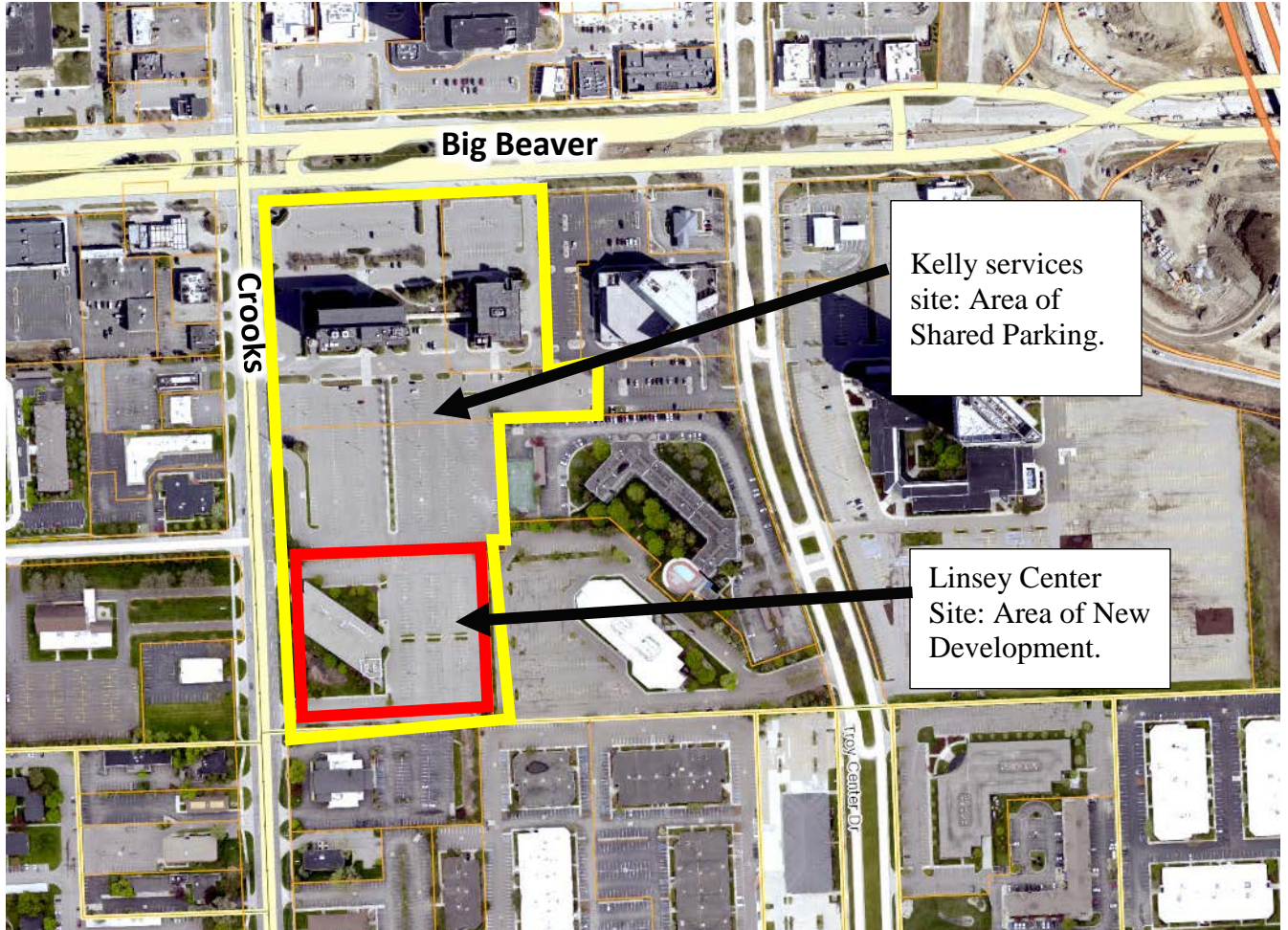
Access will remain as is with two points of access off Crooks Road with cross-access to the north and east. The applicant is proposing shared parking for both buildings at 2690 Crooks with the Kelly Services site (north of proposed building).

The portion of the first floor that faces Crooks Road will include general amenity uses such as a pool and community center. The portion of the first floor that does not front Crooks is used for

2690 Crooks Road
March 7, 2023

residential uses. Residential uses on the first floor, not fronting on a public right-of-way, requires a Special Use permit.

Site Location:



Detailed Location:



Proposed Uses of Subject Parcel:

Existing building to be converted to 62 multi-family units and new building to include 82 multi-family dwelling units.

Current Zoning:

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

Surrounding Property Details:

Direction	Zoning	Use
North	BB, Big Beaver	Office Parking
South	O, Office	Funeral Home
East	O, Office	Office
West	O, Office and R1-C, One Family Residential	Office and Place of Worship

REZONING AND ZONING TEXT AMENDMENT

In the summer of 2021, 2690 Crooks was rezoned, in part, to allow for the conversion of the existing four-story building to be converted from office to residential. The previous zoning of O, Office did not permit residential uses. Please see our May 5, 2021 review memo for more information.

In the fall of 2021, a text amendment was adopted which permitted residential uses on the first floor as a Special Use for the section of the building that does not front on a public right-of-way.

PRIOR PLANNING COMMISSION REVIEW

The Planning Commission last discussed this matter at their January 10, 2023 meeting. At that meeting, there was discussion on:

- Building heights
- Green space deficiency
- Improve walkability for pedestrians
- Shared parking
 - Coordination of parking during construction phases
 - Dynamics of shared parking among the various uses
 - 2690 Crooks is short on parking

The Planning Commission postponed action so that the applicant may comply with the Zoning Ordinance requirements of interior parking lot landscaping, enhance the pedestrian walkways and to provide information to this Commission with regard to the distance to the parking spots for the residential units in excess of what is currently around the building.

SITE PLAN CHANGES

The applicant has made the following changes to the site plan:

- Removed 1-story from rear building. Building is now 4-stories
- Removed first floor in-building parking for rear building
- Reduced number of units by 12. Site total is 144 units.
- Reconfigured units types by providing 41 studio/efficiently units. Zero (0) efficiency units were provided in previous plans.
- Decreased site landscaping by 1.8%
- Added internal parking lot landscape islands
- Revised pedestrian connection between site and northern property (Kelly Services site)

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 new four-story building will be placed to the east (rear) of the existing four-story Lindsey Center building lot. Access to the site will be via one point of access on Crooks, and cross access to the site to the north and east. There is a row of shared parking between the existing and new building.

OHM has reviewed the site plan and offers the following comments:

The proposed sidewalk connection to the north is noted on the plans: "LIMIT OF PROPOSED CONCRETE SIDEWALK. REMAINDER OF ADA CROSS-ACCESS PATHWAY TO BE COORDINATED WITH ADJACENT SITE CONSTRUCTION" This implies that the two sites will be constructed concurrently. However, what if work on this site precedes the site to the north? Since this development proposes shared parking on the adjacent site, there must be suitable pedestrian connections constructed as part of this development in the event the two sites are not constructed concurrently.

Items to be addressed: Address OHMs comment.

AREA, WIDTH, HEIGHT, SETBACKS

The applicant does not propose any changes to the footprint of the existing building. The new building is being reviewed as Building Form D as set forth in Table 5.03.B.3:

	Required	Provided	Compliance
Front (Crooks)	10-foot build-to-line	Over 10 feet	Complies as Lindsey Center is legal non-conforming and new building is placed behind existing building
Side (north)	N/A, building may be placed up to property line	47.9-feet	Complies
Side (south)	N/A, building may be placed up to property line	57.9-feet	Complies
Rear (South)	30-foot minimum setback	54.4-feet	Complies
Building Height	6 stories, 66 feet	4 stories, less than 66 feet	Complies
Lot Coverage (Building, overall site)	30%	24.1	Complies
Parking Location	Cannot be located in front yard	Parking lots not in front yard	Complies

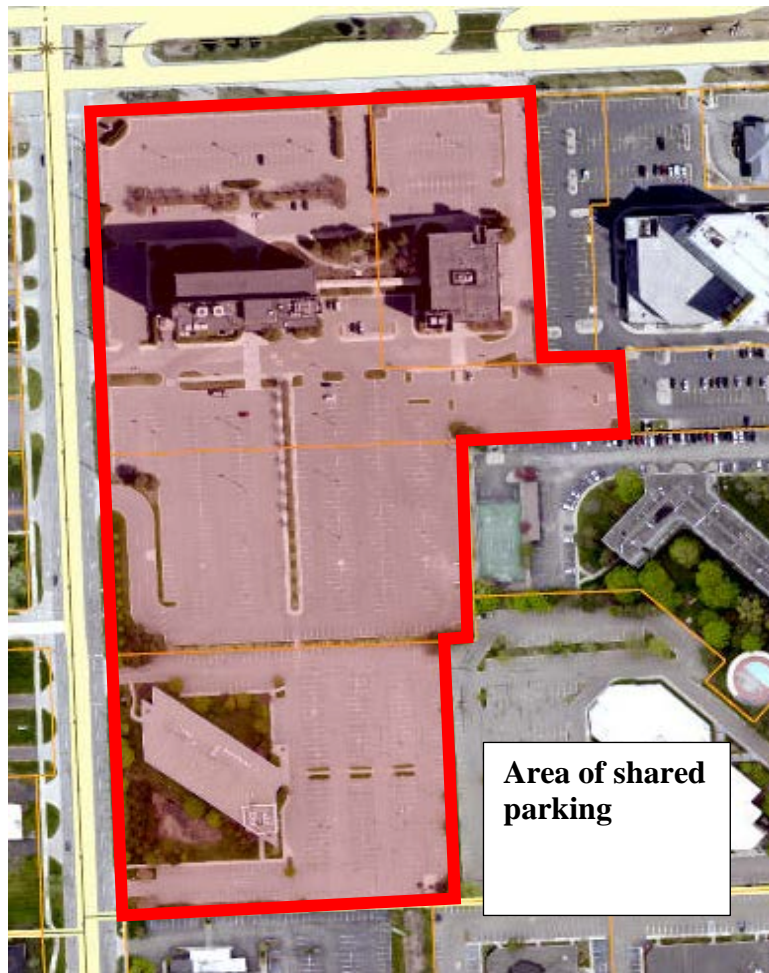
The applicant is proposing a pedestrian connection between the exiting Lindsey Center building and the new apartment complex and Lindsey Center to new residential buildings on 911 Big Beaver.

Though compliant with all dimensional requirements, the applicant did not update the Table of Land Use and Zoning calculations provided on sheet C-3 of the plan set.

Items to be addressed: Update Table of Land Use and Zoning calculations provided on sheet C-3 of the plan set.

PARKING

The applicant proposes to share parking for both buildings with the Kelly service buildings and parking areas.



The applicant is proposing shared parking to include both sites as noted. As set forth in Section 13.06, off-street parking for uses in all districts shall be on the same lot as the use or building served by the parking, unless joint parking with abutting properties and uses is provided in a form acceptable to the City Attorney and executed and recorded by the parties sharing the parking.

OHM has reviewed the shared parking. OHM has submitted memo for Planning Commission review. OHM plans on attending the Planning Commission meeting to discuss shared parking.

Items to be Addressed: Review OHM's memo regarding shared parking.

TRAFFIC

The applicant submitted a traffic study that was reviewed by both OHM and the Oakland County Road Commission.

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			
Crooks: 1 tree every 30 feet	369 / 30 = 13 trees	14 trees	Complies
Parking Lot Landscaping			
1 tree per every 8 parking spaces	221 spaces / 8 = 28 trees	16 in parking lot and 15 on perimeter	Complies, with Planning Commission approval
Overall			
<u>Site landscaping:</u> 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 brick, stone, pavers, or other public plaza elements, but shall not include any parking area or required sidewalks.	20%	27.8%	Complies

The applicant is required to provide 28 parking lot trees. Sixteen (16) of the required twenty-eight (28) trees are in parking lot and fifteen (15) are along perimeter of parking lot. Planning Commission may allow alternative location of parking lot trees.

Transformer / Trash Enclosure:

The applicant is proposing to reuse the existing trash enclosure and add an additional trash enclosure along the southern property line. As set forth in Section 13.02, trash enclosures shall be screened on all sides with a wall, and gate at least as high as the container, but no less than

six (6) feet in height, and shall be constructed of durable material and construction which is compatible with the architectural materials used in the site development.

The applicant has noted that existing trash enclosure will be surrounded by chain-link fence with slats. The applicant should replace chain-link fence with wall. For the new trash enclosure, the applicant has not provided any trash enclosure screening details other than noting that they will screen with landscaping.

Items to be Addressed: 1). Planning Commission to discuss parking lot tree location; and 2). Provide trash enclosure screening details that comply with section 13.02.

PHOTOMETRICS

The applicant is proposing thirteen (13) parking lot lights. The lighting fixture and photometrics meet ordinance requirements. The applicant notes that no building lighting is proposed.

Items to be Addressed: None.

FLOOR PLAN AND ELEVATIONS

Existing Lindsey Building:

The applicant proposes the following:

1. Existing metal panel and glass to remain
2. New metal wrap and balconies to be added to exterior skin
3. Exterior metal and glass to be removed for new balcony doors and windows
4. Other elements of current façade to remain.

The proposed color scheme is dark and light greys, and orange accents.

New Building:

Floor plans and elevations have been provided on sheets A.201. The first three floors are utility brick of different grey colors and the fourth and fifth floors are hardie panel siding. The elevations provided show architectural details, variations in material and pattern (brick, hardie panel siding) as well as general color scheme of dark and light greys, and orange accents.

The applicant has provided a rendering of the buildings; however, it would be helpful if the applicant was able to show a 3-D model of the buildings in context to the site and to each other.

Items to be Addressed: None

DESIGN STANDARDS AND SITE PLAN REVIEW STANDARDS

The Big Beaver Node design standards as well as Site Plan review standards provide the Planning Commission with direction when reviewing the proposed site plan and design features of this development.

Section 5.04.E. outlines Design Standards:

1. *Building Orientation and Entrance*
2. *Ground Story Activation*
3. *Transitional Features*
4. *Site Access, Parking, and Loading*

Please see Section 5.04.E for standard details.

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.*

SPECIAL USE STANDARDS

For any special use, according to Section 9.02.D, the Planning Commission shall “...review the request, supplementary materials either in support or opposition thereto, as well as the Planning Department’s report, at a Public Hearing established for that purpose, and shall either grant or deny the request, table action on the request, or grant the request subject to specific conditions.”

Section 9.03 states that before approving any requests for Special Use Approval, the Planning Commission shall consider:

1. *Compatibility with Adjacent Uses.*
2. *Compatibility with the Master Plan.*
3. *Traffic Impact.*
4. *Impact on Public Services.*
5. *Compliance with Zoning Ordinance Standards.*
6. *Impact on the Overall Environment.*
7. *Special Use Approval Specific Requirements.*

SUMMARY

As part of the deliberation, the Planning Commission and applicant shall discuss:

- a. Compliance with Section 5.04.E Big Beaver Design Standards
- b. Compliance with Section 8.06 Site Plan Review Standards
- c. Compliance with 9.02.D Special Use Standards
- d. Architecture and material use:
 - a. Transparency for east, north, and south elevation on new building
 - b. Consideration of a 3-D model of the buildings in context to the site and to each other
- e. Parking lot tree location
- f. Shared parking

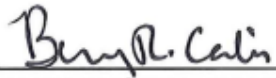
If Planning Commission approves preliminary site plan and special use, the following conditions shall be required as part of the final site plan submittal:

1. Update Table of Land Use and Zoning calculations provided on sheet C-3 of the plan set.
2. Address OHMs comment.

2690 Crooks Road
March 7, 2023

3. Provide trash enclosure screening details that comply with section 13.02.
4. Provide a shared parking agreement to the satisfaction of the City Attorney.

Sincerely,



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



memorandum

Date: March 7, 2023

To: R. Brent Savidant, AICP
Scott Finlay, PE

From: Stephen Dearing, PE, PTOE

CC: Sara Merrill, PE, PTOE

Re: 2690 Crooks Multi-Family Apartments
Traffic Review
PSUP2022-001, JPLN2022-0004

We have reviewed the preliminary site plans for 2690 Crooks Road. The plans propose renovating and repurposing the existing 4-story office building into a Multi-Family Apartment building (62-units), and also constructing a new proposed 5-story Multi-Family Apartment building (82-units) to the east of the existing building. The plans were prepared by Stonefield Engineering & Design and are dated February 6, 2023.

A shared parking analysis (for 991 & 999 Big Beaver and 2690 Crooks) was previously submitted by Rowe. This evaluation has been updated; a shared parking study has been provided by Fleis and Vandenbrink, dated February 8, 2023.

OHM offers the following comments:

1. Shared Parking:

Our previous review noted that the proposed shared parking area is located on a separate parcel, regardless of ownership. We asked that a shared parking agreement must be in place in case either parcel is sold at a later date, as well as to preserve appropriate parking facilities in the event either parcel is redeveloped.

In the Preliminary Site Plan & Special Use Review response letter of February 10, 2023, the applicant stated "The properties are owned / controlled by the same entity and should not require a shared parking agreement." However, in the Traffic Review respond letter of the same date, the applicant stated "The applicant is aware and has no objections. A shared parking agreement will be recorded prior to final City approvals."

We believe a clarification is needed and continue to recommend that a shared parking agreement will be provided.

2. Improve pedestrian connectivity.

The proposed sidewalk connection to the north is noted on the plans: "LIMIT OF PROPOSED CONCRETE SIDEWALK. REMAINDER OF ADA CROSS-ACCESS PATHWAY TO BE COORDINATED WITH ADJACENT SITE CONSTRUCTION" This implies that the two sites will be constructed concurrently. However, what if work on this site precedes the site to the north? Since this development proposes shared parking on the adjacent site, there must be suitable pedestrian connections constructed as part of this development in the event the two sites are not constructed concurrently.

MEMO

VIA EMAIL mark@tower-construct.com

To: Mr. Mark Soma
Tower Construction

From: Julie Kroll, PE, PTOE
Fleis & VandenBrink

Date: Revised February 8, 2023

Re: Proposed Development
999 Big Beaver & 2690 Crooks Road, Troy, Michigan
Parking Study

1 INTRODUCTION

This memorandum presents the results of the Shared Parking Study for the proposed development project in the City of Troy, Michigan. The project site includes two properties located at 2690 Crooks Road and 999 Big Beaver Road as shown on the attached site plan.

- North Property: The Kelly site at 999 Big Beaver development includes the construction several new land uses adjacent to the existing Kelly Services building that include retail, multi-family and a parking garage.
- South Property: The Lindsay site at 2690 Crooks Road development includes the conversion of the existing four-story office building into multi-family units, and the construction of a five-story, multi-family housing building within the existing parking lot.

The purpose of this study is to provide a summary of the projected parking generation for the proposed developments and determine if there will be adequate parking to accommodate all uses

2 PARKING ANALYSIS

2.1 NORTH PROPERTY: KELLY SITE (999 W. BIG BEAVER ROAD)

The proposed development plan for the Kelly site was evaluated and the City of Troy Zoning Ordinance was reviewed and is summarized in **Table 1**. Based upon the results of this evaluation, the proposed development meets the parking requirements per the City Parking Ordinance.

Table 1: City of Troy Parking Ordinance

Land Uses	Size	City Ordinance Rates	Parking Requirements Per Ordinance (spaces)
Multi-Family Housing	156 Units	2 spaces/dwelling unit	312
Kelly Services Office (General)	134,560 SF GFA	1 space per 300 SF GFA	449
Bank	2,000 SF GFA	1 space per 200 SF GFA	10
Retail	9,200 SF GFA	1 space per 250 SF GFA	37
Restaurant-Standard	300 Seats	1 space per 2 seats	150
Restaurant-Fast Food	2,560 SF	1 space per 70 SF	37
Total			995
Proposed Parking Supply			1,021
Difference			26

2.2 SOUTH PROPERTY: LINDSEY SITE (2690 CROOKS ROAD)

The proposed development plan for the Crooks Road site 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

Land Use	Land Use	Size	Independent Variable	Troy Zoning Ordinance	
				Parking Supply Requirements	Parking Supply (spaces)
Multiple-family residential	Dwelling Unit	103	D. U.	2 spaces/dwelling unit	206
	Efficiency Unit	41	D. U.	1 spaces/dwelling unit	41
	Total	144	D.U.		247
Proposed Parking Supply					196
Difference					-51

The results of the analysis shows that the proposed parking supply will not meet the parking ordinance requirements, therefore additional parking analysis was performed to determine how much parking should be provided and where the additional parking demand can be accommodated.

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.

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 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/suburban¹ environment and the parking demand calculations were based on this assumption.

The 85th percentile peak parking demand rates from ITE *Parking Generation, 5th Edition* were used in this analysis. An 85% percentile means that of 85% of similar sites survived for the calculation had peak parking demands at or below this rate. This provides a conservative evaluation when calculating the projected parking.

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.

Additionally, the Urban Land Institute (ULI) Shared Parking 3rd Edition recommends the 85th percentile parking demand as the appropriate metric for calculating the projected parking demands for a proposed development.

Table 3: ITE Parking Generation Parking Demand Summary

Land Use	ITE Land Use Code	Building	Size	Independent Variable	ITE Parking Generation 5 th Edition			
					Peak Period		Peak Parking Demand (veh)	
					Parking 85 th % Demand Rates			
					Weekday	Weekend	Weekday	Weekend
Multi-Family Housing: Mid-Rise	221	Lindsey A	106	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	92	82
		Lindsey B	92	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	80	71
		Total	198	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	172	152

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. The results of this analysis are summarized in **Table 4** and show that the proposed parking supply on site will accommodate the projected parking demand as calculated based upon the ITE 85% peak parking demand.

Table 4: Peak Hour Parking Analysis Summary

Methodology	Land Use	Size	Independent Variable	Troy Zoning Ordinance		Proposed Parking Supply
				Parking Supply Requirements	Parking Supply (spaces)	
Spaces per DU	Multiple-family residential	156	D. U.	2 spaces/dwelling unit 1 space /Eff Unit	247	196
Peak Parking Demand					172	172
Projected Parking Surplus					75	24
<i>Total Parking Percent Occupancy</i>					<i>70%</i>	<i>88%</i>

2.3 TOTAL SITE (KELLY + LINDSAY) PARKING SUMMARY

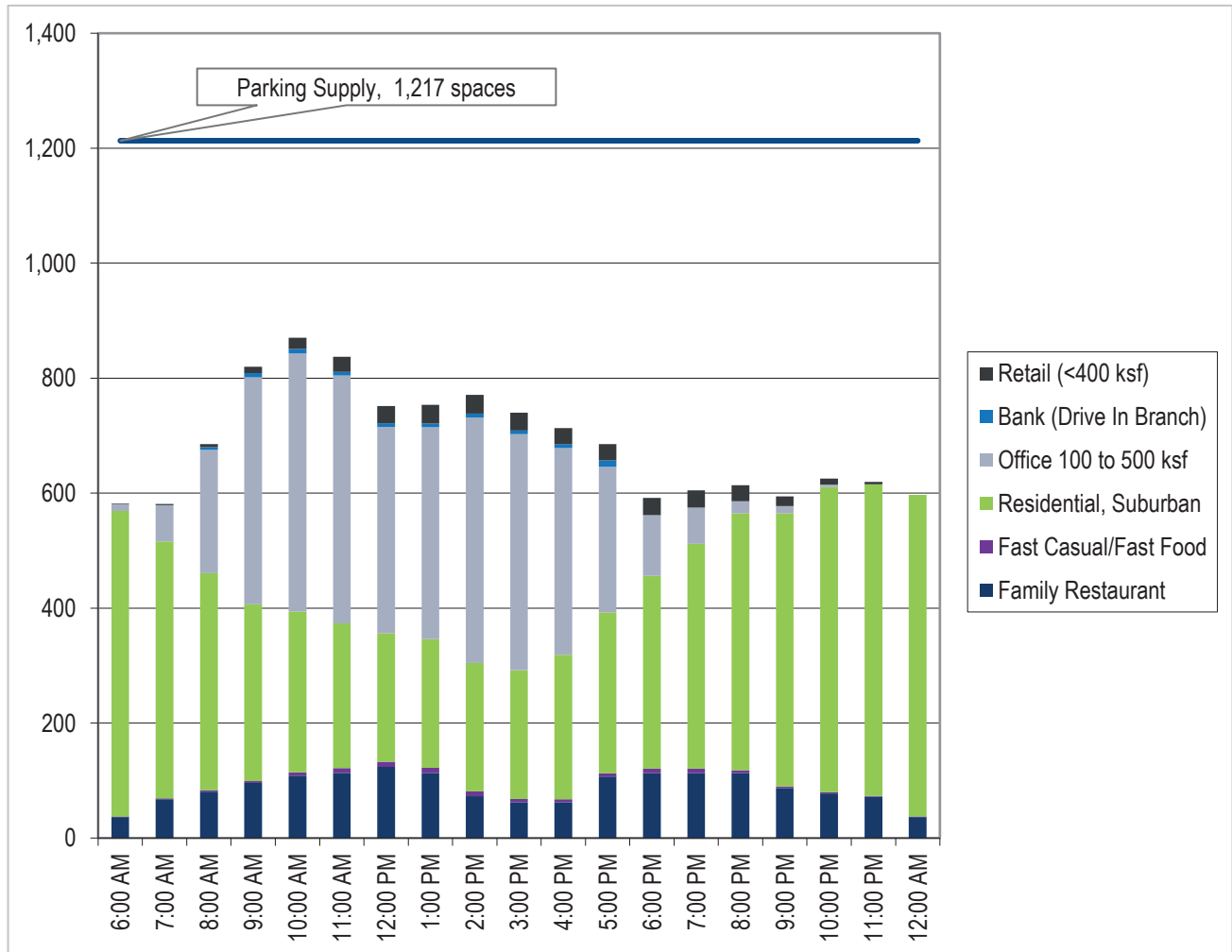
A shared parking analysis was performed for the combined North Property: Kelly Site and South Property: Lindsey Site in accordance with the requirements outlined in the City of Troy Zoning Ordinance Section 13.06 which states that shared parking can be considered where the applicant can demonstrate that the peak usage will occur at different periods of the day. In order to demonstrate shared parking compatibility, a shared parking analysis is required utilizing the methodologies of the Urban Land Institute Shared Parking Manual (3rd Edition), however the underlying parking space requirements for each use shall be based on the City of Troy parking requirements.

The shared parking for both projects is summarized in **Table 5** and shows that the peak parking demand for the site occurs during at 10:00 AM for this site. The peak hour variations in the parking demand are shown in Exhibit 1 and show the advantage of using shared parking to accommodate additional parking demand. As the office use parking demand decreases, the residential parking demand increases, thereby reducing the need for additional parking to accommodate both uses.

Table 5: Shared Parking Summary

Location	Land Uses	Size	City Ordinance Rates	Ordinance Requirements (no shared parking)	Shared Parking Peak Demand (10:00 AM)
North Property: Kelly Site	Multi-Family Housing	156 Dwelling Unit	2 spaces/DU	312	156
	Kelly Services Office (General)	134,560 SF GFA	1 space per 300 SF GFA	449	449
	Bank	2,000 SF GFA	1 space per 200 SF GFA	10	8
	Retail	9,200 SF GFA	1 space per 250 SF GFA	37	20
	Restaurant-Standard	300 Seats	1 space per 2 seats	150	108
	Restaurant-Fast Food	2,560 SF	1 space per 70 SF	37	6
South Property: Lindsey Site	Multi-Family Housing	103 Dwelling Unit	2 spaces/DU	206	103
	Multi-Family Housing	41 Efficient Unit	1 spaces/EU	41	21
Total Parking Demand (spaces)				1,242	871
Proposed Parking Supply				1,217	1,217
Difference				-25	346

Exhibit 1: Shared Parking Weekday Hourly Summary



3 CONCLUSIONS

The conclusions of this study are as follows:

- The proposed development plan for the North Property: Kelly Site meets the parking requirements per the City Parking Ordinance.
- The proposed development plan for the South Property: Lindsey Site does not meet ordinance requirements, however the 85% ITE parking demand for this site can be accommodate with the parking proposed for this property.
- Considering the City's shared parking analysis for the entire North and South properties, there will be adequate parking to accommodate both uses.

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

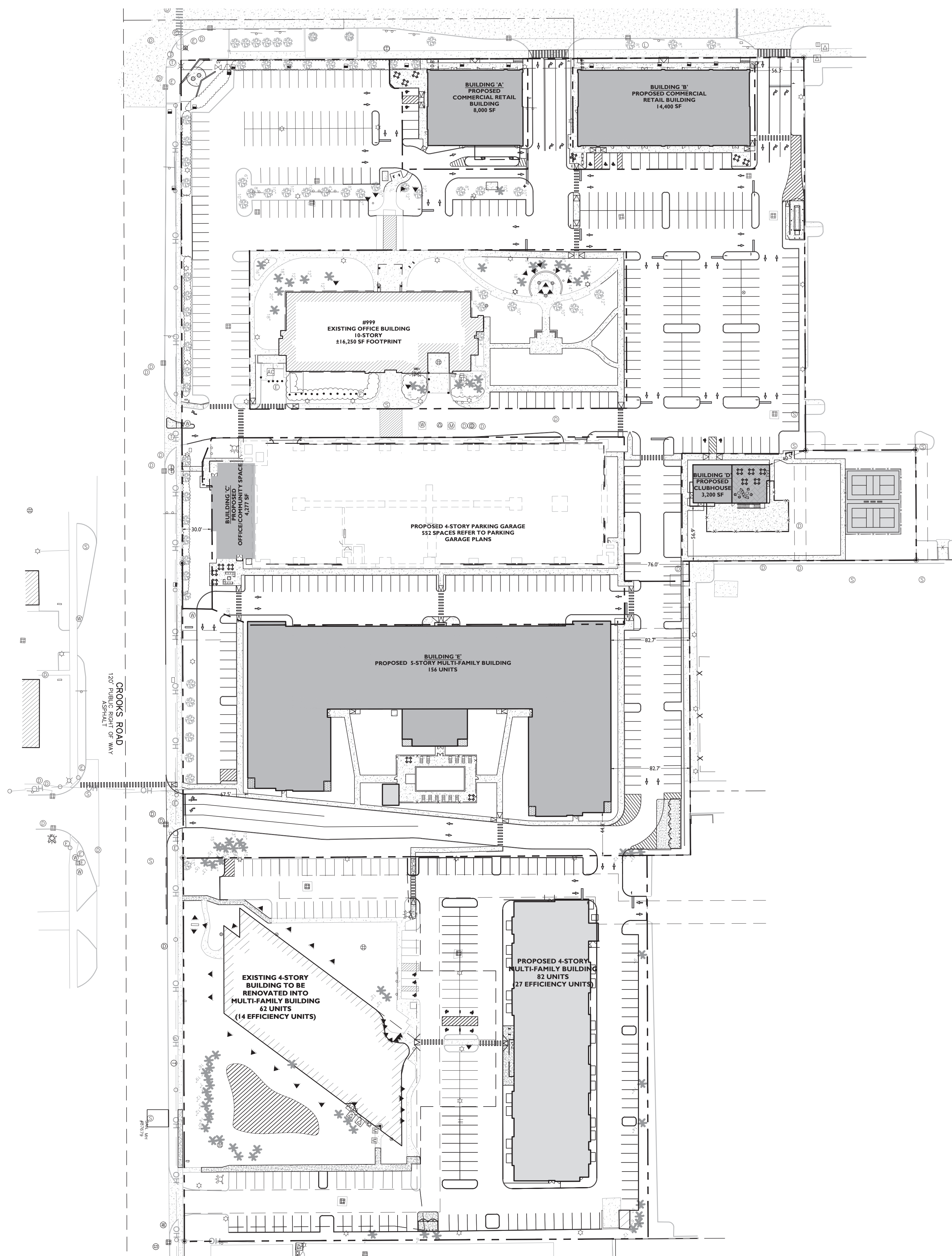


I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

A handwritten signature in blue ink that reads "Julie M. Kroll".

Digitally signed by Julie M.
Kroll
Date: 2023.02.08 16:56:55
-05'00'

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



OFF-STREET PARKING REQUIREMENTS - KELLY

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,540 NFA)/(1,000 NFA) = 449 SPACES	408 SURFACE SPACES 552 GARAGE SPACES 63 PODIUM SPACES 1,021 TOTAL SPACES
§ TABLE 13.06-A	COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(1,250 GFA) = 37 SPACES	
§ TABLE 13.06-A	BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(1,200 GFA) = 10 SPACES	
§ TABLE 6.10	4 STACKING SPACES PER LANE	4 SPACES PER LANE
§ TABLE 13.06-A	RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (300 SEATS)/(1/2 SEATS) = 150 SPACES	
§ TABLE 13.06-A	RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (*) (2,560 SF NFA)/(1/70 SF NFA) = 37 SPACES	
	MULTI-FAMILY RESIDENTIAL: 2 SPACES PER DWELLING UNIT (156 UNITS)/(1 UNITS) = 312 SPACES	
	TOTAL: 449+37+10+150+37+312 = 995 SPACES	

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF)(0.8) = 2,560 SF

OFF-STREET PARKING REQUIREMENTS - LINDSEY CENTRE

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	MULTI-FAMILY DWELLING: 2 SPACES PER DWELLING UNIT (103 UNITS)/(2 SPACES PER UNIT) = 206 SPACES 1 SPACE PER EFFICIENCY UNIT (41 UNITS)/(1 SPACE PER UNIT) = 41 SPACES TOTAL: 206 + 41 = 247 SPACES	196 SPACES

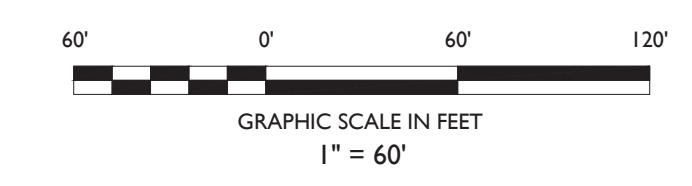
OFF-STREET PARKING REQUIREMENTS - COMBINED

PARCEL	REQUIRED	PROPOSED
KELLY PARCEL	995 SPACES	1,021 SPACES
LINDSEY CENTRE	247 SPACES	196 SPACES
	TOTAL: 995 + 247 = 1,242 SPACES	TOTAL: 1,220 SPACES

SYMBOL DESCRIPTION

	PROPERTY LINE
	EXISTING BUILDING
	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED CONCRETE

- GENERAL NOTES**
- THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
 - ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC, AND ITS SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
 - THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
 - THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC, WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
 - THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
 - THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
 - THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
 - SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC, BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.



ISSUE	DATE	BY	DESCRIPTION
5	10/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
4	07/11/2022	KTH	FOR ENGINEERING APPROVAL
3	05/31/2022	KTH	FOR SITE PLAN APPROVAL
2	02/14/2022	KTH	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
1	02/09/2021	RAC	FOR CITY SUBMISSION

NOT APPROVED FOR CONSTRUCTION

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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

J. REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

SCALE: 1" = 60' PROJECT ID: M-19301.01

TITLE:
OVERALL SITE PLAN

DRAWING:
C-4

Land Use: 221 Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and with between three and 10 levels (floors) of residence. Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), and affordable housing (Land Use 223) are related land uses.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday (one general urban/suburban study site), a Saturday (two general urban/suburban study sites), and a Sunday (one dense multi-use urban study site).

Hour Beginning	Percent of Peak Parking Demand		
	Weekday	Saturday	Sunday
12:00–4:00 a.m.	100	100	100
5:00 a.m.	94	99	–
6:00 a.m.	83	97	–
7:00 a.m.	71	95	–
8:00 a.m.	61	88	–
9:00 a.m.	55	83	–
10:00 a.m.	54	75	–
11:00 a.m.	53	71	–
12:00 p.m.	50	68	–
1:00 p.m.	49	66	33
2:00 p.m.	49	70	40
3:00 p.m.	50	69	27
4:00 p.m.	58	72	13
5:00 p.m.	64	74	33
6:00 p.m.	67	74	60
7:00 p.m.	70	73	67
8:00 p.m.	76	75	47
9:00 p.m.	83	78	53
10:00 p.m.	90	82	73
11:00 p.m.	93	88	93

Additional Data

In prior editions of *Parking Generation*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of parking demand data found no clear differences in parking demand between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

The average parking supply ratios for the study sites with parking supply information are shown in the table below.

Setting	Proximity to Rail Transit	Parking Supply Ratio	
		Per Dwelling Unit	Per Bedroom
Center City Core	Within ½ mile of rail transit	1.1 (15 sites)	1.0 (12 sites)
Dense Multi-Use Urban	Within ½ mile of rail transit	1.2 (39 sites)	0.9 (34 sites)
	Not within ½ mile of rail transit	1.2 (65 sites)	0.8 (56 sites)
General Urban/Suburban	Within ½ mile of rail transit	1.5 (25 sites)	0.8 (12 sites)
	Not within ½ mile of rail transit	1.7 (62 sites)	1.0 (39 sites)

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Oregon, Virginia, Washington, and Wisconsin.

It is expected that the number of bedrooms and number of residents are likely correlated to the parking demand generated by a residential site. Parking studies of 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). Future parking studies should also indicate the number of levels contained in the residential building.

Source Numbers

21, 209, 247, 255, 277, 401, 402, 419, 505, 512, 522, 533, 535, 536, 537, 538, 545, 546, 547, 575, 576, 577, 579, 580, 581, 583, 584, 585, 587

Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Bedrooms

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban (no nearby rail transit)

Peak Period of Parking Demand: 10:00 p.m. - 5:00 a.m.

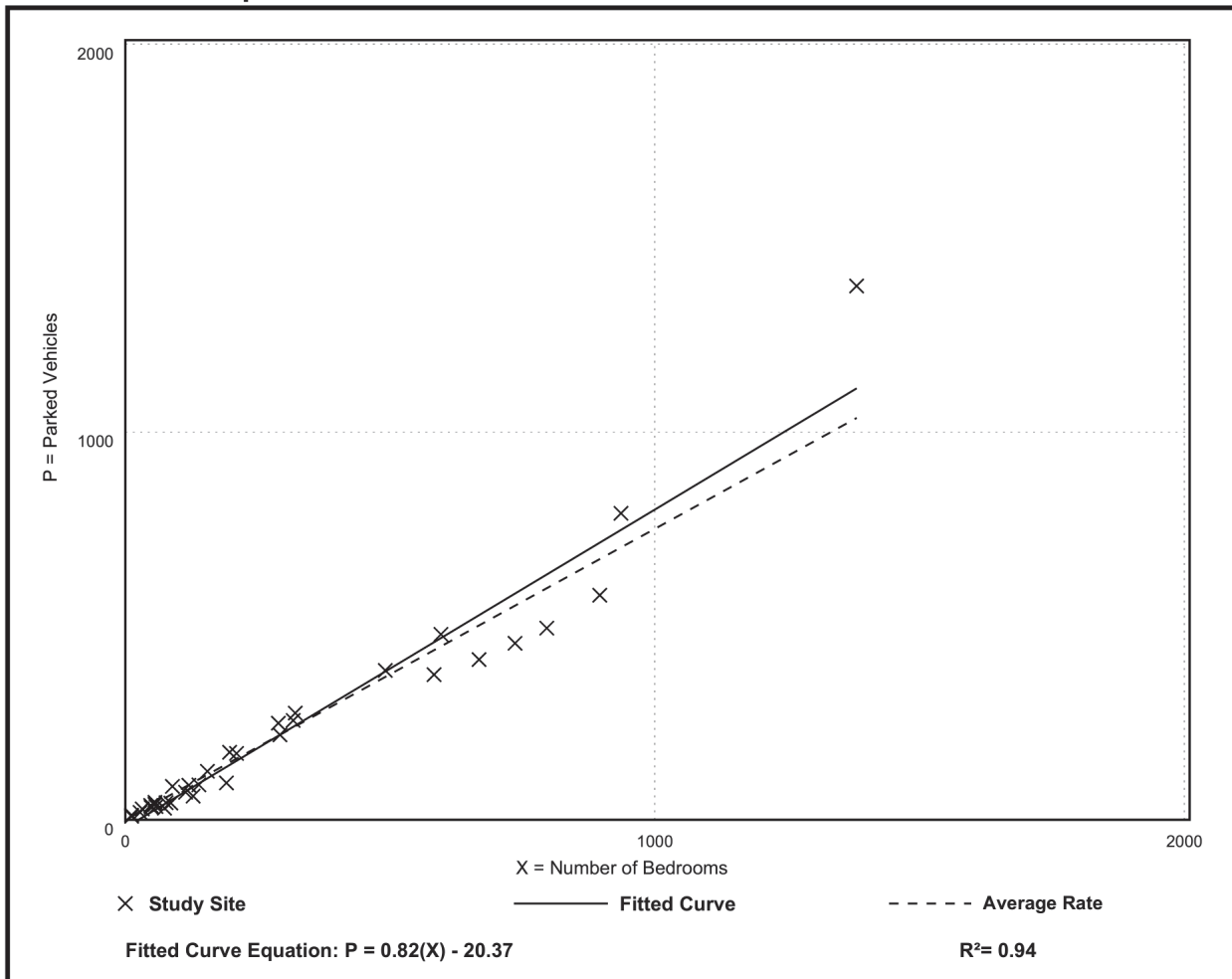
Number of Studies: 35

Avg. Num. of Bedrooms: 294

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.75	0.41 - 1.00	0.65 / 0.87	0.70 - 0.80	0.15 (20%)

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Bedrooms

On a: **Saturday**

Setting/Location: **General Urban/Suburban (no nearby rail transit)**

Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.

Number of Studies: 1

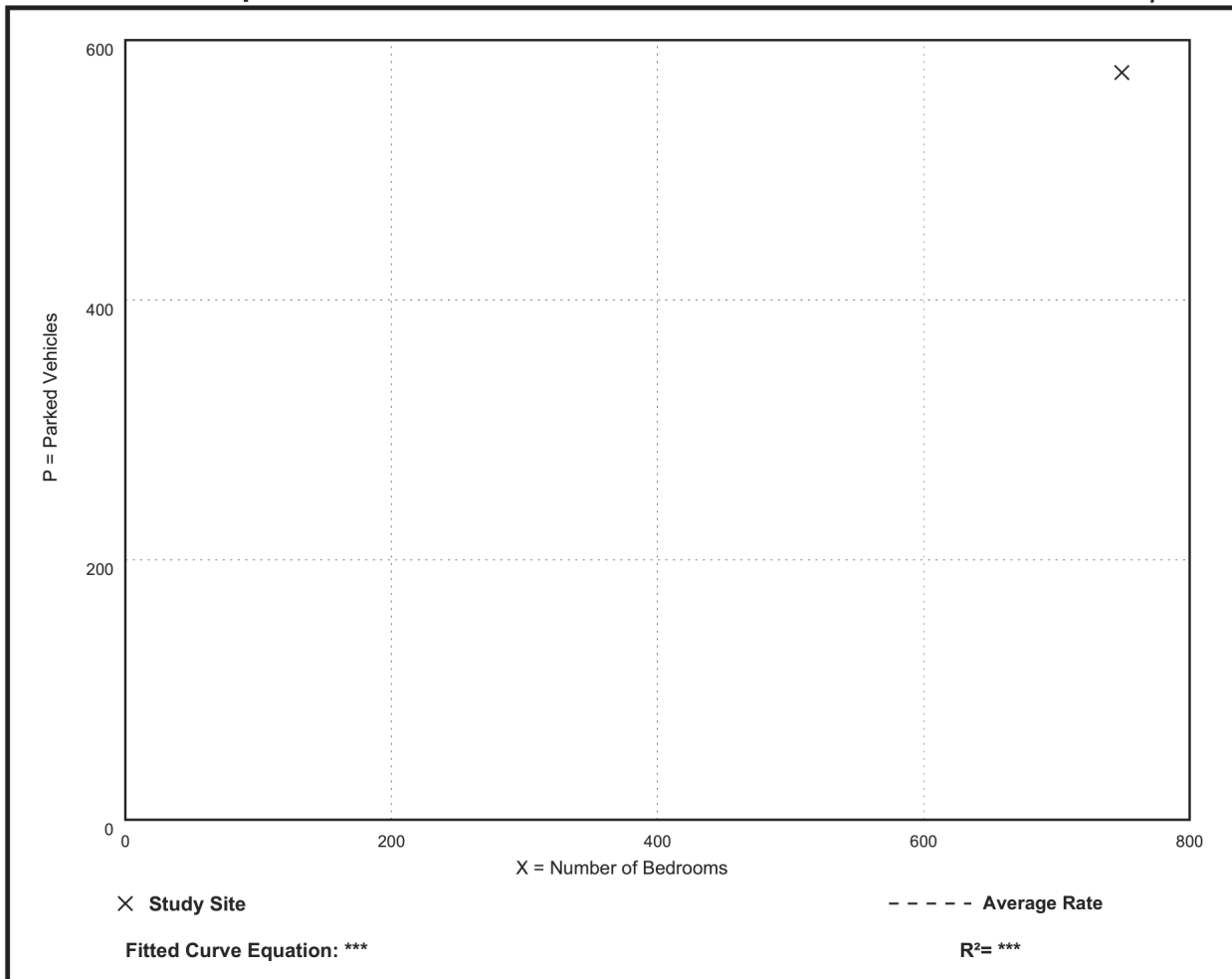
Avg. Num. of Bedrooms: 749

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.77	0.77 - 0.77	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Shared Parking Demand Summary																		
Peak Month: DECEMBER -- Peak Period: 10 AM, WEEKDAY																		
Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
			Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand
	Quantity	Unit										10 AM	December		10 AM	December		
Retail																		
Retail (<400 ksf)	9,200	sf GLA	3.12	100%	86%	2.67	ksf GLA	3.20	100%	90%	2.89	ksf GLA	55%	100%	14	60%	100%	16
Employee			0.78	100%	97%	0.76		0.80	100%	95%	0.76		75%	100%	6	85%	100%	6
Food and Beverage																		
Family Restaurant	300	sf GLA	0.42	100%	80%	0.34	ksf GLA	0.42	100%	90%	0.38	ksf GLA	85%	100%	86	90%	100%	103
Employee			0.07	100%	97%	0.07		0.07	100%	95%	0.07		100%	100%	22	100%	100%	22
Fast Casual/Fast Food	2,560	sf GLA	12.40	100%	10%	1.24	ksf GLA	12.70	100%	7%	0.85	ksf GLA	55%	96%	2	55%	96%	1
Employee			2.00	100%	97%	1.94		2.00	100%	95%	1.90		75%	100%	4	75%	100%	4
Entertainment and Institutions																		
Hotel and Residential																		
Residential, Suburban																		
Studio Efficiency	41	units	1.00	100%	100%	1.00	unit	1.00	100%	100%	1.00	unit	50%	100%	21	75%	100%	31
1 Bedroom	259	units	2.00	100%	100%	2.00	unit	2.00	100%	100%	2.00	unit	50%	100%	259	75%	100%	389
Office																		
Office 100 to 500 ksf	134,560	sf GFA	0.23	100%	100%	0.23	ksf GFA	0.03	100%	100%	0.03	ksf GFA	100%	100%	32	90%	100%	4
Reserved		emp	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.10	100%	100%	3.10		0.31	100%	100%	0.31		100%	100%	417	90%	100%	39
Bank (Drive In Branch)	2,000	sf GFA	2.90	100%	48%	1.39	ksf GFA	3.00	100%	100%	3.00	ksf GFA	100%	100%	3	75%	100%	5
Employee			2.10	100%	97%	2.04		1.75	100%	97%	1.70		100%	100%	5	100%	100%	4
Additional Land Uses																		
													Customer/Visitor	136	Customer	129		
													Employee/Resident	735	Employee/Resident	494		
													Reserved	-	Reserved	-		
													Total	871	Total	623		

Shared Parking
Reduction 30% 26%

Land Use	Quantity	Maximum Parking Demand				Combined Monthly Adjustments															
		Weekday		Weekend		Land Use	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Late Dec		
		Base Ratio	Max Spaces	Base Ratio	Max Spaces																
Retail																					
Retail (<400 ksf)	9,200	sf GLA	3.12	29	3.20	30															
Employee			0.78	8	0.80	8	Retail (<400 ksf)	59%	61%	70%	67%	72%	72%	70%	73%	66%	69%	76%	100%	85%	
Retail (400 to 600 ksf)			0.78	0	2.40	0	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	
Employee			0.74	0	0.60	0	Retail (400 to 600 ksf)	59%	61%	70%	67%	72%	72%	70%	73%	66%	69%	76%	100%	85%	
Retail (600 ksf to 1,000 ksf)	0	sf GLA	3.20	0	3.60	0	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	
Employee			0.80	0	0.90	0	Retail (600 ksf to 1,000 ksf)	59%	61%	70%	67%	72%	72%	70%	73%	66%	69%	76%	100%	85%	
Retail (1,000 ksf to 2,000 ksf)	0	sf GLA	3.50	0	4.00	0	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	
Employee			0.90	0	1.00	0	Retail (1,000 ksf to 2,000 ksf)	59%	61%	70%	67%	72%	72%	70%	73%	66%	69%	76%	100%	85%	
Retail (over 2,000 ksf)	0	sf GLA	2.90	0	3.20	0	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	
Employee			0.70	0	0.80	0	Retail (over 2,000 ksf)	59%	61%	70%	67%	72%	72%	70%	73%	66%	69%	76%	100%	85%	
Supermarket/Grocery			4.00	0	4.00	0	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	
Employee			0.75	0	0.75	0	Supermarket/Grocery	93%	86%	94%	92%	97%	94%	96%	95%	92%	95%	95%	100%	95%	
Pharmacy	0	sf GLA	3.00	0	3.00	0	Employee	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Employee			0.40	0	0.40	0	Pharmacy	89%	85%	92%	89%	91%	89%	89%	90%	88%	91%	89%	100%	95%	
Discount Stores/Superstores	0	sf GLA	3.40	0	3.80	0	Employee	99%	95%	100%	99%	100%	100%	98%	98%	98%	100%	100%	100%		
Employee			0.85	0	0.95	0	Discount Stores/Superstores	72%	72%	79%	76%	81%	79%	79%	81%	74%	79%	85%	100%	90%	
Home Improvement Stores/Garden	0	sf GLA	3.10	0	3.45	0	Employee	82%	82%	88%	86%	91%	89%	89%	91%	84%	89%	95%	100%	100%	
Employee			0.80	0	0.90	0	Home Improvement Stores/Garden	63%	62%	79%	90%	100%	100%	92%	87%	84%	80%	85%	80%	75%	65%
							Employee	72%	71%	89%	100%	100%	100%	97%	94%	90%	94%	90%	85%	75%	
Food and Beverage																					
Fine/Casual Dining	0	sf GLA	0.42	0	0.42	0	Fine/Casual Dining	88%	87%	98%	94%	99%	94%	96%	96%	89%	93%	89%	100%	95%	
Employee			0.07	0	0.07	0	Employee	95%	96%	100%	100%	100%	100%	100%	100%	99%	100%	100%	100%		
Family Restaurant	300	sf GLA	0.42	127	0.42	127	Family Restaurant	88%	87%	98%	94%	99%	94%	96%	96%	89%	93%	89%	100%	95%	
Employee			0.07	23	0.07	23	Employee	99%	98%	100%	100%	100%	100%	100%	100%	99%	100%	100%	100%		
Fast Casual/Fast Food	2,560	sf GLA	12.40	32	12.70	33	Fast Casual/Fast Food	85%	85%	97%	95%	99%	98%	100%	100%	99%	96%	92%	96%	95%	
Employee			2.60	6	2.60	6	Employee	86%	86%	98%	96%	100%	100%	100%	100%	100%	100%	100%	100%		
Bar/Lounge/Night Club	0	sf GLA	15.25	0	17.50	0	Bar/Lounge/Night Club	87%	87%	100%	93%	97%	94%	97%	96%	94%	98%	92%	96%	95%	
Employee			1.25	0	1.50	0	Employee	95%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Entertainment and Institutions																					
Family Entertainment	0	sf GLA	1.80	0	2.50	0	Family Entertainment	20%	26%	36%	50%	23%	45%	87%	68%	22%	25%	20%	48%	100%	
Employee			0.20	0	0.25	0	Employee	50%	50%	50%	60%	50%	55%	97%	78%	50%	50%	58%	100%	100%	
Active Entertainment	0	sf GLA	1.50	0	1.80	0	Active Entertainment	79%	90%	91%	100%	60%	70%	72%	76%	70%	72%	74%	60%	100%	
Employee			0.15	0	0.20	0	Employee	89%	100%	100%	100%	70%	80%	82%	86%	80%	82%	84%	70%	100%	
Amusement Park/Water Park	0	sf GLA	2.60	0	3.00	0	Amusement Park/Water Park	90%	90%	91%	100%	60%	70%	72%	74%	70%	74%	74%	60%	100%	
Employee			0.26	0	0.30	0	Employee	89%	100%	100%	100%	70%	80%	82%	86%	80%	82%	84%	70%	100%	
Adult Active Entertainment	0	sf GLA	9.00	0	10.00	0	Adult Active Entertainment	85%	86%	95%	92%	96%	95%	96%	93%	91%	96%	93%	100%	95%	
Employee			1.20	0	1.20	0	Employee	95%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Cinemas	0	seats	0.15	0	0.24	0	Cinemas	50%	50%	45%	33%	55%	50%	75%	55%	25%	25%	55%	55%	100%	
Employee			0.01	0	0.01	0	Employee	60%	60%	55%	50%	65%	60%	65%	65%	50%	50%	65%	65%	100%	
Specialty Movie Theatre	0	seats	0.18	0	0.29	0	Specialty Movie Theatre	50%	50%	45%	33%	55%	50%	75%	55%	25%	25%	55%	55%	100%	
Employee			0.02	0	0.01	0	Employee	60%	60%	55%	50%	65%	60%	65%	65%	50%	50%	65%	65%	100%	
Live Theatre	0	seats	0.36	0	0.33	0	Live Theatre	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	100%	
Employee			0.07	0	0.07	0	Employee	75%	70%	90%	100%	95%	90%	85%	80%	75%	85%	90%	85%	100%	
Outdoor Amphitheater	0	seats	0.30	0	0.33	0	Outdoor Amphitheater	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Employee			0.07	0	0.07	0	Employee	10%	10%	30%	65%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Public Park/Destination Open Space	0	acre	4.00	0	5.00	0	Public Park/Destination Open Space	25%	25%	50%	75%	100%	100%	100%	100%	100%	100%	75%	75%	25%	
Employee			0.40	0	0.50	0	Employee	50%	50%	60%	85%	100%	100%	100%	100%	100%	100%	100%	85%	50%	
Museum/Aquarium	0	sf GLA	4.00	0	4.50	0	Museum/Aquarium	20%	26%	36%	50%	23%	45%	87%	68%	22%	25%	20%	48%	100%	
Employee			0.50	0	0.25	0	Employee	50%	50%	50%	60%	50%	55%	97%	78%	50%	50%	58%	100%	100%	
Arena	0	seats	2.27	0	0.30	0	Arena	90%	100%	100%	100%	100%	75%	0%	0%	60%	65%	90%	100%	95%	
Employee			0.03	0	0.03	0	Employee	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Pro Football Stadium	0	seats	0.30	0	0.30	0	Pro Football Stadium	0%	0%	0%	0%	67%	67%	67%	67%	100%	100%	100%	100%	100%	
Employee			0.01	0	0.01	0	Employee	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	
Pro Baseball Stadium	0	seats	0.31	0	0.34	0	Pro Baseball Stadium	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Employee			0.01	0	0.01	0	Employee	10%	10%	25%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Health Club	0	sf GLA	6.00	0	5.50	0	Health Club	100%	95%	85%	70%	65%	65%	65%	70%	80%	85%	85%	100%	95%	
Employee			0.40	0	0.25	0	Employee	100%	100%	95%	80%	75%	75%	75%	80%	85%	85%	100%	100%		
Public Library	0	sf GLA	2.00	0	1.90	0	Public Library	75%	75%	80%	85%	90%	90%	90%	90%	95%	100%	100%	100%	100%	
Employee			0.25	0	0.20	0	Employee	85%	85%	85%	90%	95%	95%	90%	95%	100%	100%	100%	100%	100%	
Convention Center	0	sf GLA	5.50	0	5.50	0	Convention Center	75%	100%	90%	55%	60%	50%	45%	75%	80%	85%	100%	100%	100%	
Employee			0.50	0	0.50	0	Employee	85%	100%	100%	70%	60%	55%	85%	90%	95%	100%	100%	100%	100%	
Hotel and Residential																					
Hotel-Business	0	keys	1.00	0	1.00	0	Hotel-Business	60%	75%	90%	100%	95%	95%	95%	85%	90%	95%	80%	60%	55%	
Hotel-Lesure	0	keys	1.00	0	1.00	0	Hotel-Lesure	80%	90%	100%	100%	90%	90%	100%	100%	75%	75%	75%	50%	100%	
Hotel Employee			0.15	0	0.15	0	Hotel Employee	80%	90%	100%	100%	90%	90%	100%	100%	75%	75%	75%	50%	100%	
Restaurant/Lounge	0	sf GLA	6.67	0	7.67	0	Restaurant/Lounge	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%	95%	
Meeting/Banquet (0 to 20 sq ft/Key)	0	sf GLA	0.00	0	0.00	0	Meeting/Banquet (0 to 20 sq ft/Key)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Meeting/Banquet (20 to 50 sq ft/Key)	0	sf GLA	0.00	0	0.00	0	Meeting/Banquet (20 to 50 sq ft/Key)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Meeting/Banquet (50 to 100 sq ft/Key)	0	sf GLA	0.00	0	0.00	0	Meeting/Banquet (50 to 100 sq ft/Key)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Convention (100 to 200 sq ft/Key)	0	sf GLA	0.00	0	5.50	0	Convention (100 to 200 sq ft/Key)	75%	100%	90%	55%	60%	50%	45%	75%	80%	85%	100%	100%	0%	
Convention (> 200 sq ft/Key)	0	sf GLA	5.50	0	5.50	0	Convention (> 200 sq ft/Key)	75%	100%	90%	55%	60%	50%	45%	75%	80%	85%	100%	100%	0%	
Restaurant/Meeting Employees	0	sf GLA	0.00	0	0.00	0	Restaurant/Meeting Employees	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Residential-Suburban																					
Studio Efficiency	41	units	1.00	41	1.00	41	Studio Efficiency	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	
1 Bedroom	259	units	2.00	518	2.00	518	1 Bedroom	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	
2 Bedrooms	0	units	1.65	0	1.65	0	2 Bedrooms	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	
3+ Bedrooms	0	units	2.50	0	2.50	0	3+ Bedrooms	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	
Reserved	0%	res spaces	0.00	0	0.00	0	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Visitor	0	units	0.00	0	0.00	0	Visitor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Residential-Urban																					
Studio Efficiency	0	units	0.00	0	0.00	0	Studio Efficiency	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	

December																																												
Weekday Estimated Peak-Hour Parking Demand																																												
Land Use	Monthly Adjustment	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	Overall Pk 10 AM	AM Peak Hr 10 AM	PM Peak Hr 2 PM	Eve Peak Hr 10 PM																				
		Retail																																										
Retail (<400 ksf)	100%	0	1	4	7	14	19	22	25	25	24	20	21	22	22	21	12	7	2	0	14	14	25	7																				
Employee	100%	1	1	2	3	6	7	8	8	8	8	8	8	8	8	7	5	3	2	0	6	6	8	3																				
Food and Beverage																																												
Family Restaurant	100%	25	51	61	76	86	91	101	91	51	46	46	86	92	92	92	69	63	58	29	86	86	51	63																				
Employee	100%	11	17	20	20	22	22	22	22	22	17	17	21	21	21	21	17	14	14	8	22	22	22	14																				
Fast Casual/Fast Food	96%	0	0	1	1	2	3	3	3	3	2	2	2	3	2	2	1	1	0	0	2	2	3	1																				
Employee	100%	1	1	2	2	4	6	6	6	6	4	3	4	5	5	3	2	2	1	1	4	4	6	2																				
Entertainment and Institutions																																												
Hotel and Residential																																												
Residential, Suburban																																												
Studio Efficiency	100%	39	33	28	23	21	18	16	16	16	16	18	21	25	29	33	35	39	40	41	21	21	16	39																				
1 Bedroom	100%	492	414	350	285	259	233	207	207	207	207	233	259	311	363	414	440	492	502	518	259	259	207	492																				
2 Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
3+ Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Visitor	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Office																																												
Office 100 to 500 ksf	100%	0	0	6	19	32	14	5	14	30	14	5	3	2	1	0	0	0	0	0	32	32	30	0																				
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Employee	100%	13	63	209	375	417	417	354	354	396	396	354	250	104	63	21	13	4	0	0	417	417	396	4																				
Bank (Drive In Branch)	100%	0	0	1	3	3	1	1	1	2	1	2	6	0	0	0	0	0	0	0	3	3	2	0																				
Employee	100%	0	0	3	5	5	5	5	5	5	5	5	0	0	0	0	0	0	0	0	5	5	5	0																				
Additional Land Uses																																												
Customer/Visitor		26	53	73	106	136	128	133	135	111	87	74	118	119	117	115	82	71	60	29	136	136	111	71																				
Employee/Resident		557	529	612	713	724	709	619	619	660	653	639	567	473	487	499	512	554	559	568	734	734	660	554																				
Reserved		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																				
		582	581	685	820	870	837	752	754	771	740	713	685	592	605	614	594	625	619	597	870	870	771	625																				

December																																												
Weekend Estimated Peak-Hour Parking Demand																																												
Land Use	Monthly Adjustment	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	Overall Pk 10 AM	AM Peak Hr 10 AM	PM Peak Hr 12 PM	Eve Peak Hr 8 PM																				
		Retail																																										
Retail (<400 ksf)	100%	0	1	3	9	16	23	27	27	27	27	24	20	16	15	14	13	9	4	0	16	16	27	14																				
Employee	100%	1	1	3	6	6	7	8	8	8	8	8	7	6	6	6	5	3	1	0	6	6	8	6																				
Food and Beverage																																												
Family Restaurant	100%	11	29	52	80	103	103	114	97	74	46	52	68	80	80	74	34	28	17	11	103	103	114	74																				
Employee	100%	11	16	20	20	22	22	22	22	22	16	16	20	20	20	20	17	14	14	8	22	22	22	20																				
Fast Casual/Fast Food	96%	0	0	0	1	1	2	2	2	2	1	1	2	3	3	2	1	1	0	0	1	1	2	2																				
Employee	100%	1	1	2	2	4	6	6	6	6	4	3	4	5	5	3	2	2	1	1	4	4	6	3																				
Entertainment and Institutions																																												
Hotel and Residential																																												
Residential, Suburban																																												
Studio Efficiency	100%	41	39	36	33	31	29	28	27	27	28	29	30	32	33	34	35	36	38	41	31	31	28	34																				
1 Bedroom	100%	518	492	456	414	389	363	352	337	337	352	368	383	399	414	430	445	461	477	518	389	389	352	430																				
2 Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
3+ Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Visitor	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Office																																												
Office 100 to 500 ksf	100%	0	1	2	3	4	4	4	3	2	2	1	0	0	0	0	0	0	0	0	4	4	4	0																				
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																				
Employee	100%	0	9	26	34	39	43	39	34	26	17	9	4	2	0	0	0	0	0	0	39	39	39	0																				
Bank (Drive In Branch)	100%	0	0	2	2	5	6	5	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	0																				
Employee	100%	0	0	3	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0																				
Additional Land Uses																																												
Customer/Visitor		12	31	59	96	129	138	153	130	106	76	78	91	99	97	89	48	38	21	12	129	129	153	89																				
Employee/Resident		572	558	546	513	494	473	458	433	424	425	433	449	464	479	493	505	517	530	568	494	494	458	493																				
Reserved		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																				
		583	589	604	609	623	611	611	563	530	501	511	540	563	576	583	553	554	552	579	623	623	611	583																				

SPECIAL USE AND PRELIMINARY SITE PLAN APPROVALS

6. **SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004)** – Proposed 2690 Crooks Road Apartments, East side of Crooks, South of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District

Mr. Carlisle reviewed the Special Use and Preliminary Site Plan application for 2690 Crooks Road Apartments. The applicant proposes to repurpose the existing 4-story Lindsey Center building and construct a new 5-story multiple family residential building. Mr. Carlisle addressed the number of units, access and circulation, site arrangement, shared parking with 911 and 999 W. Big Beaver sites, waiver to relocate required parking lot trees and architectural features. Mr. Carlisle explained the Special Use Approval relates to the proposed residential use on the first floor not facing a public right of way. He reported the application includes a traffic study reviewed by both the City Traffic Consultant OHM Advisors and Oakland County Road Commission (OCRC). Mr. Carlisle said OHM and OCRC representatives are present this evening to address traffic and proposed shared parking.

(Mr. Savidant exited the meeting at 7:31 p.m.; returned at 7:33 p.m.)

Mr. Carlisle said as part of the deliberation, the Planning Commission should consider compliance with Section 5.04E Big Beaver Design Standards, Section 8.06 Site Plan Review Standards and Section 9.02.D Special Use Standards, as well the required transparency for the east, north and south elevations, parking lot tree location, proposed shared parking and consideration of providing a three-dimensional (3-D) rendering of the entire development.

Mr. Carlisle reported any approval this evening should be subject to the conditions identified in his report dated January 4, 2023 as part of Final Site Plan approval. Mr. Carlisle reminded the Board there was no public comment at the Public Hearing conducted at their December 13, 2022 meeting.

Board members expressed confusion in the review and deliberation of this application because of its relationship to Agenda item # 7 on tonight's agenda.

It was determined the Planning Consultant would give a review on Agenda item #7, 911 and 999 W. Big Beaver Special Use Approval and Preliminary Site Plan application prior to taking any action on the 2690 Crooks Road application.

Applicant Jordan Jonna said the ownership structure of the subject parcels dictated the submission of individual applications. He noted that the south site (2690 Crooks) has sufficient parking to stand alone whether the north site (911 and 999 W. Big Beaver) is developed or not.

There was discussion, some comments related to:

- Building heights.
- Green recreational space deficiency.

- Shared parking.
 - Coordination of parking during construction phases.
 - Dynamics of shared parking among the various uses.

**Refer to page 6, Agenda item #7 for additional comments that relate to both applications.*

Resolution # PC-2023-01-xxx (motion withdrawn)

Moved by: Krent
 Seconded by: Faison

RESOLVED, The Planning Commission hereby approves a reduction in the total number of required parking spaces for the proposed 2690 Crooks Road residential development to 221 when a total of 312 spaces are required on the site based on the off-street parking space requirements for multi-family residential. This 91-space reduction is sufficient to meet parking demands based on shared parking provided on the abutting site to the north; and,

RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed 2690 Crooks Road Apartments, east side of Crooks, south of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District, be granted, subject to the following conditions:

1. Increase the drive-aisle width to at least 26 feet.
2. Improve pedestrian circulation based on OHM’s comments.
3. Confirm existing screening of trash enclosure.
4. Confirm building lighting.
5. Verify unit numbers.
6. Provide a shared parking agreement to the satisfaction of the City Attorney prior to Final Site Plan Approval.
7. Provide transparency calculations.

Discussion on the motion on the floor.

Concerns discussed were:

- Required landscape trees in parking lot; impact to number of parking spaces.
- Non-friendly pedestrian walkability of site.
- Enhancement of green space.
- Improvements to access, circulation, and shared parking.

Mr. Krent withdrew his motion from the floor. Mr. Faison was in support of its withdrawal.

