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PLANNING COMMISSION
MEETING AGENDA
REGULAR MEETING

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

February 25, 2025 **7:00 P.M.** **Council Chambers**

1. ROLL CALL

2. APPROVAL OF AGENDA

3. APPROVAL OF MINUTES – February 11, 2025

4. PUBLIC COMMENT – For Items Not on the Agenda

SPECIAL USE APPROVAL

5. PUBLIC HEARING – SPECIAL USE APPLICATION (SU JPLN2024-0031) – Proposed Barbat Troy Vehicle Fueling/Multi Use Station, Southeast corner of Crooks Road and South Boulevard (1981 South Boulevard, PIN 88-20-04-100-059), Section 4, Currently Zoned NN (Neighborhood Node "U") District

CONDITIONAL REZONING

6. PUBLIC HEARING – CONDITIONAL REZONING APPLICATION (JPCR2025-001) – Proposed Village of Hastings, East side of Livernois, North of Square Lake, PIN 88-20-03-301-088, -023, -024, -025 and 88-20-03-351-004, Section 3, Presently zoned NN (Neighborhood Node "Q") and R-1B (One Family Residential) Zoning Districts

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 Perakis called the Regular meeting of the Troy City Planning Commission to order at 7:01 p.m. on February 11, 2025, in the Council Chamber of the Troy City Hall. Chair Perakis and Vice Chair Malalahalli presented opening remarks relative to the role of the Planning Commission and procedure for tonight's meeting.

1. ROLL CALL

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

Absent:
Tyler Fox

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

2. APPROVAL OF AGENDA

Resolution # PC-2025-02-009
Moved by: Faison
Support by: Tagle

RESOLVED, To approve the agenda as prepared.

Yes: All present (8)
Absent: Fox

MOTION CARRIED

3. APPROVAL OF MINUTES – January 28, 2025

Resolution # PC-2025-02-010
Moved by: Lambert
Support by: Malalahalli

RESOLVED, To approve the minutes of January 28, 2025 Regular meeting as submitted.

Yes: All present (8)
Absent: Fox

MOTION CARRIED

4. PUBLIC COMMENT – For Items Not on the Agenda

There was no one present who wished to speak.

PRELIMINARY SITE PLAN APPROVALS

5. PRELIMINARY SITE PLAN REVIEW (SP JPLN2025-0006) – Proposed Slick City Action Park: Troy, East side of Crooks, North of Maple (1820 Crooks and 1749 Northwood), Section 28, Currently Zoned MR (Maple Road) District and IB (Integrated Industrial and Business) District

Mr. Buechner, recusing himself because he is the applicant, exited the meeting at 7:04 p.m.

Mr. Carlisle reviewed the Preliminary Site Plan application for Slick City Action Park and addressed the revisions to the application since last considered by the Planning Commission at its January 28, 2025 Regular meeting.

In summary, Mr. Carlisle expressed support for the development and asked the Planning Commission in its deliberation to consider the parking waiver, location of parking lot trees and the use of transparency alternatives. He said any approval of the site plan should be subject to consolidating the lots and obtaining a parking easement with the neighboring site to the south.

Project Architect Stephen Auger said the front elevation was bumped out and windows were added. He said there is an existing DTE easement on site that creates a challenge in the distance that the front façade could be bumped out. Mr. Auger addressed safety concerns expressed by the Planning Commission for pedestrian traffic on the south side of the building.

Some comments during discussion related to the following:

- Application is close to meeting the requirement of transparency.
- Visual of building at illumination during evening hours.
- Reconfiguration of the parking lot to accommodate additional parking islands and trees to meet Zoning Ordinance requirement.
- Options to provide safety for pedestrian traffic along the south side of the building; use of traffic calming devices, separate employee parking from customer parking, create a distinction between pedestrian and vehicular traffic, administrative approval of the site plan should that be the direction of the Planning Commission.

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

Resolution # PC-2025-02-011
Moved by: Lambert
Support by: Krent

RESOLVED, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for the proposed Slick City Action Park: Troy indoor commercial recreation facility, East side of Crooks, North of Maple (1820 Crooks and 1749 Northwood), Section 28, approximately 3.02 acres in size, Currently Zoned MR (Maple Road) and IB (Integrated Industrial and Business), be granted, subject to the following conditions:

1. Consolidate lots.
2. Obtain a parking easement with the neighboring site to the south prior to Final Approval.
3. Add two more landscape islands in the lot, one to be located on the south side of the building to enhance pedestrian safety.
4. City staff to work with the petitioner to enhance pedestrian safety on the south side of the building.

Discussion on the motion on the floor.

Mr. Savidant said he would consult with the City Engineer and engineering staff on site improvements that would provide the best safety for pedestrian traffic on the south side of the building.

Vote on the motion on the floor.

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

MOTION CARRIED

Mr. Buechner returned to the meeting at 7:36 p.m.

6. PRELIMINARY SITE PLAN REVIEW (SP JPLN2024-0014) – Proposed Pinnacle of Troy, Southwest corner of Crooks and Wattles (3991 Crooks; PIN 88-20-20-226-015, -016, -017, and -106), Section 20, Currently Zoned NN (Neighborhood Node “I”) District

Mr. Carlisle reviewed the Preliminary Site Plan application for Pinnacle of Troy. He stated the applicant is before the Board this evening for feedback only. Mr. Carlisle said the applicant is seeking a building height variance from the Zoning Board of Appeals (ZBA). He said the application would come back for Planning Commission consideration when a decision is made by the ZBA.

Mr. Carlisle asked the Planning Commission to keep in mind during its discussion with the applicant the intent of the Neighborhood Node zoning classification of the subject site, as referenced on page 91 of the 2040 Master Plan.

Mr. Carlisle addressed the proposed increased front yard setbacks, internal vehicular circulation, proposed parking spaces that exceed the Zoning Ordinance requirement, arborvitae screening along Wattles and Crooks, and outdoor amenities.

In summary, Mr. Carlisle asked the Planning Commission to address:
- Compatibility with the City's vision as described in the 2040 Master Plan.
- If the use of arborvitae screening meets the intent of the form-based district.
- Consideration of increased setbacks.
- Proposed site layout and street design.
- Outdoor amenities.
- Consideration of decorative lighting.

Civil Engineer John Houser of PEA Group and Kamal Shouhayib of Choice Development were present.

Mr. Houser addressed how the application relates to the Master Plan and reflects comments from the neighboring homeowners' association (HOA), Stonehaven Woods East. He referenced a communication dated October 29, 2024 from the HOA stating Stonehaven does not want a vehicular or pedestrian connection with the proposed residential development, and the proposed building height, size and value of the residential units are a match to Stonehaven.

Ms. Dufrane advised the Planning Commission to apply the standards of the Zoning Ordinance to any approval of the proposed development, noting the Master Plan is a guide only.

Some comments during discussion related to the following:
- Internal vehicular circulation; meets fire and engineering codes.
- Arborvitae screening along Crooks and Wattles; distance of landscaping from road, sidewalk and residential units.
- Treatment, care and maintenance of landscaping.
- Increased setbacks in relation to previously approved developments in NN zoning districts.
- Traffic impact.
  - Study provided by applicant.
  - City Traffic Consultant (OHM) memorandum.
- On site utilities and easements with respect to proposed landscaping.
- Parking; consideration to reduce spaces, parking in T-turnarounds, guest parking, service truck deliveries, on-street parking not permissible, parking monitored by HOA.

- Internal vehicular movement, as relates to:
  - End residential units provide privacy desired by some homeowners.
  - Consideration to reconfigure site layout and provide vehicular loop around buildings.
  - Consideration to eliminate t-turnarounds and reduce setback on west property line to accommodate more green space and enhance corner entrance.
- Outdoor amenities; percentage of green space required.
- Price point of homes: $750,000 to $1 million.
- City preference for interconnectivity between residential developments.

Mr. Savidant said he would ask OHM to attend the next meeting should the item come back before the Planning Commission for consideration.

Chair Perakis opened the floor for public comment.

- Anand Sinha, 3949 Fadi Drive; voiced support for development, said character of neighborhood is a good fit for Stonehaven residents.
- Zhenfeng Liu, 3930 Fadi Drive; in support of no pedestrian or vehicular connection to Stonehaven.
- Fabrice Smielauskas, 4607 Lehigh Drive; voice support for development; addressed Master Plan, density, outdoor amenities and traffic.
- Jim Musial, 4160 Glencastle; addressed concern with survival of landscaping on Wattles because of existing DTE easement.
- Kamal Shouhayib, 2884 Vineyards; addressed Choice Development's accomplished reputation of residential developments.
- Karen Wilson, Real Estate One; addressed site layout, preference of homeowners to reside in end residential units for the privacy they provide.
- Daniel Raubinger, 4083 Penrose; addressed the arborvitae screening and street presence of the development.
- Paul Bertin, ArciDes Inc., no address given; addressed building height.

Chair Perakis closed the floor for public comment.

7. PLANNING COMMISION ANNUAL REPORT – 2024

It was the direction of the Board to submit the 2024 Annual Report to the City Council once a few typographical errors were corrected.

OTHER ITEMS

8. PUBLIC COMMENT – For Items on the Agenda

There was no one present who wished to speak.

9. PLANNING COMMISSION COMMENT

Mr. Savidant announced two upcoming agenda items:

- Somerset West PUD application, 3100 W. Big Beaver (fka Kmart Headquarters) - Public Hearing scheduled for the March 11, 2025 Regular meeting.
- Applicant for The Village of Hastings PUD is submitting a Conditional Rezoning application for the same property.

Board members congratulated Mr. Buechner on the approval of his application for *Slick City Action Park*.

Resolution # PC-2025-02-012
Moved by: Hutson
Support by: Lambert

RESOLVED, That when the City of Troy publishes a Notice of Public Hearing to be heard before the Planning Commission, that the same Notice of Public Hearing is electronically sent to each Planning Commissioner.

Yes: All present (8)
Absent: Fox

General comments among the members followed.

10. ADJOURN

The Regular meeting of the Planning Commission adjourned at 9:14 p.m.

Respectfully submitted,

_____
Marianna J. Perakis, Chair

_____
Kathy L. Czarnecki, Recording Secretary

ITEM #5

DATE: February 18, 2025

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: PUBLIC HEARING – SPECIAL USE APPLICATION (SU JPLN2024-0031) – Proposed Barbat Troy Vehicle Fueling/Multi Use Station, Southeast corner of Crooks Road and South Boulevard (1981 South Boulevard, PIN 88-20-04-100-059), Section 4, Currently Zoned NN (Neighborhood Node "U") District

The petitioner Barbat Troy submitted the above referenced Special Use Approval and Preliminary Site Plan Approval application for a proposed vehicle fueling/multi use station. The project features a 6,392 square foot building, 12 pumps under a canopy plus four (4) EV charging stations. Vehicle fueling stations are permitted in the NN district, subject to special use approval.

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. Special Use/Preliminary Site Plan application
4. Public comment

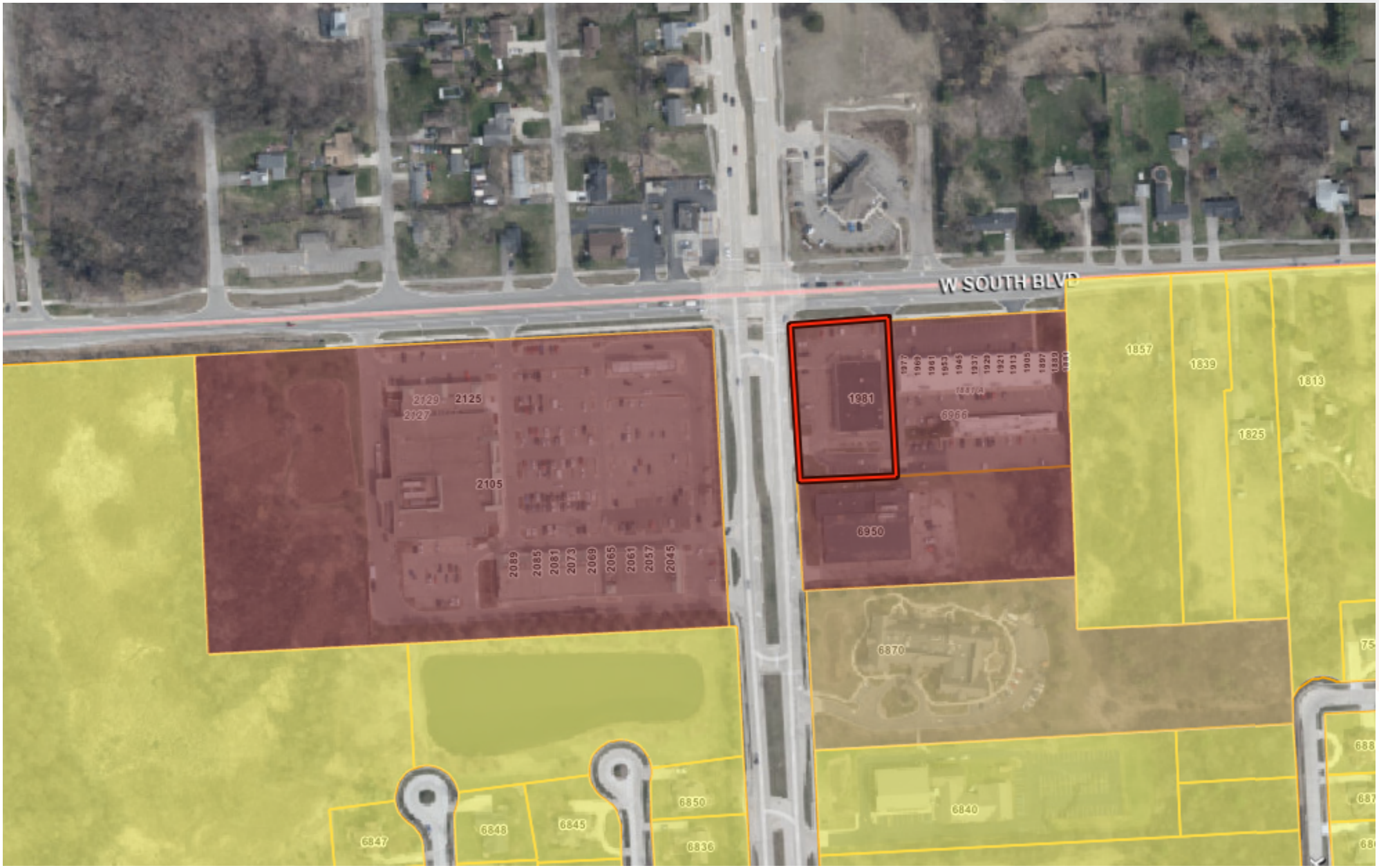
GIS Online

0 400 800 ft

Print Date: 2/17/2025

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

GIS Online



0 400 800 ft

Print Date: 2/17/2025

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.

PROPOSED RESOLUTION

PUBLIC HEARING – SPECIAL USE APPLICATION (SU JPLN2024-0031) – Proposed Barbat Troy Vehicle Fueling/Multi Use Station, Southeast corner of Crooks Road and South Boulevard (1981 South Boulevard, PIN 88-20-04-100-059), Section 4, Currently Zoned NN (Neighborhood Node "U") District

Resolution # PC-2025-02-
Moved by:
Seconded by:

RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed Barbat Troy Vehicle Fueling/Multi Use Station, Southeast corner of Crooks and South Boulevard (1981 South Boulevard), Section 4, Currently Zoned NN (Neighborhood Node) District, be **granted** subject to the following conditions:

1. Flip engaging façade to South Blvd.
2. Provide additional EV charging station information, including proposed levels.
3. Construct EV parking spaces, including chargers, as part of parking lot development.
4. Ensure canopy materials match design of the main building.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons:_____)

Yes:
No:
Absent:

MOTION CARRIED / FAILED

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

Date: January 7, 2025
February 13, 2025

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

Applicant: Duane and Scott Barbat

Project Name: Barbat Troy

Location: 1981 W South Blvd

Plan Date: January 14, 2025

Zoning: NN, Neighborhood Nodes ("O")

Action Requested: Special Use and Preliminary Site Plan Approval

SITE DESCRIPTION

An application has been submitted to construct a vehicle fueling and multi-use station at the southeast corner of South Blvd and Crooks Rd. The existing building on site (a former Rite Aid) will be removed and replaced with a new building measuring approximately 6,390 square feet. The new development will include a convenience store and future take-out restaurant. South of the main building there will be six (6) vehicle fueling stations and possibly some electric vehicle charging stations. The proposed timeline for the future take-out restaurant and vehicle charging stations is currently unclear. It is assumed that the applicant will build out the shell of the future take-out portion of the building, but the inside buildout will occur at a future date. The applicant should clarify the scope of the buildout and the projected timing.

The site is zoned NN-Neighborhood Nodes, Site Type A, Street Type A. In this district, automotive uses require both Site Plan and Special Use Approval.

Site Location:

Proposed Use of Subject Parcel:
Vehicle fueling and multi-use station, including a convenience store and future take-out restaurant. The main building is approximately 6,390 square feet.

Current Zoning:
The property is currently zoned NN, Neighborhood Nodes (O) Form Based District, Site Type A.

Surrounding Property Details:

Direction	Zoning	Use
North	City of Rochester Hills	Chase Bank
South	NN, Neighborhood Nodes (O)	Vacant Commercial Building
East	NN, Neighborhood Nodes (O)	Billy Sims Barbeque
West	NN, Neighborhood Nodes (O)	Northfield Commons Shopping Center & Kroger Fuel Station

MASTER PLAN

The subject site is located in Neighborhood Node "O." The 2040 Master Plan states the following vision for this particular node:

"Area should remain predominantly commercial, catering to local needs of the surrounding neighborhoods. New development and redevelopment should be either be mixed use or commercial that serves to further enhance this successful commercial area. Any new development should incorporate distinctive elements to create a "gateway" feeling into Troy. Distinctive elements include gateway signage, streetscape, and unique architecture."

Items to be Addressed: *Planning Commission to consider project's compatibility with Master Plan vision.*

NATURAL FEATURES

Topography/Wetlands/Drain: The site has already been graded for previous development. The site is not located in a floodplain and contains no wetlands.

Woodlands: The site is mostly impervious and contains no Woodland or Landmark trees. With the new development, the applicant will retain nine (9) of eleven (11) existing greenbelt trees.

Items to be Addressed: *None.*

AREA, WIDTH, HEIGHT, SETBACKS

Table 5.03.B.1 outlines standards for Building Form A:

	Required	Provided	Compliance
Front (South Blvd)	10-foot build-to line	10 feet	Complies
Front (Crooks)	10-foot build-to line	25 feet	Requires Planning Commission consideration. See comments below
Side (East)	N/A, building may be placed up to property line	61 feet	Complies
Rear (South)	30-foot minimum setback	213.8 feet	Complies
Building Height (Neighborhood Nodes)	2.5 stories, 30 feet in height	1 story	Complies

Open Space	30%	30.1%	Complies

Crooks Front Setback:
As the subject site is located on a corner lot, the applicant is required to comply with a 10-foot front setback along both South Blvd and Crooks. While the South Blvd setback has been met, the applicant proposes a 25-foot setback along Crooks. The 25-foot setback is requested in order to construct a concrete outdoor patio and canopy.

The Planning Commission may adjust the required building line to a maximum of 30 feet for projects incorporating a permanent space for an outdoor café, public space, or a cross access drive with an adjacent parcel. The Planning Commission may consider the applicant's request to increase the Crooks front setback to twenty-five (25) feet.

Items to be Addressed: *Planning Commission to consider increased front setback along Crooks.*

PARKING

	Required	Provided	Compliance
Vehicle Fueling/Multi-Use Station: 1 space per each 125 SF of net floor area, plus 2 parking spaces per fueling station Fast Food Restaurant: 1 space for each 70 SF of net floor area	(3,755 Net SF/125) = 30 spaces + (6 gas pumps*2) = 12 spaces = **42** vehicle fueling/multi-use station spaces **PLUS** (1,360 SF/70) = **19** restaurant spaces **=** **61 total spaces required**	51 spaces	Parking Deviation Requested/ See Discussion Below
Loading	1 space	1 space	Complies
Barrier Free	3 spaces	3 spaces	Complies
Bicycle	2 spaces	4 spaces	Complies

Deficient Parking:
Although the proposed amount of parking is deficient per Ordinance standards, Stonefield Engineering has provided a parking assessment finding the proposed parking to be sufficient. Stonefield compared the City of Troy's parking standards to those of the Institute of Transportation Engineers (ITE) and found that ITE standards would require a total of fifty (50) spaces at this site, as opposed to the sixty-one (61) required by City standards. The applicant proposes a total of fifty-one (51) spaces.

The Planning Commission shall consider a parking deviation for the proposed project. A copy of Stonefield's parking assessment is provided under separate cover.

Electric Vehicle Charging Spaces:
Notes on Sheet C-2 indicate that sixteen (16) electric vehicle charging stations will eventually be provided on site. Little information on the EV charging stations is provided, including what level(s) are proposed. Furthermore, it is unclear when the EV parking spaces will be installed. We recommend that the sixteen (16) EV spaces, including chargers, be provided immediately as these spaces are included in the overall fifty-one (51) parking spaces proposed.

Items to be Addressed: *1). Planning Commission to consider parking deviation request; 2). Provide additional information on EV Charging stations, including proposed Levels; 3). Construct EV parking spaces, including chargers, as part of parking lot development.*

ACCESS and CIRCULATION

Vehicular Traffic:
The site currently has ingress and egress access from both South Blvd and Crooks Road. The applicant intends to retain both of these access points with the new development. In addition, the South Blvd access point allows for cross-access to/from the adjacent businesses to the east. Two-way circulation is utilized throughout the site.

Pedestrian Access:
The applicant proposes a 5-foot wide pedestrian sidewalk along the perimeter of the main building. This sidewalk will connect to the existing sidewalk system along both South Blvd and Crooks Road. An additional crosswalk (5-feet wide) is proposed along the east side of the parking lot to improve safety where pedestrians must cross maneuvering aisles to access the main building.

Items to be Addressed*: None.*

LANDSCAPING

A landscaping plan has been provided on Sheet C-6. The following table discusses the development's compliance with the landscape requirements set forth in Section 13.02.

	Required	Provided	Compliance
Greenbelt Landscaping: One (1) deciduous tree for every thirty (30) lineal feet, or fraction thereof, of frontage abutting a public road right-of-way.	South Blvd: (180/30)= 6 trees Crooks: (294/30)= 10 trees	South Blvd: 6 trees Crooks: 10 trees	Complies
Site Landscaping: A minimum of 20% of the site area shall be comprised of landscape material.	20%	23%	Complies
Screening Between Uses: South: One (1) narrow evergreen tree per three (3) lineal feet and/or wall.	South: (180 LF/3)= 60 narrow trees	South: 60 trees	Complies
Parking Lot Trees: One (1) tree per eight (8) spaces.	34 spaces/8= 4 trees	4 trees	Complies

Screening Between Uses:
The applicant has noted the location of an existing 15-foot overhead and underground easement along the south property line. While the required amount of landscape screening for this area has been provided, the applicant notes "due to location of existing 15 ft utility easement, evergreens are clustered where planting space is available."

Mechanical Equipment:
Mechanical equipment is proposed near the northeast corner of the site and will be screened with nine (9) evergreen shrubs.

Trash Enclosure:
The applicant proposes to retain the existing dumpster and trash enclosure located at the southeast corner of the site.

Stormwater Management:

A stormwater management plan is provided on Sheet C-3. We refer to the City Engineer for review.

***Items to be Addressed**: None.*

PHOTOMETRICS

A lighting plan is provided on Sheet C-5. The applicant proposes a total of eighteen (18) light fixtures, including eight (8) pole lights, two (2) wall-mounted lights, and eight (8) gas station canopy lights. Light fixtures are downward directed and height compliant.

Lastly, elevations on Sheet A-2.1 show the use of eight (8) decorative sconce lights on the building exterior. These fixtures are not shown on the lighting plan. Section 13.05.C.1.b. states that:

> *"Decorative or historic light fixtures may be approved as an alternative to shielded fixtures when it can be shown that there will be no off-site glare through the use of low wattage lamps and the proposed fixtures will be more consistent with the character of the site."*

***Items to be Addressed:** Planning Commission consideration of decorative light fixture.*

FLOOR PLAN AND ELEVATIONS

Floor Plans:
Floor plans are provided on Sheet A-1.1.The proposed one-story building measures 6,392 square feet. The majority of space is dedicated to the convenience store. The convenience store includes several aisles for goods, a beer cave, liquor wall, restrooms, storage room, and office space. The eastern portion of the building is dedicated to a future take-out restaurant, which the applicant notes shall be built-out at a later date. Details of build out of take-out restaurant were not provided. We note parking for the take-out restaurant were including in the required parking requirements.

A covered outdoor patio is shown directly outside of the take-out restaurant. A gas station canopy with six (6) pumps is located south of the building, in the center of the parking lot.

Elevations:
Elevations are provided on Sheet A-2.1. The building features a flat roof measuring twenty-two (22) feet in height. Primary building materials include burnished masonry unit, vertical wood cladding, aluminum composite panels, and glass windows and doors. Secondary materials include brick veneer and metal coping. Exterior colors are proposed as black, gray, sandstone and red.

There are entryways on the building's north, west, and south sides. We note that the south façade (facing the parking lot) appears to be the most vibrant and engaging façade, over the north (facing South Blvd) and west (facing Crooks Road). The applicant should flip the facades so the more engaging façade faces South Blvd.

Canopy elevation details were not provided.

Transparency:
Transparency calculations are provided on Sheet A-2.4. Overall compliance is outlined in the table below.

Elevation	Required	Provided	Compliance
North	50%	51%	Complies
South	30%	72.3%	Complies
East	30%	32.4%	Complies
West	50%	50%	Complies

Canopy:
General canopy elevations are provided on Sheet A-0.15, although no building materials are specified. We note that canopy materials are required to match the design of the main building.

Items to be Addressed: *1). South Blvd and Crooks Road elevations; 2). Describe expected plan for the future take-out restaurant; and 3). Ensure canopy materials match design of the main building.*

SPECIAL USE APPROVAL STANDARDS

Table 5.06.C-1 illustrates that auto/transportation uses are considered a special use for Neighborhood Nodes Site Type NN:A.

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. The proposed Special Use shall no*
7. *Special Use Approval Specific Requirements.*

Items to be Addressed*: Address items noted in report.*

DESIGN STANDARDS AND SITE PLAN REVIEW STANDARDS

Section 8.06 outlines Site Plan Review Design Standards.

1. *Development shall ensure compatibility with 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.*

Items to be Addressed: *None.*

SUMMARY

The Planning Commission is asked to hold a public hearing and consider the following:

1. *Compatibility with Master Plan*
2. *Increased front setback along Crooks*
3. *Parking deviation request*
4. *South Blvd and Crooks Road elevations*
5. *Clarify the scope of the future carryout restaurant buildout and the projected timing*
6. *Compliance with Special Use Standards as set forth in Section 9.02.D*
7. *Compliance with Site Plan Review Design Standards as set forth in Section 8.06*

If the Planning Commission grants Special Use and Preliminary Site Plan approval, we recommend the following conditions:

1. *Flip engaging façade to South Blvd.*
2. *Provide additional EV charging station information, including proposed levels.*
3. *Construct EV parking spaces, including chargers, as part of parking lot development.*
4. *Ensure canopy materials match design of the main building.*

Respectfully,

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

CARLISLE/WORTMAN ASSOC., INC.
Shana Kot
Community Planner

STONEFIELD

December 2, 2024
Revised: January 14, 2025

City of Troy
Planning Commission
500 West Big Beaver Road
Troy, Michigan 48084

RE: Parking Assessment Report
Proposed Convenience Store with Fuel Sales
1981 West South Boulevard
Parcel ID: 88-20-04-100-059
City of Troy, Oakland County, Michigan
SE&D Job No. DET-230414

Dear Planning Commission:

Stonefield Engineering and Design, LLC ("Stonefield") has prepared this analysis to examine anticipated parking demand of the proposed convenience store with fuel sales. The subject property is located at the southeast quadrant of the intersection of West South Boulevard and Crooks Road in the City of Troy, Oakland County, Michigan. The subject property is designated as Parcel ID 88-20-04-100-059. The existing site contains an approximate 12,000-square-foot Rite Aid. The existing access is provided via one (1) full-movement driveway along West South Boulevard and one (1) right-in/right-out driveway along Crooks Road. Cross-access is also provided to the adjacent retail developments, which provide an additional full-movement driveway along West South Boulevard. Under the proposed development plan, a 6,392-square-foot convenience store with six (6) fueling pumps (12 fueling positions) would be constructed. Access is proposed to remain via one (1) full-movement driveway along West South Boulevard, one (1) right-in/right-out driveway along Crooks Road, and a cross-access connection to the adjacent retail developments.

Site Circulation

A review was conducted of the proposed convenience store with fuel sales using the Site Plan prepared by our office, dated January 14, 2025. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Under the proposed development plan, a 6,392-square-foot convenience store with fuel sales would be constructed on the subject property. The convenience store would be located on the northwesterly portion of the site and the fueling canopy would be centrally located on the site. Access to the site is proposed via one (1) full-movement driveway along West South Boulevard, one (1) right-in/right-out driveway along Crooks Road, and cross-access connection to the adjacent retail developments. Parking would be provided along the southerly and easterly sides of the building and on the southerly portion of the site. A trash enclosure would be provided on the southwesterly portion of the site. Two-way vehicular circulation throughout the site would be facilitated via a minimum 24-foot-wide drive aisles.

Parking Supply/Demand

Regarding the parking requirements for the proposed development, the City of Troy Ordinance requires one (1) parking space per 125 square feet of net floor area for convenience stores, one (1) parking space per 70 square feet of net floor area for fast-food restaurants, and two (2) parking spaces per fueling station. It is assumed that the net floor area of the proposed convenience store and fast-food restaurant is 80% of the gross floor area, which equates to 3,755 net square feet of convenience store and 1,360 net square feet of fast-food restaurant.

For the proposed development consisting of 3,755 net square feet of convenience store, 1,360 net square feet of fast-food restaurant, and six (6) fueling stations, this equates to 61 required parking spaces. The site would provide 51 total spaces, consisting of 39 standard parking spaces and 12 fueling positions. The spaces would be a minimum 9.5 feet wide by 17 feet deep.

The parking supply of the convenience store was evaluated with respect to data published within the ITE's Parking Generation, 6th Edition, for Land Use 851 "Convenience Store" and Land Use 933 "Fast-Food Restaurant without Drive-Through Window." The 85th percentile parking demand rate for Land Use 851 "Convenience Store" is 3.95 spaces per 1,000 square feet of gross floor area and for Land Use 933 "Fast-Food Restaurant without Drive-Through Window" is 11.01 space per 1,000 square feet of gross floor area. For the proposed 4,692-square-foot convenience store and 1,700-square-foot fast-food restaurant, this equates to 38 required parking spaces. Under the proposed development plan, 39 standard parking spaces would be provided for the proposed convenience store and fast-food restaurant, which would be sufficient to support the parking demand for the convenience store and fast-food restaurant uses on site. Based on the City of Troy Ordinance, two (2) parking spaces are required per fueling station. For the proposed six (6) vehicle fueling stations, this equates to 12 required spaces. Under the proposed development plan, 12 spaces would be provided for the proposed fueling stations, which would be sufficient to support the parking demand of the fueling stations on site. Table 1 provides a summary of the require parking based on the City of Troy Ordinance and the ITE

Table 1: Ordinance & ITE Parking Requirements

	Ordinance Requirement	Ordinance Demand	ITE Requirement	ITE Demand
Convenience Store (4,692 SF GFA - 3,755 SF NFA)	1 per 125 SF of NFA	30	3.95 per 1,000 SF of GFA	19
Fast-Food Restaurant (1,700 GFA - 1,360 SF NFA)	1 per 70 SF of NFA	19	11.01 per 1,000 SF of GFA	19
Gas Station (6 Stations)	2 per Station	12	2 per Station*	12
Total	**--**	**61 Spaces**	**--**	**50 Spaces**

* Gas Station utilized Ordinance Requirement

Conclusions

This report was prepared to examine the anticipated parking demand of the proposed convenience store with fuel sales. The analysis findings, which have been based on industry standard guidelines, indicated that the proposed parking supply of 39 standard parking spaces and 12 vehicle fueling positions would be sufficient to support the parking demand of this project. The on-site circulation and parking has been designed to provide for safe and efficient access into and out of the site.

Please do not hesitate to contact our office if there are any questions.

Best regards,

John R. Corak, PE
Stonefield Engineering and Design, LLC

Nicholas Kennedy
Stonefield Engineering and Design, LLC

SITE DEVELOPMENT PLANS

FOR

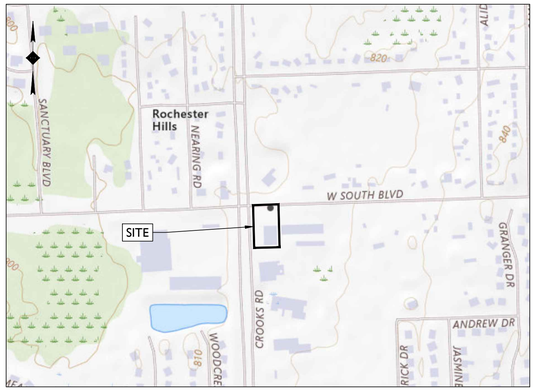
BARBAT TROY

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY, OAKLAND COUNTY, MICHIGAN 48098

APPLICANT

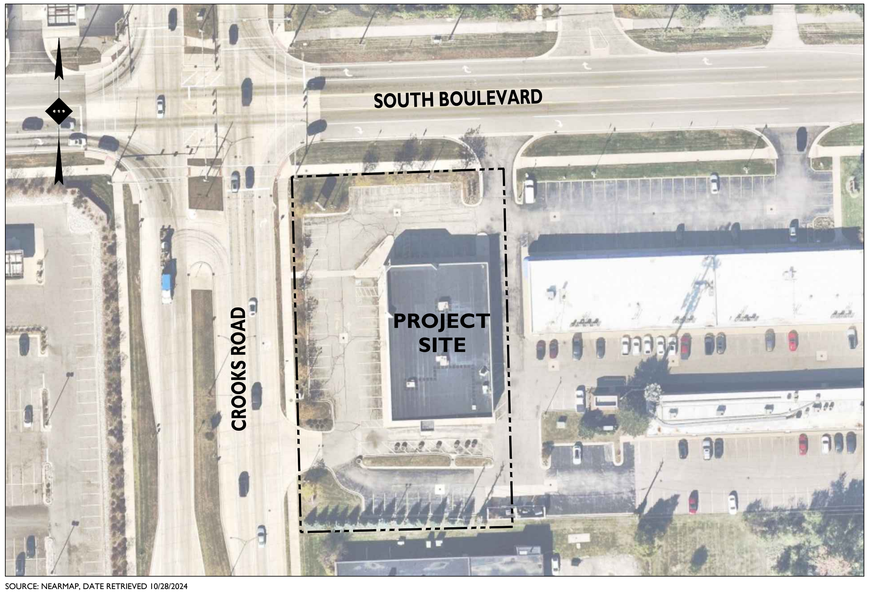
BARBAT ORGANIZATION
33477 WOODWARD AVENUE, SUITE 800
BIRMINGHAM, MI
248.914.0444
BARBATORGANIZATION.COM



SOURCE: USGS TOPOGRAPHICAL MAPS, DATE RETRIEVED 10/28/2024

LOCATION MAP

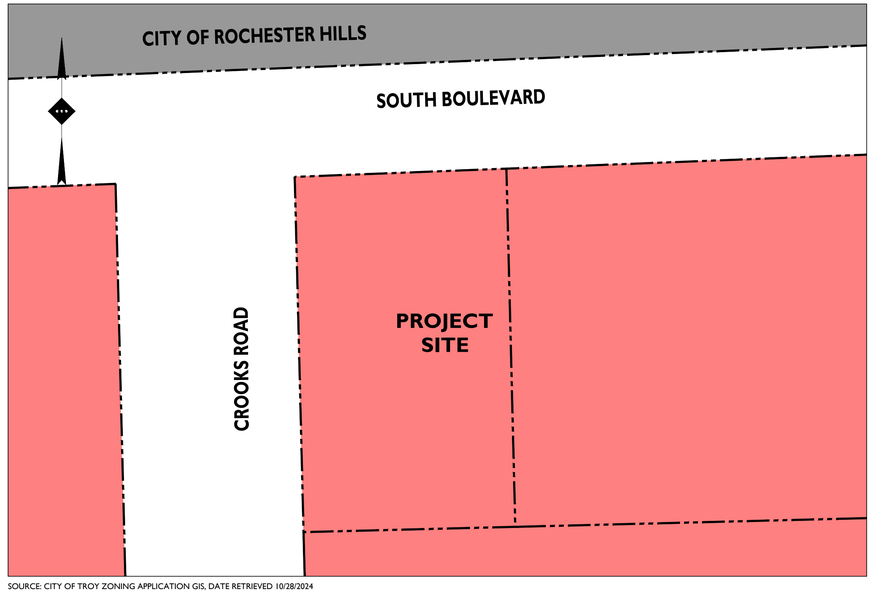
SCALE: 1" = 500'±



SOURCE: NEARMAP, DATE RETRIEVED 10/28/2024

AERIAL MAP

SCALE: 1" = 60'±



SOURCE: CITY OF TROY ZONING APPLICATION GIS, DATE RETRIEVED 10/28/2024

NN - NEIGHBORHOOD NODE U

ZONING MAP

SCALE: 1" = 60'±

PLANS PREPARED BY:

STONEFIELD engineering & design

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

555 S. Old Woodward Avenue, Suite 12L, Birmingham, MI 48009
Phone 248.247.1115

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

PLAN REFERENCE MATERIALS:

1. **THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:**
   - **ALTA / NSPS LAND TITLE SURVEY PREPARED BY KEM-TEC, DATED 12/20/2023**
   - **ARCHITECTURAL PLANS PREPARED BY ADG DESIGN STUDIO, DATED 11/21/2024**
   - **AERIAL MAP PROVIDED BY NEARMAP, DATE RETRIEVED 10/28/2024**
   - **LOCATION MAP PROVIDED BY USGS TOPOGRAPHICAL MAPS, DATE RETRIEVED 10/28/2024**
2. **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.**

SHEET INDEX

DRAWING TITLE	*SHEET #*
COVER SHEET	C-1
SITE PLAN	C-2
GRADING & STORMWATER MANAGEMENT PLAN	C-3
UTILITY PLAN	C-4
LIGHTING PLAN	C-5
LANDSCAPING PLAN	C-6
LANDSCAPING DETAILS	C-7
CONSTRUCTION DETAILS	C-8 - C-9

ADDITIONAL SHEETS

DRAWING TITLE	*SHEET #*
ALTA / NSPS LAND TITLE SURVEY	1 OF 1

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
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SITE DEVELOPMENT PLANS
BARBAT ORGANIZATION
PROPOSED VEHICLE FUELING / MULTI-USE STATION
PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

JONATHAN REID COOKSEY — ENGINEER — STATE OF MICHIGAN — LICENSE No. 6201047408 — PROFESSIONAL ENGINEER

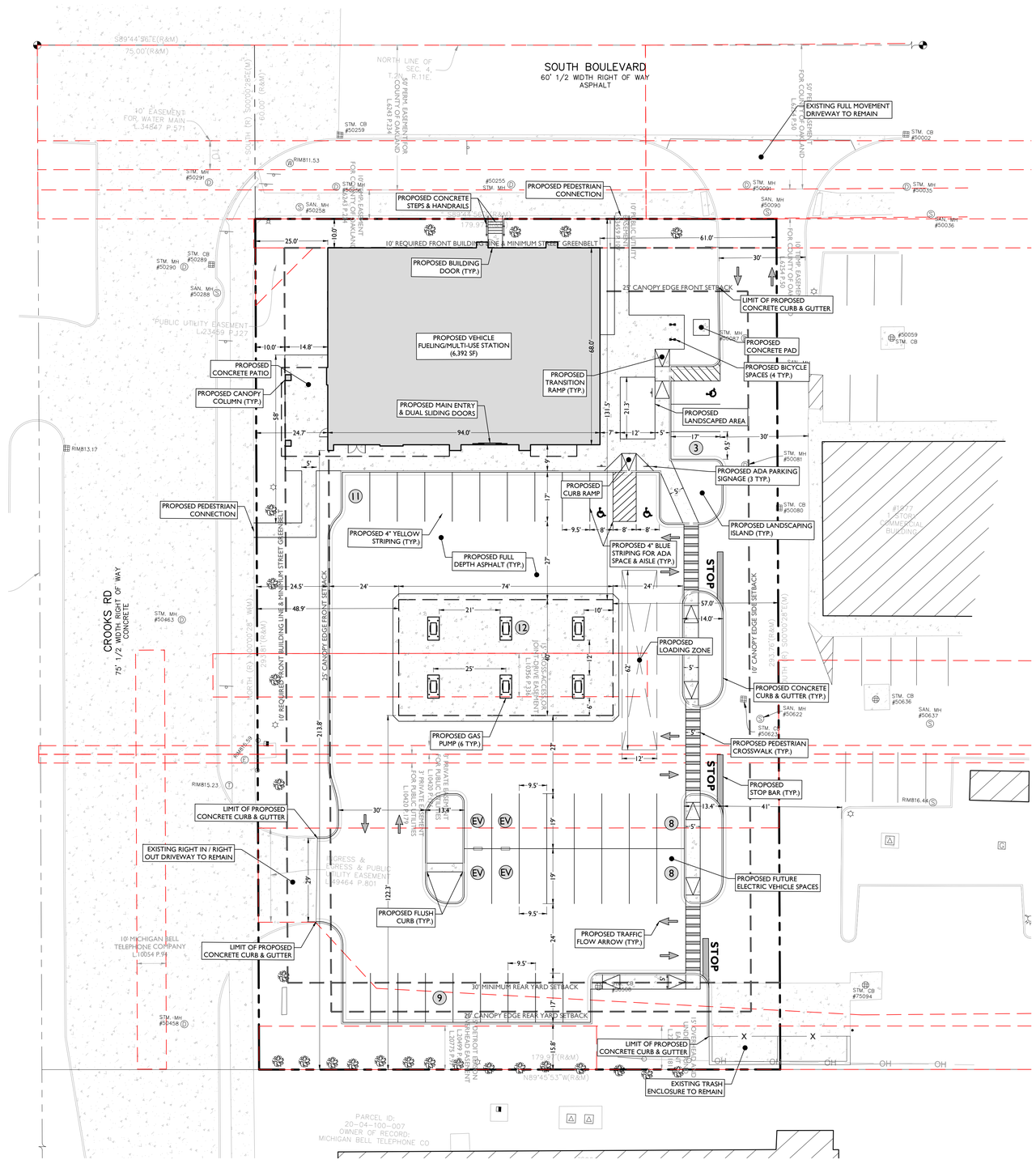
STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: DET-230414

TITLE: COVER SHEET

DRAWING: C-1

V:\DET\2023\DET-23044 BARBAT ORGANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\PLOT\DP-01-COVER.DWG



LAND USE AND ZONING

PARCEL ID: 88-20-04-100-059

NEIGHBORHOOD NODES DISTRICT (NN) NODE U

PROPOSED USE

VEHICLE FUELING/MULTI-USE STATION — SPECIAL USE

ZONING REQUIREMENT	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	1 AC	52,872 SF (1.2 AC)	NO CHANGE
MINIMUM LOT WIDTH	N/A	180.0 FT	NO CHANGE
MAXIMUM BUILDING HEIGHT	3 STORIES, 45 FT	1 STORY, < 45.0 FT	1 STORY
MINIMUM BUILDING HEIGHT	1 STORY, 14 FT	1 STORY, > 14.0 FT	1 STORY
REQUIRED FRONT BUILDING LINE (CROOKS ROAD)	10 FT	76.5 FT (EN)	25.0 FT (W)
REQUIRED FRONT BUILDING LINE (SOUTH BOULEVARD)	10 FT	76.7 FT (EN)	10.0 FT
MINIMUM SIDE YARD SETBACK	N/A	17.5 FT	61.0 FT
MINIMUM REAR YARD SETBACK	30 FT	87.3 FT	213.8 FT
MINIMUM STREET GREENBELT	10 FT	10.0 FT	NO CHANGE
MINIMUM PARKING SIDEWALK WIDTH	7 FT	7.0 FT	NO CHANGE
MINIMUM CANOPY EDGE FRONT SETBACK	25 FT	N/A	48.9 FT
MINIMUM CANOPY EDGE SIDE SETBACK	10 FT	N/A	57.0 FT
MINIMUM CANOPY EDGE REAR SETBACK	20 FT	N/A	122.3 FT
REQUIRED OPEN SPACE	30% (15,862 SF)	N/A	30.1% (15,938 SF)
CORNER LOT PARKING(1)	50% OR 100 FT	> 100.0 FT (EN)	N/A

(EN) EXISTING NON-CONFORMITY
(W) WAIVER
(1) § 5.06.E.4.b.ii - FOR CORNER LOT, NO MORE THAN 50% OF SITE'S CUMULATIVE LINEAR FEET ALONG THE REQUIRED BUILDING LINES OR 100 FT, WHICHEVER IS LESS, SHALL BE OCCUPIED BY PARKING. BUILDING SHALL BE LOCATED IN THE CORNER ADJACENT TO THE INTERSECTION.

OFF-STREET PARKING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 13.06.G	VEHICLE FUELING/MULTI-USE STATION PARKING 1 SPACE PER 125 SF OF NET FLOOR AREA (5,114 SF)(2)/(1 SPACE/125 SF) = 41 SPACES 2 SPACES PER FUELING STATION (6 FUELING STATIONS)*(2 SPACES/1 FUELING STATION) = 12 SPACES TOTAL: 41 + 12 = **53 SPACES**	39 REGULAR 12 FUELING TOTAL: 51 SPACES (D)
§ 13.06.J.4	90° PARKING SPACE DIMENSIONS(1) 9.5 FT X 19 FT W/ 24 FT AISLE	9.5 FT X 17 FT W/ 24 FT AISLE
§ 13.11.C.4	BICYCLE PARKING: 2 SPACES	4 SPACES
§ 13.10.D	LOADING REQUIREMENTS 10 FT X 50 FT	TO OCCUR OFF HOURS

(D) DEVIATION
(1) § 13.06.J.4 - PARKING SPACE LENGTH MAY BE REDUCED BY 2 FT IF ABUTTING CURBED 7 FT SIDEWALK OR OPEN SPACE
(2) NET FLOOR AREA IS ASSUMED TO BE 80% OF GROSS FLOOR AREA: (6,392 SF)/(0.8) = 5,114 SF

SYMBOL	DESCRIPTION
	PROPERTY LINE
	SETBACK LINE
	SAWCUT LINE
	PROPOSED HANDRAIL
	PROPOSED CURB
	PROPOSED FLUSH CURB
	PROPOSED SIGNS / BOLLARDS
	PROPOSED BUILDING
	PROPOSED CONCRETE
	PROPOSED BUILDING DOORS

GENERAL NOTES

1. 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.
2. 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.
3. ALL CONTRACTORS WILL TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC. AND IT'S 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.
4. 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.
5. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
6. 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.
7. 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 LISE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTORS EXPENSE.
8. 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.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
10. 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.
11. THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
12. 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
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
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SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

JONATHAN REID COOKSEY — ENGINEER — No. 6201060566 — STATE OF MICHIGAN — PROFESSIONAL ENGINEER

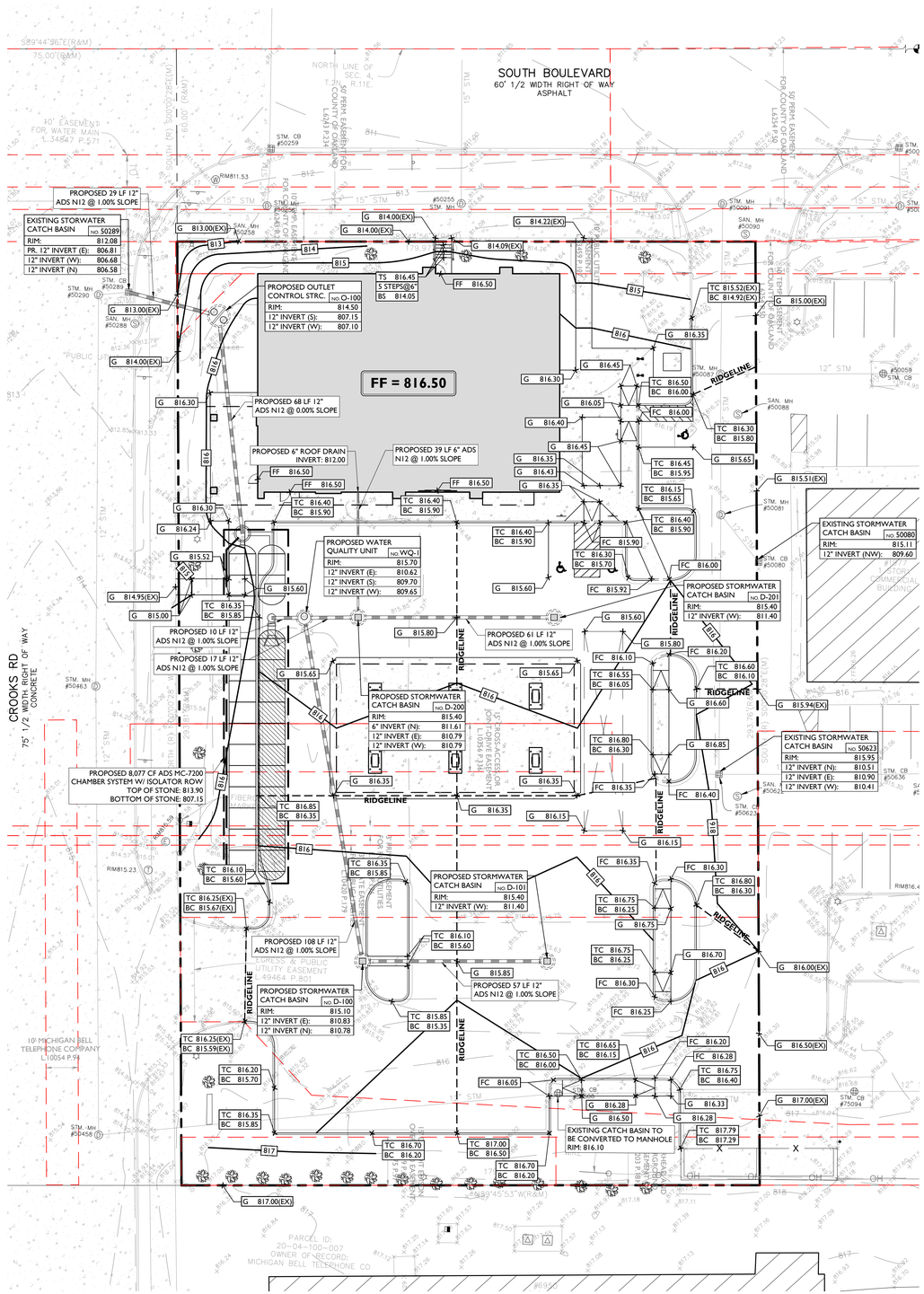
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-230414

TITLE: SITE PLAN

DRAWING: C-2

V:\DET\2023\DET-230414 BARBAT OR-ANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\PDF\SDP-03-SITE.DWG



BENCHMARKS

SITE BENCHMARK #2 (CITY BM #1736)
LETTER "M" ON EAST FACE OF HYDRANT AT NORTHEAST CORNER OF BLDG #1981.
ELEVATION = 818.33' (NAVD 88)

SITE BENCHMARK #3
CHISELED "X" ON EAST FACE OF LIGHT POLE 70'± WEST OF NORTHWEST CORNER OF BLDG #1981.
ELEVATION = 818.54' (NAVD 88)

STORMWATER MANAGEMENT CALCULATIONS

(Based on Oakland County Stormwater Engineering Design Standards (11-22-2021 ordinance))

Project:	Barbat Troy	Designer:	KRG	Date:	11/05/24

PART A: Determination of Surface Runoff

Landcover		Area (AC)	Area (SF)		C-Value*		Weighted Value
Building / Pavement		0.79	34,581	x	0.95	=	32,852
Landscaped Areas	HSG D	0.29	12,465	x	0.30	=	3,740
Subtotals		1.08	47,046				36,591

*C-values obtained from Oakland County Standards, Section III, Part 'A'

	Composite C Value, C:	0.78
$I_{WQ} = 30.20P^{0.32} / (9.17+T)^{0.84}$	Water Quality Intensity, I_{WQ}:	2.76 IN/HR
T_C, Time of Concentration: Residential - Assume 20 min; Commercial/Industrial - Assume 15 min; Sites < 5 acres - Assume 10 min	Design Storm Period, P:	1 YEARS
	Time of Concentration, T_C:	10.0 MINS

PART C: Channel Protection Volume Control

$V_{CP-R} = 4,719 * C * A$	Required CPVC Volume, V_{CP-R}:	3,975.39 CF
	Provided CPVC Volume, V_{CP-P}:	0.00 CF
Is High Ground Water Present On-Site? No	CPVC is Waived	
Is Infiltration ≥0.24 in/hr Available On-Site? No	CPVC is Waived	
K_{SAT} < 0.24 in/hr - Soil not suitable for infiltration; 0.24 in/hr < K_{SAT} < 0.50 in/hr - Supplmental Measeures Required; 0.50< K_{SAT} - No Supplmental Measeures Required	Infiltration Rate, K_{SAT}:	0.00 in/hr
	Area of Ponding Depth, A_T:	0.00 FT

PART D: Water Quality Control

Mechanical Separators

Is a Mechanical Separator Proposed? Yes	Mechanical Separator is Required	
$I_1 = 30.20 / (T_C + 9.17)^{0.84}$	Water Quality Intensity, I_1:	2.76 IN/HR
$Q_{WQ} = C * A * I_1$	Water Quality Rate, Q_{WQ}:	2.33 CFS

Sediment Forebay

Is a Forebay Proposed? No	Forebay Design is Waived	
$V_{F-R} = 545 * C * A$	Required Forebay Volume, V_{F-R}:	0.00 CF
	Provided Forebay Volume, V_{F-P}:	0.00 CF

PART E: Channel Protection Rate Control: Extended Detention

$V_{ED} = 6,897 * C * A$	Extended Detention Volume, V_{ED}:	5,810.18 CF
$H_{ED} = V_{ED} / (4,666 * \sqrt{h_{ED}})$	Total Head, h_{ED}:	5.00 FT
	1" Holes Required to Control Release, H_{ED}:	0.56 1" Holes

PART F: Detention & Flood Control Facilities

$Q_{100IN} = C * I_{100} * A$	100-yr Post-Development Peak Inflow Rate, Q_{100IN}:	6.42 CFS
$I_{100} = 83.3 / [(T_C + 9.17) ^ (0.81)]$	100-yr Rainfall Intensity, I_{100}:	7.62 in/hr
$Q_{VRR} = 1.1055 - 0.206*LN(A)$	Variable Release Rate, Q_{VRR}:	1.09 CFS / AC

*Allowable Peak Release Rate Not to Exceed: 1) Restricted Rate for the Drain, or 2) The prorated Share of the Drain's Capacity, or 3) Q_{VRR}

$Q_{100P} = Q_{VRR} * A$	100-YR Release Rate, Q_{100P}:	1.18 CFS
$R = 0.206 - 0.15 * LN(Q_{100P} / Q_{100IN})$	Storage Curve Factor, R:	0.46
$V_{100R} = 18,985 * C * A$	Post Development 100-yr Runoff Volume, V_{100C}:	15,993.37 CFS
$V_{100D} = V_{100R} * R - V_{CP-P}$	100-yr Detention Volume, V_{100D}:	7,363.18 CF

BASIN VOLUME REQUIRED

$V_R = V_{100D}$	Volume Required, Vr:	7,363 CF

MANHOLE SCHEDULE

NUM	TYPE	RIM (FT)	SIZE (IN)	DIR	INV ELEV (FT)
50002	CATCH BASIN	813.21	15	S	808.60
50035	STORM MANHOLE	814.51	15	N	808.56
		814.51	15	W	808.18
		814.51	15	E	809.39
50036	SANITARY MANHOLE	814.83	8	W	806.13
		814.83	8	E	806.14
		814.83	10	S	806.96
50059	CATCH BASIN	814.86	12	W	810.54
		814.86	12	E	810.73
50080	CATCH BASIN	815.11	12	NW	809.60
50081	STORM MANHOLE	815.85	12	N	810.39
		815.85	12	SE	810.45
		815.85	12	S	810.43
50087	STORM MANHOLE	815.14	12	E	810.27
		815.14	12	S	810.19
		815.14	12	N	BULKHEADED
50088	SANITARY MANHOLE	815.36	10	N	807.36
		815.36	10	S	807.41
50090	SANITARY MANHOLE	813.52	8	E	806.42
		813.52	8	W	806.28
		813.52	10	S	806.42
50091	STORM MANHOLE	813.01	15	W	807.19
		813.01	15	E	807.55
		813.01	12	S	808.02
50173	CATCH BASIN	813.85	T/WATER		808.16
		813.85	BTM/STRUCTURE		807.79
50255	STORM MANHOLE	813.54	15	E	806.33
		813.54	15	W	806.05
		813.54	12	S	807.42
		813.54	15	N	806.09
50256	STORM MANHOLE	812.94	15	E	805.87
		812.94	12	N	805.86
		812.94	15	W	805.65
50258	SANITARY MANHOLE	812.70	8	E	804.84
		812.70	10	SW	804.74

NUM	TYPE	RIM (FT)	SIZE (IN)	DIR	INV ELEV (FT)
50259	CATCH BASIN	810.62	12	S	805.93
50288	SANITARY MANHOLE	812.24	10	NE	805.71
		812.24	10	S	805.52
50289	CATCH BASIN	812.08	12	N	806.58
		812.08	12	W	806.68
50290	STORM MANHOLE	812.26	12	S	806.64
		812.26	12	E	806.53
50291	STORM MANHOLE	811.70	12	S	806.06
		811.70	15	W	805.09
		811.70	15	E	805.19
50360	CATCH BASIN	814.47	6	NW	812.27
		814.47	4	W	809.79
		814.47	15	S	809.80
50458	STORM MANHOLE	815.15	12	N	809.35
		815.15	12	E	809.55
50463	STORM MANHOLE	814.30	UNABLE TO OPEN		
50467	CATCH BASIN	815.20	12	N	810.76
		815.20	12	E	810.44
50491	CATCH BASIN	815.30	12	W	811.12
		815.30	10	NE	811.05
50508	CATCH BASIN	816.06	12	E	813.06
		816.06	12	W	812.67
50622	SANITARY MANHOLE	815.79	10	N	807.97
		815.79	10	E	808.09
50623	CATCH BASIN	815.95	12	N	810.51
		815.95	12	E	810.90
		815.95	12	W	810.41
50636	CATCH BASIN	814.90	12	E	810.64
		814.90	12	W	810.34
50637	SANITARY MANHOLE	815.65	UNABLE TO OPEN		
75017	CATCH BASIN	815.69	4	NW	811.97
		815.69	12	W	811.64
		815.69	12	E	811.89
75043	CATCH BASIN	816.60	12	W	813.06
		816.60	12	E	813.15
75094	CATCH BASIN	816.67	12	W	813.37
		816.67	12	E	813.42

SYMBOL / DESCRIPTION

- PROPERTY LINE
- 100 — PROPOSED GRADING CONTOUR
- RIDGELINE — PROPOSED GRADING RIDGELINE
- G 100.00 — PROPOSED GRADE SPOT SHOT
- TC 100.50 / BC 100.00 — PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
- FC 100.00 — PROPOSED FLUSH CURB SPOT SHOT
- TS 100.00 / STEPS @ 6" / BS 100.00 — PROPOSED TOP OF STEP / BOTTOM OF STEP SPOT SHOT

GRADING NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
   - CURB GUTTER: 0.50%
   - CONCRETE SURFACES: 1.00%
   - ASPHALT SURFACES: 1.00%
6. A MINIMUM SLOPE OF 1.00% 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.
7. 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

1. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
2. THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
3. 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.
4. 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.
5. 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. FOR ALTERATIONS, A CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURBS RAMPS 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.
6. 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.
7. A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
8. 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).
9. THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATIONS) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN ½ INCH.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
3	12/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	11/05/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

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248.247.1115

SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

STATE OF MICHIGAN — JONATHAN REID COOKSEY — ENGINEER — No. 6201068536 — PROFESSIONAL ENGINEER

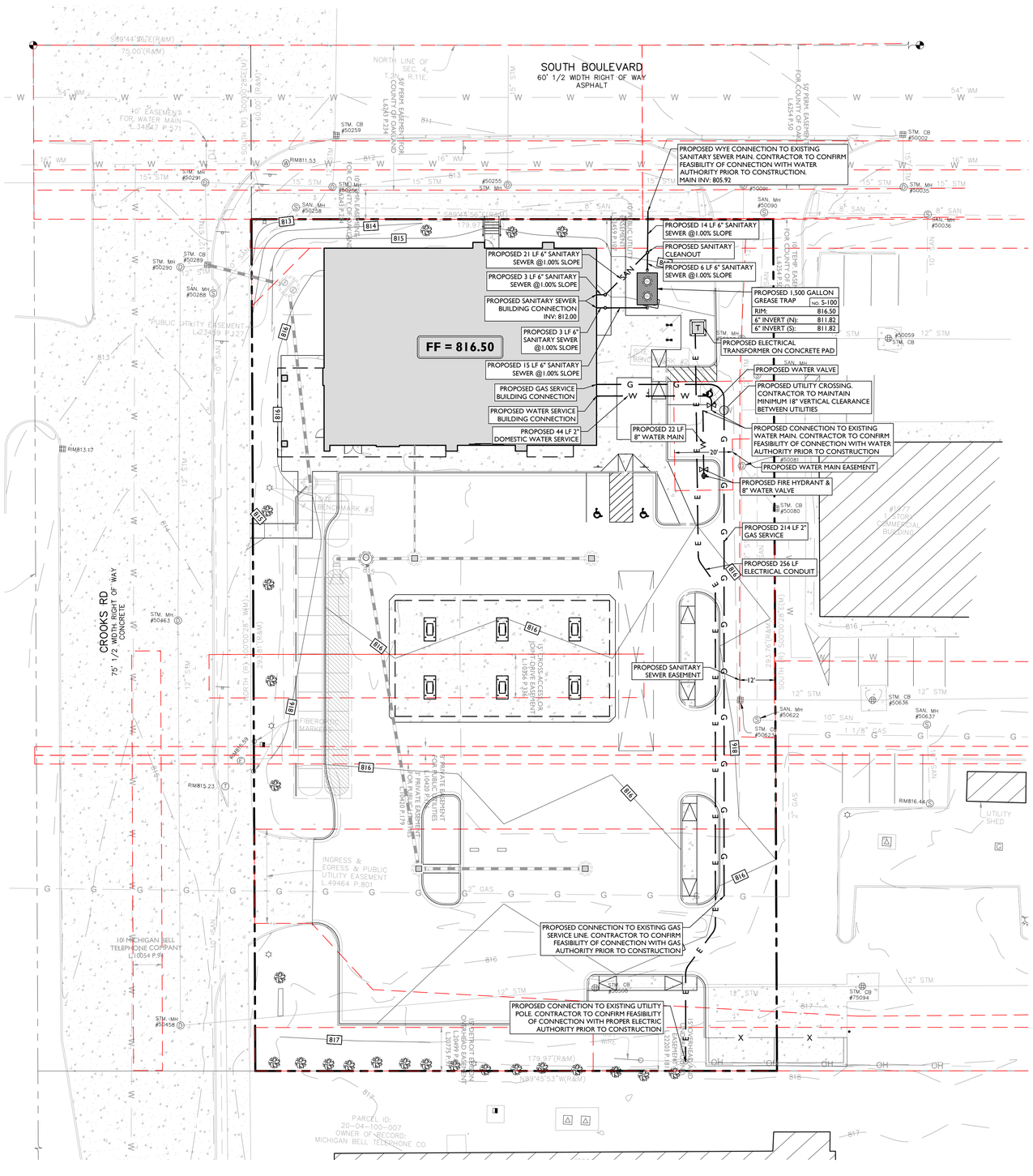
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-230414

TITLE: **GRADING & STORMWATER MANAGEMENT PLAN**

DRAWING: **C-3**

V:\DET\2023\DET-23041 BARBAT ORGANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\DWG\TOP\DET-23041 GRADING.DWG



BENCHMARKS

SITE BENCHMARK #2 (CITY BM #1736)
LETTER "H" ON EAST FACE OF HYDRANT AT NORTHEAST CORNER OF BLDG #1981.
ELEVATION = 818.33' (NAVD 88)

SITE BENCHMARK #3
CHISELED "X" ON EAST FACE OF LIGHT POLE 70'± WEST OF NORTHWEST CORNER OF BLDG #1981.
ELEVATION = 818.54' (NAVD 88)

MANHOLE SCHEDULE

NUM	TYPE	RIM (FT)	SIZE (IN)	DIR	INV ELEV (FT)
50002	CATCH BASIN	813.21	15	S	808.60
50035	STORM MANHOLE	814.51	15	N	808.56
		814.51	15	W	808.18
		814.51	15	E	809.39
50036	SANITARY MANHOLE	814.83	8	W	806.13
		814.83	8	E	806.14
		814.83	10	S	806.96
50059	CATCH BASIN	814.86	12	W	810.54
		814.86	12	E	810.73
50080	CATCH BASIN	815.11	12	NW	809.60
50081	STORM MANHOLE	815.85	12	N	810.39
		815.85	12	SE	810.45
		815.85	12	S	810.43
50087	STORM MANHOLE	815.14	12	E	810.27
		815.14	12	S	810.19
		815.14	12	N	BULKHEADED
50088	SANITARY MANHOLE	815.36	10	N	807.36
		815.36	10	S	807.41
50090	SANITARY MANHOLE	813.52	8	E	806.42
		813.52	8	W	806.28
		813.52	10	S	806.42
50091	STORM MANHOLE	813.01	15	W	807.19
		813.01	15	E	807.55
		813.01	12	S	808.02
50173	CATCH BASIN	813.85	T/WATER		808.16
		813.85	BTM/STRUCTURE		807.79
50255	STORM MANHOLE	813.54	15	E	806.33
		813.54	15	W	806.05
		813.54	12	S	807.42
		813.54	15	N	806.09
50256	STORM MANHOLE	812.94	15	E	805.87
		812.94	12	N	805.86
		812.94	15	W	805.65
50258	SANITARY MANHOLE	812.70	8	E	804.84
		812.70	10	SW	804.74
50259	CATCH BASIN	810.62	12	S	805.93
50288	SANITARY MANHOLE	812.24	10	NE	805.71
		812.24	10	S	805.52
50289	CATCH BASIN	812.08	12	N	806.58
		812.08	12	W	806.68
50290	STORM MANHOLE	812.26	12	S	806.64
		812.26	12	E	806.53
50291	STORM MANHOLE	811.70	12	S	806.06
		811.70	15	W	805.09
		811.70	15	E	805.19
50360	CATCH BASIN	814.47	6	NW	812.27
		814.47	4	W	809.79
		814.47	15	S	809.80
50458	STORM MANHOLE	815.15	12	N	809.35
		815.15	12	E	809.55
50463	STORM MANHOLE	814.30	UNABLE TO OPEN		
50467	CATCH BASIN	815.20	12	N	810.76
		815.20	12	E	810.44
50491	CATCH BASIN	815.30	12	W	811.12
		815.30	10	NE	811.05
50508	CATCH BASIN	816.06	12	E	813.06
		816.06	12	W	812.67
50622	SANITARY MANHOLE	815.79	10	N	807.97
		815.79	10	E	808.09
50623	CATCH BASIN	815.95	12	N	810.51
		815.95	12	E	810.90
		815.95	12	W	810.41
50636	CATCH BASIN	814.90	12	E	810.64
		814.90	12	W	810.34
50637	SANITARY MANHOLE	815.65	UNABLE TO OPEN		
75017	CATCH BASIN	815.69	4	NW	811.97
		815.69	12	W	811.64
		815.69	12	E	811.89
75043	CATCH BASIN	816.60	12	W	813.06
		816.60	12	E	813.15
75094	CATCH BASIN	816.67	12	W	813.37
		816.67	12	E	813.42

SYMBOL	DESCRIPTION
	PROPERTY LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
E	PROPOSED ELECTRIC CONDUITS
G	PROPOSED GAS LINE
	PROPOSED VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED GREASE TRAP
	PROPOSED SANITARY CLEANOUT
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

DRAINAGE AND UTILITY NOTES

1. 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.
2. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
4. 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 ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. 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 ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
6. 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.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
8. CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADIENT.
9. 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.
10. 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.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
3	12/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	11/05/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

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555 S. Old Woodward, Suite 12L, Birmingham, MI 48009
248.247.1115

SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

JONATHAN REID COOKSEY — ENGINEER — No. 6201060567 — PROFESSIONAL ENGINEER — STATE OF MICHIGAN — LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-230414

TITLE: UTILITY PLAN

DRAWING: C-4

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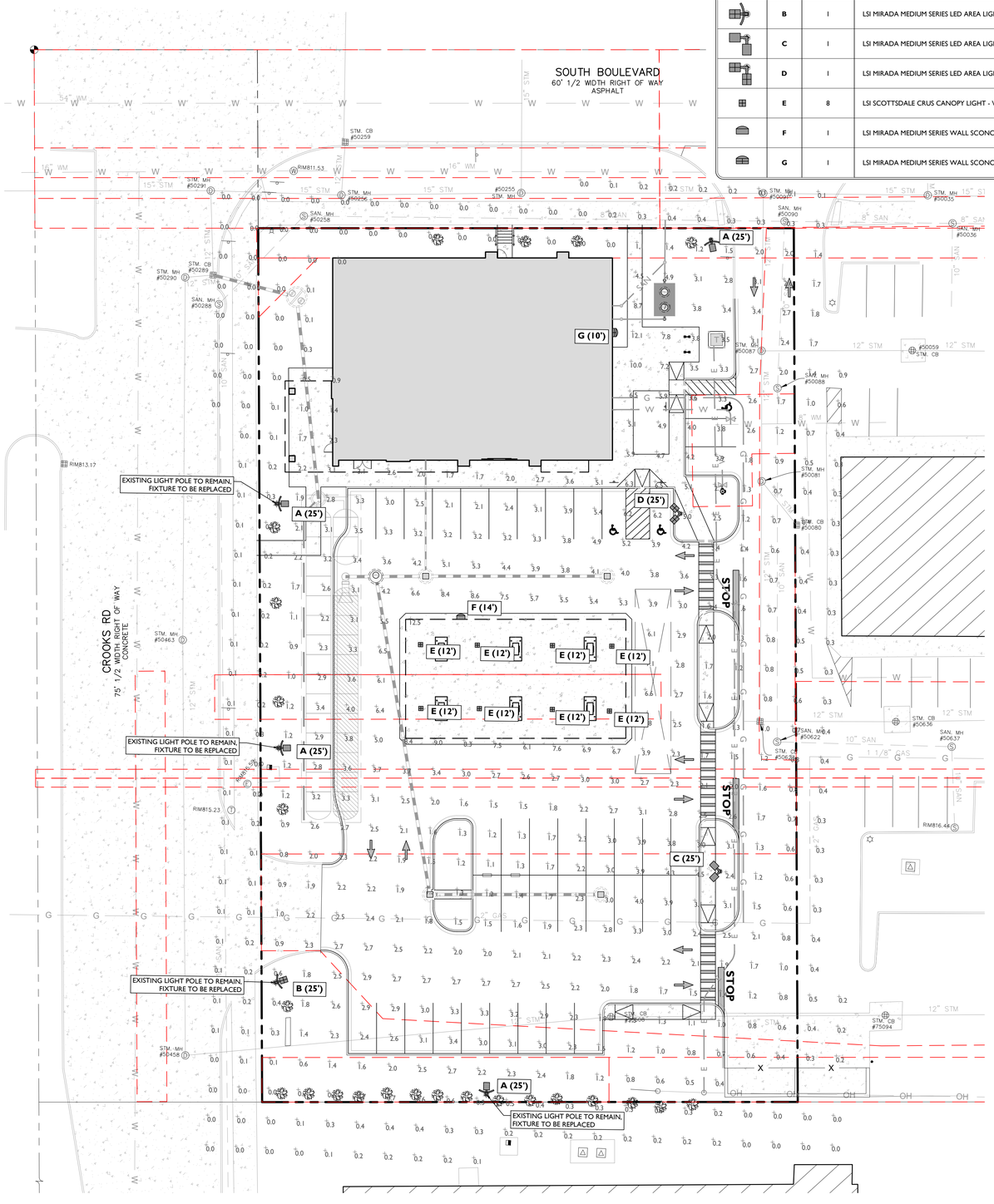

PROPOSED LUMINAIRE SCHEDULE

SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	MANUFACTURER	CONTROL	IES FILE
	A	4	LSI MIRADA MEDIUM SERIES LED AREA LIGHT - 18L - 50K - BACKSHIELD	IV	0.9	LSI LIGHTING	N/A	MRM-LED-18L-SIL-4-50-70CRI-IL.ies
	B	1	LSI MIRADA MEDIUM SERIES LED AREA LIGHT - 12L - 50K - BACKSHIELD	IV	0.9	LSI LIGHTING	N/A	MRM-LED-12L-SIL-4-50-70CRI-IL.ies
	C	1	LSI MIRADA MEDIUM SERIES LED AREA LIGHT - 12L - 50K	IV	0.9	LSI LIGHTING	N/A	MRM-LED-12L-SIL-4-50-70CRI.ies
	D	1	LSI MIRADA MEDIUM SERIES LED AREA LIGHT - 18L - 50K	IV	0.9	LSI LIGHTING	N/A	MRM-LED-18L-SIL-4-50-70CRI.ies
	E	8	LSI SCOTTSDALE CRUS CANOPY LIGHT - VLW - 30K	N/A	0.9	LSI LIGHTING	N/A	CRUS-SC-VLW-30.ies
	F	1	LSI MIRADA MEDIUM SERIES WALL SCONCE - 08L - 50K	III	0.9	LSI LIGHTING	N/A	XWM-3-LED-08L-50.ies
	G	1	LSI MIRADA MEDIUM SERIES WALL SCONCE - 08L - 50K	IV	0.9	LSI LIGHTING	N/A	XWM-4-LED-08L-50.ies

LIGHTING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 13.05.C.2	MAX LIGHT LEVEL AT POLE BASE: 20 FC DURING BUSINESS HOURS 10 FC AFTER BUSINESS HOURS	20.0 FC
§ 13.05.C.2	MAX LIGHT LEVEL AT 5 FT ABOVE PROPERTY LINE: 1 FC AT NONRESIDENTIAL BOUNDARY	2.8 FC (W)
§ 13.05.C.2	MAX LIGHT POLE HEIGHT: 25 FT	25 FT

(W) WAIVER - PROPERTY LINE DIVIDES SHARED DRIVE OFF SOUTH BOULEVARD, LIGHTING PROVIDED FOR FULL DRIVEWAY AREA

LIGHT FIXTURE 'A', 'B', 'C', & 'D'

LIGHT FIXTURE 'E'

LIGHT FIXTURE 'F' & 'G'

SYMBOL	DESCRIPTION
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
XX	PROPOSED LIGHTING INTENSITY (FOOTCANDLES)
	PROPOSED AREA LIGHT
	PROPOSED CANOPY LIGHT
	PROPOSED WALL MOUNTED LIGHT

GENERAL LIGHTING NOTES

1. 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 ARE WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
2. 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.
3. 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
4. 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.
5. 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.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
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2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	10/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

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SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
LICENSE No. 6201067428
PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-230414

TITLE: LIGHTING PLAN

DRAWING: C-5

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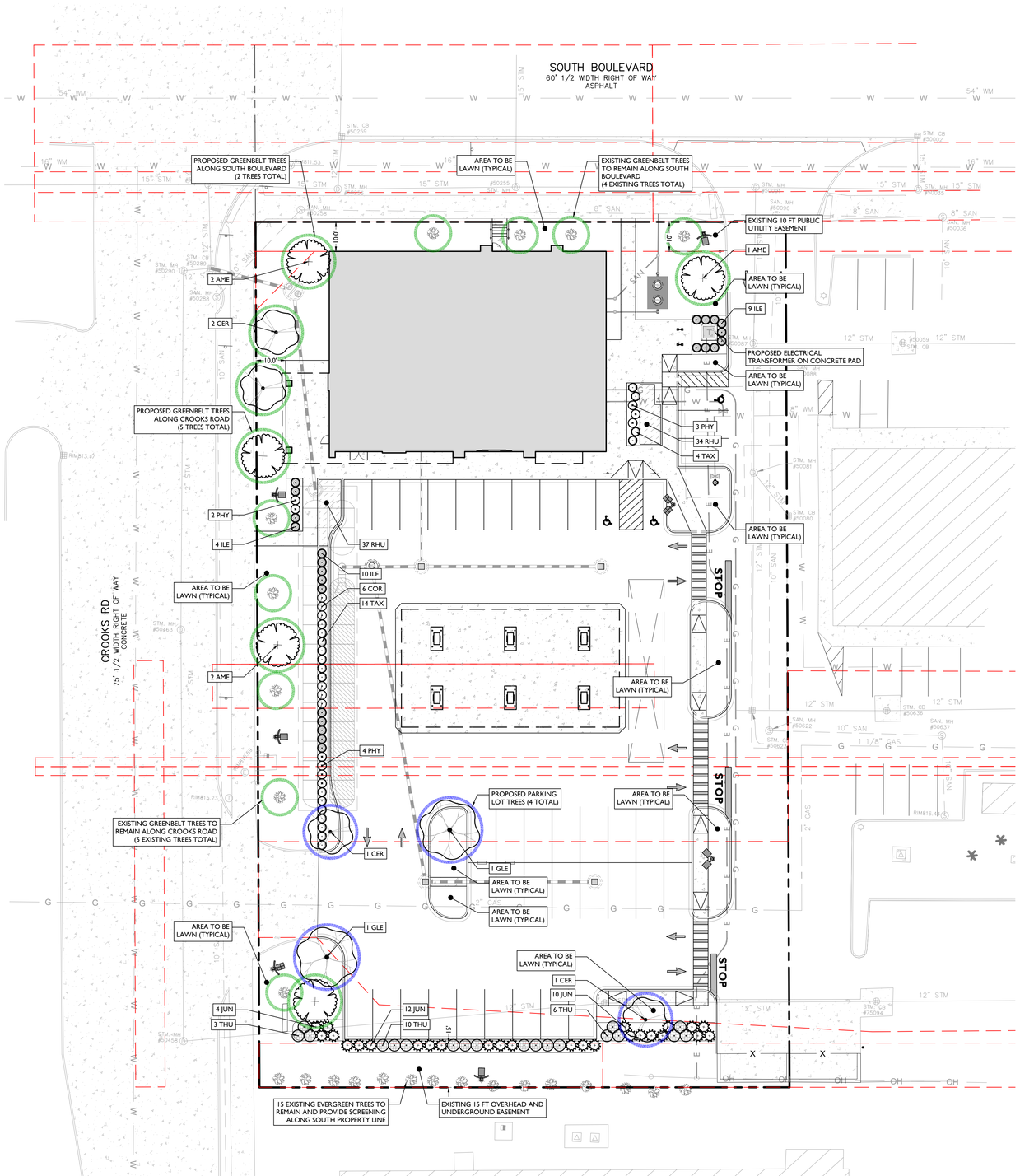


LANDSCAPING AND SCREENING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 13.02.B.2.a.	SCREEN STANDARDS LANDSCAPE BUFFER REQUIRED WITH VISUAL SCREEN MINIMUM HEIGHT: 6 FT	 COMPLIES COMPLIES
TABLE 13.02-A	LANDSCAPE SCREENING ALTERNATIVE 1 1 NARROW EVERGREEN TREE FOR EVERY 3 LF SOUTH PROPERTY LINE: 180 FT (180 FT) * (1 TREE / 3 FT) = 60 TREES	 COMPLIES 15 EXISTING TREES 45 PROPOSED TREES(1)
TABLE 13.02-B	LANDSCAPE SCREENING SCREENING ALTERNATIVE 1 REQUIRED WHERE AUTO USES ABUT RETAIL	 EAST: N/A(2) SOUTH: COMPLIES
§ 13.02.C.2.a.	PARKING LOT LANDSCAPING 1 TREE FOR EVERY 8 PARKING SPACES (34 SPACES) / (1 TREE / 8 SPACES) = 4 TREES	 4 TREES
§ 13.02.C.2.b.	LANDSCAPED ISLANDS MINIMUM AREA: 200 SF	 200 SF
§ 13.02.C.3.b.	PARKING LOT SCREENING PARKING LOTS ALONG PUBLIC R.O.W. SHALL BE SCREENED BY A LANDSCAPED BERM, LANDSCAPE PLANTINGS, OR A SOLID WALL	 COMPLIES; LANDSCAPE PLANTINGS PROPOSED
§ 13.02.D.1. § 13.02.D.2.a. § 13.02.D.2.b.	GREENBELT STANDARDS REQUIRED ALONG ALL PUBLIC STREETS MINIMUM WIDTH: 10 FT 1 TREE FOR EVERY 30 LF OF FRONTAGE SOUTH BOULEVARD: 180 LF (180 FT) * (1 TREE / 30 FT) = 6 TREES CROOKS ROAD: 294 LF (294 FT) * (1 TREE / 30 FT) = 10 TREES	 COMPLIES SOUTH BOULEVARD: 10.0 FT CROOKS ROAD: 10.0 FT 4 EXISTING TREES 2 PROPOSED TREES 5 EXISTING TREES 5 PROPOSED TREES
§ 13.02.E.1.a.	SITE LANDSCAPING MINIMUM 20% SITE LANDSCAPING REQUIRED (52,872 SF) * (0.20) = 10,574 SF	 12,301 SF (23%)

N/A NOT APPLICABLE
(1) DUE TO LOCATION OF EXISTING 15 FT UTILITY EASEMENT, EVERGREENS ARE CLUSTERED WHERE PLANTING SPACE IS AVAILABLE.
(2) SCREENING REQUIREMENT NOT APPLICABLE DUE TO EXISTING DRIVE ALONG PROPERTY LINE.

TREE REPLACEMENT REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 13.07.E.1.a.	WOODLAND TREES 50% OF THE ORIGINAL DBH OF WOODLAND TREES REMOVED SHALL BE REPLACED	 N/A; NO WOODLAND TREES EXISTING OR TO BE REMOVED
§ 13.07.E.1.b.	LANDMARK TREES 100% OF THE ORIGINAL DBH OF LANDMARK TREES REMOVED SHALL BE REPLACED	 N/A; NO LANDMARK TREES EXISTING OR TO BE REMOVED

N/A NOT APPLICABLE

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
DECIDUOUS TREES						
	GLE	2	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST	2" - 2.5" CAL	B&B
EVERGREEN TREES						
	JUN	26	JUNIPERUS VIRGINIANA 'J.N. SELECT GREEN'	EMERALD FEATHER EASTERN REDCEDAR	6' - 7' HT	B&B
	THU	19	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6' - 7' HT	B&B
ORNAMENTAL TREES						
	AME	5	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE APPLE SERVICEBERRY	2" - 2.5" CAL	B&B
	CER	4	CERCIS CANADENSIS	EASTERN REDBUD	2" - 2.5" CAL	B&B
SHRUBS						
	COR	6	CORNUS STOLONIFERA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	18" - 24"	POT
	PHY	9	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	LITTLE DEVIL DWARF NINEBARK	18" - 24"	POT
EVERGREEN SHRUBS						
	ILE	23	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	18" - 24"	B&B
	TAX	18	TAXUS X MEDIA 'DENSIFORMIS'	DENSE ANGLO-JAPANESE YEW	18" - 24"	POT
GROUND COVERS						
	RHU	71	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	1 GAL.	POT, 24" O.C.

(*) SPECIES AND SIZES HAVE BEEN SELECTED FROM TABLE 13.02-C.

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

SYMBOL	DESCRIPTION
	PROPOSED GREENBELT TREES
	PROPOSED PARKING LOT TREES

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

IRRIGATION NOTE:

IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.

LANDSCAPING NOTES

1. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
2. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
3. THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH .
4. THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
6. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.

STATE OF MICHIGAN
PAUL DEVITTO
No. 3901001797
REGISTERED LANDSCAPE ARCHITECT

PAUL DEVITTO, L.L.A.
MICHIGAN LICENSE No. 3901001797
LICENSED LANDSCAPE ARCHITECT

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
3	12/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	11/05/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
Birmingham, MI · New York, NY · Boston, MA
Princeton, NJ · Tampa, FL · Rutherford, NJ
www.stonefieldeng.com
555 S. Old Woodward, Suite 12L, Birmingham, MI 48009
248.247.1115

SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-400-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098

STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
No. 6201062555
REGISTERED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-230414

TITLE:

LANDSCAPING PLAN

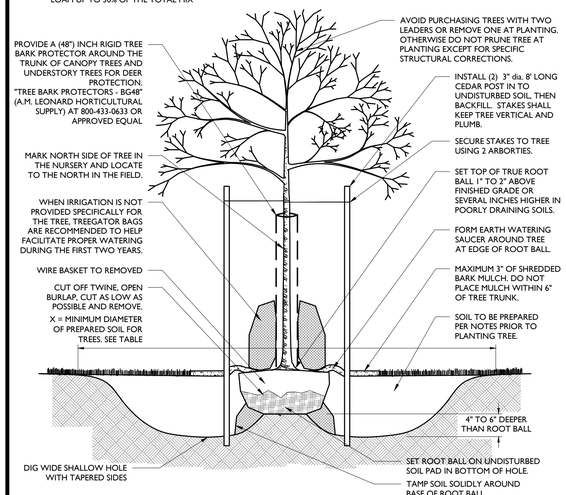
DRAWING:

C-6

V:\DET\2023\DET-230414 BARBAT ORGANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\PLOTS\DP-PLAN-LANDSCAPING

NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX



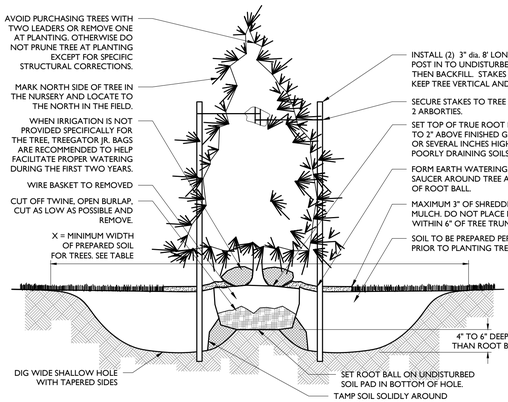
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

1

NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX

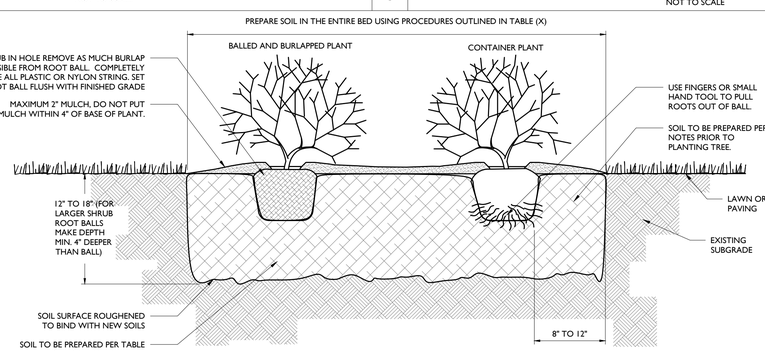


CONIFEROUS TREE PLANTING DETAIL

NOT TO SCALE

2

PREPARE SOIL IN THE ENTIRE BED USING PROCEDURES OUTLINED IN TABLE (X)



NOTES:

1. FOR CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL

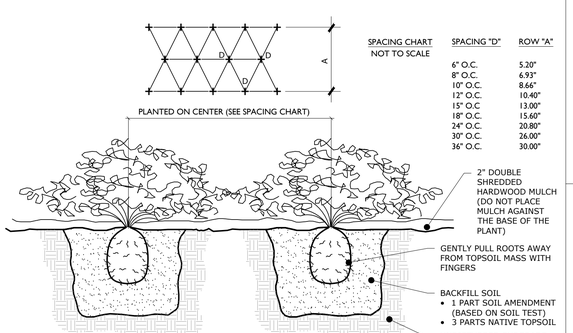
DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

3

NOTES:

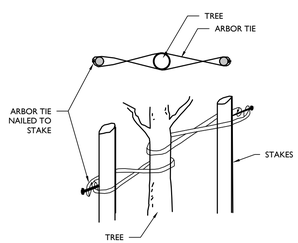
1. THOROUGHLY SOAK THE GROUND COVER ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
2. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILDS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX
3. ALL GROUND COVER AREAS SHALL BE TREATED WITH A PRE-EMERGENT PER MANUFACTURER'S SPECIFICATIONS



GROUND COVER/PERENNIAL/ANNUAL PLANTING DETAIL

NOT TO SCALE

4



INSTALLATION GUIDELINES:

1. LOOP TIE AROUND TREE AND NAIL TO CEDAR STAKE.
2. REMOVE ALL STAKING AND TIES AT END OF FIRST GROWING SEASON.
3. FOLD ENDS OF ARBORTIE BACK. SECURE TO STAKES WITH 1" GALVANIZED ROOFING NAIL OR USE A KNOT.
4. CONSULT LANDSCAPE ARCHITECT FOR STAKING OF TREES LARGER THAN 6".
5. SOURCES INCLUDE:
   GEMPLERS 1-800-332-6744 or GEMPLERS.COM
   CSP OUTDOORS 1-800-592-6940 or CSPOUTDOORS.COM

ARBORTIE DETAIL

NOT TO SCALE

5

GENERAL LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH THESE SPECIFICATIONS, APPROVED OR FINAL DRAWINGS, AND INSTRUCTIONS PROVIDED BY THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIALS, OR OWNER/OWNER'S REPRESENTATIVE. ALL WORK COMPLETED AND MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH THE INTENTION OF THE SPECIFICATIONS, DRAWINGS, AND INSTRUCTIONS AND EXECUTED WITH THE STANDARD LEVEL OF CARE FOR THE LANDSCAPE INDUSTRY.
2. WORK MUST BE CARRIED OUT ONLY DURING WEATHER CONDITIONS FAVORABLE TO LANDSCAPE CONSTRUCTION AND TO THE HEALTH AND WELFARE OF PLANTS. THE SUITABILITY OF SUCH WEATHER CONDITIONS SHALL BE DETERMINED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL.
3. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR, BEFORE ORDERING OR PURCHASING MATERIALS, TO PROVIDE SAMPLES OF THOSE MATERIALS TO THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL FOR APPROVAL, IF SO REQUESTED.
4. IF SAMPLES ARE REQUESTED, THE LANDSCAPE CONTRACTOR IS TO SUBMIT CERTIFICATION TAGS FROM TREES, SHRUBS AND SEED VERIFYING TYPE AND PURITY.
5. UNLESS OTHERWISE AUTHORIZED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL, THE LANDSCAPE CONTRACTOR SHALL PROVIDE NOTICE AT LEAST FORTY-EIGHT HOURS (48 HRS.) IN ADVANCE OF THE ANTICIPATED DELIVERY DATE OF PLANT MATERIALS TO THE PROJECT SITE. A LEGIBLE COPY OF THE INVOICE, SHOWING VARIETIES AND SIZES OF MATERIALS INCLUDED FOR EACH SHIPMENT SHALL BE FURNISHED TO THE PROJECT LANDSCAPE DESIGNER, OR GOVERNING MUNICIPAL OFFICIAL.
6. THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL RESERVES THE RIGHT TO INSPECT AND REJECT PLANTS AT ANY TIME AND AT ANY PLACE.