Resolution # PC-2023-01-004

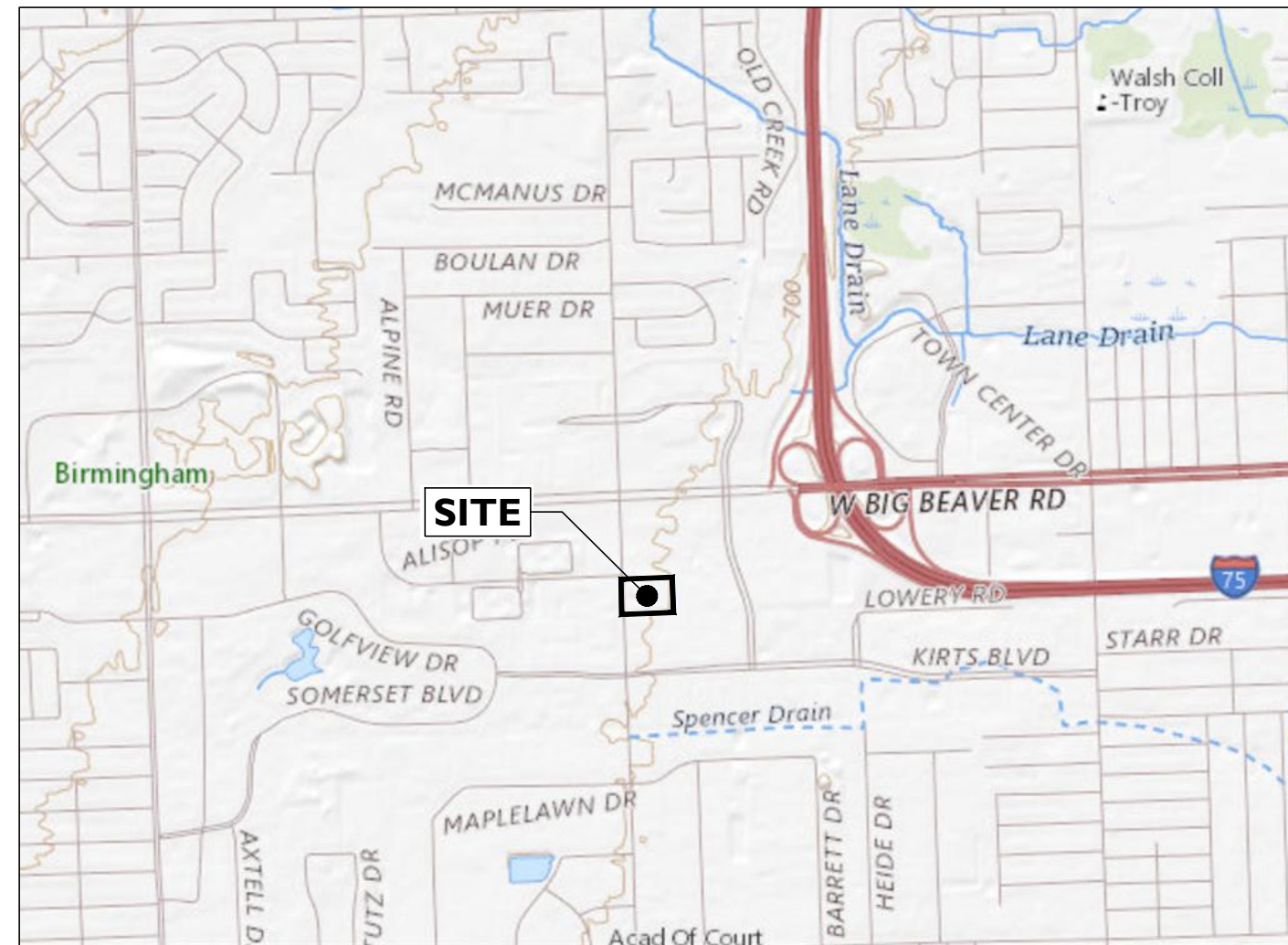
Moved by: Tagle
 Seconded by: Krent

RESOLVED, To postpone 2690 Crooks Road Apartments application so that the applicant may comply with the Zoning Ordinance requirements of interior parking lot landscaping, enhance the pedestrian walkways and to provide information to this

Commission with regard to the distance to the parking spots for the residential units in excess of what is currently around the building.

Yes: All present (9)

MOTION CARRIED



SOURCE: USGS MAPS

LOCATION MAP

SCALE: 1" = 2,000'±



SOURCE: GOOGLE EARTH PRO

AERIAL MAP

SCALE: 1" = 200'±

PLAN REFERENCE MATERIALS:

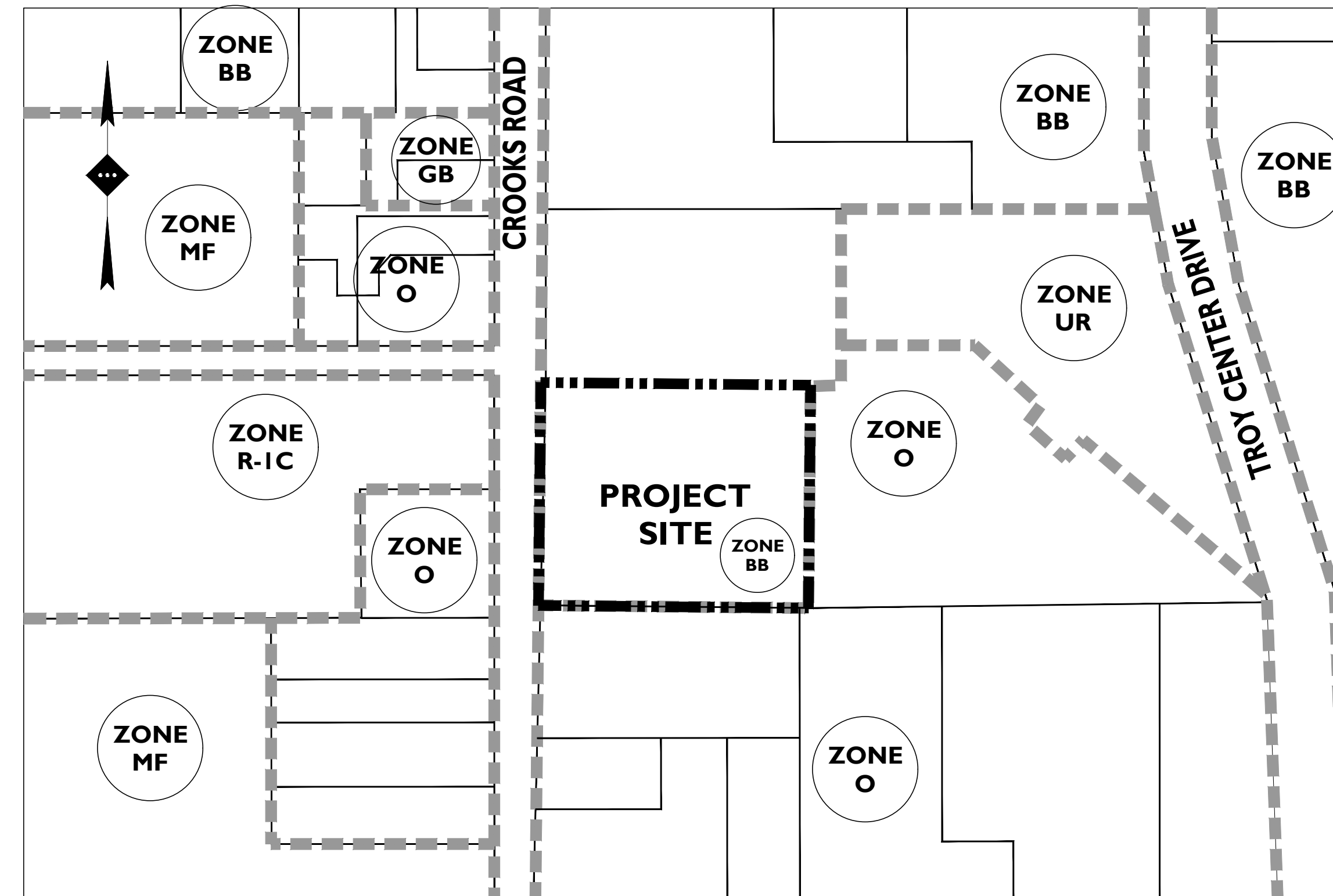
- THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - ALTA/TOPOGRAPHIC SURVEY PREPARED BY KEM-TEC SURVEY DATED 03/16/2022
 - ARCHITECTURAL DRAWINGS PREPARED BY BIDDISON ARCHITECTURE + DESIGN, DATED 02-03-2023
 - AERIAL MAP OBTAINED FROM GOOGLE EARTH PRO
 - LOCATION MAP OBTAINED FROM USGS ONLINE
 - ZONING INFORMATION OBTAINED FROM CITY OF TROY ZONING MAP
- ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.



Know what's below
Call before you dig.

SITE DEVELOPMENT PLANS FOR 2690 CROOKS ROAD EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

PARCEL ID: 20-28-101-003
2690 CROOKS ROAD
CITY OF TROY, OAKLAND COUNTY, MICHIGAN



SOURCE: OAKLAND COUNTY PROPERTY GATEWAY & CITY OF TROY ZONING MAP

ZONING MAP

SCALE: 1" = 200'±

PLANS PREPARED BY:



Detroit, MI · Rutherford, NJ · New York, NY
Princeton, NJ · Tampa, FL · Boston, MA
www.stonefieldeng.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SHEET INDEX	
DRAWING TITLE	SHEET #
COVER SHEET	C-1
DEMOLITION PLAN	C-2
SITE PLAN	C-3
OVERALL SITE PLAN	C-4
GRADING PLAN	C-5
STORMWATER MANAGEMENT PLAN	C-6
UTILITY PLAN	C-7
LIGHTING PLAN	C-8
LANDSCAPING PLAN	C-9
LANDSCAPING DETAILS	C-10
SOIL EROSION AND SEDIMENT CONTROL PLAN	C-11
CONSTRUCTION DETAILS	C-12 & C-13

ADDITIONAL SHEETS	
DRAWING TITLE	SHEET #
ALTA / TOPOGRAPHIC SURVEY	I OF I

APPLICANT
TROY KS DEVELOPMENT, LLC
4036 TELEGRAPH ROAD, SUITE 201
BLOOMFIELD HILLS, MI 48302

ISSUE	DATE	BY	DESCRIPTION
6	02/06/2023	KTH	RESUBMISSION FOR SITE PLAN APPROVAL
5	10/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
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1	02/09/2021	RAC	FOR CITY SUBMISSION

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2690 CROOKS ROAD
EXISTING BUILDING RENOVATION &
PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN



SCALE: AS SHOWN PROJECT ID: M-19301.01

TITLE:
COVER SHEET

DRAWING:
C-1

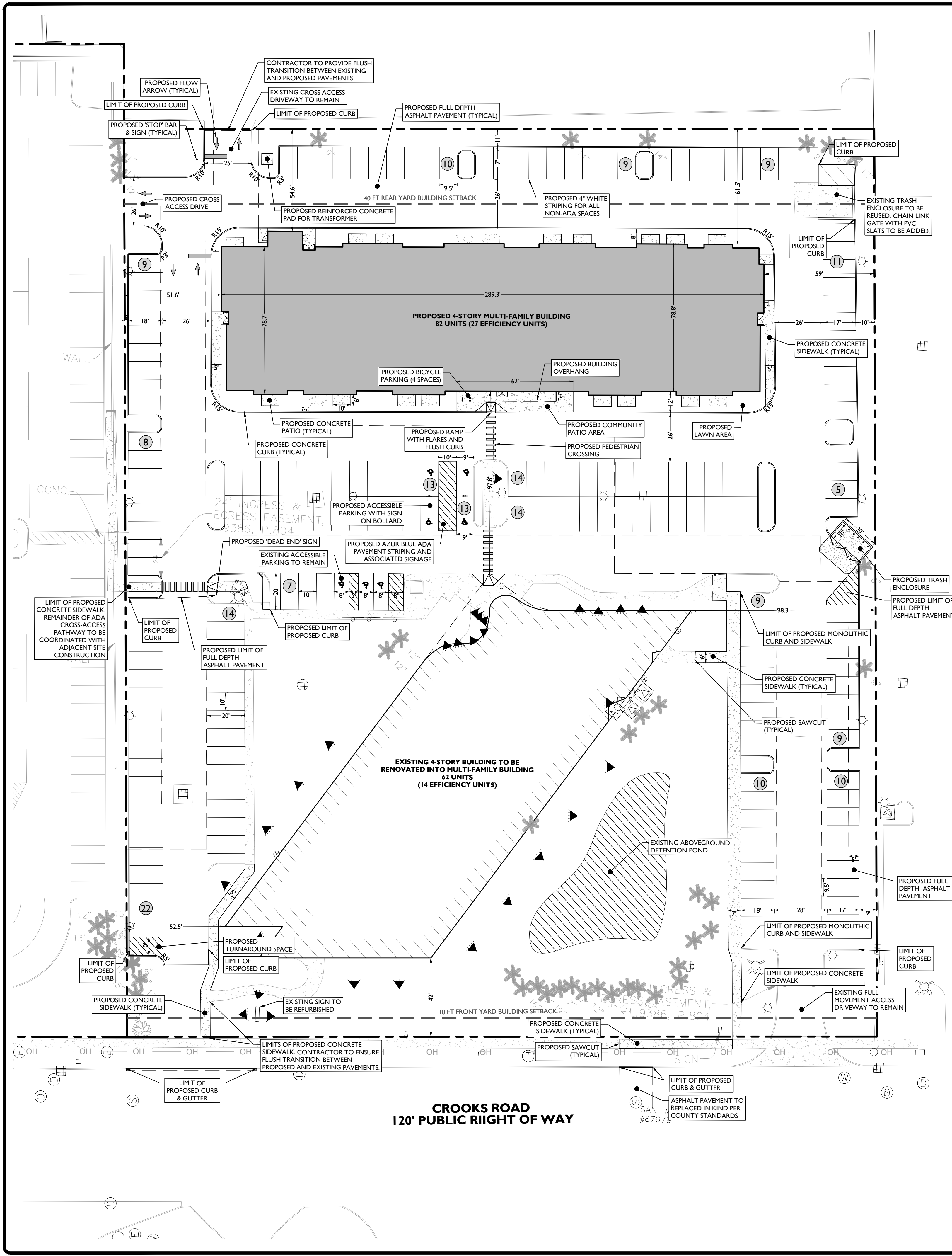


TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-28-101-003
 BIG BEAVER ROAD (BB) - (STREET TYPE: B, BUILDING FORM-D)

PROPOSED USE	PERMITTED USE	PROPOSED
MULTI-FAMILY APARTMENTS	SPECIAL LAND USE	
GROUND FLOOR UNITS		
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	193,599 SF (4.44 AC)
LOT COVERAGE BY ALL BUILDINGS	30% (58,080 SF)	24.1% (46,631 SF)
MINIMUM BUILDING HEIGHT	35 FT	60.0 FT (5 STORIES)
MAXIMUM BUILDING HEIGHT	66 FT (6 STORIES)	60.0 FT (5 STORIES)
REQUIRED BUILDING LINE	10 FT	42.0 FT (EN)
MINIMUM SIDE YARD SETBACK	0 FT	48.9 FT
MINIMUM REAR YARD SETBACK	40 FT	53.9 FT

(EN) EXISTING NON-CONFORMITY

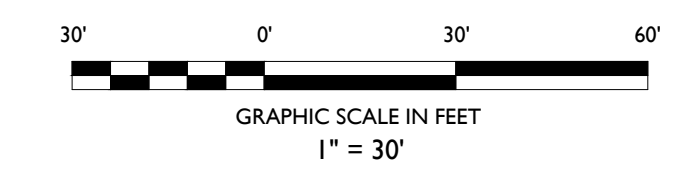
OFF-STREET PARKING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	MULTI-FAMILY DWELLING: 2 SPACES PER DWELLING UNIT (103 UNITS)(2 SPACES PER UNIT) = 206 SPACES 1 SPACE PER EFFICIENCY UNIT (41 UNITS)(1 SPACE PER UNIT) = 41 SPACES TOTAL: 206 + 41 = 247 SPACES	196 SPACES
§ TABLE 13.06-B	90° PARKING: 9.5 FT X 19 FT W/ 24 FT AISLE	9.5 FT X 19 FT W/ 24 FT AISLE
§ 13.06.F.3	MAXIMUM PARKING: 120% OF REQUIRED PARKING (247 SPACES)(1.2) = 296 SPACES	196 SPACES
§ 13.11.C.4	BICYCLE PARKING: 2 SPACES PER BUILDING (2 BUILDINGS)(2 SPACES/BUILDING) = 4 SPACES	TO BE PROVIDED
§ 13.02.E-1	SITE LANDSCAPING: 15% OF THE SITE AREA SHALL BE LANDSCAPED (193,599 SF)(0.15) = 29,040 SF	27.8% (XX SF)
§ 4.09.D.5	RECREATIONAL AREA: 300 SF RECREATIONAL AREA PER UNIT (144 UNITS)(300 SF/UNIT) = 43,200 SF	50,655 SF

SYMBOL DESCRIPTION

---	PROPERTY LINE
▨	EXISTING BUILDING
---	PROPOSED CURB
▨	PROPOSED BUILDING
▨	PROPOSED CONCRETE
---	PROPOSED FLUSH CURB
○	PROPOSED SIGNS / BOLLARDS
⊥	PROPOSED BIKE RACK

- GENERAL NOTES**
- THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
 - ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC, AND ITS SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
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 - THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTOR'S EXPENSE.
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RESUBMISSION FOR SITE PLAN APPROVAL	FOR RCOC / PLANNING APPROVAL	FOR ENGINEERING APPROVAL	FOR SITE PLAN APPROVAL	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION	FOR CITY SUBMISSION	DESCRIPTION
02/09/2023	KTH					BY
10/11/2022	KTH					DATE
07/11/2022	KTH					ISSUE
05/31/2022	KTH					
02/14/2022	KTH					
02/09/2021	RAC					

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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

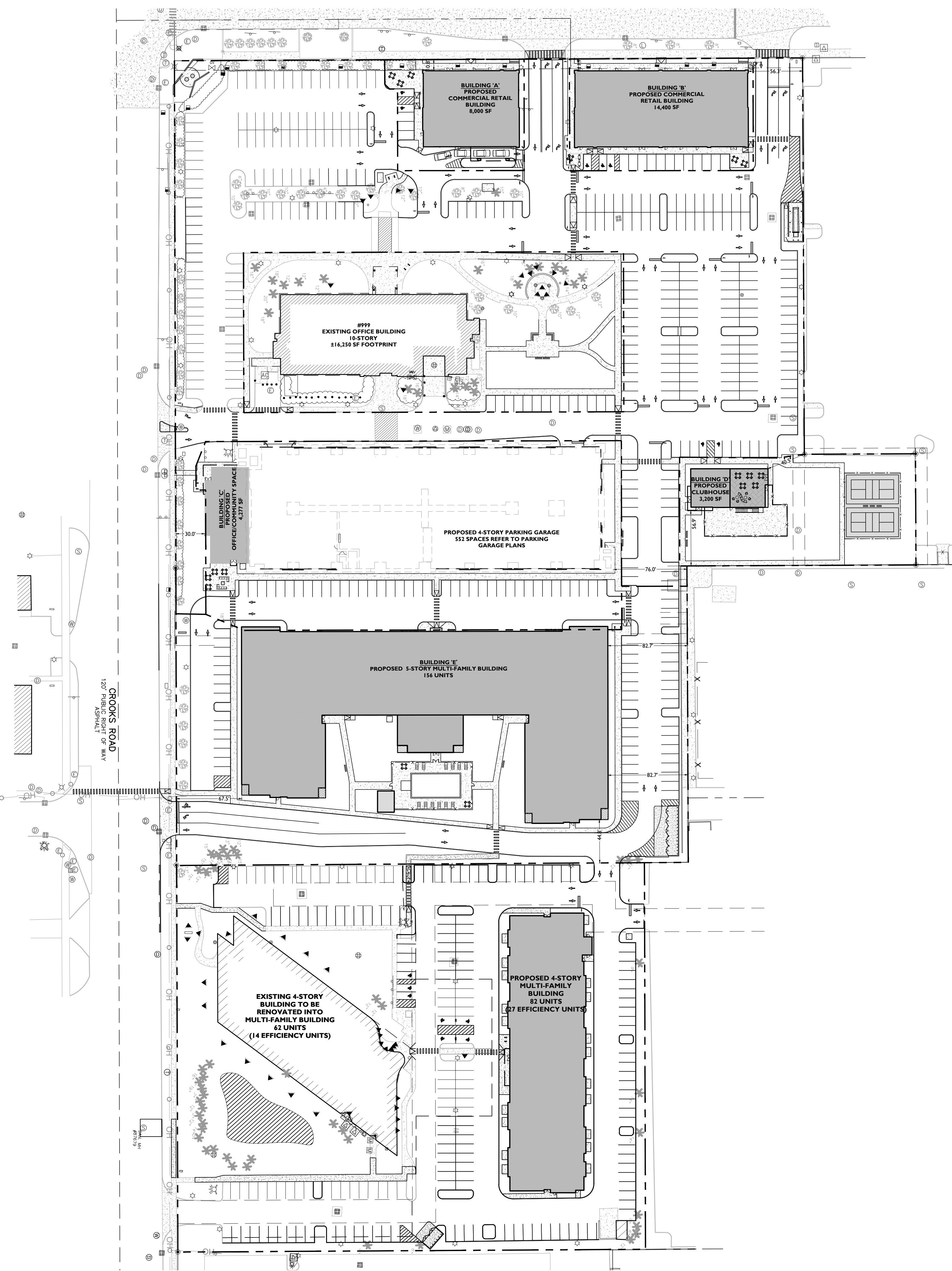
20-28-101-003
 2690 CROOKS ROAD
 CITY OF TROY
 OAKLAND COUNTY, MICHIGAN

STONEFIELD
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SCALE: 1" = 30' PROJECT ID: M-19301.01

TITLE: **SITE PLAN**

DRAWING: **C-3**



OFF-STREET PARKING REQUIREMENTS - KELLY

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,540 NFA)/(300 NFA) = 449 SPACES	408 SURFACE SPACES 552 GARAGE SPACES 61 PODIUM SPACES 1,021 TOTAL SPACES
§ TABLE 13.06-A	COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(250 GFA) = 37 SPACES	
§ TABLE 13.06-A	BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(200 GFA) = 10 SPACES	
§ TABLE 6.10	4 STACKING SPACES PER LANE	4 SPACES PER LANE
§ TABLE 13.06-A	RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (300 SEATS)/(1/2 SEATS) = 150 SPACES	
§ TABLE 13.06-A	RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (*) (2,560 SF NFA)/(70 SF NFA) = 37 SPACES	
	MULTI-FAMILY RESIDENTIAL: 2 SPACES PER DWELLING UNIT (156 UNITS)/(2 UNITS) = 312 SPACES	
	TOTAL: 449+37+10+150+37+312 = 995 SPACES	

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF)(0.8) = 2,560 SF

OFF-STREET PARKING REQUIREMENTS - LINDSEY CENTRE

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	MULTI-FAMILY DWELLING: 2 SPACES PER DWELLING UNIT (103 UNITS)/(2 SPACES PER UNIT) = 206 SPACES	196 SPACES
	1 SPACE PER EFFICIENCY UNIT (41 UNITS)/(1 SPACE PER UNIT) = 41 SPACES	
	TOTAL: 206 + 41 = 247 SPACES	

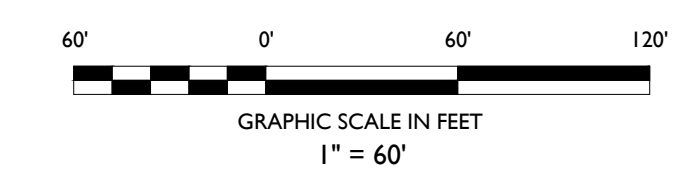
OFF-STREET PARKING REQUIREMENTS - COMBINED

PARCEL	REQUIRED	PROPOSED
KELLY PARCEL	995 SPACES	1,021 SPACES
LINDSEY CENTRE	247 SPACES	196 SPACES
	TOTAL: 995 + 247 = 1,242 SPACES	TOTAL: 1,217 SPACES

SYMBOL DESCRIPTION

	PROPERTY LINE
	EXISTING BUILDING
	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED CONCRETE

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ISSUE	DATE	BY	DESCRIPTION
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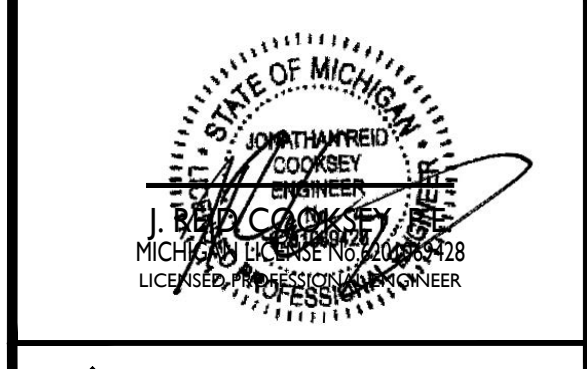
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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

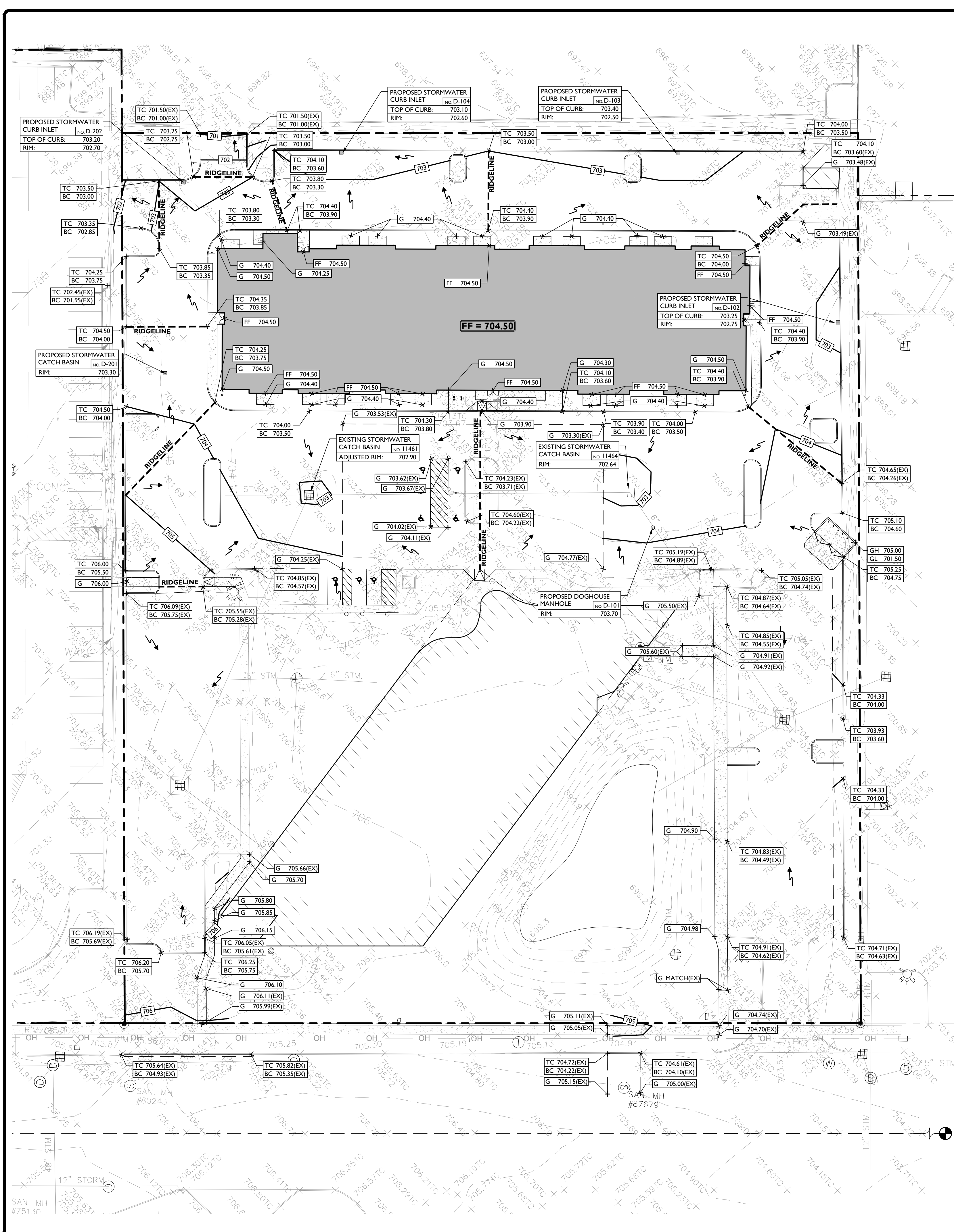


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SCALE: 1" = 60' PROJECT ID: M-19301.01

TITLE:
OVERALL SITE PLAN

DRAWING:
C-4



SYMBOL	DESCRIPTION
---	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
---	PROPOSED GRADING RIDGELINE
←	PROPOSED DIRECTION OF DRAINAGE FLOW
X G 100.00	PROPOSED GRADE SPOT SHOT
X TC 100.50 BC 100.00	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
X FF 100.00	PROPOSED FINISHED FLOOR SPOT SHOT

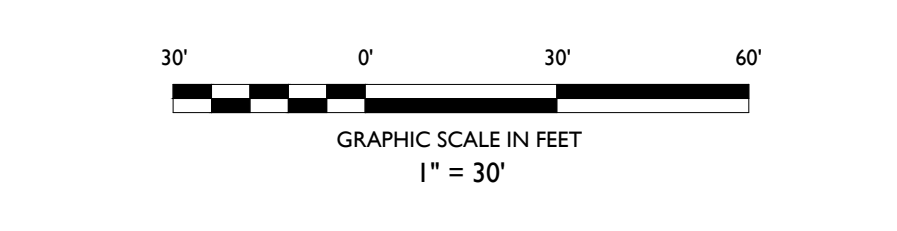
MANHOLE SCHEDULE

#	TYPE	RIM (FT)	SIZE (IN)	DIRECTION	DIP	INVERT (FT)
11297	STORM MANHOLE	705.38	12	N	4.2	701.18
11355	CATCH BASIN	704.21	6	NE	3.7	700.51
				SW	3.95	700.26
				SE	3.8	700.41
11403	BEEHIVE CATCH BASIN	704.55	6	S	3.85	700.70
				W	3.9	700.65
				NW	4.05	700.50
				N	2.75	699.91
11461	CATCH BASIN	702.66	6	SE	2.85	699.81
				NW	3	699.66
				S	3.2	699.46
				NE	3.2	699.31
11462	CATCH BASIN	702.51	6	S	3.15	699.36
				SW	3.25	699.26
				NW	3.05	699.46
11463	CATCH BASIN	702.57	6	N	3.25	699.32
				E	3.15	699.42
				W	3.05	699.52
11464	CATCH BASIN	702.64	6	S	3.15	699.32
				SW	3.85	698.80
				NW	4.75	698.89
				E	6	697.48
11824	BEEHIVE CATCH BASIN	703.48	6	E	4.2	699.28
				T/PIPE	4.25	699.23
				T/WATER	7.4	696.08
				B/STRUCTURE	7.4	696.08
11851	CATCH BASIN	702.9	6	NE	4.25	698.65
				N	4.15	698.75
				NW	5.8	697.10
				S	4.3	698.60
85015	STORM MANHOLE	703.39	12	NW	5	698.39
				S	6.5	696.89
85016	CATCH BASIN	703.37	12	SW	4.45	698.92
85025	STORM MANHOLE	703.59	12	S	4	699.59
				W	5.2	698.39
				E	4.85	698.74
				NE	4.6	698.99
				N	11.45	693.59
87679	SANITARY MANHOLE	705.04	8	S	11.5	693.54
				NW	11	694.04

SITE BENCHMARK #3
ARROW ON HYDRANT, 140° SW OF SW CORNER OF POND.
ELEVATION = 707.24' (NAVD 88 DATUM)

SITE BENCHMARK #4
ARROW ON HYDRANT, NE CORNER OF BUILDING.
ELEVATION = 708.34' (NAVD 88 DATUM)

- ### GRADING NOTES
- ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
 - THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
 - PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC. FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
 - THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
 - MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
 - CURB GUTTER: 0.50%
 - CONCRETE SURFACES: 1.00%
 - ASPHALT SURFACES: 1.00%
 - A MINIMUM SLOPE OF 1:100 SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IF THIS CONDITION CANNOT BE MET. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWED/APPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.
- ### ADA NOTES
- THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
 - THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP. AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL, THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 8.33% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00%. IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP, CURBS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
 - ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30" IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
 - A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
 - THE CONTRACTOR SHALL ENSURE A MAXIMUM OF ¼ INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN ¼ INCHES AND ½ INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP ¼ INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
 - THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN ¼ INCH.



REVISION	DATE	BY	DESCRIPTION
1	02/09/2023	KTH	RESUBMISSION FOR SITE PLAN APPROVAL
2	07/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
3	07/11/2022	KTH	FOR ENGINEERING APPROVAL
4	05/31/2022	KTH	FOR SITE PLAN APPROVAL
5	02/14/2022	KTH	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
6	02/09/2023	RAC	FOR CITY SUBMISSION

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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

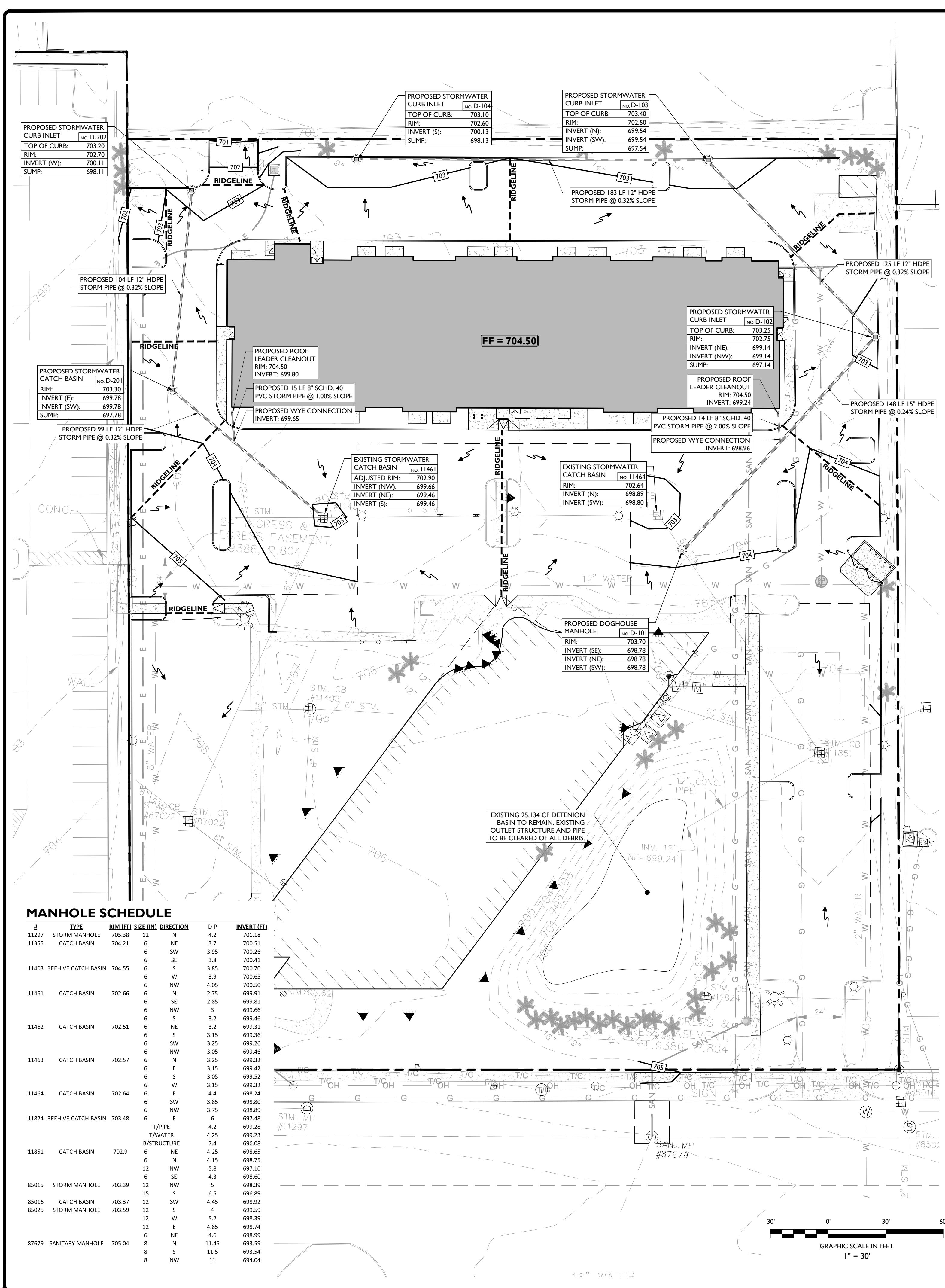
20-28-101-003
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CITY OF TROY
OAKLAND COUNTY, MICHIGAN

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SCALE: 1" = 30' PROJECT ID: M-19301.01

TITLE: **GRADING PLAN**

DRAWING: **C-5**



2022-06-03 Existing Pond Volume
 Prepared by Stonefield Engineering & Design
 HydroCAD® 10.00-22 s/n 10626 © 2018 HydroCAD Software Solutions LLC

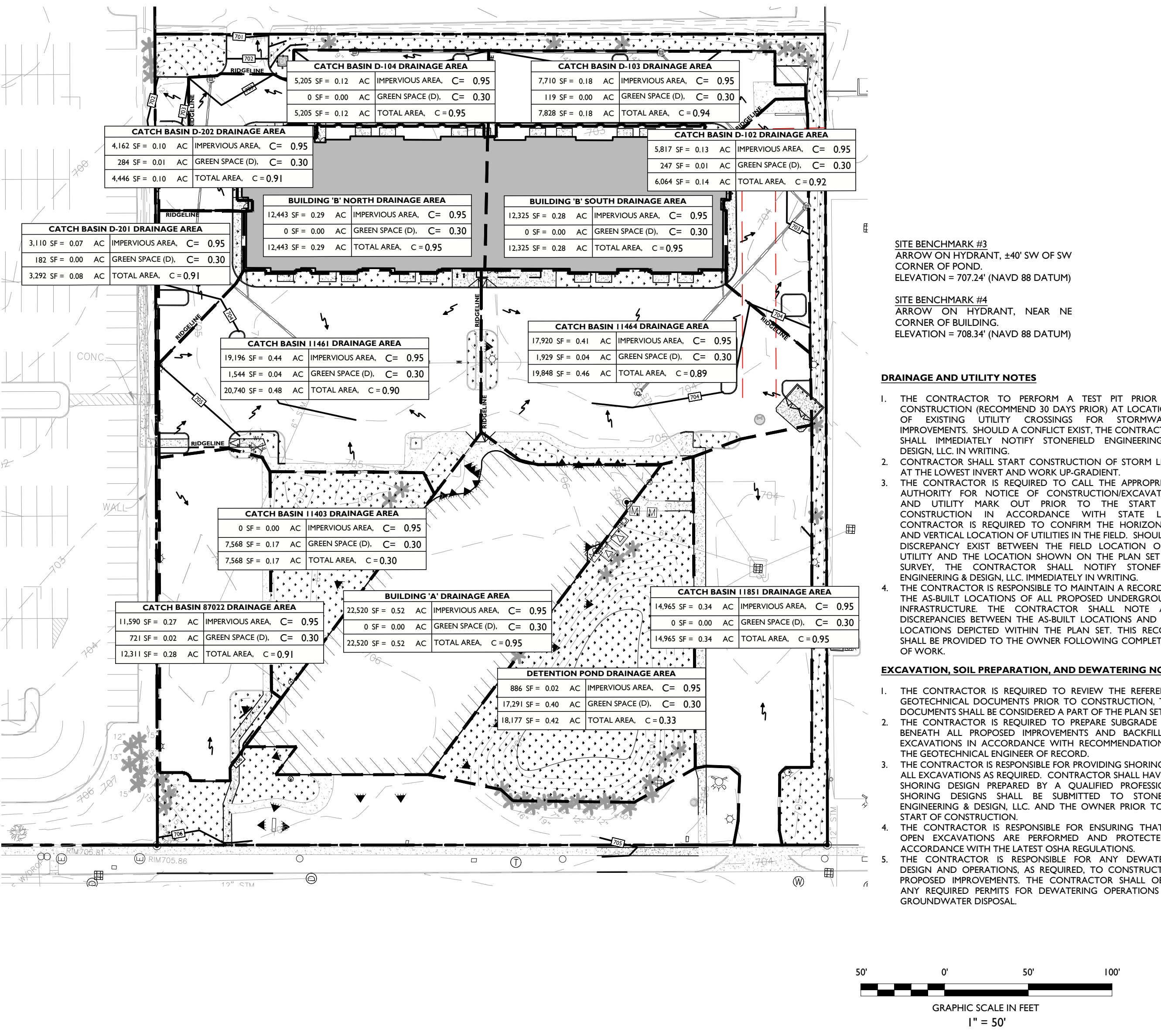
Volume #1	Invert	Avail. Storage	Storage Description
700.00'	37,337.000 af	Custom Stage Data (Prismatic) listed below (Recalc)	
Elevation (feet)	Surf. Area (acres)	Inc. Store (acre-feet)	Cum. Store (acre-feet)
700.00	5,845.000	0.000	0.000 (BOTTOM OF BASIN)
701.00	7,449.000	6,647.000	6,647.000
702.00	9,205.000	8,327.000	14,974.000
703.00	11,115.000	10,160.000	25,134.000 (TOP OF BASIN)
704.00	13,291.000	12,203.000	37,337.000 (FREEBOARD)

'PRE vs POST' STORMWATER ANALYSIS

EXISTING CONDITIONS			PROPOSED CONDITIONS		
SURFACE TYPE	'C' VALUE	WEIGHTED AREA (SF)	SURFACE TYPE	'C' VALUE	WEIGHTED AREA (SF)
IMPERVIOUS / ROOF	0.95	140,643	IMPERVIOUS / ROOF	0.95	139,750
PERVIOUS (HSG 'D')	0.30	52,956	PERVIOUS (HSG 'D')	0.30	53,849
TOTAL:		193,599	TOTAL:		193,599
EXISTING COMPOSITE 'C' VALUE =	0.772		PROPOSED COMPOSITE 'C' VALUE =	0.769	
			NET RUNOFF VALUE IMPROVEMENT:	0.003	

10-YEAR STORM EVENT CONVEYANCE CALCULATIONS

Line No.	Line ID	Grnd/Rim Elev Dn (ft)	Grnd/Rim Elev Up (ft)	Invert Down (ft)	Invert Up (ft)	Line Size (in)	Line Length (ft)	Line Slope (%)	Flow Rate (cfs)	Capacity Full (cfs)	Vel Down (ft/s)	HGL Down (ft)	HGL Up (ft)	Drainage Area (ac)	Runoff Coeff (C)	Tc (min)	iSys (in/hr)
1	D102-D101	703.70	702.75	698.78	699.14	15	148	0.24	2.30	3.18	1.87	700.03	700.20	0.14	0.92	19.5	3.39
2	D103-D102	702.75	702.50	699.14	699.54	12	125	0.32	1.00	2.01	1.28	700.31	700.40	0.18	0.94	17.9	3.55
3	D104-D103	702.50	702.60	699.54	700.13	12	183	0.32	0.45	2.02	0.60	700.44	700.54	0.12	0.95	15.0	3.91
4	BLDG(S)-WYE	702.75	704.50	699.25	699.53	8	14	2.00	1.04	1.71	2.98	700.31	700.42	0.28	0.95	15.0	3.91
5	D201-11461	702.90	703.30	699.46	699.78	12	99	0.32	1.55	2.02	1.97	700.46	700.63	0.08	0.91	18.1	3.53
6	D202-D201	703.30	702.70	699.78	700.10	12	104	0.31	0.36	1.98	0.46	700.74	700.75	0.10	0.91	15.0	3.91
7	BLDG(N)-D201	703.30	704.50	699.65	699.80	8	15	1.00	1.08	1.21	3.08	700.74	700.86	0.29	0.95	15.0	3.91



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2690 CROOKS ROAD
 EXISTING BUILDING RENOVATION &
 PROPOSED MULTI-FAMILY APARTMENTS

20-28-101.003
 2690 CROOKS ROAD
 CITY OF TROY
 OAKLAND COUNTY, MICHIGAN

SCALE: AS SHOWN PROJECT ID: M-19301.01
 TITLE: STORMWATER MANAGEMENT PLAN
 DRAWING: C-6

RESUBMISSION FOR SITE PLAN APPROVAL
 FOR RCOC/PLANNING APPROVAL
 FOR ENGINEERING APPROVAL
 FOR SITE PLAN APPROVAL
 FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
 FOR CITY SUBMISSION

DATE BY ISSUE DESCRIPTION

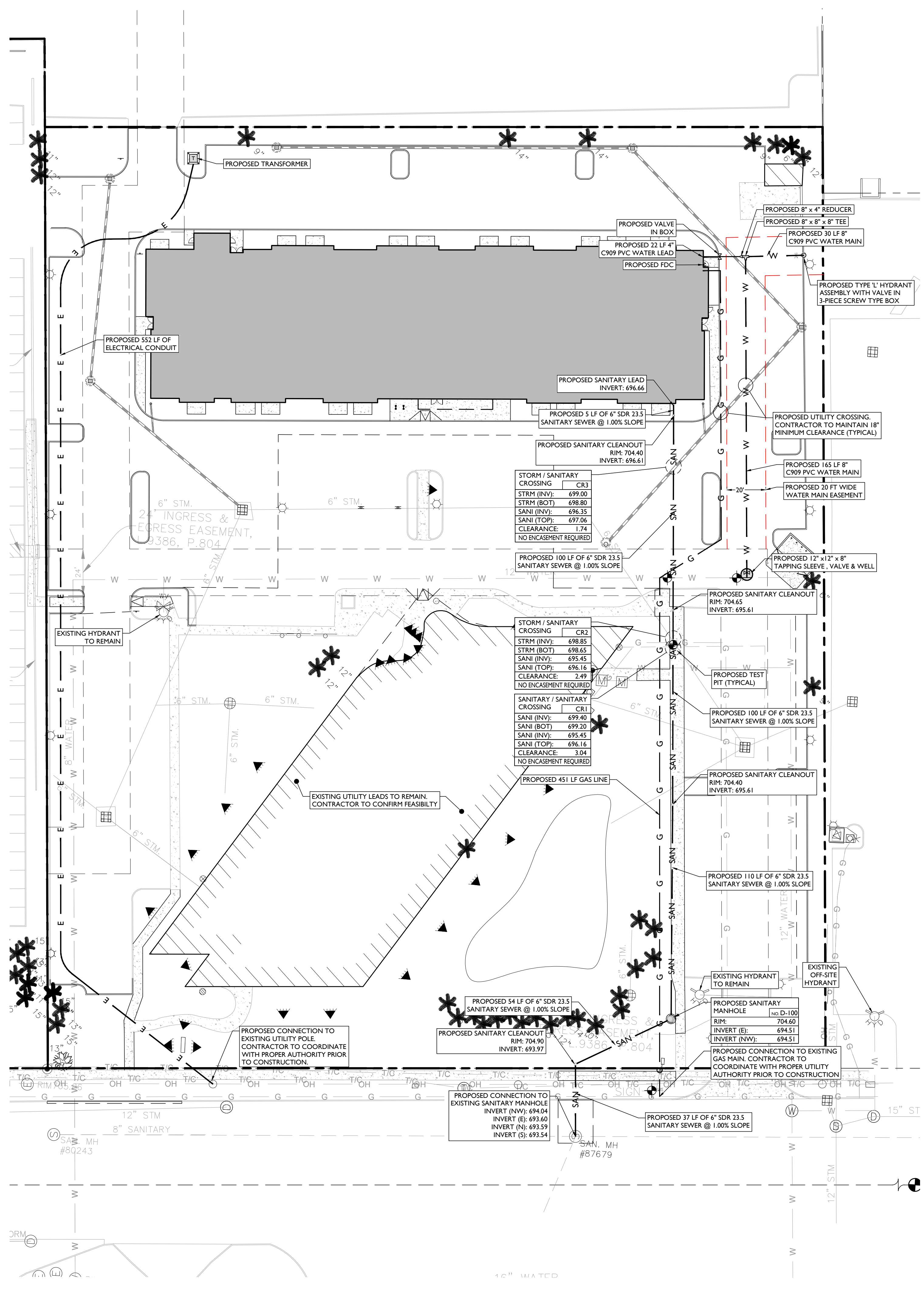
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 07/11/2022 KTH
 05/31/2022 KTH
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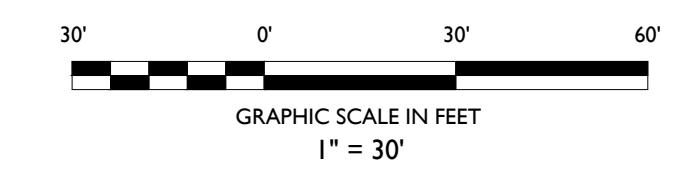
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SYMBOL	DESCRIPTION
---	PROPERTY LINE
— SAN —	PROPOSED SANITARY LATERAL
— W —	PROPOSED DOMESTIC WATER SERVICE
— E —	PROPOSED ELECTRIC CONDUITS
— G —	PROPOSED GAS LINE
⊗	PROPOSED VALVE
⊕	PROPOSED WATER TEE / BEND
⊙	PROPOSED FIRE HYDRANT
⊕	PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
⊙	PROPOSED SANITARY MANHOLE / CLEANOUT
⊕	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS
⊙	PROPOSED TEST PIT
---	PROPOSED EASEMENT

- DRAINAGE AND UTILITY NOTES**
- THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IMMEDIATELY IN WRITING.
 - THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
 - THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
 - A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
 - CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADE.
 - THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
 - THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.



RESUBMISSION FOR SITE PLAN APPROVAL	KTH	BY
FOR RCOC / PLANNING APPROVAL <td>KTH <td></td> </td>	KTH <td></td>	
FOR ENGINEERING APPROVAL <td>KTH <td></td> </td>	KTH <td></td>	
FOR SITE PLAN APPROVAL <td>KTH <td></td> </td>	KTH <td></td>	
FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION <td>KTH <td></td> </td>	KTH <td></td>	
FOR CITY SUBMISSION <td>RAC <td></td> </td>	RAC <td></td>	
ISSUE	DATE	BY
6	02/06/2023	
5	10/11/2022	
4	07/11/2022	
3	05/31/2022	
2	02/14/2022	
1	02/09/2021	

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2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

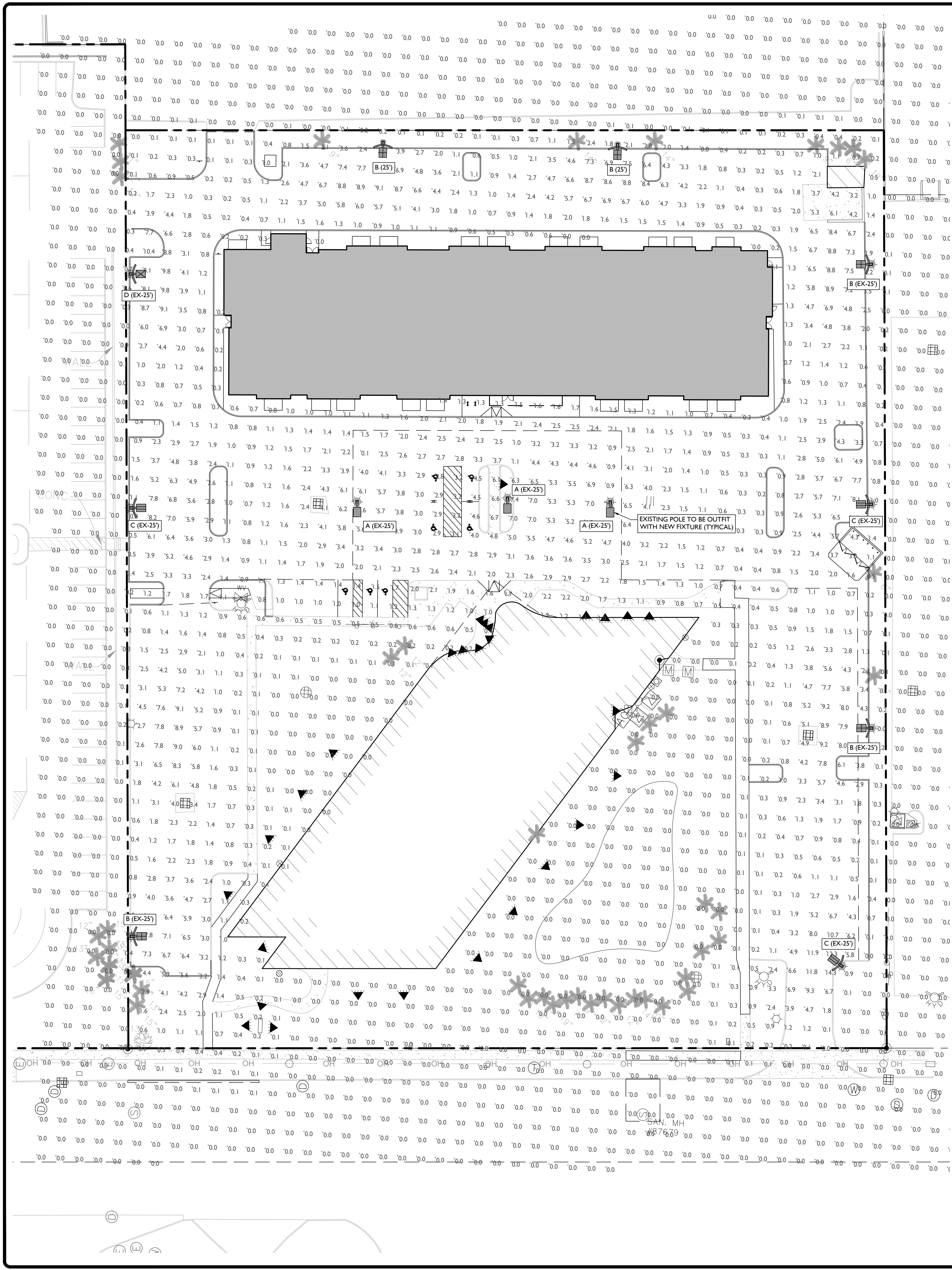
STATE OF MICHIGAN
MICHIGAN PROFESSIONAL ENGINEER
MICHAEL J. COOPER
LICENSE # 93867

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SCALE: 1" = 30' PROJECT ID: M-19301.01

TITLE: **UTILITY PLAN**

DRAWING: **C-7**



PROPOSED LUMINAIRE SCHEDULE						
SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	MANUFACTURER
	A	3	MIRADA MEDIUM LED AREA LIGHT 30L LUMEN PACKAGE	V	0.90	LSI INDUSTRIES
	B	5	MIRADA MEDIUM LED AREA LIGHT 30L LUMEN PACKAGE WITH HOUSE-SIDE SHIELD	III	0.90	LSI INDUSTRIES
	C	4	MIRADA MEDIUM LED AREA LIGHT 30L LUMEN PACKAGE WITH HOUSE-SIDE SHIELD	FT	0.90	LSI INDUSTRIES
	D	1	MIRADA MEDIUM LED AREA LIGHT 30L LUMEN PACKAGE WITH HOUSE-SIDE SHIELD	II	0.90	LSI INDUSTRIES

SYMBOL	DESCRIPTION
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
XX	PROPOSED LIGHTING INTENSITY (FOOT-CANDLES)
	PROPOSED AREA LIGHT

**Mirada Medium - MRM
Outdoor LED Area Light**

The Mirada's sleek design makes it perfectly suited for architectural & commercial applications, while its cost-effective die-cast aluminum housing makes its acquisition cost very competitive. The Mirada offers high performance factory-rotatable silicone optics, 5-star-rated CCT, 4000+ delivered lumens, and is available with integral Airlink™ Wireless Controls.

Features & Specifications

Optical System

- State-of-the-art one-piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP68 rated sealed optical chamber in 1 component.
- Proprietary silicone injection optics provide conceptual coverage and uniformity in E5 Types 2.3, 3W, FT and 17A.
- Silicone optical material does not yellow or crack with age and provides a typical light transmission of 92%.
- Zero spillage.
- Available in 3000K, 4000K, 5000K, and 2700K color temperatures per ANSI C13.77. Also Available in Phosor Converter Amber with Peak Intensity 40 FC.
- Minimum CRI of 92.
- Integrated cover ILS option available for improved back-light control without sacrificing street side performance. See page 5 for more details.

Electrical

- High performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 6-8Vf (nominal) 100% - 100% dimmable.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (240-480 VAC).
- UL818 Calculated Life >100k Hours (See Lumen Maintenance on Page 2)
- Clear lens, distortion <20%.
- Operating temperature: -40°C to +60°C (-40°F to +122°F), 40L lenses package rated to +40°C.
- Power factor > 0.95.
- Input power stays constant over life.
- Field replaceable surge protection device meets a minimum Category C Line operation (per ANSI/IEEE C84.2.2).
- High efficiency LEDs mounted to heat-conductive circuit board to maximize heat dissipation.
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components are easily accessed.

Product Dimensions

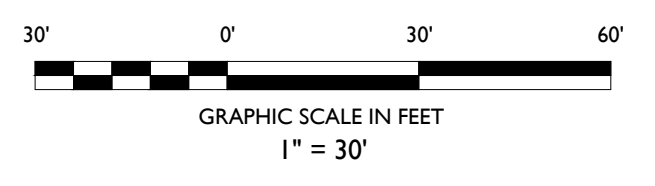
8.5 Pole Ball Pattern

LIGHTING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 13.05.C.1.A	FIXTURE SHIELDING: ALL PROPOSED FIXTURES ARE TO BE FULLY SHIELDED FROM ADJACENT PROPERTIES AND RIGHTS-OF-WAY	PROVIDED
§ 13.05.C.2.A-C	FREESTANDING POLE LIGHTING: MAXIMUM 20 FC DURING BUSINESS HOURS (10 FC AFTER HOURS) MAXIMUM 1.0 FC AT NON-RESIDENTIAL PROPERTY LINES MAXIMUM 0.1 FC AT ABUTTING RESIDENTIAL PROPERTY LINES	14.3 FC 0.8 FC N/A
§ 13.05.C.3	MAXIMUM FIXTURE HEIGHT OF 25'	25.0 FT

NOTE: ALL LIGHTING IS TO BE MEASURED AT 40' ABOVE GRADE

AREA LIGHTS 'A', 'B' & 'C'

- GENERAL LIGHTING NOTES**
- THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH AS WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
 - WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
 - UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
 - LIGHT EMITTING DIODES (LED): 0.90
 - HIGH PRESSURE SODIUM: 0.72
 - METAL HALIDE: 0.72
 - THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.



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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

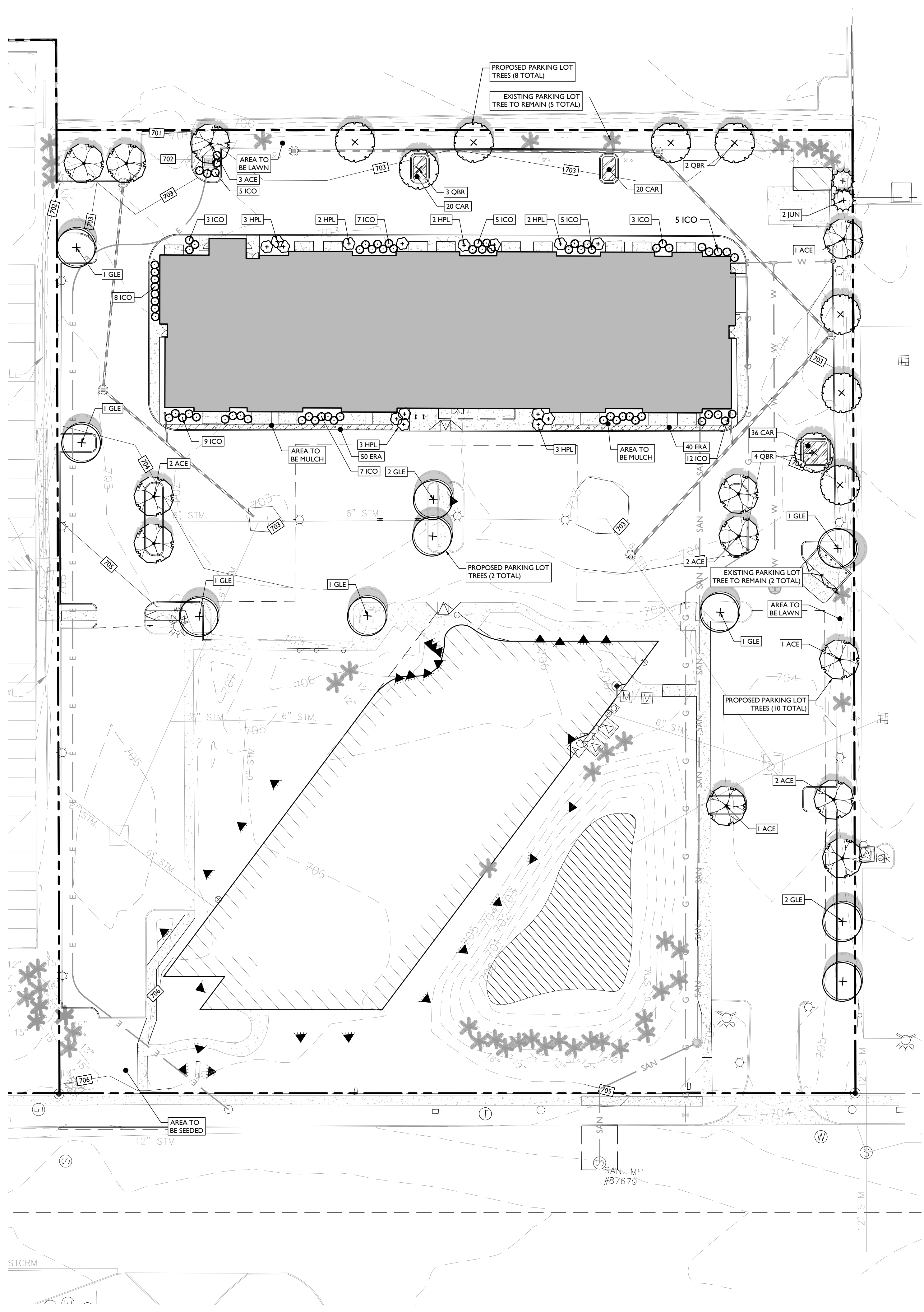
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CITY OF TROY
OAKLAND COUNTY, MICHIGAN

**STONEFIELD
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SCALE: 1" = 30' PROJECT ID: M-19301.01

TITLE:
LIGHTING PLAN

DRAWING:
C-8

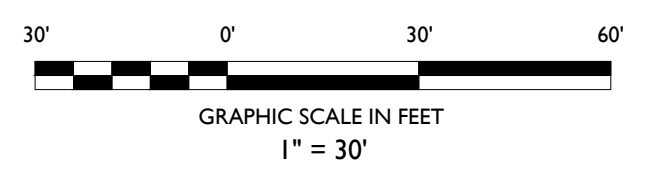


LANDSCAPING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 13.02.C-2	PARKING LOT LANDSCAPING: CURBED ISLANDS SHALL BE A MINIMUM OF 200 SF 1 TREE PER EVERY 8 PARKING SPACES (206 SURFACE SPACES) (1 TREE / 8 SPACES) = 26 TREES	COMPLIES 31 PROPOSED TREES
§ 13.02.D-2	ROW GREENBELT: MINIMUM WIDTH: 10 FT 1 DECIDUOUS TREE PER 30 LF (369 LF) (1 TREE / 30 LF) = 13 TREES	37.70 FT 13 EXISTING TREES
§ 13.02.E-1	SITE LANDSCAPING: (**) 15% OF THE SITE AREA SHALL BE LANDSCAPED (193,599 SF)(0.15) = 29,040 SF	27.8% (53,849 SF)
§ 13.03.B	TRASH ENCLOSURE SCREENING: MINIMUM HEIGHT 6 FT CANNOT BE LOCATED IN A FRONT YARD SETBACK	PROPOSED COMPLIES

(*) DECIDUOUS TREES WITHIN GREENBELT SHALL BE A MINIMUM CALIPER OF TWO AND A HALF (2 1/2) INCHES OR GREATER
 (***) UP TO 35% OF THE REQUIRED LANDSCAPE AREA MAY BE BRICK, STONE, PAVERS, OR OTHER PUBLIC PLAZA ELEMENTS

PLANT SCHEDULE							
DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	ACE	12	ACER SACCHARUM	SUGAR MAPLE	2.5" - 3" CAL	B&B	AS SHOWN
	GLE	10	GLEDITSIA TRIACANTHOS	HONEY LOCUST	2.5" - 3" CAL	B&B	AS SHOWN
	QBR	9	QUERCUS BOREALIS	NORTHERN RED OAK	2.5" - 3" CAL	B&B	AS SHOWN
EVERGREEN TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	JUN	2	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6' - 7' HT	B&B	AS SHOWN
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	HPL	15	HYDRANGEA PANICULATA 'LIMELIGHT'	LIMEIGHT PANICLE HYDRANGEA	24" - 30"	POT	AS SHOWN
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	ICO	69	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	18" - 24"	POT	AS SHOWN
GRASSES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	ERA	93	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	1 GAL.	POT	30" o.c.
	CAR	76	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	1 GAL.	POT	24" o.c.

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.



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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
 2690 CROOKS ROAD
 CITY OF TROY
 OAKLAND COUNTY, MICHIGAN



STONEFIELD
engineering & design

SCALE: 1" = 30' PROJECT ID: M-19301.01

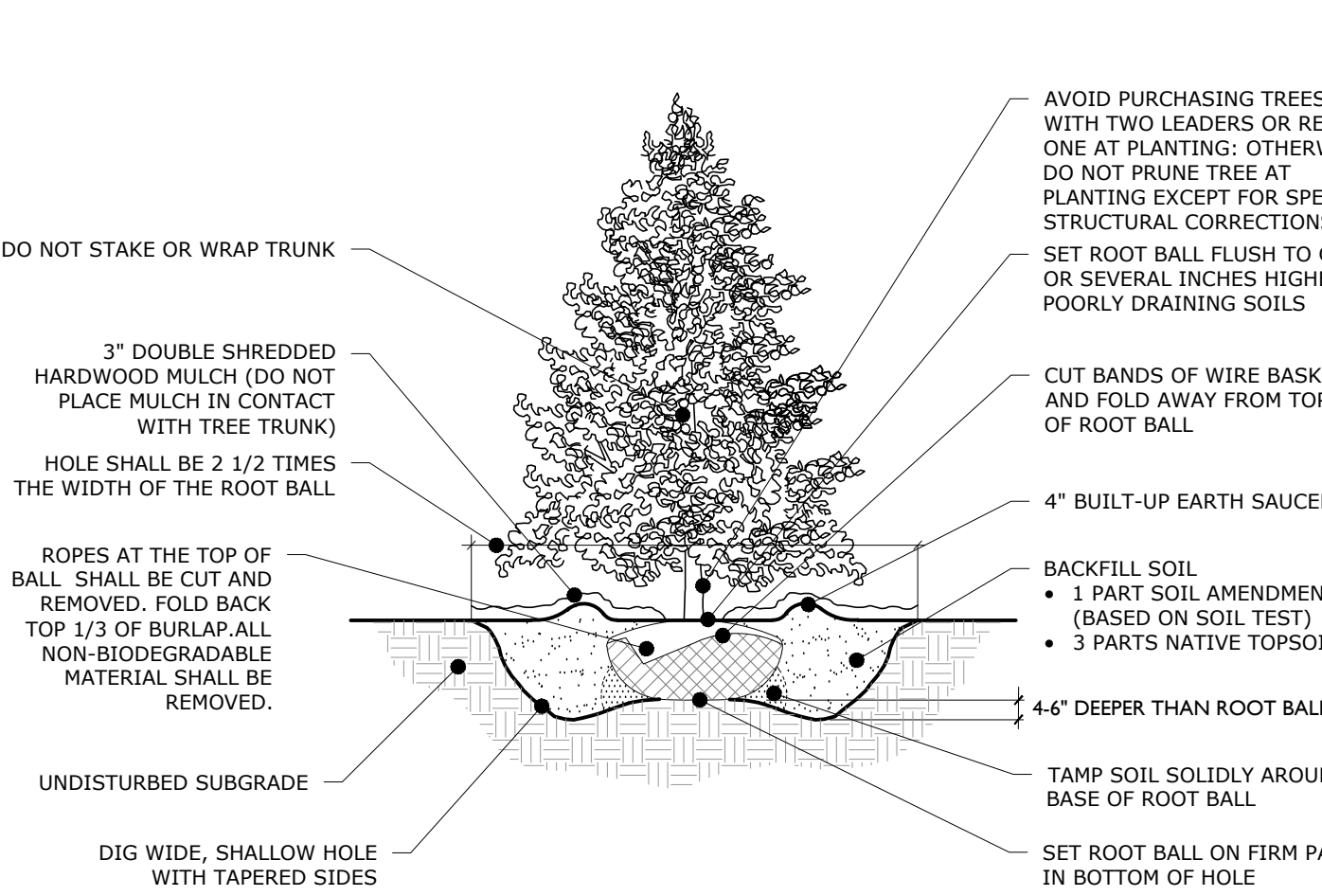
TITLE:
LANDSCAPING PLAN

DRAWING:
C-9

10/11/2022 10:51 AM 2690 CROOKS ROAD - LANDSCAPING PLAN - 10/11/2022 10:51 AM

NOTES:

- 1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL...

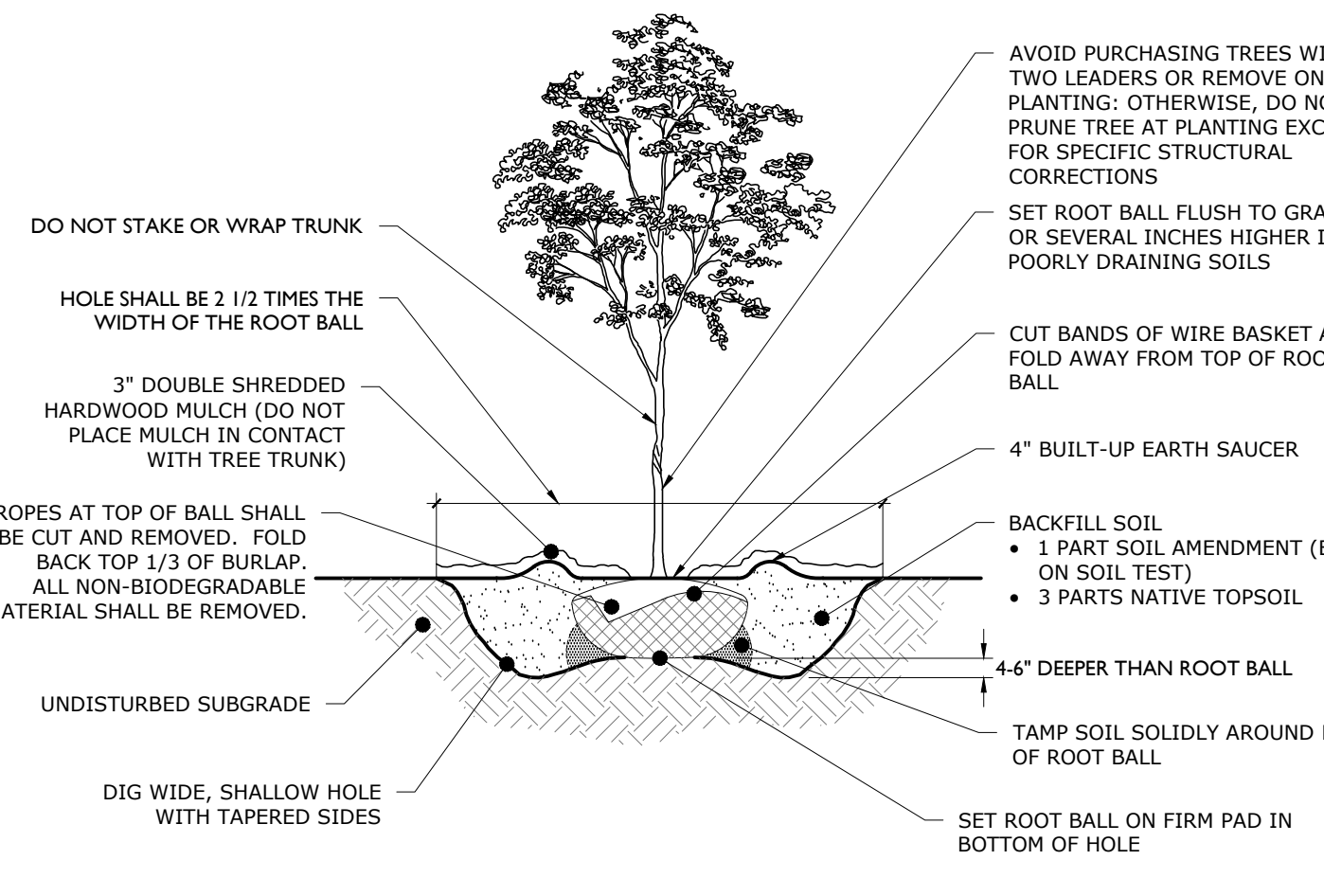


EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

NOTES:

- 1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL...



DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

2

GENERAL LANDSCAPING NOTES:

- 1. THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH THESE SPECIFICATIONS...

PROTECTION OF EXISTING VEGETATION NOTES:

- 1. BEFORE COMMENCING WORK, ALL EXISTING VEGETATION WHICH COULD BE IMPACTED AS A RESULT OF THE PROPOSED CONSTRUCTION ACTIVITIES...

SOIL PREPARATION AND MULCH NOTES:

- 1. LANDSCAPE CONTRACTOR SHALL OBTAIN A SOIL TEST OF THE IN-SITU TOPSOIL BY A CERTIFIED SOIL LABORATORY PRIOR TO PLANTING...

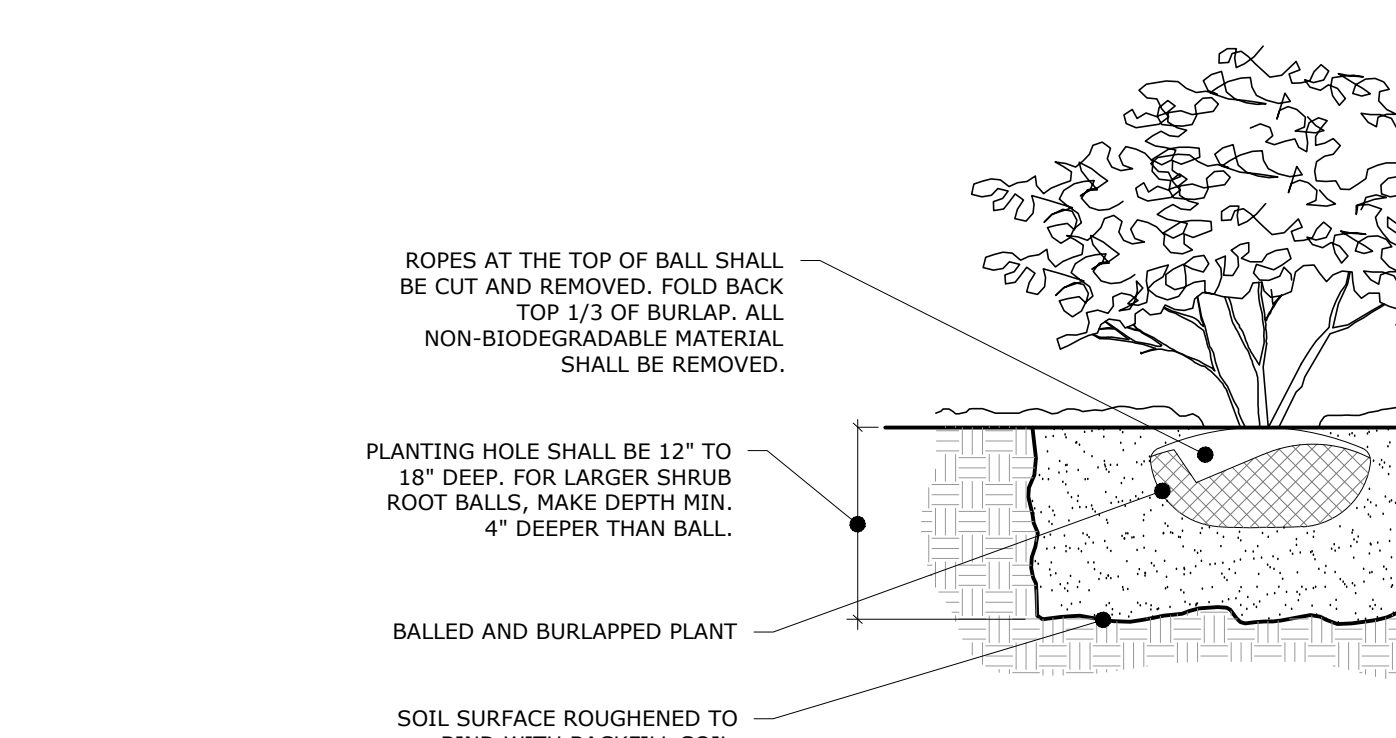
PLANT QUALITY AND HANDLING NOTES:

- 1. ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z601-2004) OR LATEST REVISION...

Table listing plant varieties such as Abies concolor, Acer buergerianum, and others with their respective codes.

NOTES:

- 1. FOR THE CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL...



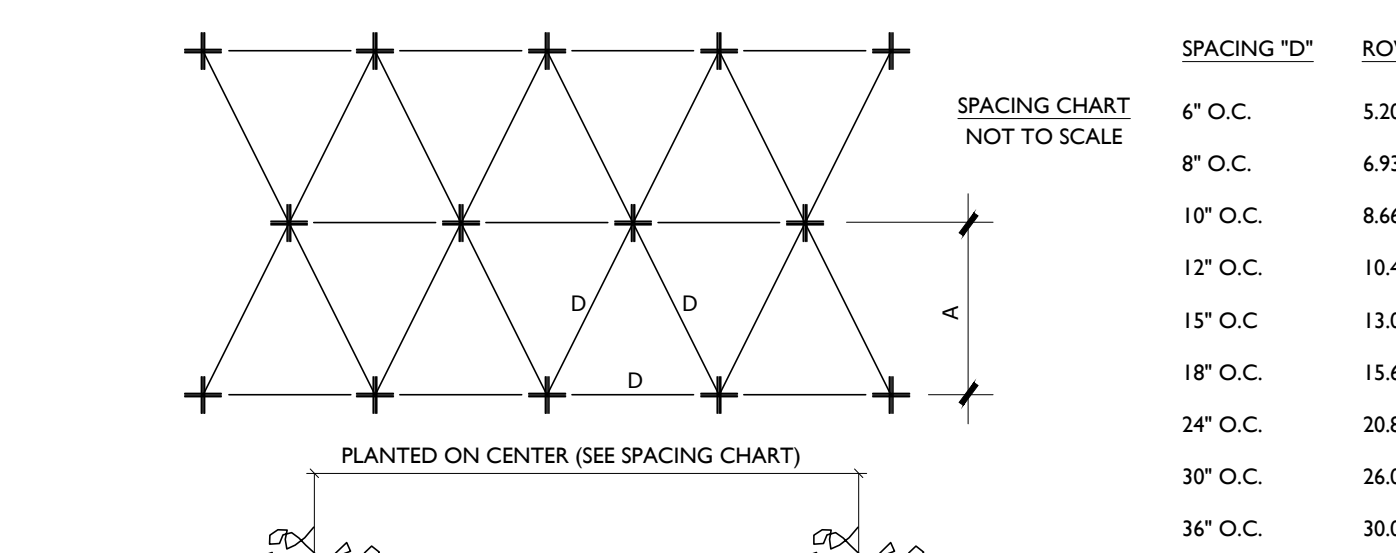
DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

3

NOTES:

- 1. THOROUGHLY SOAK THE GROUND COVER ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING...



GROUND COVER/PERENNIAL/ANNUAL PLANTING DETAIL

NOT TO SCALE

4

Table with columns for RESUBMISSION FOR SITE PLAN APPROVAL, FOR RCOC/PLANNING APPROVAL, FOR ENGINEERING APPROVAL, FOR CITY SUBMISSION, and DESCRIPTION.

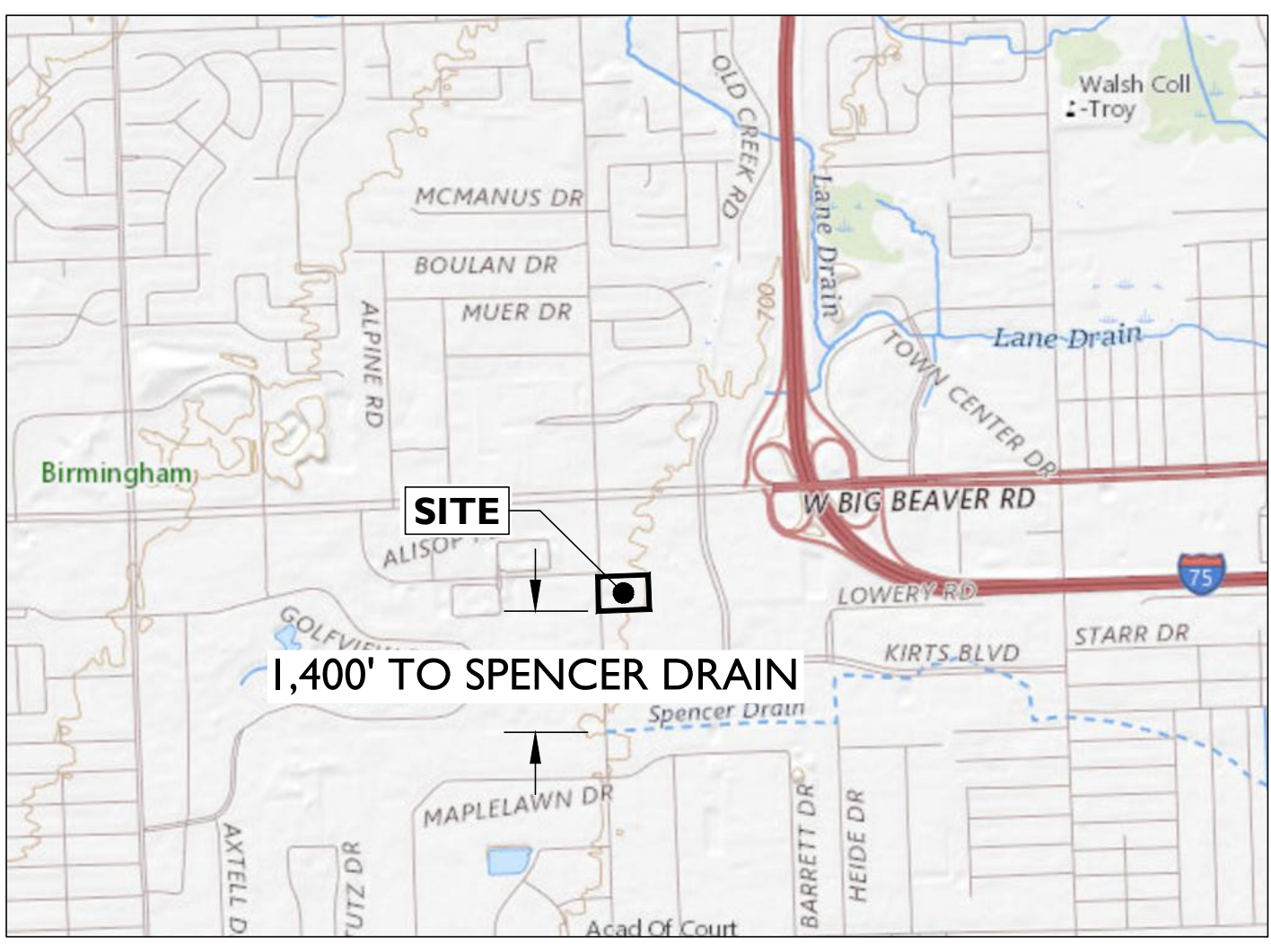
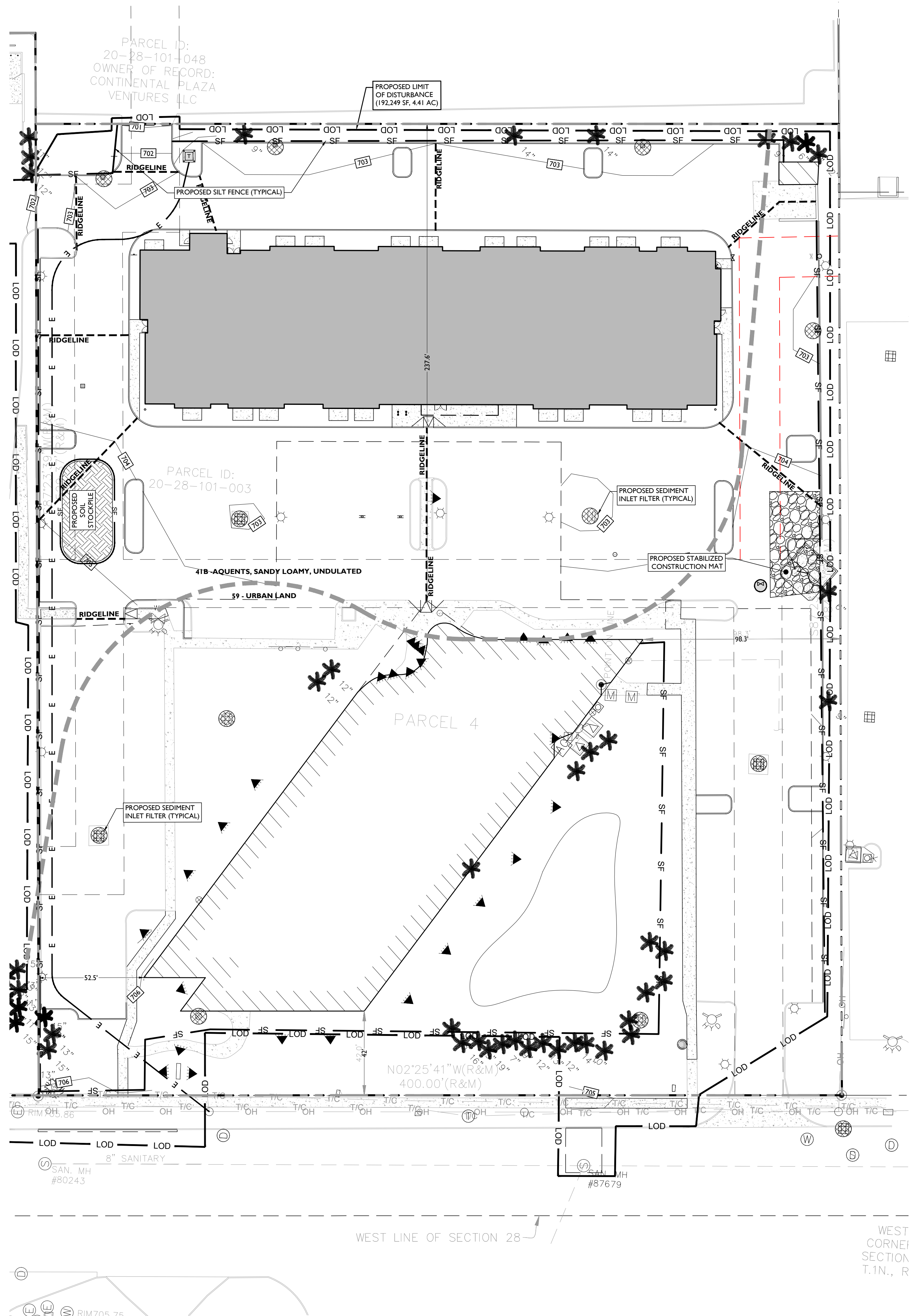
NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design logo and contact information for Detroit, MI and Princeton, NJ.

2690 CROOKS ROAD EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS. Includes site development plans and project details.



STONEFIELD engineering & design logo, scale information (AS SHOWN PROJECT ID: M-19301.01), drawing title (LANDSCAPING DETAILS), and drawing number (C-10).



LOCATION MAP
SCALE: 1" = 2,000'±

PROPERTY DESCRIPTION
THE LAND SITUATED IN THE TROY, COUNTY OF OAKLAND, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:
PARCEL 4
THE EAST 484 FEET OF THE WEST 544 FEET OF THE SOUTH 400 FEET OF THE NORTH 1/2 OF THE NORTHWEST 1/4 CORNER OF SECTION 28, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN.

SYMBOL	DESCRIPTION
---	PROPERTY BOUNDARY
- - - -	ADJACENT PROPERTY BOUNDARY
---	PROPOSED LIMIT OF DISTURBANCE
---	PROPOSED SILT FENCE
[Symbol]	PROPOSED STOCKPILE & EQUIPMENT STORAGE
[Symbol]	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
[Symbol]	PROPOSED INLET PROTECTION FILTER

- SOIL EROSION AND SEDIMENT CONTROL NOTES**
1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
 2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
 3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.

- ENVIRONMENTAL NOTES:**
1. THERE ARE NO RIPARIAN ZONES ON SITE
 2. NO PORTION OF THIS SITE LIES WITHIN A FLOOD HAZARD AREA
 3. THERE ARE NO WETLANDS ON SITE
 4. ALL ELEVATIONS SHOWN ARE BASED ON NAVD 1988 DATUM

SITE BENCHMARK #3
ARROW ON HYDRANT, ±40' SW OF SW CORNER OF POND.
ELEVATION = 707.24' (NAVD 88 DATUM)

SITE BENCHMARK #4
ARROW ON HYDRANT, NEAR NE CORNER OF BUILDING.
ELEVATION = 708.34' (NAVD 88 DATUM)

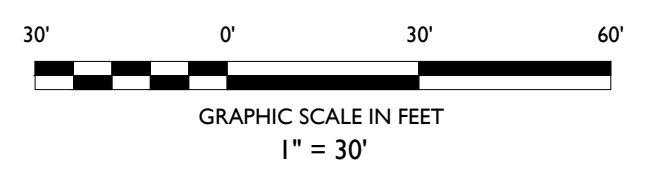
- SEQUENCE OF CONSTRUCTION**
1. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE (2 DAYS).
 2. SITE DEMOLITION (20 DAYS).
 3. ROUGH GRADING AND TEMPORARY SEEDING (20 DAYS).
 4. EXCAVATE AND INSTALL DRAINAGE PIPING, AND INLETS (10 DAYS).
 5. INSTALL INLET FILTERS (1 DAY).
 6. BUILDING CONSTRUCTION AND SITE IMPROVEMENTS (100 DAYS).
 7. LANDSCAPING IMPROVEMENTS AND FINAL SEEDING (10 DAYS).
 8. REMOVE SOIL EROSION MEASURES (1 DAY).
- NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUIDE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO TOWNSHIP AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY.

SOIL CHARACTERISTICS CHART

TYPE OF SOIL	59 - URBAN LAND
PERCENT OF SITE COVERAGE	47.3%
HYDROLOGIC SOIL GROUP	D
DEPTH TO RESTRICTIVE LAYER	> 80 INCHES
SOIL PERMEABILITY	0.00 TO 0.00 IN / HR
DEPTH TO WATER TABLE	> 80 INCHES

SOIL CHARACTERISTICS CHART

TYPE OF SOIL	418 - AQUENTS, SANDY LOAMY, UNDULATED
PERCENT OF SITE COVERAGE	52.6%
HYDROLOGIC SOIL GROUP	A/D
DEPTH TO RESTRICTIVE LAYER	> 80 INCHES
SOIL PERMEABILITY	5.95 TO 19.98 IN
DEPTH TO WATER TABLE	ABOUT 0 INCHES



ISSUE	DATE	BY	DESCRIPTION
1	02/09/2023	RAC	FOR CITY SUBMISSION
2	02/14/2022	KTH	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
3	05/31/2022	KTH	FOR ENGINEERING APPROVAL
4	07/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
5	10/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
6	02/09/2023	KTH	RESUBMISSION FOR SITE PLAN APPROVAL

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2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

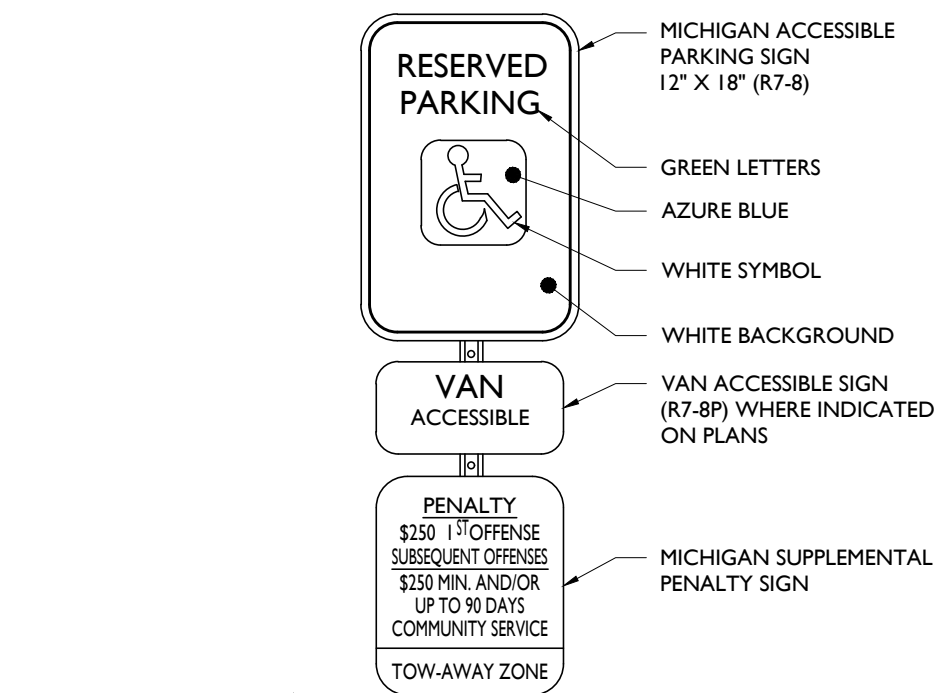


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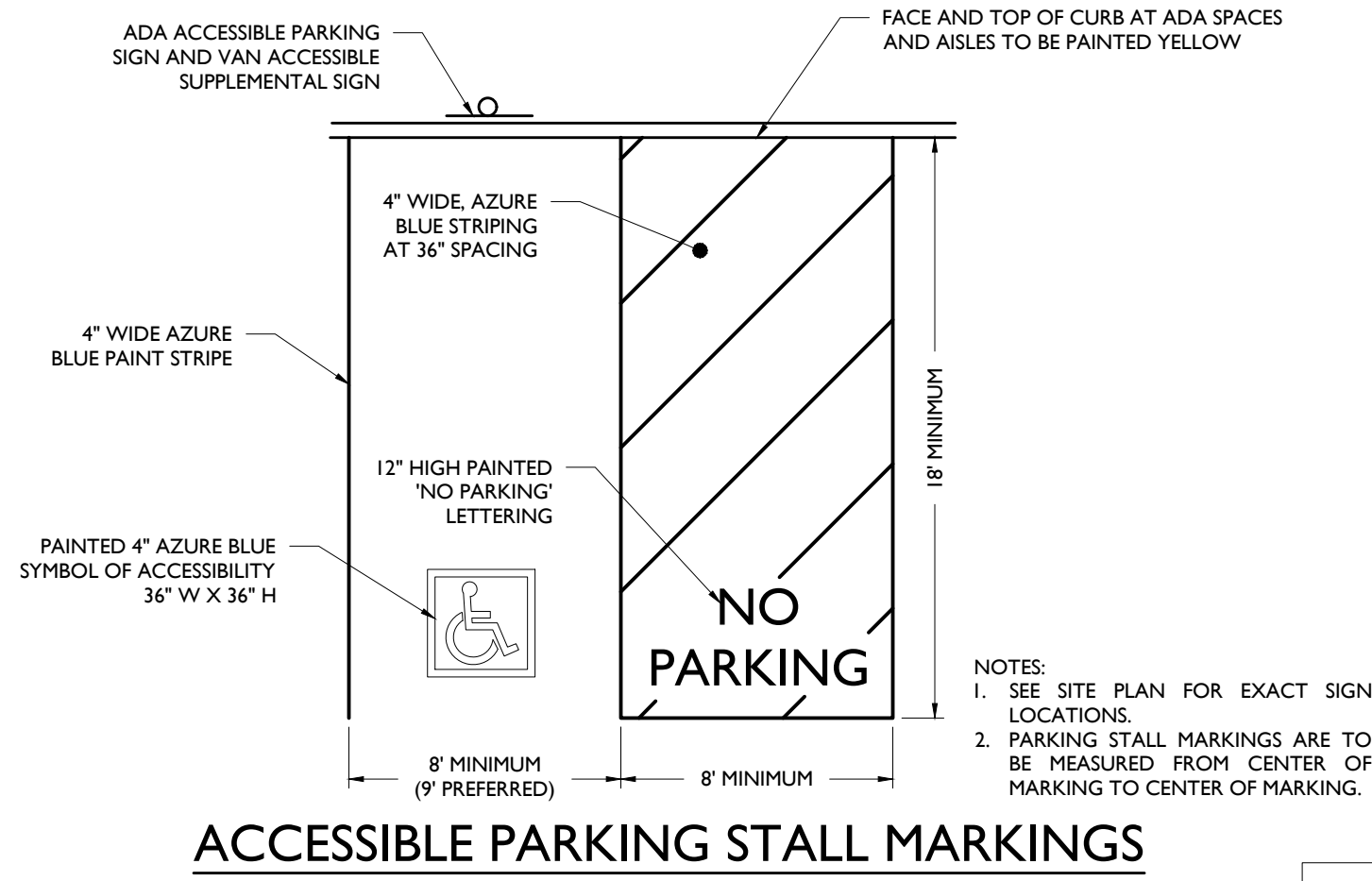
SCALE: 1" = 30' PROJECT ID: M-19301.01

TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN

DRAWING:
C-11

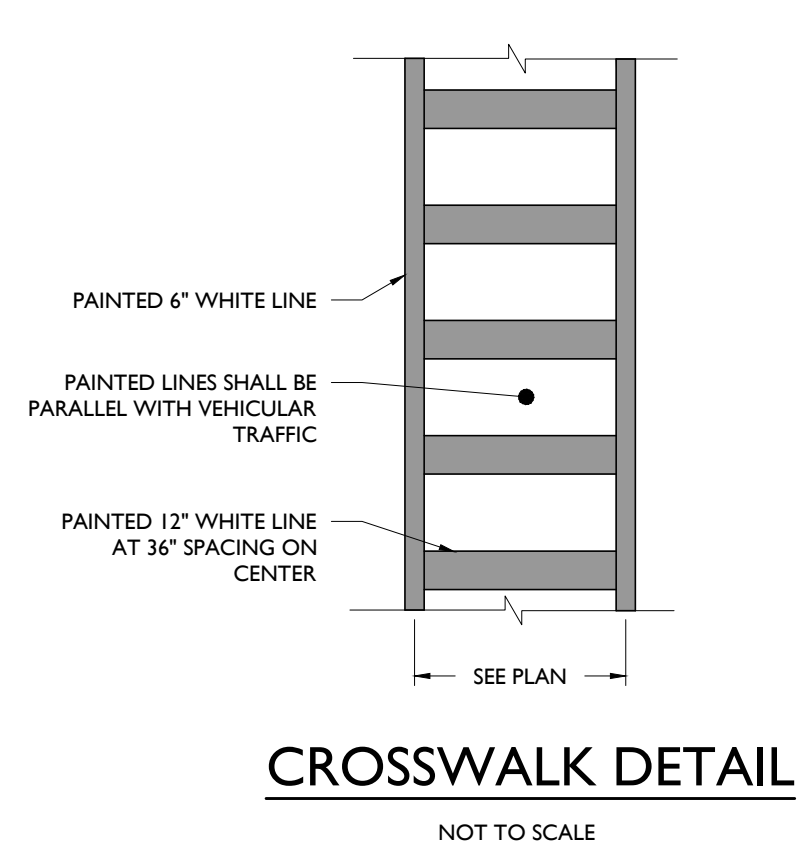


ACCESSIBLE PARKING SIGN DETAIL
NOT TO SCALE



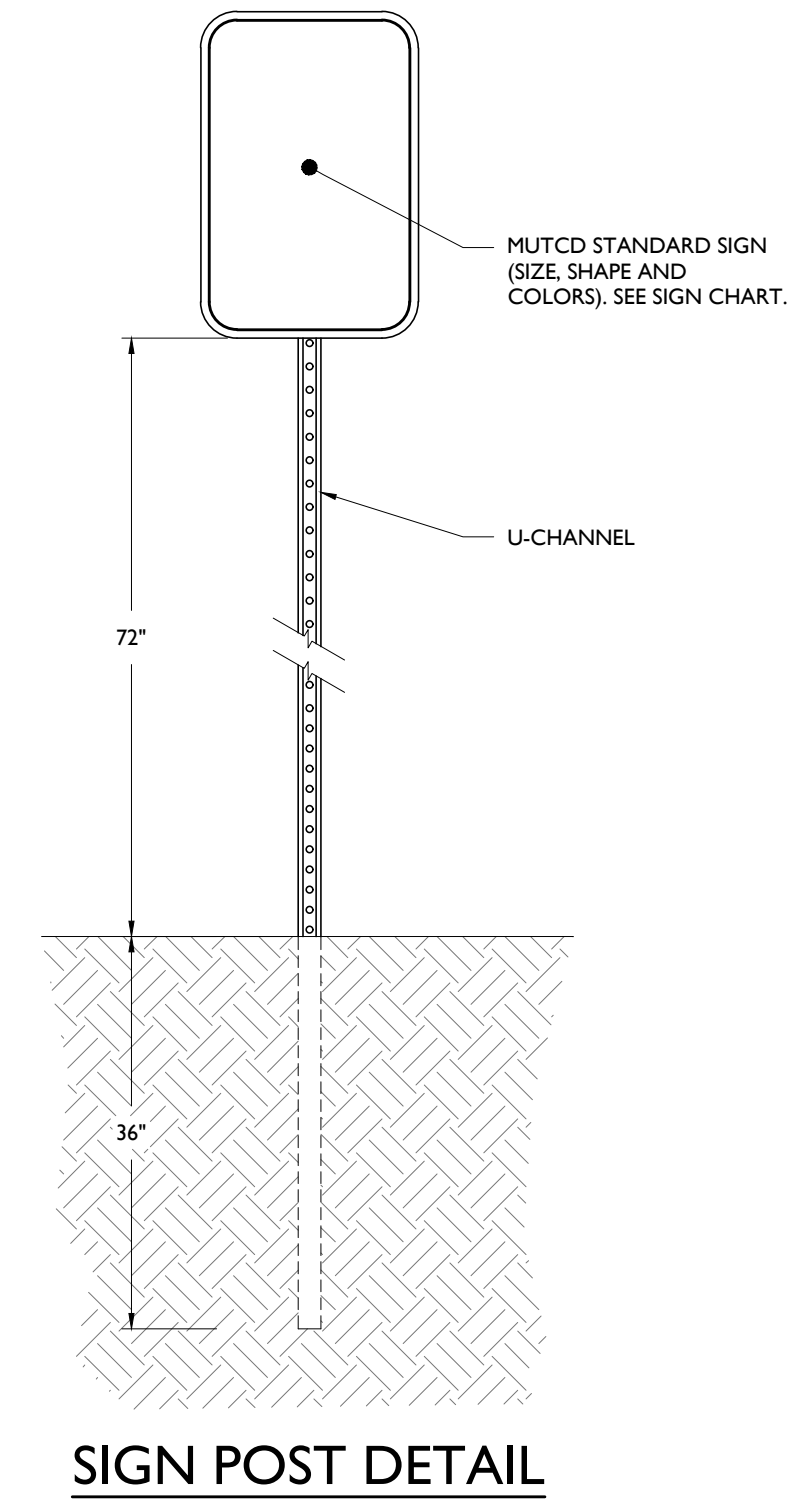
ACCESSIBLE PARKING STALL MARKINGS
NOT TO SCALE

2



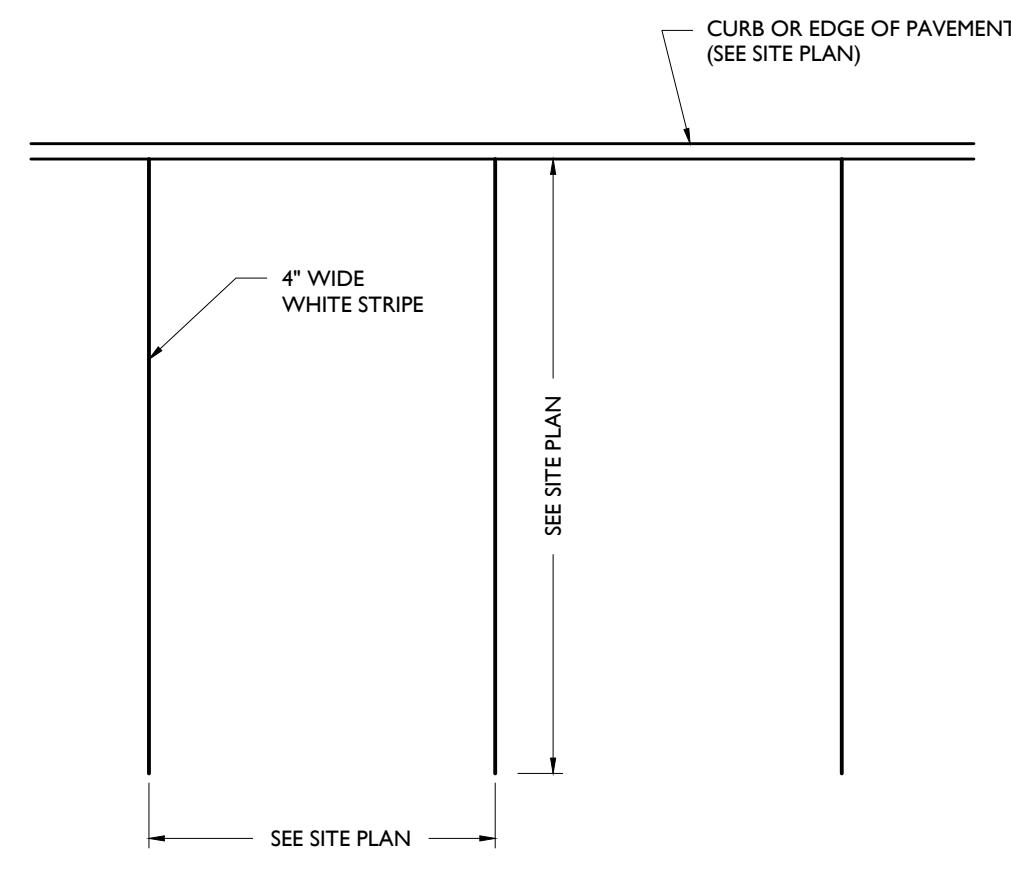
CROSSWALK DETAIL
NOT TO SCALE

3



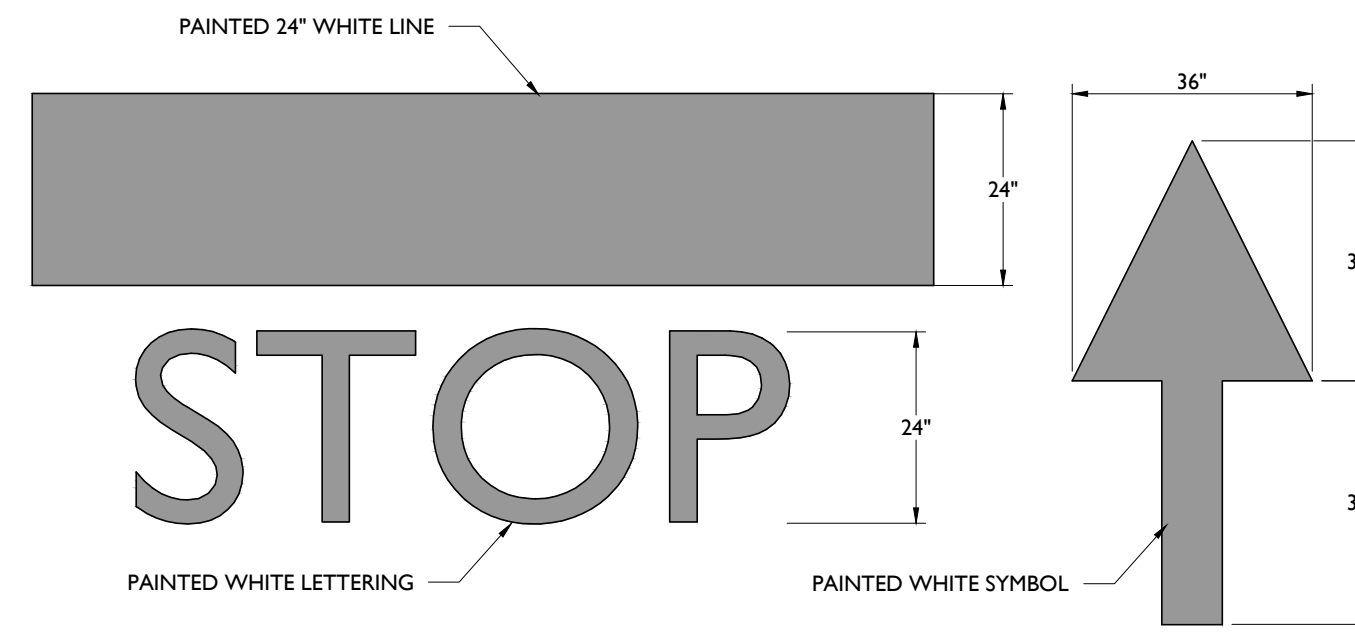
SIGN POST DETAIL

4



PARKING STALL MARKINGS
NOT TO SCALE

5

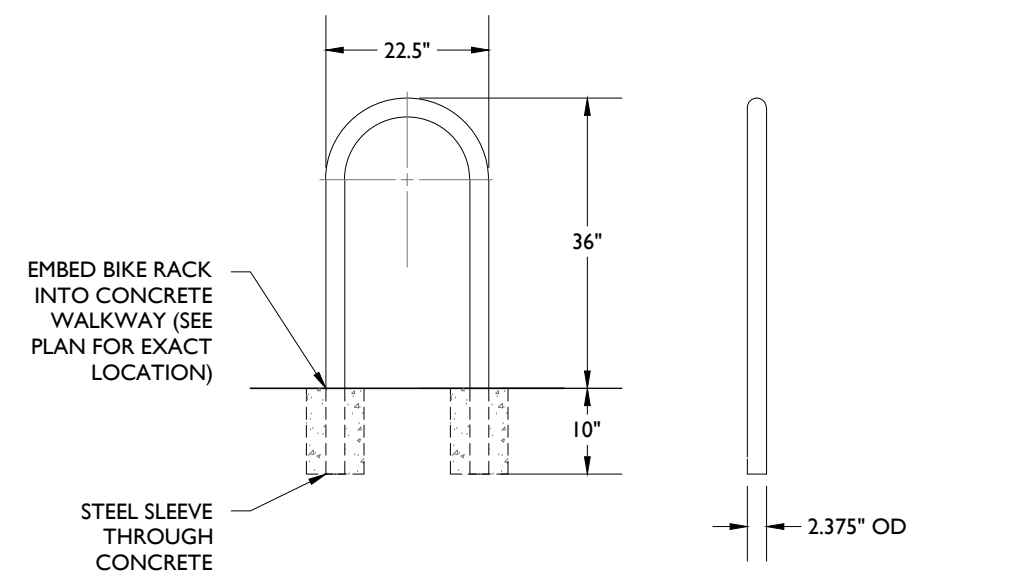


STOP BAR & ARROW DETAILS
NOT TO SCALE

6

- PAVEMENT STRIPING & MARKINGS NOTES:**
1. ALL SIGNING AND STRIPING IN EXISTING CONDITION IN CONFLICT WITH THE PROPOSED DESIGN PLAN SHALL BE REMOVED.
 2. ALL PROPOSED SIGNING AND STRIPING SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
 3. PAVEMENT STRIPING AND MARKINGS SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS.
 4. UNLESS OTHERWISE SPECIFIED, ALL STRIPING AND MARKINGS IN THE PUBLIC RIGHT-OF-WAY SHALL BE OF THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.
 5. UNLESS OTHERWISE SPECIFIED, ON SITE PARKING STALL STRIPING, FIRE LANE STRIPING AND DIRECTIONAL ARROWS SHALL BE EPOXY PAINT. ON SITE STOP BARS, "DO NOT ENTER" BARS, AND ASSOCIATED LETTERING SHALL BE THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.

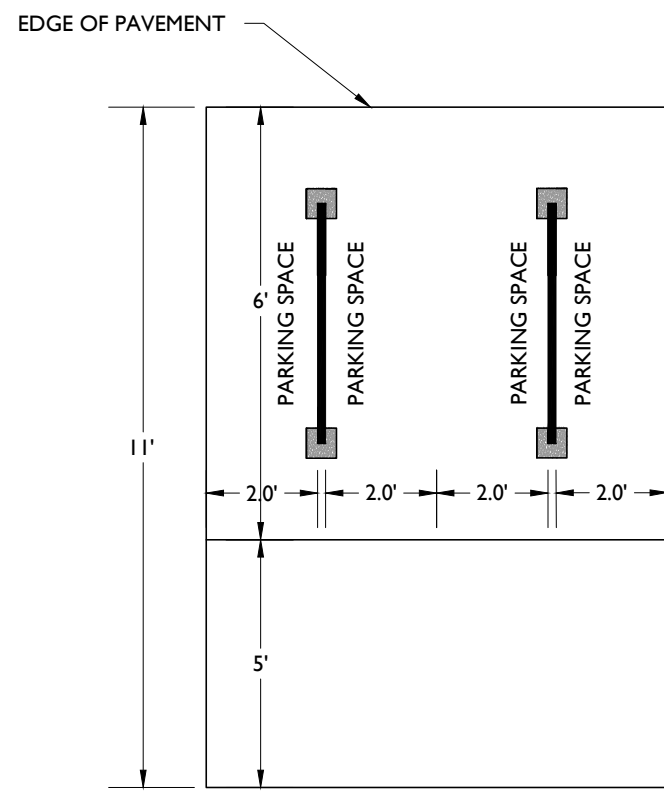
7



HOOP RACK HD IN GROUND MOUNTED BIKE RACK DETAIL
NOT TO SCALE

- NOTES:**
1. BIKE RACK TO BE MANUFACTURED BY DERO BIKE RACKS OR APPROVED EQUAL.
 2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

8



BIKE RACK LAYOUT
NOT TO SCALE

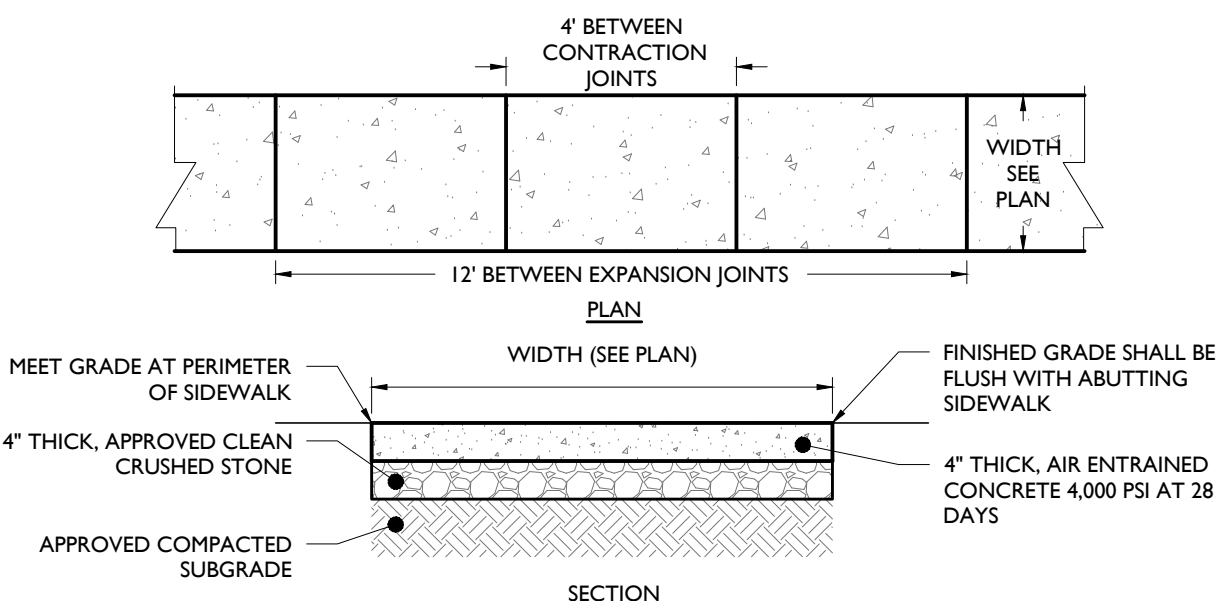
9

M.U.T.C.D. NUMBER	TEXT	COLOR		SIZE OF SIGN (WIDTH X HEIGHT)	TYPE OF MOUNT
		LEGEND	BACKGROUND		
STOP SIGN (R1-1)		WHITE	RED	36"x36"	GROUND
NO OUTLET - DEAD END (K2-0540)		TEXT: BLACK	YELLOW	24"x24"	GROUND

- NOTE:**
1. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), EXCEPT AS NOTED.
 2. ALL SIGNS SHALL BE MOUNTED AS TO NOT OBSTRUCT THE SHAPE OF "STOP" (R1-1) AND "YIELD" (R1-2) SIGNS.

SIGN DATA TABLE
NOT TO SCALE

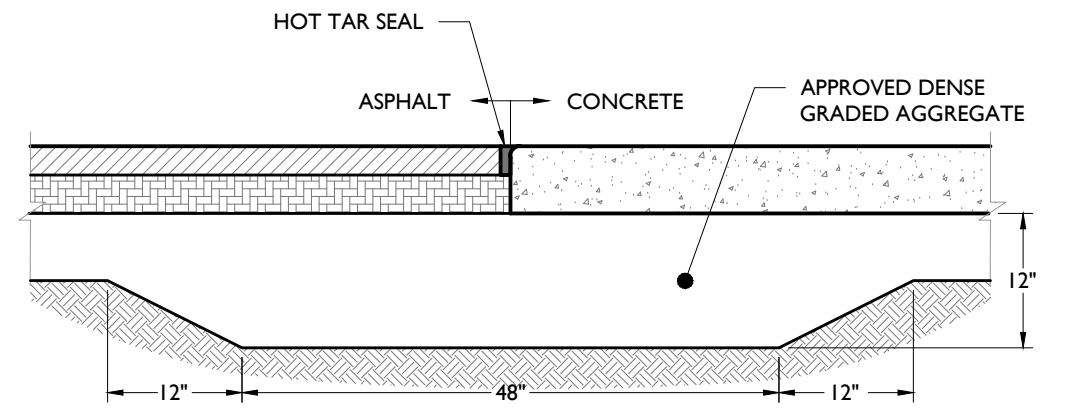
10



CONCRETE WALKWAY DETAIL
NOT TO SCALE

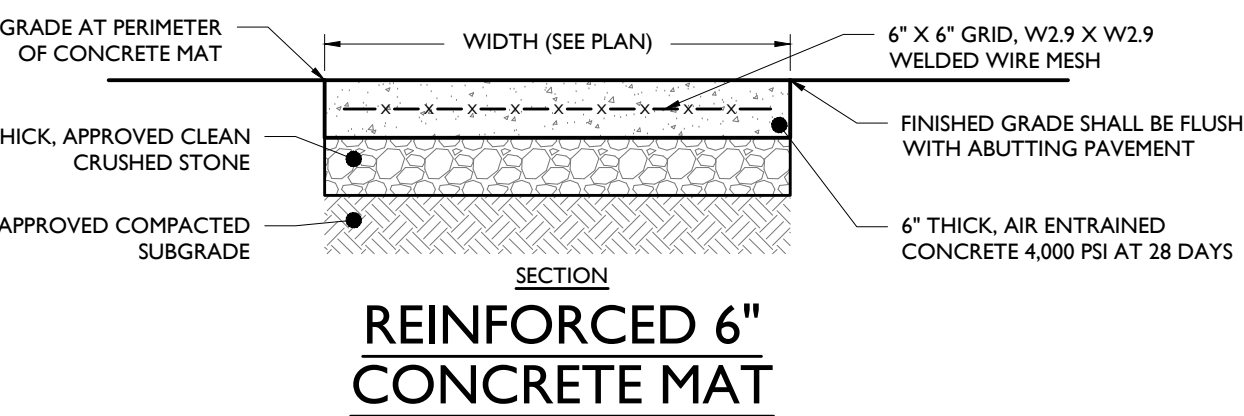
- NOTES:**
1. MAXIMUM CROSS SLOPE SHALL BE 1/4" PER FOOT.
 2. 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE.
 3. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
 4. EXPANSION JOINT SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

11



CONCRETE TO ASPHALT TRANSITION DETAIL
NOT TO SCALE

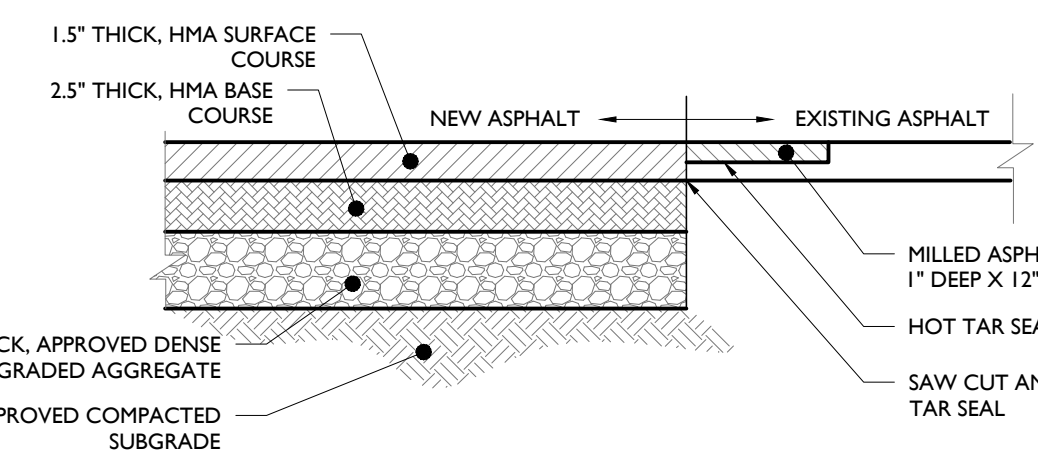
12



REINFORCED 6" CONCRETE MAT
NOT TO SCALE

- NOTES:**
1. 1/2" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
 2. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
 3. CONCRETE SHALL RECEIVE BROOM FINISH.
 4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

13



FULL DEPTH ASPHALT PAVEMENT DETAIL
NOT TO SCALE

- NOTE:**
- HMA MIX AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

14

ISSUE	DATE	BY	DESCRIPTION
6	02/09/2023	KTH	RESUBMISSION FOR SITE PLAN APPROVAL
5	10/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
4	07/11/2022	KTH	FOR ENGINEERING APPROVAL
3	05/31/2022	KTH	FOR SITE PLAN APPROVAL
2	02/14/2022	KTH	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
1	02/09/2021	RAC	FOR CITY SUBMISSION

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20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN



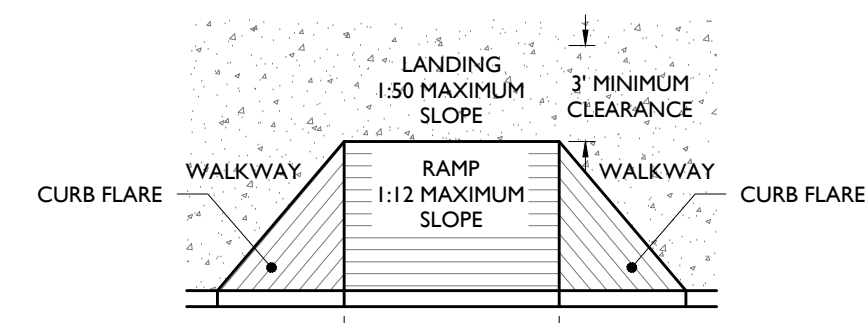
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SCALE: AS SHOWN PROJECT ID: M-19301.01

TITLE:
CONSTRUCTION DETAILS

DRAWING:
C-12

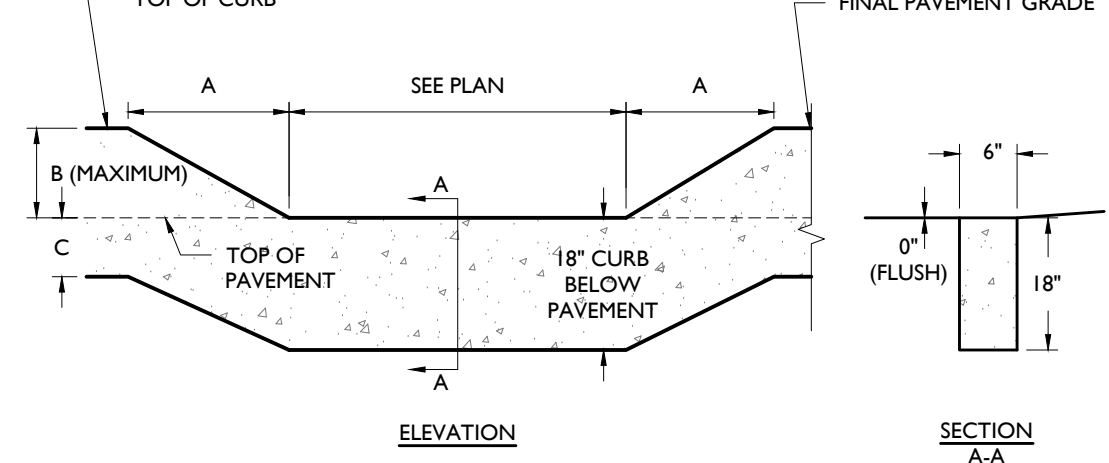
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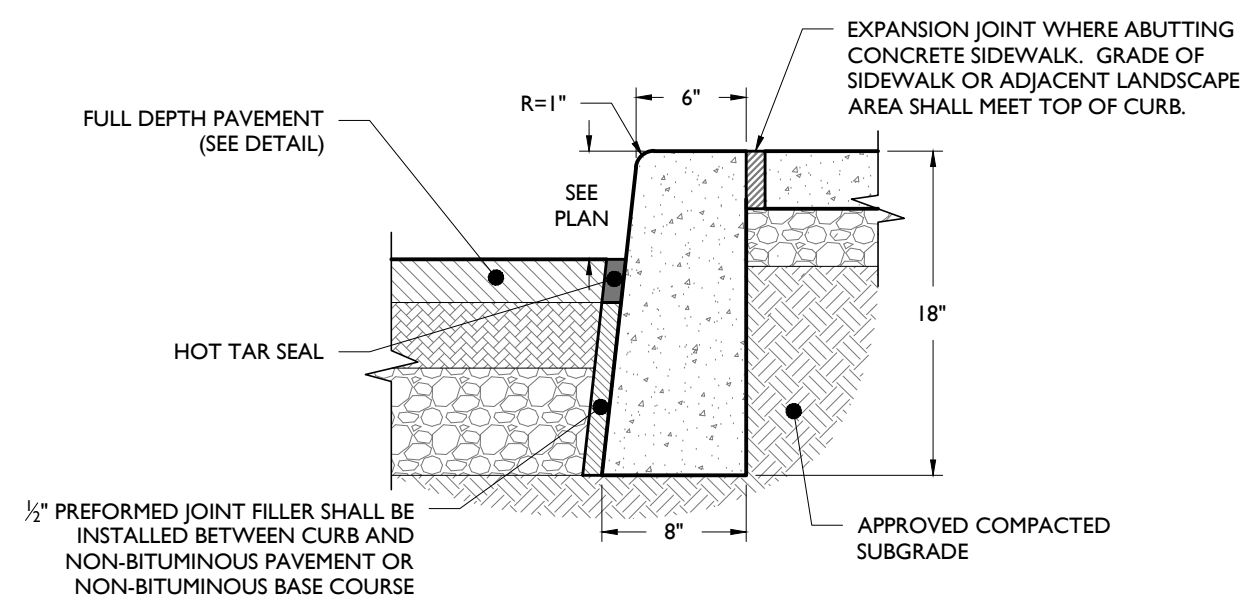
CURB RAMP WITH FLARES DETAIL
NOT TO SCALE

- NOTES:
- CROSS SLOPE ON RAMP SHALL NOT EXCEED 1:50 SLOPE.
 - WHERE A 60" x 60" LANDING EXISTS AT THE TOP OF RAMP, RAMP FLARE SHALL NOT EXCEED 1:10 SLOPE. WHERE LANDING IS NOT PROVIDED RAMP FLARE SHALL NOT EXCEED 1:12 SLOPE.
 - A FLUSH CURB SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
 - RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL.

FLUSH CURB DIMENSIONS		
A	B	C
72"	6"	12"
60"	5"	13"
48"	4"	14"
36"	3"	15"

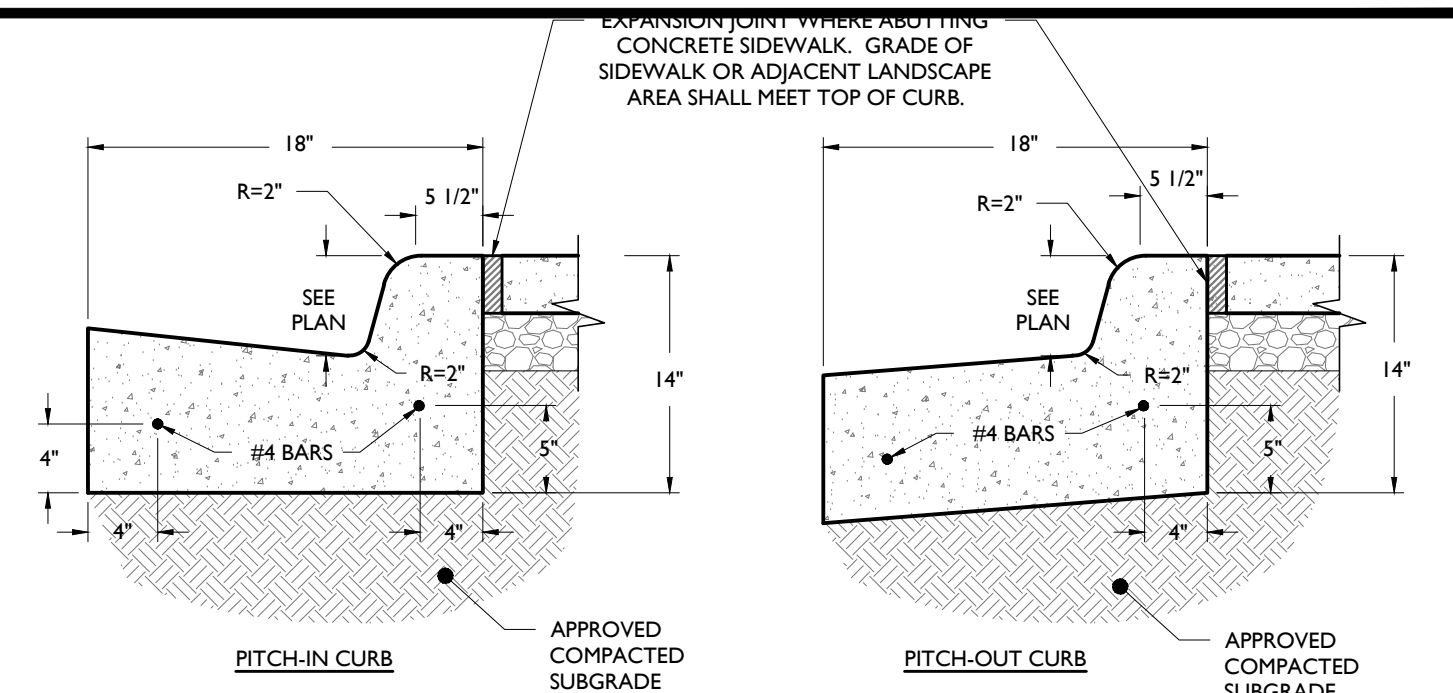


FLUSH CURB DETAIL
NOT TO SCALE



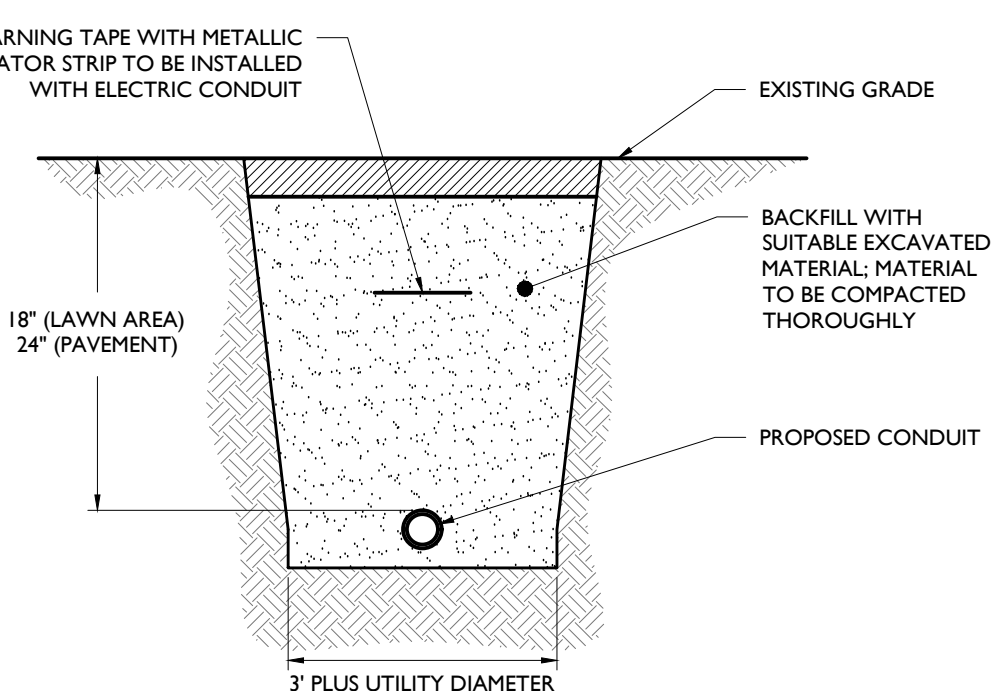
CONCRETE CURB DETAIL
NOT TO SCALE

- NOTES:
- CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
 - TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM SURFACE.
 - HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
 - 18" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.



CONCRETE CURB AND GUTTER DETAIL
NOT TO SCALE

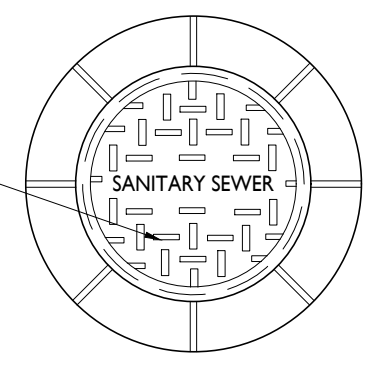
- NOTES:
- CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
 - TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM SURFACE.
 - HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
 - 14" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.



ELECTRICAL CONDUIT TRENCH DETAIL
NOT TO SCALE

- NOTES:
- FRAME AND COVER TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
 - ALL JOINTS TO BE WATER-TIGHT.
 - FRAME AND COVER TO BE E.I.J.W. 1040 OR APPROVED EQUIVALENT.

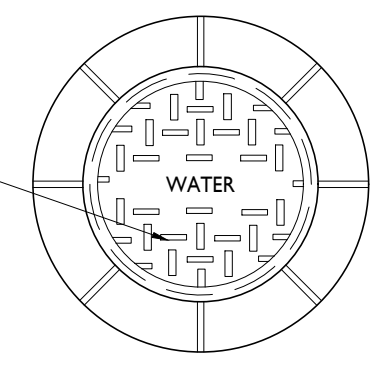
MANHOLE COVER TO BE LABELED / DEFINED PER LOCAL COMMUNITY STANDARDS AND REGULATIONS. PRIVATE MANHOLES SHALL NOT CONTAIN ANY REFERENCE TO THE CITY OF TROY.



PRIVATE SANITARY MANHOLE COVERS
NOT TO SCALE

- NOTES:
- FRAME AND COVER TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
 - ALL JOINTS TO BE WATER-TIGHT.
 - FRAME AND COVER TO BE E.I.J.W. 1040 OR APPROVED EQUIVALENT.

MANHOLE COVER TO BE LABELED / DEFINED PER LOCAL COMMUNITY STANDARDS AND REGULATIONS. PRIVATE MANHOLES SHALL NOT CONTAIN ANY REFERENCE TO THE CITY OF TROY.