PROTECTION OF EXISTING VEGETATION NOTES:

1. BEFORE COMMENCING WORK, ALL EXISTING VEGETATION WHICH COULD BE IMPACTED AS A RESULT OF THE PROPOSED CONSTRUCTION ACTIVITIES MUST BE PROTECTED FROM DAMAGE BY THE INSTALLATION OF TREE PROTECTION FENCING. FENCING SHALL BE LOCATED AT THE DRIP-LINE OR LIMIT OF DISTURBANCE AS DEPICTED WITHIN THE APPROVED OR FINAL PLAN SET, ESTABLISHING THE TREE PROTECTION ZONE. SUCH INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE PROTECTION FENCE DETAIL." NO WORK MAY BEGIN UNTIL THIS REQUIREMENT IS FULFILLED. THE FENCING SHALL BE INSPECTED REGULARLY BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
2. IN ORDER TO AVOID DAMAGE TO ROOTS, BARK OR LOWER BRANCHES, NO VEHICLE, EQUIPMENT, DEBRIS, OR OTHER MATERIALS SHALL BE DRIVEN, PARKED OR PLACED WITHIN THE TREE PROTECTION ZONE. ALL ON-SITE CONTRACTORS SHALL USE ANY AND ALL PRECAUTIONARY MEASURES WHEN PERFORMING WORK AROUND TREES, WALKS, PAVEMENTS, UTILITIES, AND ANY OTHER FIXTURES EITHER EXISTING OR PREVIOUSLY INSTALLED UNDER THIS CONTRACT.
3. IN RARE INSTANCES WHERE EXCAVATING, FILL, OR GRADING IS REQUIRED WITHIN THE DRIP-LINE OF TREES TO REMAIN, THE WORK SHALL BE PERFORMED AS FOLLOWS:
   - TRENCHING: WHEN TRENCHING OCCURS AROUND TREES TO REMAIN, THE TREE ROOTS SHALL NOT BE CUT, BUT THE TRENCH SHALL BE TUNNELED UNDER OR AROUND THE ROOTS BY CAREFUL HAND DIGGING AND WITHOUT INJURY TO THE ROOTS. NO ROOTS, LIMBS, OR WOODS ARE TO HAVE ANY PAINT OR MATERIAL APPLIED TO ANY SURFACE.
   - RAISING GRADES: WHEN THE GRADE AT AN EXISTING TREE IS BELOW THE NEW FINISHED GRADE, AND FILL NOT EXCEEDING 6 INCHES (6") IS REQUIRED, CLEAN, WASHED GRAVEL FROM ONE TO TWO INCHES (1" - 2") IN SIZE SHALL BE PLACED DIRECTLY AROUND THE TREE TRUNK. THE GRAVEL SHALL EXTEND OUT FROM THE TRUNK ON ALL SIDES A MINIMUM OF 18 INCHES (18") AND FINISH APPROXIMATELY TWO INCHES (2") ABOVE THE FINISH GRADE AT TREE. INSTALL GRAVEL BEFORE ANY EARTH FILL IS PLACED. NEW EARTH FILL SHALL NOT BE LEFT IN CONTACT WITH THE TRUNK OF ANY TREE REQUIRING FILL. WHERE FILL EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID TREE WELL SHALL BE CONSTRUCTED. IF APPLICABLE, THESE WELL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE WELL DETAIL."
   - LOWERING GRADES: EXISTING TREES LOCATED IN AREAS WHERE THE NEW FINISHED GRADE IS TO BE LOWERED, SHALL HAVE RE-GRADING WORK DONE BY HAND TO THE INDICATED ELEVATION, NO GREATER THAN SIX INCHES (6"). ROOTS SHALL BE CUT CLEANLY THREE INCHES (3") BELOW FINISHED GRADE UNDER THE DIRECTION OF A LICENSED ARBORIST. WHERE CUT EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID RETAINING WALL SHALL BE CONSTRUCTED. IF APPLICABLE, THE RETAINING WALL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE RETAINING WALL DETAIL."

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. LANDSCAPE CONTRACTOR SHALL ALLOW FOR A TWO WEEK TURNAROUND TIME FROM SUBMITTAL OF SAMPLE TO NOTIFICATION OF RESULTS.
2. BASED ON SOIL TEST RESULTS, ADJUST THE RATES OF LIME AND FERTILIZER THAT SHALL BE MIXED INTO THE TOP SIX INCHES (6") OF TOPSOIL. THE LIME AND FERTILIZER RATES PROVIDED WITHIN THE "SEED SPECIFICATION" OR "SOD SPECIFICATION" IS APPROXIMATE AND FOR BIDDING PURPOSES ONLY. IF ADDITIONAL AMENDMENTS ARE NECESSARY, ADJUST THE TOPSOIL AS FOLLOWS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM.
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.
3. TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMING CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL OBTAINED FROM A WELL-DRAINED ARABLE SITE, FREE FROM ALL CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIAL GREATER THAN ONE INCH (1").
4. TOPSOIL SHALL HAVE A PH RANGE OF 5.0-7.0 AND SHALL NOT CONTAIN LESS THAN 6% ORGANIC MATTER BY WEIGHT.
5. OBTAIN TOPSOIL ONLY FROM LOCAL SOURCES OR FROM AREAS HAVING SIMILAR SOIL CHARACTERISTICS TO THAT FOUND AT THE PROJECT SITE.
6. CONTRACTOR SHALL PROVIDE A SIX INCH (6") DEEP LAYER OF TOPSOIL IN ALL PLANTING AREAS. TOPSOIL SHALL BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN SOIL CONDITIONS.
7. UNLESS OTHERWISE NOTED IN THE CONTRACT, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBED AREA OF THE SITE.
8. LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE SUB-GRADE ELEVATION MEETS THE FINISHED GRADE ELEVATION (LESS THE REQUIRED TOPSOIL) IN ACCORDANCE WITH THE APPROVED OR FINAL GRADING PLAN.
9. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THE APPROVED OR FINAL CONSTRUCTION SET UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE DESIGNER OR MUNICIPAL OFFICIAL.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SURFACE AND SUBSURFACE PLANT BED DRAINAGE PRIOR TO THE INSTALLATION OF PLANTINGS. IF POOR DRAINAGE CONDITIONS EXIST, CORRECTIVE ACTION SHALL BE TAKEN PRIOR TO INSTALLATION. ALL PLANTING AND LAWN AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW A FREE FLOW OF SURFACE WATER.
11. DOUBLE SHREDDED HARDWOOD MULCH OR APPROVED EQUAL SHALL BE USED AS A THREE INCH (3") TOP DRESSING IN ALL SHRUB PLANTING BEDS AND AROUND ALL TREES PLANTED BY LANDSCAPE CONTRACTOR. GROUND COVER, PERENNIAL, AND ANNUAL PLANTING BEDS SHALL BE MULCHED WITH A TWO INCH (2") TOP DRESSING. SINGLE TREES OR SHRUBS SHALL BE MULCHED TO AVOID CONTACT WITH TRUNK OR PLANT STEM. MULCH SHALL BE OF SUFFICIENT CHARACTER AS NOT TO BE EASILY DISPLACED BY WIND OR WATER RUNOFF.
12. WHENEVER POSSIBLE, THE SOIL PREPARATION AREA SHALL BE CONNECTED FROM PLANTING TO PLANTING.
13. SOIL SHALL BE LOOSENED WITH A BACKHOE OR OTHER LARGE COARSE-TILING EQUIPMENT UNLESS THE SOIL IS FROZEN OR EXCESSIVELY WET. TILING THAT PRODUCES LARGE, COARSE CHUNKS OF SOIL IS PREFERABLE TO TILING THAT RESULTS IN FINE GRAINS UNIFORM IN TEXTURE. AFTER THE AREA IS LOOSENED IT SHALL NOT BE DRIVEN OVER BY ANY VEHICLE.
14. APPLY PRE-EMERGENT WEED CONTROL TO ALL PLANT BEDS PRIOR TO MULCHING. ENSURE COMPATIBILITY BETWEEN PRODUCT AND PLANT MATERIAL.
15. ALL PLANTING SOIL SHALL BE AMENDED WITH THE FOLLOWING:

MYCRO® TREE SAVER - A DRY GRANULAR MYCORRHIZAL FUNGI INOCULANT THAT IS MIXED IN THE BACKFILL WHEN PLANTING TREES AND SHRUBS. IT CONTAINS SPORES OF BOTH ECTOMYCORRHIZAL AND VA MYCORRHIZAL FUNGI (VAM), BENEFICIAL RHIZOSPHERE BACTERIA, TERRA-SORB SUPERABSORBENT HYDROGEL TO REDUCE WATER LEACHING, AND SELECTED ORGANIC MICROBIAL NUTRIENTS.

- DIRECTIONS FOR USE: USE 3-OZ PER EACH FOOT DIAMETER OF THE ROOT BALL, OR 3-OZ PER INCH CALIPER. MIX INTO THE BACKFILL WHEN TRANSPLANTING TREES AND SHRUBS. MIX PRODUCT IN A RING-SHAPED VOLUME OF SOIL AROUND THE UPPER PORTION OF THE ROOT BALL, EXTENDING FROM THE SOIL SURFACE TO A DEPTH OF ABOUT 8 INCHES, AND EXTENDING OUT FROM THE ROOT BALL ABOUT 8 INCHES INTO THE BACKFILL. APPLY WATER TO SOIL SATURATION.
- MYCOR® TREE SAVER® IS EFFECTIVE FOR ALL TREE AND SHRUB SPECIES EXCEPT RHODODENDRONS, AZALEAS, AND MOUNTAIN LAUREL, WHICH REQUIRE ERICOID MYCORRHIZAE.
- SOIL PH: THE FUNGI IN THIS PRODUCT WERE CHOSEN BASED ON THEIR ABILITY TO SURVIVE AND COLONIZE PLANT ROOTS IN A PH RANGE OF 3 TO 9.
- FUNGICIDES: THE USE OF CERTAIN FUNGICIDES CAN HAVE A DETRIMENTAL EFFECT ON THE INOCULATION PROGRAM. SOIL APPLICATION OF ANY FUNGICIDE IS NOT RECOMMENDED FOR TWO WEEKS AFTER APPLICATION.
- OTHER PESTICIDES: HERBICIDES AND INSECTICIDES DO NOT NORMALLY INTERFERE WITH MYCORRHIZAL FUNGAL DEVELOPMENT, BUT MAY INHIBIT THE GROWTH OF SOME TREE AND SHRUB SPECIES IF NOT USED PROPERLY.

HEALTHY START MACRO TABS 12-8-8

- FERTILIZER TABLETS ARE PLACED IN THE UPPER 4 INCHES OF BACKFILL SOIL WHEN PLANTING TREES AND SHRUBS.
- TABLETS ARE FORMULATED FOR LONG-TERM RELEASE BY SLOW BIODEGRADATION, AND LAST UP TO 2 YEARS AFTER PLANTING. TABLETS CONTAIN 12-8-8 NPK FERTILIZER, AS WELL AS A MINIMUM OF SEVEN PERCENT (7%) HUMIC ACID BY WEIGHT, MICROBIAL NUTRIENTS DERIVED FROM SEA KELP, PROTEIN BYPRODUCTS, AND YUCCA SCHIDIGERA, AND A COMPLEMENT OF BENEFICIAL RHIZOSPHERE BACTERIA. THE STANDARD 21 GRAM TABLET IS SPECIFIED HERE. DIRECTIONS FOR USE: FOR PLANTING BALLED & BURLAPPED (B&B) TREES AND SHRUBS, MEASURE THE THICKNESS OF THE TRUNK, AND USE ABOUT 1 TABLET (21-G) PER HALF-INCH. PLACE THE TABLETS DIRECTLY NEXT TO THE ROOT BALL, EVENLY DISTRIBUTED AROUND ITS PERIMETER, AT A DEPTH OF ABOUT 4 INCHES.

IRRIGATION DURING ESTABLISHMENT

SIZE AT PLANTING	IRRIGATION FOR VITALITY	IRRIGATION FOR SURVIVAL
< 2" CALIPER	DAILY FOR TWO WEEKS, EVERY OTHER DAY FOR TWO MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR TWO TO THREE MONTHS
2"-4 CALIPER	DAILY FOR ONE MONTH, EVERY OTHER DAY FOR THREE MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR THREE TO FOUR MONTHS
4 >" CALIPER	DAILY FOR SIX WEEKS, EVERY OTHER DAY FOR FIVE MONTHS, WEEKLY UNTIL ESTABLISHED	TWICE WEEKLY FOR FOUR TO FIVE MONTHS

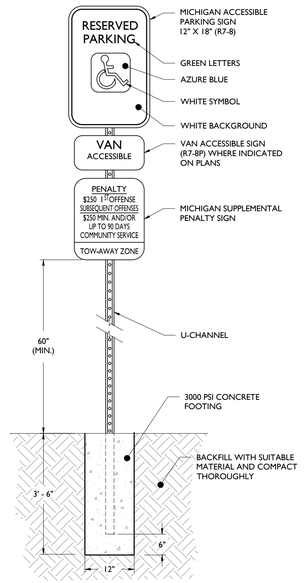
TABLE NOTES:
1. AT EACH IRRIGATION, APPLY TWO TO THREE GALLONS PER INCH TRUNK CALIPER TO THE ROOT BALL SURFACE. APPLY IT IN A MANNER SO ALL WATER SOAKS THE ENTIRE ROOT BALL. DO NOT WATER IF ROOT BALL IS WET/SATURATED ON THE IRRIGATION DAY.

2. WHEN IRRIGATING FOR VITALITY, DELETE DAILY IRRIGATION WHEN PLANTING IN WINTER OR WHEN PLANTING IN COOL CLIMATES. ESTABLISHMENT TAKES THREE TO FOUR MONTHS PER INCH TRUNK CALIPER. NEVER APPLY IRRIGATION IF THE SOIL IS SATURATED.

3. WHEN IRRIGATION FOR SURVIVAL, TREES TAKE MUCH LONGER TO ESTABLISH THAN REGULARLY IRRIGATED TREES. IRRIGATION MAY BE REQUIRED IN THE NORMAL HOT, DRY PORTIONS OF THE FOLLOWING YEAR.

PLANT QUALITY AND HANDLING NOTES:

1. ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004) OR LATEST REVISION AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. IN ALL CASES, BOTANICAL NAMES LISTED WITHIN THE APPROVED OR FINAL PLANT LIST SHALL TAKE PRECEDENCE OVER COMMON NAMES.
3. ALL PLANTS SHALL BE OF SELECTED SPECIMEN QUALITY, EXCEPTIONALLY HEAVY, TIGHTLY KNIT, SO TRAINED OR FAVORED IN THEIR DEVELOPMENT AND APPEARANCE AS TO BE SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY. ALL PLANTS SHALL HAVE A NORMAL HABIT OR SOUND, HEALTHY, VIGOROUS PLANTS WITH WELL DEVELOPED ROOT SYSTEM. PLANTS SHALL BE FREE OF DISEASE, INSECT PESTS, EGGS OR LARVAE.
4. PLANTS SHALL NOT BE PRUNED BEFORE DELIVERY. TREES WITH ABRASION OF THE BARK, SUNSCALDS, DISFIGURING KNOTS OR FRESH CUTS OF LIMBS OVER ONE AND ONE-FOURTH INCHES (1-1/4") WHICH HAVE NOT COMPLETELY CALLOUSED SHALL BE REJECTED.
5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH AND BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE.
6. THE ROOT SYSTEM OF EACH PLANT SHALL BE WELL PROVIDED WITH FIBROUS ROOTS. ALL PARTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND DENSELY FOLIATED WHEN IN LEAF.
7. ALL PLANTS DESIGNATED BALL AND BURLAP (B&B) MUST BE MOVED WITH THE ROOT SYSTEM AS SOLID UNITS WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. THE DIAMETER AND DEPTH OF THE BALLS OF EARTH MUST BE SUFFICIENT TO ENCOMPASS THE FIBROUS ROOT FEEDING SYSTEMS NECESSARY FOR THE HEALTHY DEVELOPMENT OF THE PLANT. NO PLANT SHALL BE ACCEPTED WHEN THE BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN PREPARATORY TO OR DURING THE PROCESS OF PLANTING. THE BALLS SHALL REMAIN INTACT DURING ALL OPERATIONS. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE MUST BE HEELED-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL OR MULCH AND THEN WATERING. HEMP BURLAP AND TWINE IS PREFERABLE TO TREATED. IF TREATED BURLAP IS USED, ALL TWINE IS TO BE CUT FROM AROUND THE TRUNK AND ALL BURLAP IS TO BE REMOVED.
8. PLANTS TRANSPORTED TO THE PROJECT IN OPEN VEHICLES SHALL BE COVERED WITH TARPS OR OTHER SUITABLE COVERS SECURELY FASTENED TO THE BODY OF THE VEHICLE TO PREVENT INJURY TO THE PLANTS. CLOSED VEHICLES SHALL BE ADEQUATELY VENTILATED TO PREVENT OVERHEATING OF THE PLANTS. EVIDENCE OF INADEQUATE PROTECTION FOLLOWING DIGGING, CARELESSNESS WHILE IN TRANSIT, OR STORAGE SHALL BE CAUSE FOR REJECTION OF PLANT MATERIAL. ALL PLANTS SHALL BE KEPT MOIST, FRESH, AND PROTECTED. SUCH PROTECTION SHALL ENCOMPASS THE ENTIRE PERIOD DURING WHICH THE PLANTS ARE IN TRANSIT, BEING HANDLED, OR ARE IN TEMPORARY STORAGE.
9. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE CORRESPONDING LANDSCAPE PLAN AND PLANTING DETAILS.
10. LANDSCAPE CONTRACTOR SHALL MAKE BEST EFFORT TO INSTALL PLANTINGS ON THE SAME DAY AS DELIVERY. IF PLANTS ARE NOT PLANTED IMMEDIATELY ON SITE, PROPER CARE SHALL BE TAKEN TO PLACE THE PLANTINGS IN PARTIAL SHADE WHEN POSSIBLE. THE ROOT BALL SHALL BE KEPT MOIST AT ALL TIMES AND COVERED WITH MOISTENED MULCH OR ADDED WOODCHIPS. PROPER IRRIGATION SHALL BE SUPPLIED SO AS TO NOT ALLOW THE ROOT BALL TO DRY OUT. PLANTINGS SHALL BE UNTIED AND PROPER SPACING SHALL BE ALLOTTED FOR AIR CIRCULATION AND TO PREVENT DISEASE, WILTING, AND LEAF LOSS. PLANTS THAT REMAIN UNPLANTED FOR A PERIOD OF TIME GREATER THAN THREE (3) DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH AND WATERED AS REQUIRED TO PRESERVE ROOT MOISTURE.
11. NO PLANT MATERIAL SHALL BE PLANTED IN MUDDY OR FROZEN SOIL.
12. PLANTS WITH INJURED ROOTS OR BRANCHES SHALL BE PRUNED PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY DISEASED OR INJURED PLANTS SHALL BE REMOVED.
13. IF ROCK OR OTHER UNDERGROUND OBSTRUCTION IS ENCOUNTERED, THE LANDSCAPE DESIGNER RESERVES THE RIGHT TO RELOCATE OR ENLARGE PLANTING PITS OR DELETE PLANT MATERIAL FROM THE CONTRACT.
14. IF PLANTS ARE PROPOSED WITHIN SIGHT TRIANGLES, TREES SHALL BE LIMBED AND MAINTAINED TO A HEIGHT OF EIGHT FEET (8') ABOVE GRADE, AND SHRUBS, GROUND COVER, PERENNIALS AND ANNUALS SHALL BE MAINTAINED TO A HEIGHT NOT TO EXCEED TWO FEET (2') ABOVE GRADE UNLESS OTHERWISE NOTED OR SPECIFIED BY THE GOVERNING MUNICIPALITY OR AGENCY.
15. INSTALLATION SHALL OCCUR DURING THE FOLLOWING SEASONS:
    PLANTS (MARCH 15 - DECEMBER 15)
    LAWNS (MARCH 15 - JUNE 15 OR SEPTEMBER 1 - DECEMBER 1)
16. THE FOLLOWING TREES ARE SUSCEPTIBLE TO TRANSPLANT SHOCK AND SHALL NOT BE PLANTED DURING THE FALL SEASON (STARTING SEP

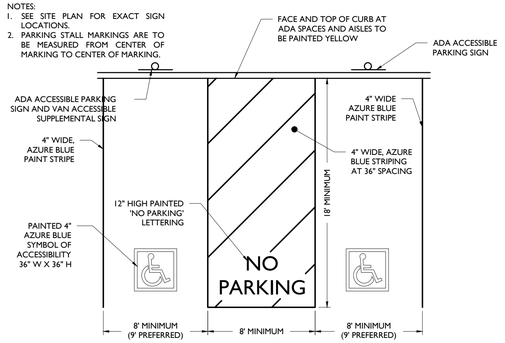


ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE

1

NOTES:
1. SEE SITE PLAN FOR EXACT SIGN LOCATIONS.
2. PARKING STALL MARKINGS ARE TO BE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING.



ACCESSIBLE PARKING STALL MARKINGS

NOT TO SCALE

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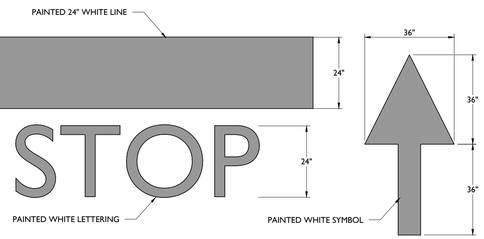
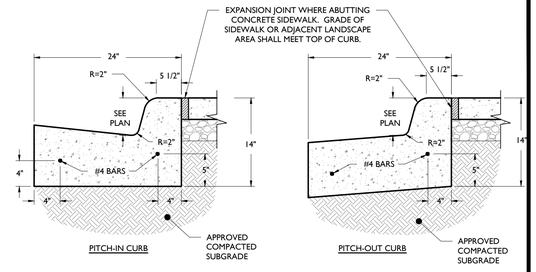


STOP BAR & ARROW DETAILS

NOT TO SCALE

3

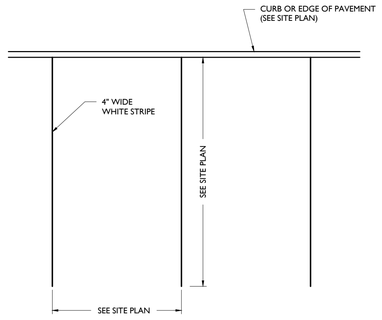


CONCRETE CURB AND GUTTER DETAIL

NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ½" FROM SURFACE.
3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
4. 14" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.

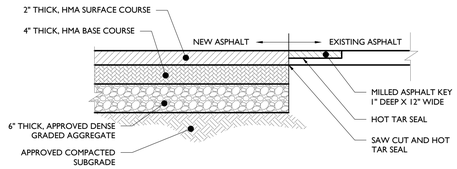
4



PARKING STALL MARKINGS

NOT TO SCALE

5

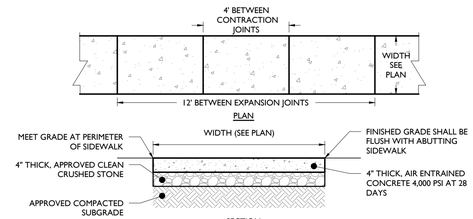


FULL DEPTH ASPHALT PAVEMENT DETAIL

NOT TO SCALE

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

6

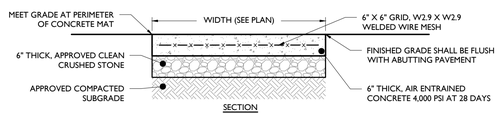


CONCRETE WALKWAY DETAIL

NOT TO SCALE

NOTES:
1. MAXIMUM CROSS SLOPE SHALL BE ½" PER FOOT.
2. ½" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ½" FROM THE SURFACE.
3. 1" DEEP BY ½" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
4. EXPANSION JOIN SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

7

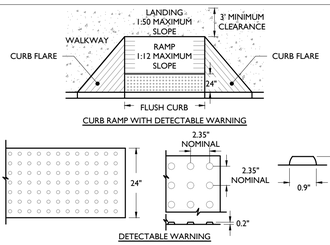


REINFORCED 6" CONCRETE MAT

NOT TO SCALE

NOTES:
1. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ½" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY ½" 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.

8

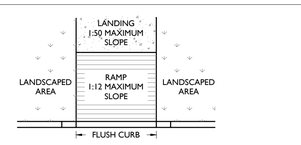


CURB RAMP WITH FLARES DETAIL

NOT TO SCALE

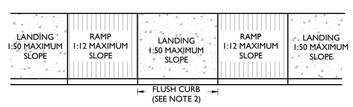
NOTES:
1. CROSS SLOPE ON RAMP SHALL NOT EXCEED 1:50 SLOPE.
2. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
3. VISUAL CONTRAST: THERE SHALL BE A MINIMUM OF 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE.
4. DETECTABLE WARNING STRIP REQUIRED WHERE RAMP DIRECTS PEDESTRIAN TRAFFIC TOWARDS VEHICLE TRAVEL WAY. WARNING STRIP SHALL BE CAST-IN-PLACE.
5. 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.
6. A FLUSH CURB SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
7. RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL.

9



CURB RAMP DETAIL

NOT TO SCALE

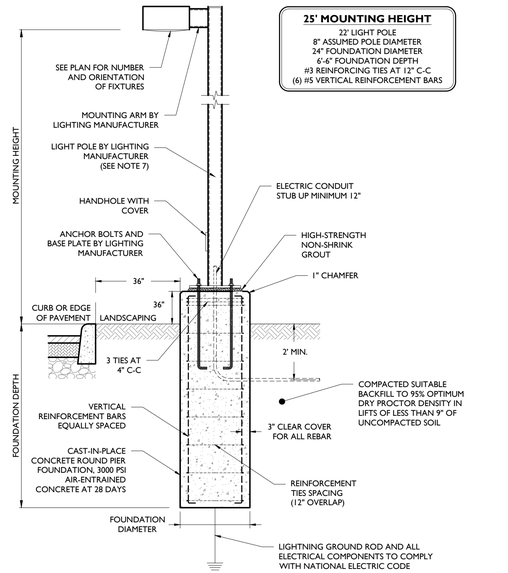


TRANSITION RAMP DETAIL

NOT TO SCALE

NOTES:
1. CROSS SLOPE ON RAMP SHALL NOT EXCEED 2%
2. A FLUSH CURB SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
3. RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL

10



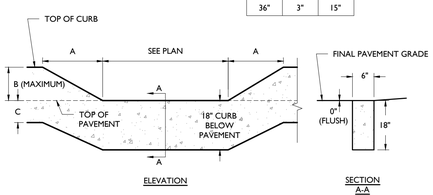
LIGHT POLE INSTALLATION DETAIL

NOT TO SCALE

NOTES:
1. 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.
2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
3. ALL REBAR TO BE NEW GRADE 60 STEEL.
4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
5. 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.
6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
7. POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
8. POUR TO BE TERMINATED AT A FORM.
9. WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
10. CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.

14

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



FLUSH CURB DETAIL

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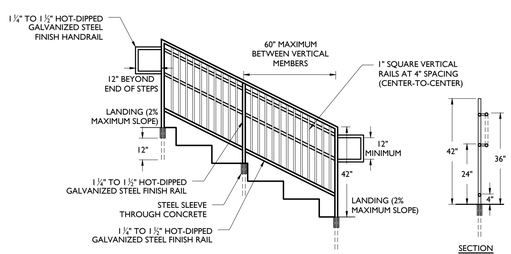
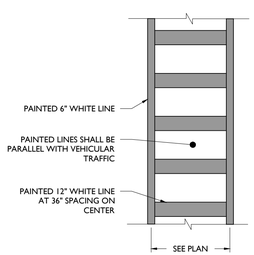


HANDRAIL DETAIL ON STEPS WITH FALL PROTECTION

NOT TO SCALE

NOTES:
1. SEE PLAN FOR STEP DIMENSIONS
2. GRIND ALL WELDS SMOOTH
3. HANDRAIL TO BE INSET 6" FROM EDGE OF CONCRETE
4. STEPS SHALL HAVE RAILINGS ON BOTH SIDES WITH 48" MINIMUM CLEARANCE BETWEEN RAILS.
5. VERTICAL RAIL REQUIRED AT TOP AND BOTTOM OF STEPS.

12



CROSSWALK DETAIL

NOT TO SCALE

13

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
3	12/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	10/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
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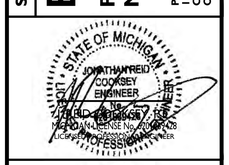
SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098



STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: DET-230414

TITLE: **CONSTRUCTION DETAILS**

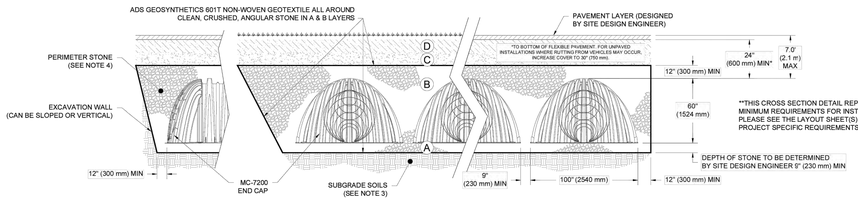
DRAWING: **C-8**

V:\DET\2023\DET-23044 BARBAT ORGANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\DWG\PDF\DET-C8.DWG

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

ADS STORMTECH MC-7200 CHAMBER SYSTEM DETAIL

I

MC-7200
STANDARD CROSS SECTION
DATE: 12/21/23 DRAWN: SLS
PROJECT # CHECKED: SLS

DATE	DRWN. CHKD	DESCRIPTION

THE DRAWINGS AND SPECIFICATIONS AND COPIES THEREOF FURNISHED BY THE ENGINEER ARE AND SHALL REMAIN THE PROPERTY OF THE ENGINEER. THEY ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY USE OTHER THAN THE SPECIFIED PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY THE ENGINEER FOR THE SPECIFIED PROJECT SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ENGINEER. ALL TITLE BLOCK INFORMATION MUST BE LEFT INTACT. THE ENGINEER SHALL NOT BE LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE DRAWINGS. ALL CHANGES TO THE DRAWINGS MUST BE IN WRITING AND APPROVED BY THE ENGINEER. REFER THE DRAWING FROM TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND COORDINATE ALL DRAWINGS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES FOUND IN THE DRAWINGS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. THE ENGINEER IS NOT RESPONSIBLE FOR ANY CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PROJECT. THE ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, ANY OF THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK.

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ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026

SHEET 1 OF 1

ISSUE	DATE	BY	DESCRIPTION
4	01/14/2025	KG	SPECIAL USE / PRELIMINARY SITE PLAN RESUBMISSION
3	12/02/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
2	11/13/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL
1	11/05/2024	KG/JD	FOR SPECIAL USE / PRELIMINARY SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
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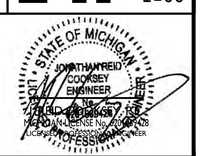
www.stonefieldeng.com
555 S. Old Woodward, Suite 12L Birmingham, MI 48009
248.247.1115

SITE DEVELOPMENT PLANS

BARBAT ORGANIZATION

PROPOSED VEHICLE FUELING / MULTI-USE STATION

PARCEL ID: 88-20-04-100-059
1981 WEST SOUTH BOULEVARD
CITY OF TROY
OAKLAND COUNTY, MICHIGAN 48098



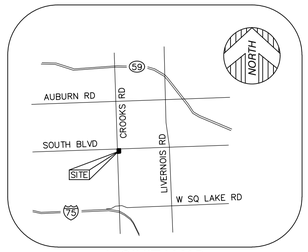
STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: DET-230414

TITLE:
CONSTRUCTION DETAILS

DRAWING:
C-9

V:\DET\2023\DET-230414 BARBAT ORGANIZATION - 1981 WEST SOUTH BOULEVARD, TROY, MI\CAD\SHEETS\DP-08-09-DETS.DWG



VICINITY MAP

(NOT TO SCALE)

PARKING

HANDICAP PARKING = 4 STALLS
STANDARD PARKING = 52 STALLS

PARCEL AREA

52,872± SQUARE FEET = 1.21± ACRES

BASIS OF BEARING

NORTH 89°44'56" EAST, BEING THE NORTH LINE OF SECTION 4, AS DESCRIBED.

BENCHMARK

SITE BENCHMARK #2 (CITY BM #1736)
LETTER "M" ON EAST FACE OF HYDRANT AT NORTHEAST CORNER OF BLDG #1981.
ELEVATION = 818.33' (NAVD 88)

SITE BENCHMARK #3
CHISELED "X" ON EAST FACE OF LIGHT POLE 70'± WEST OF NORTHWEST CORNER OF BLDG #1981
ELEVATION = 818.54' (NAVD 88)

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.

LEGEND

- FOUND SECTION CORNER (AS NOTED)
- (R&M) RECORD AND MEASURED DIMENSION
- (R) RECORD DIMENSION
- (M) MEASURED DIMENSION
- +0.00 GROUND ELEVATION
- (E) ELECTRIC MANHOLE
- ELECTRIC METER
- TRANSFORMER
- GENERATOR
- UTILITY POLE
- GAS METER
- (T) TELEPHONE MANHOLE
- TELEPHONE RISER
- CABLE TV BOX
- (S) SANITARY MANHOLE
- ROUND CATCH BASIN
- SQUARE CATCH BASIN
- (D) STORM DRAIN MANHOLE
- FIRE HYDRANT
- WATER GATE MANHOLE
- WATER METER
- WATER VALVE
- BOLLARD
- LIGHTPOST/LAMP POST
- SINGLE POST SIGN
- HANDICAP PARKING
- DECIDUOUS TREE (AS NOTED)
- CONIFEROUS TREE (AS NOTED)
- PARCEL BOUNDARY LINE
- ADJOINER PARCEL LINE
- SECTION LINE
- EASEMENT LINE
- BUILDING
- BUILDING OVERHANG
- CONCRETE CURB
- RAISED CONCRETE
- PARKING
- EDGE OF CONCRETE (CONC.)
- EDGE OF ASPHALT (ASPH.)
- FENCE (AS NOTED)
- WALL (AS NOTED)
- TREE / BRUSH LINE (AS NOTED)
- OVERHEAD UTILITY LINE
- G GAS LINE
- S SANITARY LINE
- D STORM LINE
- W WATER LINE
- MINOR CONTOUR LINE
- MAJOR CONTOUR LINE
- BUILDING AREA
- ASPHALT
- CONCRETE

PROPERTY DESCRIPTION

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

PART OF THE NORTHWEST ONE QUARTER OF SECTION 4, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 4; THENCE SOUTH 89 DEGREES 44 MINUTES 56 SECONDS EAST, ALONG THE NORTH LINE OF SAID SECTION 4, A DISTANCE OF 75.00 FEET AND DUE SOUTH, 60.00 FEET TO THE INTERSECTION OF THE SOUTHERLY RIGHT–OF–WAY LINE (60') OF SOUTH BOULEVARD AND THE EASTERLY RIGHT–OF–WAY LINE (75') OF CROOKS ROAD AND TO THE POINT OF BEGINNING; THENCE SOUTH 89 DEGREES 44 MINUTES 56 SECONDS EAST, ALONG SAID SOUTHERLY RIGHT–OF–WAY LINE OF SOUTH BOULEVARD, 179.97 FEET; THENCE DUE SOUTH, 293.76 FEET; THENCE NORTH 89 DEGREES 45 MINUTES 53 SECONDS WEST, 179.97 FEET TO THE EASTERLY RIGHT–OF–WAY LINE OF CROOKS ROAD, THENCE DUE NORTH, ALONG SAID RIGHT–OF–WAY LINE, 293.81 FEET TO THE POINT OF BEGINNING.

TITLE REPORT NOTE

ONLY THOSE EXCEPTIONS CONTAINED WITHIN THE TITLE CONNECT LLC COMMITMENT No. TC13–112163, DATED 02/16/2024, AND RELISTED BELOW WERE CONSIDERED FOR THIS SURVEY. NO OTHER RECORDS RESEARCH WAS PERFORMED BY THE CERTIFYING SURVEYOR.

18. EASEMENT IN FAVOR OF THE COUNTY OF OAKLAND, AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT(S) RECORDED IN LIBER 6243, PAGE 234 (AS SHOWN), LIBER 6254, PAGE 50 (AS SHOWN) AND LIBER 6260, PAGE 334 (DOCUMENT ILLEGIBLE).

19. TERMS AND CONDITIONS CONTAINED IN SEWER AGREEMENT BY INSTRUMENT RECORDED IN LIBER 8544, PAGE 540 (AGREEMENT TO CONNECT TO ROCHESTER HILLS SANITARY SEWER LOCATION NOT DESCRIBED, SEE DOCUMENT FOR TERMS AND CONDITIONS).

20. TERMS AND CONDITIONS CONTAINED IN CROSS–ACCESS OR JOINT–DRIVE EASEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 10356, PAGE 336 (AS SHOWN), LIBER 32389, PAGE 573 (BLANKET EASEMENT, SEE DOCUMENT FOR TERMS AND CONDITIONS), AND LIBER 32568, PAGE 133 (BLANKET EASEMENT, SEE DOCUMENT FOR TERMS AND CONDITIONS).

21. EASEMENT IN FAVOR OF MICHIGAN BELL TELEPHONE COMPANY, AND THE TERMS, CONDITIONS AND PROVISIONS CONTAINED THEREIN, RECORDED IN LIBER 10054, PAGE 94 (AS SHOWN).

22. JOINT UNDERGROUND RIGHT OF WAY AGREEMENT IN FAVOR OF THE DETROIT EDISON COMPANY AND MICHIGAN BELL TELEPHONE COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT(S) RECORDED IN LIBER 10420, PAGE 176 AND LIBER 10420, PAGE 179 (AS SHOWN).

23. TERMS AND CONDITIONS CONTAINED IN SANITARY SEWER SERVICE AGREEMENT, AS DISCLOSED BY INSTURMENT RECORDED IN LIBER 10762, PAGE 895 AND LIBER 10882, PAGE 508 (AGREEMENT TO CONNECT TO ROCHESTER HILLS SANITARY SEWER LOCATION NOT DESCRIBED, SEE DOCUMENT FOR TERMS AND CONDITIONS).

24. COVENANTS, CONDITIONS AND RESTRICTIONS AND OTHER PROVISIONS AS CONTAINED IN INSTRUMENT RECORDED IN LIBER 17027, PAGE 131 . PLEASE BE ADVISED THAT ANY PROVISION CONTAINED IN THIS DOCUMENT, OR IN A DOCUMENT THAT IS ATTACHED, LINKED, OR REFERENCED IN THIS DOCUMENT, THAT UNDER APPLICABLE LAW ILLEGALLY DISCRIMINATES AGAINST A CLASS OF INDIVIDUALS BASED UPON PERSONAL CHARACTERISTICS SUCH AS RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, FAMILIAL STATUS, DISABILITY, NATIONAL ORIGIN, OR ANY OTHER LEGALLY PROTECTED CLASS, IS ILLEGAL AND UNENFORCEABLE (AFFECTS A PORTION OF THE SUBJECT PROPERTY) (SEE DOCUMENT FOR TERMS AND CONDITIONS).

25. TERMS AND CONDITIONS CONTAINED IN AGREEMENT FOR ACCESS OF PREMISES AFTER TRANSFER OF TITLE RECORDED IN LIBER 17028, PAGE 641 (AFFECTS A PORTION OF THE SUBJECT PROPERTY) (SEE DOCUMENT FOR TERMS AND CONDITIONS).

26. DETROIT EDISON OVERHEAD EASEMENT (RIGHT OF WAY) IN FAVOR OF THE DETROIT EDISON COMPANY AND AMERITECH, AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT(S), RECORDED IN LIBER 20499, PAGE 677 AND LIBER 20775, PAGE 97 (AS SHOWN).

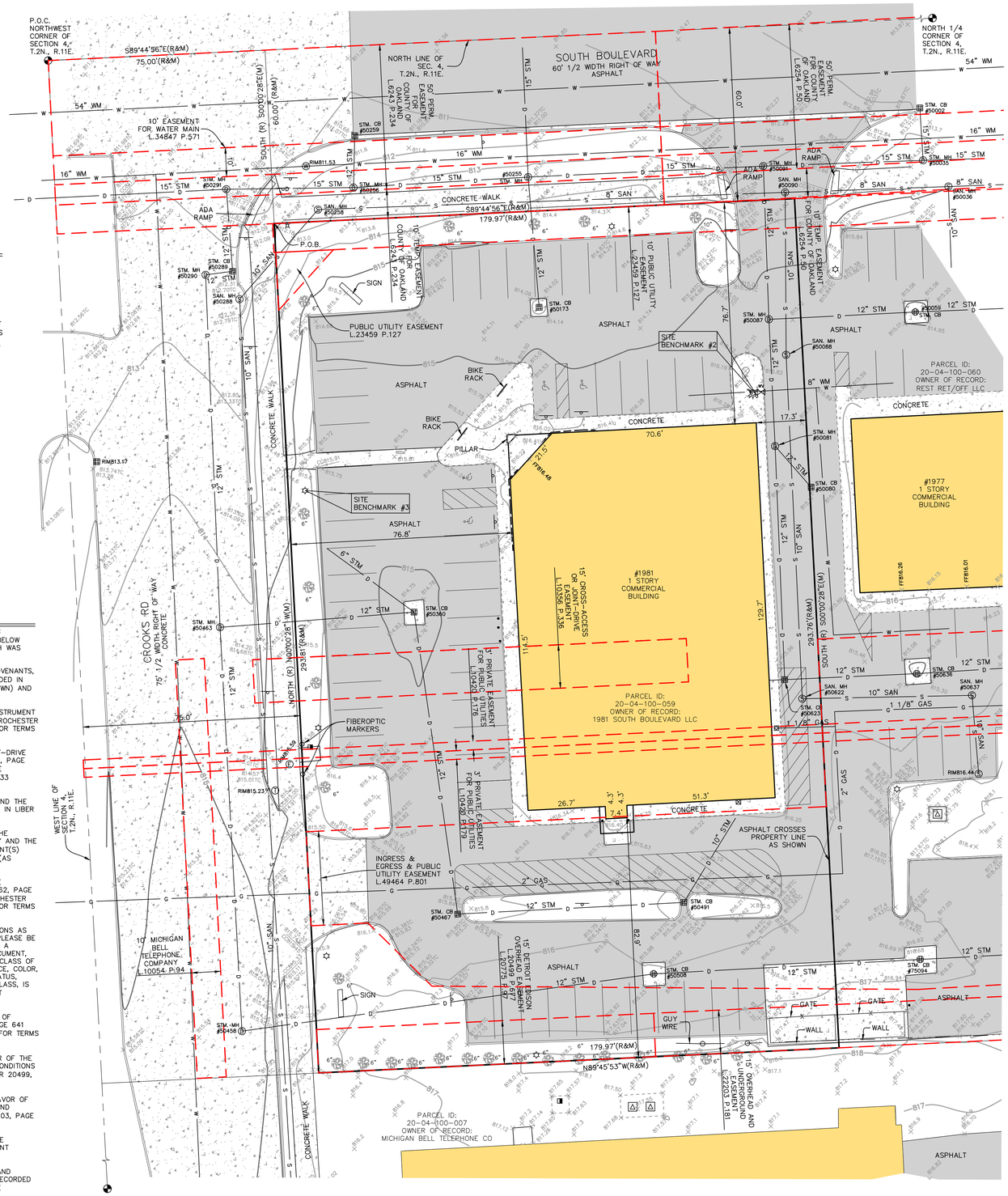
27. OVERHEAD AND UNDERGROUND EASEMENT (RIGHT OF WAY) IN FAVOR OF THE DETROIT EDISON COMPANY, AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT(S) RECORDED IN LIBER 22203, PAGE 181 (AS SHOWN).

28. PERMANENT EASEMENT IN FAVOR OF THE CITY OF TROY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 23459, PAGE 127 (AS SHOWN).

29. INTEREST OF RITE–AID CORPORATION, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY MEMORANDUM OF LEASE RECORDED IN LIBER 23896, PAGE 876 (AFFECTS ENTIRE SUBJECT PARCEL) (SEE DOCUMENT FOR TERMS AND CONDITIONS).

30. INTEREST OF OMNIPOINT HOLDINGS, INC., LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY MEMORANDUM OF LEASE RECORDED IN LIBER 34847, PAGE 751. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

31. INTEREST OF NEW PAR, A DELAWARE PARTNERSHIP D/B/A VERIZON WIRELESS, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY MEMORANDUM OF LEASE AGREEMENT RECORDED IN LIBER 49464, PAGE 801. (AS SHOWN)



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

MANHOLE SCHEDULE

NUM	TYPE	RIM (FT)	SIZE (IN)	DIR	INV ELEV (FT)
50002	CATCH BASIN	813.21	15	S	808.60
50035	STORM MANHOLE	814.51	15	N	808.56
		814.51	15	W	808.18
		814.51	15	E	809.39
50036	SANITARY MANHOLE	814.83	8	W	806.13
		814.83	8	E	806.14
		814.83	10	S	806.96
50059	CATCH BASIN	814.86	12	W	810.54
		814.86	12	E	810.73
50080	CATCH BASIN	815.11	12	NW	809.60
50081	STORM MANHOLE	815.85	12	N	810.39
		815.85	12	SE	810.45
		815.85	12	S	810.43
50087	STORM MANHOLE	815.14	12	E	810.27
		815.14	12	S	810.19
		815.14	12	N	BULKHEADED
50088	SANITARY MANHOLE	815.36	10	N	807.36
		815.36	10	S	807.41
50090	SANITARY MANHOLE	813.52	8	E	806.42
		813.52	8	W	806.28
		813.52	10	S	806.42
50091	STORM MANHOLE	813.01	15	W	807.19
		813.01	15	E	807.55
		813.01	12	S	808.02
50173	CATCH BASIN	813.85	T/WATER		808.16
		813.85	BTM/STRUCTURE		807.79
50255	STORM MANHOLE	813.54	15	E	806.33
		813.54	15	W	806.05
		813.54	12	S	807.42
		813.54	15	N	806.09
50256	STORM MANHOLE	812.94	15	E	805.87
		812.94	12	N	805.86
		812.94	15	W	805.65
50258	SANITARY MANHOLE	812.70	8	E	804.84
		812.70	10	SW	804.74
50259	CATCH BASIN	810.62	12	S	805.93
50288	SANITARY MANHOLE	812.24	10	NE	805.71
		812.24	10	S	805.52
50289	CATCH BASIN	812.08	12	N	806.58
		812.08	12	W	806.68
50290	STORM MANHOLE	812.26	12	S	806.64
		812.26	12	E	806.53
50291	STORM MANHOLE	811.70	12	S	806.06
		811.70	15	W	805.09
		811.70	15	E	805.19
50360	CATCH BASIN	814.47	6	NW	812.27
		814.47	4	W	809.79
		814.47	15	S	809.80
50458	STORM MANHOLE	815.15	12	N	809.35
		815.15	12	E	809.55
50463	STORM MANHOLE	814.30	UNABLE TO OPEN		
50467	CATCH BASIN	815.20	12	N	810.76
		815.20	12	E	810.44
50491	CATCH BASIN	815.30	12	W	811.12
		815.30	10	NE	811.05
50508	CATCH BASIN	816.06	12	E	813.06
		816.06	12	W	812.67
50622	SANITARY MANHOLE	815.79	10	N	807.97
		815.79	10	E	808.09
50623	CATCH BASIN	815.95	12	N	810.51
		815.95	12	E	810.90
		815.95	12	W	810.41
50636	CATCH BASIN	814.90	12	E	810.64
		814.90	12	W	810.34
50637	SANITARY MANHOLE	815.65	UNABLE TO OPEN		
75017	CATCH BASIN	815.69	4	NW	811.97
		815.69	12	W	811.64
		815.69	12	E	811.89
75043	CATCH BASIN	816.60	12	W	813.06
		816.60	12	E	813.15
75094	CATCH BASIN	816.67	12	W	813.37
		816.67	12	E	813.42

SURVEYOR'S CERTIFICATION

TO CLEAN EXPRESS AUTO WASH LLC, AN OHIO LIMITED LIABILITY COMPANY; THE BARBAT ORGANIZATION, INC., ON BEHALF OF AN ENTITY TO BE FORMED; 1981 SOUTH BLVD., LLC; TITLE CONNECT LLC; AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 4, 7A, 8 AND 9 OF TABLE A, THEREOF. THE FIELD WORK WAS COMPLETED ON 12/08/23.

DATE OF PLAT OR MAP: 12/20/23

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

STATE OF MICHIGAN
ANTHONY T. SYCKO, JR.
PROFESSIONAL SURVEYOR
No. 4001047976
LICENSED PROFESSIONAL SURVEYOR

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ALTA / NSPS LAND TITLE SURVEY

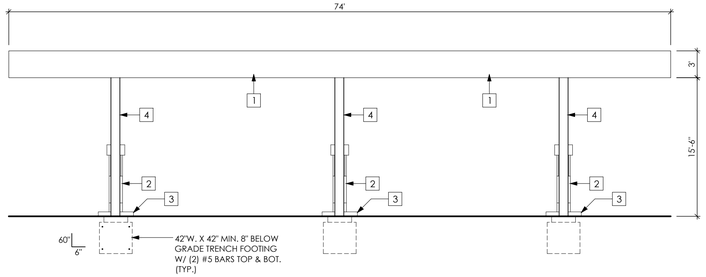
PREPARED FOR: 1981 SOUTH BLVD., LLC
1981 WEST SOUTH BOULEVARD, TROY, MICHIGAN,
PART OF SECTION 4, TOWN 2 NORTH, RANGE 11 EAST

REVISION	DATE	BY	DESCRIPTION
3	03/27/24	MRJ	REVISED EXCEPTION 20
2	03/07/24	JDM	PER REVISED TITLE WORK
1	01/17/24	MRJ	REVISED PER TITLE WORK

DRAWN BY:	DM
CHECKED BY:	ATS
DATE:	DECEMBER 20, 2023
PROJECT NO.	23-02597
SCALE:	1" = 20'
	12/20/23
	12/20/23

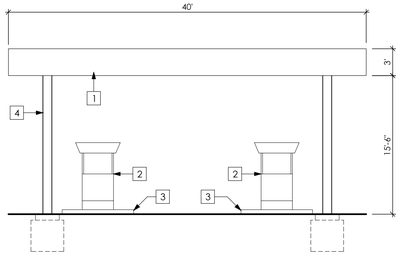
1

1 OF 1 SHEETS



NORTH AND SOUTH ELEVATION AT PUMP CANOPY

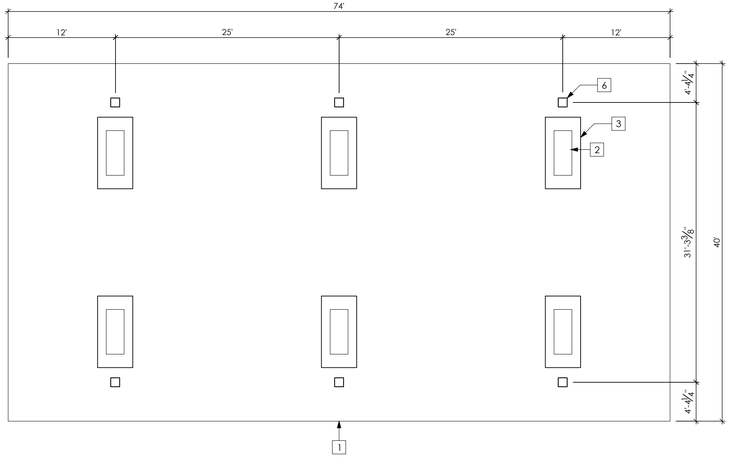
SCALE: 1/8" = 1'-0"



SOUTH ELEVATION AT PUMP CANOPY

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

	PUMP CANOPY KEY NOTES:
1	CANOPY OVERHANG, ARTWORK/ BRANDING BY OTHERS. OWNER WILL PROVIDE. VENDOR WILL PROVIDE THERE OWN STRUCTURAL COLUMNS AND FOOTINGS AS THIS IS NOT PART OF THESE PLANS.
2	GAS PUMPS BY OTHERS.
3	CURB AT PUMP BY OTHERS
4	STRUCTURAL STEEL BUILDING COLUMN.
5	NOT USED
6	VENDOR WILL PROVIDE THERE OWN STRUCTURAL COLUMNS AND FOOTINGS AS THIS IS NOT PART OF THESE PLANS. PLAN WAS DESIGNED TO BE 12' COLUMN AS THIS INFO WAS PROVIDED BY THE OWNER.



north

GAS PUMP CANOPY PLAN

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

0 2' 4' 8' 16'

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ADG DESIGN STUDIO
189 E BIG BEAVER ROAD
SUITE 200
TROY, MICHIGAN 48083

P. 248-254-3834

W.ABRODESIGNGROUP.COM

PROJECT:

CORNER STORE
GAS STATION

- BARBAT ORGANIZATION -

1981 WEST SOUTH BLVD.,
TROY, MI

SHEET TITLE:

GAS PUMP
CANOPY PLAN,
ELEVATIONS
AND DETAILS

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

DATE:	ISSUE:
11.21.24	SPA

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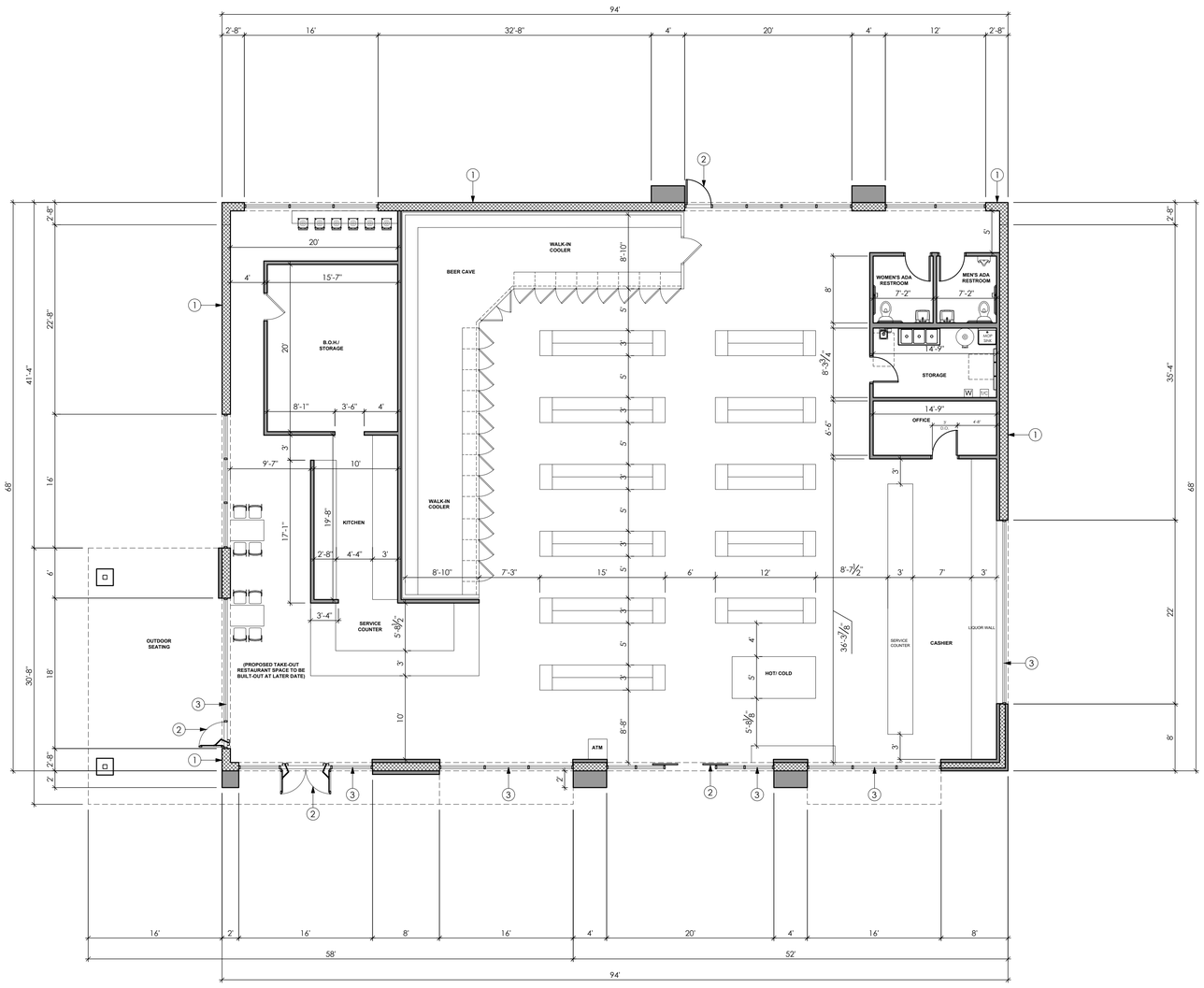
PROJECT NO:

081624

SHEET NO:

A-0.15

	FLOOR PLAN KEY NOTES:
1	C-BRICK EXTERIOR STRUCTURAL WALL - 12" D.
2	CLEAR INSULATED GLASS IN DARK BRONZE ANODIZED ALUMINUM FRAME ENTRY DOOR.
3	CLEAR INSULATED GLASS IN DARK BRONZE ANODIZED ALUMINUM FRAME STOREFRONT/ CURTAIN WALL SYSTEM.



north

FLOOR PLAN

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

0 2' 4' 8' 16'

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ADG DESIGN STUDIO
189 BIG BEAVER ROAD
SUITE 200
TROY, MICHIGAN 48083

P. 248-254-3834
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PROJECT:

CORNER STORE
GAS STATION

- BARBAT ORGANIZATION -

1981 WEST SOUTH BLVD.,
TROY, MI

SHEET TITLE:

FLOOR PLAN
(CONCEPTUAL)

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

DATE:	ISSUE:
11.21.24	SPA

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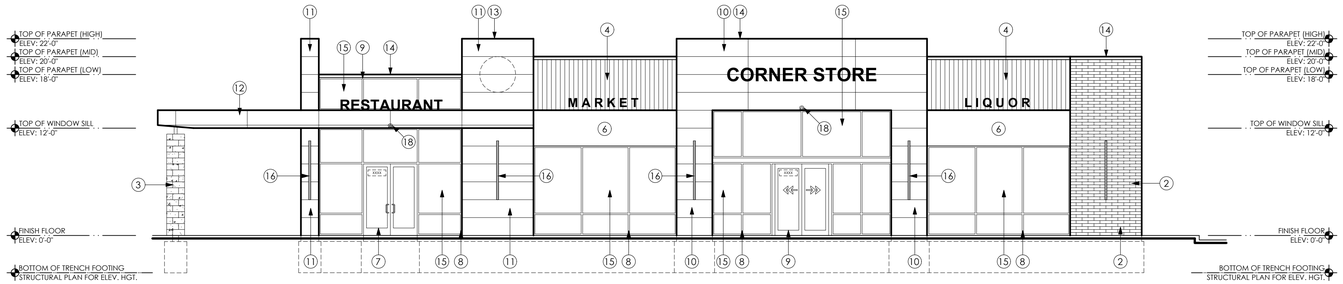
PROJECT NO:

081624

SHEET NO:

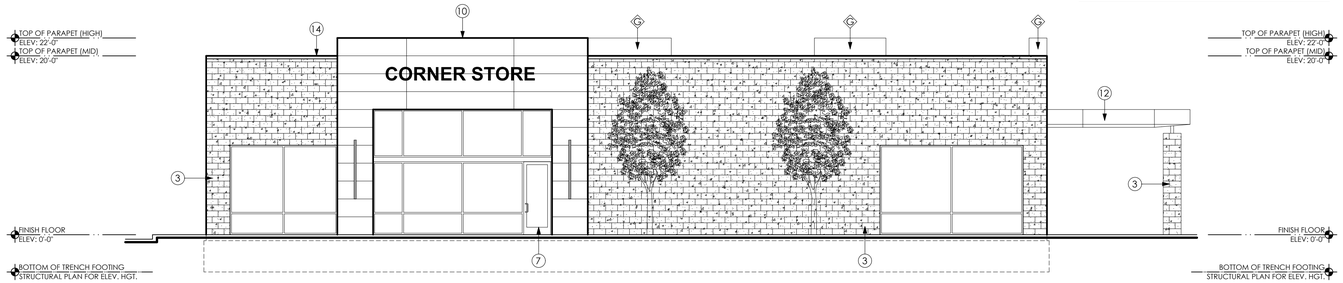
A-1.1



SOUTH ELEVATION

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

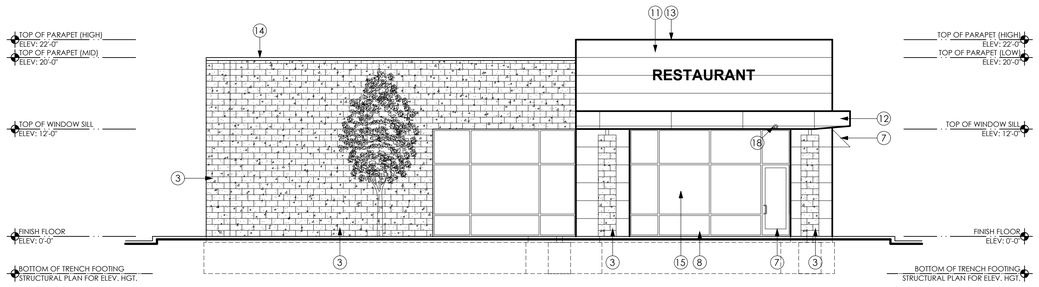
MATERIALS AT SOUTH ELEVATION:		
TOTAL SF. OF BUILDING SURFACE : 1,924 SF	100%	
WOOD CLADDING (IDENTITY WOOD PRODUCTS): 192 SF	10%	
GAZING/ STOREFRONT/ DOOR: 856 SF	44%	
BRICK VENEER: 160 SF	8.3%	
ALUMINUM COMPOSITE PANEL: 588 SF	31%	
FABRIC AWNING: 128 SF	6.7%	



NORTH ELEVATION

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

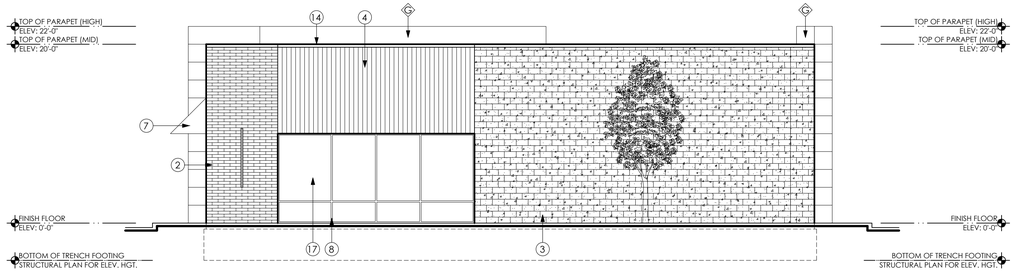
MATERIALS AT NORTH ELEVATION:		
TOTAL SF. OF BUILDING SURFACE : 1,936 SF	100%	
GAZING/ STOREFRONT/ DOOR: 560 SF	29.9%	
BURNISHED MASONRY UNIT: 1,021 SF	52.7%	
ALUMINUM COMPOSITE PANEL: 336 SF	17.4%	



WEST ELEVATION

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

MATERIALS AT WEST ELEVATION:		
TOTAL SF. OF BUILDING SURFACE : 1,457 SF	100%	
GAZING/ STOREFRONT/ DOOR: 408 SF	28%	
BURNISHED MASONRY UNIT: 635 SF	43.6%	
ALUMINUM COMPOSITE PANEL: 414 SF	28.4%	



EAST ELEVATION

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

MATERIALS AT EAST ELEVATION:		
TOTAL SF. OF BUILDING SURFACE : 1,360 SF	100%	
GAZING/ STOREFRONT/ DOOR: 220 SF	16.2%	
BRICK VENEER: 160 SF	11.8%	
BURNISHED MASONRY UNIT: 760 SF	55.8%	
WOOD CLADDING (IDENTITY WOOD PRODUCTS): 220 SF	16.2%	

EXTERIOR MATERIAL FINISH SCHEDULE AND NOTES

TAG	MATERIAL	MANUFACTURE	COLOR/ MODEL	SIZE	REMARKS/ NOTES
1	NOT USED				
2	BRICK VENEER	GLEN GERY	EBONITE W/ IRON BLACK GROUT	3 5/8"D X 3 5/8"H X 11 5/8"W - UTILITY	CONTACT: RON HUNT (810) 694-7500 SEE MASONRY NOTES BELOW
3	BURNISHED MASONRY UNIT - EXTERIOR STRUCTURAL WALL W/ ACME SHIELD IWR	NATIONAL BLOCK	WOODWARD W/ IRON BLACK GROUT	12"D X 8"H X 16"W	CONTACT: KEVIN (734) 578-4848 SEE MASONRY NOTES BELOW
4	VERTICAL WOOD CLADDING	IDENTITY WOOD PRODUCTS	3000 BARISTA'S FROTHER, 1/16" REVEAL	7 1/4" WIDE PLANKS	SEE MFG. SPECIFICATIONS FOR DETAILS
5	24" WIDE STEEL LOCKABLE SAFETY DOOR AND LADDER TO ROOF. PROVIDE LOCK AND KEY TO OWNER		PAINT TO MATCH C-BRICK WALL BEHIND		
6	FABRIC AWNING ON METAL ALUMINUM TUBE AWNING FRAMING SYSTEM	SUNBRELLA	BLACK AWNING ON BLACK TUBING	REFER TO FLOOR PLAN AND ELEVATIONS	PROVIDE COLOR TO ADG FOR APPROVAL
7	STOREFRONT TENANT DOOR ENTRY W/ 10" HIGH BOTTOM RAIL	TUBELITE	BLACK ANODIZED ALUMINUM	SEE SHEET A-8.1 FOR DETAILS	SEE MFG. SPECIFICATIONS FOR DETAILS
8	CLEAR INSULATED GLASS IN ANODIZED ALUMINUM FRAME STOREFRONT SYSTEM	TUBELITE	BLACK ANODIZED ALUMINUM	SEE SHEET A-8.1 FOR DETAILS	SEE MFG. SPECIFICATIONS FOR DETAILS
9	STOREFRONT TENANT DOOR, AUTOMATIC DOORS, SELECTION BY OWNER	TUBELITE	BLACK ANODIZED ALUMINUM	SEE SHEET A-8.1 FOR DETAILS	SEE MFG. SPECIFICATIONS FOR DETAILS
10	ALUMINUM COMPOSITE PANEL SYSTEM "CLIP & CAULK" INSTALLATION	OMEGA PANEL PROD. LAMINATORS INC.	BLACK, CAULK JOINT TO MATCH MTL. PANEL	SEE ELEV. AND WALL SECTIONS FOR JOINTS	CONTACT: TOM OLSON (734) 777-6788
11	ALUMINUM COMPOSITE PANEL SYSTEM "CLIP & CAULK" INSTALLATION	OMEGA PANEL PROD. LAMINATORS INC.	SANDSTONE, CAULK JOINT TO MATCH MTL. PANEL	SEE ELEV. AND WALL SECTIONS FOR JOINTS	CONTACT: TOM OLSON (734) 777-6788
12	ALUMINUM COMPOSITE PANEL SYSTEM "CLIP & CAULK" INSTALLATION	OMEGA PANEL PROD. LAMINATORS INC.	BRITE RED, CAULK JOINT TO MATCH MTL. PANEL	SEE ELEV. AND WALL SECTIONS FOR JOINTS	CONTACT: TOM OLSON (734) 777-6788
13	METAL COPING (TYP.)	PAC-CLAD	COLOR: SANDSTONE		BY OAKLAND METAL SALES 248-377-8847 ADG TO APPROVE COLOR
14	METAL COPING (TYP.)	PAC-CLAD	COLOR: MATTE BLACK		BY OAKLAND METAL SALES 248-377-8847 ADG TO APPROVE COLOR
15	GLASS	VIRACON OR EQUAL	1" CLEAR INSULATED GLAZING		GLASS TO BE TEMPERED PER MBC WHERE NEEDED.
16	EXTERIOR DECORATIVE WALL MOUNTED SCONCE	MOD LIGHTING	HAYLEN, BLACK METAL FINISH	3"W X 79"H NOMINAL	REFER TO ELECTRICAL PLAN FOR DETAILS
17	SPANDREL GLASS	VIRACON OR EQUAL	1" CLEAR INSULATED GLAZING		GLASS TO BE TEMPERED PER MBC WHERE NEEDED.
18	WALL MOUNTED STAND ALONE LED EMERGENCY LIGHTING	LITHONIA LIGHTING AFFINITY SERIES	DARK BRONZE METALLIC	LOCATE 12" ABOVE DOOR. SEE SPECS	REFER TO ELECTRICAL PLAN FOR DETAILS

MASONRY NOTES: INFORMATION PROVIDED BY SUPPLIER. CONTRACTOR TO COORDINATE INFORMATION W/ SUPPLIER.

1. FOR ALL BURNISHED MASONRY UNITS, PROVIDE PHYLON 1422, SERIESS G20 ACRYLIC, 1 COAT ACRYLIC APPLIED AT PLANT AND 1 COAT ACRYLIC APPLIED AT JOB SITE AFTER CLEANING BY THE PAINTING CONTRACTOR AND USE PAINT SPRAYER, NO AIR-LESS SPRAYER. CONTACT RON HUNT FOR ADDITIONAL INFO.

2. FOR ALL C-BRICK (SMOOTH-FACE)/ SPLITFACE MASONRY UNITS, PROVIDE PRIME-A-PELL PLUS WATER REPELLANT AT JOB SITE AFTER CLEANING BY THE PAINTING CONTRACTOR AND USE PAINT SPRAYER, NO AIR-LESS SPRAYER. CONTACT RON HUNT FOR ADDITIONAL INFO.

BUILDING ELEVATION NOTES:

1. ADG SHALL REVIEW AND APPROVE ALL FINAL EXTERIOR MATERIALS AND COLOR FINISH SELECTIONS PRIOR TO PURCHASE/ FABRICATION. SUBMIT MATERIALS, COLOR FINISHES AND PRODUCT SAMPLES FOR APPROVAL.

2. ALL DOORS AND WINDOWS TO BE TEMPERED PER MBC. PROVIDE SAFETY GLAZING AS REQUIRED PER CODE.

3. FIELD MEASURE ALL STOREFRONT WINDOWS AND DOOR OPENINGS PRIOR TO FABRICATION. PROVIDE WINDOW SIZES BASED ON FIELD MEASUREMENTS TO FABRICATOR. FABRICATOR TO PROVIDE SHOP DWG'S TO ADG FOR REVIEW PRIOR TO FABRICATION.

4. ALL SIGNAGE SHALL COMPLY WITH CITY'S ORDINANCE AND SIGNAGE DETAILS SHALL BE SUBMITTED TO THE PLANNING DEPARTMENT IF NEEDED.

5. ALL EXTERIOR LIGHTING SHALL BE DIRECTED DOWNWARD AND SHIELDED SO THAT LIGHT DOES NOT SHINE INTO THE ADVANCEMENT PROPERTY.

6. ALL FINISH GRADES/ SLOPES TO BE VERIFIED PER CIVIL ENGINEERING DRAWINGS IF PROVIDED.

7. ALL RTU TO BE FULLY SCREENED BY PARAPET. PROVIDE SCREENING IF NEEDED BY CONTRACTOR.

8. ADDITIONAL DOORS AND EXITING REQUIREMENTS WILL BE LOCATED TO MEET THE MBC EXIT REQUIREMENTS ONCE THE INDIVIDUAL TENANT LAYOUTS ARE KNOWN.

9. "M.C.J.": PROVIDE C-BRICK EXPANSION JOINTS AT 20'-0" O.C. SPACING MAX.

10. EXPANSION JOINTS COLOR TO MATCH C-BRICK/ EIFS/ ETC. PROVIDE SAMPLE TO ADG FOR APPROVAL.

11. SEALANT; AS REQUIRED PER MBC. COLOR TO MATCH STOREFRONT/ MASONRY, PRODUCT BY TREMPCO

	ELEVATION NOTES:
G	BACK SIDE OF ROOF PARAPET BEYOND ROOFING SYSTEM MEMBRANE EXPOSED.

ADG DESIGN STUDIO
189 E BIG BEAVER ROAD
SUITE 200
TROY, MICHIGAN 48083

P. 248-254-3834

W.ABRODESIGNGROUP.COM

PROJECT:

CORNER STORE
GAS STATION

- BARBAT ORGANIZATION -

1981 WEST SOUTH BLVD.,
TROY, MI

SHEET TITLE:

EXTERIOR
BUILDING
ELEVATIONS
-CONCEPTUAL-

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

DATE:	ISSUE:
11.21.24	SPA

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PROJECT NO:

081624

SHEET NO:

A-2.1

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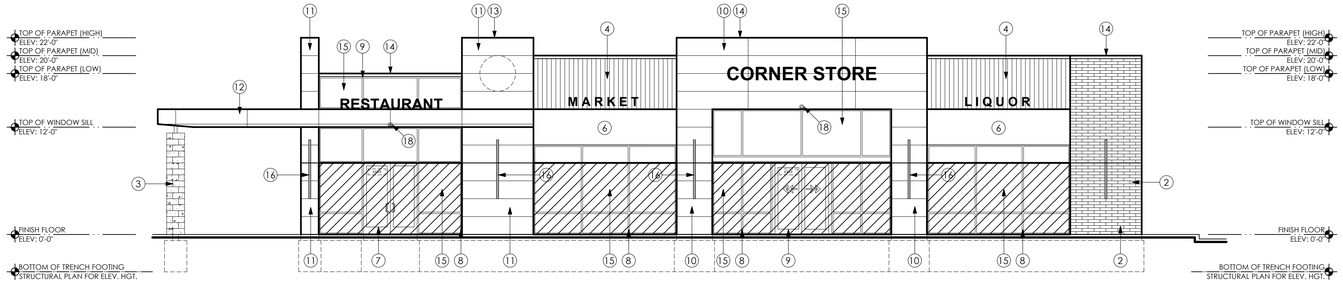
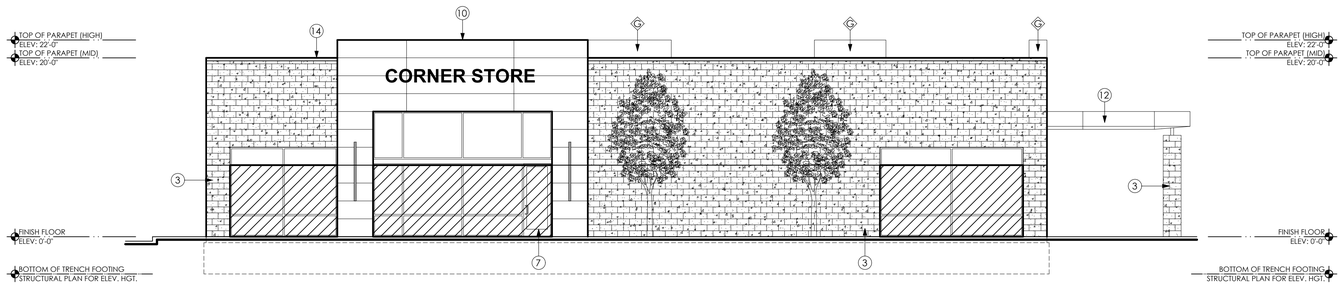


SOUTH ELEVATION

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

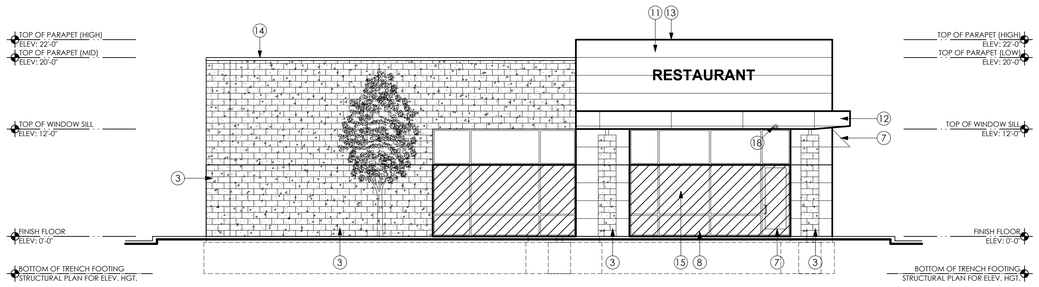
TRANSPARENCY CALCULATION AT SOUTH ELEVATION: (MIN. 30% REQ.)		
TOTAL SF. OF GLAZING SURFACE AT 0' TO 8' AFF:	544 SF	72%
TOTAL SF. OF BUILDING SURFACE AT 0' TO 8' AFF:	752 SF	100%



NORTH ELEVATION

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

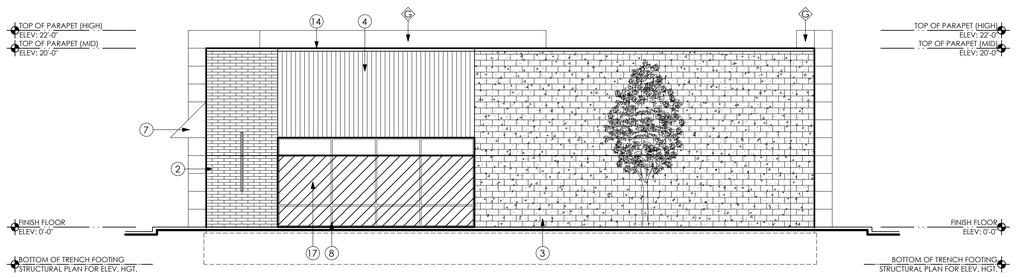
TRANSPARENCY CALCULATION AT NORTH ELEVATION: (MIN. 50% REQ.)		
TOTAL SF. OF GLAZING SURFACE AT 0' TO 8' AFF:	384 SF	51%
TOTAL SF. OF BUILDING SURFACE AT 0' TO 8' AFF:	752 SF	100%



WEST ELEVATION

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

TRANSPARENCY CALCULATION AT WEST ELEVATION: (MIN. 50% REQ.)		
TOTAL SF. OF GLAZING SURFACE AT 0' TO 8' AFF:	280 SF	50%
TOTAL SF. OF BUILDING SURFACE AT 0' TO 8' AFF:	560 SF	100%



EAST ELEVATION

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

TRANSPARENCY CALCULATION AT EAST ELEVATION: (MIN. 30% REQ.)		
TOTAL SF. OF GLAZING SURFACE AT 0' TO 8' AFF:	176 SF	32%
TOTAL SF. OF BUILDING SURFACE AT 0' TO 8' AFF:	544 SF	100%

ADG DESIGN STUDIO
189 E BIG BEAVER ROAD
SUITE 200
TROY, MICHIGAN 48083

P. 248-254-3834
W.ABRODESIGNGROUP.COM

PROJECT:

CORNER STORE
GAS STATION

- BARBAT ORGANIZATION -

1981 WEST SOUTH BLVD.,
TROY, MI

SHEET TITLE:

EXTERIOR BUILDING ELEVATIONS - GLAZING CALCULATIONS

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DATE:	ISSUE:
11.21.24	SPA

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PROJECT NO:

081624

SHEET NO:

A-2.4

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TROY GAS STATION

IMAGE 2 | **SOUTHEAST PERSPECTIVE VIEW**

TROY GAS STATION

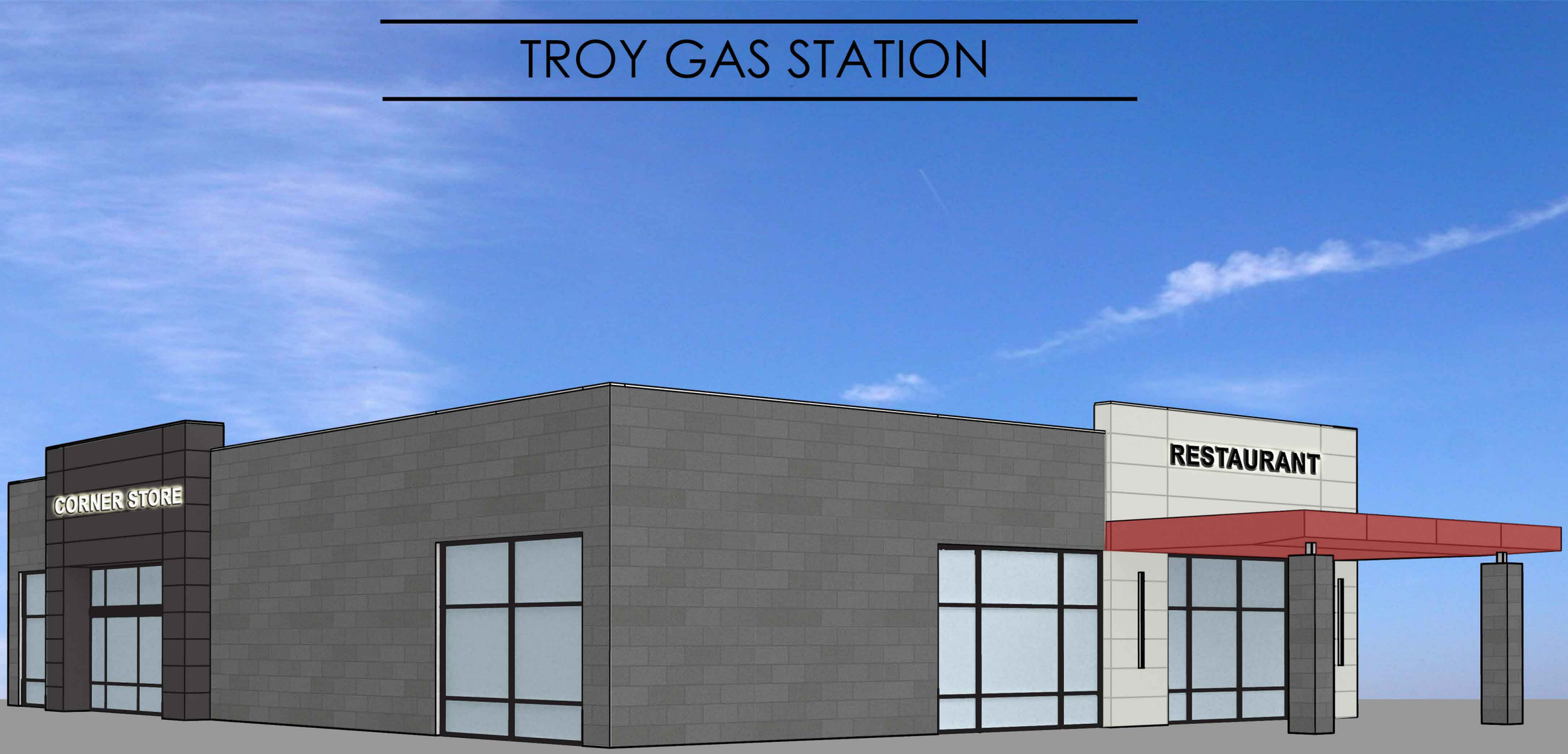

IMAGE 4 | **NORTHWEST PERSPECTIVE VIEW**

TROY GAS STATION

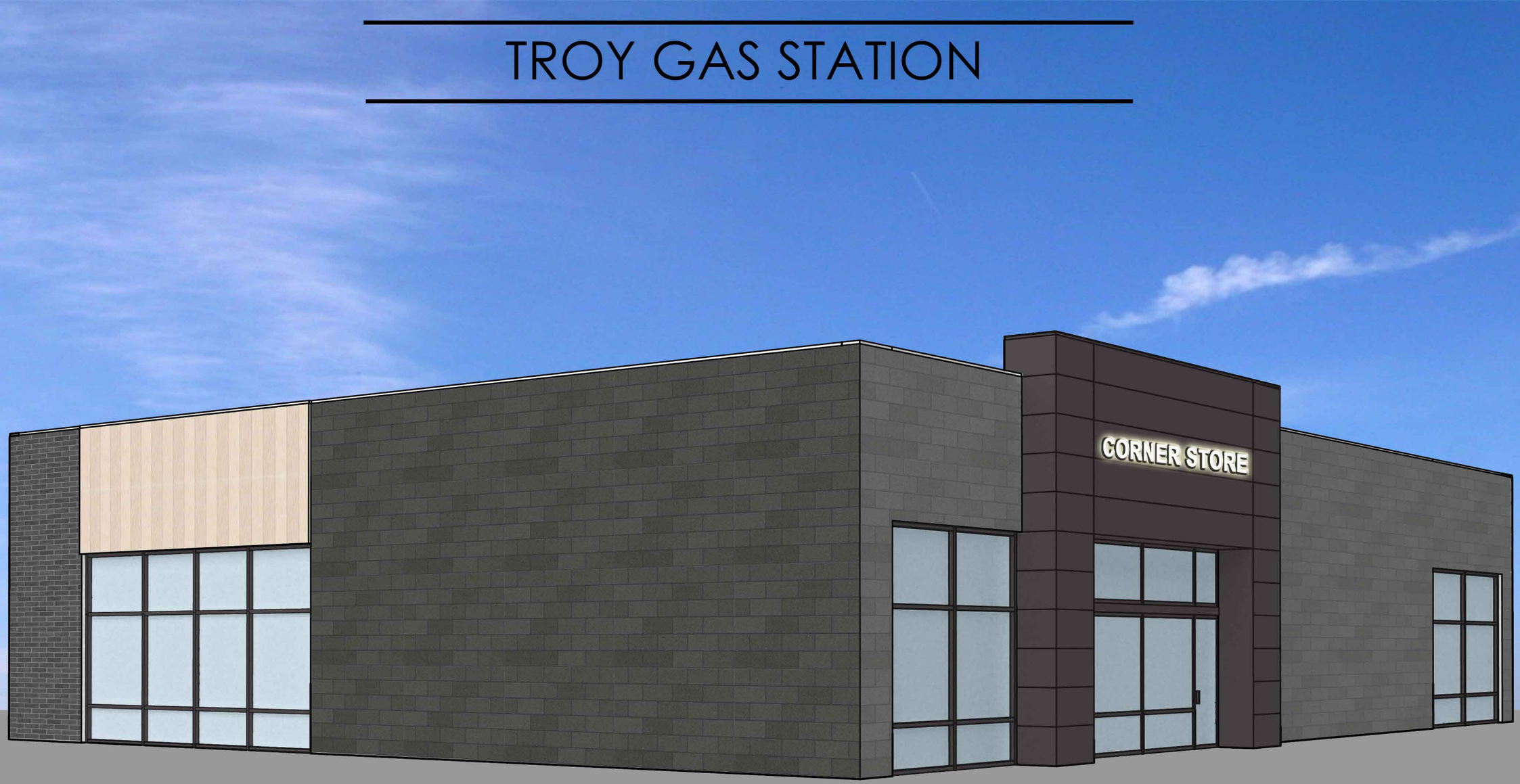

IMAGE 3 | **NORTHEAST PERSPECTIVE VIEW**

TROY GAS STATION

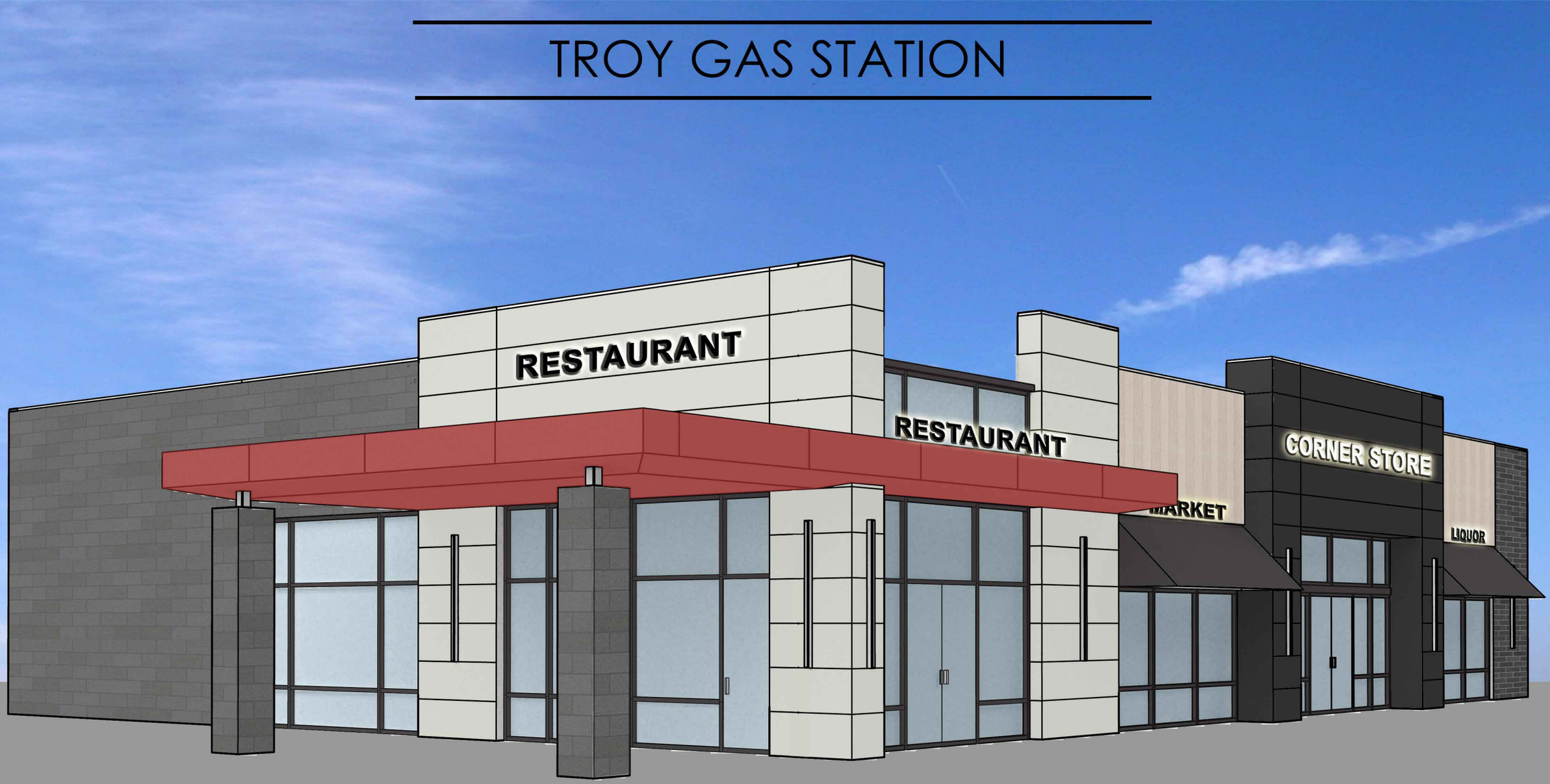

IMAGE 1 | **SOUTHWEST PERSPECTIVE VIEW**

From: John Jina
To: Planning
Subject: Fw: City Troy Council,
Date: Wednesday, February 12, 2025 6:48:20 PM

You don't often get email from johnjina76@yahoo.com. Learn why this is important

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Yahoo Mail - Email Simplified

----- Forwarded Message -----

From: "john jina" <johnkaroljina@gmail.com>

To: "johnjina76@yahoo.com" <johnjina76@yahoo.com>

Sent: Tue, Feb 11, 2025 at 6:01 PM

Subject: City Troy Council,

City Troy Council,

Hi, my name is John Jina I have been a resident for the City of Troy all my life. It had come to my attention that on 1981 West South Blvd and Crooks there might be a gas station going through development. This establishment not acceptable to me for many reasons. It will have a severe effect on human health, property value for the residents in the city of Troy and around the area, and many many qualities of life's aspects. Allowing to build another gas station close to one another when there's already 2 on a busy traffic road would be very unsafe for drivers, residents, elderly, gas station WARS between businesses which not suitable for the City of Troy. One of my concerns is a number of compounds injurious to HUMAN HEALTH are released from gas stations during vehicle fueling and from underground storage tank vents. These compounds involve Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) which is an except to human health. As busy traffic road Crooks and South Blvd are there many concerns with traffic flow and adding a gas station is not going help with Big Semi Gas Trucks,Long Tractor Trailers,Landscaping company Trucks,SUV, …etc these vehicles must be able to maneuver without effecting traffic wich is Not possible on a high traffic road like Crooks. WE DO NOT need another gas station there many other types of businesses that would be suitable for the corner of South Blvd and Crooks.