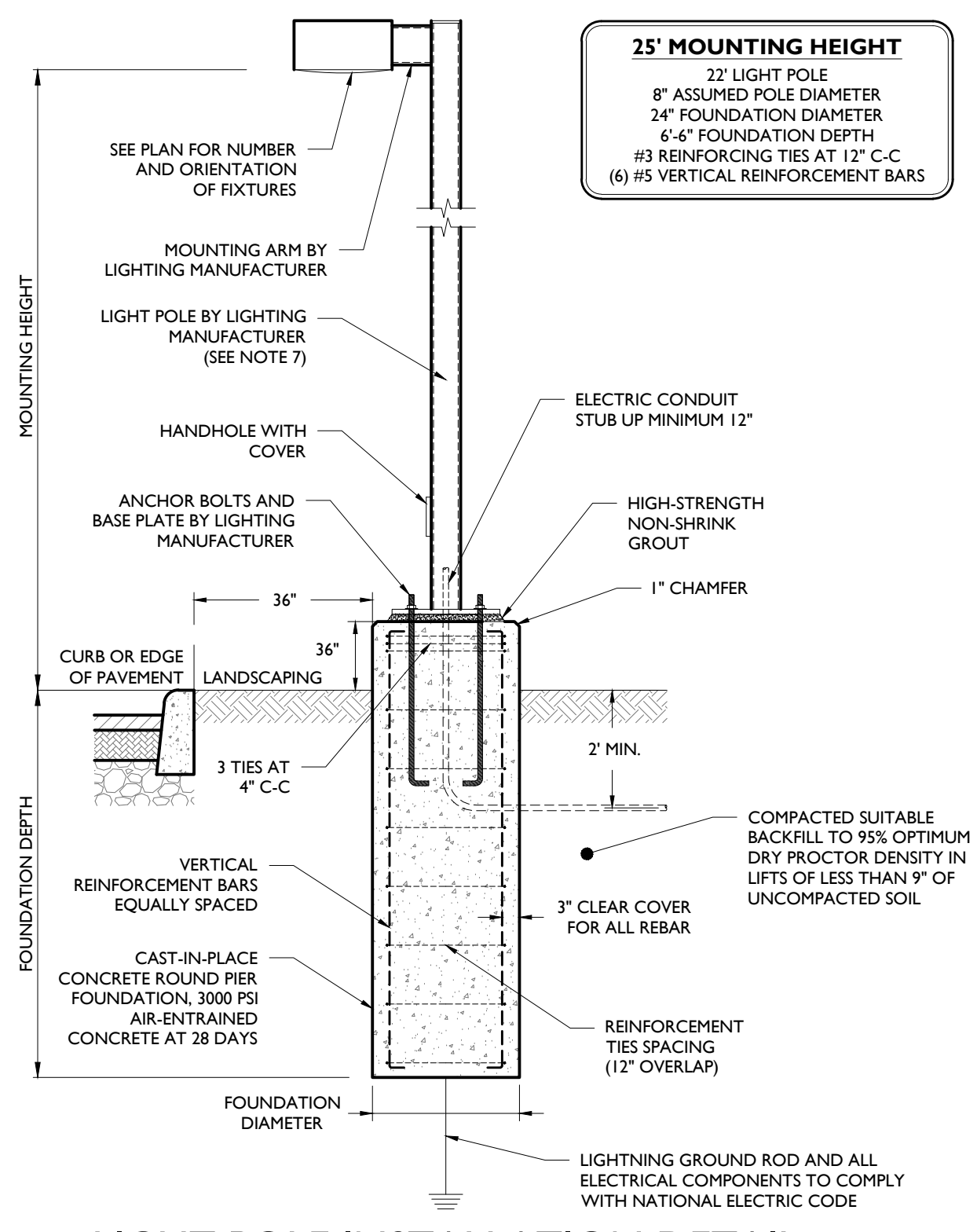
PRIVATE WATER MANHOLE COVERS
NOT TO SCALE



The above 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: 100)

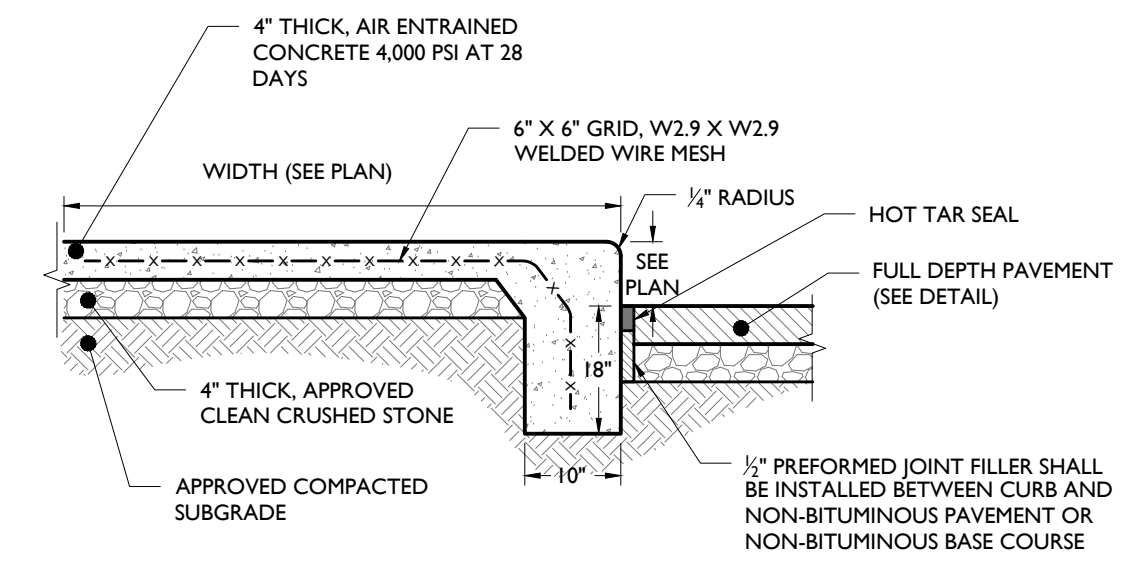
- Sign shall be red lettering on white background and shall read: "FIRE LANE, NO PARKING, NO STOPPING, NO STANDING, TOW AWAY ZONE".
- Signs shall be spaced no further than 100 feet apart.
- Signs shall be installed at a right angle or 90° to curb.
- Sign shall be seven (7) feet from the bottom of sign to grade.
- Signs shall be double faced where the possibility exists for left wheel to curb parking.
- Signs shall be 12 inches in width and 15 inches in height.

CITY OF TROY FIRE LANE SIGN DETAIL
NOT TO SCALE



LIGHT POLE INSTALLATION DETAIL
NOT TO SCALE

- NOTES:
- MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
 - CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
 - ALL REBAR TO BE NEW GRADE 60 STEEL.
 - PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
 - CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
 - CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
 - POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
 - POUR TO BE TERMINATED AT A FORM.
 - WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
 - CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.



MONOLITHIC CONCRETE CURB DETAIL
NOT TO SCALE

- NOTES:
- MAXIMUM CROSS SLOPE SHALL BE 1/4" PER FOOT.
 - 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE.
 - 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.

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607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

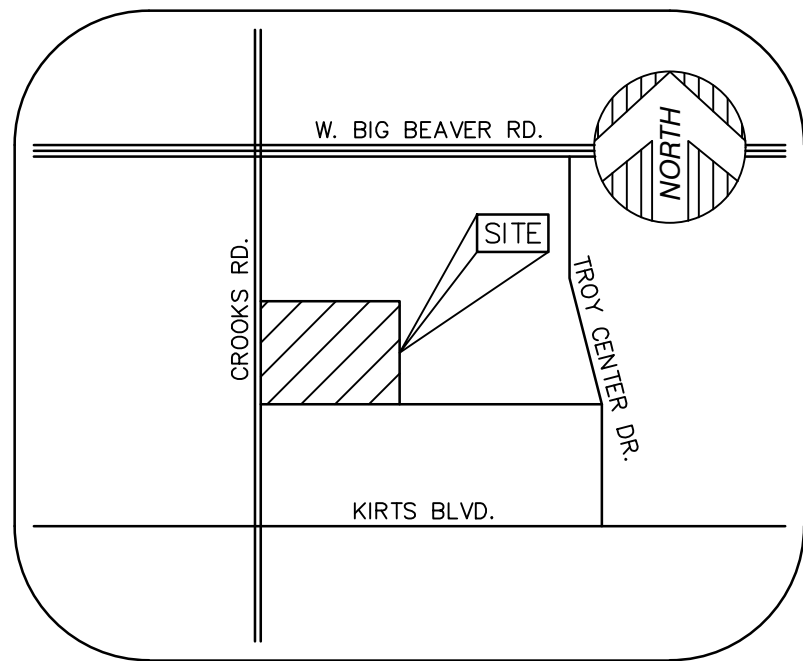


STONEFIELD
engineering & design

SCALE: AS SHOWN PROJECT ID: M-19301.01

TITLE:
CONSTRUCTION DETAILS

DRAWING:
C-13



VICINITY MAP
(NOT TO SCALE)

LEGEND

- FOUND MONUMENT (AS NOTED)
- FOUND SECTION CORNER (AS NOTED)
- RECORD AND MEASURED DIMENSION
- RECORD DIMENSION
- MEASURED DIMENSION
- ELECTRIC MANHOLE
- ELECTRIC PANEL
- TRANSFORMER
- UTILITY POLE
- GAS METER
- GAS VALVE
- TELEPHONE MANHOLE
- ELECTRIC OUTLET
- CABLE TV RISER
- TRAFFIC SIGNAL
- CROSSWALK SIGNAL
- CLEANOUT
- SANITARY MANHOLE
- ROUND CATCH BASIN
- SQUARE CATCH BASIN
- DRAIN
- STORM DRAIN MANHOLE
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE MANHOLE
- WATER VALVE
- AIR CONDITIONING UNIT
- BOLLARD
- FLAGPOLE
- FLOOD LIGHT
- LIGHTPOST/LAMP POST
- MAIL BOX
- SINGLE POST SIGN
- DOUBLE POST SIGN
- HANDICAP PARKING
- PARCEL BOUNDARY LINE
- ADJOINER PARCEL LINE
- SECTION LINE
- EASEMENT (AS NOTED)
- BUILDING
- BUILDING OVERHANG
- ASPHALT CURB
- CONCRETE CURB
- RAISED CONCRETE
- PARKING
- EDGE OF CONCRETE (CONC.)
- EDGE OF ASPHALT (ASPH.)
- EDGE OF GRAVEL
- FENCE (AS NOTED)
- WALL (AS NOTED)
- LANDSCAPING (AS NOTED)
- OVERHEAD UTILITY LINE
- UNDERGROUND PIPE (AS NOTED)
- BUILDING AREA
- ASPHALT
- CONCRETE

PARKING

HANDICAP PARKING = 8 STALLS
STANDARD PARKING = 328 STALLS

PARCEL AREA

PARCEL 4:
193,599± SQUARE FEET = 4.444± ACRES

SURVEYOR'S NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES OTHER THAN THE STRUCTURE INVENTORY SHOWN HEREON.

BASIS OF BEARING

SOUTH 02°25'41" EAST, BEING THE WEST LINE OF SECTION 28, AS SHOWN.

BENCHMARK

SITE BENCHMARK #3
ARROW ON HYDRANT, ±40' SW OF SW CORNER OF POND.
ELEVATION = 707.24' (NAVD 88 DATUM)

SITE BENCHMARK #4

ARROW ON HYDRANT, NEAR NE CORNER OF BUILDING.
ELEVATION = 708.34' (NAVD 88 DATUM)



GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

PROPERTY DESCRIPTION

THE LAND SITUATED IN THE TROY, COUNTY OF OAKLAND, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

PARCEL 4:
THE EAST 484 FEET OF THE WEST 544 FEET OF THE SOUTH 400 FEET OF THE NORTH 1/2 OF THE NORTHWEST 1/4 CORNER OF SECTION 28, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN.

TITLE REPORT NOTE

ONLY THOSE EXCEPTIONS CONTAINED WITHIN THE STEWART TITLE GUARANTY COMPANY FILE NO. 63-19650824-SCM, REVISION 4, DATED SEPTEMBER 03, 2019, AND RELISTED BELOW WERE CONSIDERED FOR THIS SURVEY. NO OTHER RECORDS RESEARCH WAS PERFORMED BY THE CERTIFYING SURVEYOR.

27. TERMS AND PROVISIONS CONTAINED WITHIN, AND EASEMENTS CREATED BY CROSS-ACCESS OR JOINT-DRIVE EASEMENT RECORDED IN LIBER 9386, PAGE 804, OAKLAND COUNTY RECORDS (AFFECTS PARCELS 4). (AS SHOWN)

28. TERMS AND PROVISIONS CONTAINED WITHIN, AND EASEMENTS CREATED BY CROSS-ACCESS OR JOINT-DRIVE EASEMENT RECORDED IN LIBER 9630, PAGE 559, OAKLAND COUNTY RECORDS (AFFECTS PARCELS 4). (AS SHOWN)

MANHOLE SCHEDULE

#	TYPE	RIM (FT)	SIZE (IN)	DIRECTION	DIP	INVERT (FT)
11297	STORM MANHOLE	705.38	12	N	4.2	701.18
11355	CATCH BASIN	704.21	6	NE	3.7	700.51
			6	SW	3.95	700.26
			6	SE	3.8	700.41
			6	S	3.85	700.70
			6	W	3.9	700.65
11403	BEEHIVE CATCH BASIN	704.55	6	S	3.85	700.70
			6	SW	3.9	700.65
			6	NW	4.05	700.50
			6	N	2.75	699.91
			6	SE	2.85	699.81
			6	NW	3	699.66
			6	S	3.2	699.46
11462	CATCH BASIN	702.51	6	NE	3.2	699.31
			6	S	3.15	699.36
			6	SW	3.25	699.26
			6	NW	3.05	699.46
			6	N	3.25	699.32
			6	E	3.15	699.42
			6	S	3.05	699.52
			6	W	3.15	699.32
11464	CATCH BASIN	702.64	6	E	4.4	698.24
			6	SW	3.85	698.80
			6	NW	3.75	698.89
			6	E	6	697.48
11824	BEEHIVE CATCH BASIN	703.48	6	E	6	697.48
				T/PIPE	4.2	699.28
				T/WATER	4.25	699.23
				B/STRUCTURE	7.4	696.08
11851	CATCH BASIN	702.9	6	NE	4.25	698.65
			6	N	4.15	698.75
			12	NW	5.8	697.10
			6	SE	4.3	698.60
85015	STORM MANHOLE	703.39	12	NW	5	698.39
			15	S	6.5	696.89
85016	CATCH BASIN	703.37	12	SW	4.45	698.92
85025	STORM MANHOLE	703.59	12	S	4	699.59
			12	W	5.2	698.39
			12	E	4.85	698.74
			6	NE	4.6	698.99
87679	SANITARY MANHOLE	705.04	8	N	11.45	693.59
			8	S	11.5	693.54
			8	NW	11	694.04

SURVEYOR'S CERTIFICATION

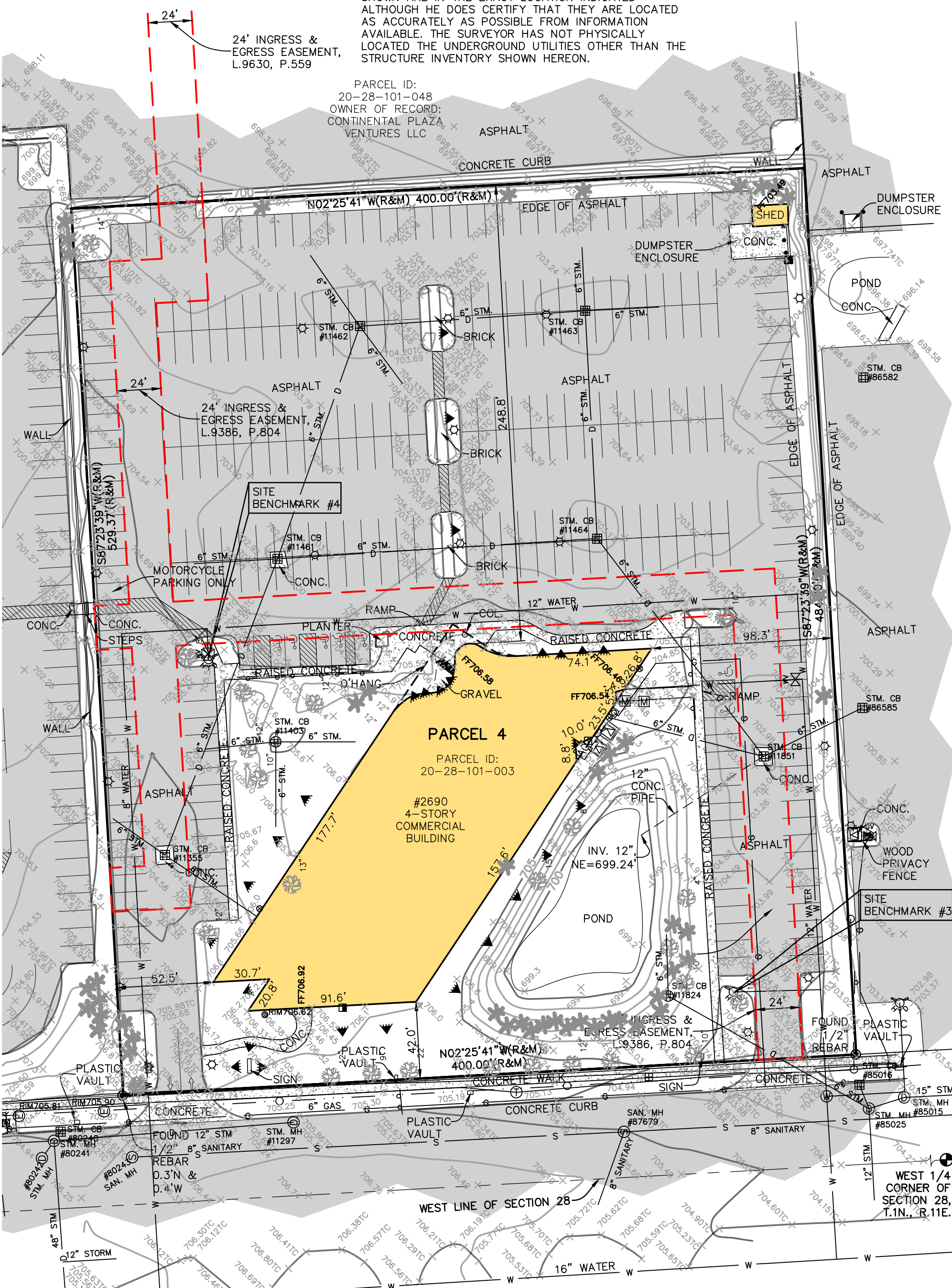
TO A.F. JONNA; CIBC BANK USA, AN ILLINOIS CHARTERED BANK, ITS SUCCESSORS AND/OR ASSIGNS; STEWART TITLE GUARANTY COMPANY; AND ATA NATIONAL TITLE GROUP, LLC:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDED ITEMS 2, 4, 7A, 8, AND 9 OF TABLE A, THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 05, 2019.

DATE OF PLAT OR MAP: DECEMBER 10, 2019

DRAFT

ANTHONY T. SYCKO, JR., P.S.
PROFESSIONAL SURVEYOR
MICHIGAN LICENSE NO. 47976
22556 GRATIOT AVE., EASTPOINTE, MI 48021
Tsycko@kemtec-survey.com



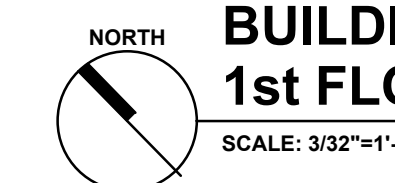
ALTA / NSPS LAND TITLE SURVEY
PREPARED FOR: A.F. JONNA
991 & 999 W. BIG BEAVER RD. & 2690 CROOKS RD.,
TROY, MICHIGAN,
PART OF SECTION 28,
TOWN 2 NORTH, RANGE 11 EAST

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www.kemtecgroupprofessionals.com

DRAWN BY:	JDM	12/12/19
CHECKED BY:	ATS	12/12/19
DATE:	DECEMBER 12, 2019	
PROJECT NO.:	19-03620	SCALE: 1" = 50'



(2) EFFICIENCY UNITS
(3) 1 BEDROOM UNITS
(7) 2 BEDROOM UNITS



BUILDING A
1st FLOOR PLAN

SCALE: 3/32"=1'-0"

Project title

PROPOSED RENOVATION FOR:
Lindsey Centre
Redevelopment

2690 Crooks Road
Troy, Michigan

Issued dr/ch

SITE PLAN 10.11.22

Sheet title

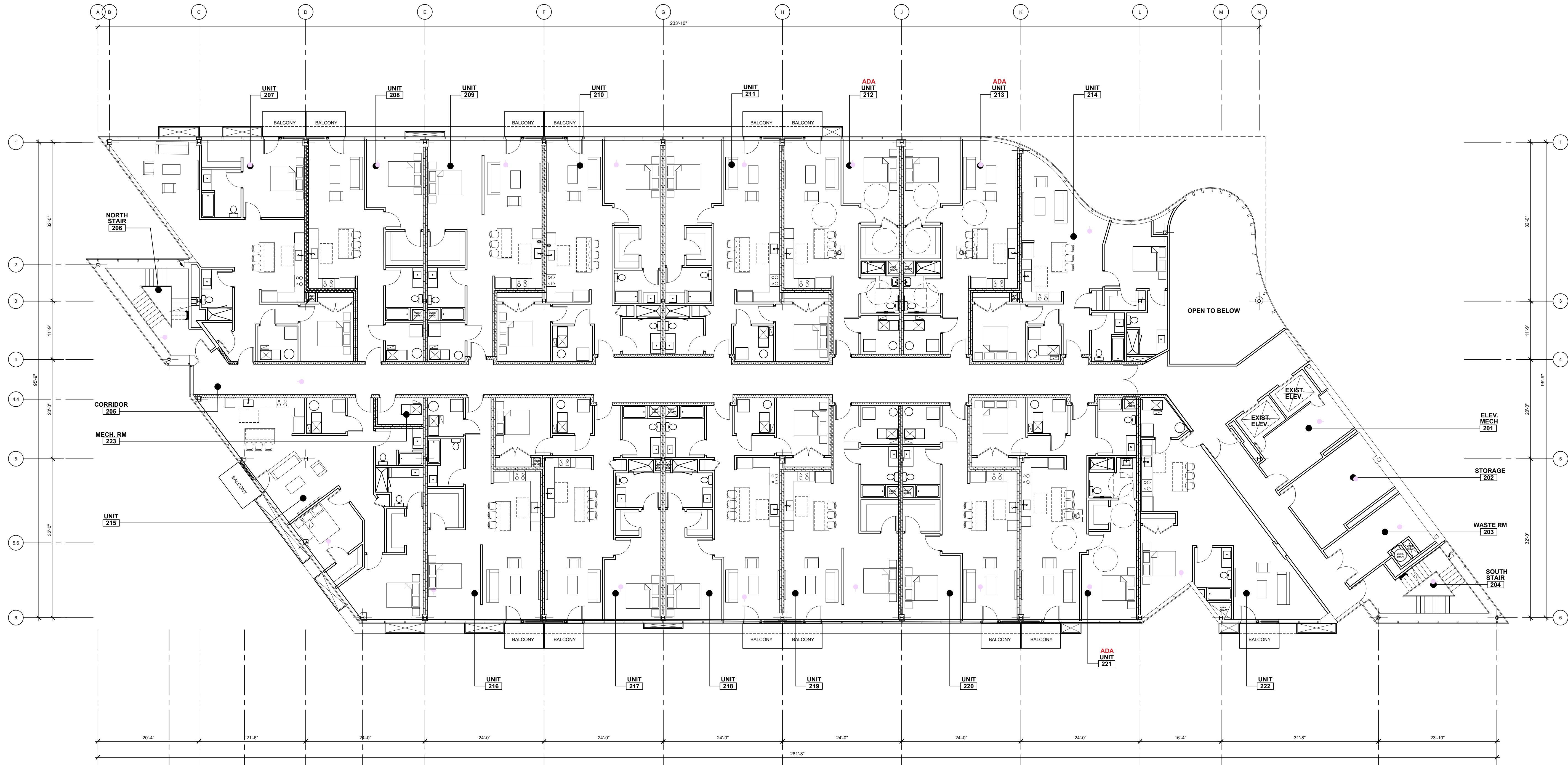
Building A
1st FLOOR PLAN

Project no.

2068.20

Sheet no.

A.101

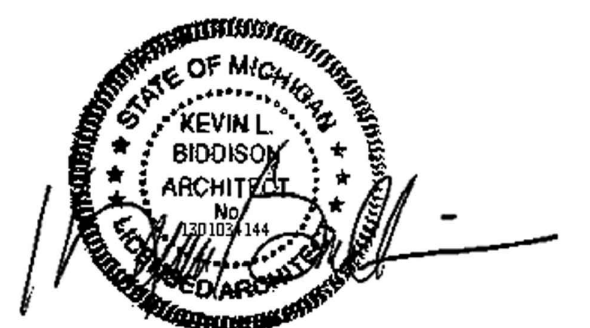


PROPOSED RENOVATION FOR:
**Lindsey Centre
Redevelopment**

2690 Crooks Road
Troy, Michigan

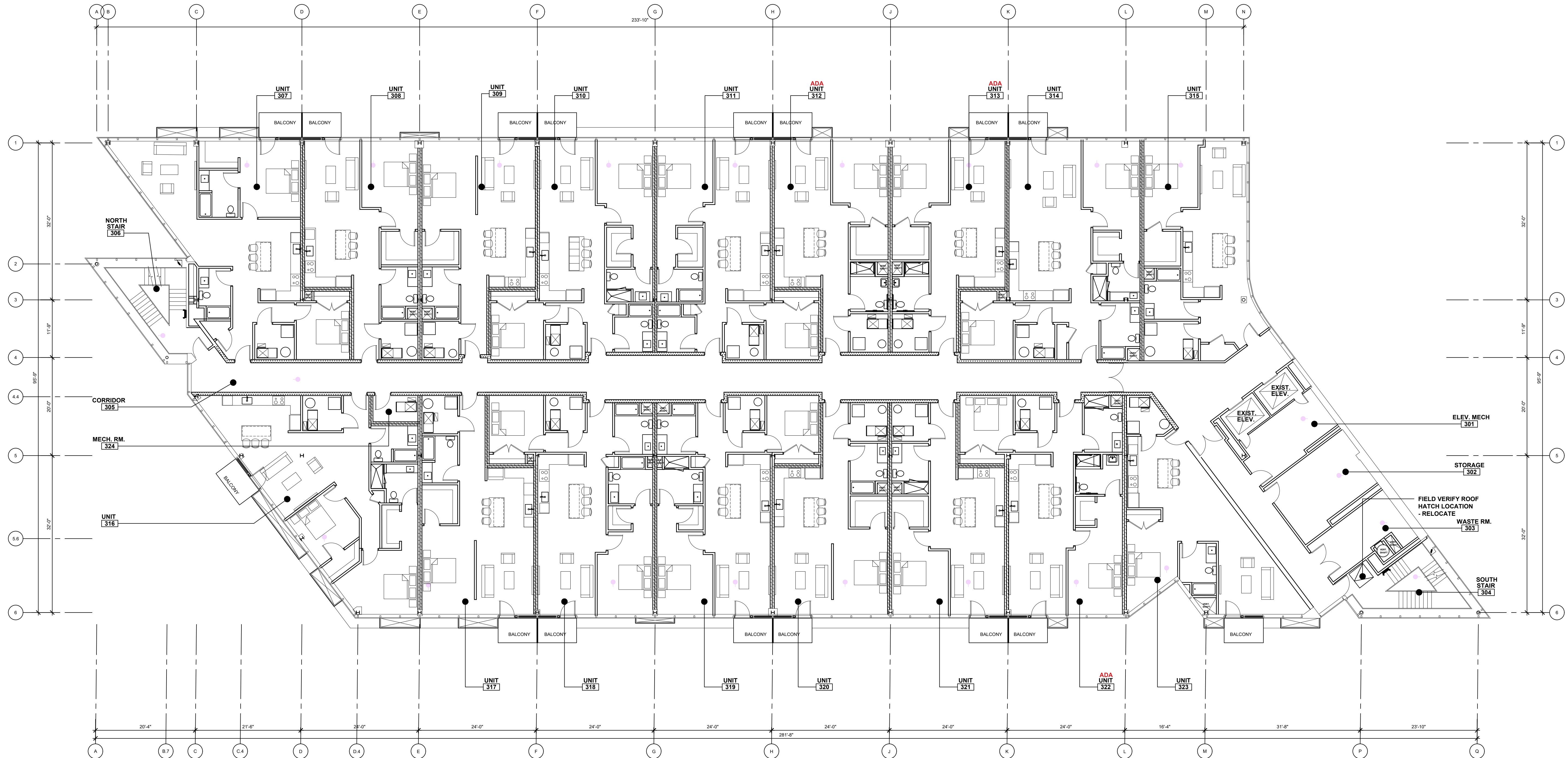
SITE PLAN APPROVAL 02.07.23

**Building A
2nd FLOOR PLAN**



2068.20

A.102

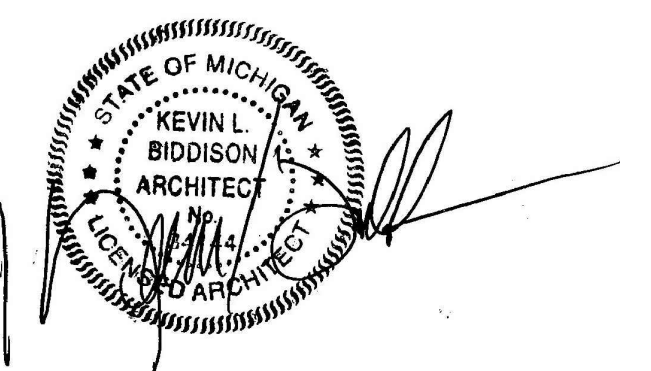


PROPOSED RENOVATION FOR:
**Lindsey Centre
Redevelopment**

2690 Crooks Road
Troy, Michigan

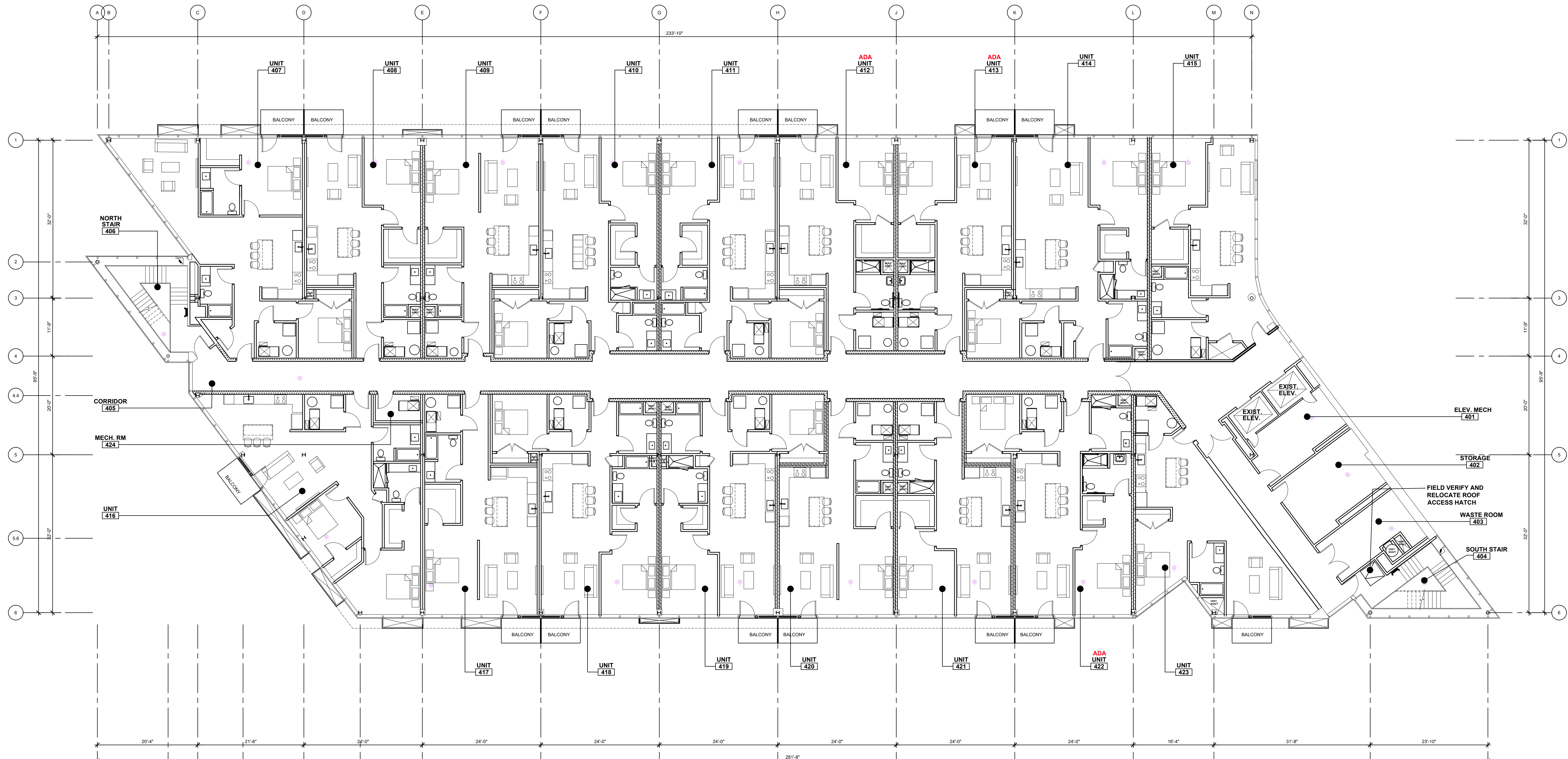
SITE PLAN APPROVAL 02.07.23

**Building A
3rd FLOOR PLAN**



2068.20

A.103

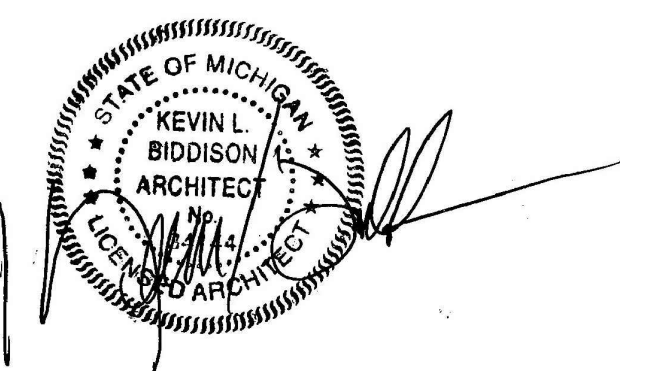


**Lindsey Centre
Redevelopment**

2690 Crooks Road
Troy, Michigan

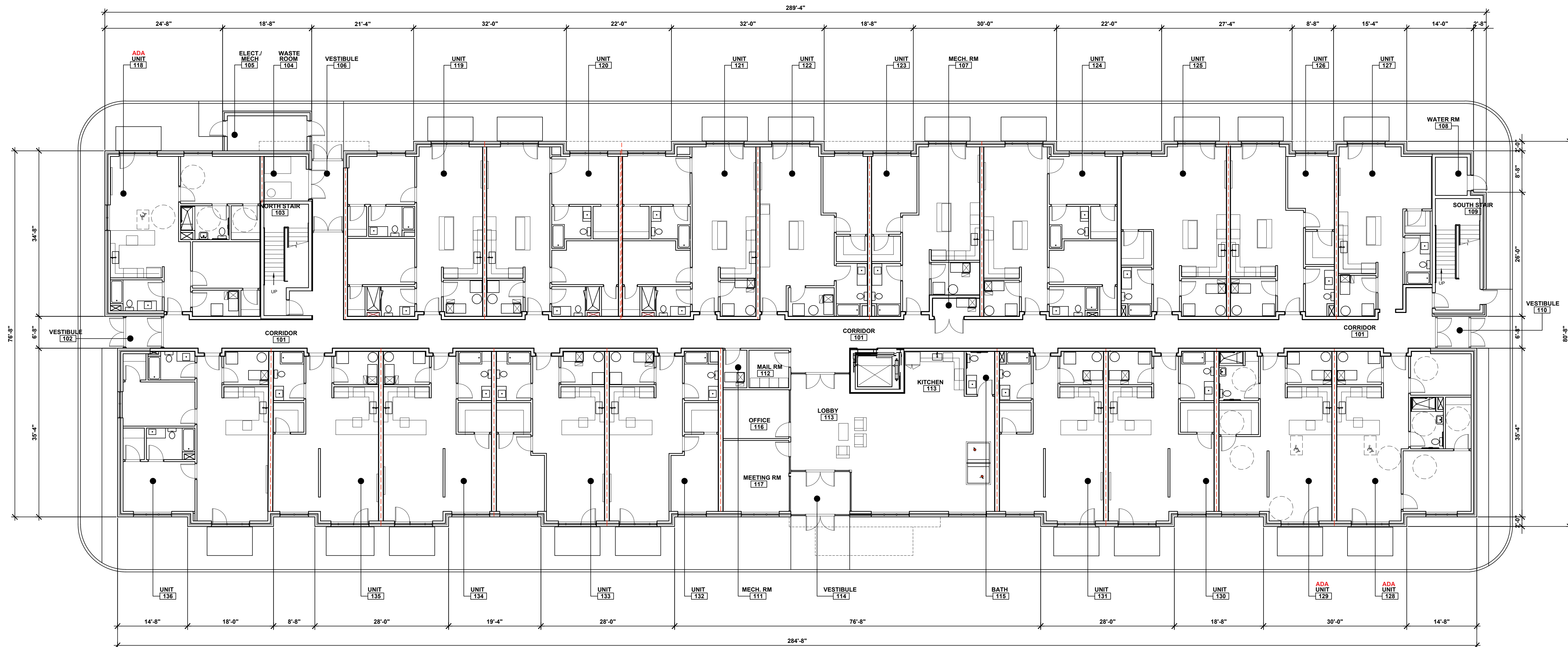
SITE PLAN APPROVAL 02.07.23

**Building A
4th FLOOR PLAN**



2068.20

A.104

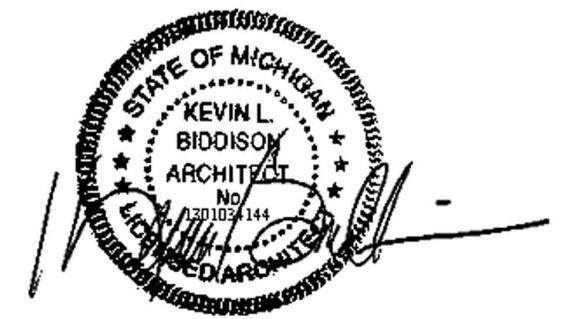


Project title
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch
SITE PLAN 02.07.23

Sheet title
**Building B
1st FLOOR PLAN**



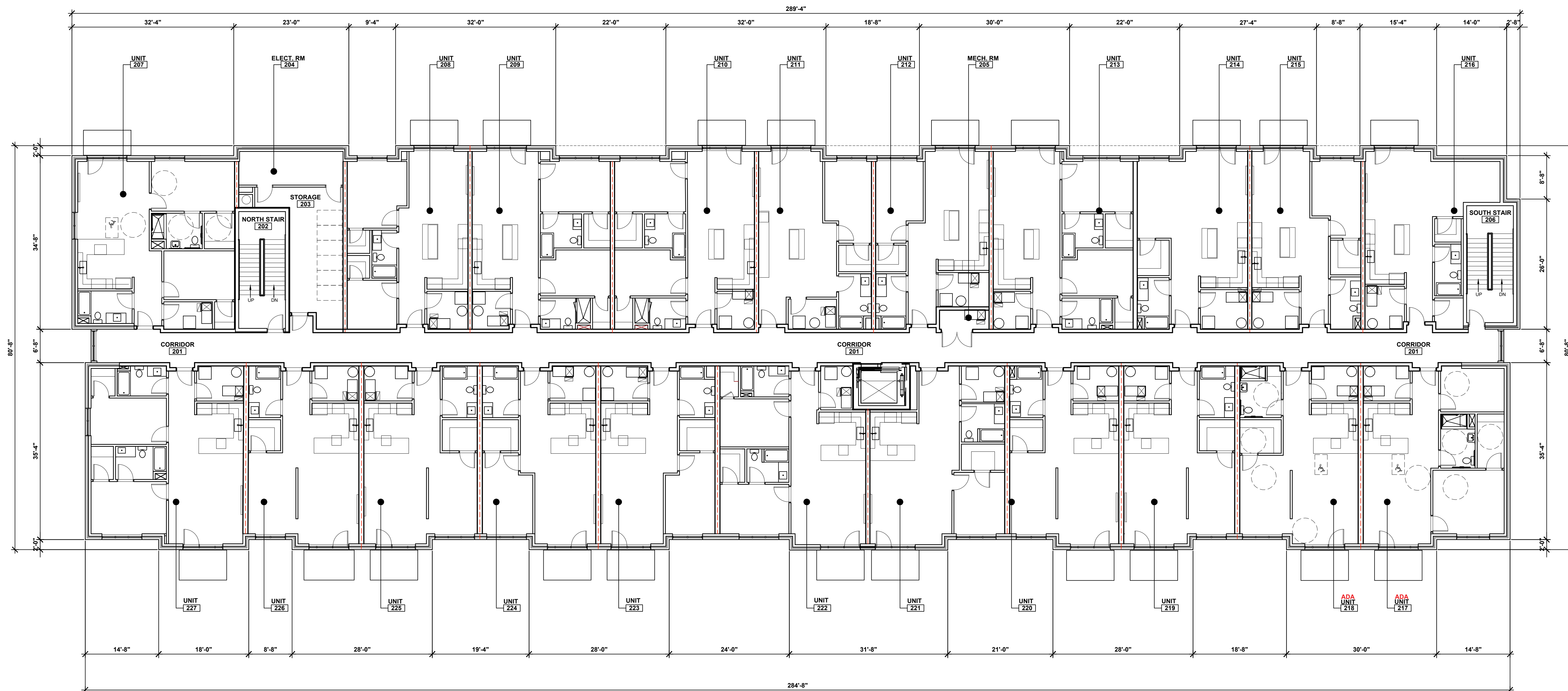
Project no.
2068.20

**1ST FLOOR - 19 UNITS
EFFICIENCY - 06 UNITS
1BR - 07 UNITS
2BR - 06 UNITS**

**BUILDING B OVERALL
1st FLOOR PLAN**



Sheet no.
A.101



Project title

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
RESIDENTIAL**

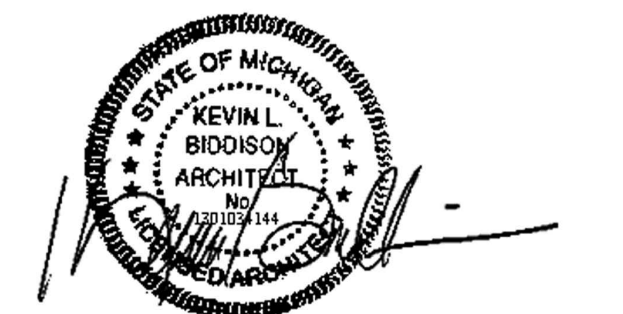
2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

SITE PLAN 02.07.23

Sheet title

**Building B
2nd FLOOR PLAN**



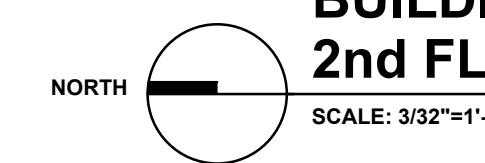
Project no.

2068.20

Sheet no.

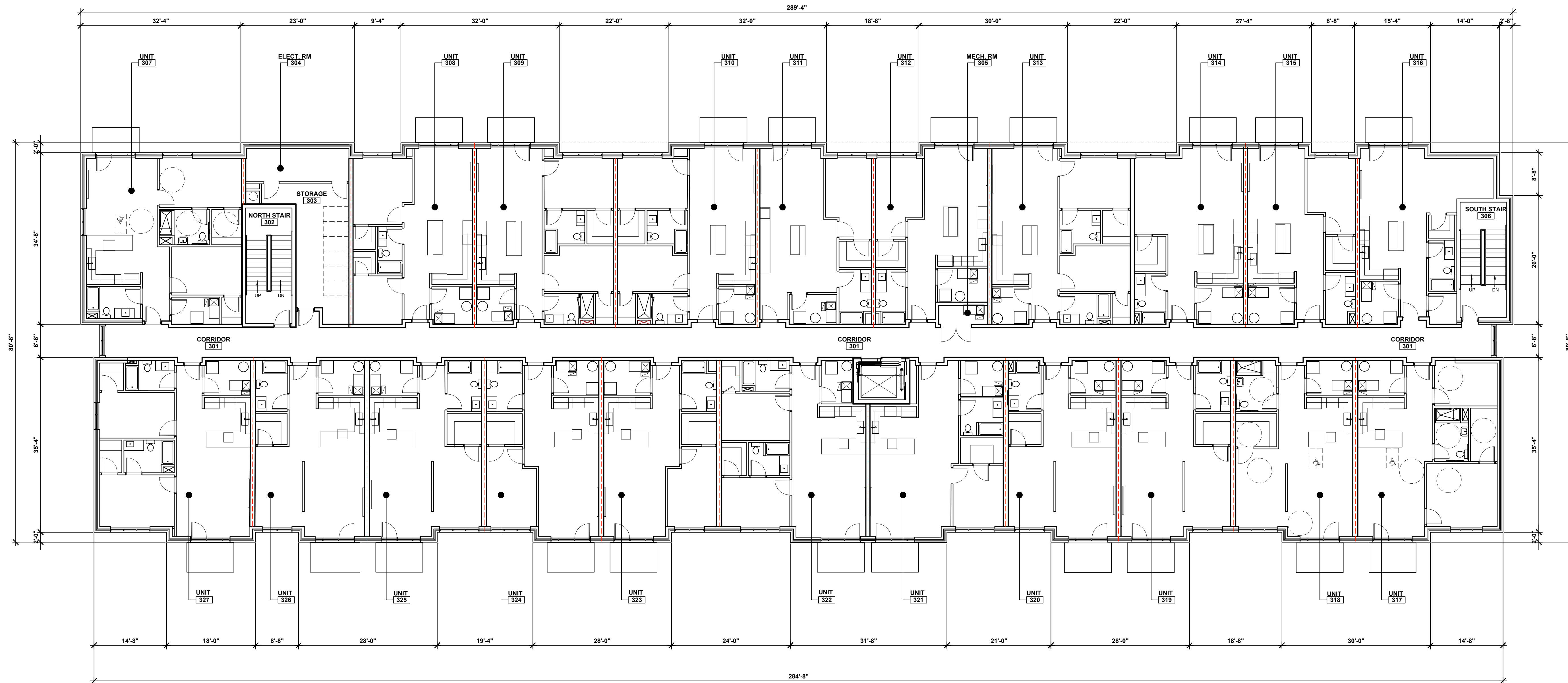
A.102

**2ND FLOOR - 21 UNITS
EFFICIENCY - 07 UNITS
1BR - 08 UNITS
2BR - 06 UNITS**



**BUILDING B OVERALL
2nd FLOOR PLAN**

SCALE: 3/32"=1'-0"



3RD FLOOR - 21 UNITS
EFFICIENCY - 07 UNITS
1BR - 08 UNITS
2BR - 06 UNITS

BUILDING B OVERALL
3rd FLOOR PLAN
SCALE: 3/32"=1'-0"

Project title

PROPOSED BUILDING FOR:
Crooks & Big Beaver
Mixed Use
Redevelopment

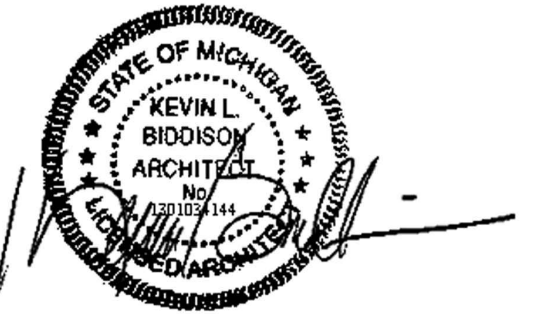
2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

SITE PLAN 02.07.23

Sheet title

Building B
3RD FLOOR PLAN



Project no.

2068.20

Sheet no.

A.106



4TH FLOOR - 21 UNITS
EFFICIENCY - 07 UNITS
1BR - 08 UNITS
2BR - 06 UNITS

BUILDING B OVERALL
4TH FLOOR PLANS



Project title

PROPOSED BUILDING FOR:
Crooks & Big Beaver
Mixed Use
Redevelopment

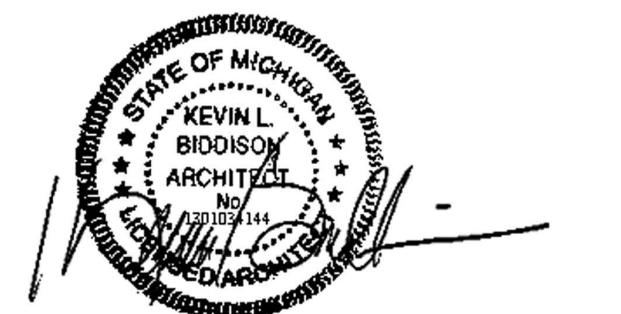
2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

SITE PLAN 02.07.23

Sheet title

Building B
4th FLOOR PLAN



Project no.

2068.20

Sheet no.

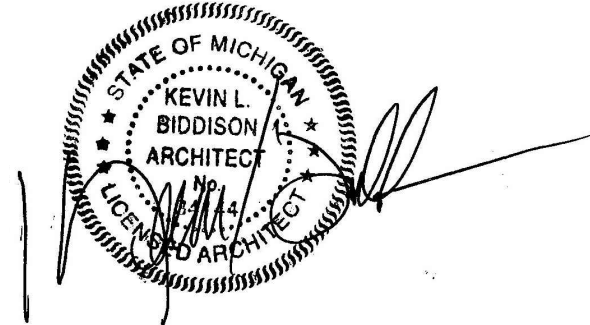
A.104

PROPOSED RENOVATION FOR:
**Lindsey Centre
Redevelopment**

2690 Crooks Road
Troy, Michigan

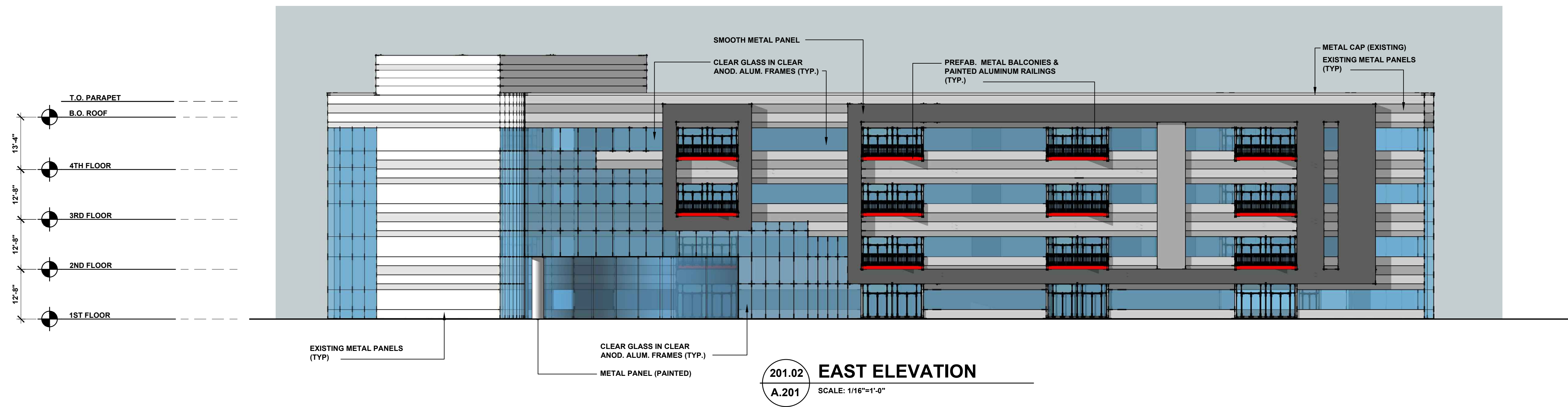
SITE PLAN 10.11.22
SITE PLAN APPROVAL 02.07.23

**Building A
EXTERIOR
ELEVATIONS**



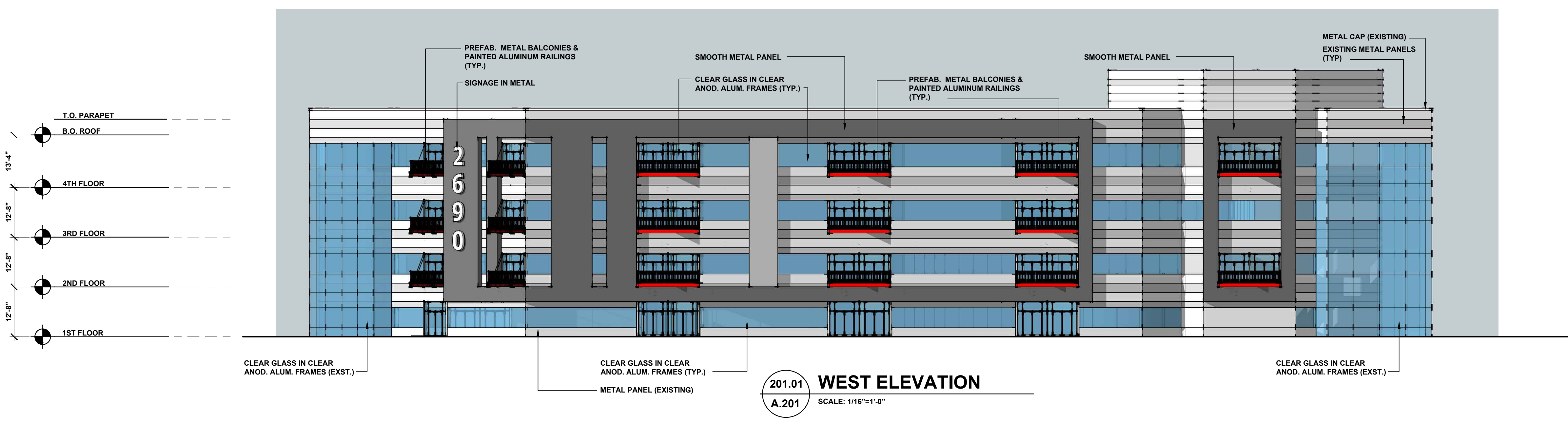
2068.20

A.201



GENERAL PROJECT NOTES:

- 1) EXISTING METAL PANEL AND GLASS TO REMAIN EXTERIOR SKIN
- 2) NEW METAL WRAP AND BALCONIES TO BE ADDED TO EXTERIOR SKIN
- 3) EXTERIOR METAL AND GLASS TO BE REMOVED FOR NEW BALCONY DOORS AND WINDOWS
- 4) OTHER ELEMENTS OF CURRENT FACADE TO REMAIN AS EXISTING

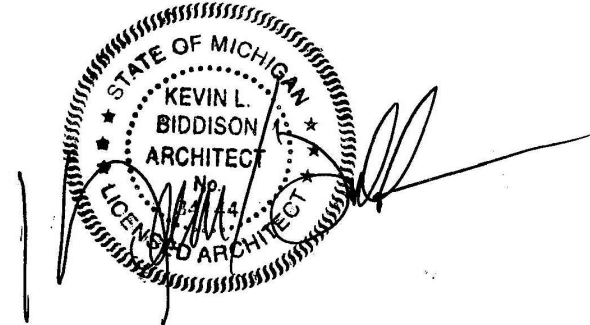


PROPOSED RENOVATION FOR:
**Lindsey Centre
Redevelopment**

2690 Crooks Road
Troy, Michigan

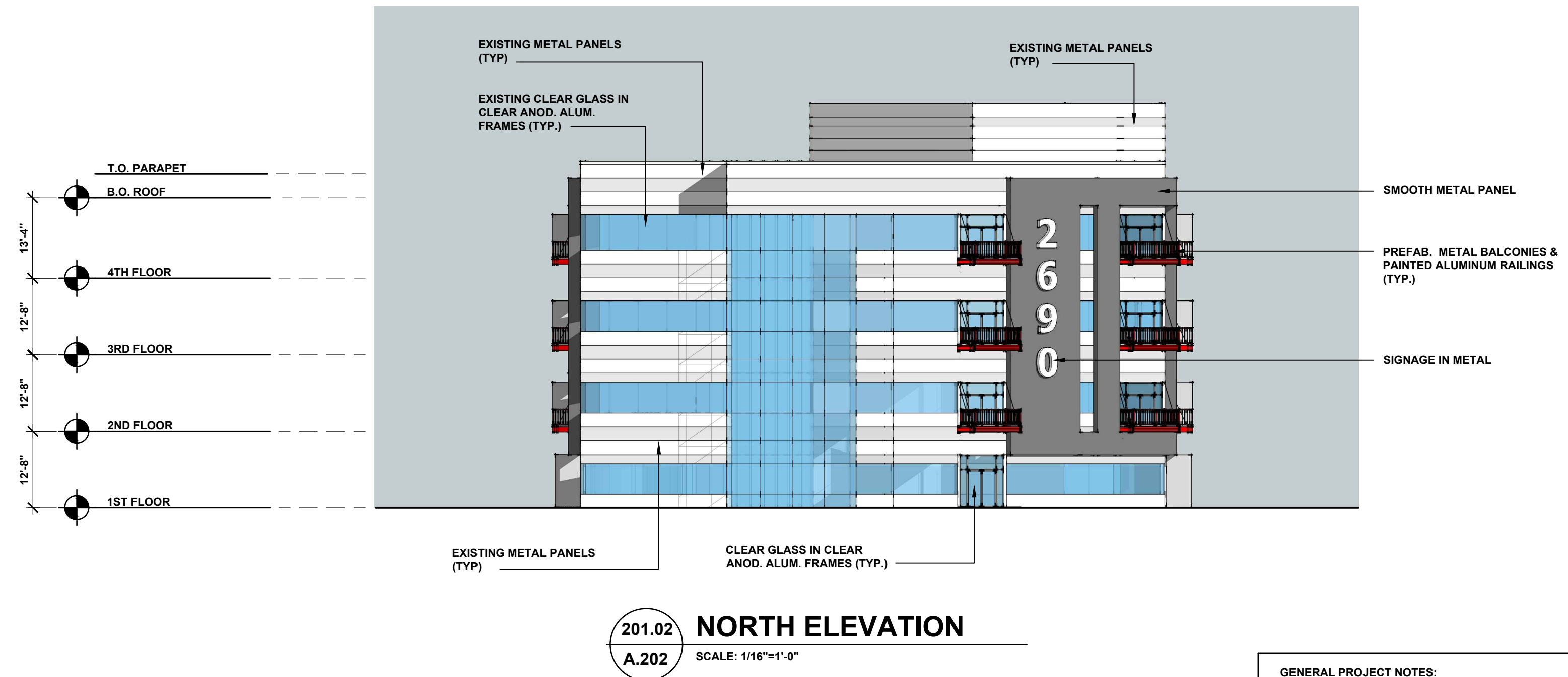
SITE PLAN 10.11.22
SITE PLAN APPROVAL 02.07.23

**Building A
EXTERIOR
ELEVATIONS**

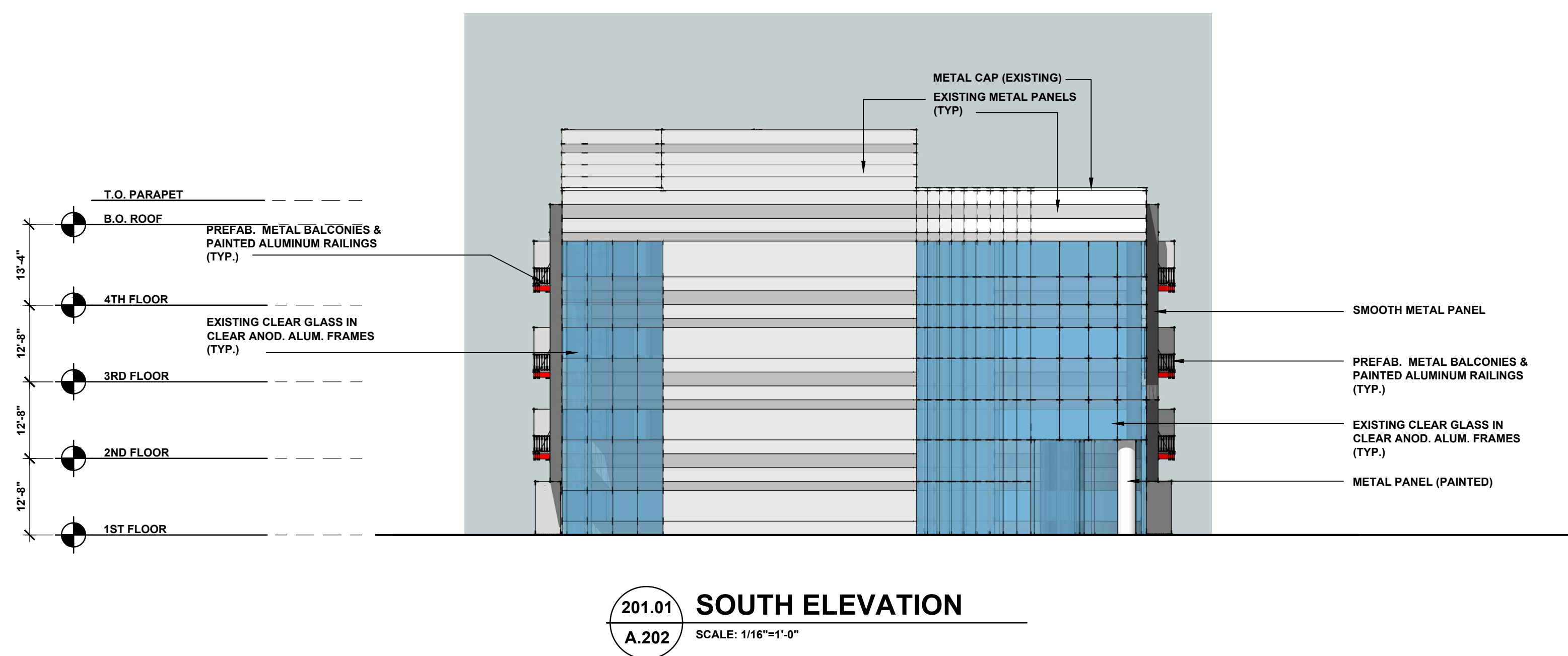


2068.20

A.202



GENERAL PROJECT NOTES:
1) EXISTING METAL PANEL AND GLASS TO REMAIN
2) NEW METAL WRAP AND BALCONIES TO BE ADDED TO EXTERIOR SKIN
3) EXTERIOR METAL AND GLASS TO BE REMOVED FOR NEW BALCONY DOORS AND WINDOWS
4) OTHER ELEMENTS OF CURRENT FACADE TO REMAIN AS EXISTING





201.01 WEST ELEVATION
A.201 SCALE: 1/16"=1'-0"

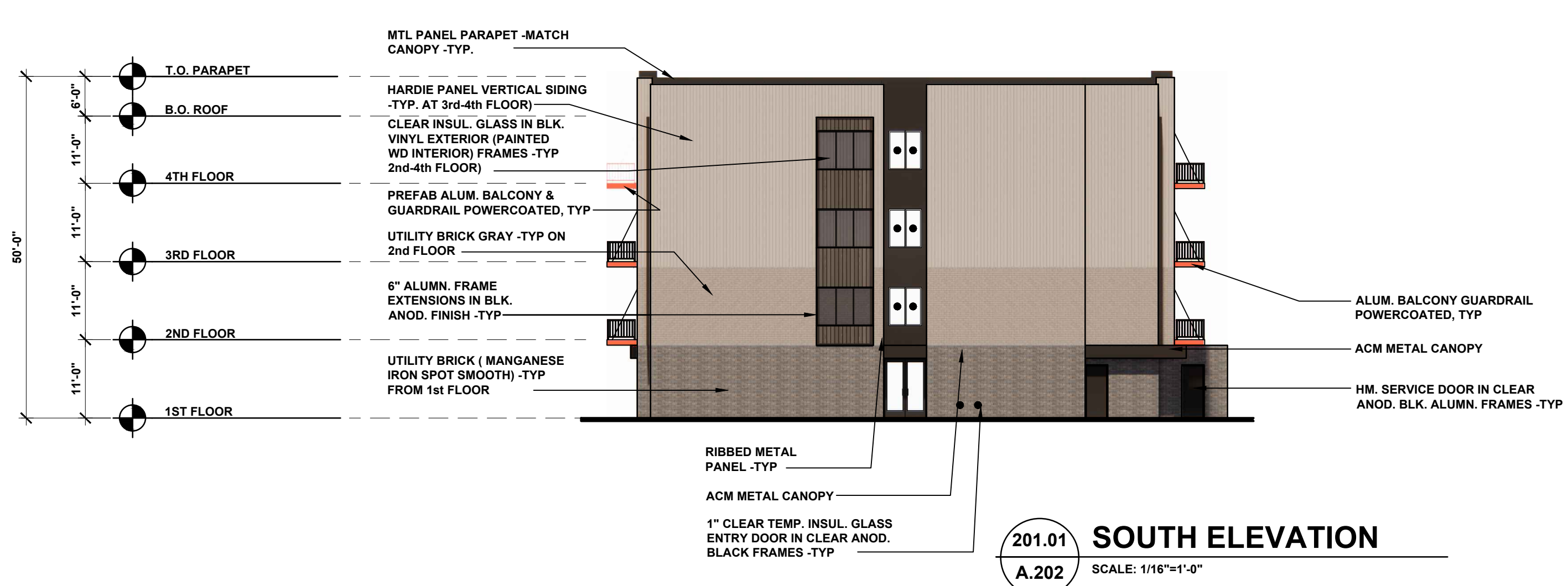
PROPOSED BUILDING FOR:
**Lindsey Centre
Redevelopment**

2690 CROOKS RD
TROY, MI

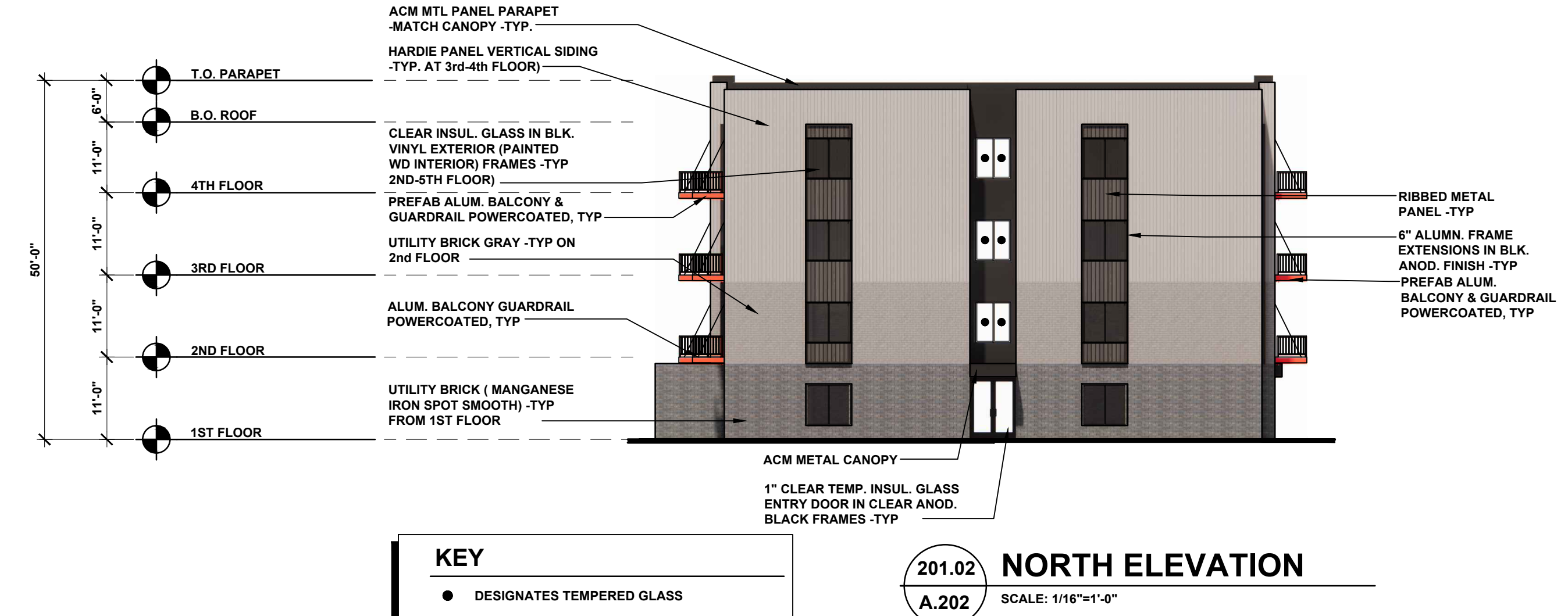
SITE PLAN 10.11.22
SITE PLAN APPROVAL 02.07.23



201.02 EAST ELEVATION
A.201 SCALE: 1/16"=1'-0"



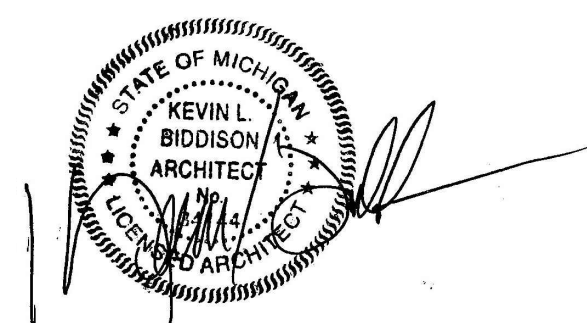
201.01 SOUTH ELEVATION
A.202 SCALE: 1/16"=1'-0"



201.02 NORTH ELEVATION
A.202 SCALE: 1/16"=1'-0"

2068.21

A.201





PERSPECTIVE IMAGE
 N.T.S. FOR REFERENCE

Consultants

Project title

PROPOSED BUILDING FOR
CROOK & BIG BEAVER
 MIXED USE
 REDEVELOPMENT

2690 CROOKS ROAD,
 TROY, MI

Issued dr/ch

SITE PLAN APPROVAL 12.06.22

Sheet title

SITE PERSPECTIVES

Project no.

2068-20

Sheet no.

A.301



PERSPECTIVE IMAGE
 N.T.S. FOR REFERENCE



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE

Consultants

Project title

PROPOSED BUILDING FOR
CROOK & BIG BEAVER
MIXED USE
REDEVELOPMENT

2690 CROOKS ROAD,
TROY, MI

Issued dr/ch

SITE PLAN APPROVAL 12.06.22

Sheet title

SITE PERSPECTIVES

Project no.

2068-20

Sheet no.

A.303



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE



PERSPECTIVE IMAGE
N.T.S. FOR REFERENCE

STONEFIELD

February 8, 2023

Brent Savidant
Community Development Director
City of Troy
500 W. Big Beaver Road
Troy, MI 48084

**RE: Traffic Review
Proposed Mixed Use Redevelopment
Parcel ID: 88-20-28-101-034, 88-20,101-032 & 88-20-101-047
911 & 999 West Big Beaver Road & 2690 Crooks Road
City of Troy, Oakland County, Michigan**

Brent:

Our office is submitting documents on behalf of the Applicant to address the outstanding conditions of the Board's Resolution including comments contained within the latest Board Professional's review letter. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Site Development Plans	02-06-2023	2	Stonefield Engineering & Design
Shared Parking Study	02-07-2023	2	Fleis & Vandenbrink

The following is an itemized response to the comments contained within the Traffic Review Letter dated December 22, 2022. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

Traffic Impact Study:

1. Table 3 shows 312 dwelling units for the multi-family housing; however, the site plan shows 156 units. These documents need to match. It appears that the 2690 Crooks development is proposed to include an additional 156 dwelling units. If so, add a footnote to Table 3 to add clarity.

The tables have been clarified.

2. OHM notes a level of service F with a delay of 73.1 seconds for NBR vehicles at Big Beaver Road and W. Site Drive during the PM peak hour. Traffic congestion and backups may occur within the site. It is expected that many of these vehicles will instead utilize one of the signalized driveways to exit the site.

Noted.

3. The plans provide a parking phasing plan that show available parking for each phase of development (during construction, when large portions of the existing surface lots are unavailable and/or before the proposed parking structure is constructed). As each phase of development proceeds, there must be sufficient parking to satisfy parking demand. Interim parking calculations should be reviewed with engineering plans for each phase of development on the 999 Big Beaver and 2690 Crooks sites. It is unclear when 2690 Crooks development will occur relative to the proposed phased construction for 999 Big Beaver.

The project team will work closely with City staff to ensure adequate parking is provided throughout each phase of construction.

Site Plan:

1. We note that adjacent site, 2690 Crooks, proposes to utilize shared parking and requires a pedestrian sidewalk connection between the sites. This pedestrian route must be ADA-accessible.

The pathway has been revised to be ADA compliant.

2. As a part of Building E, the four parking stalls adjacent to the common area should be hatched out since it is impossible for a vehicle to exit this area if all of the parking spaces are occupied.

Two parking stalls have been striped out to aid in vehicles leaving parking spaces.

3. For the parking provided within Building E, an active parking management sign displaying the number of available spaces should be provided for both parking areas. This will alert drivers if these lots are full. There is not an easy way for vehicles to exit these areas if they are full.

This system is not necessary, residents will quickly become accustomed to what parking spaces are available at any point in time. Adequate turnaround areas are provided to ensure vehicles can exit the area as necessary.

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



Eric Williams, PE
Stonefield Engineering and Design, LLC



Kevin Heffernan, PE
Stonefield Engineering and Design, LLC

STONEFIELD

February 10, 2023

Brent Savidant
Community Development Director
City of Troy
500 W. Big Beaver Road
Troy, MI 48084

**RE: Preliminary Site Plan & Special Use Review
Existing Building Renovation & Proposed Multi-Family Apartments
Parcel ID: 20-28-101-003
2690 Crooks Road
City of Troy, Oakland County, Michigan**

Brent:

Our office is submitting documents on behalf of the Applicant to address the outstanding conditions of the Board's Resolution including comments contained within the latest Board Professional's review letter. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Site Development Plans	02-08-2023	2	Stonefield Engineering & Design
Architectural Plans	10-11-2022	2	Biddison Architecture
Shared Parking Study	02-08-2023	2	Fleis & Vandenbrink

The following is an itemized response to the comments contained within the Preliminary Site Plan and Special Use Review dated December 6, 2023. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

1. Provide 26-foot-wide drive aisles per Fire Department.

All proposed drive aisles have been widened to 26'-wide to allow for proper emergency vehicle circulation. Refer to Sheets C-3 & C-4.

2. Improve pedestrian circulation based on OHMs comments.

The pedestrian connection between the 999/991 Big Beaver site and 2690 Crooks site has been revised to both better align with the southern crosswalk, and provide an ADA-accessible connection between the sites at all times.

3. Confirm existing screening of trash enclosure.

4 existing evergreen trees currently screen the east side of the trash enclosure, and an additional 2 evergreen trees and 1 deciduous tree are proposed along the south side for further screening.

STONEFIELDENG.COM

607 SHELBY STREET, SUITE 200, DETROIT, MI 48226 248.247.1115 T. 201.340.4472 F.

4. Confirm building lighting.

No building lights are proposed at this time. Adequate site lighting is achieved by way of light pole fixtures placed throughout the site. Any building fixtures will be of decorative nature, or to provide emergency lighting.

5. Provide a shared parking agreement to the satisfaction of the City Attorney.

The properties are owned / controlled by the same entity and should not require a shared parking agreement.

6. Provide transparency calculations.

Please see below for transparency calculations.

TRANSPARENCY %	NORTH	SOUTH	EAST	WEST
RETAIL BUILDING A	86%	77%	44%	42%
RETAIL BUILDING B	85%	65%	43%	42%
COMMUNITY SPACE BUILDING C	73%	66%	-	75%
CLUBHOUSE BUILDING D	35%	28%	55%	43%
RESIDENTIAL BUILDING E	33%	41%	41%	42%
LINDSEY BUILDING A	87%	53%	70%	80%
LINDSEY BUILDING B	16%	12%	39%	46%

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



Eric Williams, PE
Stonefield Engineering and Design, LLC



Kevin Heffernan, PE
Stonefield Engineering and Design, LLC

ITEM #6

DATE: March 9, 2023

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 911 & 999 W. Big Beaver Mixed Use Development, Southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District.

The petitioner Tower Construction, LLC submitted the above referenced Special Use Approval and Preliminary Site Plan Approval application for a mixed-use development. Proposed improvements include 5-story apartment building, 4-story parking deck, clubhouse building, two new commercial buildings including financial institution drive-thru, and site amenities. The drive-thru and first floor apartments require Special Use Approval. The applicant proposes to demolish the 5-story building but retain the existing 15-story building.

The owner of this property is the same owner as 2690 Crooks, the other development project on the March 14, 2023 agenda.

The Planning Commission considered this item at the January 10, 2023 Planning Commission Regular meeting and postponed the item. The applicant revised the site plan based on feedback from the Planning Commission, staff and consultants.

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. Report prepared by Carlisle/Wortman Associates, Inc.
3. Memo from City Traffic Consultant OHM, dated March 7, 2023.
4. Parking Study from Fleis & Vandenbrink, dated February 8, 2023.
5. Minutes from January 10, 2023 Planning Commission Regular meeting (excerpt).
6. Site Plan.

G:\SPECIAL USE\SU JPLN2022-0005 911 & 999 W BIG BEAVER\PC Memo 03 14 2023.docx

PROPOSED RESOLUTION

SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 911 & 999 W. Big Beaver Mixed Use Development, Southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District.

Resolution # PC-2023-03-

Moved by:

Seconded by:

RESOLVED, The Planning Commission hereby approves shared parking between 911 & 999 W. Big Beaver Road and 2690 Crooks Road; and,

RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed 911 & 999 W. Big Beaver Mixed Use Development, southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District, be (granted, subject to the following conditions)

1. Review and revise site plan based on OHMs comments.
2. For Building E, replace use of first floor residential along eastern elevation (Crooks)
3. Provide transparency calculations on the elevation plan set.
4. Provide a shared parking agreement to the satisfaction of the City Attorney.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons: _____)

Yes:

No:

Absent:

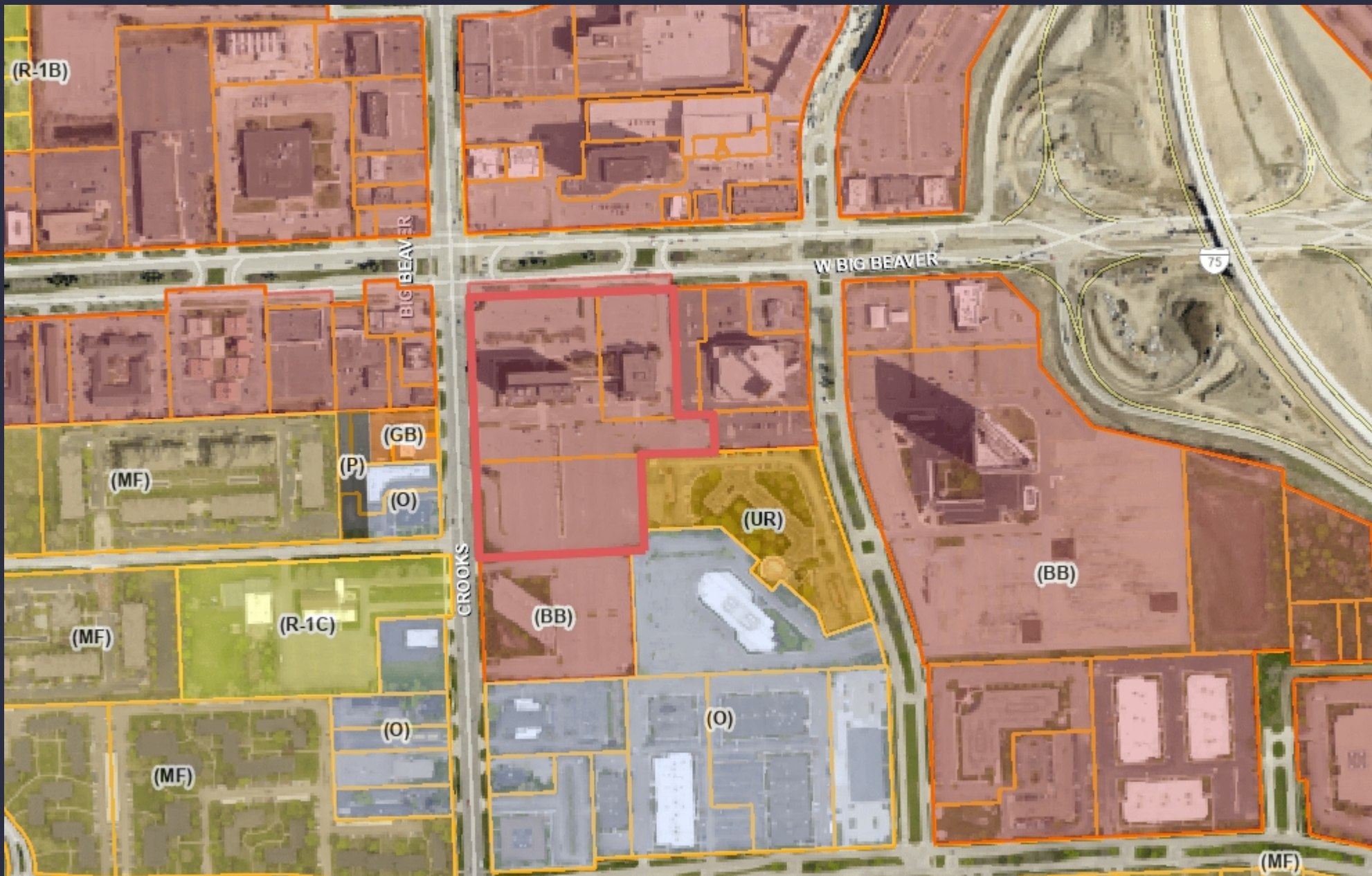
MOTION CARRIED / FAILED



1,154 0 577 1,154 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.



1,154 0 577 1,154 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.



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: March 7, 2023

Preliminary Site Plan and Special Use For City of Troy, Michigan

Applicant: Jordan Jonna

Project Name: 911 and 999 W. Big Beaver Mixed Use Development

Location: 911 and 999 W. Big Beaver

Plan Date: February 6, 2023

Zoning: BB, Big Beaver

Action Requested: Preliminary Site Plan and Special Use

SITE DESCRIPTION

An application has been submitted to convert the existing Kelly Services site into a mixed-use development. Proposed improvements include:

- New Building (Building A): 8,000 sq/ft commercial retail building, with financial institution drive-thru, that fronts on Big Beaver
- New Building (B): 14,400 sq/ft commercial retail building that fronts on Big Beaver
- New 4-story, 552 space parking garage located to the rear of the Kelly Services Building
- New Building (C): 4,200 sq/ft office/community center attached to new parking garage
- New Building (D): 3,200 sq/ft clubhouse for new residential uses on site
- New Building (E): 5-story, 156-unit multiple family building
- Improved landscaping, lighting, and other site amenities

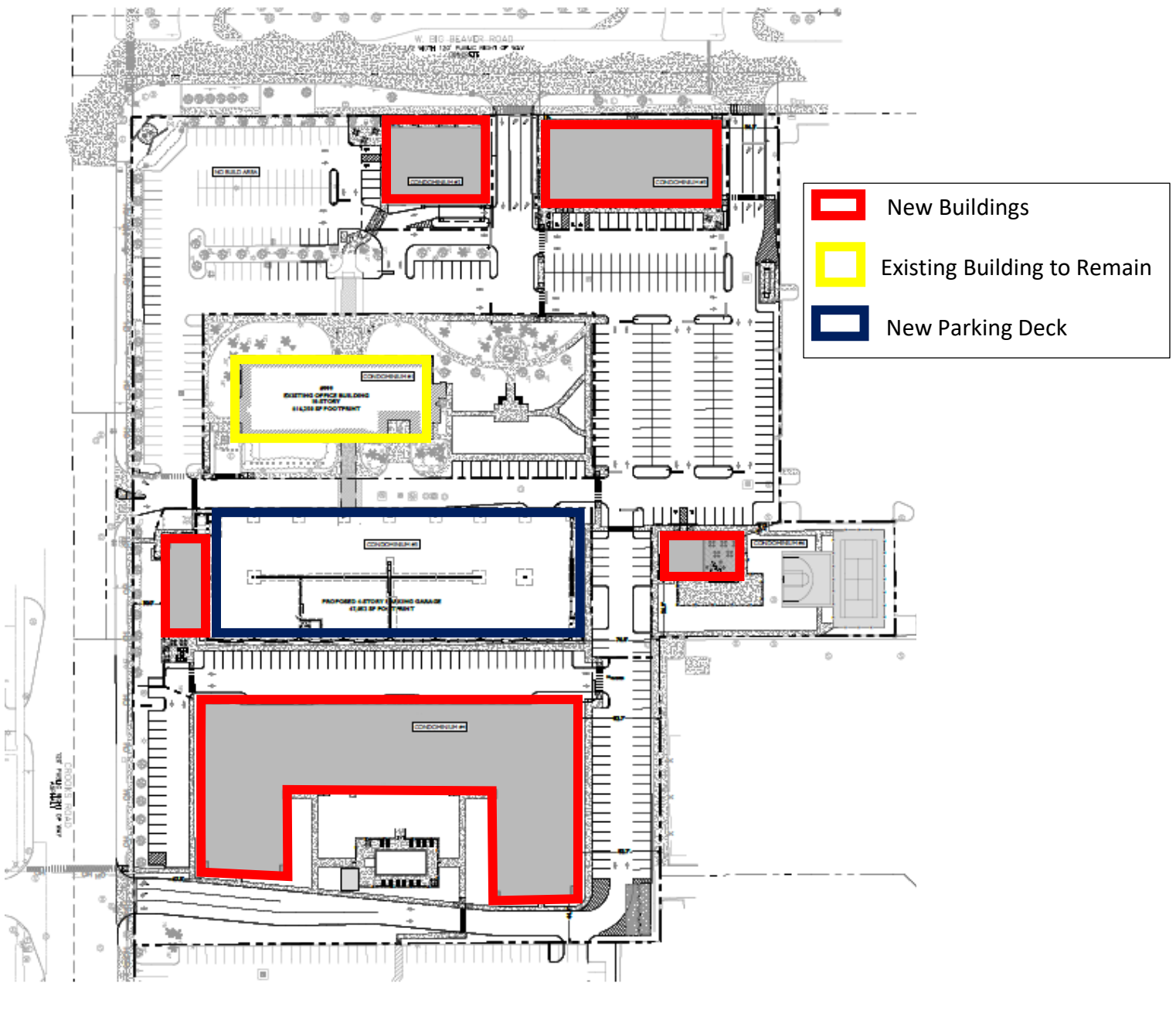
They propose to demolish the existing 5 story (911 Big Beaver) but keep the existing 10-story Kelly Service building (999 Big Beaver) as an office building.

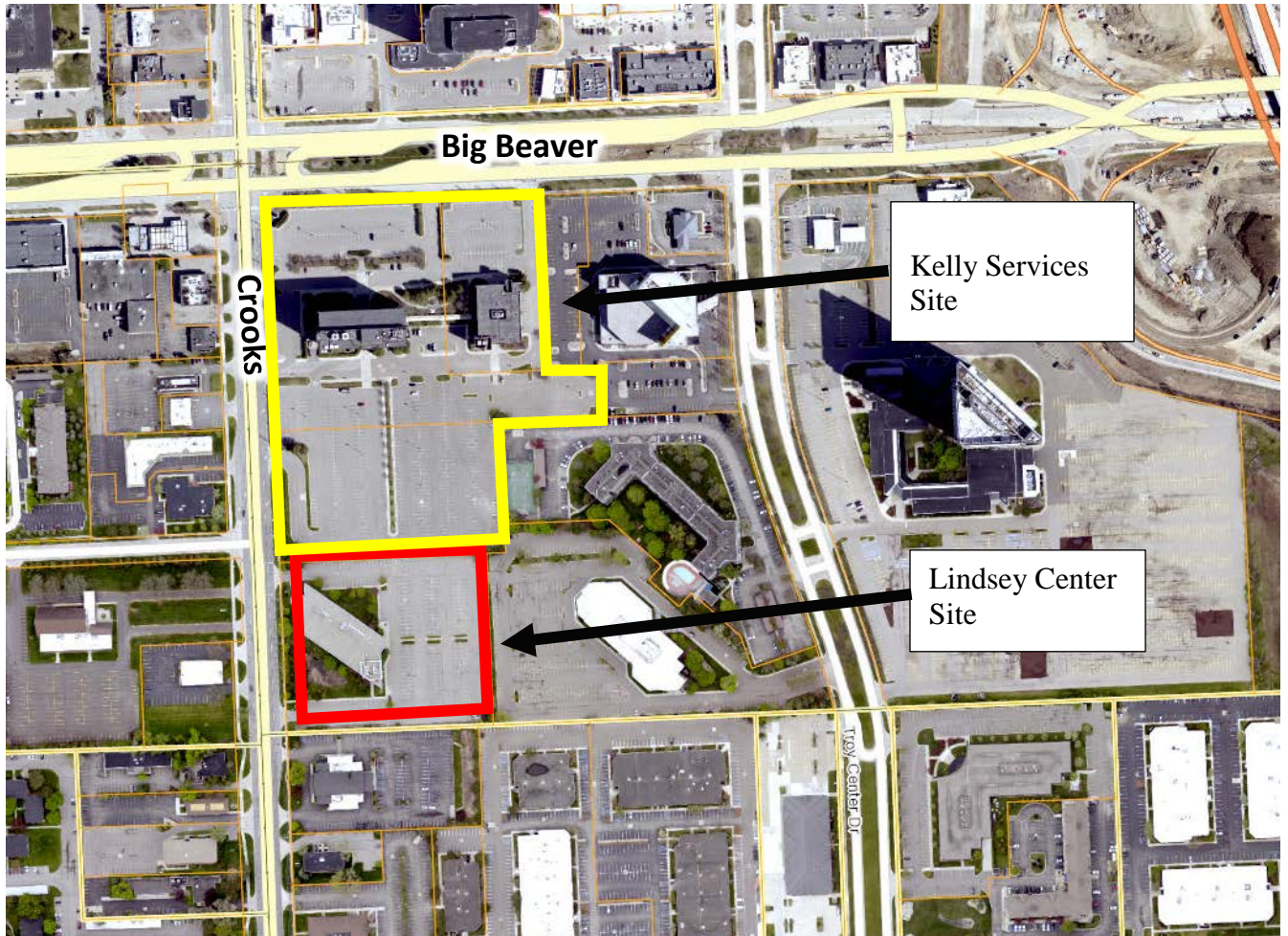
Overall site parking will be shared with the 2960 Crooks (Lindsey Center site). Both sites are under the same ownership.

Applicant is seeking the following approvals:

1. Preliminary site plan approval
2. Special Use approval
 - a. Financial Institution Drive-thru
 - b. Residential use on first floor of area not facing right of way
3. Waivers (as noted in review)

Summary of Improvements:





Proposed Uses of Subject Parcel:

Convert the existing Kelly Services site into a mixed-use development.

Current Zoning:

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

Surrounding Property Details:

Direction	Zoning	Use
North	BB, Big Beaver	Big Beaver Road, Mixed Use
South	BB, Big Beaver	Lindsey Center
East	BB, Big Beaver and UR, Urban Residential	Office and Commercial
West	BB, Big Beaver, CB, Commercial, O, Office	Mix of Commercial Uses

NATURAL FEATURES

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

Items to be addressed: None.

PRIOR PLANNING COMMISSION REVIEW

The Planning Commission last discussed this matter at their January 10, 2023 meeting. At that meeting, there was discussion on:

- Shared parking and parking deck.
 - Distance to residential.
 - Location of parking deck for all users.
 - Parking calculations.
 - 2690 Crooks sufficient parking on its own.
- Improve walkability for pedestrians.
- Alternative site arrangement; access, circulation.
- Drive-through for financial institution.
- Open space deficiencies.
- Requirement for parking lot trees to break up pavement, create islands.
- Environmental resources.
- Recorded easement(s).
- Trash collection.

The Planning Commission postponed action in order to allow the applicant to:

- Review and revise site plan based on OHMs comments.
- Flip the parking for Building E to be adjacent to the building.
- Address OHM and Road Commission comments.
- Show drive-through stacking spaces and provide dimensions
- For Building E, replace use of first floor residential along eastern elevation (Crooks)
- Provide one (1) additional green belt tree
- Applicant shall either increase overall landscaping or seek a variance from the Zoning Board of Appeals.
- Provide transparency calculations.
- Provide a shared parking agreement to the satisfaction of the City Attorney.

After the motion there was discussion on the floor.

- Easement to Tower Center Drive and to neighboring properties as relates to flow and connectivity.
- Drive-through facility as relates to environment, green space, walkability.
- Location of parking deck pursuant to Zoning Ordinance requirements
- Concerns with pedestrian and vehicular circulation.

- Alternative commercial/retail uses other than drive-through financial institution.

CHANGES SINCE LAST PLANNING COMMISSION REVIEW

The applicant has made the following changes to the site plan:

- Added parking lot landscaping by reducing parking by 13 parking spaces to the overall site
- Increased site landscaping to 15.5%
- Reconfigured parking between Crooks Road and Building E
- Added some additional internal pedestrian crosswalks
- Demonstrated stacking space and dimensions for drive-through use

SITE ARRANGEMENT

Access will be provided via two points on Big Beaver, two on Crooks, and cross-access to the 2690 Crooks (Lindsey Center site). The applicant is proposing shared parking for both buildings at Lindsey Center site and the Kelly Services site.

Two new small commercial buildings will be placed fronting on Big Beaver. The new five (5) story parking deck and five (5) story multiple family building is placed behind the existing Kelly Services office tower. The residential clubhouse building will be placed interior to the rear of the site.

OHM has reviewed site circulation and some additional changes:

1. *There is an implication that the 999 Big Beaver and the 2690 Crooks sites will be constructed concurrently. However, we question what if work on the Crooks site precedes the Big Beaver site? Since this development proposes shared parking on the adjacent site, there must be suitable pedestrian connections constructed as part of this development in the event the two sites are not constructed concurrently.*
2. *At the eastern site driveway to Big Beaver Rd, there is a note PROPOSED 'STOP' & 'NO TURN ON RED' SIGNS. Provide the correct sign legends and call out codes so there is no confusion as to what is needed:*
 - a. *STOP HERE ON RED, R10-6b*
 - b. *NO TURN ON RED, R10-11 or R10-11b*
3. *At the western site driveway to Big Beaver Rd, it shows a stop bar pavement marking immediately adjacent to the pedestrian cross markings for the driveway. Show the stop bar a minimum of 5' offset from ped crossing.*
4. *The existing 999 Big Beaver office building has two access drives along its south side for loading zones. They should be configured such that the sidewalk paralleling the south side of the building is continuous through these loading zone drives.*
5. *The main entrance /exit for the 4-story parking garage has sight triangles identified to show what exiting traffic may be able to see prior to exiting. This is important as the aisle used is the northern site driveway to Crooks Rd and thus likely to have relatively high traffic*

flows. However, it appears that the sight lines are not being shown correctly, overstating the available sight distances looking east or west. Verify the sight distances.

The applicant should review and revised based on OHMs comments.

Items to be addressed: Review and revise site plan based on OHMs comments.

AREA, WIDTH, HEIGHT, SETBACKS

The applicant does not propose any changes to the footprint of the existing building. The Kelly Services building is an existing non-conforming structure. By placing the new buildings on Big Beaver and the small office/community building (Building C) that fronts on Crooks, the applicant is making the site more conforming.

	Required	Provided	Compliance
Front (Big Beaver)	10-foot build-to-line	10.8-feet (building A)	Complies with Planning Commission approval
Front (Crooks)	10-foot build-to-line	30 feet (building C)	Complies with Planning Commission approval.
Side (east)	N/A, building may be placed up to property line	56-feet	Complies
Rear (South)	30-foot minimum setback	44-feet	Complies
Building Height	6 stories, 72 feet	5 stories, 62 feet	Complies
Open Space	20%	22%	Complies
Parking Location	Cannot be located in front yard	Located adjacent to Building E.	Complies

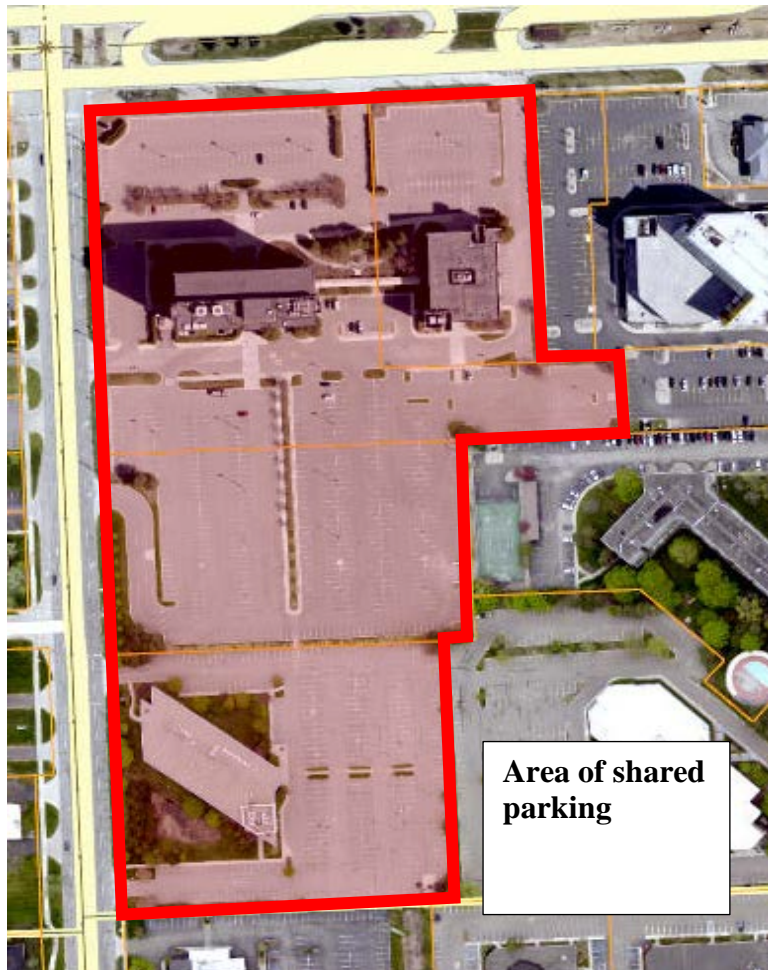
The applicant is seeking the following waivers from the Planning Commission:

- Building A build-to-line: 10.8’ when 10.0’ is required
- Building C build-to-line: 30’ when 10.0’ is required

Items to be addressed: Planning Commission to consider the two request waivers

PARKING

The applicant proposes shared parking for both buildings with the Kelly service buildings and parking areas.



The applicant is proposing shared parking to include both sites as noted. As set forth in Section 13.06, off-street parking for uses in all districts shall be on the same lot as the use or building served by the parking, unless joint parking with abutting properties and uses is provided in a form acceptable to the City Attorney and executed and recorded by the parties sharing the parking.

OHM has reviewed the shared parking. OHM has submitted a memo for Planning Commission review. A representative from OHM will attend the meeting to discuss shared parking and other issues.

Items to be Addressed: Planning Commission to consider shared parking.

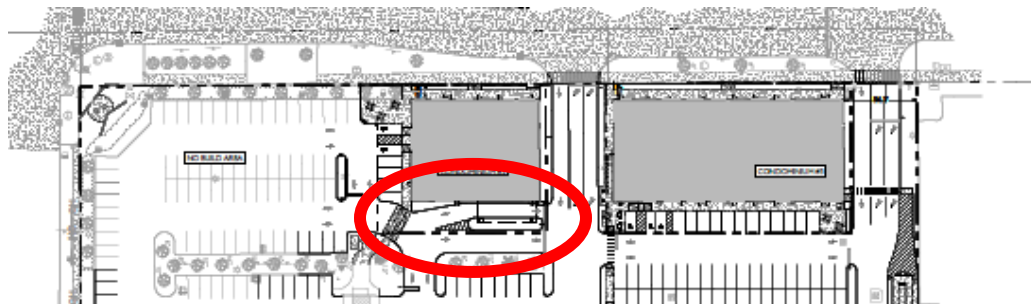
TRAFFIC

The applicant submitted a traffic study that was reviewed by both OHM and the Oakland County Road Commission.

Items to be addressed: None

SPECIAL USE: FINANCIAL INSTITUTION DRIVE-THROUGH

The applicant is proposing a financial institution drive-through located on the rear side of Building A. A financial institution drive-through is permitted as a special use in the Big Beaver district.



Drive-Through Standards (15.05.E.5.d):

- i. *A drive-through and associated structure cannot be a primary use or principal building.*

CWA Comment: The drive-through is an accessory use to the principal use of the building.

- ii. *Ingress and egress to drive-through facilities shall be part of the internal circulation of the site and integrated with the overall site design. Clear identification and delineation between the drive-through facility and the parking lot shall be provided. Drive-through facilities shall be designed in a manner which promotes pedestrian and vehicular safety.*

CWA Comment: Through the use of curbing, landscaping islands, and pedestrian stripping, the applicant has clearly delineated the drive-through use.

- iii. *Drive-throughs must be located behind façade opposite Big Beaver Road or detached from principal structure and shall be located in a manner that will be the least visible from a public thoroughfare.*
 - a. *If detached, the point-to-point tube transport system (pneumatic tubes) must be located underground to serve the drive-through kiosk or canopy.*
 - b. *Canopy design shall be compatible with the design of the principal building and incorporate similar materials and architectural elements.*

CWA Comment: The drive-through is located on the opposite façade of Big Beaver. The applicant shows a canopy with a stone column and metal covering that matches the primary building.

- iv. *Each drive-through facility shall provide stacking space meeting the following standards:*
 - a. *Each stacking lane shall be one-way, and each stacking lane space shall be a minimum of ten (10) feet in width and twenty (20) feet in length.*
 - b. *If proposed, an escape lane shall be a minimum of twelve (12) feet in width to allow other vehicles to pass those waiting to be served.*
 - c. *Four (4) stacking spaces per drive-through lane.*
 - d. *All stacking lanes must be clearly delineated through the use of striping, landscaping, curbs, or signage.*

CWA Comment: The applicant has provided dimensions and shown stacking spaces.

- v. *A drive-through aisle shall not be directly accessed from or exit onto Big Beaver Road.*

CWA Comment: The drive-through is not directly access from or exits to Big Beaver Road.

Items to be Addressed: *Planning Commission to consider Special Use*

SPECIAL USE: FIRST FLOOR RESIDENTIAL

In the fall of 2021, a text amendment was adopted which permitted residential uses on the first floor as a Special Use for the section of the building that does not front on a public right-of-way. New Building E has first floor residential uses along the eastern (Crooks) and western property line. The residential uses on the western property line is permitted via Special Use; however the residential use on the first floor is not permitted and the use must be converted to a non-residential use.

Items to be Addressed: *1). For Building E, replace use of first floor residential along eastern elevation (Crooks); and 2). Planning Commission to consider Special Use.*

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			
Crooks and Big Beaver: 1 tree every 30 feet	1,483 / 30 = 50 trees	50	Complies
Parking Lot Landscaping			
1 tree per every 8 parking spaces	408 spaces / 8 = 51 trees	107	Complies, with Planning Commission approval
Overall			
<u>Site landscaping:</u> A minimum of fifteen percent (15%) of the site area shall be comprised of landscape material. Up to twenty-five percent (25%) of the required landscape area may be brick, stone, pavers, or other public plaza elements, but shall not include any parking area or required sidewalks.	15% = 106,623 sq/ft	15.5% (110,226 sq.ft)	Complies

The applicant is providing double the amount of required parking lot landscaping and has increased the amount of landscaping in the parking lot. However, we note there are a few long stretches of parking, particularly along Crooks Road, with no internal parking lot landscaping. The Planning Commission may allow alternative location of parking lot trees.

Transformer / Trash Enclosure:

The applicant has indicated they propose to screen the trash enclosure with a masonry block.

Items to be Addressed: *Planning Commission to discuss parking lot tree location*

PHOTOMETRICS

The applicant is proposing twenty (20) new parking lot lights, fourteen (14) wall scones, and fifteen (15) lighted bollards. There are existing lights that will remain on site. The lighting fixture and photometrics meet ordinance requirements.

Items to be Addressed: None

FLOOR PLAN AND ELEVATIONS

Existing Kelly Services Building:

The building will remain as is.

New Buildings (A and B) Commercial:

Brown and tan tone color scheme, with brick, glass, and limestone veneer. Please note that the labeling on the elevations is different than the building labeling on the site plan set. Building A is building B on the site plan and vice-versa.

New Parking Structure

Proposed brick and masonry block. The color scheme is gray and black, with a brown brick elevator tower.

New Buildings (C) Office/Community Space:

Proposed brick and glass material use. Color scheme is browns and tans.

New Buildings (D) Clubhouse:

Proposed burnished block and glass material use. Color scheme is greys.

New Buildings (E) Multiple Family:

Proposed brick, masonry block, and metal panels. and glass material use. Color scheme is greys.

The applicant has provided a supplemental letter indicating that transparency requirements have been met. The calculations should be provided on the elevation plan set.

Items to be Addressed: Provide transparency calculations on the elevation plan set.

DESIGN STANDARDS AND SITE PLAN REVIEW STANDARDS

The Big Beaver Node design standards as well as Site Plan review standards provide the Planning Commission with direction when reviewing the proposed site plan and design features of this development.

Section 5.04.E. outlines Design Standards:

1. *Building Orientation and Entrance*
2. *Ground Story Activation*
3. *Transitional Features*
4. *Site Access, Parking, and Loading*

Please see Section 5.04.E for standard details.

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.*

SPECIAL USE STANDARDS

The applicant is seeking two special uses:

1. Financial Institution Drive-thru
2. Residential use on first floor of area not facing right of way.

For any special use, according to Section 9.02.D, the Planning Commission shall “...review the request, supplementary materials either in support or opposition thereto, as well as the Planning Department’s report, at a Public Hearing established for that purpose, and shall either grant or deny the request, table action on the request, or grant the request subject to specific conditions.”

Section 9.03 states that before approving any requests for Special Use Approval, the Planning Commission shall consider:

1. *Compatibility with Adjacent Uses.*
2. *Compatibility with the Master Plan.*
3. *Traffic Impact.*
4. *Impact on Public Services.*
5. *Compliance with Zoning Ordinance Standards.*
6. *Impact on the Overall Environment.*
7. *Special Use Approval Specific Requirements.*

SUMMARY

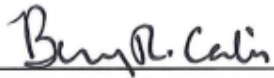
As part of the deliberation, the Planning Commission and the applicant shall discuss:

- a. Two (2) building placement waiver requests
- b. Compliance with Section 5.04.E Big Beaver Design Standards
- c. Compliance with Section 8.06 Site Plan Review Standards
- d. Compliance with 9.02.D Special Use Standards
- e. Architecture and material use
- f. Parking lot tree location
- g. Shared parking

If Planning Commission approves the preliminary site plan and special uses, the following conditions shall be required as part of the final site plan submittal:

1. Review and revise site plan based on OHMs comments.
2. For Building E, replace use of first floor residential along eastern elevation (Crooks)
3. Provide transparency calculations on the elevation plan set.
4. Provide a shared parking agreement to the satisfaction of the City Attorney.

Sincerely,



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



memorandum

Date: March 7, 2023

To: R. Brent Savidant, AICP
Scott Finlay, PE

From: Stephen Dearing, PE, PTOE

CC: Sara Merrill, PE, PTOE

Re: Multi-Family/ Mixed Use at Crooks Rd & Big Beaver Rd
(a.k.a. 911/999 Big Beaver, Kelly Properties PUD)
JPLN2022-0006

We have reviewed the planned development. Phase 1 of the mixed-use development at the southeast corner of Crooks Road & Big Beaver Road proposes to redevelop a portion of the site, demolishing the existing 4-story commercial building at 911 Big Beaver Road and constructing two commercial/retail buildings totaling 22,008 SFT and surface parking. Future phases of this development will retain an existing 10-story office building, and will also construct a 4,277 SFT office building, a 156-unit 5-story multi-family building, a clubhouse, and a 4-story parking structure. The site plans were prepared by Stonefield Engineering, Inc., and dated February 6, 2023.

The previously submitted Traffic Impact Study was prepared by Fleis & Vanderbrink, Inc and dated December 7, 2022. Fleis & Vanderbrink also prepared a shared parking study for the 2690 Crooks Rd (Lindsey Center) site, dated February 8, 2023, which utilizes the 911/999 Big Beaver site.

At this time, OHM recommends approval the site plan subject to corrections of a few minor items noted below.

OHM's comments are as follows:

Traffic Impact Study:

In our review of the TIS dated December 22, 2022, we noted a few minor corrections to be made that would not impact the conclusions and recommendations of the study. In their response letter of February 8, 2023, the applicant indicated that these corrections were made. However, a revised copy of the TIS has not been provided to verify the changes.

Shared Parking Study:

The shared parking study is acceptable and does not need to be corrected or changed.

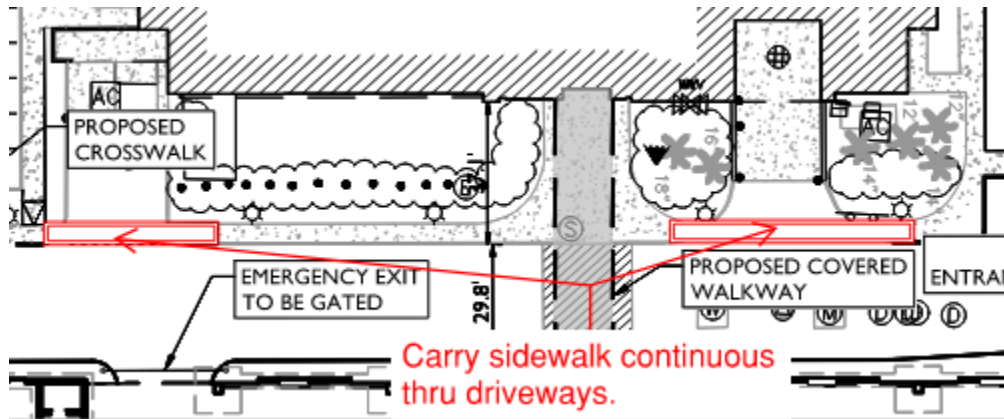
Site Plan:

1. There is an implication that the 999 Big Beaver and the 2690 Crooks sites will be constructed concurrently. However, we question what if work on the Crooks site precedes the Big Beaver site? Since this development proposes shared parking on the adjacent site, there must be suitable

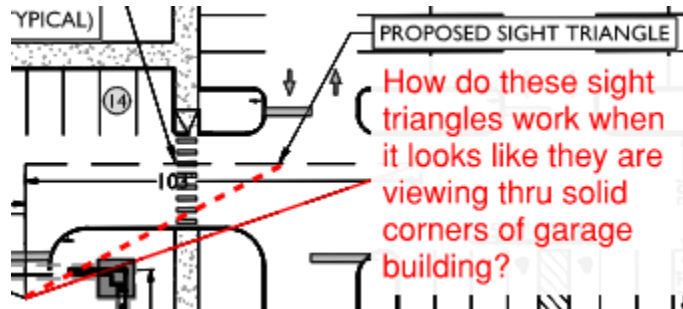


pedestrian connections constructed as part of this development in the event the two sites are not constructed concurrently.

2. At the eastern site driveway to Big Beaver Rd, there is a note PROPOSED 'STOP' & 'NO TURN ON RED' SIGNS. Provide the correct sign legends and call out codes so there is no confusion as to what is needed:
 - a. STOP HERE ON RED, R10-6b
 - b. NO TURN ON RED, R10-11 or R10-11b
3. At the western site driveway to Big Beaver Rd, it shows a stop bar pavement marking immediately adjacent to the pedestrian cross markings for the driveway. Show the stop bar a minimum of 5' offset from ped crossing.
4. The existing 999 Big Beaver office building has two access drives along its south side for loading zones. They should be configured such that the sidewalk paralleling the south side of the building is continuous through these loading zone drives.



5. The main entrance /exit for the 4-story parking garage has sight triangles identified to show what exiting traffic may be able to see prior to exiting. This is important as the aisle used is the northern site driveway to Crooks Rd and thus likely to have relatively high traffic flows. However, it appears that the sight lines are not being shown correctly, overstating the available sight distances looking east or west. Verify the sight distances.



MEMO

VIA EMAIL mark@tower-construct.com

To: Mr. Mark Soma
Tower Construction

From: Julie Kroll, PE, PTOE
Fleis & VandenBrink

Date: Revised February 8, 2023

Re: Proposed Development
999 Big Beaver & 2690 Crooks Road, Troy, Michigan
Parking Study

1 INTRODUCTION

This memorandum presents the results of the Shared Parking Study for the proposed development project in the City of Troy, Michigan. The project site includes two properties located at 2690 Crooks Road and 999 Big Beaver Road as shown on the attached site plan.

- North Property: The Kelly site at 999 Big Beaver development includes the construction several new land uses adjacent to the existing Kelly Services building that include retail, multi-family and a parking garage.
- South Property: The Lindsay site at 2690 Crooks Road development includes the conversion of the existing four-story office building into multi-family units, and the construction of a five-story, multi-family housing building within the existing parking lot.

The purpose of this study is to provide a summary of the projected parking generation for the proposed developments and determine if there will be adequate parking to accommodate all uses

2 PARKING ANALYSIS

2.1 NORTH PROPERTY: KELLY SITE (999 W. BIG BEAVER ROAD)

The proposed development plan for the Kelly site was evaluated and the City of Troy Zoning Ordinance was reviewed and is summarized in **Table 1**. Based upon the results of this evaluation, the proposed development meets the parking requirements per the City Parking Ordinance.

Table 1: City of Troy Parking Ordinance

Land Uses	Size	City Ordinance Rates	Parking Requirements Per Ordinance (spaces)
Multi-Family Housing	156 Units	2 spaces/dwelling unit	312
Kelly Services Office (General)	134,560 SF GFA	1 space per 300 SF GFA	449
Bank	2,000 SF GFA	1 space per 200 SF GFA	10
Retail	9,200 SF GFA	1 space per 250 SF GFA	37
Restaurant-Standard	300 Seats	1 space per 2 seats	150
Restaurant-Fast Food	2,560 SF	1 space per 70 SF	37
Total			995
Proposed Parking Supply			1,021
Difference			26

2.2 SOUTH PROPERTY: LINDSEY SITE (2690 CROOKS ROAD)

The proposed development plan for the Crooks Road site 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

Land Use	Land Use	Size	Independent Variable	Troy Zoning Ordinance	
				Parking Supply Requirements	Parking Supply (spaces)
Multiple-family residential	Dwelling Unit	103	D. U.	2 spaces/dwelling unit	206
	Efficiency Unit	41	D. U.	1 spaces/dwelling unit	41
	Total	144	D.U.		247
Proposed Parking Supply					196
Difference					-51

The results of the analysis shows that the proposed parking supply will not meet the parking ordinance requirements, therefore additional parking analysis was performed to determine how much parking should be provided and where the additional parking demand can be accommodated.

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.

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 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/suburban¹ environment and the parking demand calculations were based on this assumption.

The 85th percentile peak parking demand rates from ITE Parking Generation, 5th Edition were used in this analysis. An 85% percentile means that of 85% of similar sites survived for the calculation had peak parking demands at or below this rate. This provides a conservative evaluation when calculating the projected parking.

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.

Additionally, the Urban Land Institute (ULI) Shared Parking 3rd Edition recommends the 85th percentile parking demand as the appropriate metric for calculating the projected parking demands for a proposed development.

Table 3: ITE Parking Generation Parking Demand Summary

Land Use	ITE Land Use Code	Building	Size	Independent Variable	ITE Parking Generation 5 th Edition			
					Peak Period		Peak Parking Demand (veh)	
					Parking 85 th % Demand Rates			
					Weekday	Weekend	Weekday	Weekend
Multi-Family Housing: Mid-Rise	221	Lindsey A	106	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	92	82
		Lindsey B	92	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	80	71
		Total	198	Bedrooms	0.87 space/bedroom	0.77 space/bedroom	172	152

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. The results of this analysis are summarized in **Table 4** and show that the proposed parking supply on site will accommodate the projected parking demand as calculated based upon the ITE 85% peak parking demand.

Table 4: Peak Hour Parking Analysis Summary

Methodology	Land Use	Size	Independent Variable	Troy Zoning Ordinance		Proposed Parking Supply
				Parking Supply Requirements	Parking Supply (spaces)	
Spaces per DU	Multiple-family residential	156	D. U.	2 spaces/dwelling unit 1 space /Eff Unit	247	196
Peak Parking Demand					172	172
Projected Parking Surplus					75	24
<i>Total Parking Percent Occupancy</i>					<i>70%</i>	<i>88%</i>

2.3 TOTAL SITE (KELLY + LINDSAY) PARKING SUMMARY

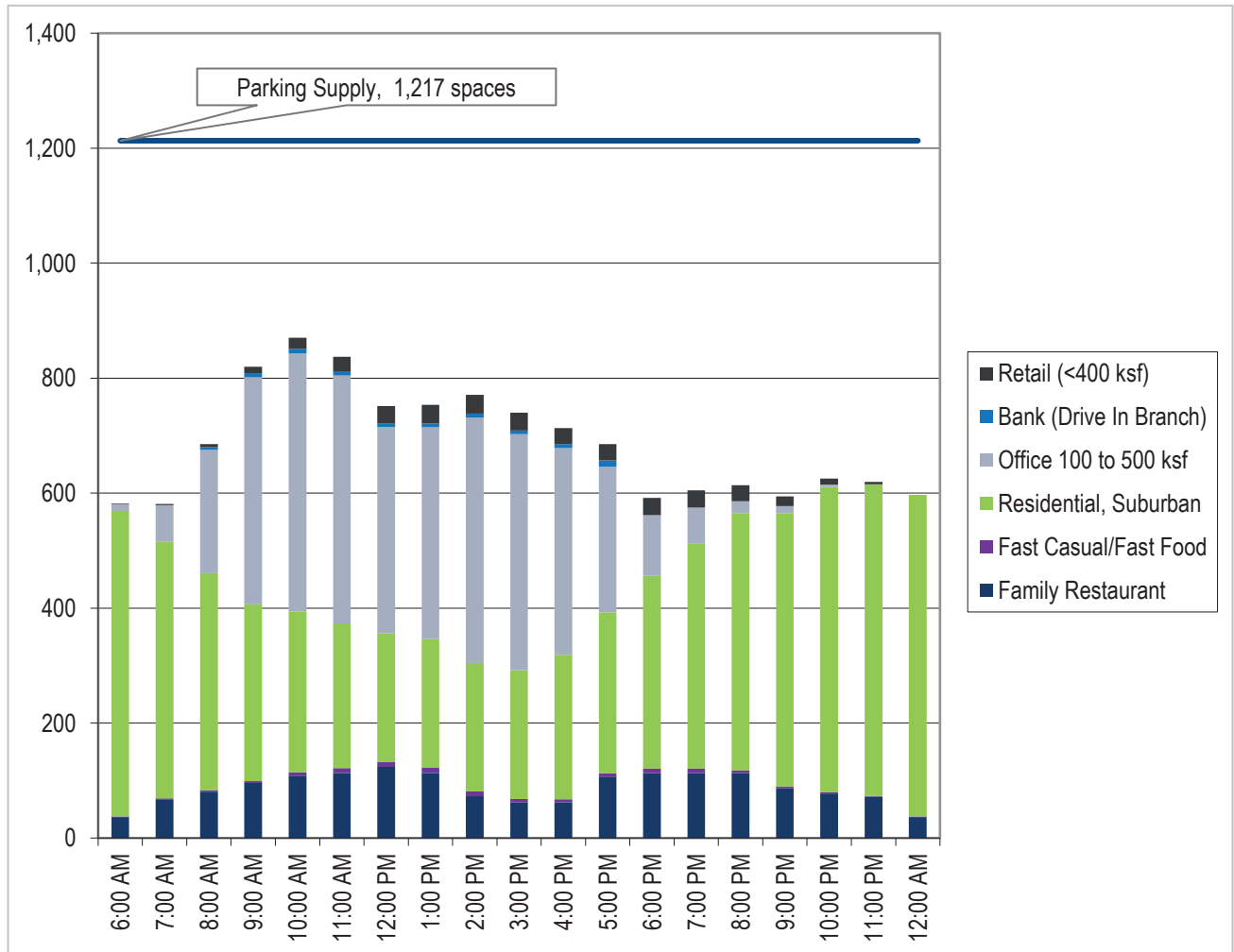
A shared parking analysis was performed for the combined North Property: Kelly Site and South Property: Lindsey Site in accordance with the requirements outlined in the City of Troy Zoning Ordinance Section 13.06 which states that shared parking can be considered where the applicant can demonstrate that the peak usage will occur at different periods of the day. In order to demonstrate shared parking compatibility, a shared parking analysis is required utilizing the methodologies of the Urban Land Institute Shared Parking Manual (3rd Edition), however the underlying parking space requirements for each use shall be based on the City of Troy parking requirements.

The shared parking for both projects is summarized in **Table 5** and shows that the peak parking demand for the site occurs during at 10:00 AM for this site. The peak hour variations in the parking demand are shown in Exhibit 1 and show the advantage of using shared parking to accommodate additional parking demand. As the office use parking demand decreases, the residential parking demand increases, thereby reducing the need for additional parking to accommodate both uses.

Table 5: Shared Parking Summary

Location	Land Uses	Size	City Ordinance Rates	Ordinance Requirements (no shared parking)	Shared Parking Peak Demand (10:00 AM)
North Property: Kelly Site	Multi-Family Housing	156 Dwelling Unit	2 spaces/DU	312	156
	Kelly Services Office (General)	134,560 SF GFA	1 space per 300 SF GFA	449	449
	Bank	2,000 SF GFA	1 space per 200 SF GFA	10	8
	Retail	9,200 SF GFA	1 space per 250 SF GFA	37	20
	Restaurant-Standard	300 Seats	1 space per 2 seats	150	108
	Restaurant-Fast Food	2,560 SF	1 space per 70 SF	37	6
South Property: Lindsey Site	Multi-Family Housing	103 Dwelling Unit	2 spaces/DU	206	103
	Multi-Family Housing	41 Efficient Unit	1 spaces/EU	41	21
Total Parking Demand (spaces)				1,242	871
Proposed Parking Supply				1,217	1,217
Difference				-25	346

Exhibit 1: Shared Parking Weekday Hourly Summary



3 CONCLUSIONS

The conclusions of this study are as follows:

- The proposed development plan for the North Property: Kelly Site meets the parking requirements per the City Parking Ordinance.
- The proposed development plan for the South Property: Lindsey Site does not meet ordinance requirements, however the 85% ITE parking demand for this site can be accommodate with the parking proposed for this property.
- Considering the City's shared parking analysis for the entire North and South properties, there will be adequate parking to accommodate both uses.

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

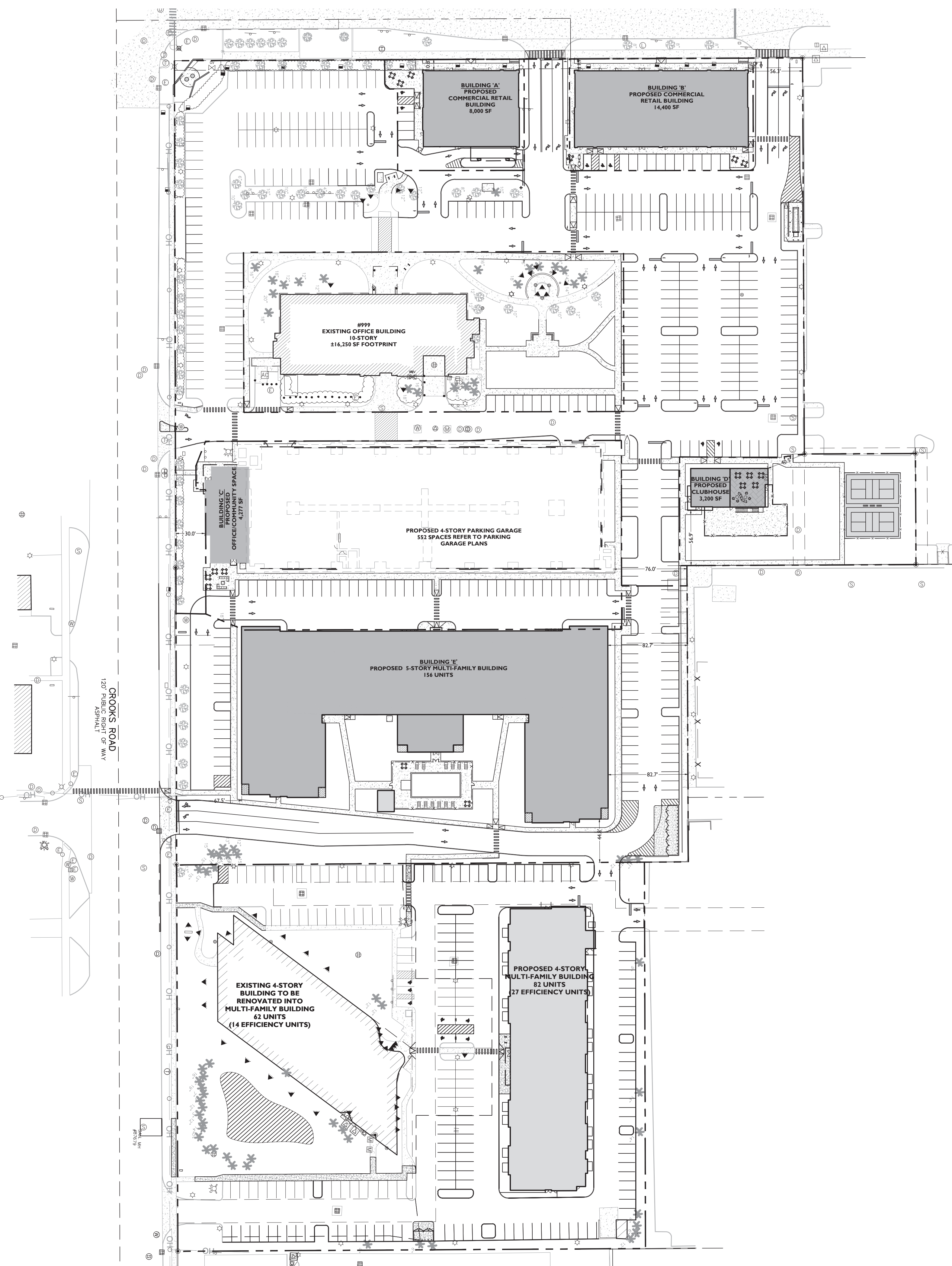


I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

A handwritten signature in blue ink that reads "Julie M. Kroll".

Digitally signed by Julie M.
Kroll
Date: 2023.02.08 16:56:55
-05'00'

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



OFF-STREET PARKING REQUIREMENTS - KELLY

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,540 NFA)/(1,000 NFA) = 449 SPACES	408 SURFACE SPACES 552 GARAGE SPACES 63 PODIUM SPACES 1,021 TOTAL SPACES
§ TABLE 13.06-A	COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(1,250 GFA) = 37 SPACES	
§ TABLE 13.06-A	BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(1,200 GFA) = 10 SPACES	
§ TABLE 6.10	4 STACKING SPACES PER LANE	4 SPACES PER LANE
§ TABLE 13.06-A	RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (300 SEATS)/(1/2 SEATS) = 150 SPACES	
§ TABLE 13.06-A	RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (*) (2,560 SF NFA)/(1/70 SF NFA) = 37 SPACES	
	MULTI-FAMILY RESIDENTIAL: 2 SPACES PER DWELLING UNIT (156 UNITS)/(1 UNITS) = 312 SPACES	
	TOTAL: 449+37+10+150+37+312 = 995 SPACES	

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF)(0.8) = 2,560 SF

OFF-STREET PARKING REQUIREMENTS - LINDSEY CENTRE

CODE SECTION	REQUIRED	PROPOSED
§ TABLE 13.06-A	MULTI-FAMILY DWELLING: 2 SPACES PER DWELLING UNIT (103 UNITS)/(2 SPACES PER UNIT) = 206 SPACES 1 SPACE PER EFFICIENCY UNIT (41 UNITS)/(1 SPACE PER UNIT) = 41 SPACES TOTAL: 206 + 41 = 247 SPACES	196 SPACES

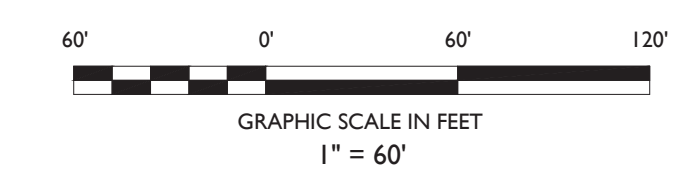
OFF-STREET PARKING REQUIREMENTS - COMBINED

PARCEL	REQUIRED	PROPOSED
KELLY PARCEL	995 SPACES	1,021 SPACES
LINDSEY CENTRE	247 SPACES	196 SPACES
	TOTAL: 995 + 247 = 1,242 SPACES	TOTAL: 1,220 SPACES

SYMBOL DESCRIPTION

	PROPERTY LINE
	EXISTING BUILDING
	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED CONCRETE

- GENERAL NOTES**
- THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
 - ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC, AND ITS SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
 - THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
 - THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC, WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
 - THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
 - THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
 - THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
 - SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC, BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.



ISSUE	DATE	BY	DESCRIPTION
5	10/11/2022	KTH	FOR RCOC / PLANNING APPROVAL
4	07/11/2022	KTH	FOR ENGINEERING APPROVAL
3	05/31/2022	KTH	FOR SITE PLAN APPROVAL
2	02/14/2022	KTH	FOR SITE PLAN REVIEW & SPECIAL LAND USE SUBMISSION
1	02/09/2021	RAC	FOR CITY SUBMISSION

NOT APPROVED FOR CONSTRUCTION

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SITE DEVELOPMENT PLANS

2690 CROOKS ROAD

EXISTING BUILDING RENOVATION & PROPOSED MULTI-FAMILY APARTMENTS

20-28-101-003
2690 CROOKS ROAD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

J. REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

SCALE: 1" = 60' PROJECT ID: M-19301.01

TITLE:
OVERALL SITE PLAN

DRAWING:
C-4

Land Use: 221 Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and with between three and 10 levels (floors) of residence. Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), and affordable housing (Land Use 223) are related land uses.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday (one general urban/suburban study site), a Saturday (two general urban/suburban study sites), and a Sunday (one dense multi-use urban study site).

Hour Beginning	Percent of Peak Parking Demand		
	Weekday	Saturday	Sunday
12:00–4:00 a.m.	100	100	100
5:00 a.m.	94	99	–
6:00 a.m.	83	97	–
7:00 a.m.	71	95	–
8:00 a.m.	61	88	–
9:00 a.m.	55	83	–
10:00 a.m.	54	75	–
11:00 a.m.	53	71	–
12:00 p.m.	50	68	–
1:00 p.m.	49	66	33
2:00 p.m.	49	70	40
3:00 p.m.	50	69	27
4:00 p.m.	58	72	13
5:00 p.m.	64	74	33
6:00 p.m.	67	74	60
7:00 p.m.	70	73	67
8:00 p.m.	76	75	47
9:00 p.m.	83	78	53
10:00 p.m.	90	82	73
11:00 p.m.	93	88	93

Additional Data

In prior editions of *Parking Generation*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of parking demand data found no clear differences in parking demand between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

The average parking supply ratios for the study sites with parking supply information are shown in the table below.

Setting	Proximity to Rail Transit	Parking Supply Ratio	
		Per Dwelling Unit	Per Bedroom
Center City Core	Within ½ mile of rail transit	1.1 (15 sites)	1.0 (12 sites)
Dense Multi-Use Urban	Within ½ mile of rail transit	1.2 (39 sites)	0.9 (34 sites)
	Not within ½ mile of rail transit	1.2 (65 sites)	0.8 (56 sites)
General Urban/Suburban	Within ½ mile of rail transit	1.5 (25 sites)	0.8 (12 sites)
	Not within ½ mile of rail transit	1.7 (62 sites)	1.0 (39 sites)

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Oregon, Virginia, Washington, and Wisconsin.

It is expected that the number of bedrooms and number of residents are likely correlated to the parking demand generated by a residential site. Parking studies of 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). Future parking studies should also indicate the number of levels contained in the residential building.

Source Numbers

21, 209, 247, 255, 277, 401, 402, 419, 505, 512, 522, 533, 535, 536, 537, 538, 545, 546, 547, 575, 576, 577, 579, 580, 581, 583, 584, 585, 587

Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Bedrooms

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban (no nearby rail transit)

Peak Period of Parking Demand: 10:00 p.m. - 5:00 a.m.

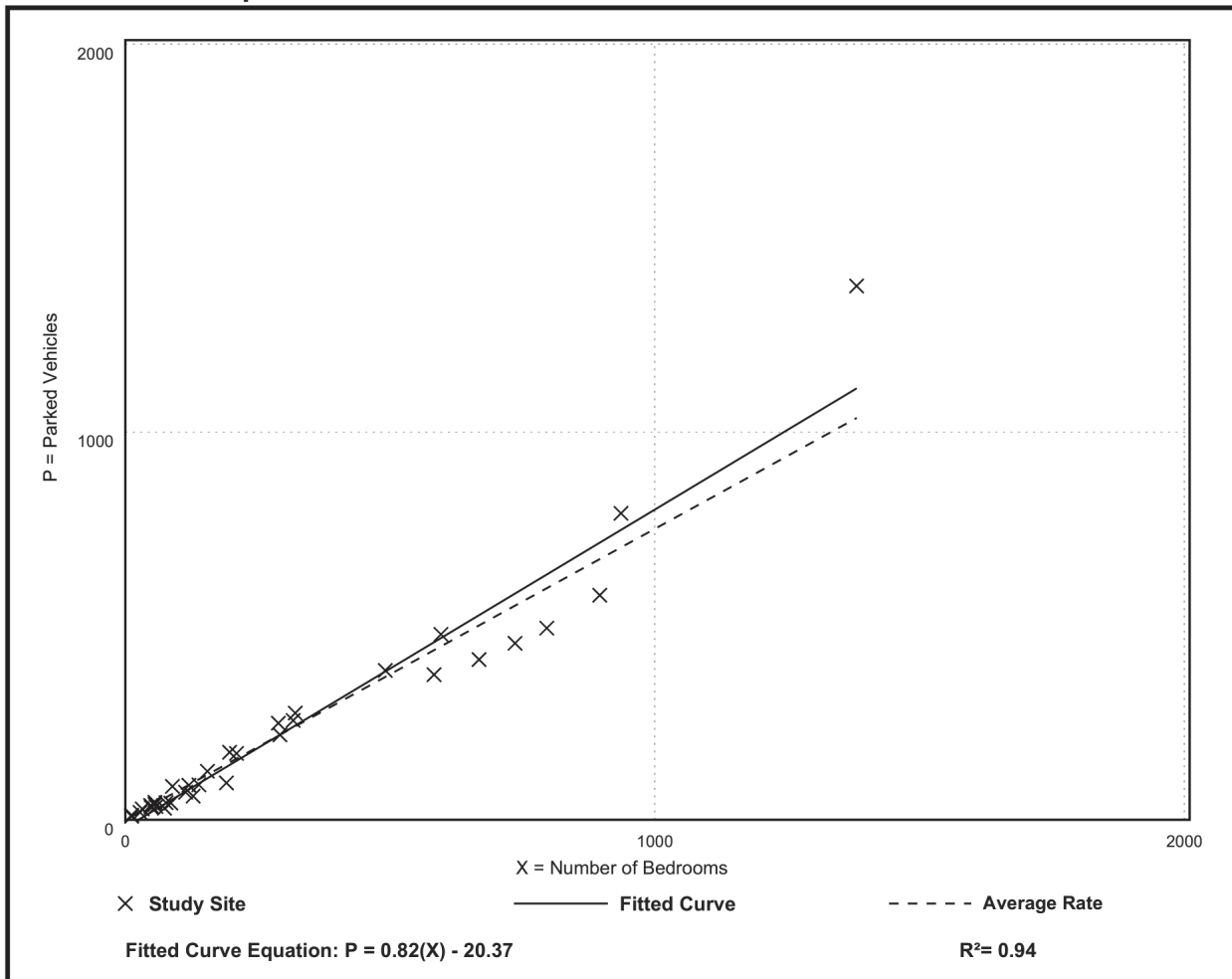
Number of Studies: 35

Avg. Num. of Bedrooms: 294

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.75	0.41 - 1.00	0.65 / 0.87	0.70 - 0.80	0.15 (20%)

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Bedrooms

On a: **Saturday**

Setting/Location: **General Urban/Suburban (no nearby rail transit)**

Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.