Thank you,
John Jina

Sent from my iPhone

From: Sam Kasto
To: Planning
Subject: Sam kasto
Date: Thursday, February 13, 2025 10:17:33 AM

[You don't often get email from samk513@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

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Hi, my name is Sam Kasto and I see there's a proposal to put another Gas Station on South Boulevard and crooks, I really don't think there should be another gas station on the corner. I'm totally against it.
Sent from my iPhone

From: Dave Yousif
To: Planning
Subject: 1981 west S.blvd
Date: Thursday, February 13, 2025 10:07:22 AM

You don't often get email from dkesto6767@gmail.com. Learn why this is important

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To Troy city council

My name is David Yousif and I have lived in Troy and own a business in Troy also , I am sending this letter to oppose the plan that was submitted to convert the rite aid store to a gas station we are already over saturated with gas stations and there's a Kroger fuel station and a shell on those corners and We Don't Need anymore stations So please Do Not approve this project and we the neighborhood appreciate and respect all the right decision you guys make for the benefit of our community.
Thank you

From: john jina
To: Planning
Subject: To: The city of Troy, Michigan
Date: Monday, February 10, 2025 7:19:46 PM

You don't often get email from johnkaroljina@gmail.com. Learn why this is important

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To: The city of Troy, Michigan
Attn: City council of Troy

From: Karol Jina

I Karol Jina am writing you this letter to express my strong reasons for NOT building another gas station in the city of Troy on 1981 West South Blvd. Road. I have lived in the city of Troy almost all my life, and believe that the residents of the City of Troy do NOT need another Gas Station on Crooks road which is a very high traffic road. I would like to express some of my personal reasons for NOT building another gas station on Crooks road and South Blvd road.

1. Safety Issues for the Troy Residents and other Residents
2. Traffic issues are not safe for people driving.
3. There are already enough Gas Stations on South Blvd and Crooks
4. Construction and Development is not good on a high traffic road, we already have enough gas stations in the Surrounding area.
5. Health and Property Value will be a concern for the Troy Residents
6. Troy Residents will also lead to potential declines in there property value because of a increase in high vehicle traffic
7. Pollution, Gas spills, and high traffic congestion from semi trucks trying to go in and out on a high traffic road.

Thank you to the City Council of Troy for taking the time to read our concerns.

Sincerely,
Karol Jina
Sent from my iPhone

From: Dee Jay
To: Planning
Subject: Concern
Date: Monday, February 17, 2025 1:39:19 PM

You don't often get email from afjay03@yahoo.com. Learn why this is important

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To Troy City Council,

My name is Dunia, and I am writing to express my deep concern regarding the proposed gas station at 1981 West South Blvd. While development can be a positive thing, it should not come at the cost of hardworking, family-owned businesses that have been serving our community for years.

Directly across the street from this proposed location is a locally owned Shell gas station that has been a reliable part of this neighborhood for a long time. Unlike corporate chains with endless resources, small, independently owned businesses like this one depend on steady community support to survive. Bringing in another gas station so close by would create unfair competition, making it harder for them to stay in business. This isn't just about a new building—it's about people's livelihoods.

This raises an important question: If the city approves this project, does it have a plan to support the small business owners who will inevitably suffer losses? Will there be any effort to compensate them for the damage this decision may cause? It seems unfair to prioritize large-scale developments while leaving long-standing local businesses to struggle against unnecessary competition.

Troy is a community that thrives because of its balance between growth and support for local businesses. I urge the council to consider the real impact of this decision—not just in terms of development but in terms of the people and families it will affect.

Sincerely,

Dunia

From: Kathi Strickland
To: Planning
Subject: Special request
Date: Thursday, January 2, 2025 11:23:29 AM

You don't often get email from kathistrickland@gmail.com. Learn why this is important

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Hi Jackie,

Thank you for the information regarding the property at South Blvd and Crooks. I am against another gas station on that property. There are already 2 of them at that corner so I don't see why a 3rd is needed. What is the justification for that?

I hope that the city takes that into account when making a decision.

Regards,
Kathi Strickland

From: R Sclabassi
To: Planning
Subject: Special Land Use Proposal at 1981 South Blvd W
Date: Monday, February 17, 2025 10:13:05 PM

You don't often get email from r.sclabassi@gmail.com. Learn why this is important

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To whom it may concern,

It has been brought to my attention that there is a special land use proposal for the corner of South Boulevard and Crooks Road. I am a resident of Troy with a home off of Crooks Road between South Boulevard and Square Lake. Crooks Road is heavily congested during the morning commute and the rush-hour evening traffic. The proposal for yet another gas station, when there are currently already two at the same intersection would just bring further congestion that the homeowners in the surrounding area do not need. Crooks Road is already noisy and particularly in the summer filled with people racing. There have been many complaints by residents that back up to Crooks about the noise level. We have been slammed in our subdivision by the noise from the recent renovation of I-75. Building a large gas station that potentially brings in much more traffic would further exasperate the noise decibel in our community. Additionally, it would take away from the businesses that are currently established on adjacent corners. This truly is not a business that is appropriate for this corner of our community.

Thank You,

A Very Concerned Resident.

From: Danny Pruzinsky
To: Planning
Subject: Special Use Request
Date: Friday, February 7, 2025 7:07:01 PM

You don't often get email from dannypruzinsky1@gmail.com. Learn why this is important

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Dear Planning Department,
I live in the neighborhood that is southeast of Crooks and South. I see that there is a special use request to turn the old Rite Aid into a gas station. My family and I are opposed to this development. First, we simply do not need another gas station. With Kroger and Shell occupying two of the 4 corners of this intersection another gas station would be redundant. I encourage you to consider a different proposal that could add value to the residents of Troy. Secondly, with 2 teenage drivers at home, the traffic zipping in and out of another gas station at this busy intersection could be problematic.
Thank you for your consideration.
Sincerely,
Danny Pruzinsky
586-709-9793

From: sam Yahoo
To: Planning
Subject: Opposition to Liquor Store/Gas Station Proposal at South Blvd & Crooks
Date: Monday, February 10, 2025 4:49:30 PM

You don't often get email from samkirma@yahoo.com. Learn why this is important

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Greetings,
As a resident of the city of Troy, I am writing to express my strong opposition to the proposed liquor store or gas station at the intersection of South Blvd and Crooks. As a concerned resident, I believe that this addition is unnecessary and does not serve the best interests of our community.

Currently, we already have similar establishments at two of the other corners of this intersection, making another liquor store or gas station redundant. Rather than enhancing the area, this would contribute to oversaturation and could negatively impact the character of our neighborhood. We should focus on attracting businesses that add value to the community, rather than duplicating services that are already abundantly available.

I respectfully urge the City of Troy to deny this proposal and consider alternative developments that better align with the needs of residents. Thank you for your time and attention to this matter.

Best regards,
Sam Kirma

From: Kristina Kado
To: Planning
Subject: Property 1981 west south blvd
Date: Monday, February 10, 2025 10:18:24 PM

[You don't often get email from carlokristina@yahoo.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

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Hi my name is Kristina, hope all is well!!

I just found out that they're proposing to put another gas station on the intersection of Crooks and South BLVD. (1981 West South BLVD)
I don't think this is a good idea since we already have two gas stations at this intersection. Putting another gas station will only cause more competition for all the businesses that are near the area. All this is doing is congestion the area with gas stations. We Also have to look at the environmental impact it'll bring fuel spill, soil contamination and groundwater pollution! I believe they can put another business in this location like a pet smart, car wash, salon etc.

I have faith in The City of Troy to continue doing a good job in balancing commercial growth by not overlapping SAME businesses at every intersection.

Thank you

Sent from my iPhone

From: Alex Jindo
To: Planning
Subject: corner gas station
Date: Sunday, February 9, 2025 4:29:20 PM

You don't often get email from alex.jindo@yahoo.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

My name is Alex, and I am furious about the proposal to build yet another gas station at 1981 West South Blvd. This is not just unnecessary—it is outright harmful to our community in ways that go beyond competition with existing businesses. This development threatens our neighborhood's safety, environmental quality, and overall quality of life.

First, let's talk about traffic. This intersection is already a high-traffic area, and adding another gas station will only worsen congestion, making it more dangerous for pedestrians and drivers alike. Increased vehicle activity, more cars turning in and out of yet another station, and potential backups will create a mess that affects everyone who uses this route daily.

Then there's the environmental impact. More gas stations mean more risk of fuel spills, soil contamination, and groundwater pollution. Gas stations also contribute to air pollution, and adding another one so close to existing businesses and homes is a reckless decision. Do we really want more fuel runoff and toxic emissions in our community when we already have enough stations to meet demand?

Another major concern is crime. Studies have shown that areas with a high concentration of gas stations often experience more incidents of loitering, theft, and other petty crimes. We already have two gas stations at this intersection—do we really need to create another magnet for these problems? Residents deserve to feel safe in their own neighborhood without worrying about an increase in unwanted activity.

This proposal is completely out of line with the careful city planning that has helped make Troy a great place to live. Allowing yet another gas station to be squeezed into an already crowded intersection disregards the needs of the people who live here in favor of corporate interests. There are countless better uses for this space that would actually improve the community instead of dragging it down.

I demand that the city council reject this proposal and prioritize the well-being of its residents. This is not what the people of Troy want or need, and approving it would be a major mistake.

Sincerely,

Alex

Sent from Yahoo Mail for iPhone

From: Zach Jina
To: Planning
Subject: Letter to troy city council
Date: Monday, February 17, 2025 4:04:31 PM

You don't often get email from zachjina@gmail.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

My Name is Zachary Jina, I have lived in the City of Troy all my life. It has come to my attention that the City of Troy wants to build a Gas Station on the corner of South Blvd and Crooks road. This development is UNACCEPTABLE to me because of many factors. We already have enough Gas Stations in this particular corner building another gas station will just worsen traffic and will be very dangerous for drivers and people trying to maneuver getting in and out of the gas station with a high traffic road like crooks. Development of another Gas Station has many significant health risks to our community like pollution spills,leaky underground storage tanks, air pollution, decrease in property value, accidents, carbon monoxide poisoning…etc. As a resident for the City of Troy I strongly recommend not building Another Gas Station on the corner of South Blvd and Crooks road in our community. Thank you, Zachary Jina

From: DJ Jin
To: Planning
Subject: 1981 west south boulevard
Date: Saturday, February 8, 2025 7:57:33 PM

You don't often get email from jd072703@yahoo.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello, my name is Jay Jindo. I have lived in Troy all of my life and noticed that there is a request for a special land use proposal at the south east corner of South Boulevard and crooks which is 1981 West South Blvd. I looked over the site Plans on the city's website and I noticed that they're trying to put another gas station on the old Rite Aid parcel where there's already two gas stations on that corner. I really don't feel A third gas station on this corner is going to benefit the community. We already have two gas stations and three liquor licenses between Kroger CVS and the Shell gas station all adequately enough for the community to get their fuel and alcohol needs. I've discussed this with several of the neighbors in our community and everyone seems to agree with me. I feel the city of Troy and the city council have done an amazing job making sure there isn't too much over congestion or too much of the same type of businesses on the same corner like some other cities allow. I feel when the city decides on master plan usage they do for a reason, especially when it comes to not desirable zoning like automotive usage, which can cause an eyesore to a community things like too many gas stations, oil changes, or mechanic shops only should be allowed in certain districts within the city, that's why they have master plan discussions. I feel this is a classic case of a wrong type of business added to the south Boulevard location, especially when there's already two of the same type of businesses already there serving the community. I think the developers which I have looked them up are in several types of businesses and I feel they could come up with a better plan for this site so it could benefit the community and adhere to the current zoning of the parcel. Things like a nice restaurant a hardware store, a dollar store, etc. are type of businesses that will fit the zoning of that parcel and definitely benefit the community because those types of businesses are not at the intersection currently. I'm sure the owners of the parcel can think of 1000 different type of businesses that will be much more successful than putting up another gas station that is just going to be an eyesore and compete with neighboring gas stations which I think their vision isn't with the community in mind. The owners of the property were well aware of the zoning when they purchased this property if they had intentions of putting a gas station there it is there Burden to Make the necessary rezoning request before purchasing it. The current Rite Aid building with some remodeling would be a beautiful building which Will fit the needs of the Community. I urge city council to put the communities needs first and please consider my suggestions and opinions when making your decision. Thank you very much!!! Jay Jindo 248-227-3077

Sent from Yahoo Mail for iPhone

From: fraydo jindo
To: Planning
Subject: Concerned Citizen
Date: Sunday, February 9, 2025 4:30:06 PM

You don't often get email from fraydo.jindo14@gmail.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To the Troy City Council,

My name is Fraydo, and I have been a proud resident of Troy for many years. I recently became aware of the special land use request for 1981 West South Blvd., where developers are proposing to build yet another gas station. As a concerned member of the community, I strongly believe this is not the right fit for this location. This intersection already has two gas stations that adequately serve the area. Adding a third would not only be redundant but could also negatively impact small, well-established businesses that our community values. Independent shops and family-owned stores rely on steady local support, and an unnecessary gas station could take away potential business from them. These smaller businesses contribute to the character of our city and deserve to be protected from unnecessary competition driven by large, corporate-backed developments. Beyond the economic impact, the city has done a great job in balancing commercial growth with thoughtful planning, ensuring that we don't end up with an over-congested mess of similar businesses at every intersection. This proposal goes against that careful planning and could set a precedent for more unnecessary development in the future. I urge the city council to prioritize the needs of the community over the interests of developers. There are many other types of businesses that would benefit the area without harming small, locally loved establishments. Please take the community's concerns into account when making this decision.

Sincerely, Fraydo

From: Diana Yousif
To: Planning
Date: Tuesday, February 18, 2025 9:24:30 PM

You don't often get email from dyousif5760@gmail.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Members of the Troy City Council,

I have worked in the Troy area for several years and have become familiar with the businesses and dynamics that make this community unique. I recently learned that the Rite Aid at the corner of S. Blvd. and Crooks may be converted into a gas station. I strongly oppose this proposal for several reasons.

First, there are already multiple fuel stations in this area, including two others at the same intersection. Adding another one would only increase traffic congestion, especially at an already busy and heavily trafficked location. This could create safety concerns for pedestrians and drivers alike, particularly during rush hours.

Second, the presence of additional fuel stations could harm local businesses. Smaller businesses, like convenience stores and auto repair shops, rely on the foot traffic and customer base that a gas station typically generates. Increasing the number of fuel stations could lead to reduced patronage for these small businesses, which are vital to the economic health of our community.

Furthermore, the construction of another gas station would have negative environmental impacts. Gas stations can contribute to increased pollution from fuel vapors and runoff, potentially harming local air and water quality. In an era where many are striving to reduce our carbon footprint, adding a gas station seems counterproductive to our shared environmental goals.

Lastly, the long-term sustainability of a community is more important than the short-term benefits of having another gas station.

For all these reasons, I urge you to reconsider the approval of us this project. The negative impact on local businesses, the environment, and the long-term sustainability of our community outweigh the short-term benefits of adding another fuel station.

Thank you for your time and consideration.

Sincerely,

Diana Yousif

From: Jason Hanna
To: Planning
Subject: New Gas Station Proposal
Date: Wednesday, February 19, 2025 10:08:39 AM

You don't often get email from jasonjhanna@hotmail.com. Learn why this is important

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Jason Hanna

Subject: Opposition to Proposed Gas Station Development

To whom it May Concern,

I am writing to express my strong opposition to the proposed construction of a new gas station on the South East corner of South Boulevard and Crooks(Former Rite Aid). Given the number of existing gas stations in our area, this project is unnecessary and poses significant environmental, health, and economic concerns for our community.

Firstly, the addition of another gas station is redundant. Our neighborhood is already adequately served by multiple fueling stations within a short distance, making the construction of a new one an inefficient use of land. Rather than meeting an unmet need, this project would only contribute to market oversaturation, potentially leading to abandoned or underutilized stations in the future.

More importantly, gas stations pose serious environmental risks. Underground fuel storage tanks can leak over time, leading to soil and groundwater contamination that is costly and difficult to remediate. Harmful chemicals such as benzene and toluene, both known carcinogens, can seep into the surrounding environment, endangering public health. Additionally, gas stations contribute to air pollution by releasing volatile

organic compounds (VOCs), which exacerbate respiratory issues and contribute to smog formation.

From a long-term perspective, investing in more fossil fuel infrastructure contradicts the growing push toward renewable energy and sustainability. With the rise of electric vehicles and the global transition away from gasoline dependency, it makes little sense to develop another gas station when cleaner alternatives, such as EV charging stations or community green spaces, could be pursued instead.

Beyond environmental and health concerns, the construction of another gas station could negatively impact property values and quality of life for nearby residents. Increased traffic congestion, noise pollution, and the potential for hazardous spills all make this project an undesirable addition to our community.

Thank you for your time and consideration. I hope you will listen to the concerns of the community and make a decision that benefits both current and future residents.

Sincerely,

Jason Hanna

ITEM #6

DATE: February 17, 20254

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: PUBLIC HEARING – CONDITIONAL REZONING APPLICATION (JPCR2025-001) – Proposed Village of Hastings, East side of Livernois, North of Square Lake, PIN 88-20-03-301-088, -023, -024, -025 and 88-20-03-351-004, Section 3, Presently zoned NN (Neighborhood Node "Q") and R-1B (One Family Residential) Zoning Districts

The applicant GFA Development, Inc. seeks a conditional rezoning of the subject parcel from NN and R-1B to RT. The applicant proposes to maintain the present R-1B zoning of three (3) existing single family homes on Livernois and preserve the homes. The remainder of the site is proposed to be rezoned to RT to accommodate twenty-two (22) new units. The subject site to be rezoned is 5.15 net acres in area.

The applicant is voluntarily offering some conditions as outlined in the attached report, including a complete Preliminary Site Plan. The layout of the project is similar to the Village of Hastings PUD which was denied by City Council on August 12, 2024. The PUD featured a total of thirty-three (33) units (including the three (3) single family homes on Livernois). This application features twenty-five (25) units (including the three (3) single family homes on Livernois).

The Planning Commission is a recommending body for this application.

The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City's Planning Consultant, summarizes the project. 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 the recommendations included therein.

Attachments:

1. Maps
2. Report prepared by Carlisle/Wortman Associates, Inc.
3. Site plan
4. Public comment

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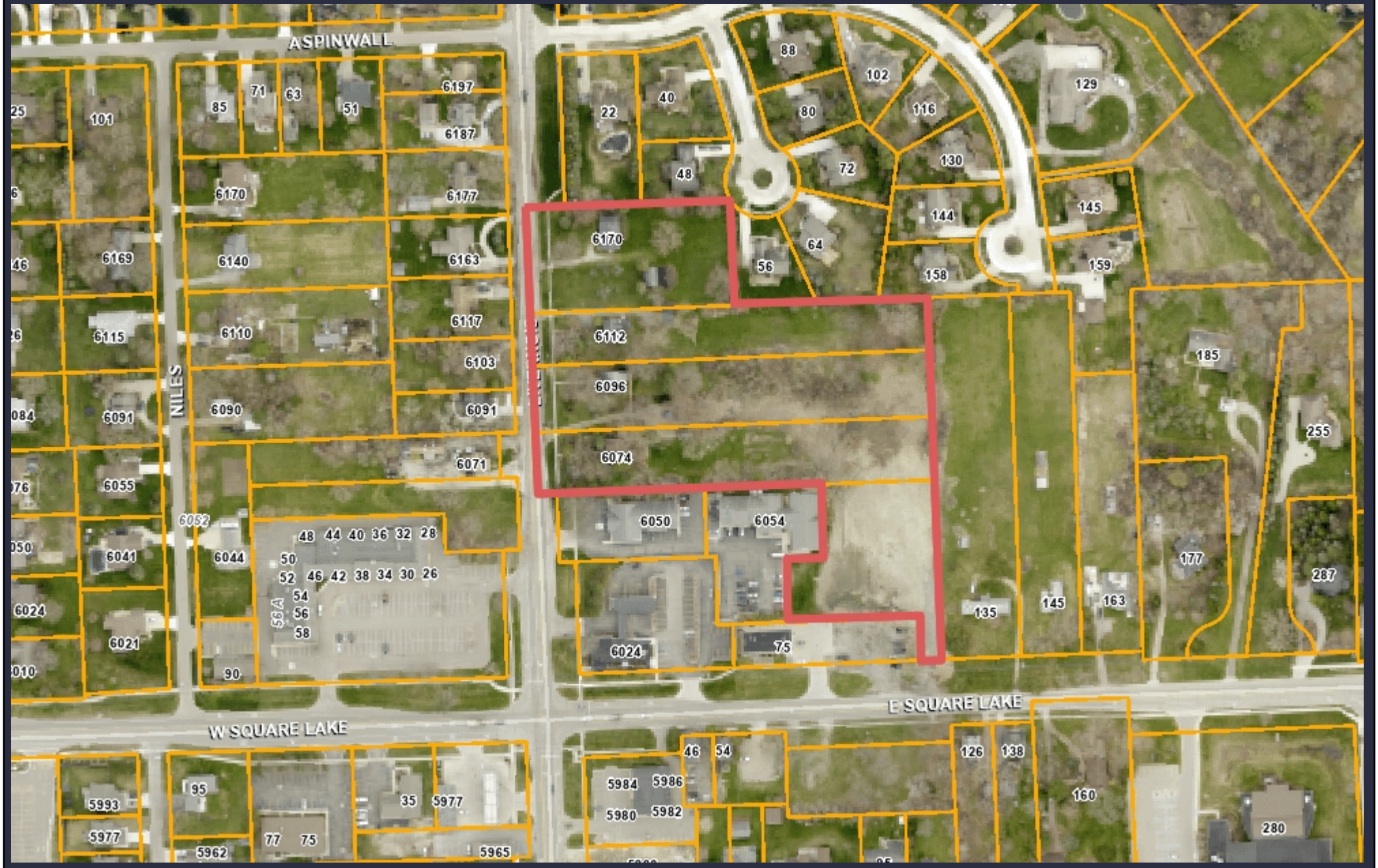
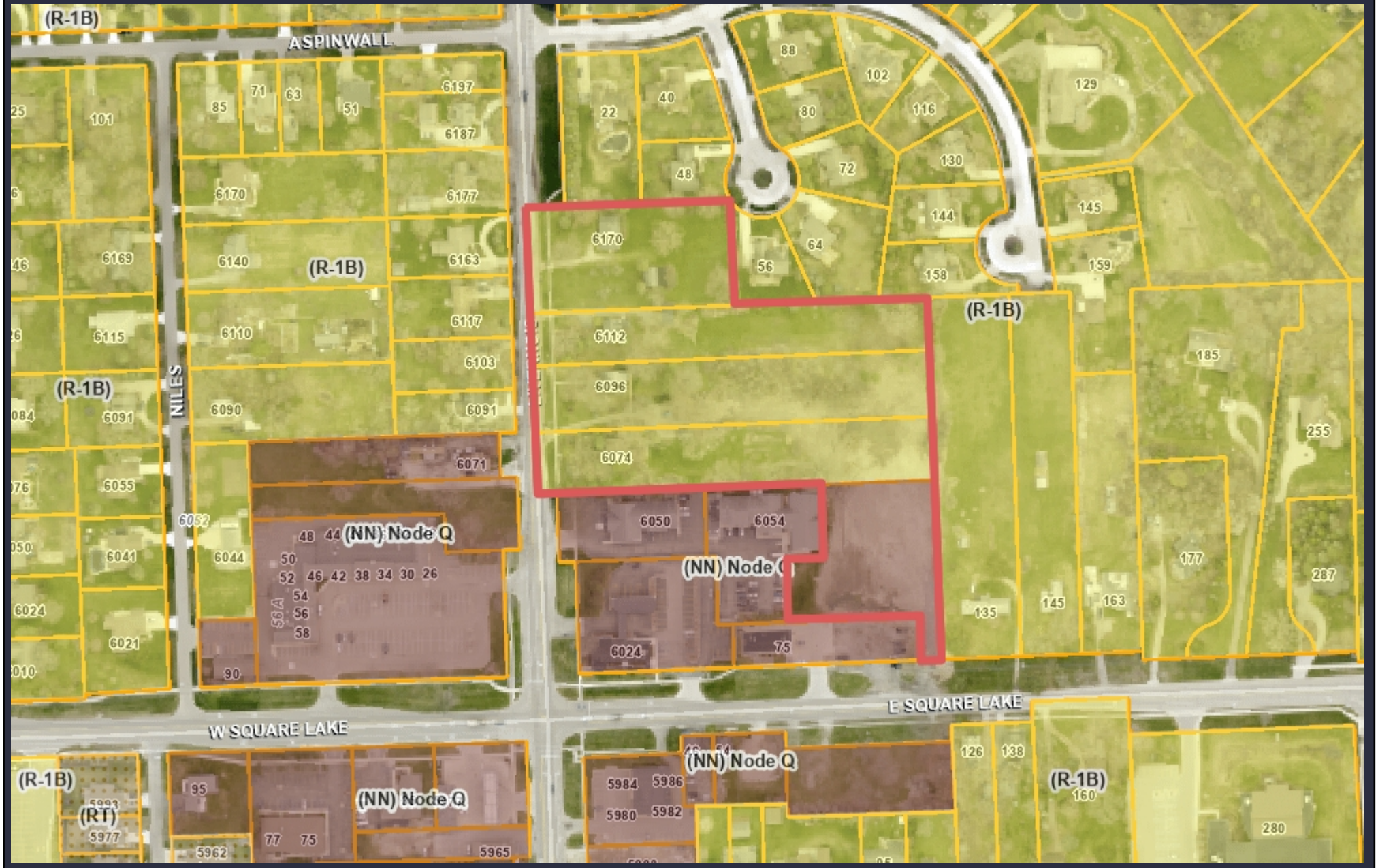
GIS Online



577 0 288 577 Feet

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

GIS Online



577 0 288 577 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.

POTENTIAL RESOLUTION

PUBLIC HEARING – CONDITIONAL REZONING APPLICATION (JPCR2025-001) – Proposed Village of Hastings, East side of Livernois, North of Square Lake, PIN 88-20-03-301-088, -023, -024, -025 and 88-20-03-351-004, Section 3, Presently zoned NN (Neighborhood Node "Q") and R-1B (One Family Residential) Zoning Districts

Resolution # PC-2025-02-
Moved by:
Seconded by:

RESOLVED, That the Planning Commission hereby recommends to the City Council that the NN and R-1B to RT conditional rezoning request, as per Section 16.04 of the City of Troy Zoning Ordinance, located on the east side of Livernois and north of Square Lake (PIN 88-20-03-301-088, -023, -024, -025 and 88-20-03-351-004), within Section 3, being approximately 5 acres in size, be **GRANTED** for the following reasons:

1. The request complies with the Master Plan.
2. The rezoning would permit greater flexibility in use and development of the property.
3. The conditions offered by the applicant reasonably protect the adjacent properties.
4. The rezoning would be compatible with surrounding zoning and land use.
5. The site can be adequately served with municipal water and sewer.

BE IT FURTHER RESOLVED, That the Planning Commission recommends the following site plan design considerations:

1. Provide photometric plan.
2. Move Ranch 1 to 50-feet from Livernois or seek variance.
3. Provide color renderings of the proposed duplex product.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons:_____)

Yes:
No:

MOTION PASSED / FAILED

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

Date: February 17, 2025

Conditional Rezoning and Preliminary Development Plan Approval Review For City of Troy, Michigan

Applicant:	GFA Development Inc
Project Name:	Village of Hastings CR
Plan Date:	December 13, 2024
Location:	East side of Livernois, north of Square Lake
Zoning:	R-1B, Single Family Residential (approx. 5 acres) & NN-Q Neighborhood Node, (approx. 1.1 acres)
Proposed Zoning:	Conditional Rezoning to RT, One-family Attached Residential District
Action Requested:	Conditional Rezoning and Preliminary Development Plan Recommendation

BACKGROUND

An application has been submitted to conditionally rezone a +/-5.0 acre site to RT, One-family Attached Residential District in order to construct twenty-two (22) new residential units and preserve the three (3) existing homes on Livernois

Approximately 3.9 acres of the site is currently zoned R-1B, which does not permit multi-family residential or duplexes; while approximately 1.1 acres of the site is zoned Neighborhood Node, which does allow multi-family residential.

The subject site is located on the east side of Livernois, north of Square Lake. Access is via a new twenty-eight (28) foot wide private road off Livernois along with an emergency vehicle access road off Square Lake in the southeast corner of the development. The 25-units will be distributed in the format outlined below:

- Four (4) ranch style detached single-family homes,
- Two (2) duplex ranches (4 units),
- Seven (7) two-story attached (14 units)
- Three (3) existing homes on Livernois (3)

The applicant previously submitted a Planned Unit Development (PUD) for this site which included thirty (30) new residential units and preserved the three (3) existing homes on site. The PUD was recommended for approval by the Planning Commission but was denied by City Council on August 12, 2024

Please note that the Planning Commission is a recommending body on this matter. The Planning Commission is to make a recommendation to the City Council for their consideration.

<u>Location of Subject Site:</u>

Current Zoning:
R-1B, Single Family Residential & NN-Q Neighborhood Node.

Proposed Uses of Subject Parcels:
Twenty-two (22) new units and preserving three (3) homes on Livernois. Totals 25 units.

Current Use of Subject Properties:
Single Family Homes and undeveloped land.

Surrounding Property Details:

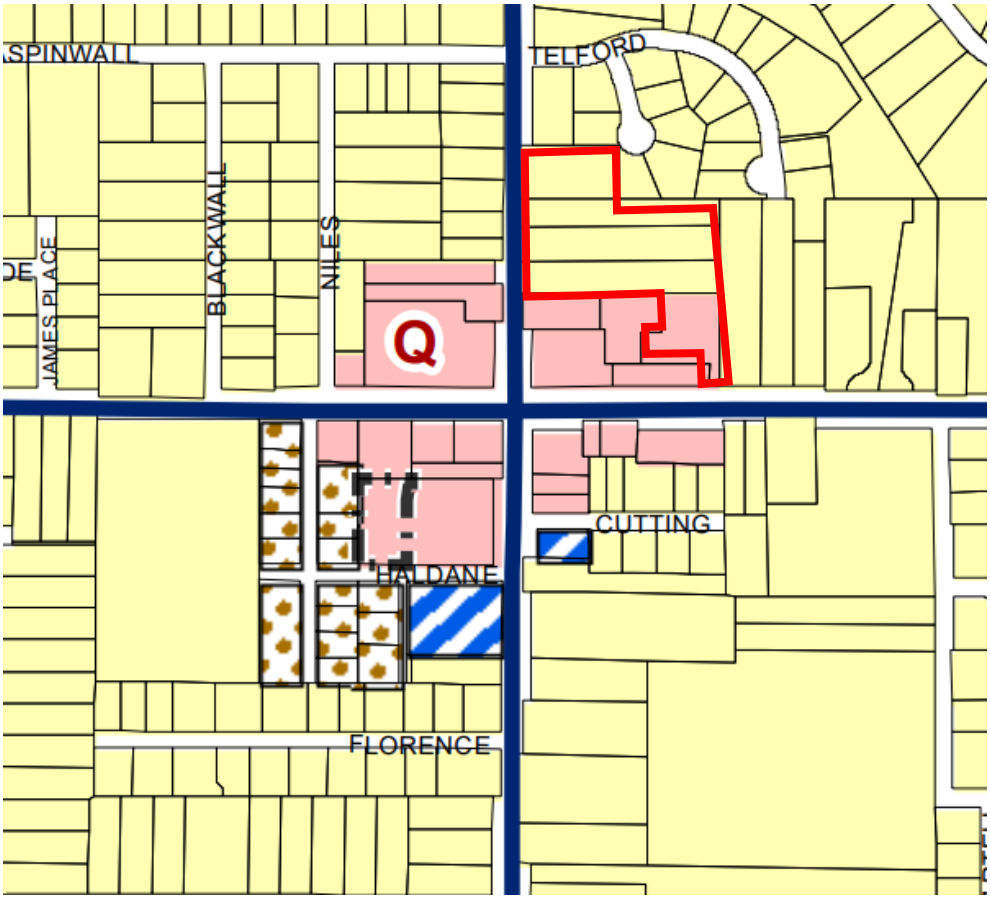
Direction	Zoning	Use
North	R-1B	Single Family Housing
South	NN-Q	Commercial / Office
East	R-1B	Single Family Housing
West	R-1B / NN-Q	Single Family Housing / Commercial

CONDITIONS OFFERED

The applicant has voluntarily offered the following conditions:

1. *The total number of units within the property proposed to be rezoned to RT shall not exceed 22.*
2. *The maximum height of all units shall not exceed 28 feet.*
3. *The approved 3-story townhouse project will be abandoned and not constructed.*
4. *The Preliminary Site Plan for the Village of Hastings is approved.*
5. *Three Single Family Residential parcels to remain R-1B to save the three century old homes that front Livernois Road. These homes will help to preserve the historic nature of the historical area of Troy Corners.*
6. *The proposed development will include a minimum of 20% site area dedicated to open space within the development. Within this open space dedication will be two parks for the residents of The Village of Hastings to enjoy. The parks will encourage people from outside the development to utilize the facilities provided within the Village of Hastings.*
7. *As emphasized in the City of Troy's Master Plan for the Livernois and Square Lake neighborhood node, the development will focus on non-vehicular transport. Over 2,000 feet of sidewalks and walking path will be provided for the local residents of the historic Troy Corners area to utilize.*
8. *Landscape screening will be provided to the R-1B zoned properties to the north and the east of the proposed development. Per table 13.02-B in the City of Troy's Zoning Ordinance, screening between two residential uses (one and two family dwellings) is not required. We propose to use a combination of Alternative 1 and Alternative 2 screening styles between the proposed development and the existing single-family homes.*

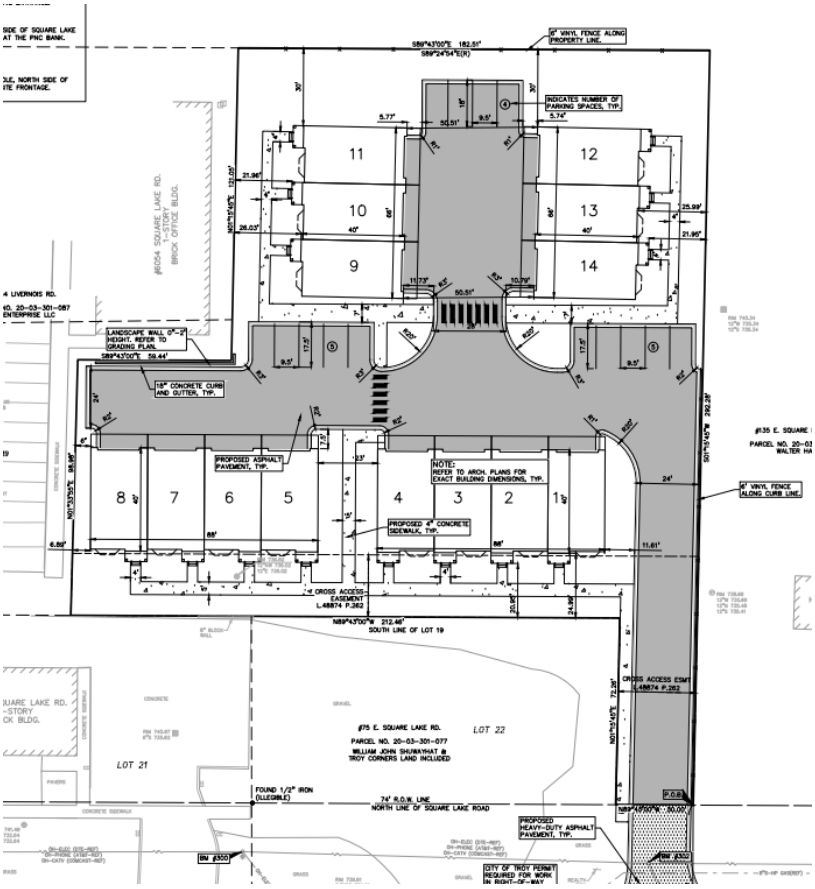
ZONING



The site includes a mix of zoned R1-B (one family residential) and NN, Neighborhood Node Zoning. Uses along this portion of Livernois and Square Lake Road are primarily low intensity office and retail located near the intersection. Institutional uses exist along Square Lake Road with Troy Preschool to the west of the intersection and Saint Elizabeth Ann Seton Church to the east of the intersection. Newer dense multi-family housing are south of the intersection along Livernois.

PREVIOUS PLANNING COMMISSION REVIEWS

The following 14-unit townhome development was approved in 2018:



2018 approved 14-unit site plan.

The applicant is revising the approved site layout shown above and expanding the project to the northwest. If the conditional rezoning is approved, this approved site plan would be null and void.

NATURAL FEATURES

Topography: A topographic survey has been provided on sheet P-1.0. The site is relatively flat with the exception of the southeast corner where a natural depression exists and will be converted into the detention basin.

Wetlands: There are no state regulated wetlands on the site.

Floodplain: The site is not located within a flood hazard zone.

Woodlands: A tree inventory and replacement plan have been provided on Sheet T.1.0-T.1.1. The applicant surveyed a total of 295 trees on site. The composition of trees is predominantly woodland and invasive species with a small number of landmark trees. Invasive species include silver maples, box elder, black walnut, elm, white mulberry, American elm, Norway maple, catalpa, white poplar, green ash and cottonwood. Of the 295 on-site trees, 44 woodland trees and 4 landmark trees will be saved. Preserved trees will be primarily along the borders of the site and adjacent to the three (3) existing homes.

Replacement Details		
Protected Tree	**Inches Removed**	**Replacement Required**
Landmark	189 inches	189 inches
Woodland	329 inches	165 inches
Protected Tree	**Inches Preserved**	**Credit**
Landmark	77 inches	154 inches
Woodland	440 inches	880 inches
Protected Replacement Required	354 Inches	
Preservation Credit	1,034 Inches	
Total	**0 inches of replacement required**	
Total Tree Mitigation	**0 inches of replacement required**	

Items to be Addressed: *None.*

SITE ARRANGEMENT

The applicant is proposing to construct twenty-two (22) new residential units and preserve the three (3) homes on Livernois. A detention basin is proposed for the southeastern portion of the site, which will be bordered by neighboring properties to the south and west, the site emergency vehicle access drive to the east, and on-site parking to the north. The plans include one (1) centralized outdoor recreational area.

Items to be Addressed: *None.*

AREA, WIDTH, HEIGHT, SETBACKS

The dimensional requirements for the RT district are indicated below:

	Required	Provided	Compliance
Front Setback	25 feet	35 feet	Complies
Front Setback (major arterial)	50 feet	35 feet	Does not comply
Side Setbacks	5/15 feet	35 feet	Complies
Rear Setback	35 feet	35 feet	Complies
Maximum Building Lot Coverage	30%	18%	Complies
Maximum Building Height	2.5 stories 30 feet	18/19- feet (one-story ranch) 25”-11” (two story)	Complies

Setback

As set forth in Section 4.07.D.1, all units that abut a major arterial shall have a yard setback of not less than fifty (50) feet in depth as measured from the right-of-way line of the major arterial. Ranch 1, which abuts Livernois is 35-feet from the future ROW. Setbacks are measured from the future ROW.

Items to be Addressed: *Move Ranch 1 to 50-feet from the future ROW or seek variance*

PARKING

Section 13.06.G of the Zoning Ordinance requires:

	Required	Provided	Complies
Multiple-Family Residential			
1 space per each efficiency dwelling unit 2 spaces per each dwelling unit	2*22 units= 44 spaces (new) + 2*3= 6 spaces (existing)	25 surface lot spaces 22 garage spaces = 47 total (new) + 6 spaces (existing)	Complies

Items to be Addressed: *None*

SITE ACCESS AND CIRCULATION

Vehicular Access

The site will be accessed from Livernois Road via a two-lane entry. There is a one-lane Emergency Vehicular Access (EVA) proposed from Square Lake Road into the southeastern portion of the development. The applicant has provided signage around the EVA to inform that this lane is meant for emergency vehicles only.

Pedestrian Circulation

Five (5) foot wide sidewalks are shown throughout the development providing pedestrian connection to multiple units and open space amenities. The applicant has also provided three (3) crosswalks in areas expected to have heavier pedestrian traffic. One (1) crosswalk connects the sidewalk south of the sports court to the adjacent sidewalk north of Unit 22. On the south side of the main road, two (2) more crosswalks are provided where the sidewalk ends for vehicular entry.

Items to be Addressed: *None.*

LANDSCAPING

A landscaping plan has been provided on Sheets L-1.0 and L-1.1. The following table discusses the development's compliance with the landscape requirements set forth in Section 13.02.

	Required	Provided	Compliance
Greenbelt Planting			
Livernois: 1 tree per 30 feet of frontage	463 / 30 = 15	16	Complies
Property Lines			

North (Residential): 1 large evergreen tree per 10 lineal feet OR 1 narrow evergreen tree per 3 lineal feet	297-feet along western half / 10 = 30 trees	30 large evergreen trees	Complies
	305-feet along eastern half / 10 = 31 trees	31 large evergreen trees	Complies
East (Residential): 1 large evergreen tree per 10 lineal feet OR 1 narrow evergreen tree per 3 lineal feet	170-feet along northern quarter/3 = 57 trees	57 narrow evergreen trees	Complies
	586-feet along southern three quarters/3 = 195 trees	195 narrow evergreen trees	Complies
South (Office): Not required	N/A	2 trees	N/A
Subdivision and Site Condominium Landscaping			
1 tree per 50 lineal feet of public or private road frontage	1,281 LF / 50= 26 trees	52 trees	Complies
Overall			
Site landscaping: A minimum of 20% of the site area shall be comprised of landscape material	20%	26%	Complies

Trash Pickup

There ae no common trash enclosures. Trash will be located in each individual garage and rolled out for pickup.

***Items to be Addressed**: None.*

PHOTOMETRICS

A photometric plan was not provided.

***Items to be Addressed:** Provide photometric plan.*

FLOOR PLAN AND ELEVATIONS

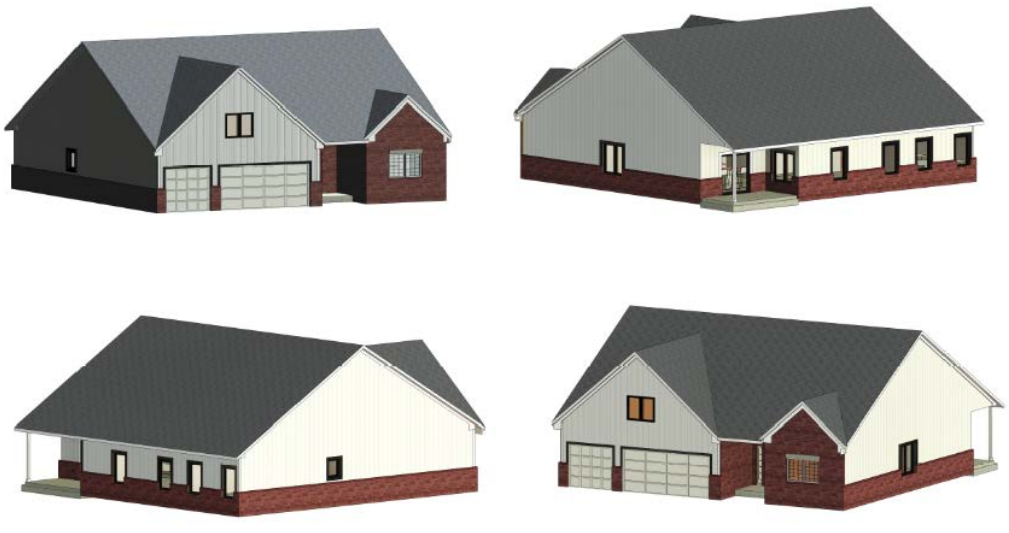
Floor Plans

Ranch Unit:
The front façade of the ranch allows entry into the unit via the front door and through the garage. The unit features three (3) bedrooms, two (2) restrooms, a great room, kitchen, nook area, and laundry room. Ranch units can be built with either a 2-car garage or 3-car garage. The applicant has confirmed that this choice shall be made by the buyer at the time of sale. Ranch units with a 3-car garage will be slightly larger in width and will include a covered patio in the rear yard.