Number of Studies: 1

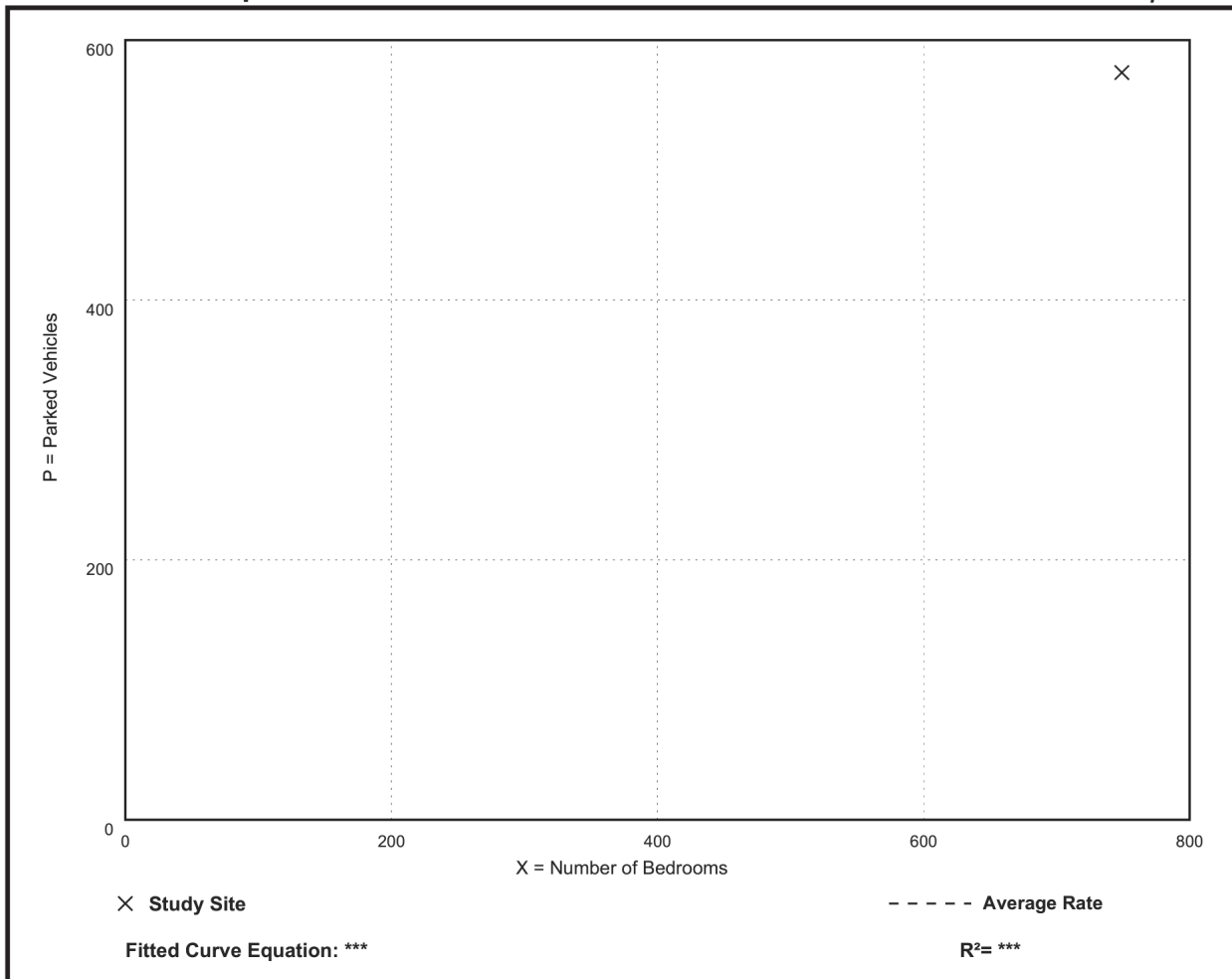
Avg. Num. of Bedrooms: 749

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.77	0.77 - 0.77	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Shared Parking Demand Summary																		
Peak Month: DECEMBER -- Peak Period: 10 AM, WEEKDAY																		
Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
			Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand
	Quantity	Unit										10 AM	December		10 AM	December		
Retail																		
Retail (<400 ksf)	9,200	sf GLA	3.12	100%	86%	2.67	ksf GLA	3.20	100%	90%	2.89	ksf GLA	55%	100%	14	60%	100%	16
Employee			0.78	100%	97%	0.76		0.80	100%	95%	0.76		75%	100%	6	85%	100%	6
Food and Beverage																		
Family Restaurant	300	sf GLA	0.42	100%	80%	0.34	ksf GLA	0.42	100%	90%	0.38	ksf GLA	85%	100%	86	90%	100%	103
Employee			0.07	100%	97%	0.07		0.07	100%	95%	0.07		100%	100%	22	100%	100%	22
Fast Casual/Fast Food	2,560	sf GLA	12.40	100%	10%	1.24	ksf GLA	12.70	100%	7%	0.85	ksf GLA	55%	96%	2	55%	96%	1
Employee			2.00	100%	97%	1.94		2.00	100%	95%	1.90		75%	100%	4	75%	100%	4
Entertainment and Institutions																		
Hotel and Residential																		
Residential, Suburban																		
Studio Efficiency	41	units	1.00	100%	100%	1.00	unit	1.00	100%	100%	1.00	unit	50%	100%	21	75%	100%	31
1 Bedroom	259	units	2.00	100%	100%	2.00	unit	2.00	100%	100%	2.00	unit	50%	100%	259	75%	100%	389
Office																		
Office 100 to 500 ksf	134,560	sf GFA	0.23	100%	100%	0.23	ksf GFA	0.03	100%	100%	0.03	ksf GFA	100%	100%	32	90%	100%	4
Reserved		emp	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.10	100%	100%	3.10		0.31	100%	100%	0.31		100%	100%	417	90%	100%	39
Bank (Drive In Branch)	2,000	sf GFA	2.90	100%	48%	1.39	ksf GFA	3.00	100%	100%	3.00	ksf GFA	100%	100%	3	75%	100%	5
Employee			2.10	100%	97%	2.04		1.75	100%	97%	1.70		100%	100%	5	100%	100%	4
Additional Land Uses																		
													Customer/Visitor	136	Customer	129		
													Employee/Resident	735	Employee/Resident	494		
													Reserved	-	Reserved	-		
													Total	871	Total	623		

Shared Parking
Reduction 30% 26%

Land Use	Quantity	Maximum Parking Demand				Combined Monthly Adjustments													
		Weekday		Weekend		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Late Dec	
		Base Ratio	Max Spaces	Base Ratio	Max Spaces														
Retail																			
Retail (<400 ksf)	9,200	sf GLA	3.12	29	3.20	30													
Employee			0.78	8	0.80	8													
Retail (400 to 600 ksf)		sf GLA	2.96	0	2.40	0													
Employee			0.74	0	0.60	0													
Retail (600 ksf to 1,000 ksf)	0	sf GLA	3.20	0	3.60	0													
Employee			0.80	0	0.90	0													
Retail (1,000 ksf to 2,000 ksf)	0	sf GLA	3.90	0	4.00	0													
Employee			0.50	0	1.00	0													
Retail (over 2,000 ksf)	0	sf GLA	2.90	0	3.20	0													
Employee			0.70	0	0.80	0													
Supermarket/Grocery	0	sf GLA	4.00	0	4.00	0													
Employee			0.75	0	0.75	0													
Pharmacy	0	sf GLA	3.00	0	3.00	0													
Employee			0.40	0	0.40	0													
Discount Stores/Superstores	0	sf GLA	3.40	0	3.80	0													
Employee			0.85	0	0.95	0													
Home Improvement Stores/Garden	0	sf GLA	3.10	0	3.45	0													
Employee			0.80	0	0.90	0													
Food and Beverage																			
Fine/Casual Dining	0	sf GLA	0.42	0	0.42	0													
Employee			0.07	0	0.07	0													
Family Restaurant	300	sf GLA	0.42	127	0.42	127													
Employee			0.07	23	0.07	23													
Fast Casual/Fast Food	2,560	sf GLA	12.40	32	12.70	33													
Employee			2.60	6	2.60	6													
Bar/Lounge/Night Club	0	sf GLA	15.25	0	17.50	0													
Employee			1.25	0	1.50	0													
Entertainment and Institutions																			
Family Entertainment	0	sf GLA	1.80	0	2.50	0													
Employee			0.20	0	0.25	0													
Active Entertainment	0	sf GLA	1.50	0	1.80	0													
Employee			0.15	0	0.20	0													
Amusement Park/Water Park	0	sf GLA	2.60	0	3.00	0													
Employee			0.26	0	0.30	0													
Adult Active Entertainment	0	sf GLA	9.00	0	10.00	0													
Employee			1.20	0	1.20	0													
Cinemas	0	seats	0.15	0	0.24	0													
Employee			0.01	0	0.01	0													
Specialty Movie Theatre	0	seats	0.18	0	0.29	0													
Employee			0.02	0	0.01	0													
Live Theatre	0	seats	0.36	0	0.33	0													
Employee			0.07	0	0.07	0													
Outdoor Amphitheater	0	seats	0.30	0	0.33	0													
Employee			0.07	0	0.07	0													
Public Park/Destination Open Space	0	acre	4.00	0	5.00	0													
Employee			0.40	0	0.50	0													
Museum/Aquarium	0	sf GLA	4.00	0	4.50	0													
Employee			0.50	0	0.25	0													
Arena	0	seats	2.27	0	0.30	0													
Employee			0.03	0	0.03	0													
Pro Football Stadium	0	seats	0.30	0	0.30	0													
Employee			0.01	0	0.01	0													
Pro Baseball Stadium	0	seats	0.31	0	0.34	0													
Employee			0.01	0	0.01	0													
Health Club	0	sf GLA	6.00	0	5.50	0													
Employee			0.40	0	0.25	0													
Public Library	0	sf GLA	2.00	0	1.90	0													
Employee			0.25	0	0.20	0													
Convention Center	0	sf GLA	5.50	0	5.50	0													
Employee			0.50	0	0.50	0													
Hotel and Residential																			
Hotel-Business	0	keys	1.00	0	1.00	0													
Hotel-Lesure	0	keys	1.00	0	1.00	0													
Hotel Employee	0	keys	0.15	0	0.15	0													
Restaurant/Lounge	0	sf GLA	6.67	0	7.67	0													
Meeting/Banquet (0 to 20 sq ft/Key)	0	sf GLA	0.00	0	0.00	0													
Meeting/Banquet (20 to 50 sq ft/Key)	0	sf GLA	0.00	0	0.00	0													
Meeting/Banquet (50 to 100 sq ft/Key)	0	sf GLA	0.00	0	0.00	0													
Convention (100 to 200 sq ft/Key)	0	sf GLA	0.00	0	5.50	0													
Convention (> 200 sq ft/Key)	0	sf GLA	5.50	0	5.50	0													
Restaurant/Meeting Employees	0	sf GLA	0.00	0	0.00	0													
Residential-Suburban																			
Studio Efficiency	41	units	1.00	41	1.00	41													
1 Bedroom	259	units	2.00	518	2.00	518													
2 Bedrooms	0	units	1.65	0	1.65	0													
3+ Bedrooms	0	units	2.50	0	2.50	0													
Reserved	0%	res spaces	0.00	0	0.00	0													
Visitor	0	units	0.00	0	0.00	0													
Residential-Urban																			
Studio Efficiency	0	units	0.00	0	0.00	0													
1 Bedroom	0	units	0.00	0	0.00	0													
2 Bedrooms	0	units	0.00	0	0.00	0													
3+ Bedrooms	0	units	0.00	0	0.00	0													
Reserved	100%	res spaces	0.00	0	0.00	0													
Visitor	0	units	0.10	0	0.15	0													
Active Senior Housing	0	units	0.55	0	0.42	0													
Residents	0	units	0.30	0	0.30	0													
Office																			
Office <25 ksf	0	sf GFA	0.30	0	0.03	0													
Reserved weekday only =1, 24/7 2	2	emp	0.00	0	0.00	0													
Employee			3.50	0	0.35	0													
Office 25 to 100 ksf	0	sf GFA	0.32	0	0.03	0													
Reserved weekday only =1, 24/7 2	2	emp	0.00	0	0.00	0													
Employee			3.62	0	0.36	0													
Office >100 ksf	0	sf GFA	0.25	0	0.03	0													
Reserved weekday only =1, 24/7 2	2	emp	0.00	0	0.00	0													
Employee			3.15	0	0.32	0													
Office 100 to 500 ksf	134,560	sf GFA	0.23																

December																																											
Weekday Estimated Peak-Hour Parking Demand																																											
Land Use	Monthly Adjustment	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	Overall Pk 10 AM	AM Peak Hr 10 AM	PM Peak Hr 2 PM	Eve Peak Hr 10 PM																			
		Retail																																									
Retail (<400 ksf)	100%	0	1	4	7	14	19	22	25	25	24	20	21	22	22	21	12	7	2	0	14	14	25	7																			
Employee	100%	1	1	2	3	6	7	8	8	8	8	8	8	8	8	7	5	3	2	0	6	6	8	3																			
Food and Beverage																																											
Family Restaurant	100%	25	51	61	76	86	91	101	91	51	46	46	86	92	92	92	69	63	58	29	86	86	51	63																			
Employee	100%	11	17	20	20	22	22	22	22	22	17	17	21	21	21	21	17	14	14	8	22	22	22	14																			
Fast Casual/Fast Food	96%	0	0	1	1	2	3	3	3	3	2	2	2	3	2	2	1	1	0	0	2	2	3	1																			
Employee	100%	1	1	2	2	4	6	6	6	6	4	3	4	5	5	3	2	2	1	1	4	4	6	2																			
Entertainment and Institutions																																											
Hotel and Residential																																											
Residential, Suburban																																											
Studio Efficiency	100%	39	33	28	23	21	18	16	16	16	16	18	21	25	29	33	35	39	40	41	21	21	16	39																			
1 Bedroom	100%	492	414	350	285	259	233	207	207	207	207	233	259	311	363	414	440	492	502	518	259	259	207	492																			
2 Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
3+ Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Visitor	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Office																																											
Office 100 to 500 ksf	100%	0	0	6	19	32	14	5	14	30	14	5	3	2	1	0	0	0	0	0	32	32	30	0																			
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Employee	100%	13	63	209	375	417	417	354	354	396	396	354	250	104	63	21	13	4	0	0	417	417	396	4																			
Bank (Drive In Branch)	100%	0	0	1	3	3	1	1	1	2	1	2	6	0	0	0	0	0	0	0	3	3	2	0																			
Employee	100%	0	0	3	5	5	5	5	5	5	5	5	0	0	0	0	0	0	0	0	5	5	5	0																			
Additional Land Uses																																											
Customer/Visitor		26	53	73	106	136	128	133	135	111	87	74	118	119	117	115	82	71	60	29	136	136	111	71																			
Employee/Resident		557	529	612	713	724	709	619	619	660	653	639	567	473	487	499	512	554	559	568	734	734	660	554																			
Reserved		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																			
		582	581	685	820	870	837	752	754	771	740	713	685	592	605	614	594	625	619	597	870	870	771	625																			

December																																											
Weekend Estimated Peak-Hour Parking Demand																																											
Land Use	Monthly Adjustment	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	Overall Pk 10 AM	AM Peak Hr 10 AM	PM Peak Hr 12 PM	Eve Peak Hr 8 PM																			
		Retail																																									
Retail (<400 ksf)	100%	0	1	3	9	16	23	27	27	27	27	24	20	16	15	14	13	9	4	0	16	16	27	14																			
Employee	100%	1	1	3	6	6	7	8	8	8	8	8	7	6	6	6	5	3	1	0	6	6	8	6																			
Food and Beverage																																											
Family Restaurant	100%	11	29	52	80	103	103	114	97	74	46	52	68	80	80	74	34	28	17	11	103	103	114	74																			
Employee	100%	11	16	20	20	22	22	22	22	16	16	20	20	20	20	17	14	14	8	8	22	22	22	20																			
Fast Casual/Fast Food	96%	0	0	0	1	1	2	2	2	2	1	1	2	3	3	2	1	1	0	0	1	1	2	2																			
Employee	100%	1	1	2	2	4	6	6	6	5	4	3	4	5	5	3	2	2	1	1	4	4	6	3																			
Entertainment and Institutions																																											
Hotel and Residential																																											
Residential, Suburban																																											
Studio Efficiency	100%	41	39	36	33	31	29	28	27	27	28	29	30	32	33	34	35	36	38	41	31	31	28	34																			
1 Bedroom	100%	518	492	456	414	389	363	352	337	337	352	368	383	399	414	430	445	461	477	518	389	389	352	430																			
2 Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
3+ Bedrooms	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Visitor	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Office																																											
Office 100 to 500 ksf	100%	0	1	2	3	4	4	4	3	2	2	1	0	0	0	0	0	0	0	0	4	4	4	0																			
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-																			
Employee	100%	0	9	26	34	39	43	39	34	26	17	9	4	2	0	0	0	0	0	0	39	39	39	0																			
Bank (Drive In Branch)	100%	0	0	2	2	5	6	5	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	0																			
Employee	100%	0	0	3	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0																			
Additional Land Uses																																											
Customer/Visitor		12	31	59	96	129	138	153	130	106	76	78	91	99	97	89	48	38	21	12	129	129	153	89																			
Employee/Resident		572	558	546	513	494	473	458	433	424	425	433	449	464	479	493	505	517	530	568	494	494	458	493																			
Reserved		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																			
		583	589	604	609	623	611	611	563	530	501	511	540	563	576	583	553	554	552	579	623	623	611	583																			

Chair Lambert called the Regular meeting of the Troy City Planning Commission to order at 7:01 p.m. on January 10, 2023, in the Council Chamber of the Troy City Hall. Chair Lambert and Vice Chair Perakis 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
- Tyler Fox
- Michael W. Hutson
- Tom Krent
- David Lambert
- Lakshmi Malalahalli
- Marianna Perakis
- 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

Mr. Savidant announced the applicant for a potential Planned Unit Development application that was postponed at the December 13, 2022 meeting to tonight’s agenda would like to postpone the item indefinitely for personal reasons.

Resolution # PC-2023-01-001

Moved by: Faison
 Support by: Tagle

RESOLVED, To approve the Agenda as prepared.

Yes: All present (9)

MOTION CARRIED

3. APPROVAL OF MINUTES – December 13, 2022

Resolution # PC-2023-01-002

Moved by: Fox
 Support by: Buechner

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

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

MOTION CARRIED

4. PUBLIC COMMENT – For Items Not on the Agenda

There was no one present who wished to speak.

ZONING ORDINANCE TEXT AMENDMENT

5. PUBLIC HEARING – ZONING ORDINANCE TEXT AMENDMENT (File Number ZOTA 257)
– Places of Worship

Ms. Dufrane introduced proposed revisions to the Zoning Ordinance relating to places of worship because of a Zoning Board of Appeals litigation decision. She stated a Federal District Court Judge made known that portions of Sections 4.21 and 6.21 of the Zoning Ordinance are not enforceable as written. Ms. Dufrane emphasized the proposed revised text is not a directive from the Court but that the proposed revisions were drafted by the administration after a comprehensive review.

There was discussion, some comments related to:

- Proposed revisions as relates to the protection of residentially zoned properties; i.e., parking, setbacks, frontage and access to major or minor arterial roads.
- Zoning Ordinance definition of places of worship.
- Charge of the Zoning Administrator to interpret the Zoning Ordinance.
- Intent is to apply similar treatment to both religious institutions and nonreligious places of assembly and institutions.

Ms. Perakis stated she is not personally prepared this evening to recommend the text revisions as proposed.

PUBLIC HEARING OPENED

There was no one present who wished to speak.

PUBLIC HEARING CLOSED

Resolution # PC-2023-01-003

Moved by: Faison

Seconded by: Tagle

RESOLVED, That the Planning Commission hereby recommends to the City Council that Articles 4 and 6 of Chapter 39 of the Code of the City of Troy, which includes provisions related to places of worship, be amended as printed on the proposed Zoning Ordinance Text Amendment.

Discussion on the motion on the floor.

Chair Lambert said he is happy the City came forth with language that both eliminates some of the discriminatory language in the City’s Zoning Ordinance and at the same time protects the residential areas that might be impacted.

Vote on the motion on the floor.

Yes: Buechner, Faison, Fox, Hutson, Krent, Lambert, Malalahalli, Tagle
 No: Perakis

MOTION CARRIED

SPECIAL USE AND PRELIMINARY SITE PLAN APPROVALS

- 6. SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 2690 Crooks Road Apartments, East side of Crooks, South of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District

Mr. Carlisle reviewed the Special Use and Preliminary Site Plan application for 2690 Crooks Road Apartments. The applicant proposes to repurpose the existing 4-story Lindsey Center building and construct a new 5-story multiple family residential building. Mr. Carlisle addressed the number of units, access and circulation, site arrangement, shared parking with 911 and 999 W. Big Beaver sites, waiver to relocate required parking lot trees and architectural features. Mr. Carlisle explained the Special Use Approval relates to the proposed residential use on the first floor not facing a public right of way. He reported the application includes a traffic study reviewed by both the City Traffic Consultant OHM Advisors and Oakland County Road Commission (OCRC). Mr. Carlisle said OHM and OCRC representatives are present this evening to address traffic and proposed shared parking.

(Mr. Savidant exited the meeting at 7:31 p.m.; returned at 7:33 p.m.)

Mr. Carlisle said as part of the deliberation, the Planning Commission should consider compliance with Section 5.04E Big Beaver Design Standards, Section 8.06 Site Plan Review Standards and Section 9.02.D Special Use Standards, as well the required transparency for the east, north and south elevations, parking lot tree location, proposed shared parking and consideration of providing a three-dimensional (3-D) rendering of the entire development.

Mr. Carlisle reported any approval this evening should be subject to the conditions identified in his report dated January 4, 2023 as part of Final Site Plan approval. Mr. Carlisle reminded the Board there was no public comment at the Public Hearing conducted at their December 13, 2022 meeting.

Board members expressed confusion in the review and deliberation of this application because of its relationship to Agenda item # 7 on tonight’s agenda.

It was determined the Planning Consultant would give a review on Agenda item #7, 911 and 999 W. Big Beaver Special Use Approval and Preliminary Site Plan application prior to taking any action on the 2690 Crooks Road application.

Applicant Jordan Jonna said the ownership structure of the subject parcels dictated the submission of individual applications. He noted that the south site (2690 Crooks) has sufficient parking to stand alone whether the north site (911 and 999 W. Big Beaver) is developed or not.

There was discussion, some comments related to:

- Building heights.
- Green recreational space deficiency.
- Shared parking.
 - Coordination of parking during construction phases.
 - Dynamics of shared parking among the various uses.

**Refer to page 6, Agenda item #7 for additional comments that relate to both applications.*

Resolution # PC-2023-01-xxx (motion withdrawn)

Moved by: Krent
 Seconded by: Faison

RESOLVED, The Planning Commission hereby approves a reduction in the total number of required parking spaces for the proposed 2690 Crooks Road residential development to 221 when a total of 312 spaces are required on the site based on the off-street parking space requirements for multi-family residential. This 91-space reduction is sufficient to meet parking demands based on shared parking provided on the abutting site to the north; and,

RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed 2690 Crooks Road Apartments, east side of Crooks, south of Big Beaver (2690 Crooks), Section 28, Currently Zoned BB (Big Beaver) District, be granted, subject to the following conditions:

1. Increase the drive-aisle width to at least 26 feet.
2. Improve pedestrian circulation based on OHM’s comments.
3. Confirm existing screening of trash enclosure.
4. Confirm building lighting.
5. Verify unit numbers.
6. Provide a shared parking agreement to the satisfaction of the City Attorney prior to Final Site Plan Approval.
7. Provide transparency calculations.

Discussion on the motion on the floor.

Concerns discussed were:

- Required landscape trees in parking lot; impact to number of parking spaces.
- Non-friendly pedestrian walkability of site.
- Enhancement of green space.
- Improvements to access, circulation, and shared parking.

Mr. Krent withdrew his motion from the floor. Mr. Faison was in support of its withdrawal.

Resolution # PC-2023-01-004

Moved by: Tagle

Seconded by: Krent

RESOLVED, To postpone 2690 Crooks Road Apartments application so that the applicant may comply with the Zoning Ordinance requirements of interior parking lot landscaping, enhance the pedestrian walkways and to provide information to this Commission with regard to the distance to the parking spots for the residential units in excess of what is currently around the building.

Yes: All present (9)

MOTION CARRIED

7. PUBLIC HEARING - SPECIAL USE APPROVAL AND PRELIMINARY SITE PLAN REVIEW (File Number SU JPLN2022-0004) – Proposed 911 and 999 W. Big Beaver Mixed Use Development, Southeast corner of Big Beaver and Crooks (PIN 88-20-28-101-032, -034 and -047), Section 28, Currently Zoned BB (Big Beaver) District.

Mr. Carlisle reviewed the Special Use Approval and Preliminary Site Plan application for 911 and 999 W. Big Beaver that proposes to convert the existing Kelly Services site as a mixed use. He said the Special Use Approval relates to 1) a potential use of a financial institution drive-through, and 2) proposed residential use on the first floor not facing a public right of way. Mr. Carlisle said the applicant is seeking waivers for required setbacks for Buildings A and C. He noted the parking for Building E must be adjacent to the building.

Mr. Carlisle addressed access and site circulation, architectural features and deficiencies in the landscaping.

Mr. Carlisle reported as part of the deliberation, the Planning Commission should discuss compliance with Section 5.04.E Big Beaver Design Standards, Section 8.06 Site Plan Review Standards and Section 9.02D Special Use Standards, as well, architectural features, parking lot tree location, shared parking and setback waivers for placement of two buildings.

Mr. Carlisle said OHM and OCRC representatives are present this evening to address traffic and proposed shared parking.

Mr. Jonna addressed the relationship with Kelly Services Headquarters, complementary architectural features among buildings, development phases, current state of office space, parking deck and recreational amenities for all users of the sites. He addressed legal implications in the ownership structure of the subject parcels. Mr. Jonna said the project team is very comfortable with the proposed shared parking and briefly addressed parking calculations for both applications.

There was discussion, some comments related to:

- Shared parking and parking deck.
 - Distance to residential.
 - Location of parking deck for all users.
 - Parking calculations.
 - 2690 Crooks sufficient parking on its own.
- Improve walkability for pedestrians.
- Alternative site arrangement; access, circulation.
- Drive-through for financial institution.
- Open space deficiencies.
- Requirement for parking lot trees to break up pavement, create islands.
- Environmental resources.
- Recorded easement(s).
- Trash collection.

Project Architect Kevin Biddison addressed the subject parcels as relates to the residential use, public amenities and walking community.

Julie Kroll of Fleis & Vanderbrink addressed the parking study and analysis for both applications as relates to parking space calculations and number of parking spaces. She stated they are comfortable with the parking numbers.

PUBLIC HEAR OPENED

There was no one present who wished to speak.

PUBLIC HEARING CLOSED

Stephan Maxe of OHM Advisors addressed OHM comments on the traffic impact study as identified in their memorandum dated December 22, 0222 and their comments relating to the improvement of pedestrian circulation between the developments.

Resolution # PC-2023-01-005

Moved by: Fox
Seconded by: Buechner

RESOLVED, To postpone 911 and 999 W. Big Beaver Mixed Use Development application per the reasons discussed in the previous motion and including conditions as listed in the proposed Resolution (number one through nine) and that the applicant come back with a simplistic explanation and diagrams of the shared parking and circulation plans that clearly shows pedestrian amenities and how the subject sites are tied together.

Discussion on the motion on the floor.

- Easement to Tower Center Drive and to neighboring properties as relates to flow and connectivity.
- Drive-through facility as relates to environment, green space, walkability.
- Location of parking deck pursuant to Zoning Ordinance requirements.
- Concerns with pedestrian and vehicular circulation.
- Alternative commercial/retail uses other than drive-through financial institution.

Vote on the motion on the floor.

Yes: All present (9)

MOTION CARRIED

OTHER ITEMS

8. **ELECTION OF OFFICERS**

Chair Lambert opened the floor for nominations for Chair.

Ms. Perakis nominated David Lambert. Mr. Krent supported the nomination.

Acknowledging there were no further nominations, Chair Lambert closed the floor to nominations.

Roll Call vote on the nomination for *David Lambert as Chair.*

Yes: All present (9)

Chair Lambert opened the floor for nominations for Vice Chair.

Chair Lambert nominated Marianna Perakis. Mr. Buechner supported the nomination.

Acknowledging there were no further nominations, Chair Lambert closed the floor to nominations.

Roll Call vote on the nomination on the floor for *Marianna Perakis as Vice Chair.*

Yes: All present (9)

Chair Lambert opened the floor for nominations for Zoning Board of Appeals Representative.

Chair Lambert nominated Tyler Fox. Mr. Krent supported the nomination.

Acknowledging there were no further nominations, Chair Lambert closed the floor to nominations.

Roll Call vote on the recommendation of appointment for **Tyler Fox as ZBA Representative.**

Yes: All present (9)

9. PUBLIC COMMENT – For Items on the Agenda

There was no one present who wished to speak.

10. PLANNING COMMISSION COMMENT

There were general comments, some relating to:

- Welcome to Planning Commissioner Fox.
- Well wishes for the New Year.
- Potential future study on sustainability.

Ms. Dufrane gave an update on litigation of the Tollbrook (McClure and Alpine) matters.

11. ADJOURN

The Regular meeting of the Planning Commission adjourned at 9:45 p.m.

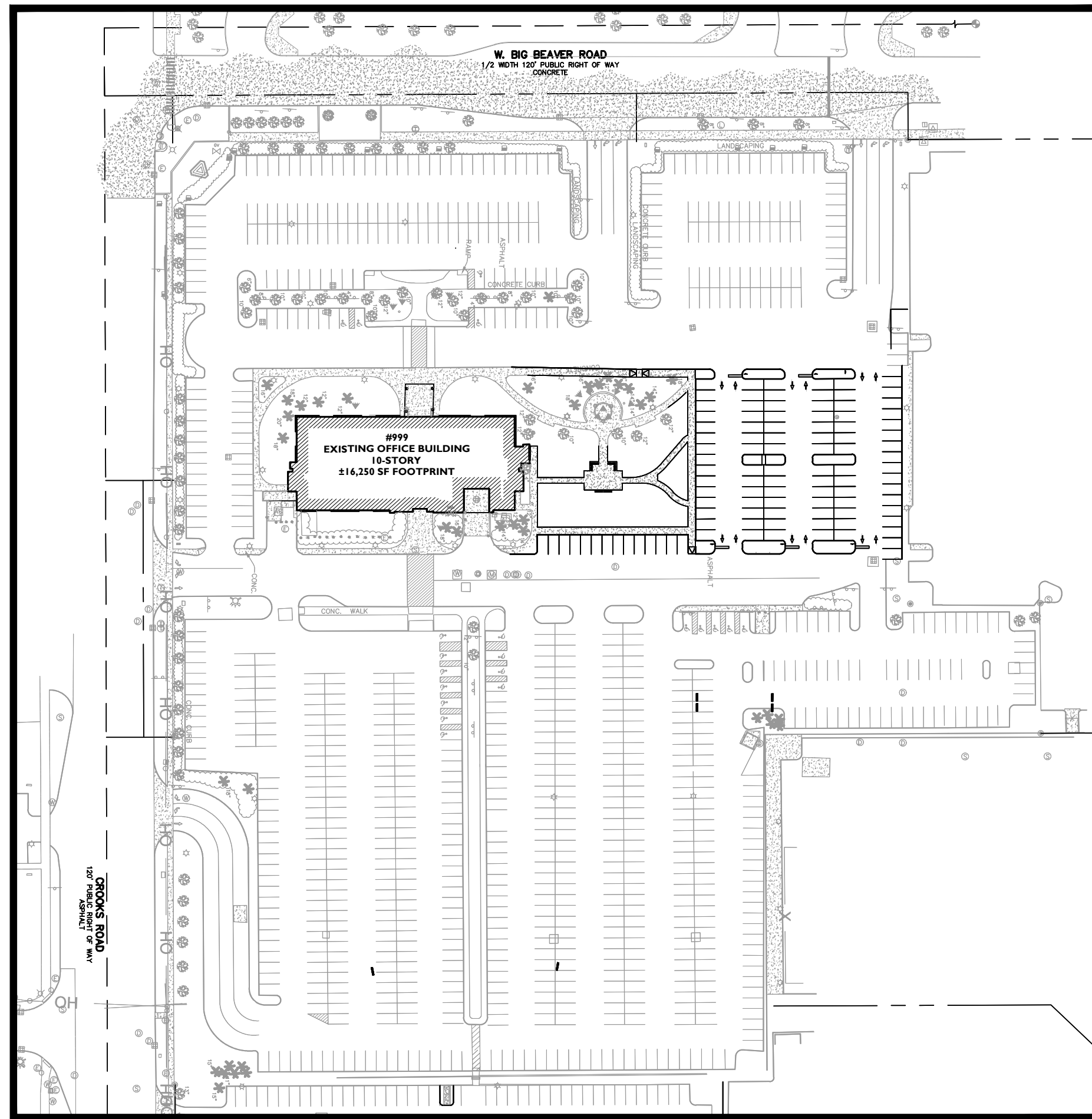
Respectfully submitted,



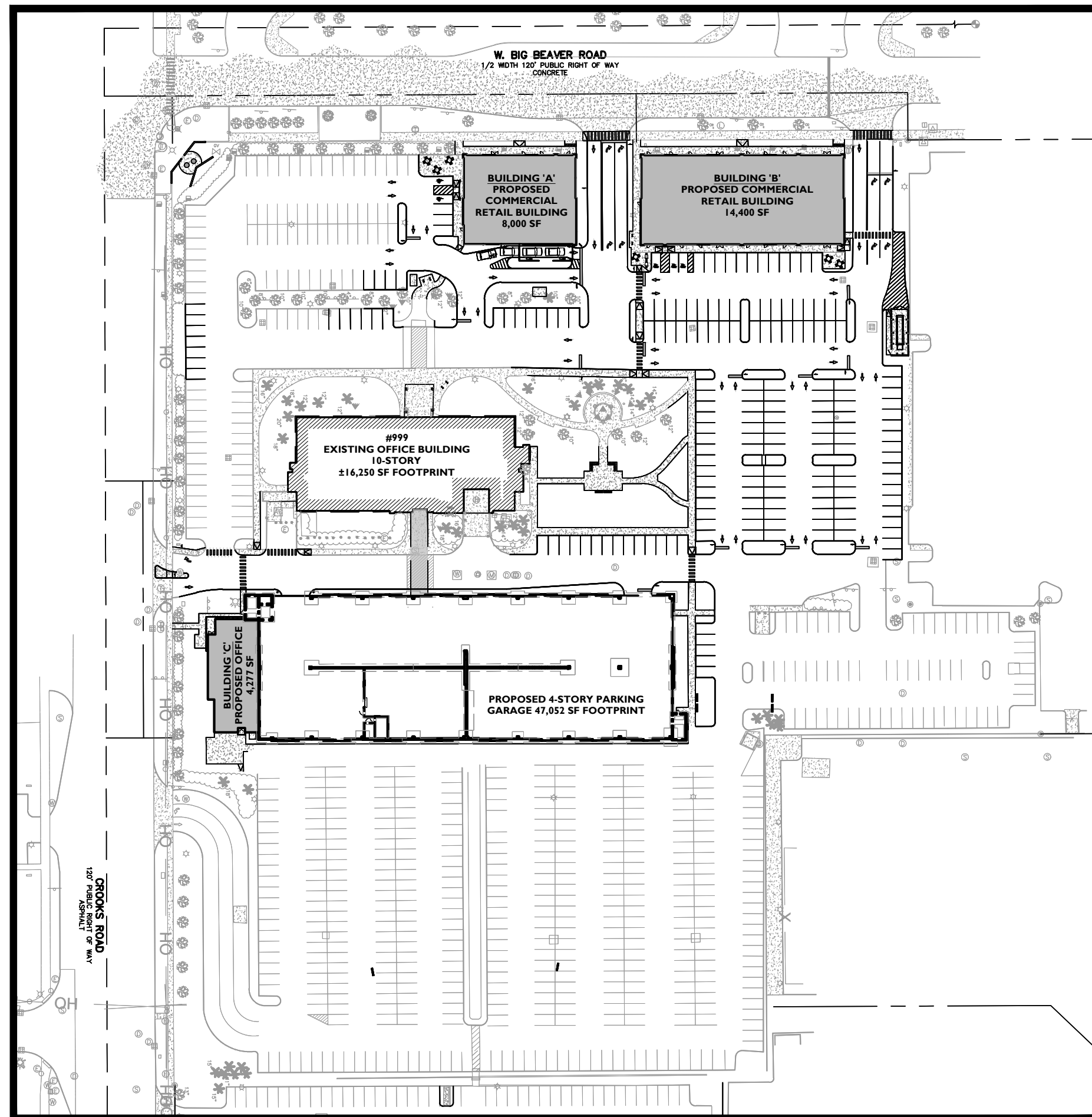
David Lambert, Chair



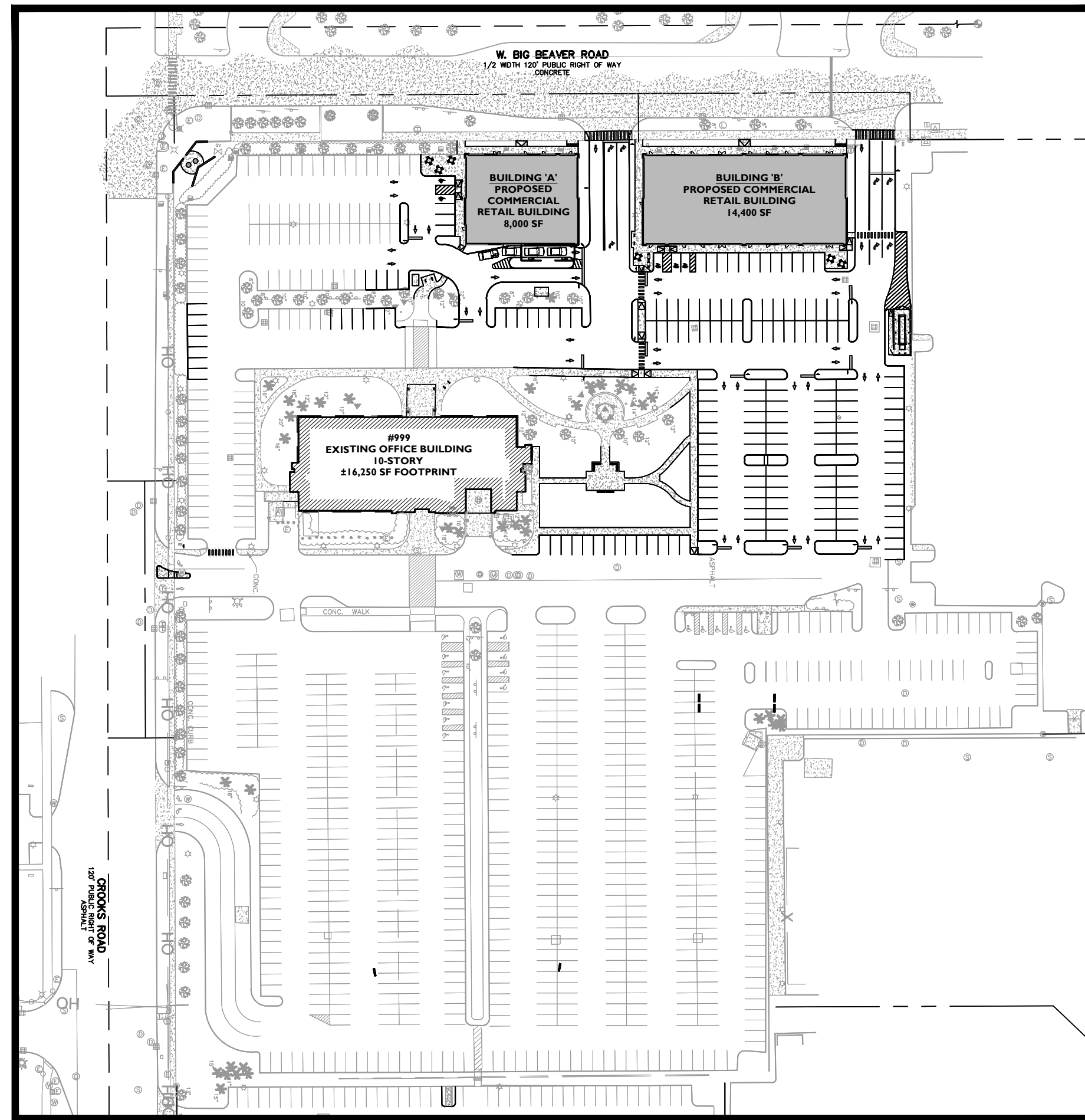
Kathy L. Czarnecki, Recording Secretary



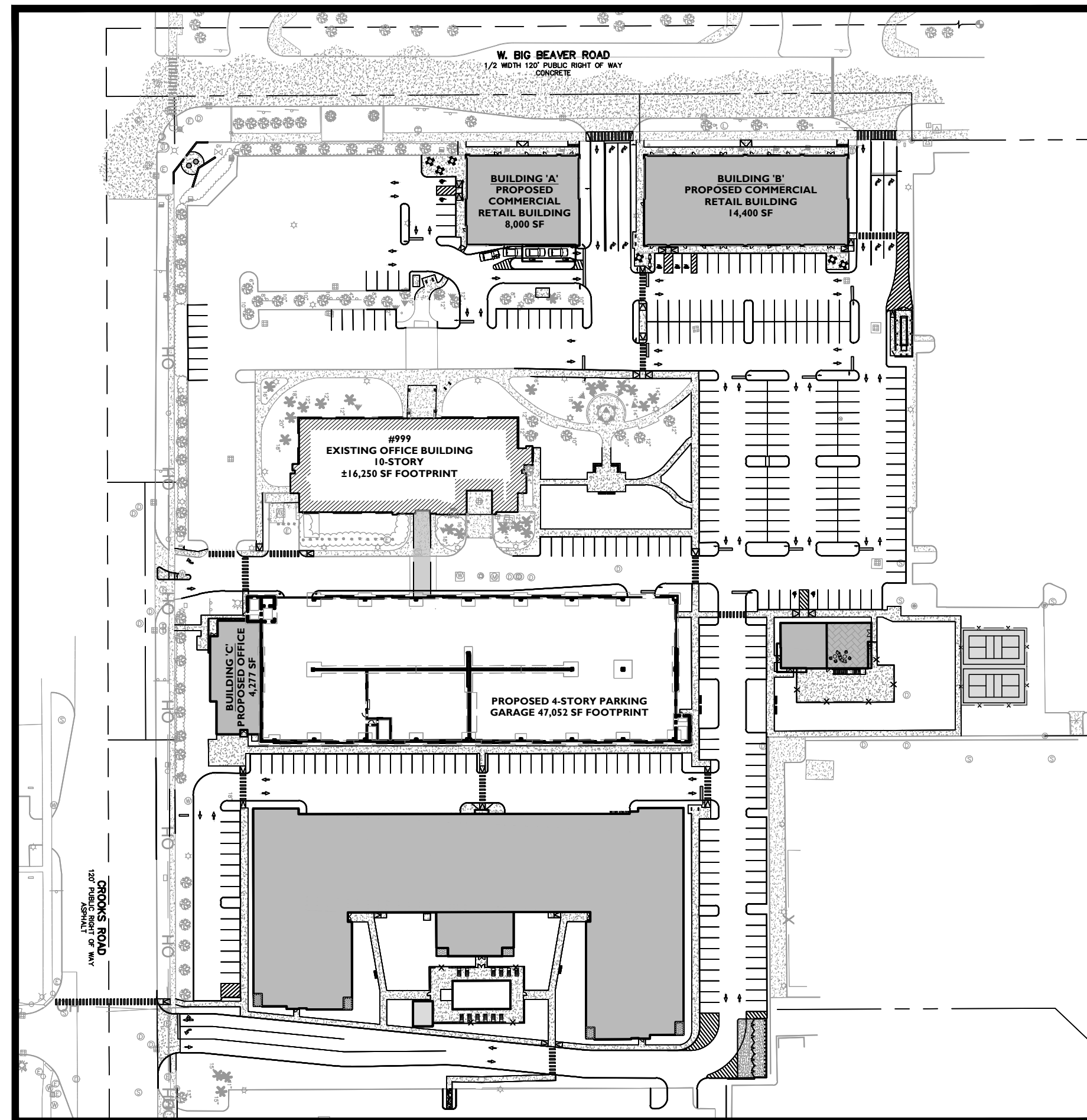
PHASE 1 SITE PLAN: DEMOLITION OF 911 W BIG BEAVER, PROPOSED PARKING LOT, ENHANCED LANDSCAPING AND PEDESTRIAN PLAZA



PHASE 3 SITE PLAN: PROPOSED 4-STORY PARKING GARAGE, 4,277 SF OFFICE FRONTING CROOKS ROAD



PHASE 2 SITE PLAN: TWO PROPOSED COMMERCIAL BUILDINGS FRONTING BIG BEAVER ROAD WITH ASSOCIATED SITE IMPROVEMENTS



PHASE 4 SITE PLAN: PROPOSED 5-STORY APARTMENT BUILDING WITH PODIUM PARKING, CLUBHOUSE WITH OUTDOOR AMENITIES AND CONNECTION TO CROOKS AND BUTTERFIELD ROAD INTERSECTION

PARKING REQUIREMENTS - PHASE 1			
CODE SECTION	REQUIRED (POST-CONSTRUCTION)	PROPOSED POST-CONSTRUCTION	PROPOSED UNDER-CONSTRUCTION
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,560 NFA)/(1/300 NFA) = 449 SPACES TOTAL: 449 SPACES	957 SPACES	851 SPACES (449 REQUIRED)

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF

PARKING REQUIREMENTS - PHASE 2			
CODE SECTION	REQUIRED (POST-CONSTRUCTION)	PROPOSED POST-CONSTRUCTION	PROPOSED UNDER-CONSTRUCTION
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,560 NFA)/(1/300 NFA) = 449 SPACES BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(1/200 GFA) = 10 SPACES COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(1/250 GFA) = 37 SPACES RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (300 SEATS)/(1/2 SEATS) = 150 SPACES RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (2,560 SF NFA)/(1/70 SF NFA) = 37 SPACES TOTAL: 449+10+37+150+37 = 683 SPACES	896 SPACES	807 SPACES (449 REQUIRED)

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF GFA)(0.8) = 2,560 SF

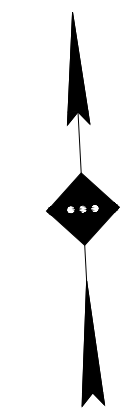
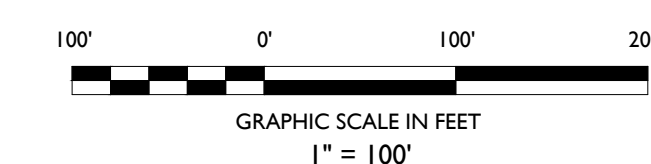
PARKING REQUIREMENTS - PHASE 3			
CODE SECTION	REQUIRED (POST-CONSTRUCTION)	PROPOSED POST-CONSTRUCTION	PROPOSED UNDER-CONSTRUCTION
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,560 NFA)/(1/300 NFA) = 449 SPACES BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(1/200 GFA) = 10 SPACES COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(1/250 GFA) = 37 SPACES RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (270 SEATS)/(1/2 SEATS) = 135 SPACES RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (2,560 SF NFA)/(1/70 SF NFA) = 37 SPACES TOTAL: 449+10+37+135+37 = 668 SPACES	744 SURFACE SPACES 552 GARAGE SPACES 1,296 TOTAL SPACES	739 SURFACE SPACES (683 REQUIRED)

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF GFA)(0.8) = 2,560 SF

NOTE: DURING CONSTRUCTION OF THE PROPOSED PARKING GARAGE, CONSTRUCTION FENCING WITH SIGNAGE WILL BE PROVIDED TO ENSURE SAFE PEDESTRIAN CIRCULATION

PARKING REQUIREMENTS - PHASE 4			
CODE SECTION	REQUIRED (POST-CONSTRUCTION)	PROPOSED POST-CONSTRUCTION	PROPOSED UNDER-CONSTRUCTION
§ TABLE 13.06-A	PROFESSIONAL OFFICE: 1 SPACE PER 300 NFA (134,560 NFA)/(1/300 NFA) = 449 SPACES BANK: 1 SPACE PER 200 GFA (2,000 GFA)/(1/200 GFA) = 10 SPACES COMMERCIAL / RETAIL: 1 SPACE PER 250 GFA (9,200 GFA)/(1/250 GFA) = 37 SPACES RESTAURANT (STANDARD): 1 SPACE PER 2 SEATS AT MAXIMUM CAPACITY (300 SEATS)/(1/2 SEATS) = 150 SPACES RESTAURANT (FAST FOOD): 1 SPACE PER 70 SF NET FLOOR AREA (2,560 SF NFA)/(1/70 SF NFA) = 37 SPACES MULTI-FAMILY RESIDENTIAL: 2 SPACES PER DWELLING UNIT (156 UNITS)/(2/1 UNITS) = 312 SPACES TOTAL: 449+37+10+150+37+312 = 995 SPACES	408 SURFACE SPACES 552 GARAGE SPACES 61 BELOW APARTMENT 1,021 TOTAL SPACES	310 SURFACE SPACES 552 GARAGE SPACES 862 TOTAL SPACES (683 REQUIRED)

(*) NET FLOOR AREA IS ASSUMED TO BE 80% GROSS FLOOR AREA
(168,200 SF)(0.8) = 134,560 SF
(3,200 SF GFA)(0.8) = 2,560 SF



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SITE DEVELOPMENT PLANS

CROOKS & BIG BEAVER
PROPOSED MIXED USE
REDEVELOPMENT

PARCEL ID: 88-20-28-101-034, 88-20-28-101-032, 88-20-28-101-047
CITY OF TROY
OAKLAND COUNTY, MICHIGAN



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SCALE: 1" = 100' PROJECT ID: M-19301

TITLE:
PHASING PLAN

DRAWING:
C-3

V:\P\1911\1911-01\JONAS\BIG BEAVER ROAD & CROOKS ROAD_TROY_MICH\DDI\NOTDIP_1911-01-04.DWG

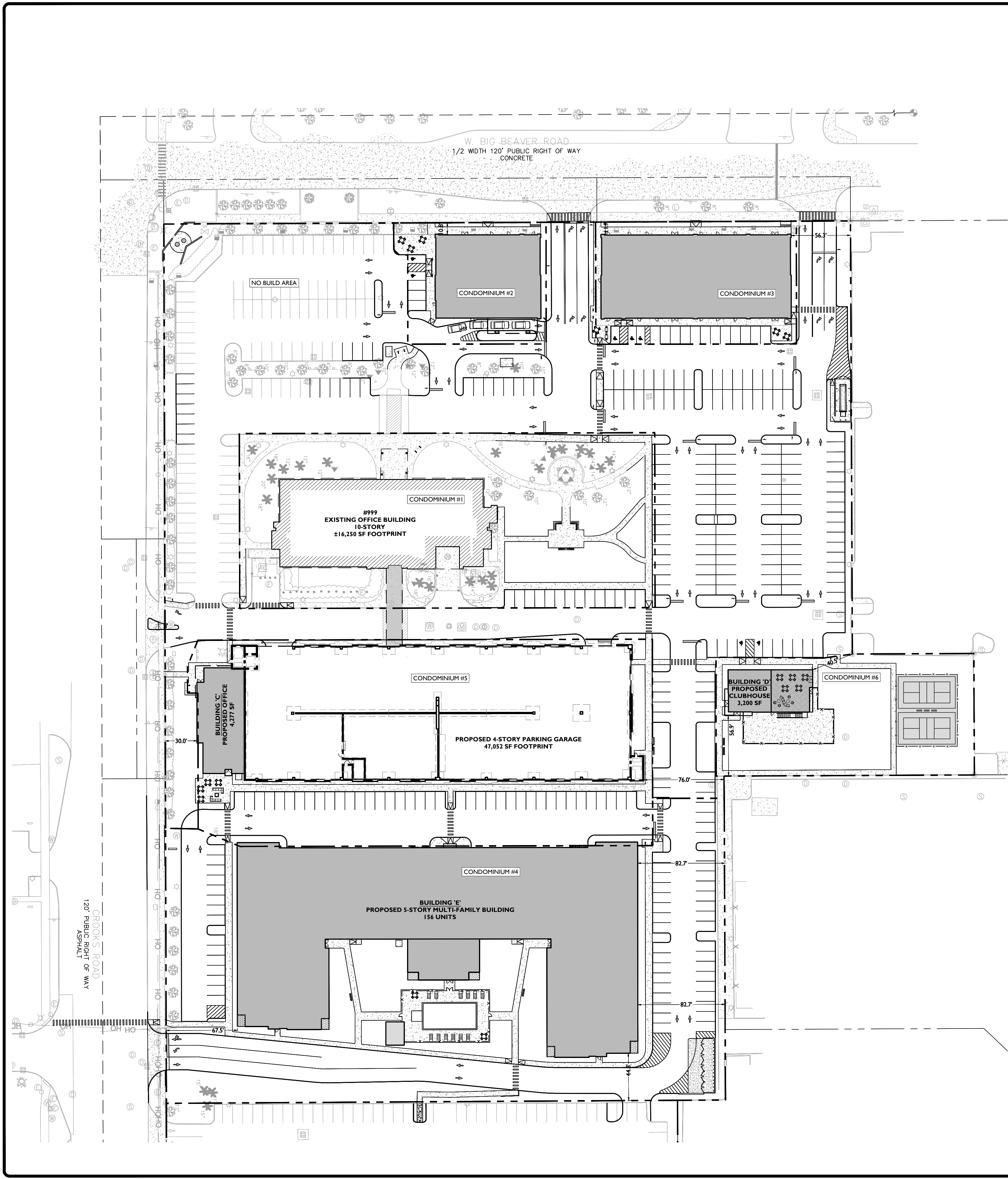


TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-21-351-015
 BIG BEAVER ROAD (BB) - (STREET TYPE: A, BUILDING FORM-A)

PROPOSED USE	PERMITTED USE	
COMMERCIAL RETAIL/RESTAURANT/ SERVICE (BUILDING 'A')		
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	15,445 SF (0.35 AC)
MINIMUM BUILDING HEIGHT	14 FT (1 STORY)	30.0 FT (1 STORY)
MAXIMUM BUILDING HEIGHT	45 FT (3 STORIES)	30.0 FT (1 STORY)
REQUIRED FRONT BUILDING LINE	10 FT	10.8 FT (W)
MINIMUM SIDE YARD SETBACK	0 FT	293.5 FT
MINIMUM REAR YARD SETBACK	30 FT	740.8 FT

(W) WAIVER

TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-21-351-015
 BIG BEAVER ROAD (BB) - (STREET TYPE: A, BUILDING FORM-A)

PROPOSED USE	PERMITTED USE	
COMMERCIAL RETAIL/RESTAURANT/ SERVICE (BUILDING 'B')		
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	22,029 SF (0.51 AC)
MINIMUM BUILDING HEIGHT	14 FT (1 STORIES)	30.0 FT (1 STORY)
MAXIMUM BUILDING HEIGHT	45 FT (3 STORIES)	30.0 FT (1 STORY)
REQUIRED FRONT BUILDING LINE	10 FT	11.7 FT (W)
MINIMUM SIDE YARD SETBACK	0 FT	56.3 FT
MINIMUM REAR YARD SETBACK	30 FT	740.2 FT

(W) WAIVER

TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-21-351-015
 BIG BEAVER ROAD (BB) - (STREET TYPE: B, BUILDING FORM-A)

PROPOSED USE	PERMITTED USE	
OFFICE (BUILDING 'C')		
PARKING GARAGE	ACCESSORY USE	
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	84,115 SF (1.93 AC)
MINIMUM BUILDING HEIGHT	14 FT (1 STORY)	20.0 FT (1 STORY)
MAXIMUM BUILDING HEIGHT	45 FT (3 STORIES)	45.0 FT (4 STORIES)
REQUIRED FRONT BUILDING LINE	10 FT	30.0 FT (W)
MINIMUM SIDE YARD SETBACK	0 FT	244.2 FT
MINIMUM REAR YARD SETBACK	30 FT	74.9 FT

(W) WAIVER

TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-21-351-015
 BIG BEAVER ROAD (BB) - (STREET TYPE: A, BUILDING FORM-A)

PROPOSED USE	PERMITTED USE	
CLUB HOUSE (BUILDING 'D')		
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	27,734 SF (0.64 AC)
MINIMUM BUILDING HEIGHT	14 FT (1 STORY)	20.0 FT (1 STORY)
MAXIMUM BUILDING HEIGHT	45 FT (3 STORIES)	20.0 FT (1 STORY)
REQUIRED FRONT BUILDING LINE	10 FT	424.5 (W)
MINIMUM SIDE YARD SETBACK	0 FT	56.9 FT
MINIMUM REAR YARD SETBACK	30 FT	40.5 FT

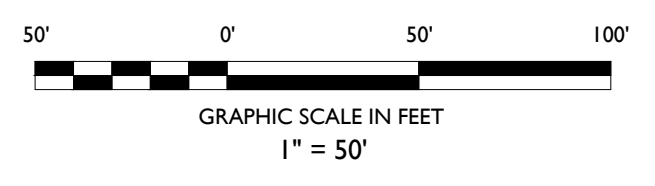
(W) WAIVER

TABLE OF LAND USE AND ZONING
 PARCEL ID: 20-21-351-015
 BIG BEAVER ROAD (BB) - (STREET TYPE: B, BUILDING FORM-D)

PROPOSED USE	PERMITTED USE	
MULTI-FAMILY (BUILDING 'E')		
GROUND FLOOR UNITS (BUILDING 'E')	SPECIAL LAND USE	
ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	N/A	131,971 SF (3.03 AC)
MINIMUM BUILDING HEIGHT	55 FT (5 STORIES)	85.0 FT (6 STORIES)
MAXIMUM BUILDING HEIGHT	N/A	85.0 FT (6 STORIES)
REQUIRED FRONT BUILDING LINE	10 FT	67.5 FT (W)
MINIMUM SIDE YARD SETBACK	0 FT	57.1 FT
MINIMUM REAR YARD SETBACK	40 FT	82.7 FT

(W) WAIVER

- SYMBOL**
- CONDOMINIUM LINE
 - PROPOSED CURB
 - — — PROPOSED FLUSH CURB
 - PROPOSED SIGNS / BOLLARDS
 - PROPOSED BUILDING
 - ▨ PROPOSED PEDESTRIAN SKYWALK
 - ▤ PROPOSED CONCRETE
 - X — X — PROPOSED CHAINLINK FENCE



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SITE DEVELOPMENT PLANS

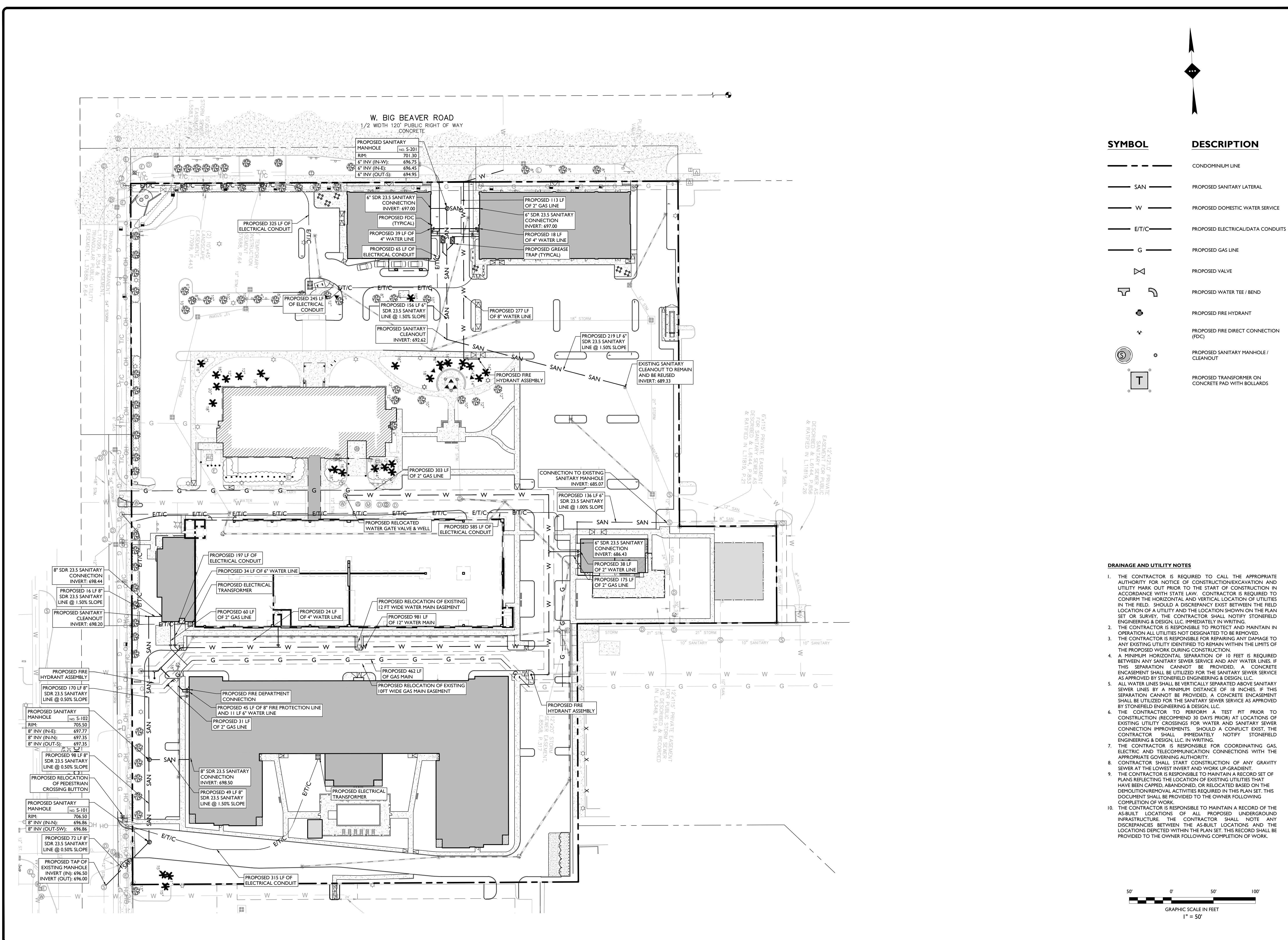
CROOKS & BIG BEAVER
PROPOSED MIXED USE
REDEVELOPMENT

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 911 & 999 WEST BIG BEAVER ROAD & 2690 CROOKS ROAD
 CITY OF TROY
 OAKLAND COUNTY, MICHIGAN

STATE OF MICHIGAN
 DEPARTMENT OF LAND AND WATER
 DIVISION OF LAND AND WATER MANAGEMENT
 MICHAEL J. COOPER, REGISTERED PROFESSIONAL ENGINEER
 LICENSE NO. 94238

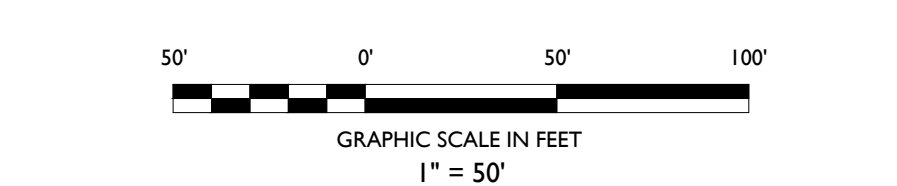
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SCALE: 1" = 50' PROJECT ID: M-19301
 TITLE:
CONDOMINIUM PLAN
 DRAWING:
C-4



SYMBOL	DESCRIPTION
---	CONDOMINIUM LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
E/T/C	PROPOSED ELECTRICAL/DATA CONDUITS
G	PROPOSED GAS LINE
⊗	PROPOSED VALVE
⊕	PROPOSED WATER TEE / BEND
⊙	PROPOSED FIRE HYDRANT
⊕	PROPOSED FIRE DIRECT CONNECTION (FDC)
⊙	PROPOSED SANITARY MANHOLE / CLEANOUT
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

- DRAINAGE AND UTILITY NOTES**
- THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IMMEDIATELY IN WRITING.
 - THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
 - THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
 - A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
 - CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADE.
 - THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
 - THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.



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SITE DEVELOPMENT PLANS

CROOKS & BIG BEAVER
PROPOSED MIXED USE
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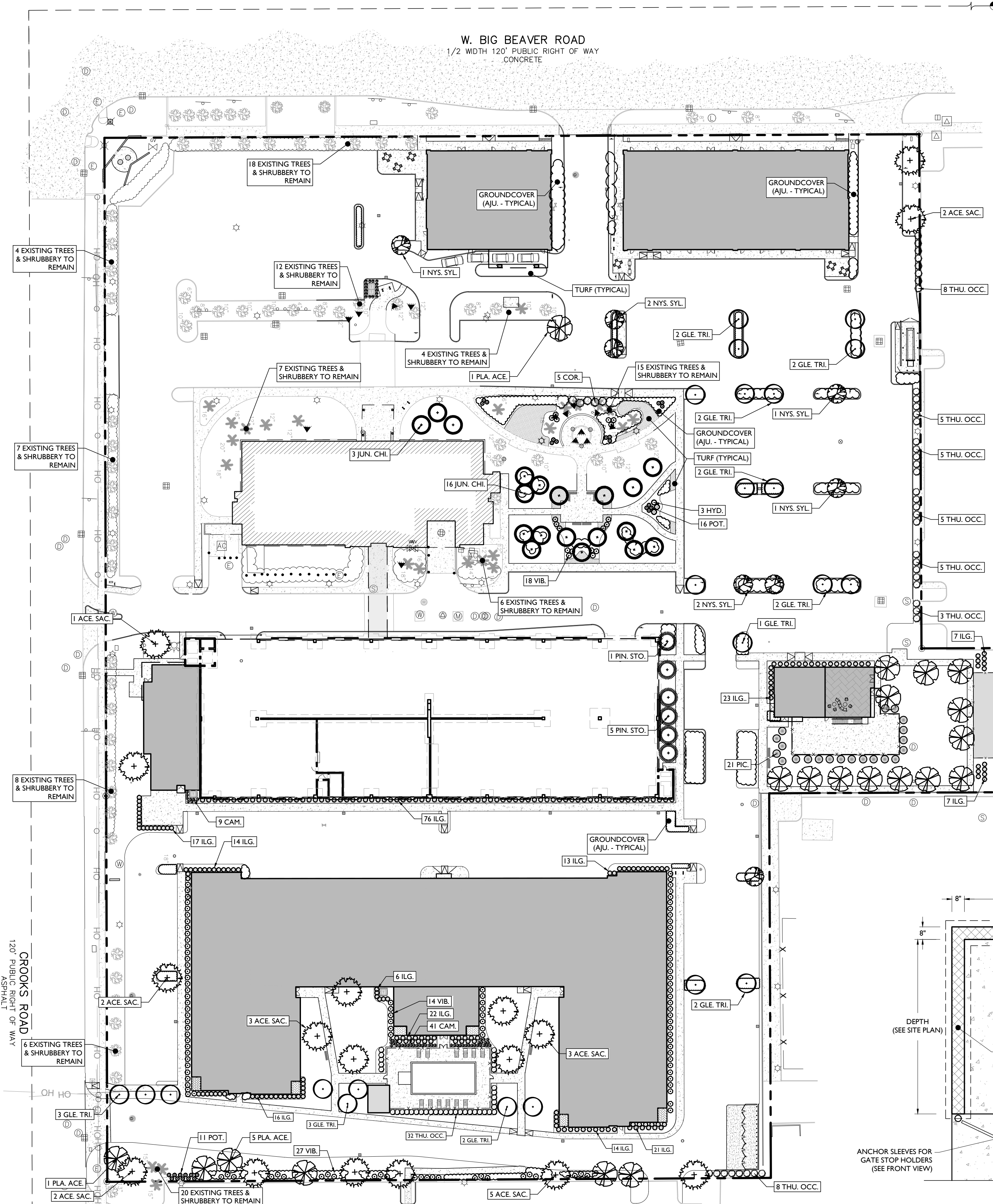
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SCALE: 1" = 50' PROJECT ID: M-19301

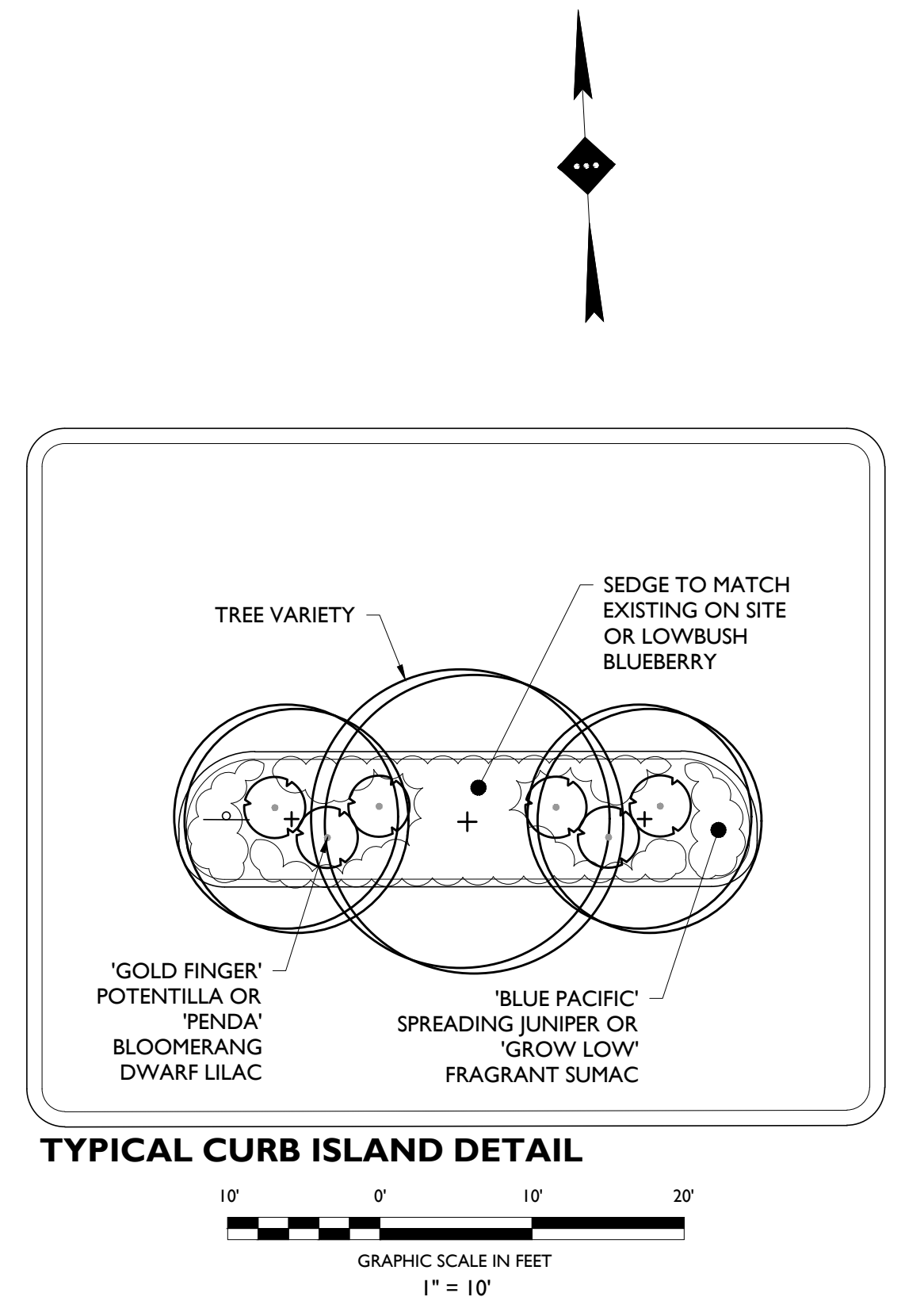
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UTILITY PLAN

DRAWING:
C-7



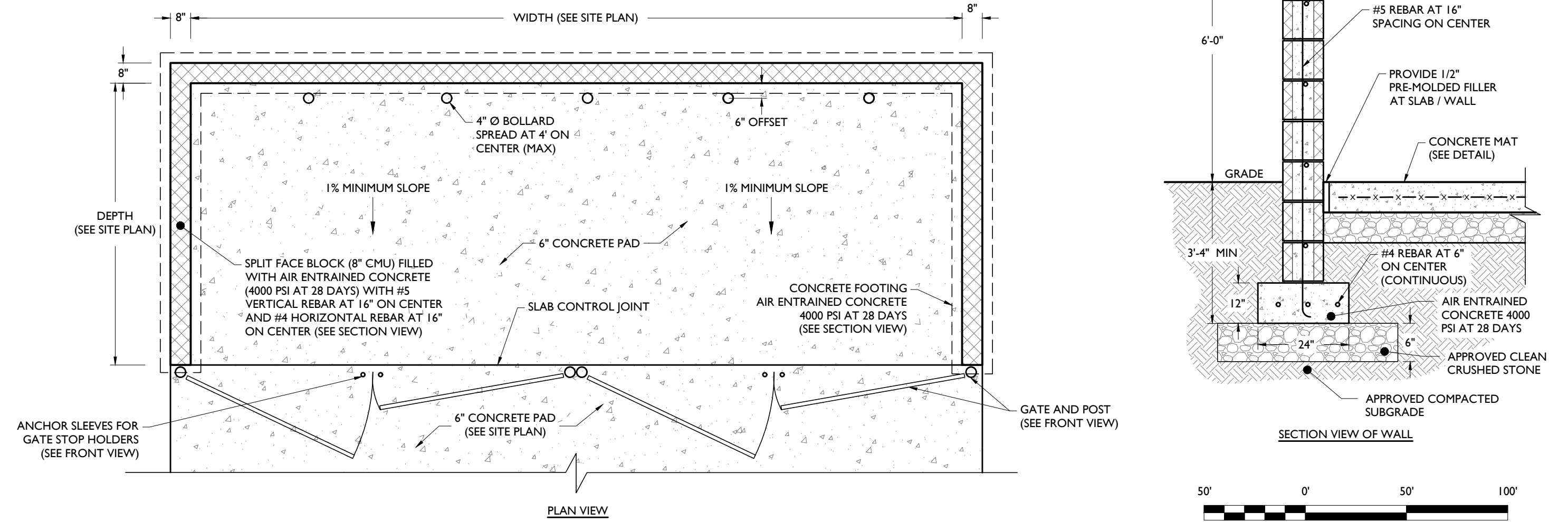
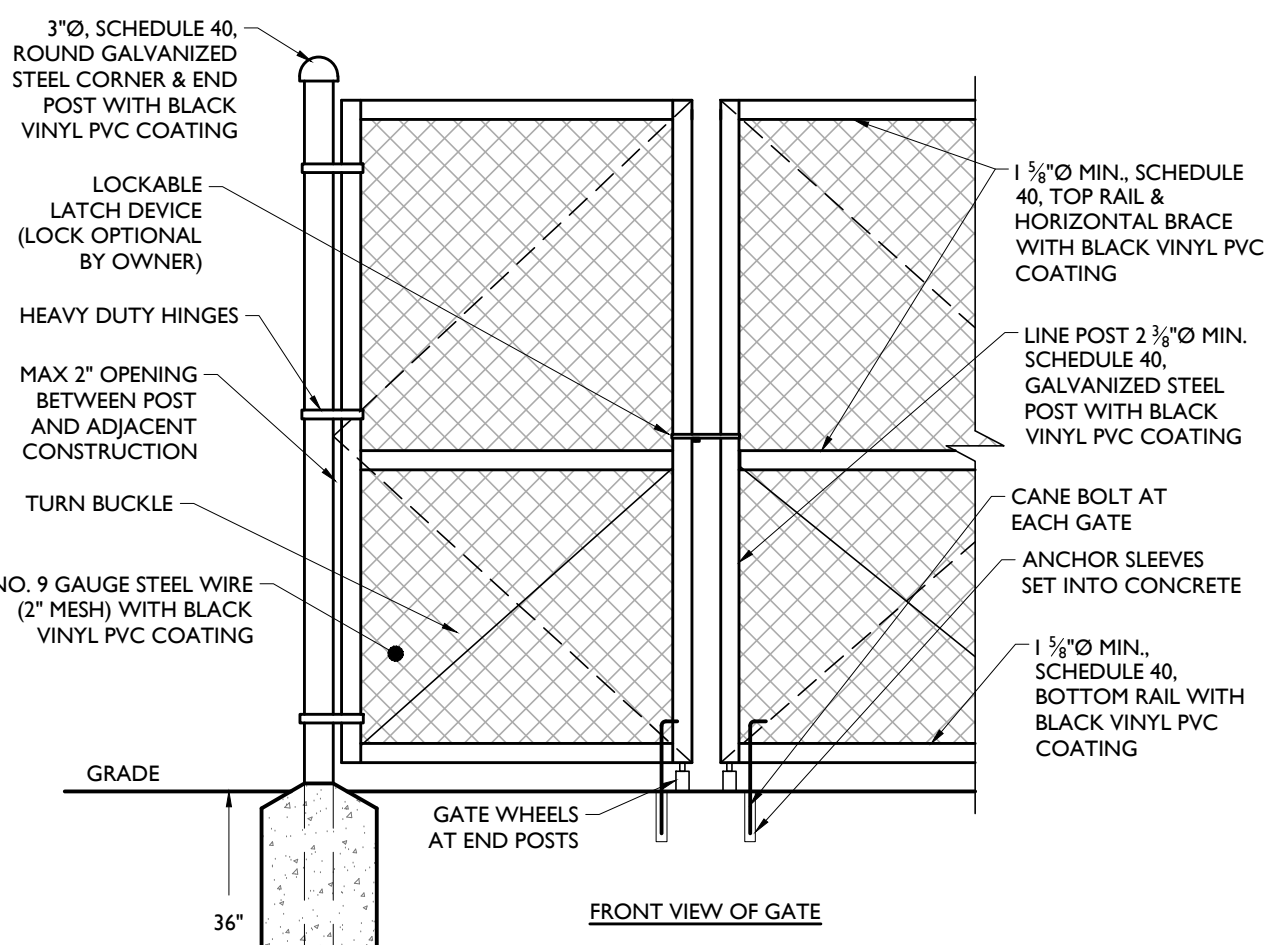
LANDSCAPING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 13.02.C-2	PARKING LOT LANDSCAPING: CURBED ISLANDS SHALL BE A MINIMUM OF 200 SF 1 TREE PER EVERY 8 PARKING SPACES (408 SURFACE SPACES) (1 TREE / 8 SPACES) = 51 TREES	PROVIDED 60 PROPOSED TREES 47 EXISTING TREES TOTAL: 107 TREES
§ 13.02.D-2	ROW GREENBELT: MINIMUM WIDTH: 10 FT 1 DECIDUOUS TREE PER 30 LF (1,483 LF) (1 TREE / 30 LF) = 49 TREES	PROVIDED 6 PROPOSED TREES 43 EXISTING TREES TOTAL: 49 TREES
§ 13.02.E-1	SITE OPEN SPACE: 15% OF THE SITE AREA SHALL BE PRESERVED AS OPEN SPACE (710,825 SF) (0.15) = 106,624 SF	158,712 SF 22.3%
§ 13.02.E-1	SITE LANDSCAPING: (*) 15% OF THE SITE AREA SHALL BE LANDSCAPED (710,825 SF) (0.15) = 106,624 SF	110,226 SF 15.5%
§ 13.03.B	TRASH ENCLOSURE SCREENING: MINIMUM HEIGHT 6 FT CANNOT BE LOCATED IN A FRONT YARD SETBACK	6 FT NOT IN SETBACK

(*) DECIDUOUS TREES WITHIN GREENBELT SHALL BE A MINIMUM CALIPER OF TWO AND A HALF (2 1/2) INCHES OR GREATER
 (**) UP TO 25% OF THE REQUIRED LANDSCAPE AREA MAY BE BRINK, STONE, PAVERS, OR OTHER PUBLIC PLAZA ELEMENTS



ANTICIPATED TREE KEY		
PLANT KEY	COMMON NAME	BOTANICAL NAME
DECIDUOUS TREES		
	SUGAR MAPLE	ACER SACCHARUM (ACE. SAC.)
	LONDON PLANE	PLANTANUS X ACERIFOLIA (PLA. ACE.)
	BLACK GUM	NYSSA SYLVATICA (NYS. SYL.)
	HONEY LOCUST	GLEDISIA TRICANTHOS (GLE. TRI.)
EVERGREEN TREES		
	WHITE PINE	PINUS STROBUS (PIN. STO.)
	SPARTAN JUNIPER	JUNIPERUS CHINENSIS (JUN. CHI.)
	EMERALD GREEN ARBORVITAE	THUJA OCCIDENTALIS 'SMARAGD'

ANTICIPATED SHRUB KEY		
PLANT KEY	COMMON NAME	BOTANICAL NAME
	RED OSER DOGWOOD	CORNUS SERICEA (COR.)
	ARROWWOOD VIBURNUM	VIBURNUM DENTATUM (VIB.)
	GOLD FINGER POTENTILLA	POTENTILLA FRUTICOSA (POT.)
	COMMON BUGLE	AJUGA REPTANS (AJU.)
	FAT ALBERT SPRUCE	PICEA PUNGENS (PIC.)
	LIMELIGHT	HYDRANGEA PANICULATA (HYD.)
	DEGROOT SPIRE	THUJA OCCIDENTALIS (THJ.)
	INKBERRY HOLLY	ILEX QUARRA (ILG.)
	CREeping JENNY	LYSIMACHIA NUMMULARIA (LYS.)
	FEATHER REED GRASS	CAMAGROSTIS X ACUTIFLORA (CAM.)



NOTE: BLOCK COLOR TO MATCH BUILDING OR AS SPECIFIED BY OWNER

DOUBLE TRASH / RECYCLE ENCLOSURE DETAILS
NOT TO SCALE

RESUBMISSION FOR SITE PLAN APPROVAL
 FOR SITE PLAN APPROVAL
 FOR SITE PLAN APPROVAL
 RESUBMISSION FOR SPA APPROVAL
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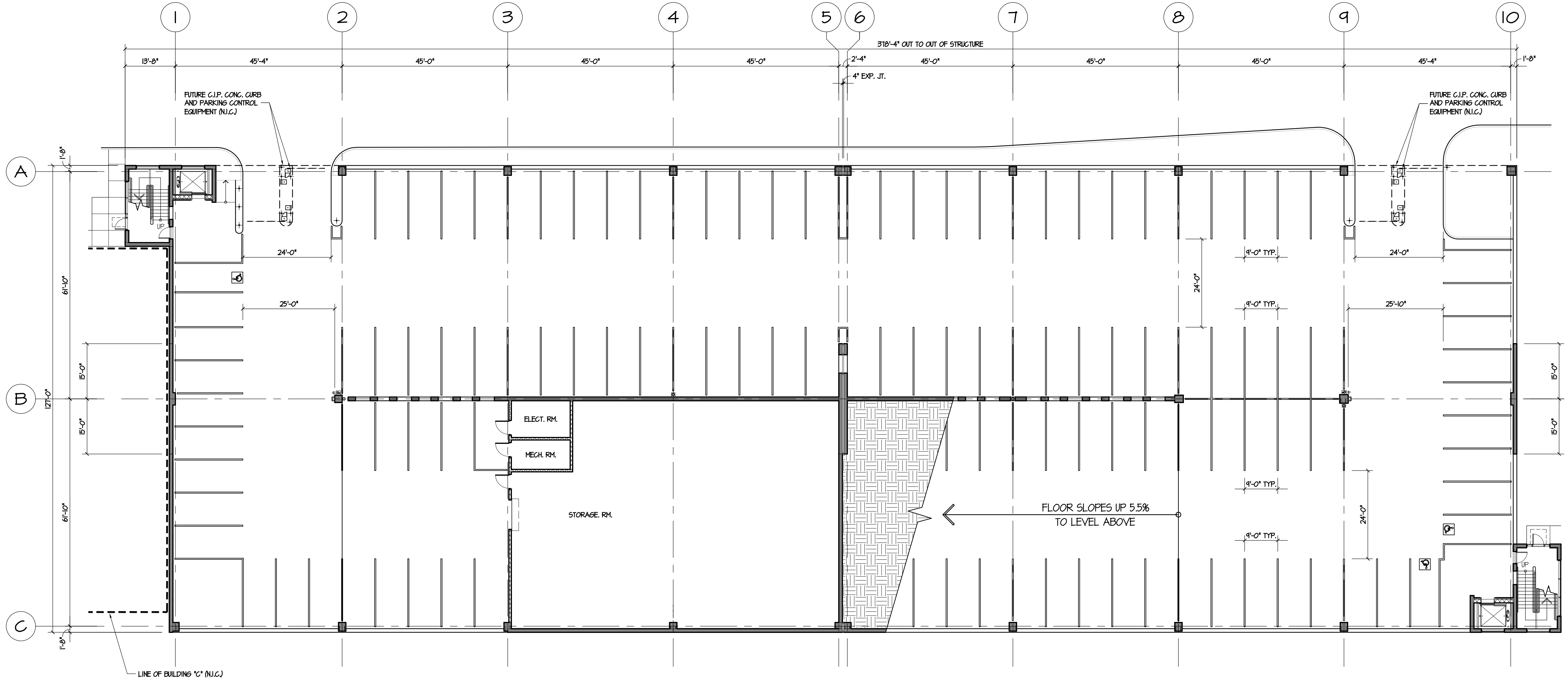
TITLE: LANDSCAPING PLAN

DRAWING: C-9

PROJECT ID: M-19301

KELLY PARKING STRUCTURE

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 PARKING CONSULTANTS
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 WWW.RICHASSOC.COM



LEVEL I STRIPING & SIGNAGE PLAN
 SCALE: 1/16" = 1'-0"

CAR COUNT SUMMARY			
LEVEL	STANDARD	BARRIER FREE	TOTAL
1	120	3	123
2	146	4	150
3	146	4	150
4	127	2	129
TOTAL	539	13	552

Date	ISSUED FOR:	By
04-19-2022	100% SCHEMATIC DESIGN	

Sheet Title:
LEVEL 1 STRIPING + SIGNAGE PLAN

Drawn By	RTM	Detail Number Detail Sheet
Checked By	RJK	
File Name	2225A-2_1	
Plot Date		

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File No	2225	NORTH
Date		
Scale	AS NOTED	
Last Rev.		

Sheet Number:
A - 2.1

KELLY PARKING STRUCTURE

RICH & ASSOCIATES
 PARKING CONSULTANTS
 ARCHITECTS • ENGINEERS • PLANNERS
 26677 NORTHWESTERN HWY.
 SUITE 208
 SOUTHFIELD, MI 48033
 (248) 353-5050 (813) 949-9860
 WWW.RICHASSOC.COM

Date	ISSUED FOR:	By
04-19-2022	100% SCHEMATIC DESIGN	

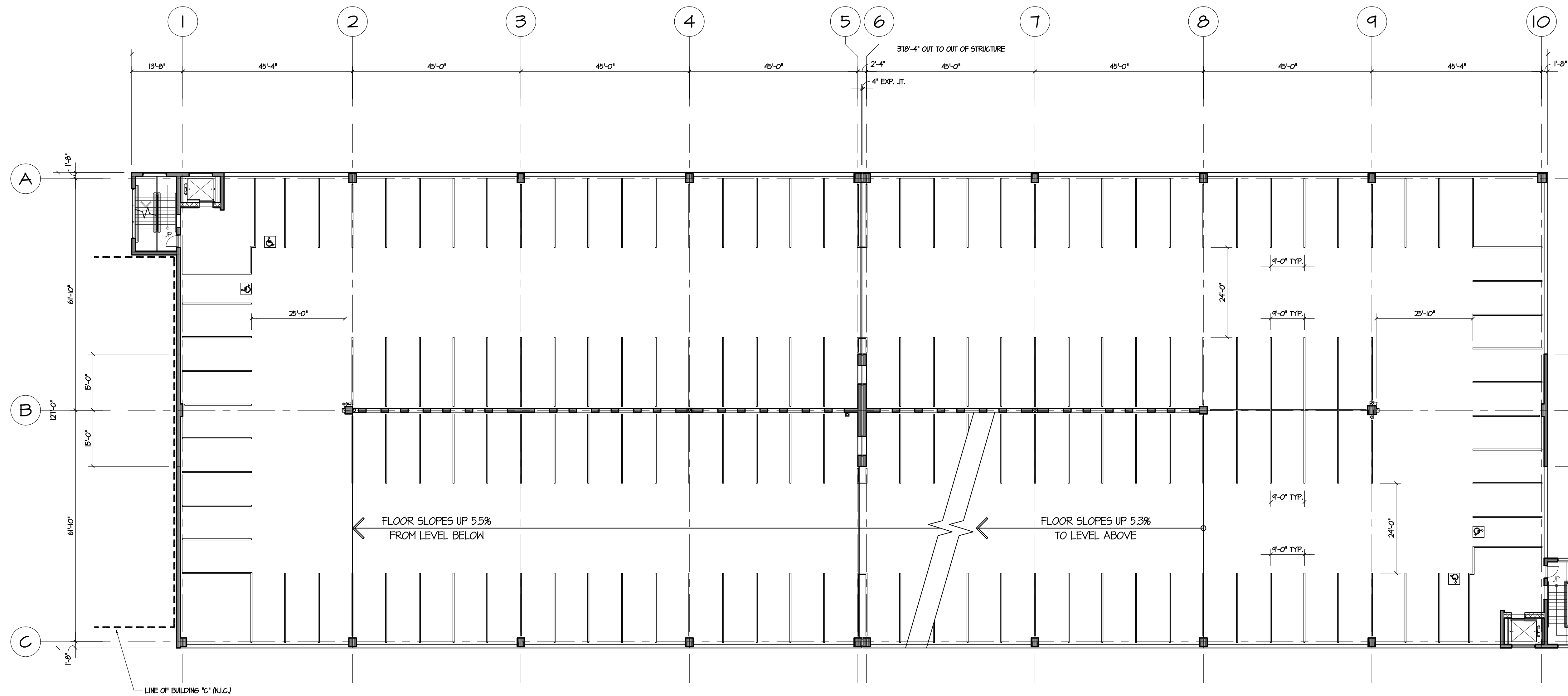
Sheet Title:
**LEVEL 2
 STRIPING +
 SIGNAGE PLAN**

Drawn By	RTM	Detail Number Detail Sheet
Checked By	RJK	
File Name	2225A-2_2	
Plot Date		

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File No	2225	NORTH
Date		
Scale	AS NOTED	
Last Rev.		

Sheet Number:
A - 2.2

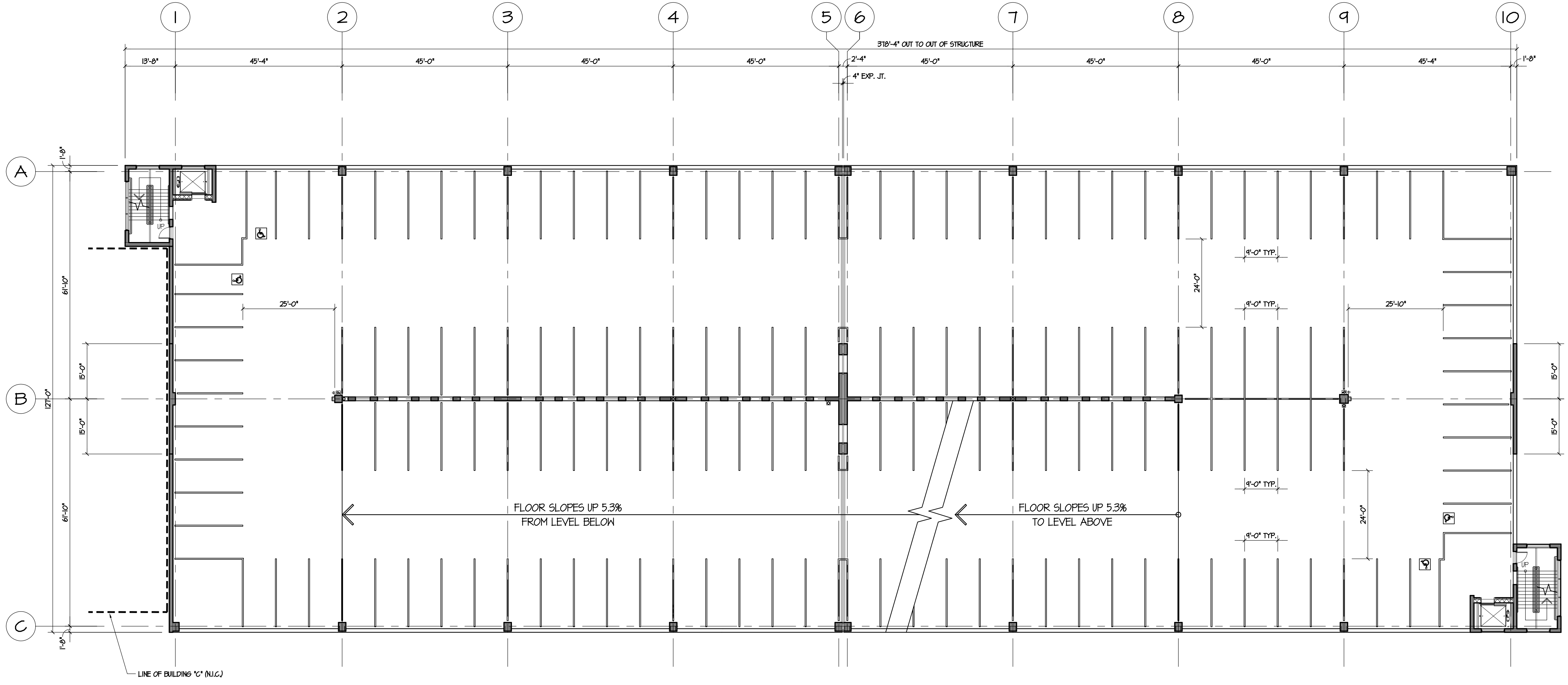


LEVEL 2 STRIPING & SIGNAGE PLAN
 SCALE: 1/16" = 1'-0"

CAR COUNT SUMMARY			
LEVEL	STANDARD	BARRIER FREE	TOTAL
1	120	3	123
2	146	4	150
3	146	4	150
4	127	2	129
TOTAL	539	13	552

KELLY PARKING STRUCTURE

RICH & ASSOCIATES
 PARKING CONSULTANTS
 ARCHITECTS - ENGINEERS - PLANNERS
 26677 NORTHWESTERN HWY.
 SUITE 208
 SOUTHFIELD, MI 48033
 SOUTHFIELD, MI, LUTZ, FL
 (248) 353-5050 (813) 949-9860
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LEVEL 3 STRIPING & SIGNAGE PLAN
 SCALE: 1/16" = 1'-0"

CAR COUNT SUMMARY			
LEVEL	STANDARD	BARRIER FREE	TOTAL
1	120	3	123
2	146	4	150
3	146	4	150
4	127	2	129
TOTAL	539	13	552

Date	ISSUED FOR:	By
04-19-2022	100% SCHEMATIC DESIGN	

Sheet Title:
LEVEL 3 STRIPING + SIGNAGE PLAN

Drawn By	RTM	Detail Number Detail Sheet
Checked By	RJK	
File Name	2225A-2_3	
Plot Date		

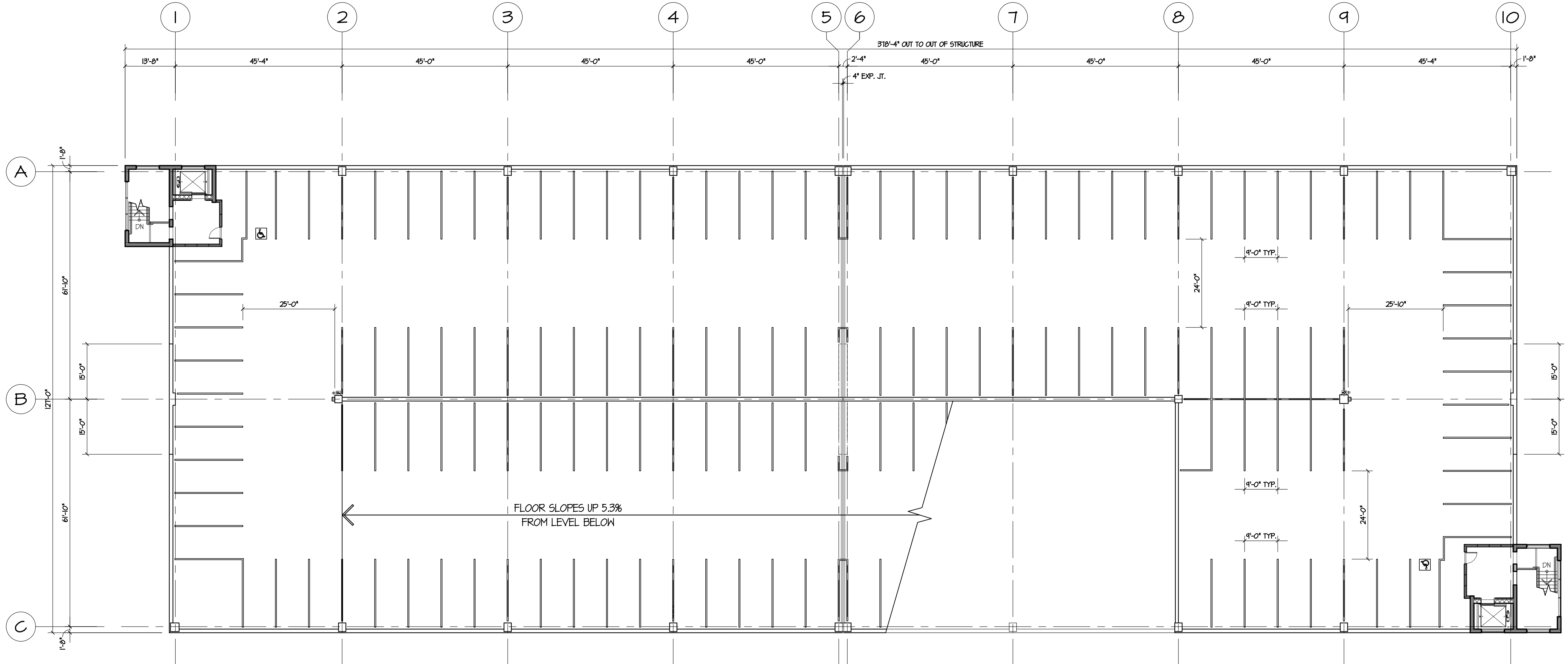
All matter contained herein, including drawings, written matter, notes or computations, are the creation of Rich and Associates, Inc. for the specific project and shall remain the property of Rich and Associates, Inc. No disclosure thereof to any third party shall be made to any person, firm, corporation, agency or organization, including news media without the written consent of Rich and Associates, Inc. except as required for the general completion of the specific project.

File No	2225	NORTH
Date		
Scale	AS NOTED	
Last Rev.		

Sheet Number:
A - 23

KELLY PARKING STRUCTURE

RICH & ASSOCIATES
 PARKING CONSULTANTS
 ARCHITECTS - ENGINEERS - PLANNERS
 26677 NORTHWESTERN HWY.
 SUITE 208
 SOUTHFIELD, MI 48033
 SOUTHFIELD, MI, LUTZ, FL
 (248) 353-5050 (813) 949-9860
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LEVEL 4 (ROOF) STRIPING & SIGNAGE PLAN
 SCALE: 1/16" = 1'-0"

CAR COUNT SUMMARY			
LEVEL	STANDARD	BARRIER FREE	TOTAL
1	120	3	123
2	146	4	150
3	146	4	150
4	127	2	129
TOTAL	539	13	552

Date	ISSUED FOR:	By
04-19-2022	100% SCHEMATIC DESIGN	

Sheet Title:
**LEVEL 4 (ROOF)
 STRIPING +
 SIGNAGE PLAN**

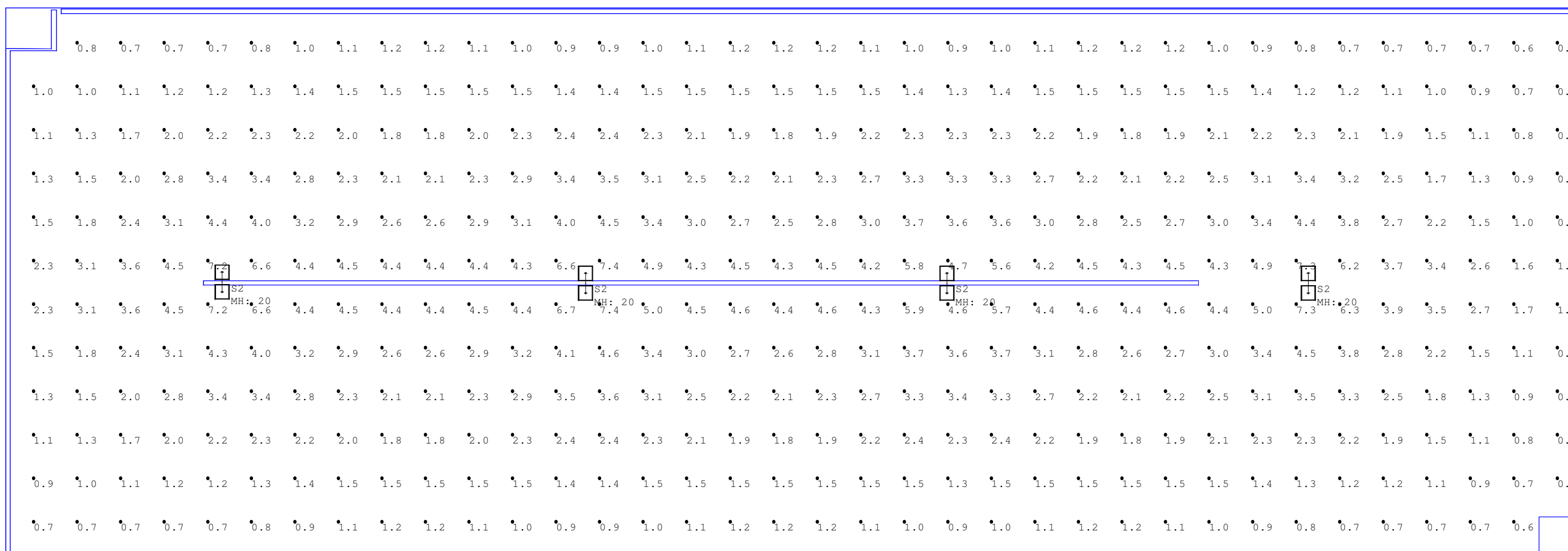
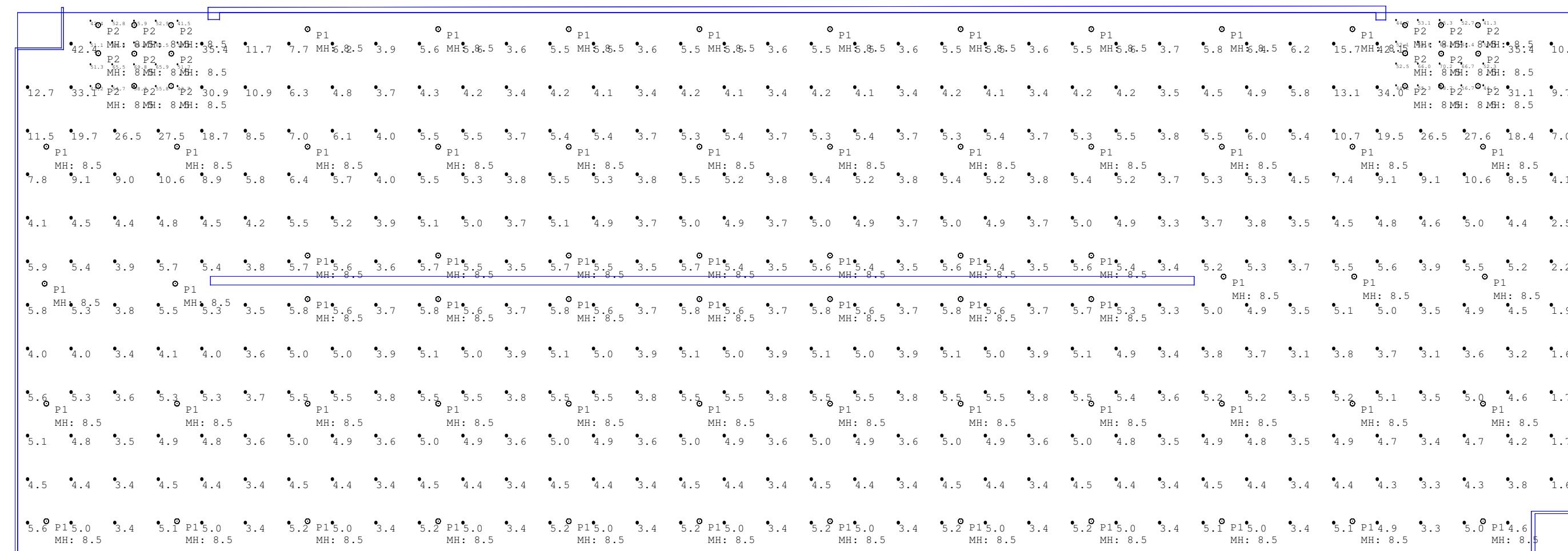
Drawn By	RTM	Detail Number Detail Sheet
Checked By	RJK	
File Name	2225A-2_4	
Plot Date		

All matter contained herein, including drawings, written matter, notes or computations, are the creation of Rich and Associates, Inc. for the specific project and shall remain the property of Rich and Associates, Inc. No disclosure thereof in any form whatsoever shall be made to any person, firm, corporation, agency or organization, including news media without the written consent of Rich and Associates, Inc. except as required for the special completion of the specific project.

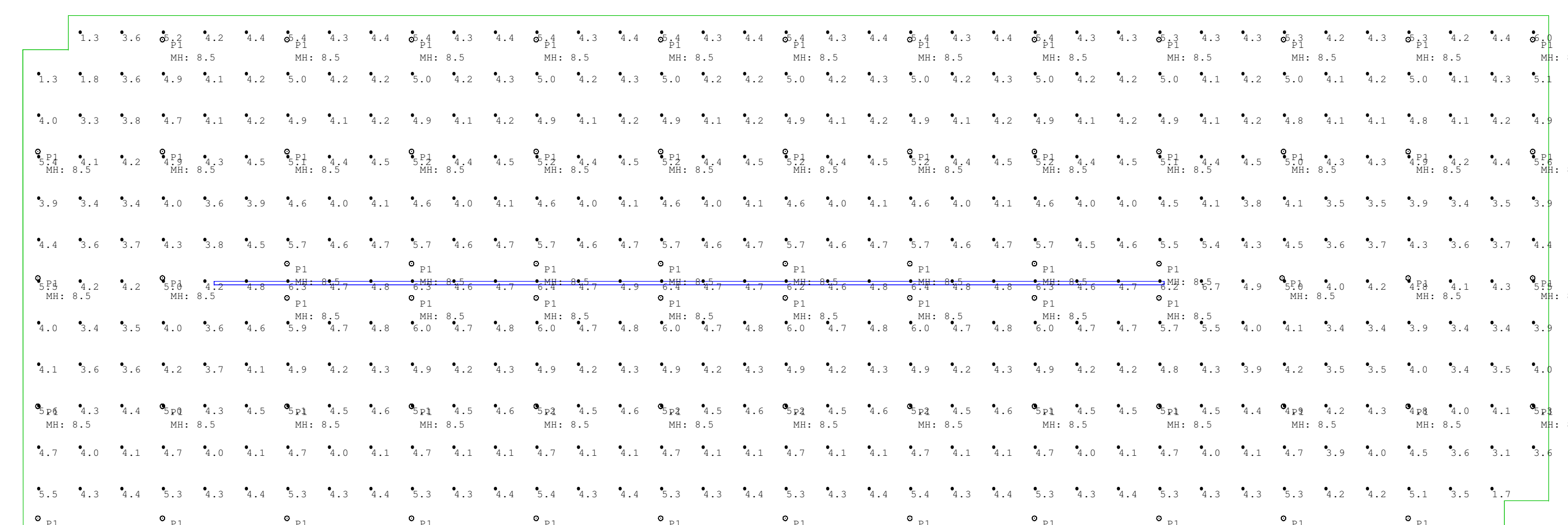
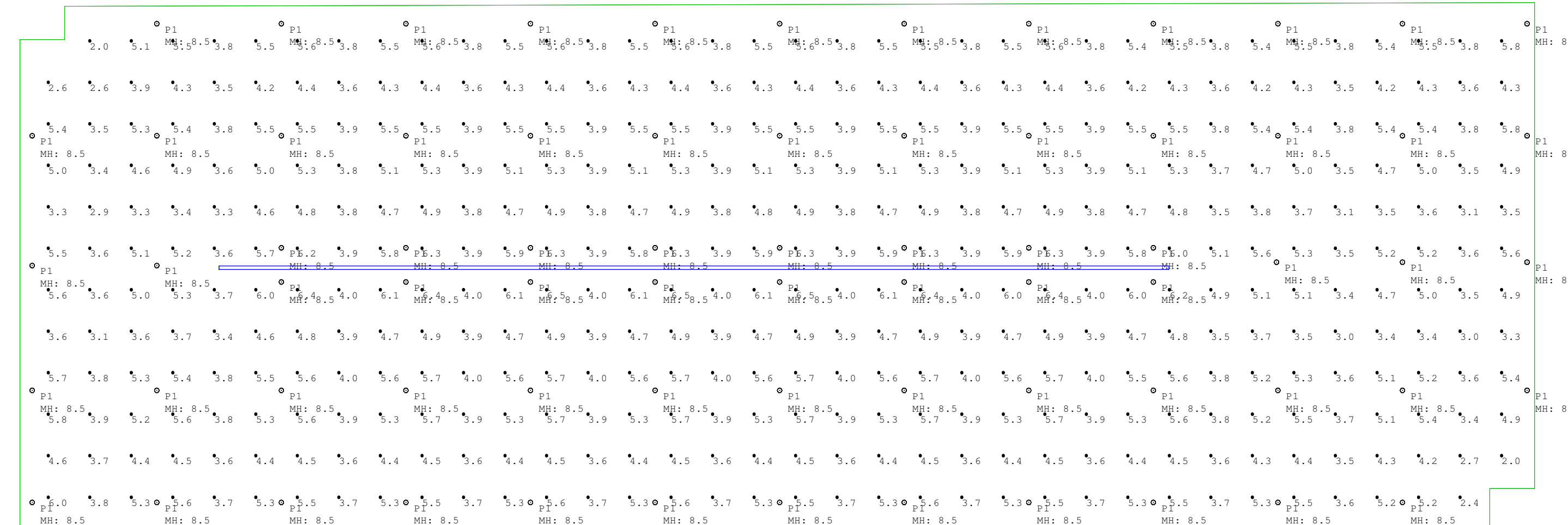
File No	2225	NORTH
Date		
Scale	AS NOTED	
Last Rev.		

Sheet Number:
A - 2.4

FIRST FLOOR



SECOND FLOOR



FOURTH FLOOR/ROOF

THIRD FLOOR

Luminaire Schedule					
Symbol	Qty	Label	LLF	Description	Lum. Watts
⊙	206	P1	0.920	COOPER MCGRAW-EDISON# TT-D1-740-U-WQ	28
⊙	18	P2	0.920	COOPER MCGRAW-EDISON# TT-D5-740-U-WQ	74.7
⊕	4	S2	0.920	COOPER LUMARK# PRV-PA2A-740-U-T4W (TWIN ASSEMBLY)	112

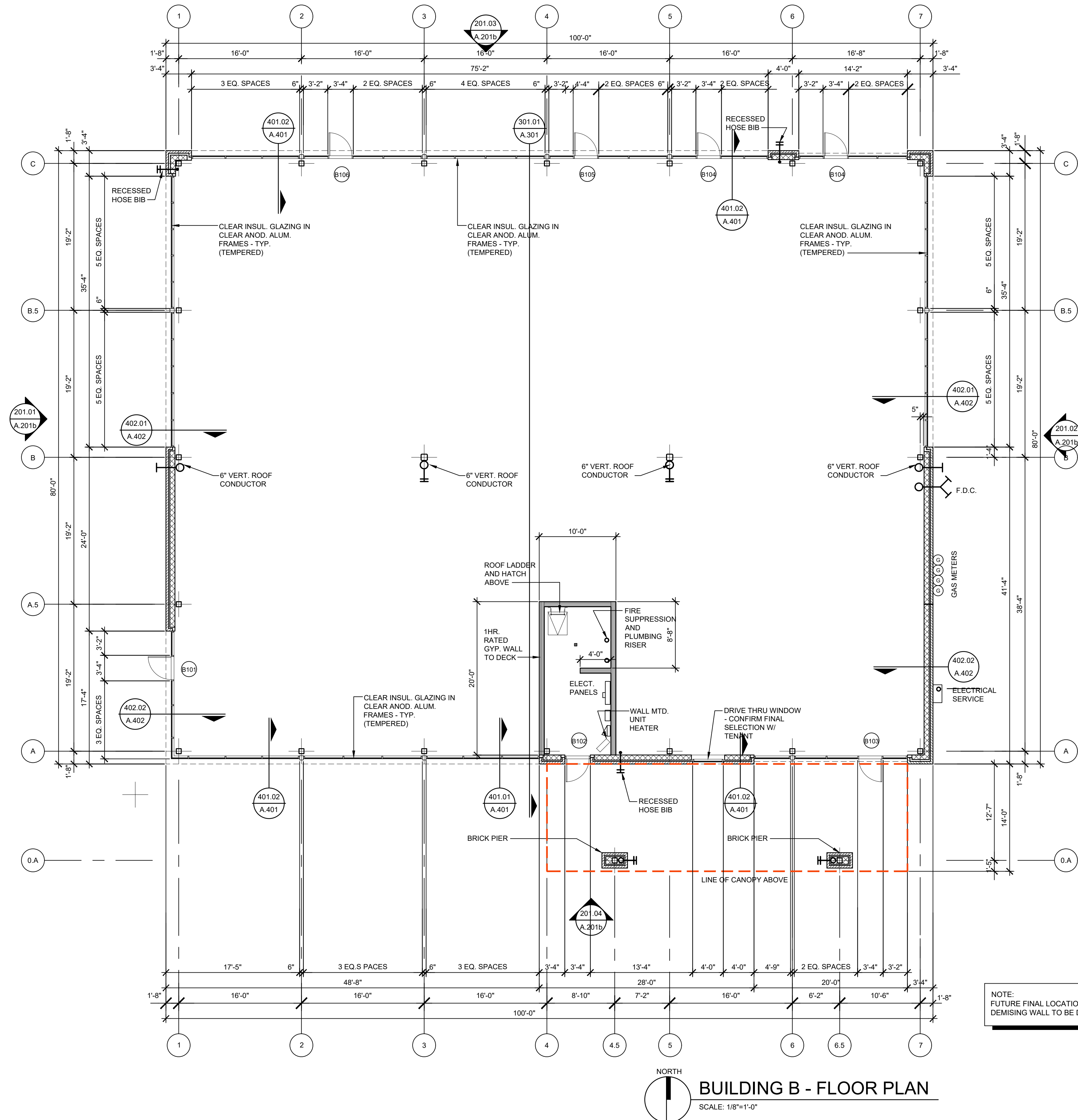
Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
1st Floor - At Grade	Illuminance	Fc	5.79	42.4	1.6	3.62
1st Floor Entrance & Exit A	Illuminance	Fc	55.72	70.2	41.3	1.35
1st Floor Entrance & Exit B	Illuminance	Fc	55.21	69.8	41.5	1.68
2nd Floor - At Grade	Illuminance	Fc	4.64	6.5	2.0	2.32
3rd Floor - At Grade	Illuminance	Fc	4.50	6.7	1.3	3.46
4th Floor - At Grade	Illuminance	Fc	2.37	7.4	0.5	4.74



#	Date	Comments

Drawn By: ACM
 Checked By:
 Date: 10/27/2020
 Scale: NOT TO SCALE

CROOKS & BIG BEAVER
 MIXED USED SITE
 4 STORY PARKING STRUCTURE



NOTE:
FUTURE FINAL LOCATION OF
DEMISING WALL TO BE DETERMINED

NORTH
BUILDING B - FLOOR PLAN
SCALE: 1/8"=1'-0"

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
REVIEW	02.17.22
BIDS	02.22.22
OWNER REVISIONS	03.25.22
PERMITS	05.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

**RETAIL
BUILDING B
FLOOR PLAN**



2058.20

A.101b

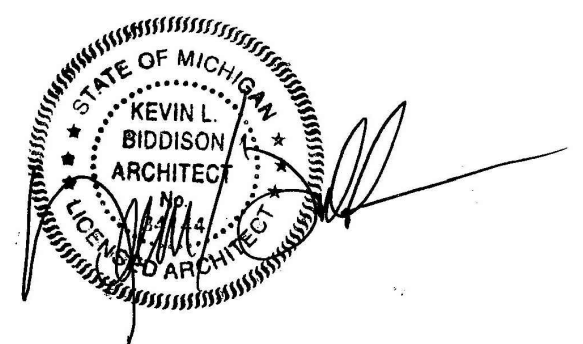
PROPOSED BUILDING FOR:

**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

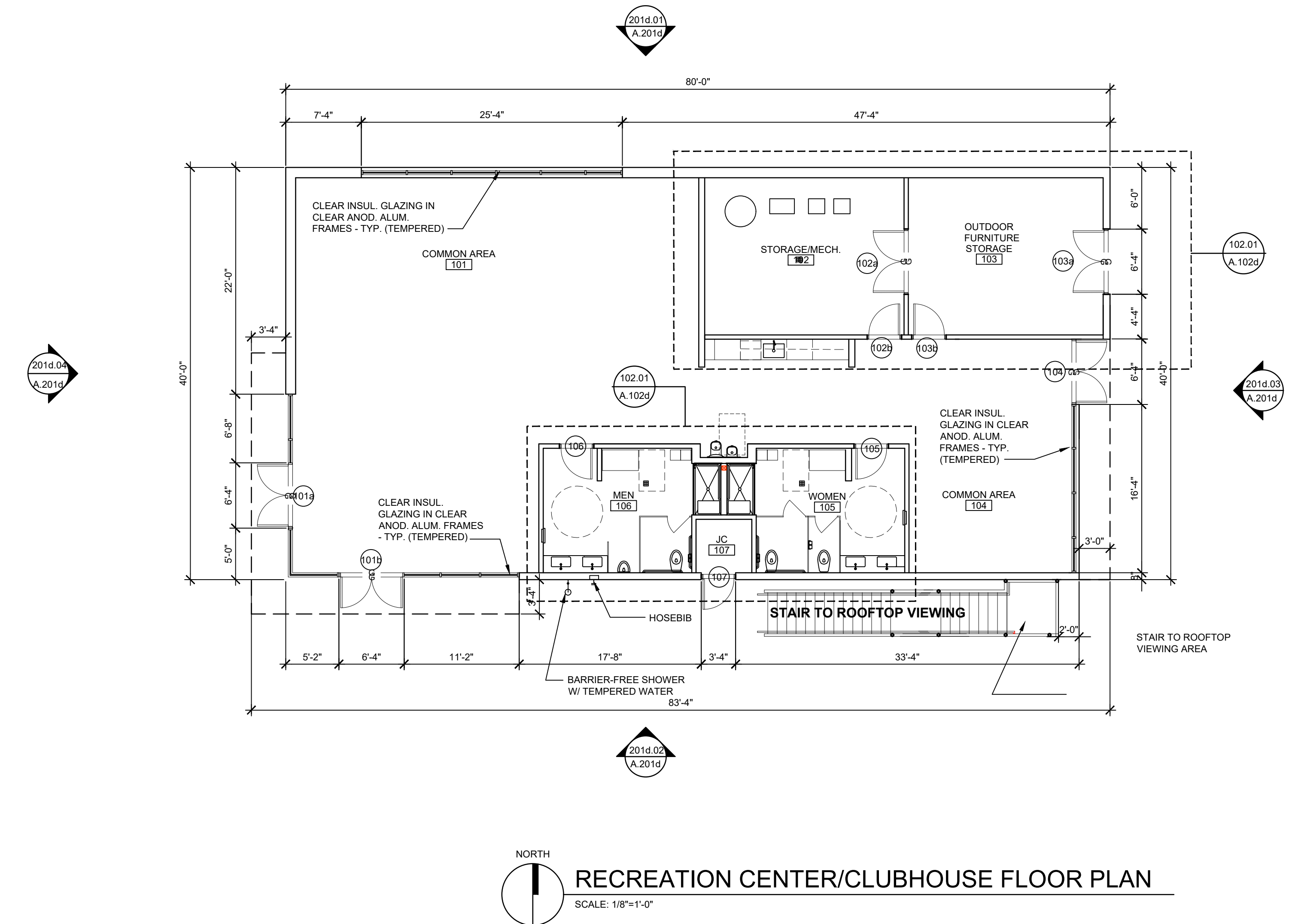
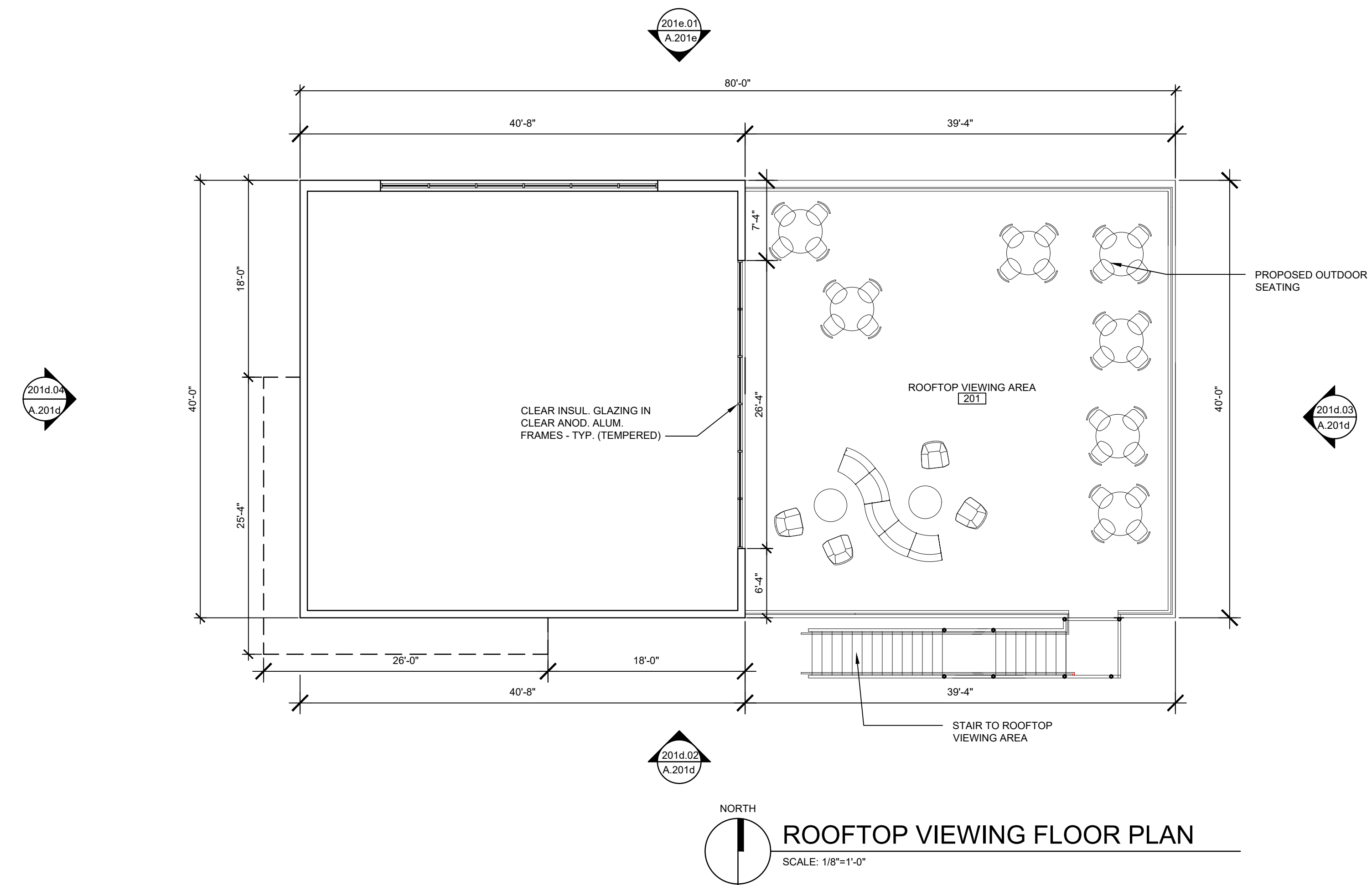
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

**BUILDING D
RECREATION CNTR.
PLANS**

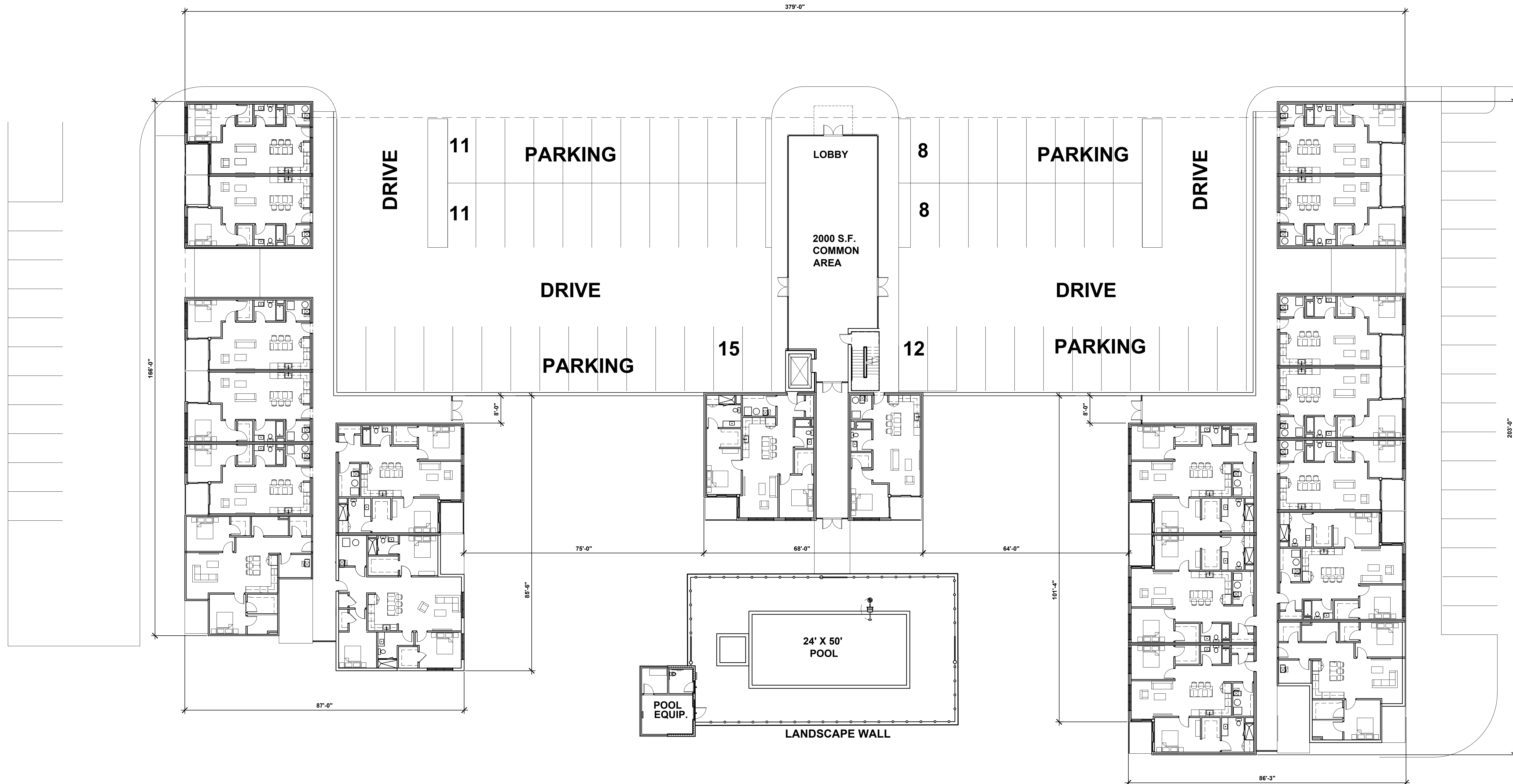


2058.20

A.101d



PARKING STRUCTURE



Project title

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/c

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title

**RESIDENTIAL
FIRST FLOOR PLAN**



Project no

2058.20

Sheet no

A.101e



Project title

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued d/r/c

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title

**RESIDENTIAL
2ND-5TH FLOOR PL**

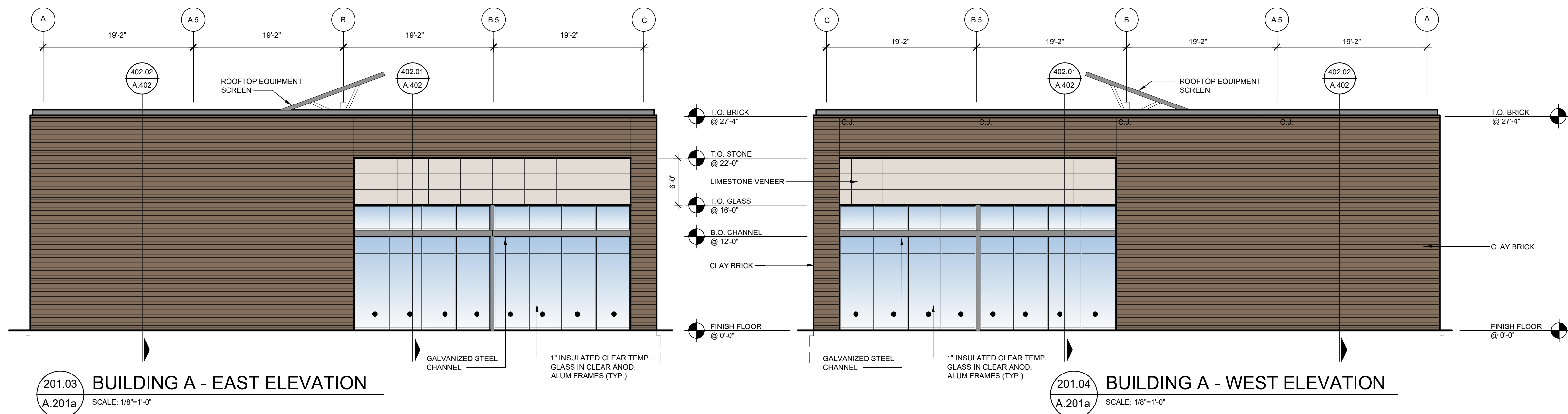
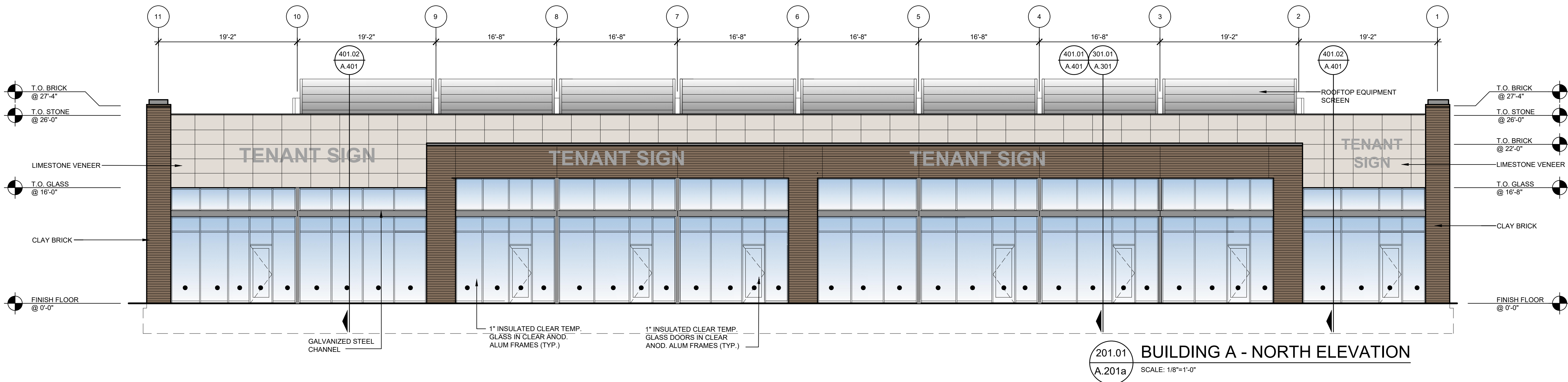
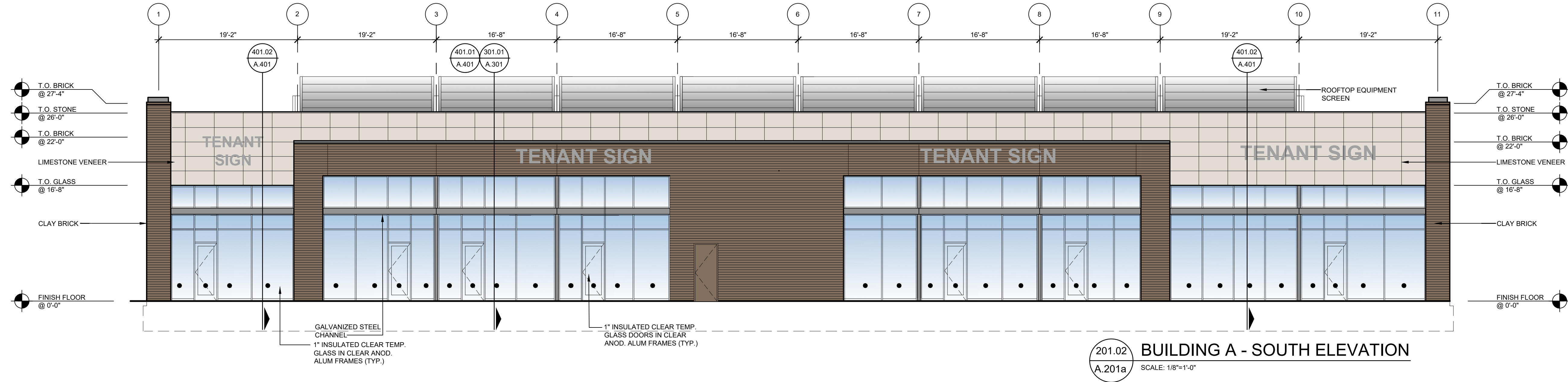


Project no

2058.20

Sheet no

A.102e



● DENOTES CLEAR TEMPERED GLASS
Project title

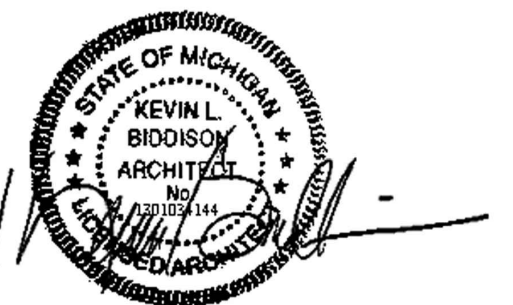
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