Ranch Duplex Unit:
Each ranch duplex unit is accessed via the front door or the 2-car garage. The unit includes (3) bedrooms, two (2) restrooms, a great room, kitchen, nook area, laundry room, and mud room.

2-story Duplex Unit:
The first floor of each 2-story duplex unit includes a 2-car garage, mechanical equipment area, and stairs. The main door entrance is located on the side of the unit. The second floor includes the living room, kitchen, laundry area, two (2) bedrooms, and one (1) restroom.

Building Materials
Overall, the same general building materials are proposed for all housing types at this development. These materials include asphalt shingles, brick veneer, board and batten siding, painted wood trim, and insulated vinyl windows. The only notable differences in materials are that the ROW homes also contain limestone veneer and the ranch duplexes have a couple of small areas with metal roofing. Colored renderings indicate that all housing types shall have a similar color scheme, including shades of red, orange, brown, white, gray, and black.



RANCH UNIT -
3 CAR
GARAGE

3D VIEW 1

3D VIEW 2

3D VIEW 3

3D VIEW 4

The applicant has not provided color renderings of the duplex product. We recommend the Planning Commission evaluate the proposed architecture in accordance with Site Plan Review Design Standards of Section 8.06.

Items to be Addressed: *1). Provide color renderings of the proposed duplex product; and 2). Planning Commission to evaluate proposed architecture in accordance with Site Plan Review Design Standards of Section 8.06.*

CONDITIONAL REZONING STANDARDS

As set forth in section 16.04.C.3, Standards for Approval, a Conditional Rezoning may only be approved upon a finding and determination that all of the following are satisfied:

1. The conditions, proposed development, and/or proposed use of the land are designed or proposed for public health, safety, and welfare purposes.
2. The conditions, proposed development and/or proposed use are not in material conflict with the Master Plan, or, if there is material conflict with the Master Plan, such conflict is due to one of the following:
    a. A change in City policy since the Master Plan was adopted.
    b. A change in conditions since the Master Plan was adopted.
    c. An error in the Master Plan.
3. The conditions, proposed development and/or proposed use are in accordance with all terms and provisions of the zoning district to which the land is to be rezoned, except as otherwise allowed in the Conditional Rezoning Agreement.
4. Public services and facilities affected by a proposed development will be capable of accommodating service and facility loads caused by use of the development.
5. The conditions, proposed development and/or proposed use shall insure compatibility with adjacent uses of land.

SITE PLAN REVIEW STANDARDS

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

<u>Section 8.06 outlines Site Plan Review Design Standards.</u>

1. *Development shall ensure compatibility to existing commercial districts and provide a transition between land uses.*
    a. *Building design shall enhance the character of the surrounding area in relation to building and parking placement, landscape and streetscape features, and architectural design.*

   b. *Street fronts shall provide a variety of architectural expression that is appropriate in its context and prevents monotony.*
   c. *Building design shall achieve a compatible transition between areas with different height, massing, scale, and architectural style.*

2. *Development shall incorporate the recognized best architectural building design practices.*
   a. *Foster a lasting impact on the community through the provision of high quality design, construction, and detailing.*
   b. *Provide high quality, durable materials, such as but not limited to stone, brick, glass, and metal. E.I.F.S. or material equivalent shall only be used as an accent material.*
   c. *Develop buildings with creativity that includes balanced compositions and forms.*
   d. *Design roofs that are appropriate to the architectural style of the building and create an appropriate visual exterior mass of the building given the context of the site.*
   e. *For commercial buildings, incorporate clearly defined, highly visible customer entrances using features such as canopies, porticos, arcades, arches, wing walls, ground plane elements, and/or landscape planters.*
   f. *Include community amenities that add value to the development such as patio/ seating areas, water features, art work or sculpture, clock towers, pedestrian plazas with park benches or other features located in areas accessible to the public.*

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

SUMMARY

We recommend the Planning Commission hold a public hearing, consider public comment, and deliberate the following:

1. Compliance with Master Plan.
2. Compliance with Conditional Rezoning Standards.
3. Evaluate proposed architecture in accordance with Site Plan Review Design Standards of Section 8.06.

If the Planning Commission recommends approval of the Conditional Rezoning and Preliminary Site Plan, we suggest the following considerations:

1. Provide photometric plan.
2. Move Ranch 1 to 50-feet from Livernois or seek variance.
3. Provide color renderings of the proposed duplex product.

Sincerely,

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

CARLISLE/WORTMAN ASSOC., INC.
Shana Kot
Community Planner

PEA GROUP

1849 Pond Run
Auburn Hills, MI 48326

844.813.2949
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January 31, 2025
PEA Project No: 2019-0007

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

RE: Conditional Rezoning Application
Parcels 20-03-351-004, 20-03-301-023, 20-03-301-024, 20-03-301-025, & 20-03-301-088
6170, 6112, 6096, & 6074 Livernois Road
City of Troy, Oakland County, Michigan

Dear Mr. Savidant:

On behalf of **GFA Development Inc.**, we respectfully submit this petition to conditionally rezone Parcels 20-03-351-004, 20-03-301-023, 20-03-301-024, 20-03-301-025, & 20-03-301-088 to RT (One-Family Attached Residential District).

Pursuant to the provisions of the Michigan Zoning Enabling Act, P.A. 110 of 2006, as amended, and pursuant to all applicable provisions of law, we are requesting the Zoning Map of the City of Troy be amended to conditionally rezone 6170, 6112, 6096, & 6074 Livernois Road and parcel 20-03-301-088. These parcels are currently zoned R-1B (One-Family Residential) and NN (Neighborhood Node).

Public Engagement:

The developer reached out and tried to meet with the Telford Subdivision President, but the President decided not to. The developer also reached out to the “Save Troy Corners" group with a drawing of the existing properties for the community to give feedback on what sort of development they would like to see, but there was not much interest.

Future Land Use:

The Neighborhood Node that the development and more specifically the 20-03-301-088 parcel is located in the Livernois Road and Square Lake Road District. This District is in the area historically known as the Historic Troy Corners. The emphasis of this Neighborhood Node District is to preserve historic buildings and create and walkable community. Per the City of Troy Master Plan: a low scale single-family attached residential development may be permissible if it fits the characteristics of the single-family neighborhood at the NE corner of Square Lake Road and Livernois Road.

Surrounding Zoning:

Directly to the east of the proposed Village of Hastings development is a series of deep single family lots fronting Square Lake Road. These lots are all zoned R-1B “One Family Residential” and have a single house with various accessory structures. To the north is the Telford Ridge neighborhood. These single-family homes also have the R-1B “One Family Residential” designation. The parcels to the south of the Village of Hasting development are zoned NN “Neighborhood Node” and are part of the Livernois Road and Square Lake Road Neighborhood Node. The Neighborhood Node has been developed with an emphasis on commercial. On the hard corner of Livernois and Square Lake is a bank, to the north along Livernois are two medical office buildings, and to the east along Square Lake is a Liquor Store. Across Livernois Road to the west, the properties nearest Square Lake Road are part of the NN “Neighborhood Node” district. The parcels further along Livernois to the north, are zoned R-1B “One Family Residential”. Rezoning the subject property as RT, and allowing low impact attached single-family residential housing would create a transition between the commercial/office developments and the One Family Residential parcels. The current zoning of the subject property and the surrounding parcels is shown in the attached Exhibit “A”.

Proposed Land Use & Site Plan:

Under the proposed conditional rezoning, there are new 22 units being proposed. Additionally, three of the four existing century old homes that front Livernois will be preserved. New lots will be created around the three homes that front Livernois, these will remain zoned R-1B - One Family Residential. The remainder of the existing three parcels will be rezoned as RT – One Family Attached Residential. The one-story ranch units that are adjacent to the single-family residential neighborhood to the north all have a 35’ rear yard as required in the RT Zoning. An additional buffer has been provided to the single-family parcel to the east, with only one building within 90 feet of the property line. There are nine duplexes proposed with seven of those being two story townhouse style duplexes and two being single floor ranch style duplexes. There are four proposed standalone single-family homes in addition to the three century old homes that are being saved. All proposed units will include an attached garage and a dedicated guest parking spot.

As part of the development, 1 acre (20% of the site) has been provided as open space for the residents. Along with the large amount of open space, the site was designed with enhanced resident walkability in mind. There are over 2,000 feet of pedestrian sidewalk throughout the site. This was done to encourage non-automotive transport as was stressed in the 2024 City of Troy Master Plan vision for this Neighborhood Node.

An exhibit showcasing the proposed rezoning is attached to this letter as Exhibit “B”, while the proposed site plan is attached to this letter as Exhibit “C”.

By-Right vs Proposed Development:

	By-Right Existing R-1B and NN	Previously Submitted Village of Hastings PUD	Proposed RT Zoning
Max. Density (units per acre)	R-1B: 2.9 NN: N/A	PUD: 5.4	RT: 8.7
Height	3 story townhomes	2.5 stories and 30 feet	2.5 stores and 30 feet
Rear Yard Setbacks	R-1B: Rear: 45 feet NN: Rear: 35 feet	Rear: 30 feet	Rear: 35 feet
Lot Coverage	R-1C: Max % of lot covered by building: 30% RT: Max % of lot covered by building: 30% + 20% landscape area	PUD: Max % of lot covered by building: 18%	RT: Max % of lot covered by building: 30% + 20% landscape area

Rezoning Standards/Reasons of Recommendation:

The petitioner's request for rezoning is based upon the following:

A. According to the Master Plan for Livernois and Square Lake Neighborhood Node, RT Zoning meets the requirement for "low-scale single family attached residential" and creates an appropriate transition between the commercial developments to the south and the residential parcels to the north and the east.
B. The proposed number of dwelling units is compatible with surrounding uses and zoning in terms of the environment, density, traffic volumes, aesthetics, infrastructure, and potential influence on property values.
C. According to OHM, the City of Troy's traffic engineer consultant, the street system is capable of safely and efficiently accommodating the expected traffic volumes generated by the proposed number of attached single-family dwelling units. Exhibit "D" attached is a letter from OHM for a previous development at the subject parcels, for a denser development. Per OHM the traffic impact of that development would be negligible and imperceptible to the majority of road users.
D. The capacity of public utilities and services is sufficient to accommodate the proposed number of attached single-family dwelling units without compromising the city's health, safety and welfare.
E. There is an apparent demand for mixed housing developments in relation to the amount of land in the city currently zoned and available to accommodate the demand.

Voluntary Conditions:

Under Section 405 of the Zoning Enabling Act, the petitioner voluntarily offers uses and restrictions of the property as a condition to rezoning the land. These conditions result in recognizable and material benefits to the city that would unlikely be achieved otherwise under the site's existing zoning.

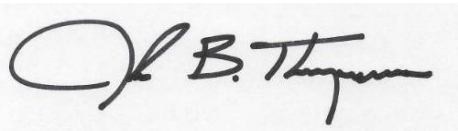
The following conditions are provided voluntarily as conditions of rezoning approval:

A. The total number of units within the property proposed to be rezoned to RT shall not exceed 22.
B. The maximum height of all units shall not exceed 28 feet.
C. The approved 3-story townhouse project will be abandoned and not constructed.
D. The Preliminary Site Plan for the Village of Hastings is approved.
E. Three Single Family Residential parcels to remain R-1B to save the three century old homes that front Livernois Road. These homes will help to preserve the historic nature of the historical area of Troy Corners.
F. The proposed development will include a minimum of 20% site area dedicated to open space within the development. Within this open space dedication will be two parks for the residents of The Village of Hastings to enjoy. The parks will encourage people from outside the development to utilize the facilities provided within the Village of Hastings.
G. As emphasized in the City of Troy's Master Plan for the Livernois and Square Lake neighborhood node, the development will focus on non-vehicular transport. Over 2,000 feet of sidewalks and walking path will be provided for the local residents of the historic Troy Corners area to utilize.
H. Landscape screening will be provided to the R-1B zoned properties to the north and the east of the proposed development. Per table 13.02-B in the City of Troy's Zoning Ordinance, screening between two residential uses (one and two family dwellings) is not required. We propose to use a combination of Alternative 1 and Alternative 2 screening styles between the proposed development and the existing single-family homes.

In Summary, the proposed rezoning from NN & R-1B to RT, will allow the site to be developed in a manner consistent with the City of Troy's Master Plan, maintains a greater amount of open space, creates additional landscape buffers between the proposed development and the existing single-family homes, and preserves the historic nature of the Troy Corners area better than if the site was developed under its current zoning.

Thank you for your consideration,

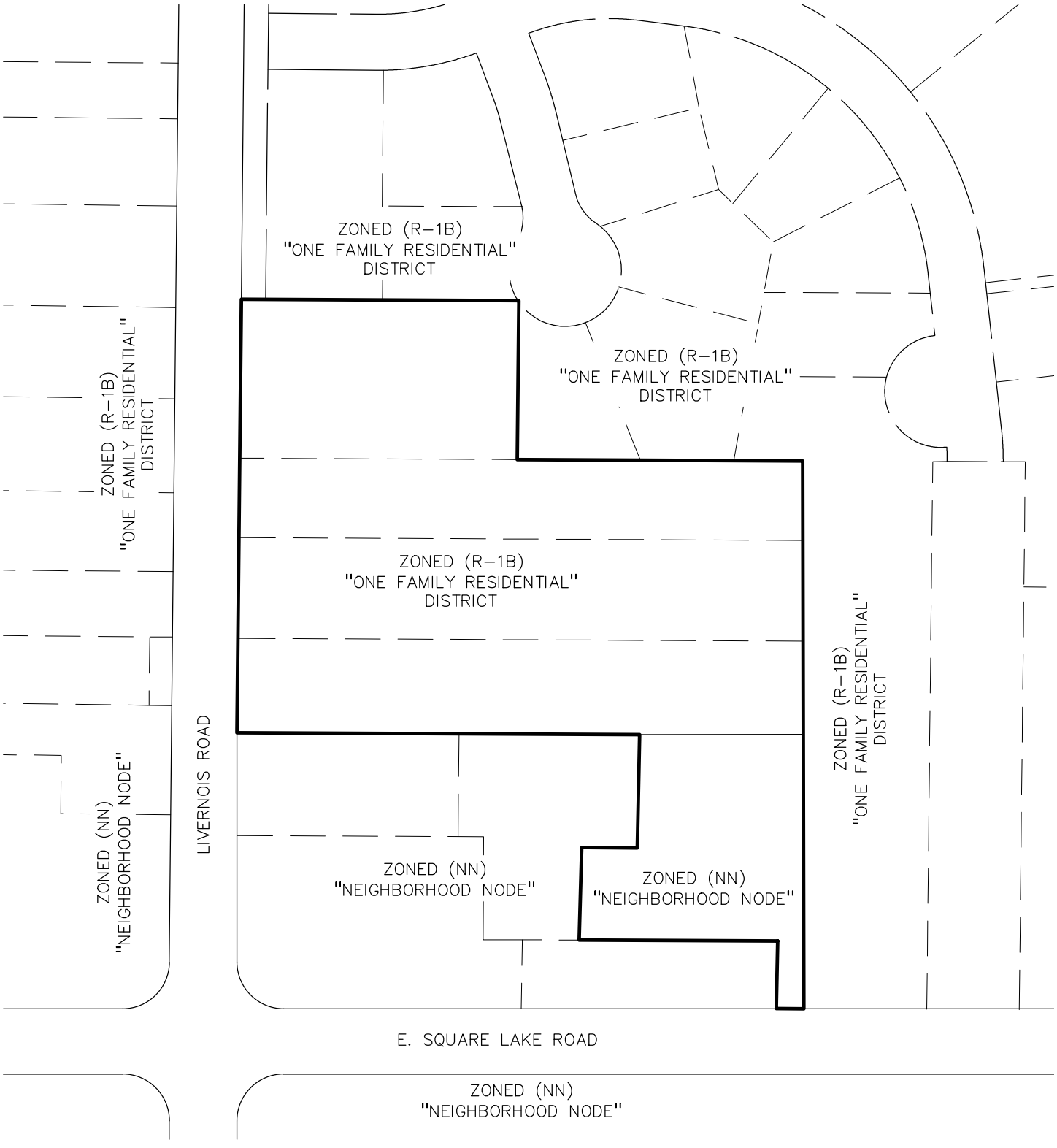
PEA Group



John B. Thompson, PE
Associate | Senior Project Manager

Exhibit A
Existing Zoning

EXHIBIT A
EXISTING ZONING



GFA DEVELOPMENT
3301 MIRAGE DRIVE
TROY, MI 48083

0 75 150
SCALE: 1" = 150'

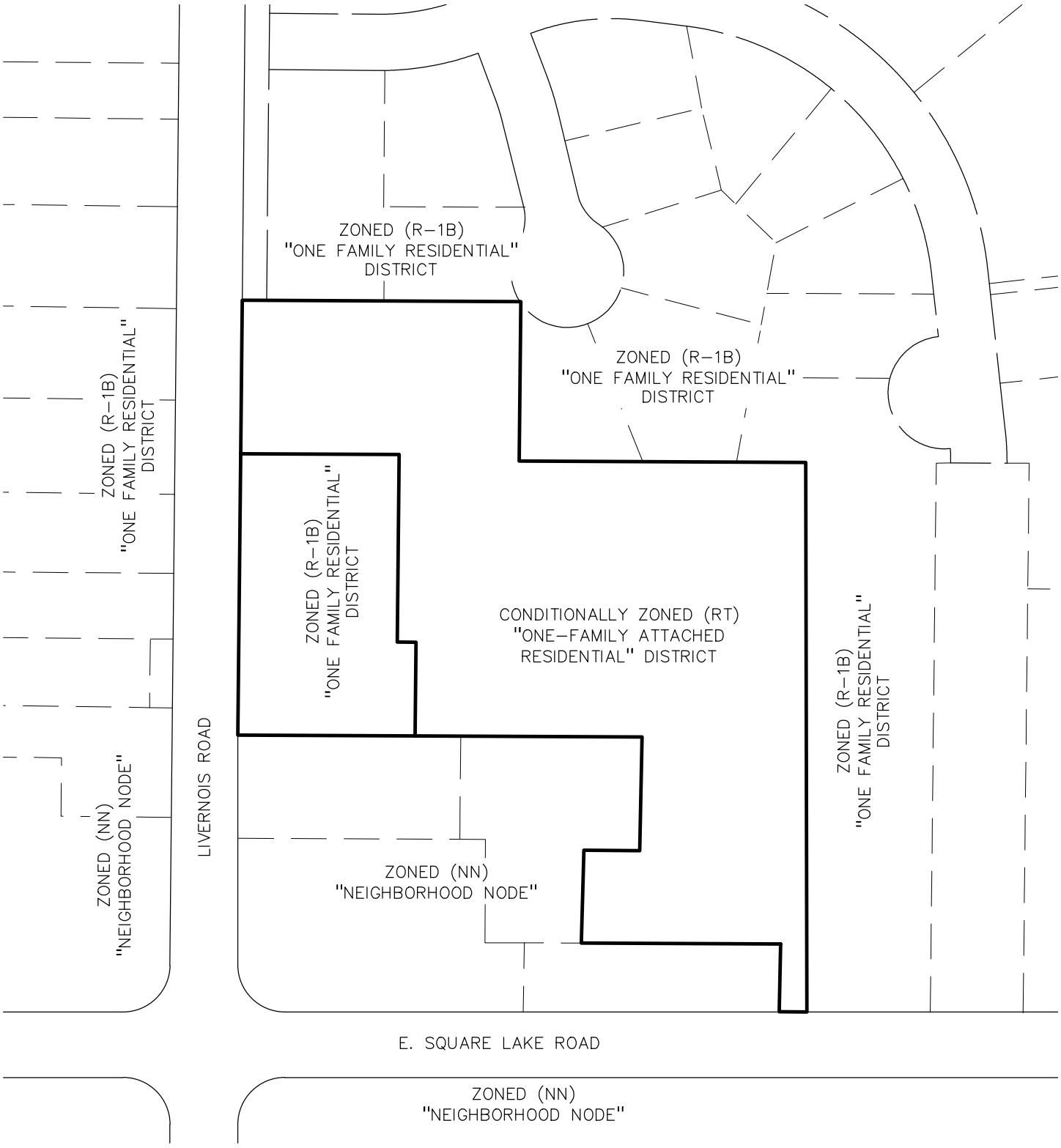
NORTH

EXHIBIT A
NOVEMBER 6, 2024
17-0009

PEA GROUP
t: 844.813.2949
www.peagroup.com

Exhibit B
Proposed Zoning

EXHIBIT B
PROPOSED ZONING



GFA DEVELOPMENT
3301 MIRAGE DRIVE
TROY, MI 48083

0 75 150
SCALE: 1" = 150'

NORTH

EXHIBIT B
NOVEMBER 6, 2024
17-0009

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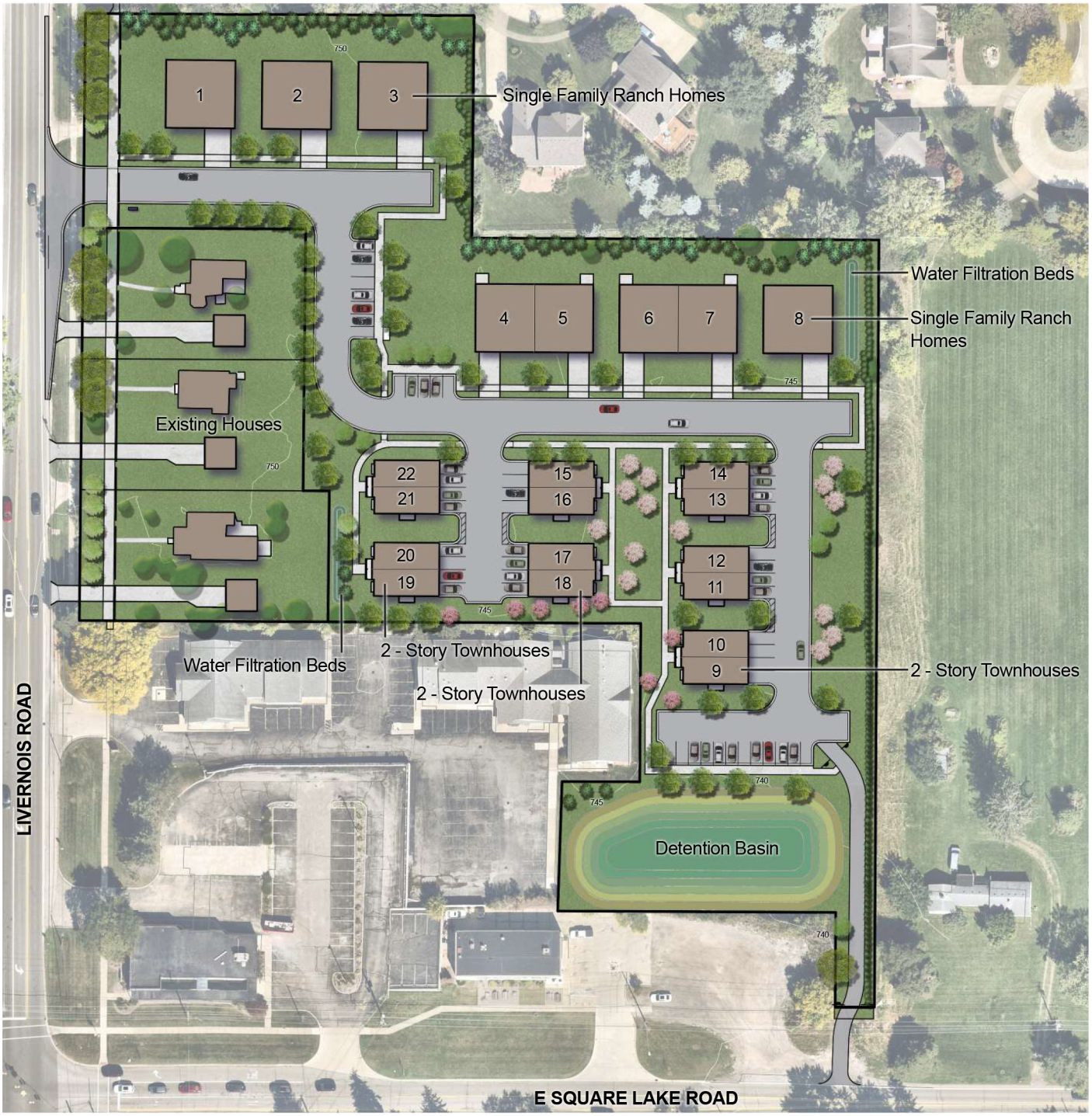
t: 844.813.2949
www.peagroup.com

Exhibit C
Proposed Site Plan

EXHIBIT C
PROPOSED SITE PLAN



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NORTH

EXHIBIT C
NOVEMBER 6, 2024
17-0009

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Exhibit D
OHM Traffic Impact Study

Anticipated Traffic Impacts

Usually, a traffic study is performed to identify any needed roadway improvements that would be required to support a proposed development. In this case, the site plan already shows reasonable turn lane improvements for the site's point of access. But it may be considered appropriate to at least identify the trip generation that is likely to result from the proposed development.

The proposed site development consisting of 2 existing single-family homes to remain, as well as 8 new ranch homes, 6 duplexes and 28 townhouses. All but one existing home will be accessing Livernois with the site's single street to Livernois.

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, provides trip generation rates for numerous land uses, based on thousands of studies throughout the United States and Canada. This data can then be used to estimate the number of vehicle trips generated by a development. For residential housing, traffic impacts are usually most noticeable during the peak hour of adjacent street traffic – that is, during morning and evening peak commuter periods, when traffic on the roads is most congested. In most areas, the morning (AM) peak is a one hour period that occurs between 7 am – 9 am, and the evening (PM) peak is a one hour period usually between 4 pm – 6 pm.

The table below provides the calculated number of trips generated for the proposed Village of Hastings, based on the ITE Trip Generation Manual, 11th Edition, for various residential building types (ITE Land Use Codes #210 and 215).

Land Use	No. of Units	ITE Land Use Code	Number of Site-Generated Trips								
			AM Peak Hour			PM Peak Hour			Daily		
			In	Out	Total	In	Out	Total	In	Out	Total
Single Family Detached	6	210	1	5	6	4	3	7	38	38	76
Single Family Attached	38	215	4	10	14	11	8	19	120	120	240
Site Totals – 44 Units			5	15	20	15	11	26	158	158	316

Single family detached is self-explanatory and includes the two existing historic houses. The category of single family attached encompasses the four ranches that share a common wall, the six duplex units and the 28 townhouse units.

During the morning (AM) peak hour, the proposed Village of Hastings development is expected to generate 20 new trips: 5 inbound (entering the site), and 15 outbound (exiting the site). During the evening (PM) peak hour, the proposed site is expected to generate 26 new vehicle trips: 15 inbound (entering the site) trips, and 11 outbound (exiting the site). This pattern coincides with residents typically leaving in the morning for work and returning home in the evening.

Traffic volumes are closely correlated with the number of residential units. Essentially all the trips generated by the Village of Hastings development will be delivered directly to Livernois Road, an arterial roadway, which will increase slightly over current conditions. The traffic generated by the proposed development would be minimal, adding less than 30 vehicle trips during the peak ("busiest") hour. This equates to approximately one vehicle every 2-3 minutes during the peak hours. The traffic impact of this site on the adjacent road network is negligible and would be imperceptible to the majority of road users.

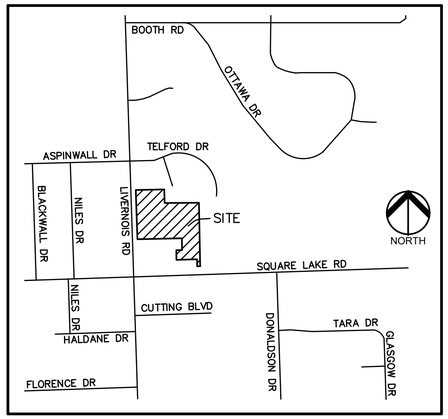
PRELIMINARY SITE PLAN

THE VILLAGE OF HASTINGS

PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E.,

CITY OF TROY, OAKLAND COUNTY, MICHIGAN

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL



LOCATION MAP
NO SCALE

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
P-1.0	TOPOGRAPHIC SURVEY
P-2.0	PRELIMINARY SITE PLAN
P-3.0	PRELIMINARY GRADING PLAN
P-4.0	PRELIMINARY UTILITY PLAN
L-1.0	PRELIMINARY LANDSCAPE PLAN
L-1.1	LANDSCAPE DETAILS
T-1.0	TREE PRESERVATION PLAN
T-1.1	TREE PRESERVATION LIST
	ARCHITECTURAL PLANS
A100	FIRST FLOOR UNIT PLAN
A200	ELEVATIONS
A300	3D VIEWS
A100	FIRST FLOOR UNIT PLAN
A200	ELEVATIONS
A300	3D VIEWS
A100	FIRST FLOOR UNIT PLAN
A200	ELEVATIONS
A300	3D VIEWS
A200	STANDARD NORTH & SOUTH ELEVATION
A200	STANDARD NORTH & SOUTH ELEVATION
A201	STANDARD EAST & WEST ELEVATIONS

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

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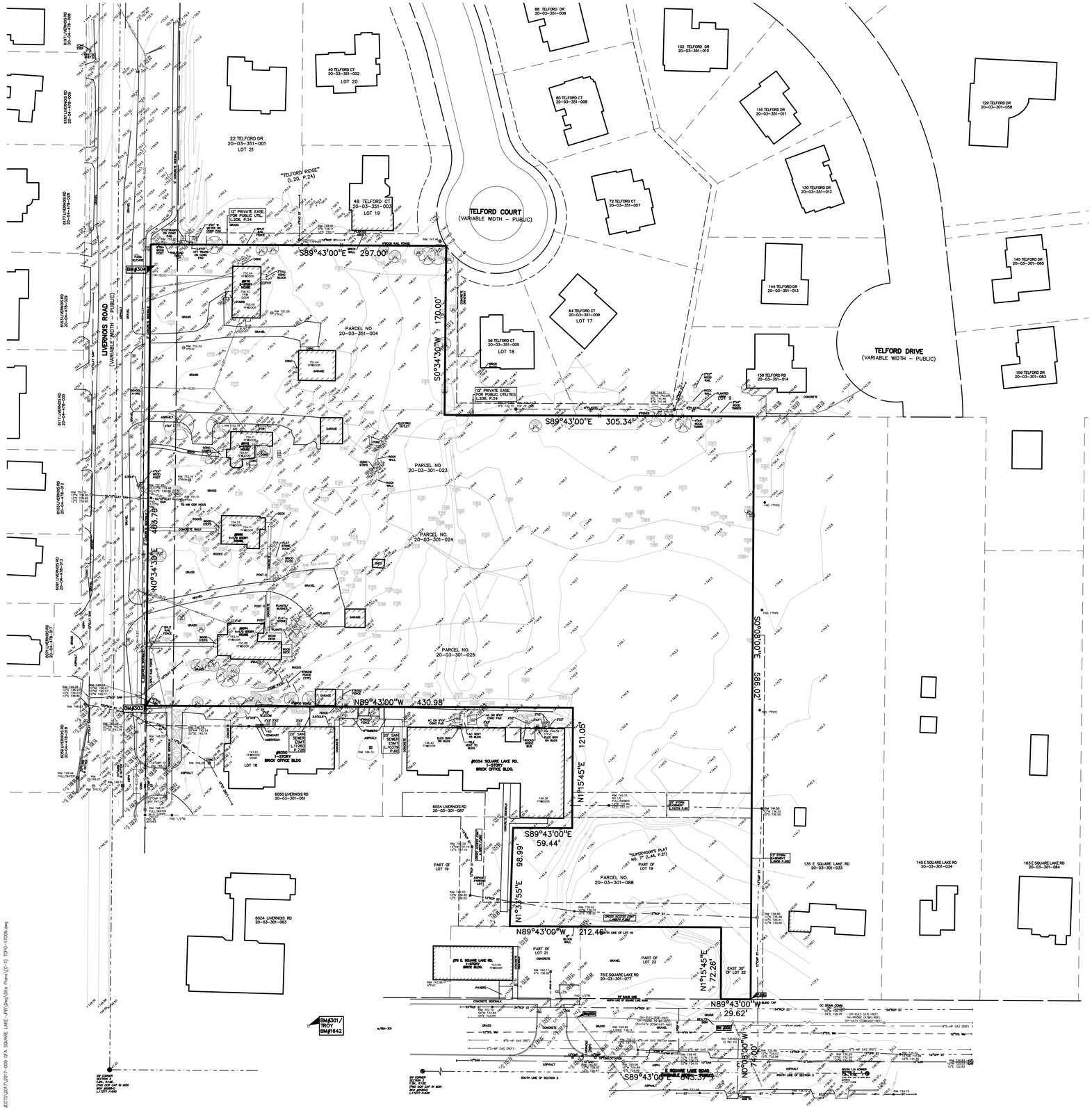
PEA GROUP

REVISIONS	
DESCRIPTION	DATE
ORIGINAL ISSUE DATE	12/13/2024

STATE OF MICHIGAN
JOHN BRUCE THOMPSON
License No. 6201043292
LICENSED PROFESSIONAL ENGINEER

PRELIMINARY SITE PLAN | THE VILLAGE OF HASTINGS | PEA JOB NO. 2017-009 | PEA GROUP



LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- SEC. CORNER FOUND
- R RECORDED
- M MEASURED
- C CALCULATED

EXISTING

- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UNDERGROUND CABLE TV, CATV PEDESTAL
- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS MAIN, VALVE & GAS LINE MARKER
- WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY SEWER, CLEANOUT & MANHOLE
- STORM SEWER, CLEANOUT & MANHOLE
- COMBINED SEWER & MANHOLE
- SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN
- POST INDICATOR VALVE
- WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNIDENTIFIED STRUCTURE
- SPOT ELEVATION
- CONTOUR LINE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN
- CONCRETE
- ASPHALT
- GRAVEL SHOULDER
- WETLAND

REFERENCE DRAWINGS

PRELIMINARY ALTA/NSPS SURVEY, PEA JOB NO. 2017–009, DATED JANUARY 24, 2018

CABLE	COMCAST MAP NO. 1319–404, DATED 4/03/07
ELECTRIC	DTE MAP 316–404 & 319–404, DATED 2/15/2017
PHONE	AT&T SKETCH VIA EMAIL, DATED 01/15/2017
GAS	CONSUMERS ENERGY QUARTER SECTION MAP NO. 02–61–03–3, DATED 10–16–14
WATER MAIN	CITY OF TROY GIS ONLINE
SANITARY SEWER	CITY OF TROY GIS ONLINE
SEWER & WATER	CITY OF TROY GIS ONLINE
STORM SEWER	CITY OF TROY GIS ONLINE OAKLAND COUNTY WATER RESOURCES COMMISSION – KING DRAIN MAP SHEET #11 SW SECTION 3
DRAIN	KING DRAIN, OAKLAND COUNTY DRAIN COMMISSIONER JOB NO. 880119, SHEET NO. 3, DATED 5–10–93, AS–BUILT 5–1–98 STORM DRAIN SYSTEMS, SHEET 011, WATER RESOURCES COMMISSIONER

Legal Description
(Combined Parcel Per PEA Group)

Part of Lots 19 and 22 of "Supervisors Plat No. 7" as recorded in Liber 45 on pages 21 and 21A, Oakland County Records, together with part of the Southwest 1/4 of Section 3, Town 2 North, Range 11 East, City of Troy, Oakland County Michigan and being more particularly described as Commencing at the Southwest Corner of said Section 3; thence along the south line of said section, S89°43'00"E, 643.50 feet; thence N00°08'00"W, 74.00 feet to the north line of East Square Lake Road, 74' half width, and the Point of Beginning; thence along said north line, N89°43'00"W, 29.62 feet; thence N01°15'45"E, 72.26 feet to the north line of said Lot 22, said line also being the south line of said Lot 19; thence along said south line N89°43'00"W, 212.46 feet; thence N01°33'55"E, 98.99 feet; thence S89°43'00"E, 59.44 feet; thence N01°15'45"E, 121.05 feet to the easterly extension of the north line of Lot 18 of said Supervisors Plat; thence along said line, N89°43'00"W, 430.98 feet to the east line of Livernois Road, 33' half width; thence along said east line, N00°34'30"E, 463.76 feet to the easterly extension of the south line of "Telford Ridge" as recorded in Liber 206, page 24 Oakland County Records; thence along said south line, S89°43'00"E, 297.00 feet to the west line of said Telford Ridge; thence along said west line, S00°34'30"W, 170.00 feet to the south line of said Telford Ridge, said line also being the north line of the south 660 feet of the southwest 1/4 of said Section 3; thence along said south line, S89°43'00"E, 305.34 feet to the west line of tax parcel 20–03–301–033; thence along said west line,S00°08'00"E, 586.02 feet to the aforementioned north line of East Square Lake Road and the Point of Beginning.
Containing 6.313 acres of land more or less.

BENCHMARKS
(CITY OF TROY DATUM)

BM #300
SET BENCHTIE IN SOUTHEAST FACE OF POWER LIGHT POLE, NORTH SIDE OF SQUARE LAKE ROAD APPROX. 70' SOUTHEAST OF SOUTHEAST BUILDING CORNER OF JOHN'S MARKET AT EAST SIDE OF DRIVE ENTRANCE.
ELEV. – 743.36

BM #301 – CITY OF TROY BM #1642
ARROW ON A HYDRANT LOCATED ON THE NORTH SIDE OF SQUARE LAKE ROAD, APPROX. 200' EAST OF LIVERNOIS ROAD AT THE PNC BANK.
ELEV. – 750.08

BM #302
FOUND BOAT SPIKE IN SOUTH FACE OF UTILITY POLE, NORTH SIDE OF SQUARE LAKE ROAD, AT THE CENTERLINE OF 30' WIDE SITE FRONTAGE.
ELEV – 737.51

BM #303
ARROW ON HYDRANT, EAST SIDE OF LIVERNOIS, APPROX. 75' SOUTHWEST OF #6074 LIVERNOIS.
ELEV – 750.66

BM #304
ARROW ON HYDRANT, EAST SIDE OF LIVERNOIS, APPROX. 80' WEST OF #6170 LIVERNOIS.
ELEV – 755.18

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 25 50 100
SCALE: 1" = 50'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E., TROY, MI

REVISIONS

ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

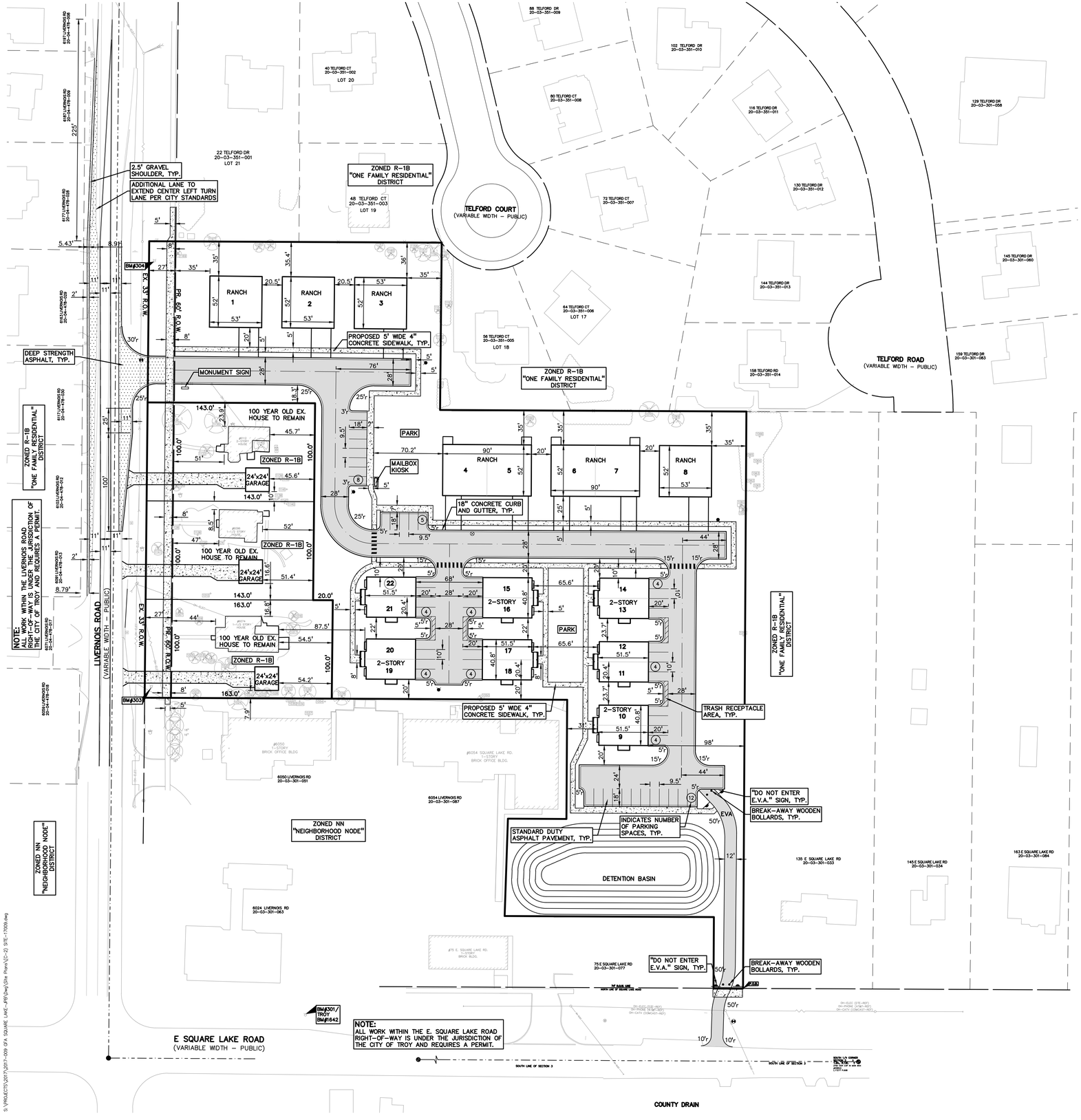
DRAWING TITLE
TOPOGRAPHIC SURVEY

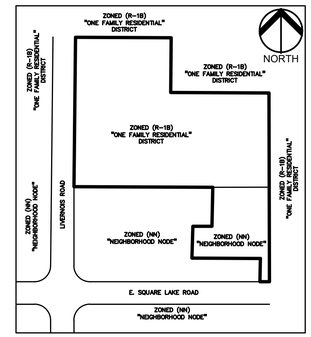
PEA JOB NO.	2017-009
P.M.	KR
DN.	EH
DES.	EH

DRAWING NUMBER:
P-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2017\2017-009 GFA SQUARE LAKE - JP\Dwg\Site Plans\(C-1) TOPO-17008.dwg





ZONING SKETCH

NOT TO SCALE

LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- SEC. CORNER FOUND
- R RECORDED
- M MEASURED
- C CALCULATED

EXISTING / PROPOSED

- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UNDERGROUND CABLE TV, CATV PEDESTAL
- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS MAIN, VALVE & GAS LINE MARKER
- WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY SEWER, CLEANOUT & MANHOLE
- STORM SEWER, CLEANOUT & MANHOLE
- COMBINED SEWER & MANHOLE
- SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN
- POST INDICATOR VALVE
- WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNIDENTIFIED STRUCTURE
- SPOT ELEVATION
- CONTOUR LINE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN
- CONCRETE
- ASPHALT
- GRAVEL SHOULDER
- WETLAND

SITE DATA:

LOCATION OF PROJECT:
LIVERNOIS ROAD, NORTH OF SQUARE LAKE ROAD

SIZE OF PROPERTY: 5.15 ACRES GROSS, 5.04 ACRES NET

PROPOSED USE OF PROPERTY: EIGHT (8) RANCH STYLE SINGLE FAMILY HOMES, FOURTEEN (14) 2 STORY ATTACHED SINGLE FAMILY HOMES.

CURRENT ZONING: R-1B, ONE-FAMILY RESIDENTIAL DISTRICT AND (NN) NEIGHBORHOOD NODE Q, SITE TYPE NN:B, BUILDING FORM: C

PROPOSED ZONING: CONDITIONAL RE-ZONE TO RT "ONE-FAMILY ATTACHED RESIDENTIAL DISTRICT"

SURROUNDING PROPERTY DETAILS:

DIRECTION	ZONING	USE
NORTH	R-1B, ONE-FAMILY RESIDENTIAL DISTRICT	SINGLE-FAMILY HOMES
SOUTH	NEIGHBORHOOD NODE Q	COMMERCIAL
EAST	R-1B, ONE-FAMILY RESIDENTIAL DISTRICT	SINGLE-FAMILY HOMES
WEST	NEIGHBORHOOD NODE Q	COMMERCIAL

REQUIRED AND PROVIDED LOT DIMENSIONS (RT):

	REQUIRED:	PROVIDED:
FRONT	25' SETBACK	35' SETBACK
REAR	35' SETBACK	35' SETBACK
SIDES	7.5' SETBACK	20' SETBACK
OPEN SPACE	15%	26%
LOT COVERAGE BY ALL BLDGS	30%	18%

REQUIRED AND PROVIDED LOT DIMENSIONS (R-1B):

	REQUIRED:	PROVIDED:
FRONT	40' SETBACK	44' SETBACK
REAR	45' SETBACK	45.7' SETBACK
SIDES	25' TOTAL SETBACK	25' TOTAL SETBACK
MAXIMUM HEIGHT	2 STORIES/30'	30 FEET, 2 STORY

PARKING:
REQUIRED:
2 SPACES PER DWELLING UNIT = 2 SPACES x 22 UNITS = 44 REQUIRED PARKING SPACES

PROVIDED:
25 SURFACE LOT SPACES + 36 DRIVEWAY SPACES + 22 GARAGES SPACES = 83 PARKING SPACES

PROJECT AND SITE DESCRIPTION:
PROPOSED DEVELOPMENT OF A 22-UNIT RESIDENTIAL CONDOMINIUM LOCATED ON LIVERNOIS ROAD NORTH OF SQUARE LAKE ROAD. THE SITE CONSISTS OF 18 ATTACHED UNITS AND 4 DETACHED SINGLE FAMILY UNITS, ACCOMPANYING THE DEVELOPMENT IS THE PRESERVATION OF 3 CENTENNIAL SINGLE FAMILY HOUSES. ACCESS TO ALL UNITS WILL BE VIA CONNECTION TO LIVERNOIS ROAD, WITH ALL OF THE PRESERVED HOUSES HAVING DIRECT ACCESS TO LIVERNOIS, AND AN EMERGENCY VEHICLE ACCESS (EVA) WILL BE PROVIDED TO SQUARE LAKE ROAD. THE PROPOSED RESIDENTIAL USE IS PERMITTED BY-RIGHT IN THE (NN) NEIGHBORHOOD NODE Q DISTRICT AND THE R-1B PORTION OF THE SITE. DUE TO THE MIXED HOUSING PRODUCTS AND MIXED ZONING A CONDITIONAL REZONE IS PROPOSED FOR THIS PROPERTY.

NATURAL RESOURCES:
THE SITE CURRENTLY HAS MODERATE TREE COVER.

FLOODPLAIN:
THE PROPERTY IS NOT LOCATED WITHIN THE FLOOD HAZARD AREA INDICATED BY FLOOD INSURANCE RATE MAP (FIRM) NO. 26125C0532F DATED: SEPTEMBER 29, 2006 (ZONE X).

WETLAND:
PER THE 2022 SEMCOG WETLAND DATA, THE SITE CONTAINS NO WETLANDS.

ACCESS AND CIRCULATION:

VEHICULAR ACCESS AND CIRCULATION:
VEHICULAR ACCESS TO ALL UNITS WILL BE VIA A PRIVATE ROAD OFF OF LIVERNOIS ROAD. THE NEW ROAD WILL HAVE A TWENTY-EIGHT (28) FOOT WIDE ACCESS AGREEMENT. AN EVA WILL BE PROVIDED TO SQUARE LAKE ROAD.

PEDESTRIAN ACCESS AND CIRCULATION:
SIDEWALKS ARE PROVIDED AT BUILDING ENTRANCES TO PARKING FIELDS. THIS WILL BE A WALK FRIENDLY DEVELOPMENT WITH CIRCULATION THROUGHOUT THE DEVELOPMENT WITH CONNECTIONS TO LIVERNOIS ROAD VIA THE EVA.

UTILITIES:
UTILITIES ARE PLACED WITHIN EASEMENTS APPROVED AS TO SIZE AND LOCATION BY THE CITY ENGINEER.

ALL SITES ARE SERVED BY PUBLIC WATER, SANITARY SEWER, STORM WATER AND DETENTION/RETENION SYSTEMS CONSTRUCTED TO CITY STANDARDS, AT THE EXPENSE OF THE DEVELOPER. EASEMENTS OVER THESE SYSTEMS SHALL BE CONVEYED AND RECORDED BEFORE OCCUPANCY PERMITS ARE ISSUED FOR DWELLING UNITS.

100-YEAR DETENTION IS PROPOSED WITH A RESTRICTED OUTLET DISCHARGING THROUGH CITY OF TROY STORM SEWER.

NOT FOR CONSTRUCTION

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t: 844.813.2949
www.peagroup.com

NORTH

0 25 50 100
SCALE: 1" = 50'

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

CAUTION!!
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CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E., TROY, MI

REVISIONS

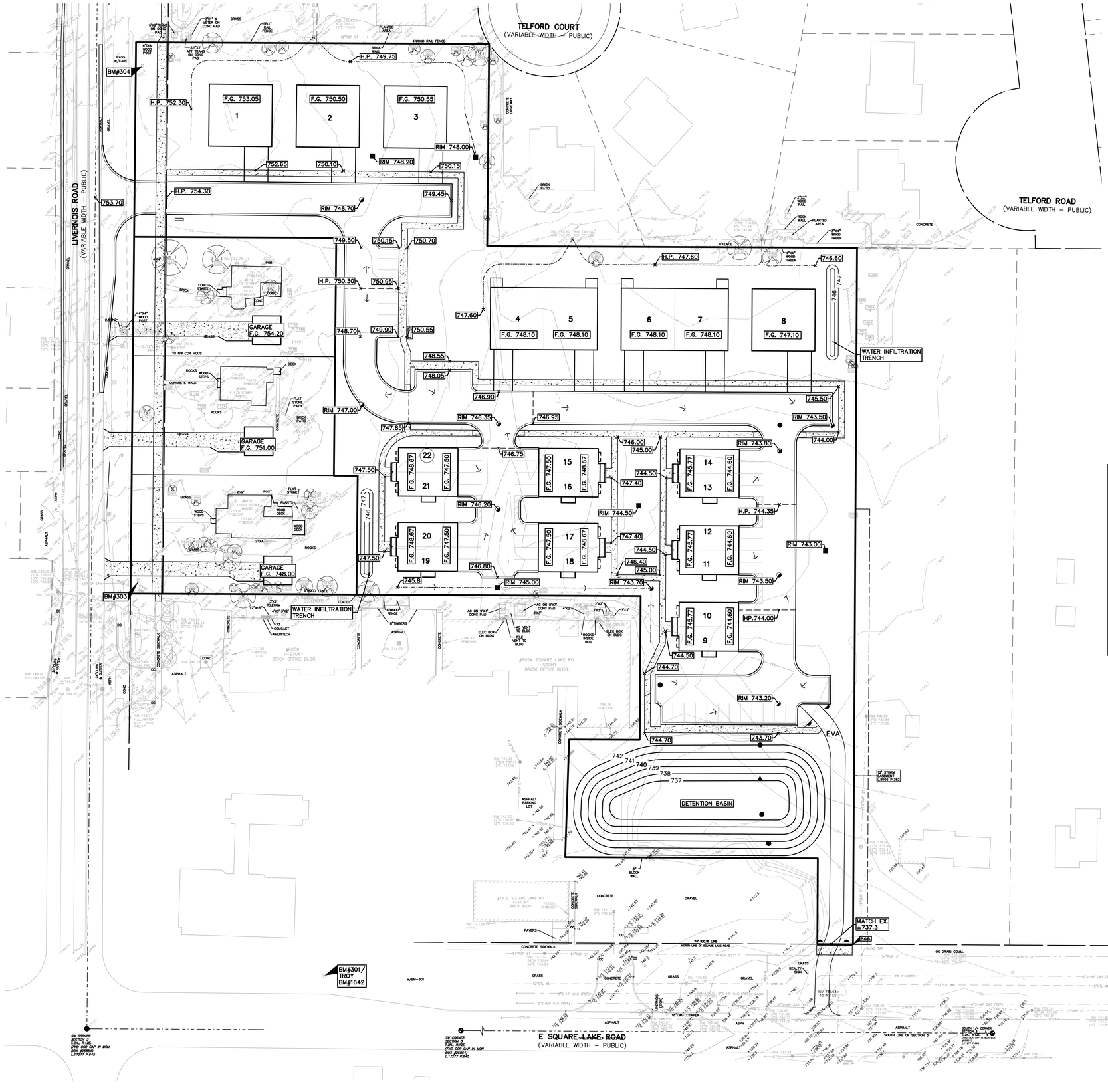
ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

DRAWING TITLE
PRELIMINARY SITE PLAN

PEA JOB NO.	2017-009
P.M.	JBT
DN.	KMB
DES.	DSK

DRAWING NUMBER:
P-2.0

S:\PROJECTS\2017\2017-009 (FX SQUARE LAKE-#FB)\Dwg\Site Plans\(C-2) SITE-17009.dwg



LEGEND

IRON FOUND · IRON SET · NAIL FOUND · NAIL & CAP SET · BRASS PLUG SET · MONUMENT FOUND · MONUMENT SET · SEC. CORNER FOUND · R RECORDED · M MEASURED · C CALCULATED

EXISTING	PROPOSED
ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE	
UNDERGROUND CABLE TV, CATV PEDESTAL	
TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE	
ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE	
GAS MAIN, VALVE & GAS LINE MARKER	
WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE	
SANITARY SEWER, CLEANOUT & MANHOLE	
STORM SEWER, CLEANOUT & MANHOLE	
COMBINED SEWER & MANHOLE	
SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN	
POST INDICATOR VALVE	
WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE	
UNIDENTIFIED STRUCTURE	
SPOT ELEVATION	671.21
CONTOUR LINE	671
FENCE	
GUARD RAIL	
STREET LIGHT	
SIGN	
CONCRETE	STD DUTY · HEAVY DUTY · R.O.W. ONLY
ASPHALT	STD DUTY · HEAVY DUTY · DEEP STRENGTH
GRAVEL SHOULDER	
WETLAND	

NORTH

0 20 40 80

SCALE: 1" = 40'

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SYMBOLS: GRADING

PROPOSED SPOT ELEVATION:
TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES. 622.50

PROPOSED CONTOUR LINE 922

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

BENCHMARKS
(CITY OF TROY DATUM)

BM #300
SET BENCHTIE IN SOUTHEAST FACE OF POWER LIGHT POLE, NORTH SIDE OF SQUARE LAKE ROAD APPROX. 70' SOUTHEAST OF SOUTHEAST BUILDING CORNER OF JOHN'S MARKET AT EAST SIDE OF DRIVE ENTRANCE.
ELEV. – 743.36

BM #301 – CITY OF TROY BM #1642
ARROW ON A HYDRANT LOCATED ON THE NORTH SIDE OF SQUARE LAKE ROAD, APPROX. 200' EAST OF LIVERNOIS ROAD AT THE PNC BANK.
ELEV. – 750.08

BM #302
FOUND BOAT SPIKE IN SOUTH FACE OF UTILITY POLE, NORTH SIDE OF SQUARE LAKE ROAD, AT THE CENTERLINE OF 30' WIDE SITE FRONTAGE.
ELEV – 737.51

BM #303
ARROW ON HYDRANT, EAST SIDE OF LIVERNOIS, APPROX. 75' SOUTHWEST OF #6074 LIVERNOIS.
ELEV – 750.66

BM #304
ARROW ON HYDRANT, EAST SIDE OF LIVERNOIS, APPROX. 80' WEST OF #6170 LIVERNOIS.
ELEV – 755.18

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REVISIONS

ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

DRAWING TITLE
PRELIMINARY GRADING PLAN

PEA JOB NO.	2017-009
P.M.	JBT
DN.	KMB
DES.	DSK

DRAWING NUMBER:
P-3.0

NOT FOR CONSTRUCTION

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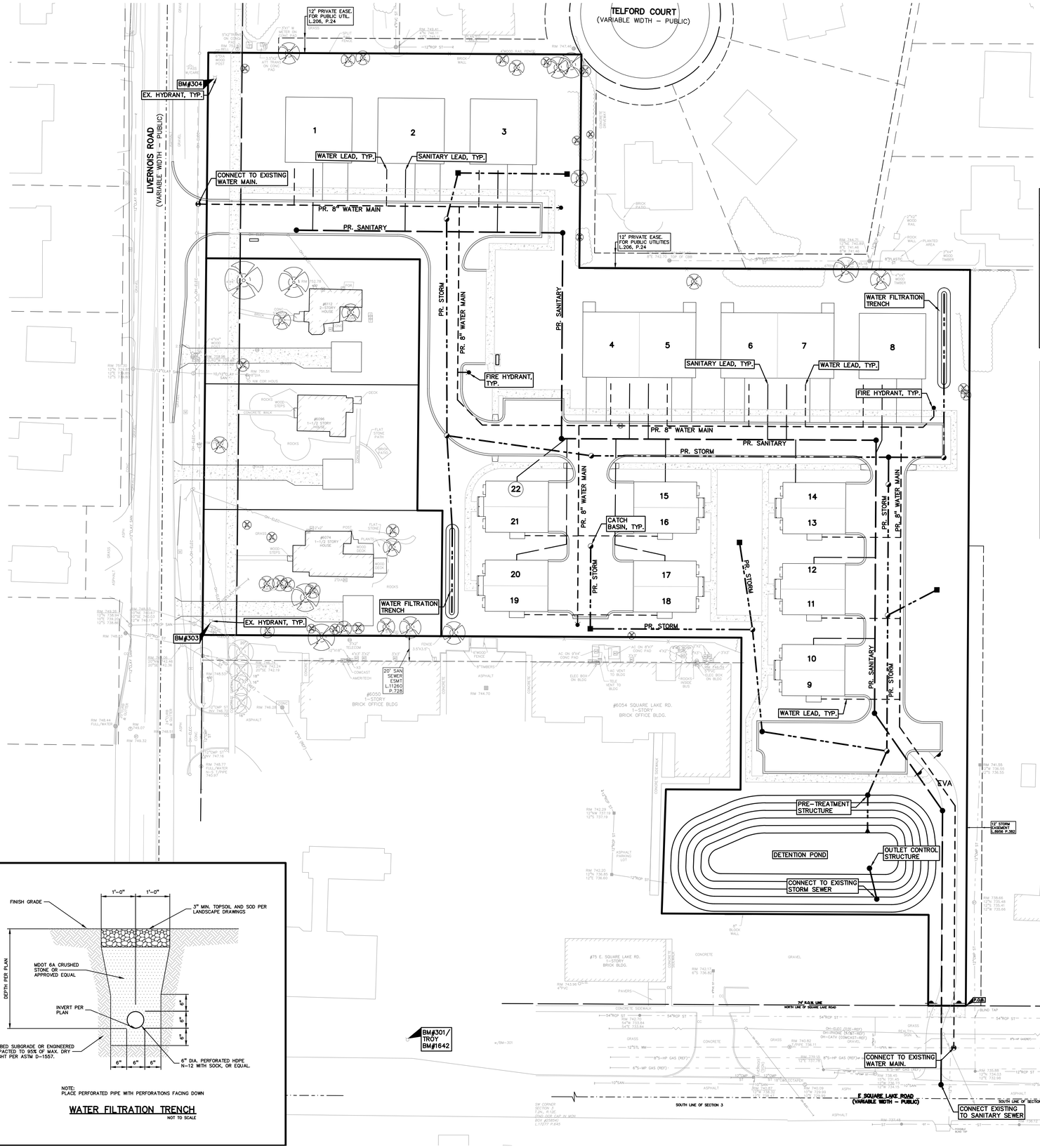

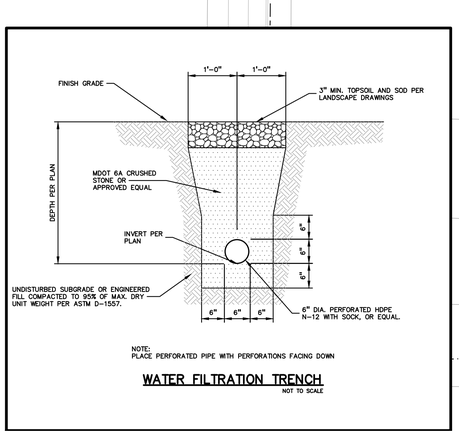

NOTE:
PLACE PERFORATED PIPE WITH PERFORATIONS FACING DOWN

WATER FILTRATION TRENCH
NOT TO SCALE

WATER MAIN BASIS OF DESIGN:
(Unit Factors Based on Oakland County Unit Assignment Factors)
Residential Dwelling

ULTIMATE DESIGN	
Number of Units	41.0
REU	41.0
People / REU	3.5
	144 People
Average Flow (150 GPCPD)	21,600 G.P.D.
	0.033 C.F.S.
	0.022 M.G.D.
Design Max. Flow = (2*avg)	43,200 G.P.D.
	0.067 C.F.S.
	0.043 M.G.D.

SQUARE LAKE SANITARY SEWER BASIS OF DESIGN:
(Unit Factors Based on Oakland County Unit Assignment Factors)
Residential Dwelling

ULTIMATE DESIGN	
Number of Units	35.0
REU (1.0 Per Dwelling)	35.0
People / REU	3.5
Population (P)	123 People
Average Flow (100 GPCPD)	12,300 G.P.D.
	0.019 C.F.S.
P (1000s)	0.123
Peaking Factor (PF)	4.22
PF = (18+sqrt(P))/(4+sqrt(P))	
Peak Flow (G.D.P.)	51,880 G.P.D.
Peak Flow (C.F.S.)	0.080 C.F.S.
8" Pipe Capacity Provded	0.906 C.F.S.

LIVERNOIS SANITARY SEWER BASIS OF DESIGN:
(Unit Factors Based on Oakland County Unit Assignment Factors)
Residential Dwelling

ULTIMATE DESIGN	
Number of Existing Units	4.0
Number of Existing Units Removed	2.0
Number of Proposed Units	6.0
Net REU's Added (1.0 Per Dwelling)	4.0
People / REU	3.5
Population (P)	14 People
Average Flow (100 GPCPD)	1,400 G.P.D.
	0.002 C.F.S.
P (1000s)	0.014
Peaking Factor (PF)	4.40
PF = (18+sqrt(P))/(4+sqrt(P))	
Peak Flow (G.D.P.)	6,159 G.P.D.
Peak Flow (C.F.S.)	0.010 C.F.S.
8" Pipe Capacity Provded	0.906 C.F.S.

LEGEND

IRON FOUND	BRASS PLUG SET	SEC. CORNER FOUND	
IRON SET	MONUMENT FOUND	R RECORDED	
NAIL FOUND	MONUMENT SET	M MEASURED	
NAIL & CAP SET		C CALCULATED	

EXISTING	PROPOSED	
-OH--ELEC-		ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
-UG--CATV-		UNDERGROUND CABLE TV, CATV PEDESTAL
-UG--PHONE-		TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
-UG--ELEC-		ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
		GAS MAIN, VALVE & GAS LINE MARKER
		WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE
		SANITARY SEWER, CLEANOUT & MANHOLE
		STORM SEWER, CLEANOUT & MANHOLE
		COMBINED SEWER & MANHOLE
		SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN
		POST INDICATOR VALVE
		WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
		MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE
		UNIDENTIFIED STRUCTURE
		SPOT ELEVATION
670	671	CONTOUR LINE
		FENCE
		GUARD RAIL
		STREET LIGHT
		SIGN
CONC.		CONCRETE
ASPH.		ASPHALT
GRAVEL		GRAVEL SHOULDER
		WETLAND

STD DUTY | HEAVY DUTY | R.O.W. ONLY

STD DUTY | HEAVY DUTY | DEEP STRENGTH

Site Drainage Data			
Select County:	Oakland		
Existing			
Natural Greenspace area:	0.00 acre	C =	0.35
Select NCRS Soil type:	D		
Select NCRS Soil type:	D		
Impervious Area:	0.00 acre	C =	0.95
Greenbelt Area:	5.04 acre	C =	0.35
Total Area (A):	5.04 acre		
Weighted Coefficient of Runoff (C):	0.35		
Proposed			
Natural Greenspace area:	0.00 acre	C =	0.25
Select NCRS Soil type:	C		
Improved Greenspace area:	1.10 acre	C =	0.25
Select NCRS Soil type:	C		
Wooded Area:	0.00 acre	C =	0.25
Select NCRS Soil type:	C		
Impervious Area:	3.94 acre	C =	0.95
Greenbelt Area:	1.10 acre	C =	0.25
Total Area (A):	5.04 acre		
Weighted Coefficient of Runoff (C):	0.80		
Rainfall Intensity			
Flood Control Time of Concentration, Tc =	20.00 min		

Rainfall Intensity	
Time of Concentration (T_C)	20.00 min
Since 15<Tc<60, use intensity equation	
I1 = 30.2 /[(T + 9.17)^.81]	1.97 in/hr
I10 = 50.12 / [(T + 9.17)^.81]	3.26 in/hr
I100 = 83.3/[(T + 9.17)^.81]	5.42 in/hr
CPVC: Channel Protection Volume Control Volume	
Vcpvc = (4719)CA	19,027 cf
CPRC: Channel Protection Rate Control Volume: Extended Detention	
VED= (6897)CA	27,809 cf
CPRC Allowable Outlet Rate	
Q_{VED} = V_{ED} / (48*60*60)	0.16 cfs
Water Quality Control	
Forebay Volume = (545)CA	2,197 cf
Forebay Release Rate: QVF = VF/(48*60*60)	0.013 cfs
100-Year Allowable Outlet Rate	
Since 2<A<100, Qvrr = 1.1055-0.206xln(A)	
Q_{VRR} =	0.77 cfs/ac
100-Year Peak Allowable Discharge	
Q_{100P} = Q_{VRR}(A)	3.89 cfs
100-Year Runoff Volume	
V100R = (18,985)CA	76,548 cf
100-Year Peak Inflow	
Q_{100IN} = C(I_{100})A	21.85 cfs
Storage Curve Factor (Vs/Vr)	
R = 0.206-0.15 x ln(Q100P/Q100IN)	0.465
100-Year Storage Volume	
Vs = R(V100R)	35,595 cf
No infiltration will be provided, so no CPVC deduction is taken.	
V100 = Vs	35,595 cf
V_{Rood} must be larger or equal to V_{ED} :	
Is V_{100} >= V_{ED} ?	Yes
V_{Rood} =	35,595 cf

Design Requirements		
CPVC Storage Volume: V_{CP-R} =	NA	cf
CPVC Storage Outflow Rate: Q_{CP-R} =	NA	cfs
CPRC Extended Detention: V_{ED} =	27,809	cf
CPRC Allowable Outlet Rate: Q_{VED} =	0.16	cfs
100-Year Storage Volume, V_{100D} =	35,595	cf
100-Year Allowable Outlet Rate: Q_{VRR} =	3.89	cfs
100 Year Peak Inflow: Q_{100IN} =	21.85	cfs

Detention Basin

Elev. (ft)	Area (sf)	Vol. (cf)	Total Vol. (cf)
736.00	0	0	0
737.00	4,575	2,288	2,288
738.00	6,817	5,696	7,984
739.00	9,236	8,027	16,010
740.00	11,880	10,558	26,568
741.00	14,751	13,316	39,884

CPRC Storage Elevation: 740.09
100-yr Storage Elevation: 740.68

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NORTH

0 20 40 80
SCALE: 1" = 40'

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PRELIMINARY UTILITY PLAN

PEA JOB NO.	2017-009
P.M.	JBT
DN.	KMB
DES.	DSK

DRAWING NUMBER:
P-4.0

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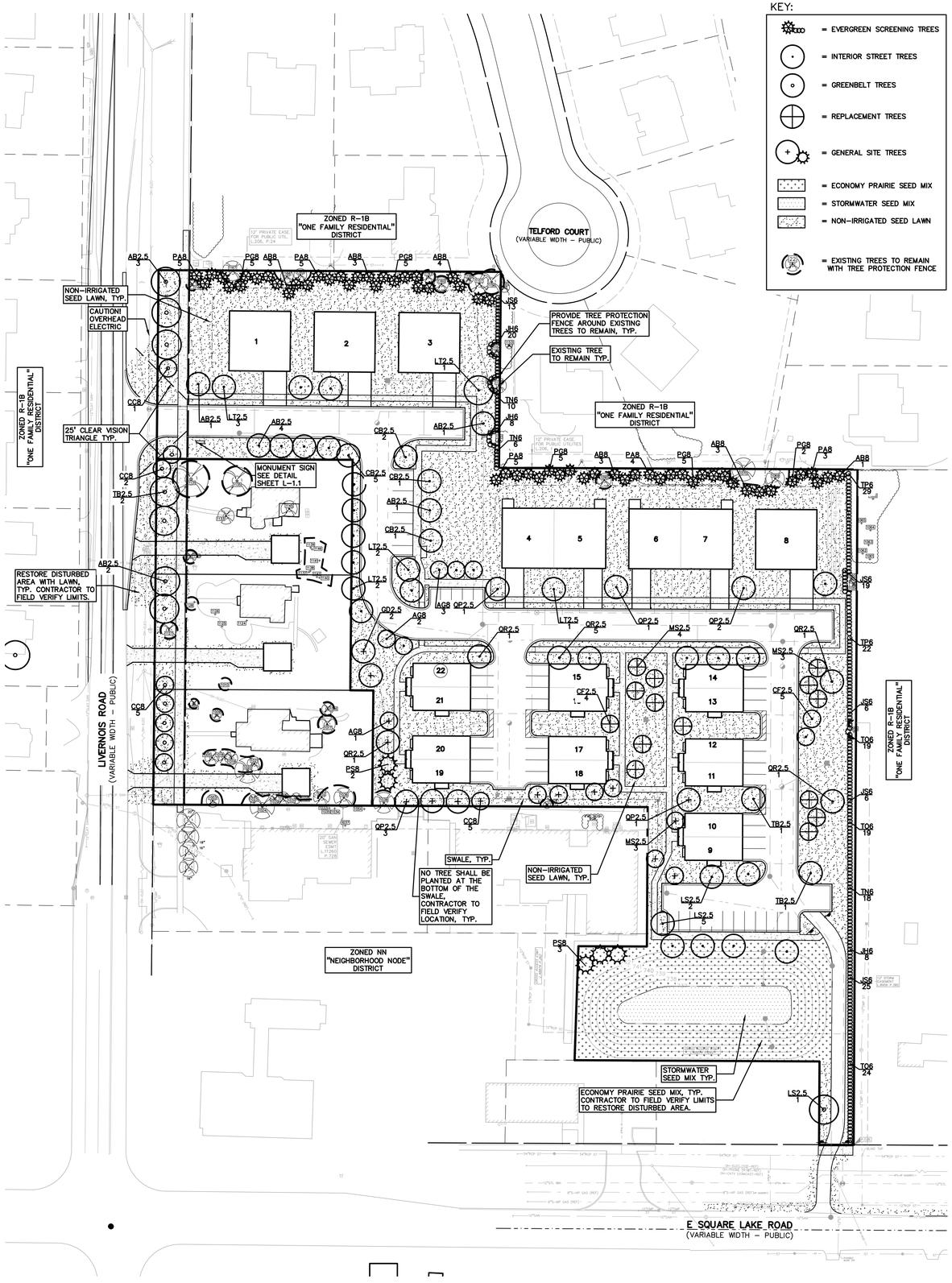

KEY:

- = EVERGREEN SCREENING TREES
- = INTERIOR STREET TREES
- = GREENBELT TREES
- = REPLACEMENT TREES
- = GENERAL SITE TREES
- = ECONOMY PRAIRIE SEED MIX
- = STORMWATER SEED MIX
- = NON-IRRIGATED SEED LAWN
- = EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

DECIDUOUS TREE LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
12	AB2.5	Bowhall Maple	*Acer rubrum 'Bowhall' (columnar)*	2.5" Cal.	B&B
6	AG8	Autumn Brillance Serviceberry	*Amelanchier x grandiflora 'Autumn Brillance'*	8-10' Ht.	B&B
8	CB2.5	European Hornbeam	*Carpinus betulus*	2.5" Cal.	B&B
13	CC8	Eastern Redbud	*Cercis canadensis*	8-10' Ht.	B&B
9	CF2.5	Cherokee Brave Flowering Dogwood	*Cornus florida 'Combo NO.1'*	2.5" Cal.	B&B
2	GD2.5	Kentucky Coffee Tree	*Gymnocladus dioica- male only*	2.5" Cal.	B&B
8	LS2.5	Sweetgum	*Liquidambar styraciflua*	2.5" Cal.	B&B
9	LT2.5	Tulip Tree	*Liriodendron tulipifera*	2.5" Cal.	B&B
10	MS2.5	Royal Star Magnolia	*Magnolia stellata 'Royal Star'*	2.5" Cal.	B&B
8	QP2.5	Regal Prince Oak	*Quercus robur x bicolor 'Long' (columnar)*	2.5" Cal.	B&B
9	QR2.5	Red Oak	*Quercus rubra*	2.5" Cal.	B&B
4	TB2.5	Boulevard Linden	*Tilia americana 'Boulevard (columnar)*	2.5" Cal.	B&B
98	TOTAL DEC				

EVERGREEN TREE PLANT LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
17	AB8	Balsam Fir	*Abies balsamea*	8' Ht.	B&B
22	PA8	Norway Spruce	*Picea abies*	8' Ht.	B&B
22	PG8	Black Hills Spruce	*Picea glauca 'Densata'*	8' Ht.	B&B
5	PS8	Eastern White Pine	*Pinus strobus*	8' Ht.	B&B
66	TOTAL EVERGREEN				

NARROW EVERGREEN LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
62	TO6	Techny Arborvitae	*Thuja occidentalis 'Techny'*	6' Ht.	B&B
34	TN6	Dark Green Arborvitae	*Thuja occidentalis 'Nigra'*	6' Ht.	B&B
51	TP6	Pyramidal Arborvitae	*Thuja occidentalis 'Pyramidalis'*	6' Ht.	B&B
36	JH6	Hetz Columnar Juniper	*Juniperus chinensis 'Hetzii Columnaris'*	6' Ht.	B&B
69	JS6	Blue Arrow Juniper	*Juniperus scopolorum 'Blue Arrow'*	6' Ht.	B&B
252	TOTAL NARROW EVERGREEN				

LANDSCAPE CALCULATIONS:
PROPOSED AS: RT "ONE FAMILY ATTACHED RESIDENTIAL DISTRICT"

5.03 C-1a. = GENERAL SITE LANDSCAPE:
REQUIRED: 15% OF SITE AREA SHALL BE LANDSCAPE MATERIAL
PROVIDED: 26% OF THE SITE IS LANDSCAPE MATERIAL

13.02 B. = SCREENING BETWEEN USES:
ABUTS R-1B USE SPACE TO THE NORTH AND EAST
PROVIDED: SCREEN ALT. 1 (1 NARROW EVG. / 3')
OR ALT. 2 (1 LARGE EVG. TREE / 10 LF)

NORTH PROPERTY LINE –
WESTERN SEGMENT 297 LF AND EASTERN SEGMENT 305 LF.
ALT. 2; 297 LF / 10 = 30 AND 305 LF / 10 = 31 LARGE EVG. TREES
PROVIDED: WESTERN SEGMENT: 30 8' HT LARGE EVG. TREES
EASTERN SEGMENT: 31 8' HT LARGE EVG. TREES

EAST PROPERTY LINE –
NORTHERN SEGMENT 170 LF AND SOUTHERN SEGMENT 586 LF.
ALT 1; 170 LF / 3 = 57 AND 586 LF / 3 = 195 NARROW EVG. TREES
PROVIDED: NORTHERN SEGMENT: 57, 6' HT. NARROW EVG. / 3' OC.
SOUTHERN SEGMENT: 195, 6' HT. NARROW EVG. / 3' OC.

13.02 F. INTERIOR STREET TREES:
REQUIRED: 1 TREE PER 50 LF OF INTERIOR STREETS
1281 LF / 50 = 26 TREES REQUIRED (EACH SIDE)

PROVIDED: 52 PROPOSED TREES

13.02 D2. GREENBELT:
REQUIRED: 1 TREE / 30 LF OF FRONTAGE TO PUBLIC RD.
LIVERNOIS ROAD = 463 LF FRONTAGE / 30 = 15 TREES
E. SQUARE LAKE ROAD – 30 LF FRONTAGE / 30 = 1 TREES

PROVIDED: LIVERNOIS ROAD: 15 TREES
E. SQUARE LAKE ROAD: 1 TREES

REPLACEMENT TREES:
SEE SHT. T-1.0 AND T-1.1 FOR EXISTING TREE LIST AND TREE PRESERVATION PLAN.

PROVIDED: 14 TREES AT 2.5" (14 • 2.5 = 35") PROVIDED

WOODLAND TREES			
WOODLAND TREES REMOVED:	30	(REPLACE AT 50% OF REMOVED DBH)	
329" DBH x 0.5 =		165" REPLACEMENT	
WOODLAND TREES SAVED:	44	(CREDIT OF 2X DBH)	
440 DBH x 2 =		880" CREDIT	
164.5	880	=	-715.5
0" DBH REQUIRED FOR REPLACEMENT			
LANDMARK TREES			
LANDMARK TREES REMOVED:	11	(REPLACE AT 100% OF REMOVED DBH)	
189" DBH x 1 =		189" REPLACEMENT	
LANDMARK TREES SAVED:	4	(CREDIT OF 2X DBH)	
77" DBH x 2 =		154" CREDIT	
189	154	=	35
35" DBH REQUIRED FOR REPLACEMENT			

GENERAL PLANTING NOTES:

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

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
LYNN A. WHIPPLE
LANDSCAPE ARCHITECT
No. 1301
REGISTERED LANDSCAPE ARCHITECT

NORTH

0 25 50 100
SCALE: 1" = 50'

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

CAUTION!!
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CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E., TROY, MI

REVISIONS

ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

DRAWING TITLE
PRELIMINARY LANDSCAPE PLAN

PEA JOB NO.	2017-009
P.M.	JBT
DN.	LAW
DES.	LAW

DRAWING NUMBER:
L-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2017\2017-009 GFA SQUARE LAKE-JP8\Dwg\Site Plans\(L-1.0) LANDSCAPE-170309.dwg

NATIVE SEED MIX. BY STANTEC NATIVE PLANT NURSERY, 574-586-2412, OR EQUAL SPECIES TO BE NATIVE TO COUNTY, NO INVASIVE SPECIES ALLOWED

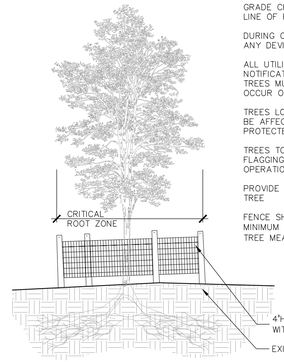
FOR ALL SEED MIXES, PROVIDE EROSION MAT ON SLOPES AND AREAS OF WASH OUT TYP. INSTALL AND PREP PER MANUFACTURES SPECIFICATIONS.

Economy Prairie Seed Mix
Stantec Native Plant Nursery 574-586-2412
stantec.com/native-plant-nursery

Botanical Name	Common Name
Permanent Grasses/Sedges/Rushes:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side Oats Grama
Carex spp.	Prairie Sedge Mix
Elymus canadensis	Canada Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs & Shrubs:	
Asclepias syriaca	Common Milkweed
Asclepias tuberosa	Butterfly Weed
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Sand Coreopsis
Echinacea purpurea	Broad-leaved Purple Coneflower
Heliopsis helianthoides	False Sunflower
Lupinus perennis	Wild Lupine
Monarda fistulosa	Wild Bergamot
Penstemon digitalis	Foxglove Beard Tongue
Pycnanthemum virginianum	Common Mountain Mint
Ratibida pinnata	Yellow Coneflower
Rudbeckia hirta	Black-Eyed Susan
Solidago speciosa	Showy Goldenrod
Symphyotrichum laeve	Smooth Blue Aster
Symphyotrichum novae-angliae	New England Aster

Stormwater Seed Mix
Stantec Native Plant Nursery 574-586-2412
stantec.com/native-plant-nursery

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



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

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

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

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

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

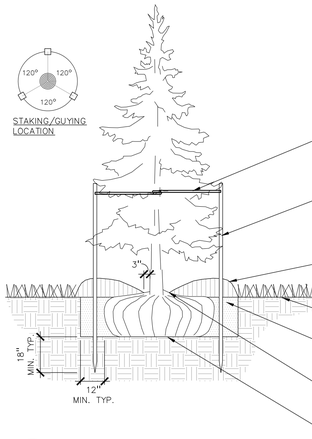
TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED

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

PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE

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

3 TREE PROTECTION DETAIL
SCALE: 1" = 3'-0"



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

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

THREE 2"X2" HARDWOOD STAKES OR STEEL T–POSTS DRIVEN A MIN. OF 18" DEEP FIRMLY INTO SUBGRADE PRIOR TO BACKFILLING

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

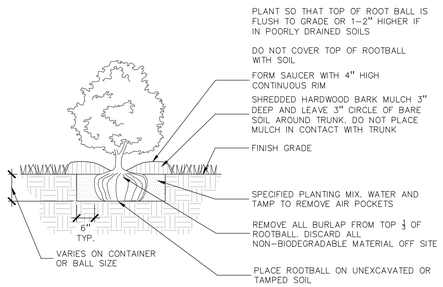
FINISH GRADE

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

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

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL

2 EVERGREEN TREE PLANTING DETAIL
SCALE: 1" = 3'-0"



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

DO NOT COVER TOP OF ROOTBALL WITH SOIL

FORM SAUCER WITH 4" HIGH CONTINUOUS RIM

SHREDDED HARDWOOD BARK MULCH 3" DEEP AND LEAVE 3" CIRCLE OF BARE SOIL AROUND TRUNK. DO NOT PLACE MULCH IN CONTACT WITH TRUNK

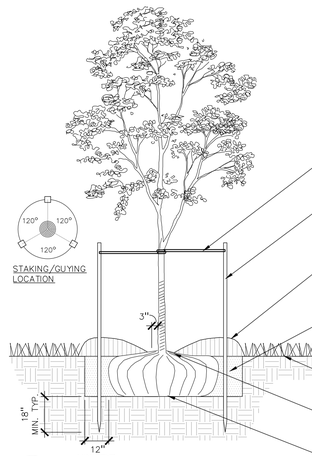
FINISH GRADE

SPECIFIED PLANTING MIX, WATER AND TAMP TO REMOVE AIR POCKETS

REMOVE ALL BURLAP FROM TOP ⅓ OF ROOTBALL. DISCARD ALL NON–BIODEGRADABLE MATERIAL OFF SITE

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL

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



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

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

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

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

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

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

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

FINISH GRADE

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

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL

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

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
LYNN A. WHIPPLE
LANDSCAPE ARCHITECT
No. 3901001446
REGISTERED LANDSCAPE ARCHITECT

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

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CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E.,
TROY, MI

REVISIONS

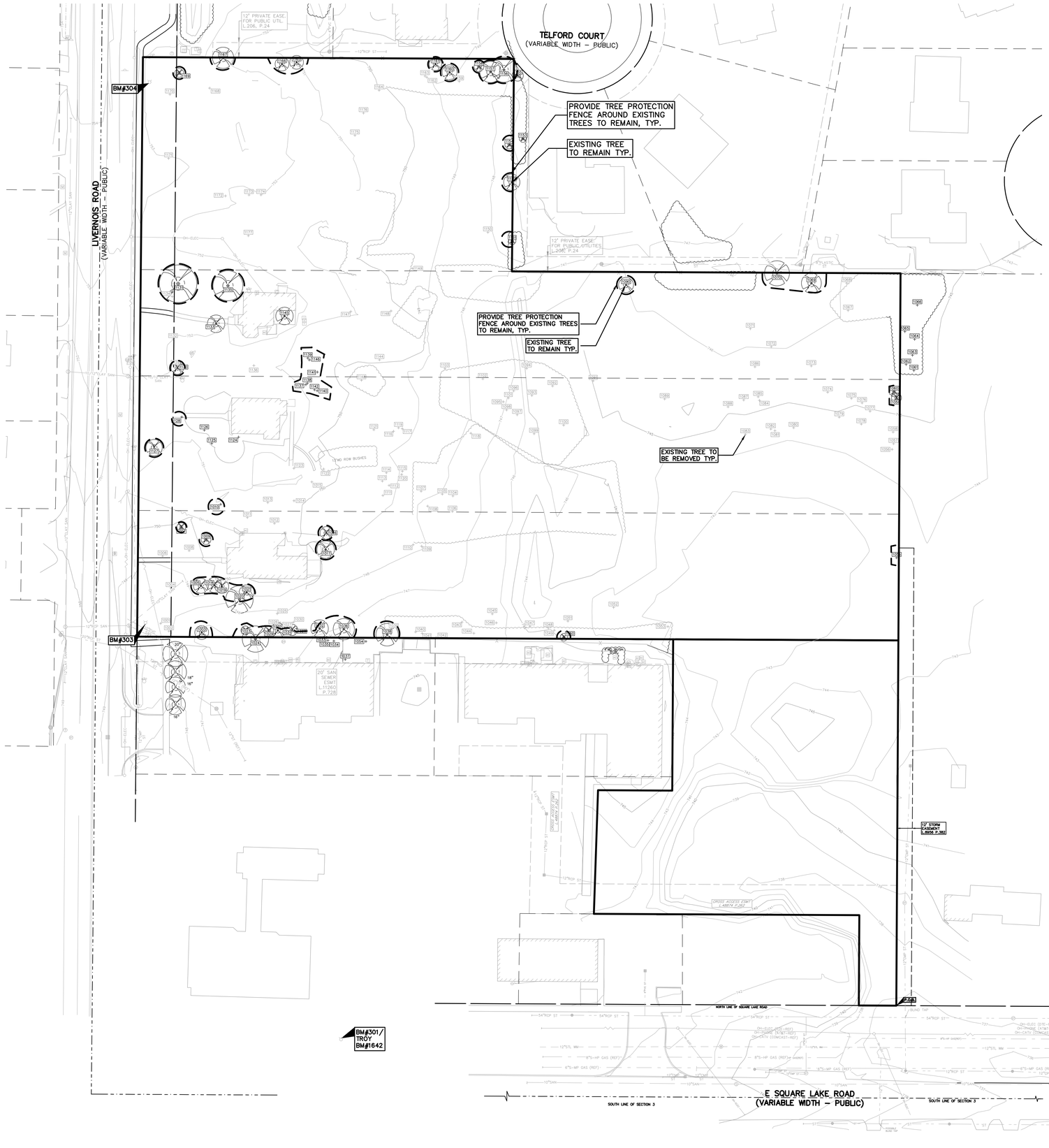
ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

DRAWING TITLE
LANDSCAPE DETAILS

PEA JOB NO.	2017-009
P.M.	JBT
DN.	LAW
DES.	LAW

DRAWING NUMBER:
L-1.1

S:\PROJECTS\2017\2017-009 GFA SQUARE LAKE - #3\Dwg\Site Plans\(L-1.1) LANDSCAPE DETAILS-17009.dwg



KEY

12"&82	= EXISTING TREE/ TAG TO REMAIN
12"&82	= EXISTING TREE / TAG TO BE REMOVED
	= TREE PROTECTION FENCE

WOODLAND TREES			
WOODLAND TREES REMOVED:	**30**	(REPLACE AT 50% OF REMOVED DBH)	
329" DBH x 0.5 =		**165"**	REPLACEMENT
WOODLAND TREES SAVED:	44	**(CREDIT OF 2X DBH)**	
440 DBH x 2 =		**880"**	CREDIT
164.5 -	880	**=**	-715.5
0 " DBH REQUIRED FOR REPLACEMENT			

LANDMARK TREES			
LANDMARK TREES REMOVED:	11	**(REPLACE AT 100% OF REMOVED DBH)**	
189" DBH x 1 =		**189"**	REPLACEMENT
LANDMARK TREES SAVED:	4	**(CREDIT OF 2X DBH)**	
77" DBH x 2 =		**154"**	CREDIT
189 -	154	**=**	35
35" DBH REQUIRED FOR REPLACEMENT			

PEA GROUP
t: 844.813.2949
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STATE OF MICHIGAN
LYNN A. WHIPPLE
LANDSCAPE ARCHITECT
No. 3901001391
REGISTERED LANDSCAPE ARCHITECT

NORTH

0 20 40 80
SCALE: 1" = 40'

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CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E.,
TROY, MI