Issued drc/c

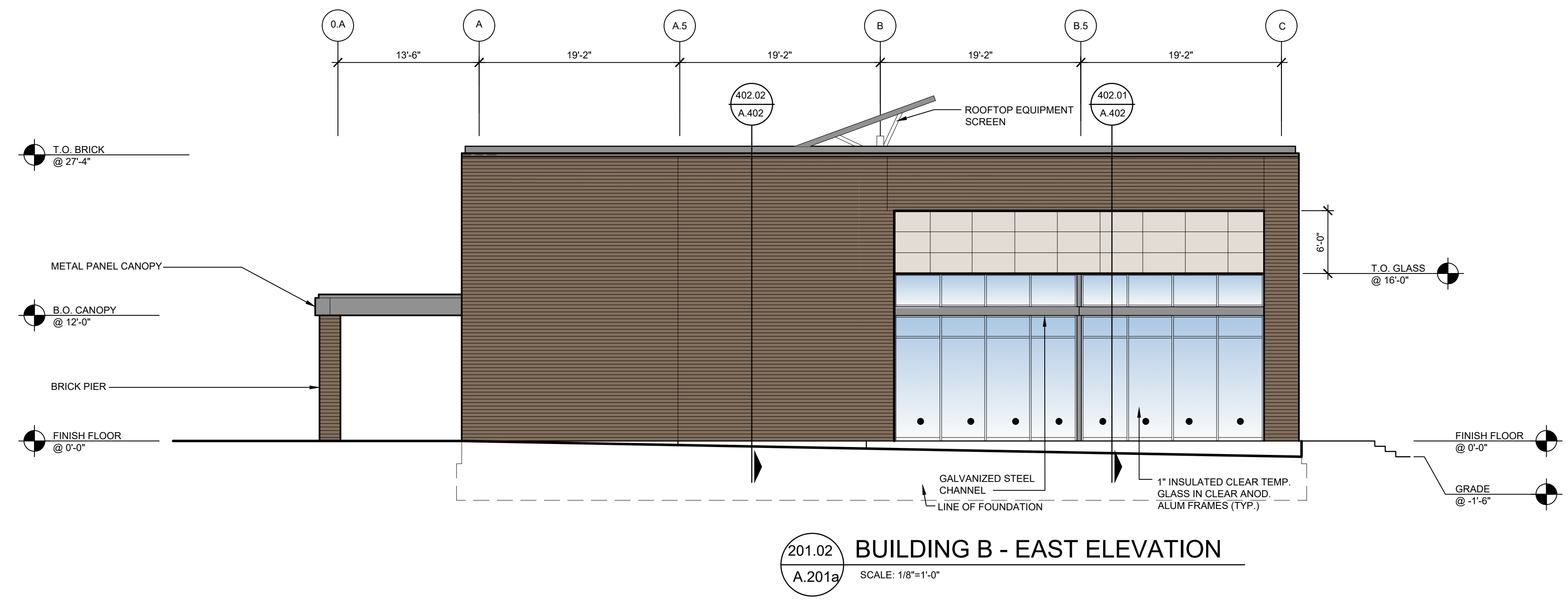
PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL REVIEW	02.11.22
BIDS	02.17.22
OWNER REVISIONS	02.22.22
PERMITS	03.24.22
SITE PLAN APPROVAL	05.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title
**RETAIL
BUILDING A
ELEVATIONS**



Project no
2058.20

Sheet no
A.201A



● DENOTES CLEAR TEMPERED GLASS

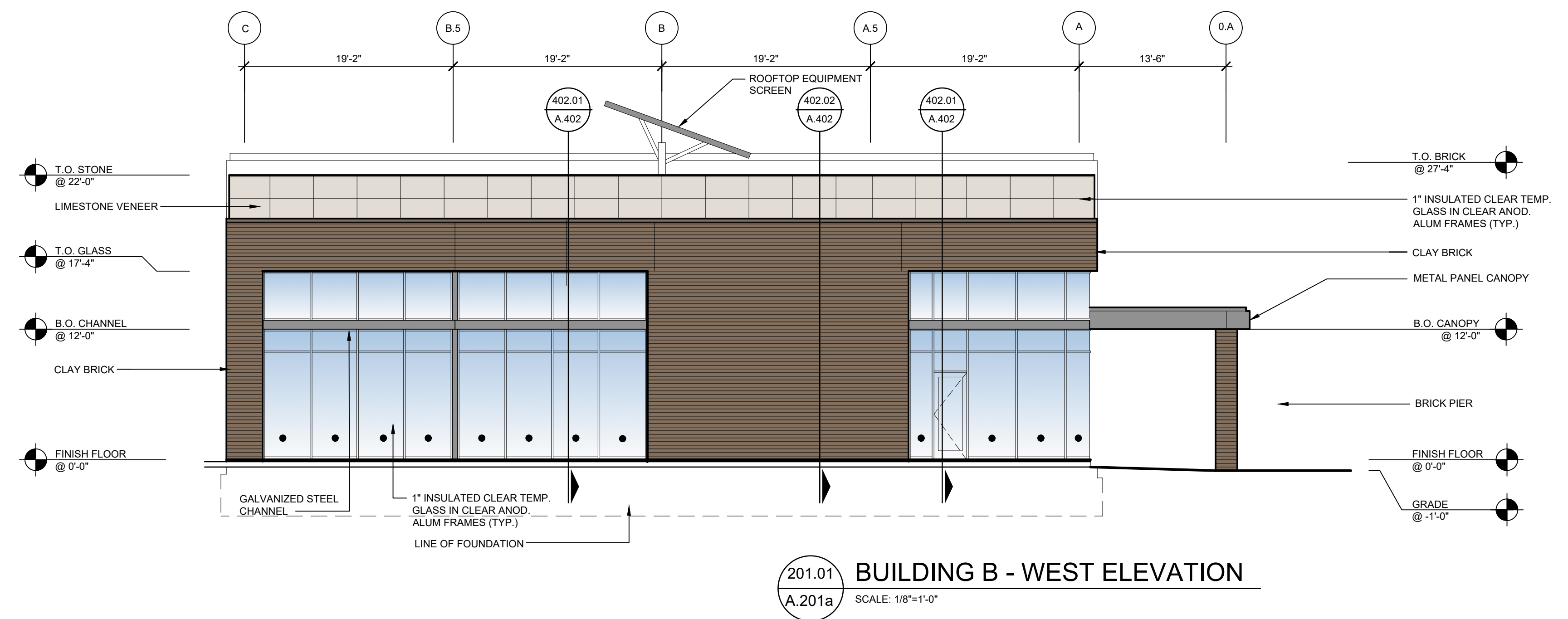
Project title

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

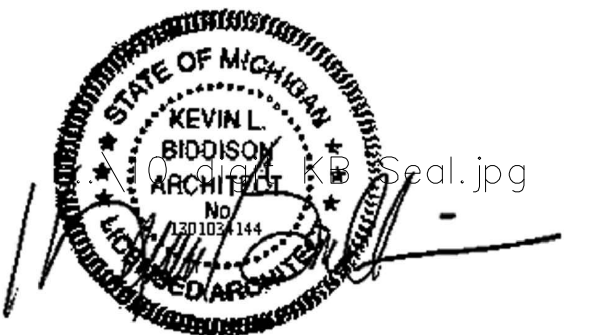
Issued dr/c

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN APPROVAL	07.02.20
REVIEW	02.11.22
BIDS	02.17.22
OWNER REVISIONS	02.22.22
PERMITS	03.24.22
SITE PLAN APPROVAL	05.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23



Sheet title

**RETAIL
BUILDING B
ELEVATIONS**



Project no

2058.20

Sheet no

A.202b

● DENOTES CLEAR
TEMPERED GLASS

Project title

PROPOSED BUILDING FOR:

**Crooks & Big Beaver
Mixed Use
Redevelopment**

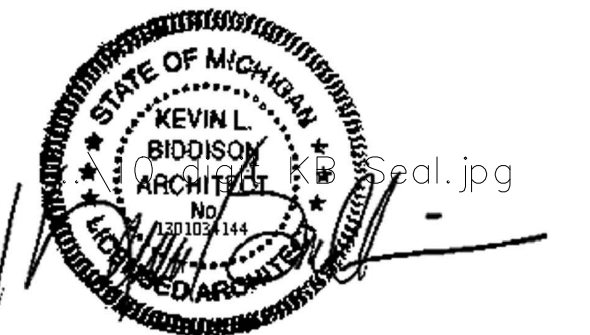
BIG BEAVER
TROY, MICHIGAN

Issued dr/c

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
REVIEW	02.17.22
BIDS	02.22.22
OWNER REVISIONS	03.24.22
PERMITS	05.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title

**RETAIL
BUILDING B
ELEVATIONS**

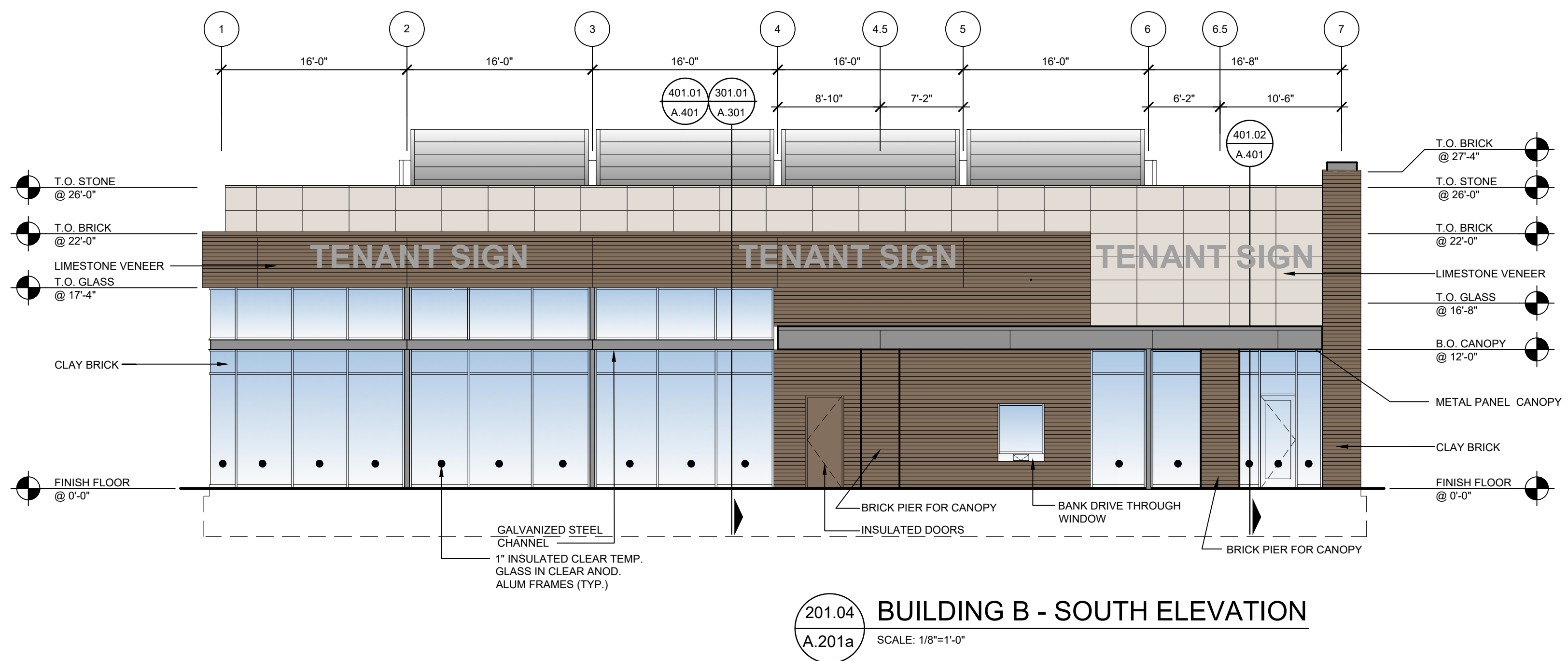


Project no

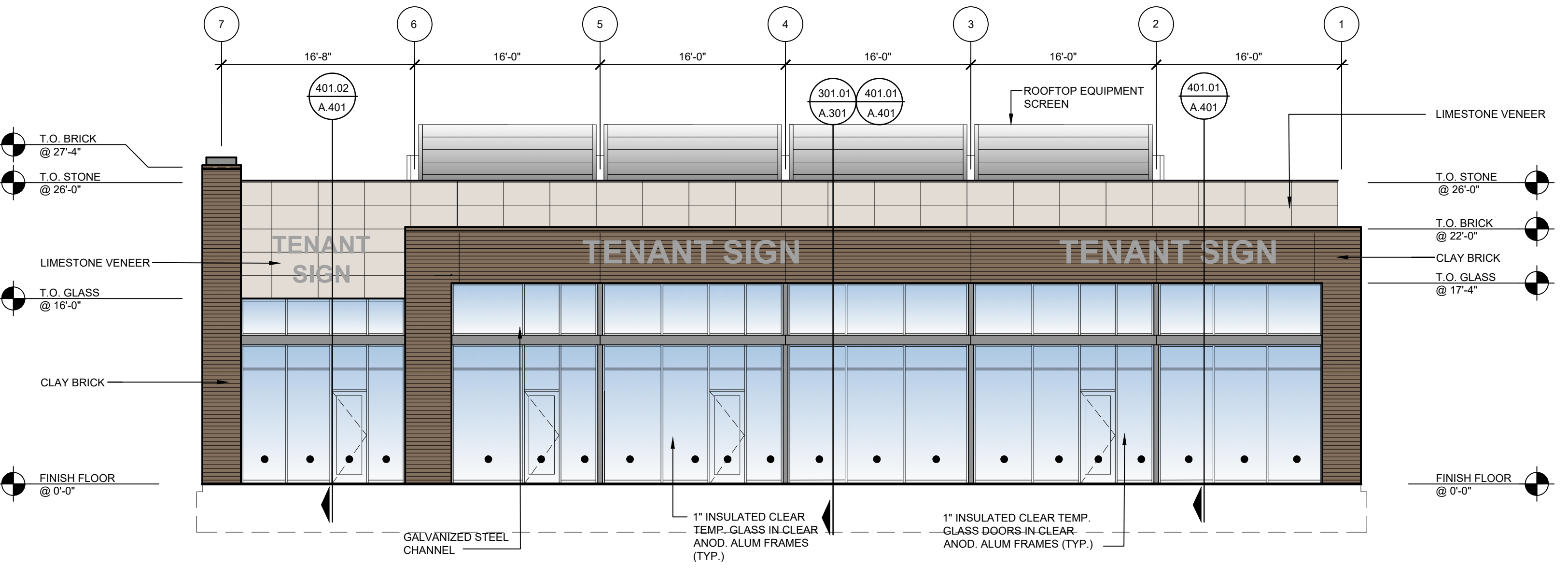
2058.20

Sheet no

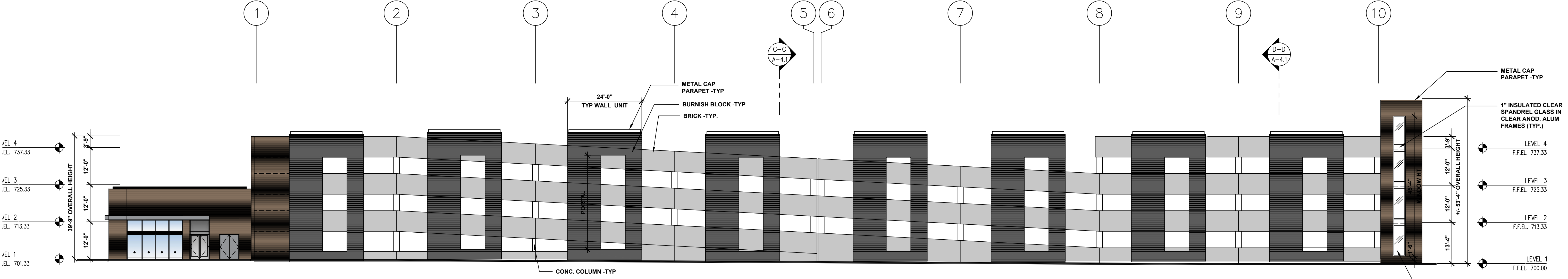
A.201b



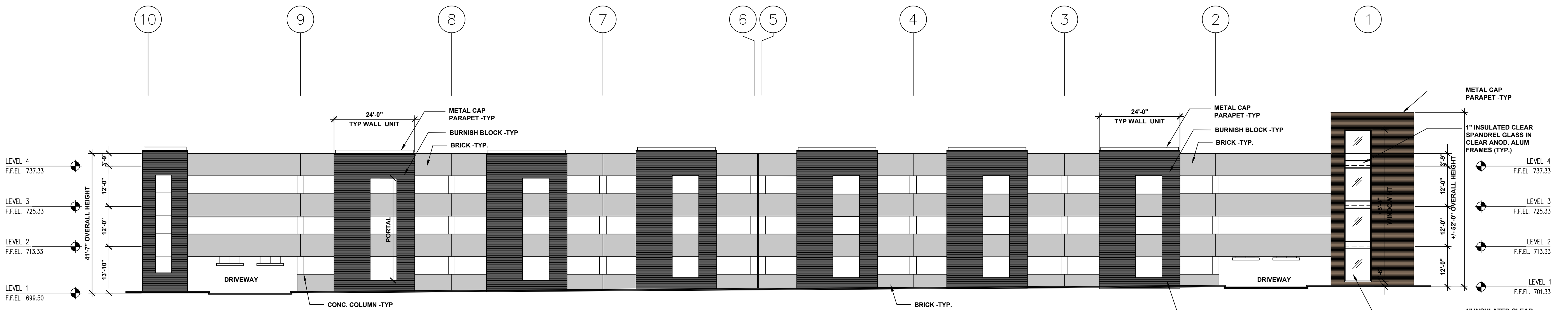
201.04 BUILDING B - SOUTH ELEVATION
A.201a SCALE: 1/8"=1'-0"



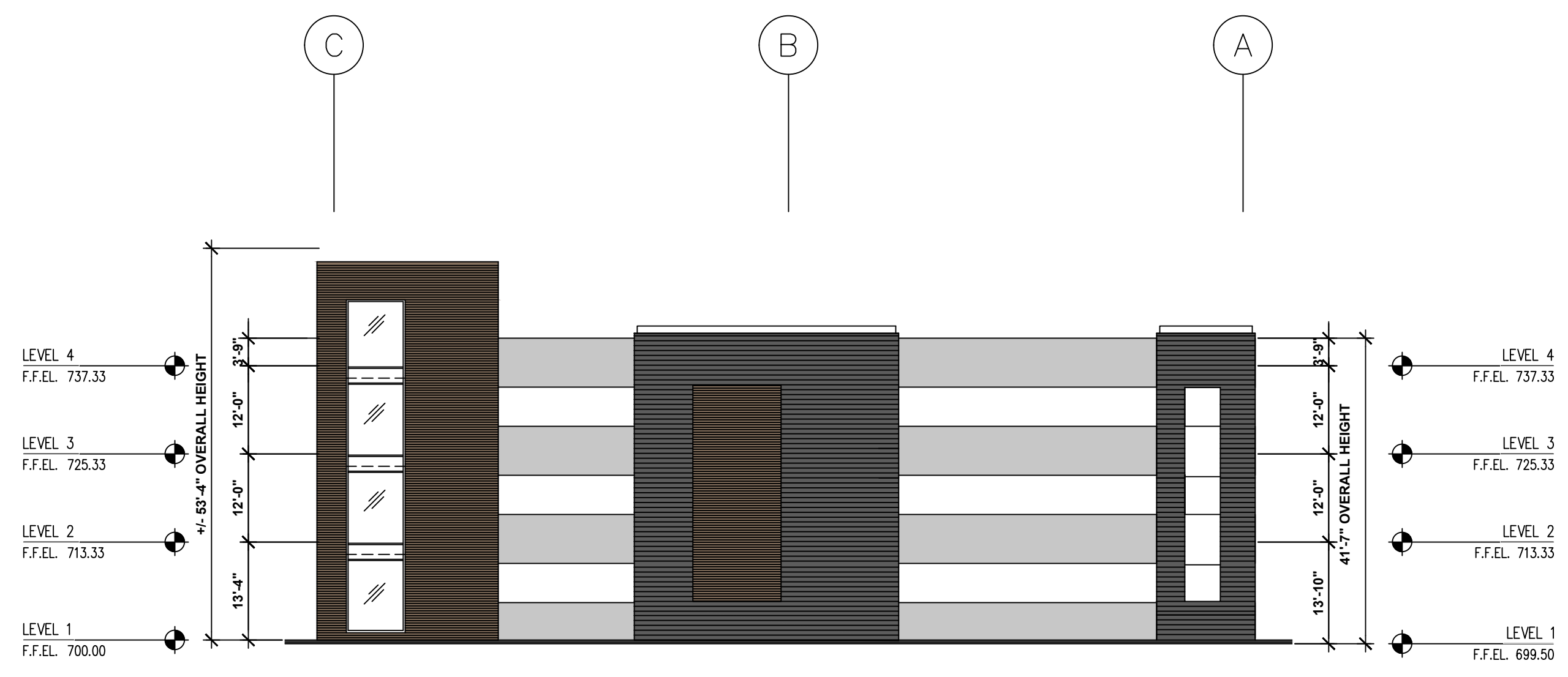
201.03 BUILDING B - NORTH ELEVATION
A.201a SCALE: 1/8"=1'-0"



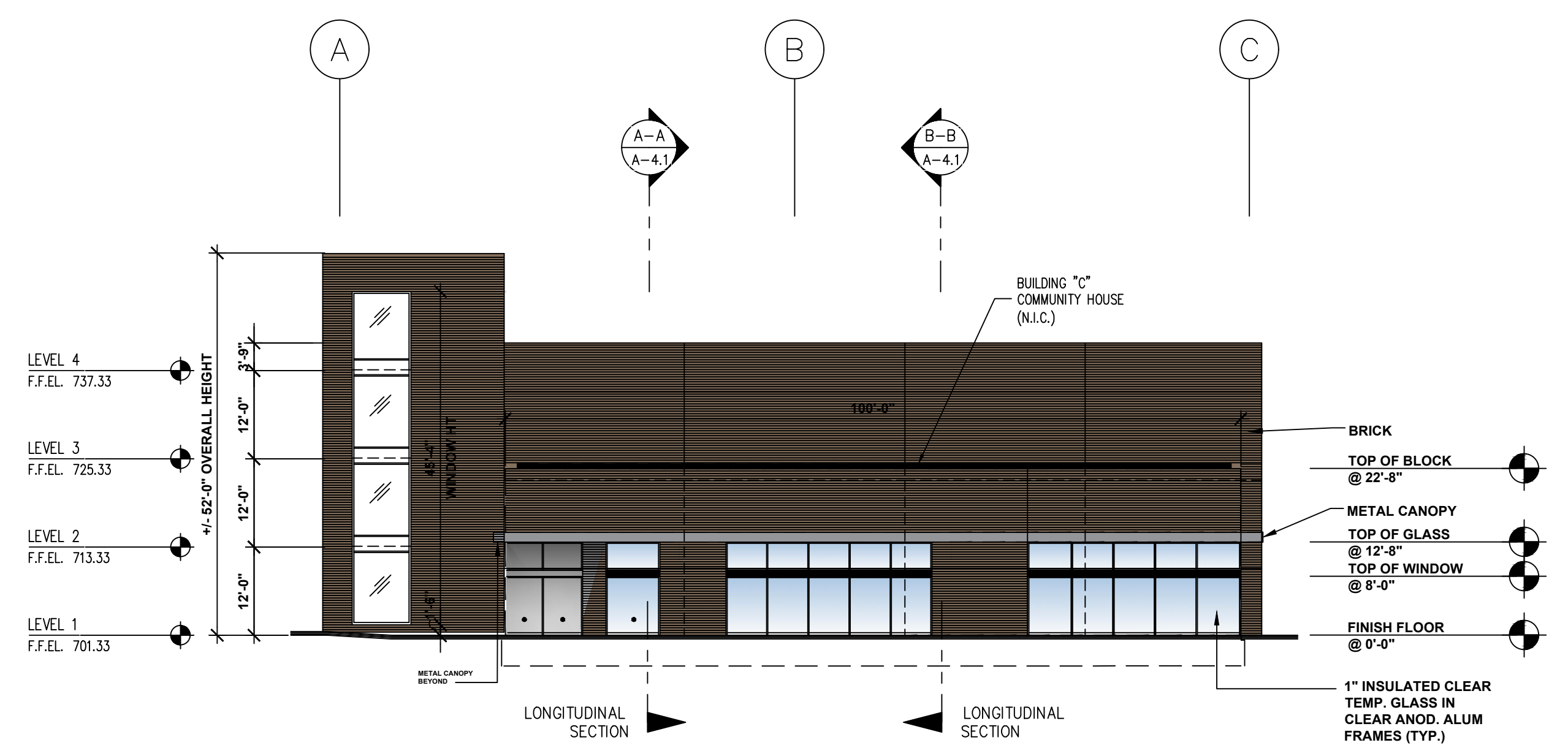
SOUTH ELEVATION
SCALE: 1/16" = 1'-0"
4
A-3.1



NORTH ELEVATION
SCALE: 1/16" = 1'-0"
4
A-3.1



WEST ELEVATION
SCALE: 1/16" = 1'-0"
3
A-3.1



WEST ELEVATION
SCALE: 1/16" = 1'-0"
3
A-3.1

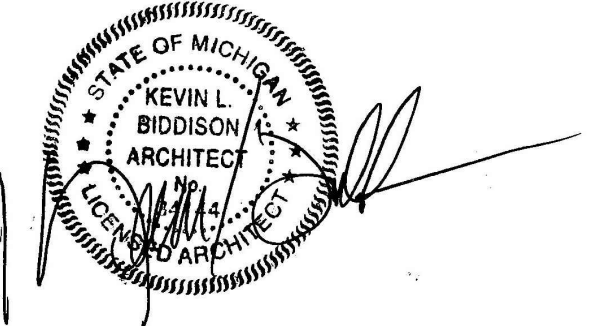
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

● DENOTES CLEAR
TEMPERED GLASS

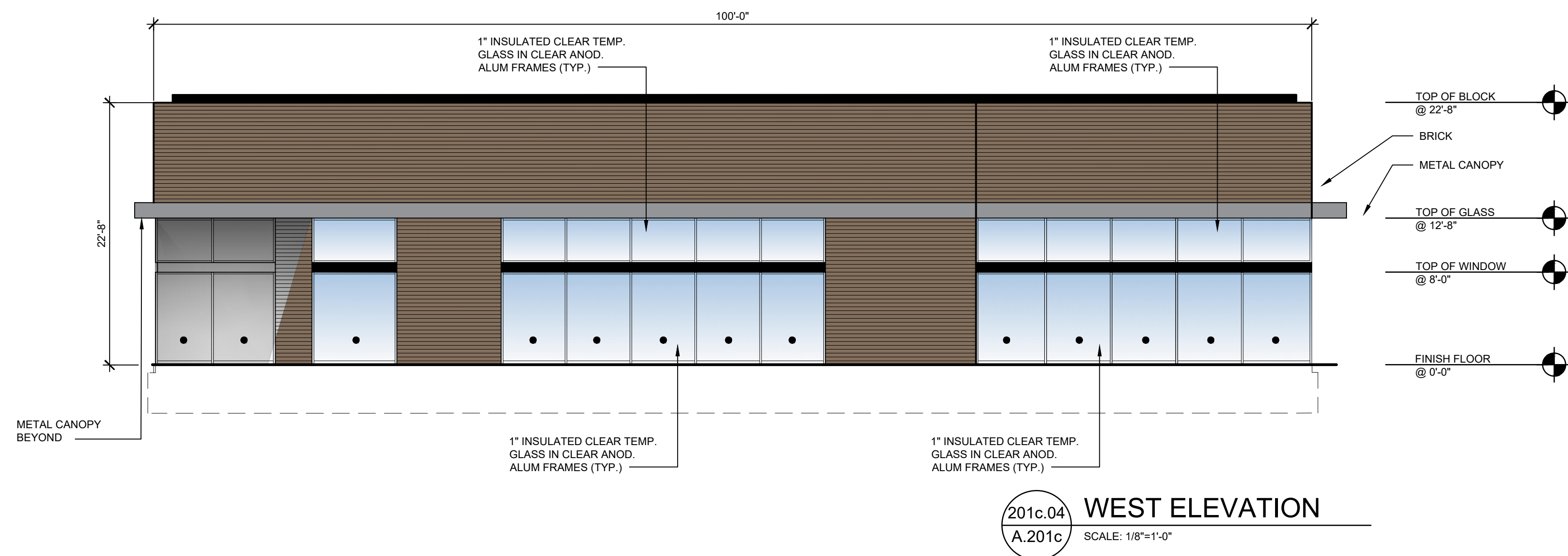
SITE PLAN REVIEW 04.10.20
SITE PLAN APPROVAL 02.11.22
SITE PLAN APPROVAL 05.31.22
SITE PLAN APPROVAL 02.07.23

**BUILDING C
COMMUNITY HOUSE
ELEVATIONS**

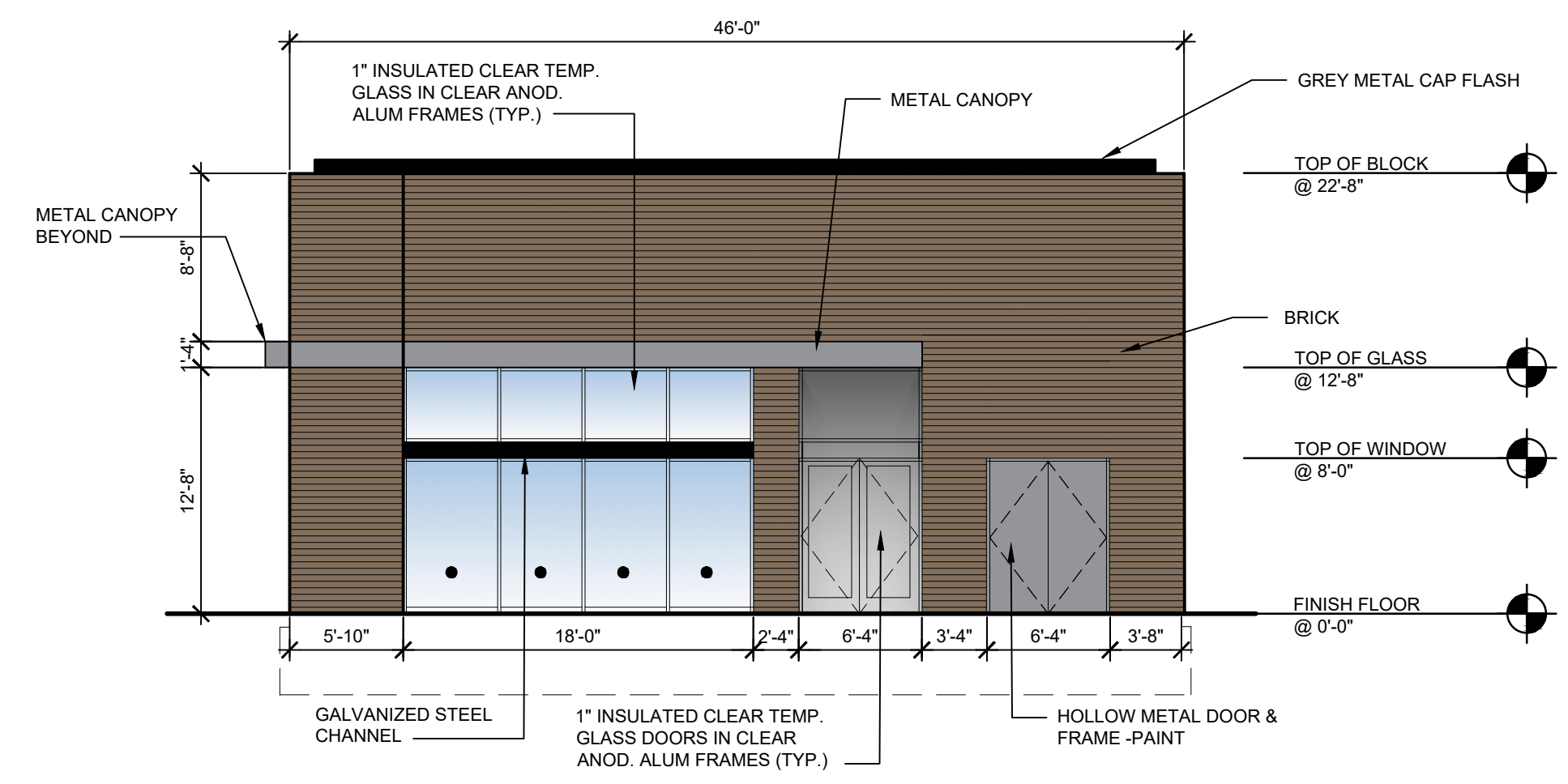


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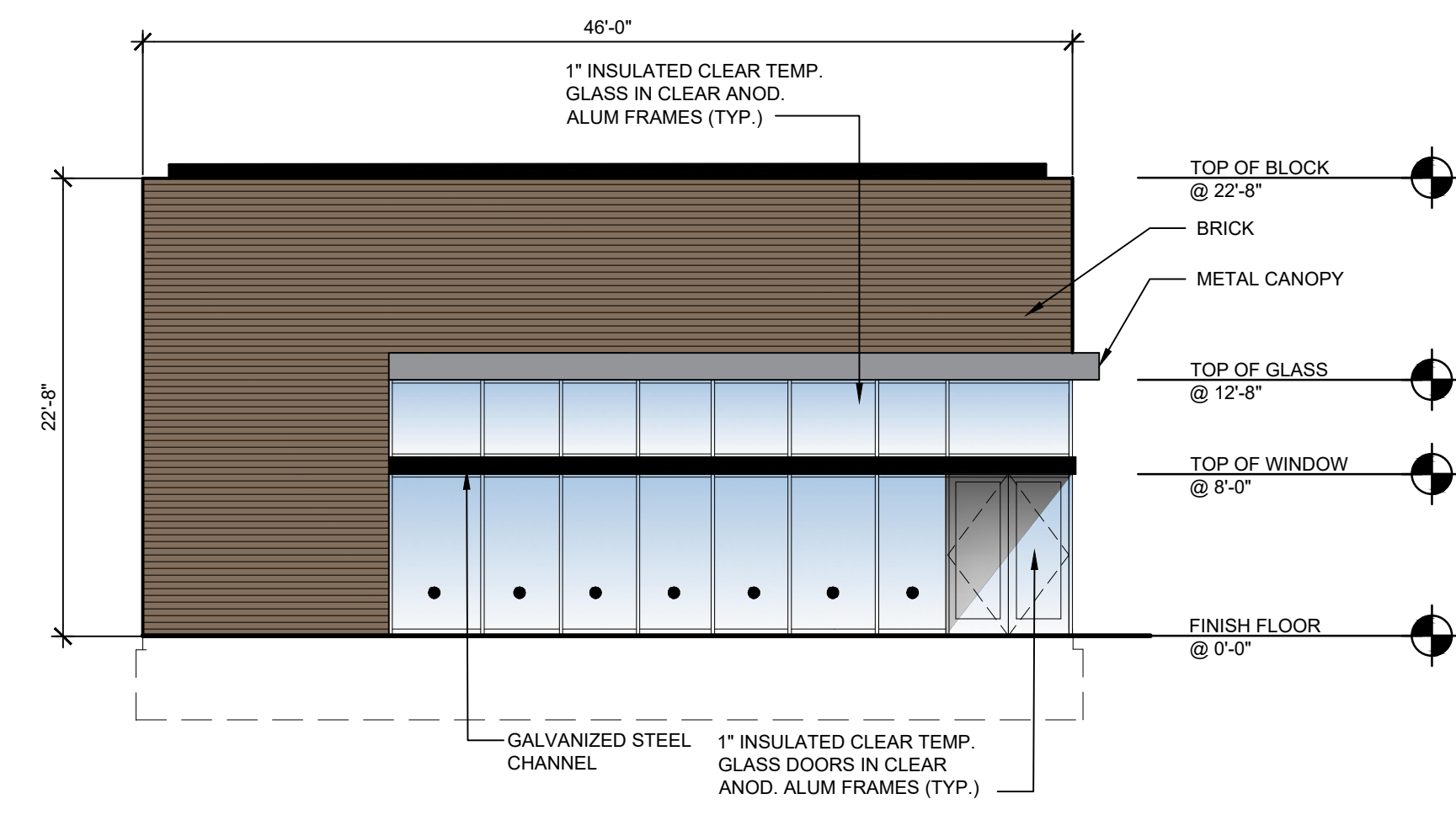
A.202c



201c.04
A.201c WEST ELEVATION
SCALE: 1/8"=1'-0"



201c.01
A.201c SOUTH ELEVATION
SCALE: 1/8"=1'-0"



201c.02
A.201c NORTH ELEVATION
SCALE: 1/8"=1'-0"

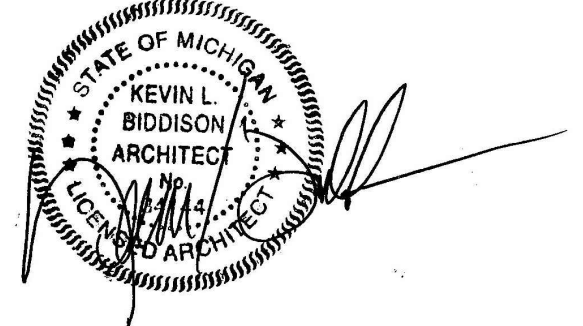
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

BIG BEAVER
TROY, MICHIGAN

• DENOTES CLEAR
TEMPERED GLASS

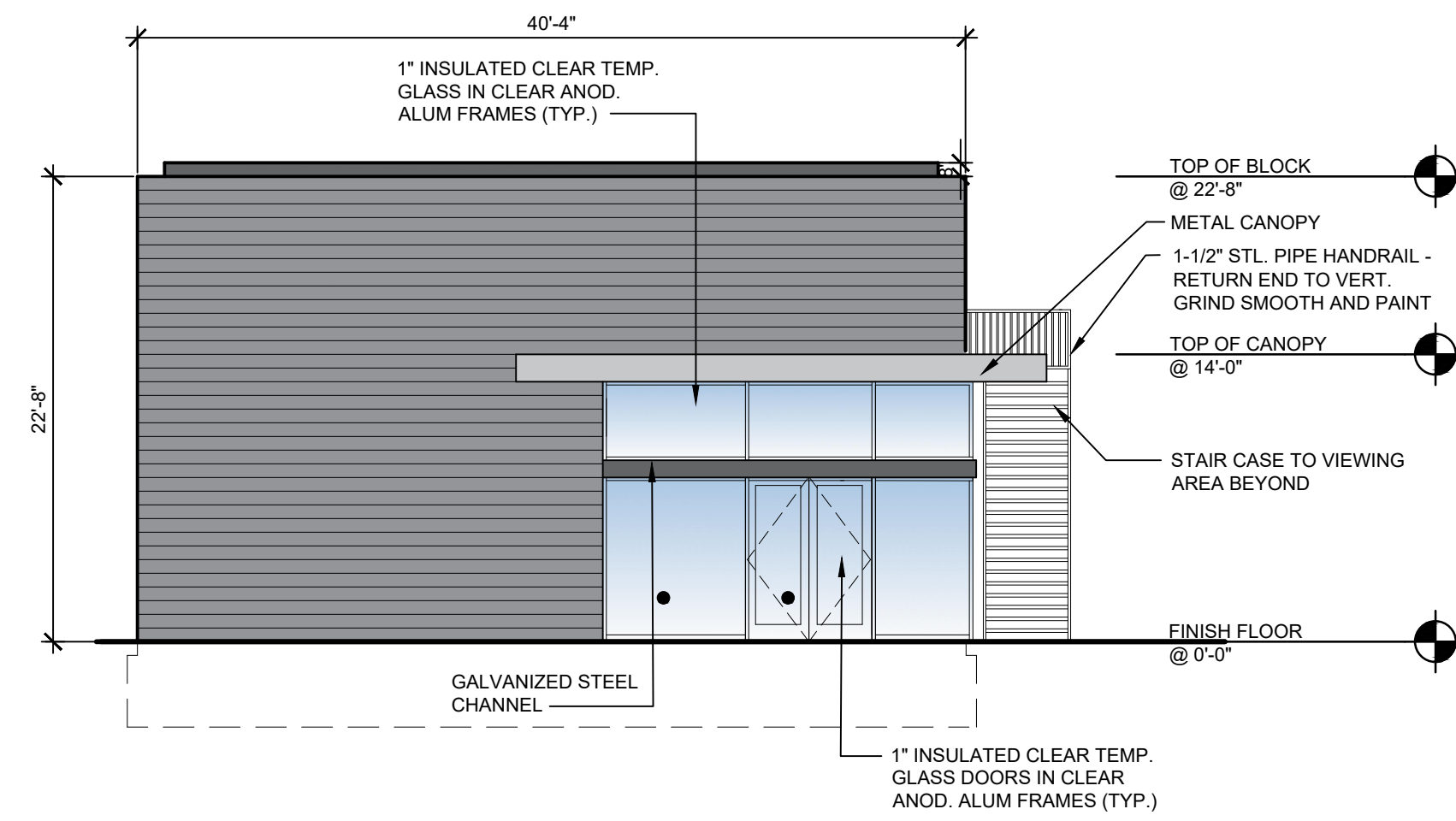
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SITE PLAN REVIEW	07.02.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

**BUILDING D
RECREATION BLDG.
ELEVATIONS**

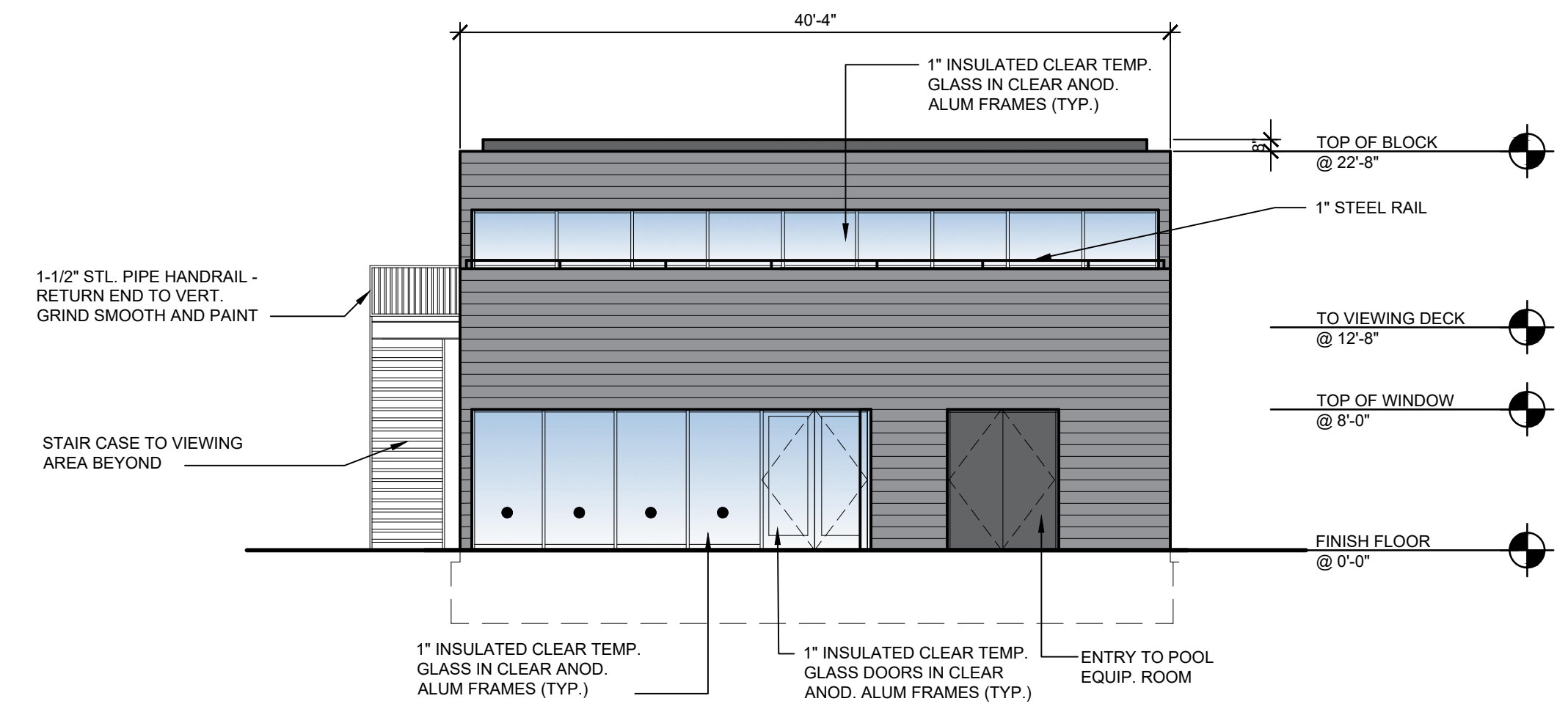


2058.20

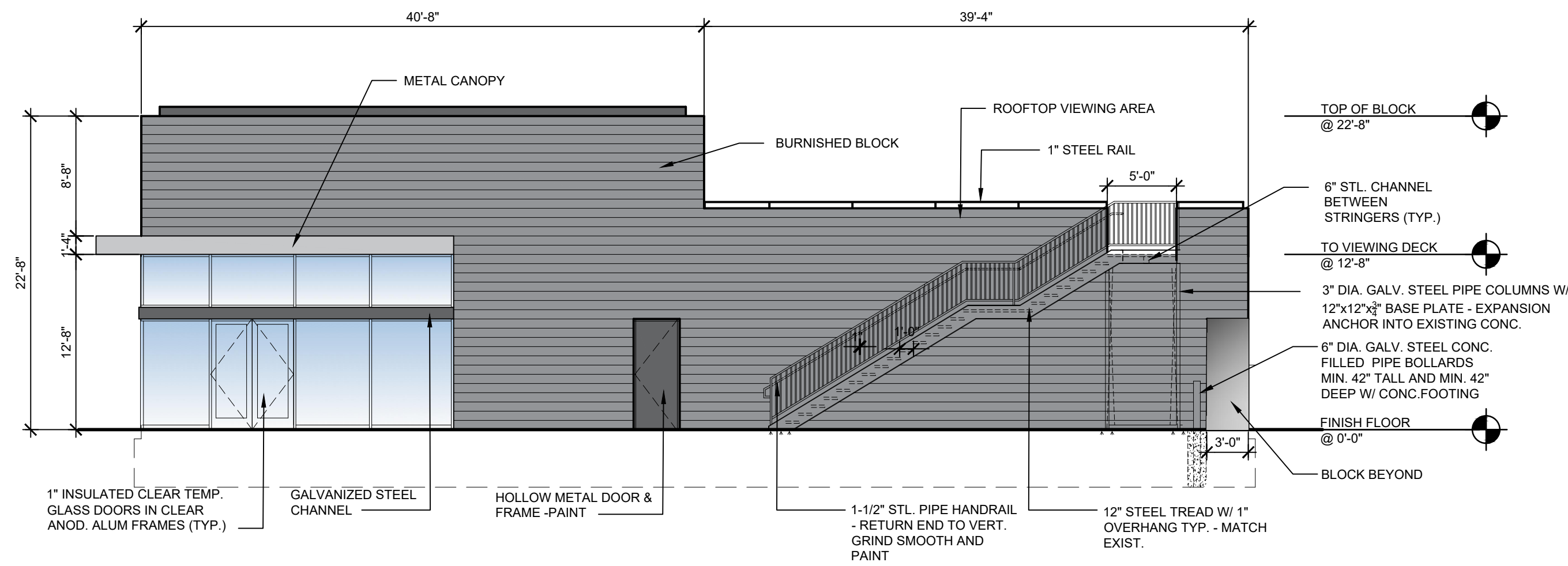
A.201d



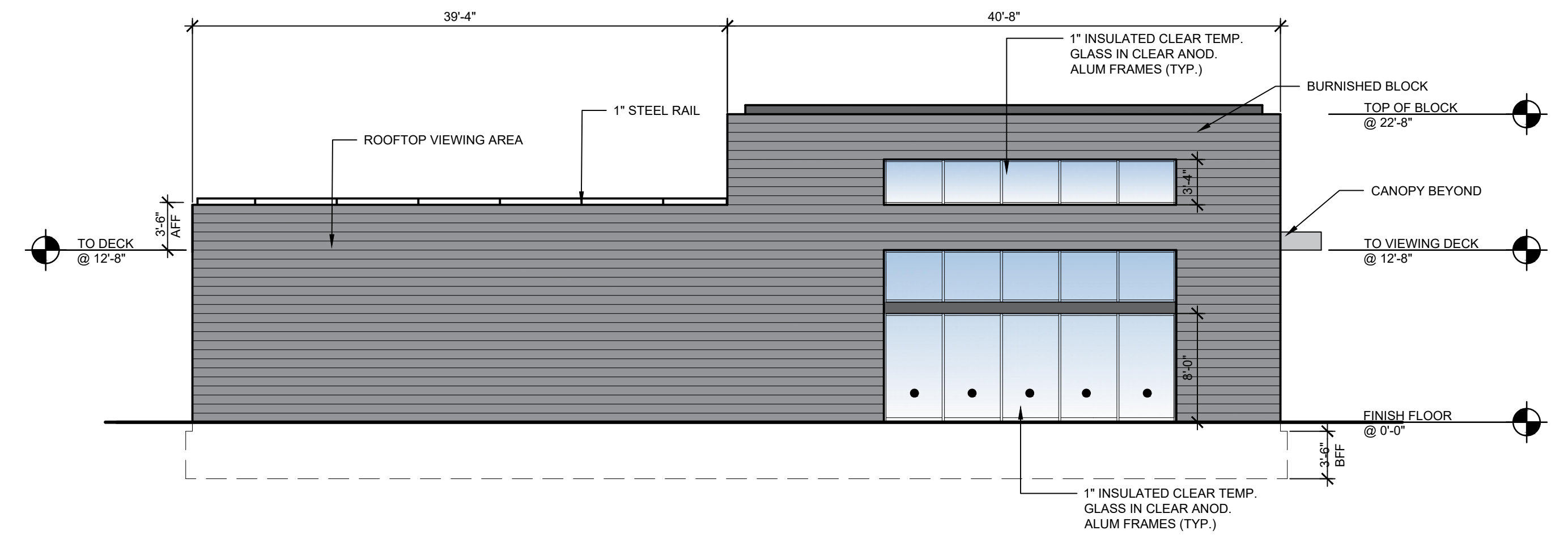
201d.04 WEST ELEVATION
A.201d SCALE: 1/8"=1'-0"



201d.03 EAST ELEVATION
A.201d SCALE: 1/8"=1'-0"



201d.02 SOUTH ELEVATION
A.201d SCALE: 1/8"=1'-0"



201d.01 NORTH ELEVATION
A.201d SCALE: 1/8"=1'-0"



201c.02 SOUTH ELEVATION
A.201c SCALE: 1/16"=1'-0"

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23



201c.01 NORTH ELEVATION
A.201c SCALE: 1/16"=1'-0"

**RESIDENTIAL
ELEVATIONS
BUILDING E**



2058.20

A.201e

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

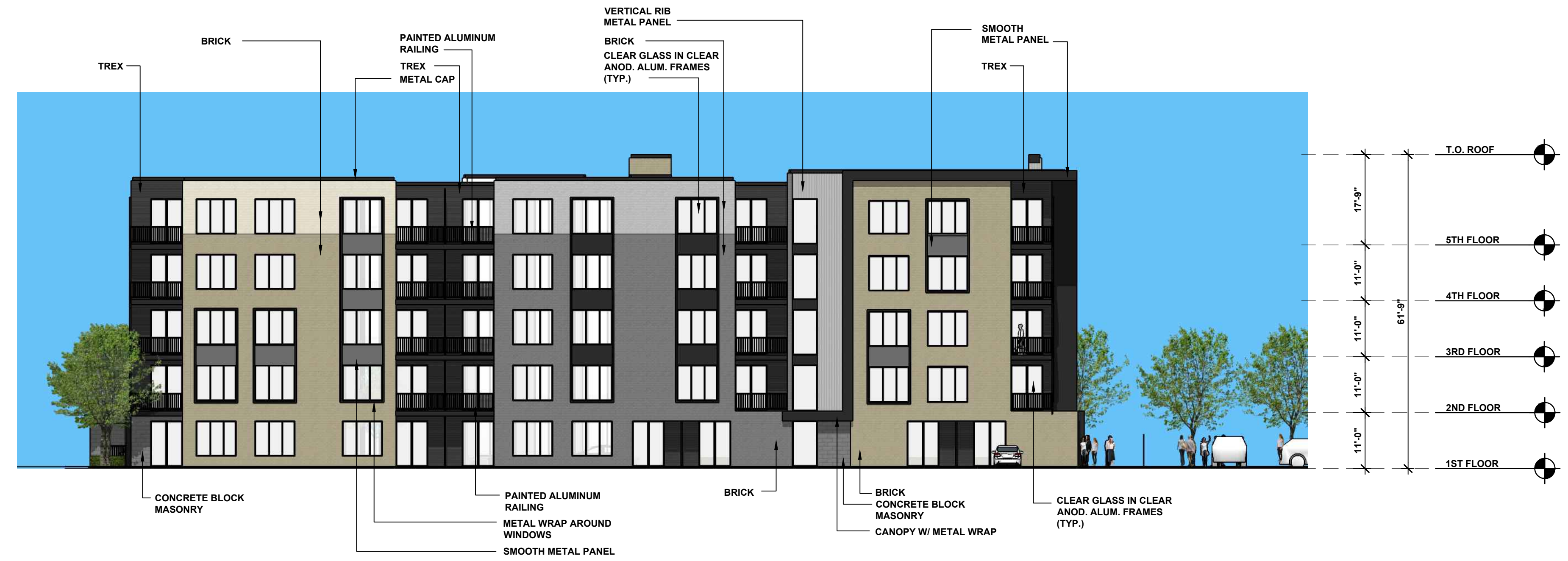
2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN APPROVAL	02.11.22
SITE PLAN APPROVAL	05.31.22
SITE PLAN APPROVAL	02.07.23

**RESIDENTIAL
ELEVATIONS
BUILDING E**

2058.20

A.201f



201f.02 EAST ELEVATION
A.201f SCALE: 1/16"=1'-0"



201f.01 WEST ELEVATION
A.201f SCALE: 1/16"=1'-0"



PERSPECTIVE IMAGE

FOR REFERENCE



PERSPECTIVE IMAGE

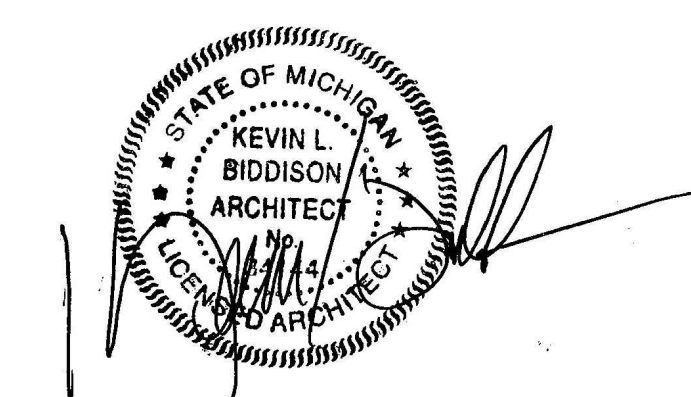
FOR REFERENCE

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN REVIEW	02.11.22
SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

SITE PERSPECTIVES



2058.20

A.301



PERSPECTIVE IMAGE

FOR REFERENCE

PROPOSED BUILDING FOR:

**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN REVIEW	02.11.22
SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

SITE PERSPECTIVES



2058.20

A.302



PERSPECTIVE IMAGE

FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
SITE PLAN REVIEW	04.10.20
SITE PLAN REVIEW	07.02.20
SITE PLAN REVIEW	02.11.22
SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23



2058.20

A.310



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

Consultants

Project title

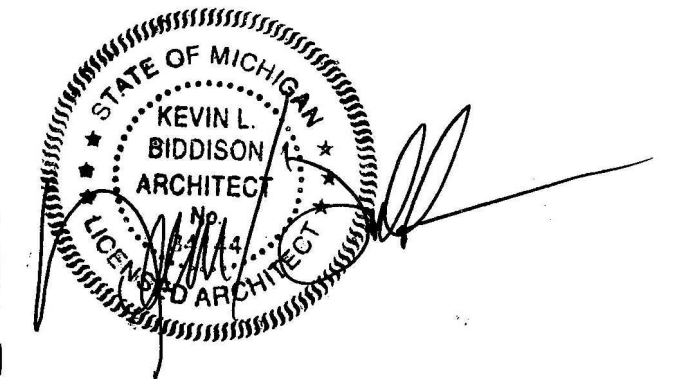
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

PUD APPROVAL	03.06.20
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SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title



Project no.

2058.20

Sheet no.

A.311



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

PUD APPROVAL	03.06.20
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SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23



2058.20

A.312



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

Consultants

Project title

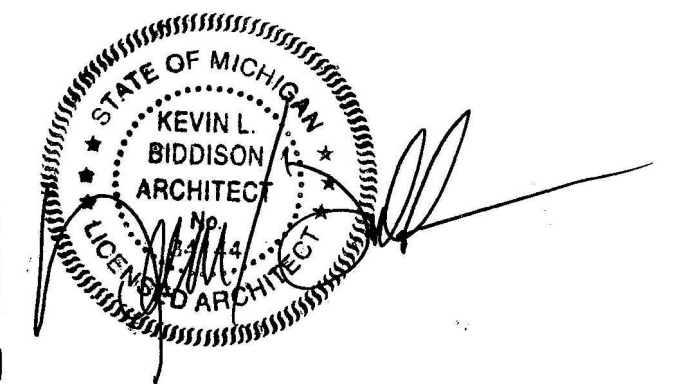
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

PUD APPROVAL	03.06.20
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SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title



Project no.

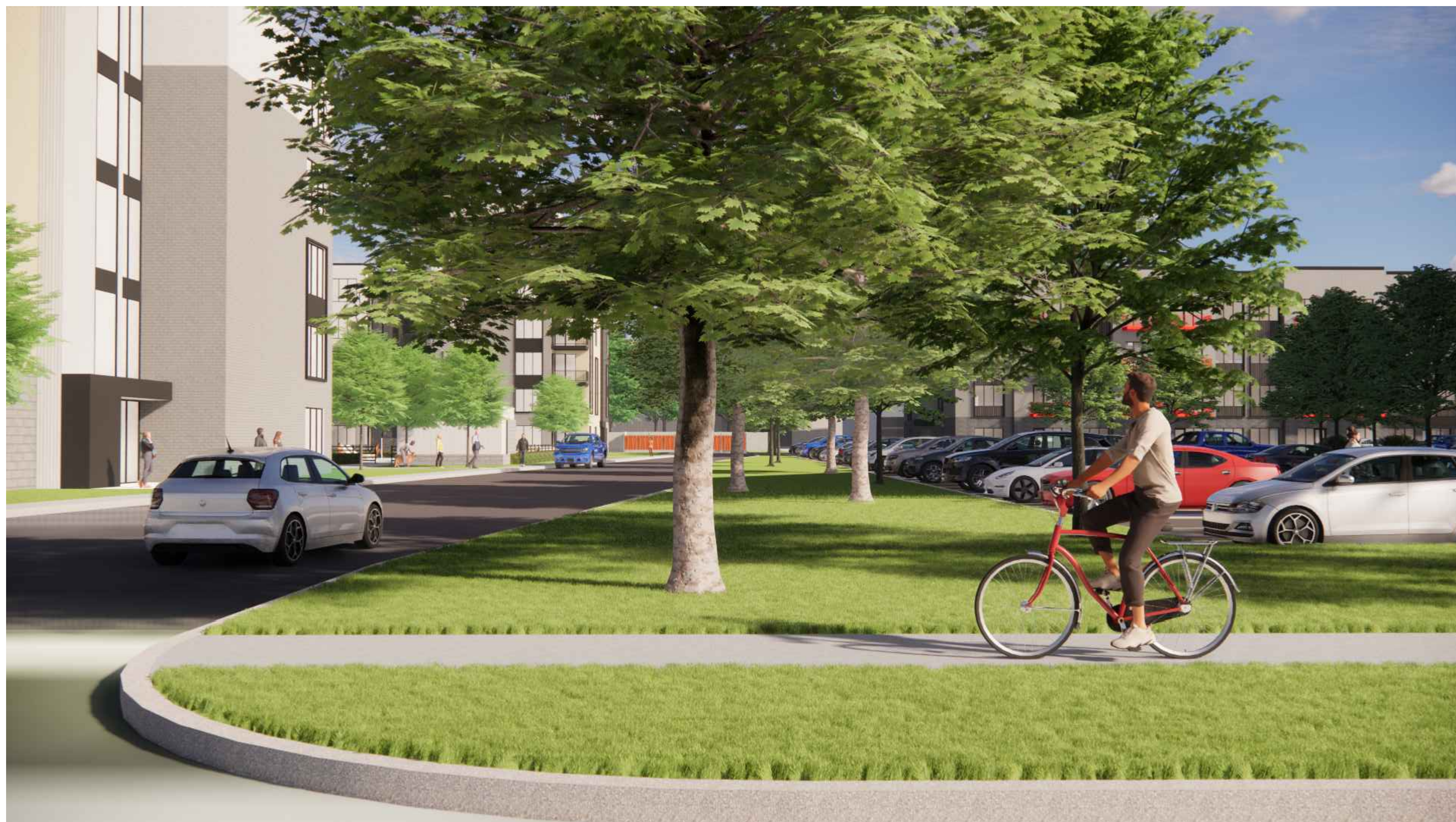
2058.20

Sheet no.

A.313



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

Consultants

Project title

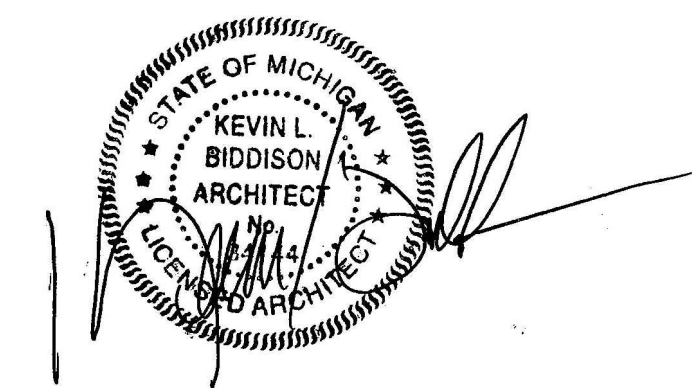
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

PUD APPROVAL	03.06.20
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SITE PLAN REVIEW	02.11.22
SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title



Project no.

2058.20

Sheet no.

A.314



PERSPECTIVE IMAGE
FOR REFERENCE



PERSPECTIVE IMAGE
FOR REFERENCE

Consultants

Project title

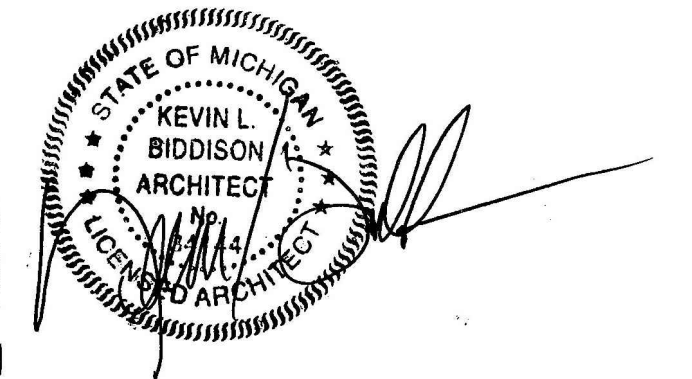
PROPOSED BUILDING FOR:
**Crooks & Big Beaver
Mixed Use
Redevelopment**

2690 CROOKS RD
TROY, MICHIGAN

Issued dr/ch

PUD APPROVAL	03.06.20
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SITE PLAN REVIEW	05.31.22
SITE PLAN APPROVAL	02.07.23

Sheet title



Project no.

2058.20

Sheet no.

A.315

STONEFIELD

February 10, 2023

Brent Savidant
Community Development Director
City of Troy
500 W. Big Beaver Road
Troy, MI 48084

**RE: Traffic Review
Proposed Mixed Use Redevelopment
Parcel ID: 88-20-28-101-034, 88-20,101-032 & 88-20-101-047
911 & 999 West Big Beaver Road
City of Troy, Oakland County, Michigan**

Brent:

Our office is submitting documents on behalf of the Applicant to address the outstanding conditions of the Board's Resolution including comments contained within the latest Board Professional's review letter. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Site Development Plans	02-06-2023	2	Stonefield Engineering & Design
Shared Parking Study	02-07-2023	2	Fleis & Vandenbrink

The following is an itemized response to the comments contained within the Traffic Review Letter dated December 22, 2022. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

Traffic Impact Study:

1. Table 3 shows 312 dwelling units for the multi-family housing; however, the site plan shows 156 units. These documents need to match. It appears that the 2690 Crooks development is proposed to include an additional 156 dwelling units. If so, add a footnote to Table 3 to add clarity.

The tables have been clarified.

2. OHM notes a level of service F with a delay of 73.1 seconds for NBR vehicles at Big Beaver Road and W. Site Drive during the PM peak hour. Traffic congestion and backups may occur within the site. It is expected that many of these vehicles will instead utilize one of the signalized driveways to exit the site.

Noted.

3. The plans provide a parking phasing plan that show available parking for each phase of development (during construction, when large portions of the existing surface lots are unavailable and/or before the proposed parking structure is constructed). As each phase of development proceeds, there must be sufficient parking to satisfy parking demand. Interim parking calculations should be reviewed with engineering plans for each phase of development on the 999 Big Beaver and 2690 Crooks sites. It is unclear when 2690 Crooks development will occur relative to the proposed phased construction for 999 Big Beaver.

The project team will work closely with City staff to ensure adequate parking is provided throughout each phase of construction.

Site Plan:

1. We note that adjacent site, 2690 Crooks, proposes to utilize shared parking and requires a pedestrian sidewalk connection between the sites. This pedestrian route must be ADA-accessible.

The pathway has been revised to be ADA compliant.

2. As a part of Building E, the four parking stalls adjacent to the common area should be hatched out since it is impossible for a vehicle to exit this area if all of the parking spaces are occupied.

Two parking stalls have been striped out to aid in vehicles leaving parking spaces.

3. For the parking provided within Building E, an active parking management sign displaying the number of available spaces should be provided for both parking areas. This will alert drivers if these lots are full. There is not an easy way for vehicles to exit these areas if they are full.

This system is not necessary, residents will quickly become accustomed to what parking spaces are available at any point in time. Adequate turnaround areas are provided to ensure vehicles can exit the area as necessary.

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



Eric Williams, PE
Stonefield Engineering and Design, LLC



Kevin Heffernan, PE
Stonefield Engineering and Design, LLC

STONEFIELD

February 10, 2023

Brent Savidant
Community Development Director
City of Troy
500 W. Big Beaver Road
Troy, MI 48084

**RE: Preliminary Site Plan & Special Land Use Review
Proposed Mixed Use Redevelopment
Parcel ID: 88-20-28-101-034, 88-20,101-032 & 88-20-101-047
911 & 999 West Big Beaver Road
City of Troy, Oakland County, Michigan**

Brent:

Our office is submitting documents on behalf of the Applicant to address the outstanding conditions of the Board's Resolution including comments contained within the latest Board Professional's review letter. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Site Development Plans	02-06-2023	2	Stonefield Engineering & Design
Shared Parking Study	02-07-2023	2	Stonefield Engineering & Design

The following is an itemized response to the comments contained within the Preliminary Site Plan and Special Land Use Review Letter dated January 5, 2023. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

1. Review and revise site plan based on OHMs comments.

Noted.

2. Flip the parking for Building E to be adjacent to the building.

This revision has been made on Sheet C-2 of the Site Development Plans.

3. Address OHM and Road Commission comments.

Noted.

4. Show drive-through stacking spaces and provide dimensions.

The stacking spaces on Sheet C-2 of the Site Development Plans.

5. For Building E, replace use of first floor residential along eastern elevation (Crooks).

The residential units have been left in place since there is a substantial setback from the roadway and this area could not function as a retail / office space.

6. Provide one (1) additional green belt tree.

One additional tree has been provided on Sheet C-9 of the Site Development Plans.

7. Applicant shall either increase overall landscaping or seek a variance from the Zoning Board of Appeals.

The landscape area has been revised to exceed the 15% requirement on Sheet C-9 of the Site Development Plans.

8. Provide transparency calculations.

Please see below for transparency calculations.

TRANSPARENCY %	NORTH	SOUTH	EAST	WEST
RETAIL BUILDING A	86%	77%	44%	42%
RETAIL BUILDING B	85%	65%	43%	42%
COMMUNITY SPACE BUILDING C	73%	66%	-	75%
CLUBHOUSE BUILDING D	35%	28%	55%	43%
RESIDENTIAL BUILDING E	33%	41%	41%	42%
LINDSEY BUILDING A	87%	53%	70%	80%
LINDSEY BUILDING B	16%	12%	39%	46%

9. Provide a shared parking agreement to the satisfaction of the City Attorney.

The properties are owned / controlled by the same entity and should not require a shared parking agreement.

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



Eric Williams, PE
Stonefield Engineering and Design, LLC



Kevin Heffernan, PE
Stonefield Engineering and Design, LLC