REVISIONS

ORIGINAL ISSUE DATE:
DECEMBER 13, 2024

DRAWING TITLE
TREE PRESERVATION PLAN

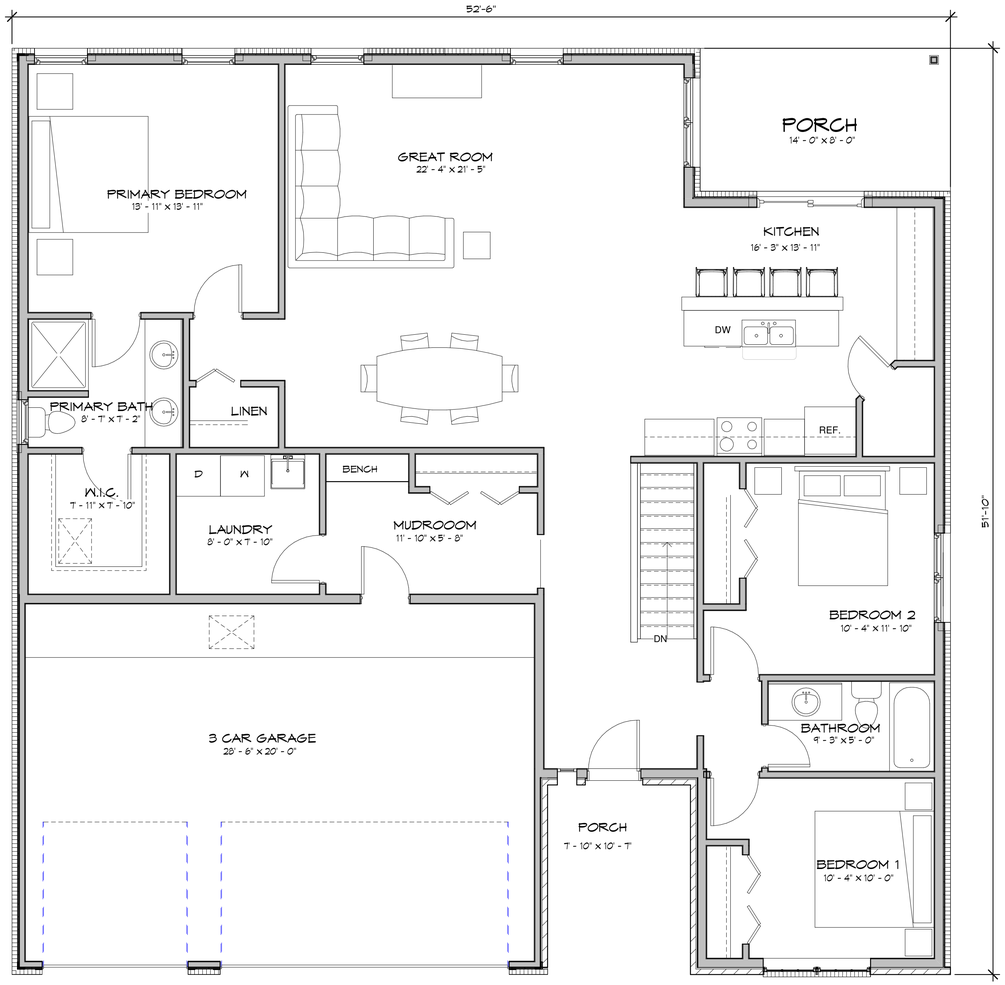
PEA JOB NO.	2017-009
P.M.	JBT
DN.	LAW
DES.	LAW

DRAWING NUMBER:
T-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2017\2017-009 GFA SQUARE LAKE--#FB\Dwg\Shw Prsnt\T-1.0 TREE PRESERVATION-17009.dwg

TAG	CODE	DBH	COMMON NAME	LATIN NAME	CONDITION	NOTE	CLASS	SAVE / REMOVE	ON-SITE
1	E	6	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
2	E	7	American Elm	Ulmus americana	Very Poor		INVASIVE	S	Y
3	CT	11	Cottonwood	Populus deltoides	Poor		INVASIVE	S	Y
4	BW	13	Black Walnut	Juglans nigra	Very Poor		WOODLAND	S	Y
5	B	8	Basswood	Tilia americana	Fair		WOODLAND	S	Y
6	BX	8	Box elder	Acer negundo	Very Poor		INVASIVE	S	Y
7	B	9	Basswood	Tilia americana	Fair		WOODLAND	S	Y
8	BX	6	Box elder	Acer negundo	Poor		INVASIVE	S	Y
9	E	9	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
10	E	6	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
11	B	6	Basswood	Tilia americana	Poor		WOODLAND	S	Y
12	E	9	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
13	BX	8	Box elder	Acer negundo	Poor		INVASIVE	S	Y
14	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
15	E	7	American Elm	Ulmus americana	Very Poor		INVASIVE	S	Y
16	E	7	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
17	E	9	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
18	CT	8	Cottonwood	Populus deltoides	Poor		INVASIVE	S	Y
19	NM	11	Norway Maple	Acer platanoides	Fair		INVASIVE	S	Y
20	E	12	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
21	BX	12	Box elder	Acer negundo	Very Poor		INVASIVE	S	Y
22	E	9	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
23	E	7	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
24	CT	11	Cottonwood	Populus deltoides	Good		INVASIVE	S	Y
25	B	9	Basswood	Tilia americana	Poor		WOODLAND	S	Y
26	CT	8	Cottonwood	Populus deltoides	Poor		INVASIVE	S	Y
27	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
28	E	10	American Elm	Ulmus americana	Good		INVASIVE	S	Y
29	E	13	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
30	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
31	NM	15	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
32	NM	15	Norway Maple	Acer platanoides	Very Poor		INVASIVE	S	Y
33	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
34	B	10	Basswood	Tilia americana	Poor		WOODLAND	S	Y
35	B	11	Basswood	Tilia americana	Poor		WOODLAND	S	Y
36	E	6	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
37	E	9	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
38	BC	7	Wild Black Cherry	Prunus serotina	Fair		WOODLAND	S	Y
39	E	6	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
40	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
41	B	9	Basswood	Tilia americana	Fair		WOODLAND	S	Y
42	B	8	Basswood	Tilia americana	Poor		WOODLAND	S	Y
43	B	8	Basswood	Tilia americana	Very Poor		WOODLAND	S	Y
44	B	6	Basswood	Tilia americana	Very Poor		WOODLAND	S	Y
45	BC	10	Wild Black Cherry	Prunus serotina	Good		WOODLAND	S	Y
46	B	8	Basswood	Tilia americana	Very Poor		WOODLAND	S	Y
47	B	8	Basswood	Tilia americana	Fair		WOODLAND	S	Y
48	B	8	Basswood	Tilia americana	Very Poor		WOODLAND	S	Y
49	B	11	Basswood	Tilia americana	Poor		WOODLAND	S	Y
50	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
51	B	7	Basswood	Tilia americana	Fair		WOODLAND	S	Y
52	B	7	Basswood	Tilia americana	Fair		WOODLAND	S	Y
53A	GA	7	Green Ash	Fraxinus pennsylvanica	Very Poor		INVASIVE	S	Y
53B	E	9	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
54	E	7	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
55	BW	8	Black Walnut	Juglans nigra	Fair		WOODLAND	S	Y
56	B	11	Basswood	Tilia americana	Fair		WOODLAND	S	Y
57	E	10	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
58	B	12	Basswood	Tilia americana	Fair		WOODLAND	S	Y
59	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
60	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
61	CT	11	Cottonwood	Populus deltoides	Poor		INVASIVE	S	Y
62	NM	12	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
63	B	10	Basswood	Tilia americana	Fair		WOODLAND	S	Y
64	CT	21	Cottonwood	Populus deltoides	Good		INVASIVE	S	Y
65	B	10	Basswood	Tilia americana	Fair		WOODLAND	S	Y
66	B	12	Basswood	Tilia americana	Fair		WOODLAND	S	Y
67	CT	12	Cottonwood	Populus deltoides	Poor		INVASIVE	S	Y
68	NM	7	Norway Maple	Acer platanoides	Poor		INVASIVE	S	Y
69	NM	15	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
70	BX	9	Box elder	Acer negundo	Poor		INVASIVE	S	Y
71	B	11	Basswood	Tilia americana	Fair		WOODLAND	S	Y
72	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
73	BX	7	Box elder	Acer negundo	Poor		INVASIVE	S	Y
74	B	13	Basswood	Tilia americana	Fair		WOODLAND	S	Y
75	B	12	Basswood	Tilia americana	Fair		WOODLAND	S	Y
76	B	11	Basswood	Tilia americana	Fair		WOODLAND	S	Y
77	B	11	Basswood	Tilia americana	Fair		WOODLAND	S	Y
78	BX	9	Box elder	Acer negundo	Fair		INVASIVE	S	Y
79	CT	~~14~~	Cottonwood	Populus deltoides	Fair		INVASIVE	S	Y
80	B	7	Basswood	Tilia americana	Fair		WOODLAND	S	Y
81	CT	12	Cottonwood	Populus deltoides	Fair		INVASIVE	S	Y
82	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
83	B	7	Basswood	Tilia americana	Poor		WOODLAND	S	Y
84	CT	12	Cottonwood	Populus deltoides	Fair		INVASIVE	S	Y
85	BX	8	Box elder	Acer negundo	Poor		INVASIVE	S	Y
86	PW	~~14~~	White Poplar	Populus alba	Good		INVASIVE	S	Y
87	BX	8	Box elder	Acer negundo	Poor		INVASIVE	S	Y
88	E	9	American Elm	Ulmus americana	Poor		INVASIVE	S	Y
89	BX	11	Box elder	Acer negundo	Poor		INVASIVE	S	Y
90	E	10	American Elm	Ulmus americana	Good		INVASIVE	S	Y
91	E	8	American Elm	Ulmus americana	Fair		INVASIVE	S	Y
92	BX	11	Box elder	Acer negundo	Poor		INVASIVE	S	Y
93	BX	13	Box elder	Acer negundo	Poor		INVASIVE	S	Y
94	B	~~14~~	Basswood	Tilia americana	Very Poor		WOODLAND	S	Y
95	BX	~~16~~	Box elder	Acer negundo	Poor		INVASIVE	S	Y
96A	B	9	Basswood	Tilia americana	Poor		WOODLAND	S	Y
96B	B	9	Basswood	Tilia americana	Poor		WOODLAND	S	Y
97	BX	10	Box elder	Acer negundo	Poor		INVASIVE	S	Y
98	BX	11	Box elder	Acer negundo	Very Poor		INVASIVE	S	Y
99	CT	11	Cottonwood	Populus deltoides	Fair		INVASIVE	S	Y
100	RO	8	Red Oak	Quercus rubra	Poor		WOODLAND	S	Y
101	B	7	Basswood	Tilia americana	Fair		WOODLAND	S	Y
102	BX	12	Box elder	Acer negundo	Poor		INVASIVE	S	Y
103	BX	8	Box elder	Acer negundo	Poor		INVASIVE	S	Y
~~104~~	~~WC~~	~~6~~	~~White Cedar~~	~~Thuja occidentalis~~	Very Poor		INVASIVE	S	Y
~~105~~	~~BX~~	~~9~~	~~Box elder~~	~~Acer negundo~~	Very Poor		INVASIVE	S	Y
~~106~~	~~BX~~	~~12~~	~~Box elder~~	~~Acer negundo~~	Poor		INVASIVE	S	Y
~~107~~	~~BX~~	~~17~~	~~Box elder~~	~~Acer negundo~~	Poor		INVASIVE	S	Y
~~108~~	~~BX~~	~~9~~	~~Box elder~~	~~Acer negundo~~	Poor		INVASIVE	S	Y
109	B	12	Basswood	Tilia americana	Fair		WOODLAND	S	Y
110	B	10	Basswood	Tilia americana	Fair		WOODLAND	S	Y
111	B	12	Basswood	Tilia americana	Fair		WOODLAND	S	Y
112	B	10	Basswood	Tilia americana	Fair		WOODLAND	S	Y
113	B	8	Basswood	Tilia americana	Fair		WOODLAND	S	Y
~~114~~	B	8	Basswood	Tilia americana	Fair		WOODLAND	S	Y
115	BX	7	Box elder	Acer negundo	Fair		INVASIVE	S	N
116	BX	8	Box elder	Acer negundo	Fair		INVASIVE	S	N
117	PW	6	White Poplar	Populus alba	Good		INVASIVE	S	N
~~1001~~	~~BS~~	~~10~~	~~Blue Spruce~~	~~Picea pungens~~	Poor		~~WOODLAND~~	R	~~Y~~
~~1002~~	~~AU~~	~~15~~	~~Austrian Pine~~	~~Pinus nigra~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
1003	SC	11	Scotch Pine	Pinus sylvestris	Fair		WOODLAND	S	Y
~~1004~~	~~B~~	~~23~~	~~Basswood~~	~~Tilia americana~~	~~Good~~		~~LANDMARK~~	R	~~Y~~
1005	SM	12	Silver Maple	Acer saccharinum	Fair		INVASIVE	S	Y
~~1006~~	~~NS~~	~~14~~	~~Norway Spruce~~	~~Picea Abies~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
1007	WS	7	White Spruce	Picea glauca	Poor		WOODLAND	S	Y
~~1008~~	~~NM~~	~~27~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
1009	WS	14	White Spruce	Picea glauca	Fair		WOODLAND	S	Y
1010	TH	7	Thornapple/Hawthorne	Crataegus spp.	Poor		WOODLAND	S	Y
~~1011~~	~~TH~~	~~11~~	~~Thornapple/Hawthorne~~	~~Crataegus spp.~~	~~Poor~~		~~WOODLAND~~	R	~~Y~~
~~1012~~	SU	~~17~~	~~Sugar Maple~~	~~Acer saccharum~~	~~Fair~~		~~LANDMARK~~	R	~~Y~~
~~1013~~	~~NM~~	~~10~~	~~Norway Maple~~	~~Acer platanoides~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1014~~	~~NM~~	~~13~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1015~~	~~NM~~	~~11~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
1016	WS	10	White Spruce	Picea glauca	Poor		WOODLAND	S	Y
1017	SU	14	Sugar Maple	Acer saccharum	Very Poor	dead	WOODLAND	S	Y
1018	SC	12	Scotch Pine	Pinus sylvestris	Fair		WOODLAND	S	Y
1019	NM	11	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1020	SM	22	Silver Maple	Acer saccharinum	Fair		INVASIVE	S	Y
1021	SC	20	Scotch Pine	Pinus sylvestris	Good		LANDMARK	S	Y
1022	NM	12	Norway Maple	Acer platanoides	Fair		INVASIVE	S	Y
1023	SC	7	Scotch Pine	Pinus sylvestris	Fair		WOODLAND	S	Y
1024	NM	21	Norway Maple	Acer platanoides	Good		INVASIVE	S	N
~~1025~~	~~SC~~	~~13~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1026~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1027~~	~~NM~~	~~10~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
1028	NM	10	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1029	NM	8	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
~~1030~~	~~NM~~	~~9~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
1031	NM	9	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1032	BX	14	Box elder	Acer negundo	Fair		INVASIVE	S	Y
1033	BX	11	Box elder	Acer negundo	Fair		INVASIVE	S	N
1034	AU	16	Austrian Pine	Pinus nigra	Fair		WOODLAND	S	N
1035	NM	6	Norway Maple	Acer platanoides	Good		INVASIVE	S	N
1036	AU	17	Austrian Pine	Pinus nigra	Very Poor	dead	WOODLAND	S	Y
1037	NM	12	Norway Maple	Acer platanoides	Fair		INVASIVE	S	N
1038	BX	18	Box elder	Acer negundo	Fair		INVASIVE	S	Y
~~1039~~	~~WC~~	~~6~~	~~White Cedar~~	~~Thuja occidentalis~~	~~Good~~		~~WOODLAND~~	R	~~Y~~
~~1040~~	~~WC~~	~~6~~	~~White Cedar~~	~~Thuja occidentalis~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1041~~	~~BX~~	~~10~~	~~Box elder~~	~~Acer negundo~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1042~~	~~NM~~	~~12~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1043~~	~~SM~~	~~12~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1044~~	~~SC~~	~~11~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Very Poor~~	dead	~~WOODLAND~~	R	~~Y~~
~~1045~~	~~SM~~	~~43~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1046~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1047~~	~~SM~~	~~16~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1048~~	~~SC~~	~~14~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Poor~~		~~WOODLAND~~	R	~~Y~~
~~1049~~	~~SC~~	~~14~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Poor~~		~~WOODLAND~~	R	~~Y~~
1050	SM	6	Silver Maple	Acer saccharinum	Fair		INVASIVE	S	Y
~~1051~~	~~SM~~	~~22~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1052~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	~~Very Poor~~		~~INVASIVE~~	R	~~Y~~
~~1053~~	~~SM~~	~~30~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Poor~~		~~INVASIVE~~	R	~~Y~~
1054	SU	7	Sugar Maple	Acer saccharum	Good		WOODLAND	S	N
1055	TH	7	Thornapple/Hawthorne	Crataegus spp.	Very Poor	x2 dead	WOODLAND	S	Y
~~1056~~	~~SC~~	~~13~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1057~~	~~SC~~	~~12~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1058~~	~~SC~~	~~13~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
1059	BX	8	Box elder	Acer negundo	Fair		INVASIVE	S	Y
1060	BX	8	Box elder	Acer negundo	Fair	x2	INVASIVE	S	Y
1061	BS	6	Blue Spruce	Picea pungens	Fair		WOODLAND	S	N
1062	NS	6	Norway Spruce	Picea Abies	Fair		WOODLAND	S	N
1063	NS	6	Norway Spruce	Picea Abies	Fair		WOODLAND	S	N
1064	NS	7	Norway Spruce	Picea Abies	Good		WOODLAND	S	N
1065	NS	6	Norway Spruce	Picea Abies	Fair		WOODLAND	S	N
1066	SC	17	Scotch Pine	Pinus sylvestris	Fair		WOODLAND	S	N
~~1067~~	~~CT~~	~~25~~	~~Cottonwood~~	~~Populus deltoides~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1068~~	~~WP~~	~~21~~	~~(Eastern) White Pine~~	~~Pinus strobus~~	~~Fair~~		~~LANDMARK~~	R	~~Y~~
1069	BW	16	Black Walnut	Juglans nigra	Good		WOODLAND	S	Y
1070	AU	20	Austrian Pine	Pinus nigra	Good		LANDMARK	S	Y
~~1071~~	~~MH~~	~~16~~	~~Bitternut Hickory~~	~~Carya cordiformis~~	~~Good~~	~~bitternut hickory~~	~~LANDMARK~~	R	~~Y~~
~~1072~~	~~SH~~	~~16~~	~~Shagbark Hickory~~	~~Carya ovata~~	~~Good~~	hickory	~~LANDMARK~~	R	~~Y~~
~~1073~~	~~SH~~	~~8~~	~~Shagbark Hickory~~	~~Carya ovata~~	~~Very Poor~~	hickory	~~WOODLAND~~	R	~~Y~~
~~1074~~	~~SC~~	~~12~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1075~~	~~SC~~	~~10~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1076~~	~~SC~~	~~10~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1077~~	~~SC~~	~~9~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1078~~	~~SC~~	~~9~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1079~~	~~SC~~	~~8~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1080~~	~~SC~~	~~14~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1081~~	~~SC~~	~~8~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1082~~	~~SC~~	~~13~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1083~~	~~SC~~	~~16~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~	~~x1~~	~~WOODLAND~~	R	~~Y~~
~~1084~~	~~SM~~	~~10~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1085~~	~~SC~~	~~14~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	R	~~Y~~
~~1086~~	~~BT~~	~~9~~	~~Butternut~~	~~Juglans cinerea~~	~~Good~~		~~LANDMARK~~	R	~~Y~~
~~1087~~	~~SM~~	~~10~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1088~~	~~SM~~	~~16~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Good~~		~~INVASIVE~~	R	~~Y~~
~~1089~~	~~BX~~	~~12~~	~~Box elder~~	~~Acer negundo~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
1090	BS	12	Blue Spruce	Picea pungens	Good		WOODLAND	S	Y
~~1091~~	~~SM~~	~~12~~	~~Silver Maple~~	~~Acer saccharinum~~	~~Fair~~		~~INVASIVE~~	R	~~Y~~
~~1093~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	~~R~~	~~Y~~
~~1094~~	~~C~~	~~7~~	~~Catalpa~~	~~Catalpa speciosa~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1095~~	~~BX~~	~~9~~	~~Box elder~~	~~Acer negundo~~	Fair	~~x1~~	~~INVASIVE~~	~~R~~	~~Y~~
~~1096~~	~~NM~~	~~9~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1097~~	~~BX~~	~~9~~	~~Box elder~~	~~Acer negundo~~	Poor	~~x1~~	~~INVASIVE~~	~~R~~	~~Y~~
~~1098~~	~~BX~~	~~12~~	~~Box elder~~	~~Acer negundo~~	Poor		~~INVASIVE~~	~~R~~	~~Y~~
~~1099~~	~~NM~~	~~7~~	~~Norway Maple~~	~~Acer platanoides~~	Fair		~~INVASIVE~~	~~R~~	~~Y~~
~~1100~~	~~NM~~	~~7~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1101~~	~~BX~~	~~10~~	~~Box elder~~	~~Acer negundo~~	Poor		~~INVASIVE~~	~~R~~	~~Y~~
~~1102~~	~~BS~~	~~7~~	~~Blue Spruce~~	~~Picea pungens~~	Good		~~WOODLAND~~	~~R~~	~~Y~~
~~1103~~	~~TH~~	~~9~~	~~Thornapple/Hawthorne~~	~~Cragaegus spp.~~	Poor	x2	~~WOODLAND~~	~~R~~	~~Y~~
~~1104~~	~~NM~~	~~13~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1105~~	~~NM~~	~~15~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1106~~	~~SM~~	~~31~~	~~Silver Maple~~	~~Acer saccharinum~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1107~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1108~~	~~BX~~	~~15~~	~~Box elder~~	~~Acer negundo~~	Fair		~~INVASIVE~~	~~R~~	~~Y~~
~~1109~~	~~BX~~	~~20~~	~~Box elder~~	~~Acer negundo~~	Fair		~~INVASIVE~~	~~R~~	~~Y~~
~~1110~~	~~NM~~	~~10~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1111~~	~~NM~~	~~8~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1112~~	~~NM~~	~~14~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1113~~	~~NM~~	~~12~~	~~Norway Maple~~	~~Acer platanoides~~	Good	~~x1~~	~~INVASIVE~~	~~R~~	~~Y~~
~~1114~~	~~NM~~	~~12~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1115~~	~~BX~~	~~9~~	~~Box elder~~	~~Acer negundo~~	Fair		~~INVASIVE~~	~~R~~	~~Y~~
~~1116~~	~~NM~~	~~10~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1117~~	~~NM~~	~~9~~	~~Norway Maple~~	~~Acer platanoides~~	Good	~~x1~~	~~INVASIVE~~	~~R~~	~~Y~~
~~1118~~	~~BW~~	~~8~~	~~Black Walnut~~	~~Juglans nigra~~	Good	~~o/s 10 ft E~~	~~WOODLAND~~	~~R~~	~~Y~~
~~1119~~	~~BT~~	~~20~~	~~Butternut~~	~~Juglans cinerea~~	Fair		~~LANDMARK~~	~~R~~	~~Y~~
~~1120~~	~~E~~	~~15~~	~~American Elm~~	~~Ulmus americana~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
~~1121~~	~~SC~~	~~20~~	~~Scotch Pine~~	~~Pinus sylvestris~~	Fair		~~LANDMARK~~	~~R~~	~~Y~~
~~1122~~	~~E~~	~~11~~	~~American Elm~~	~~Ulmus americana~~	Good	~~x1~~	~~INVASIVE~~	~~R~~	~~Y~~
~~1123~~	~~NM~~	~~24~~	~~Norway Maple~~	~~Acer platanoides~~	Good		~~INVASIVE~~	~~R~~	~~Y~~
1124	BS	8	Blue Spruce	Picea pungens	Good		WOODLAND	S	Y
1125	NM	24	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1126	NM	15	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1127	MW	13	White Mulberry	Morus alba	Fair		INVASIVE	S	Y
1128	NM	20	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
~~1129~~	~~WO~~	~~14~~	~~White Oak~~	~~Quercus alba~~	~~Fair~~		~~WOODLAND~~	~~R~~	~~Y~~
1130	WP	10	(Eastern) White Pine	Pinus strobus	Good		WOODLAND	S	Y
1131	SM	31	Silver Maple	Acer saccharinum	Good		INVASIVE	S	Y
~~1132~~	~~WP~~	~~15~~	~~(Eastern) White Pine~~	~~Pinus strobus~~	~~Good~~		~~WOODLAND~~	~~R~~	~~Y~~
1133	WS	14	White Spruce	Picea glauca	Fair		WOODLAND	S	Y
~~1134~~	~~NM~~	~~12~~	~~Norway Maple~~	~~Acer platanoides~~	~~Good~~		~~INVASIVE~~	~~R~~	~~Y~~
1135	WS	24	White Spruce	Picea glauca	Poor		LANDMARK	S	Y
~~1136~~	~~MW~~	~~7~~	~~White Mulberry~~	~~Morus alba~~	~~Fair~~		~~INVASIVE~~	~~R~~	~~Y~~
1137	NM	12	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1138	NM	7	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1139	NM	11	Norway Maple	Acer platanoides	Good		INVASIVE	S	Y
1140	E	17	American Elm	Ulmus americana	Good	x1	INVASIVE	S	Y
1141	E	15	American Elm	Ulmus americana	Good		INVASIVE	S	Y
1142	SM	14	Silver Maple	Acer saccharinum	Good		INVASIVE	S	Y
~~1143~~	~~SC~~	~~6~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~WOODLAND~~	~~R~~	~~Y~~
~~1144~~	~~SC~~	~~20~~	~~Scotch Pine~~	~~Pinus sylvestris~~	~~Fair~~		~~LANDMARK~~	~~R~~	~~Y~~
1145	BS	14	Blue Spruce	Picea pungens



FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

Moiseev/Gordon Associates, Inc.
4351 Delemere Court
Royal Oak, MI 48073

248.549.4500 voice
248.549.7300 facs.

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Client:

GFA Development

Project Title:

VILLAGE OF HASTINGS

Troy, MI

Sheet Title:

FIRST FLOOR UNIT PLAN

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date: 06-16-2023

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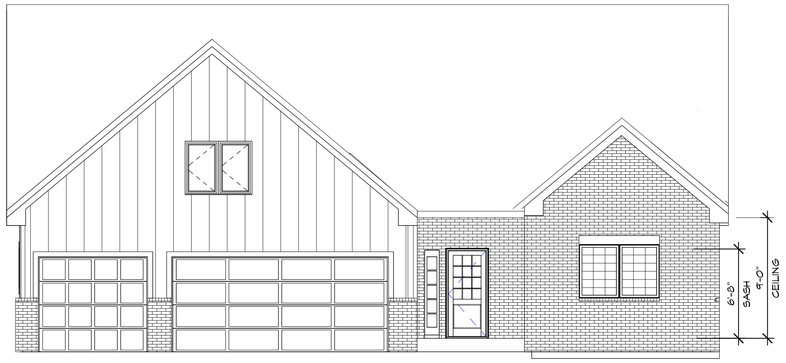
Sheet Number:

A100

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1301091108
LICENSED ARCHITECT

4/22/2024 2:10:26 PM



1 FRONT ELEVATION
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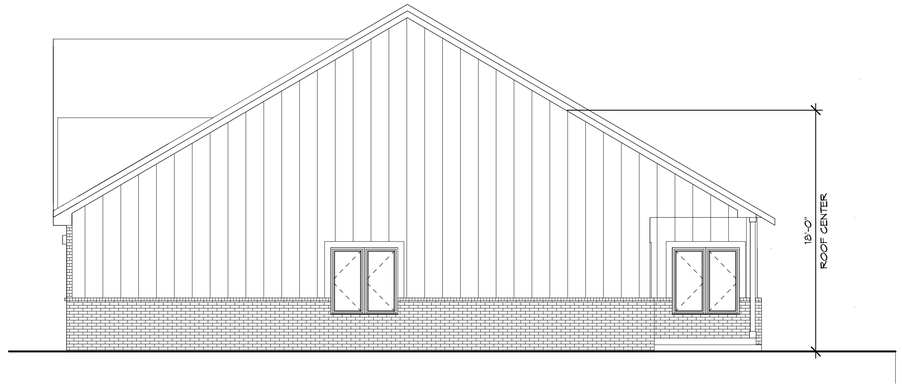

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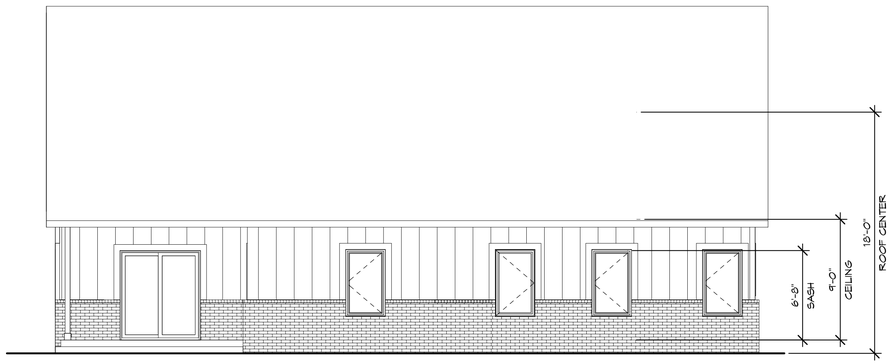

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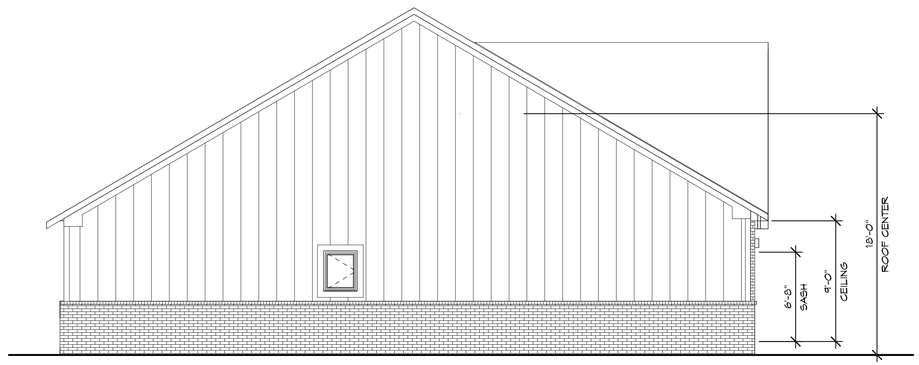

3 LEFT ELEVATION
Scale: 3/16" = 1'-0"

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Client:
GFA Development

Project Title:
VILLAGE OF HASTINGS

Troy, MI

Sheet Title:
ELEVATIONS

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date: 06-16-2023

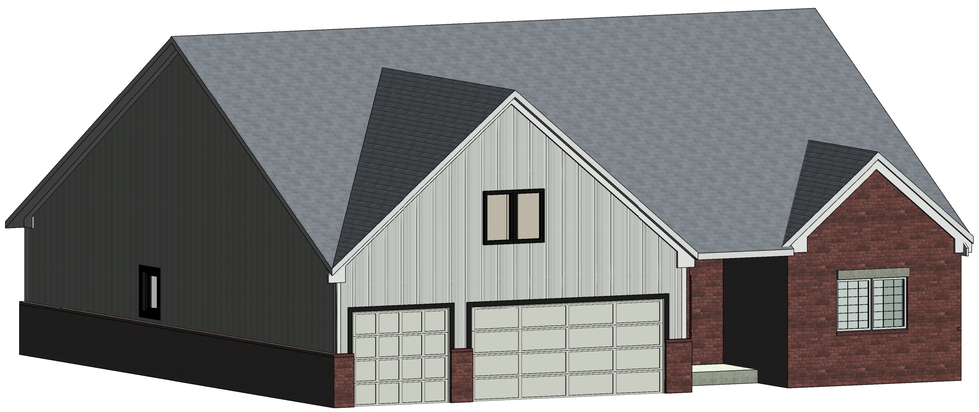
Issued:

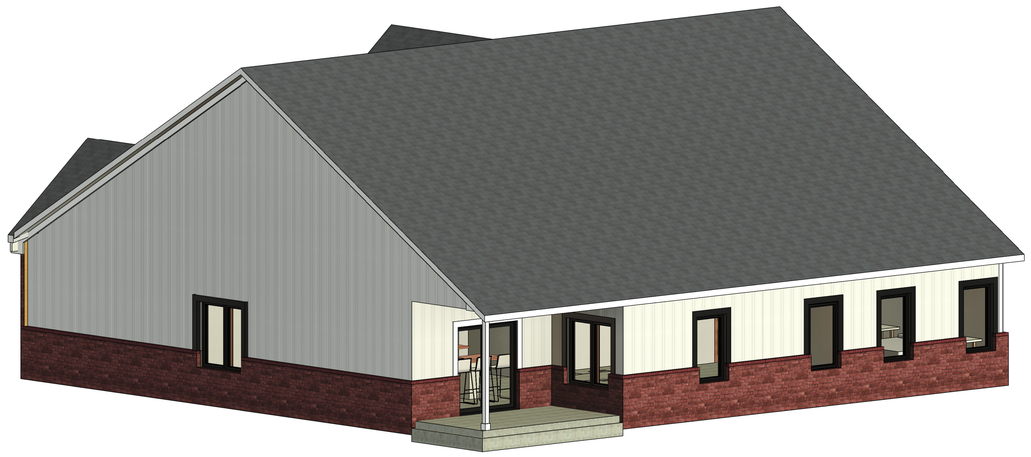
Review	08-04-16
Owner's Review	06-16-23
Owner's Review	11-09-2023

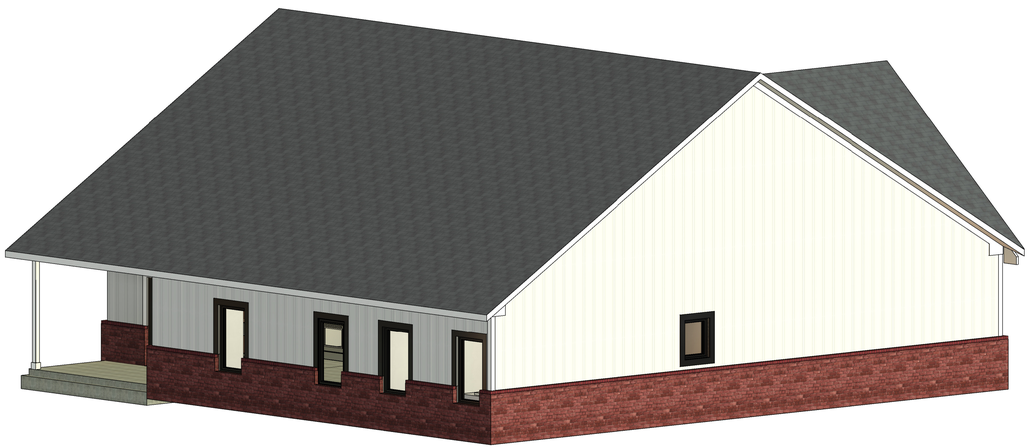
Sheet Number:
A200

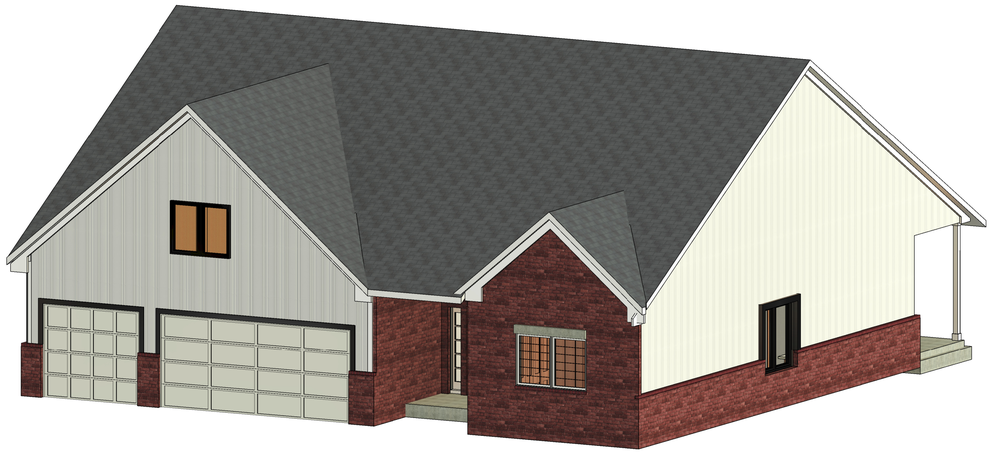
STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1301031108
LICENSED ARCHITECT

4/22/2024 2:10:28 PM









RANCH UNIT - 3 CAR GARAGE

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Client:
GFA Development

Project Title:
VILLAGE OF HASTINGS

Troy, MI

Sheet Title:
3D VIEWS

Project Number: 22312
Drawn By: JS
Checked By: AJM
Approved By: AJM
Date: 06-16-2023

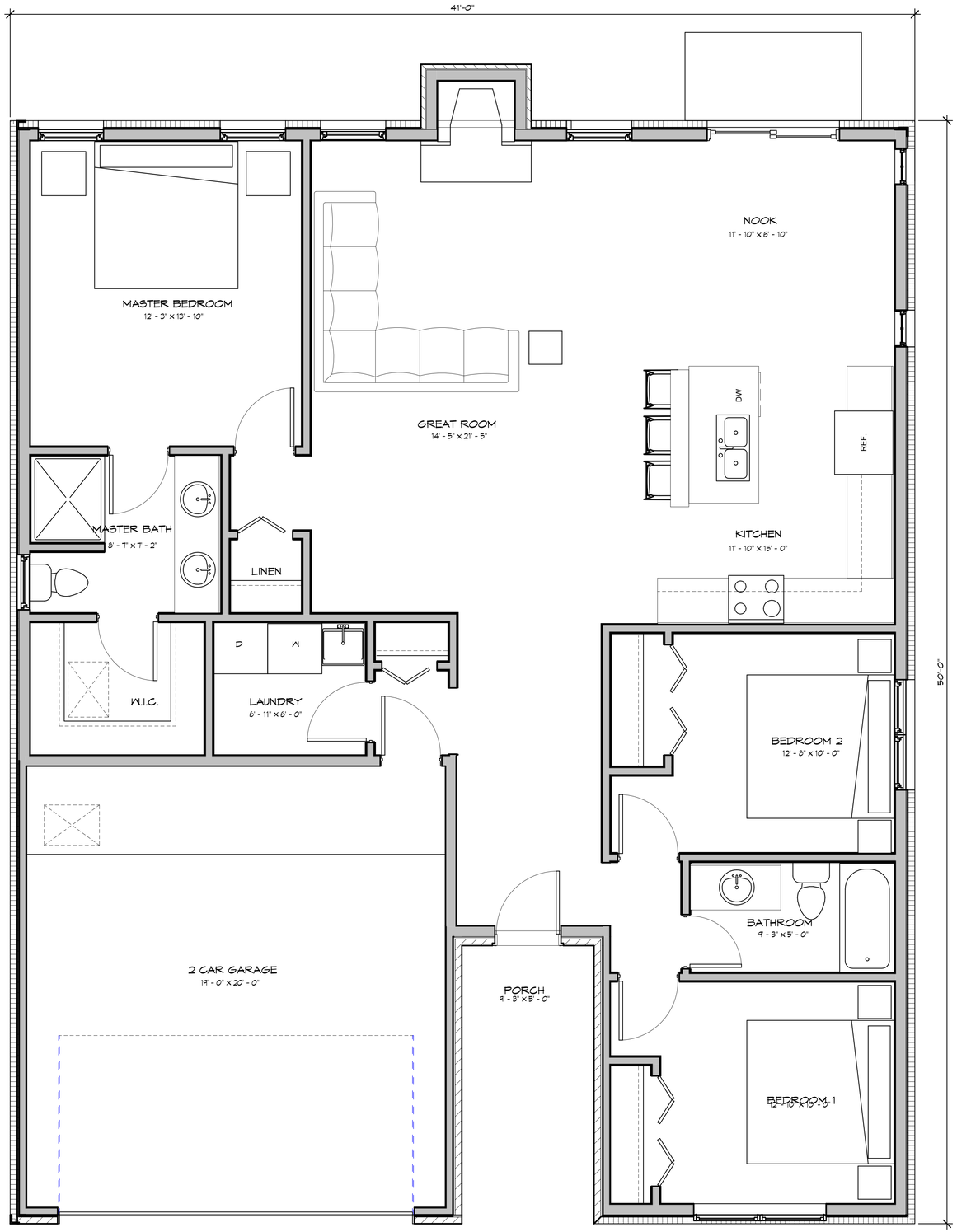
Issued:

Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:
A300

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1301031108
LICENSED ARCHITECT

4/22/2024 2:10:39 PM



FIRST FLOOR PLAN

Scale: 3/8" = 1'-0"

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Client:

GFA Development

Project Title:

VILLAGE OF HASTINGS

Troy, MI

Sheet Title:

FIRST FLOOR UNIT PLAN

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

Issued:

Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:

A100

STATE OF MICHIGAN · ANDREW J. MOISEEV · ARCHITECT · 1001031108 · LICENSED ARCHITECT

4/22/2024 2:25:40 PM

1 FRONT ELEVATION
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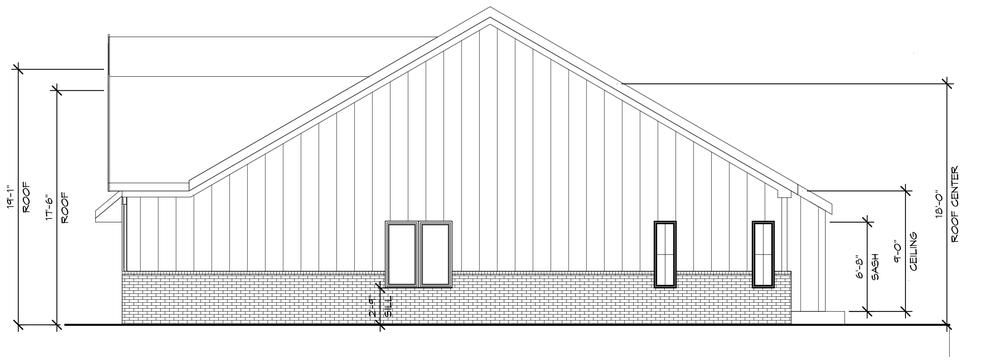

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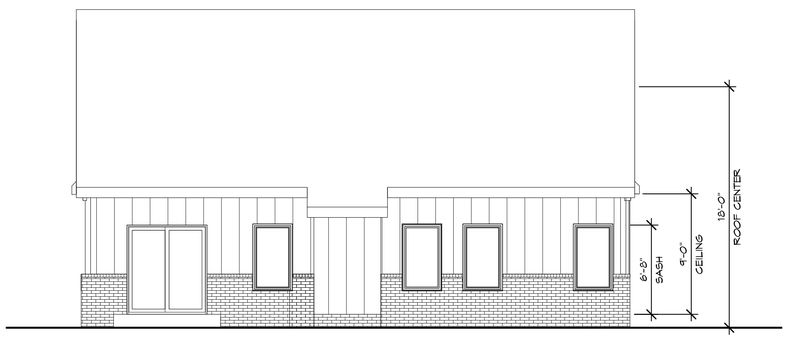

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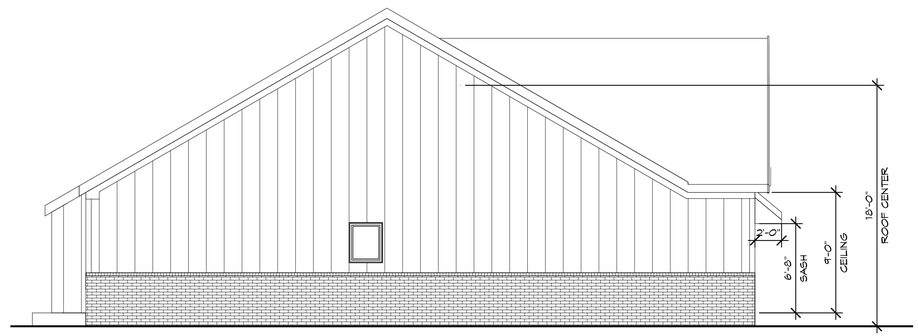

3 LEFT ELEVATION
Scale: 3/16" = 1'-0"

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Client:
GFA Development

Project Title:
VILLAGE OF HASTINGS

Troy, MI

Sheet Title:
ELEVATIONS

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

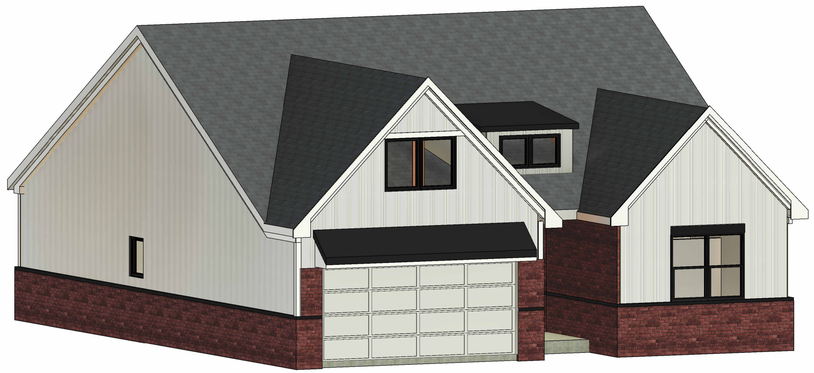
Issued:

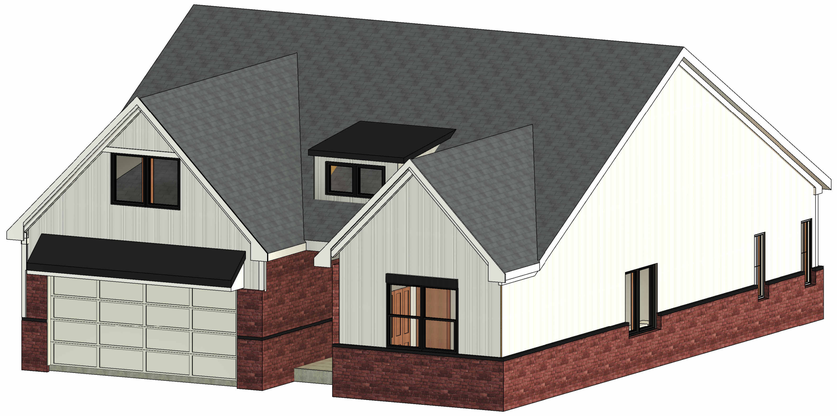
Review	08-04-16
Owner's Review	06-16-23
Owner's Review	11-09-2023

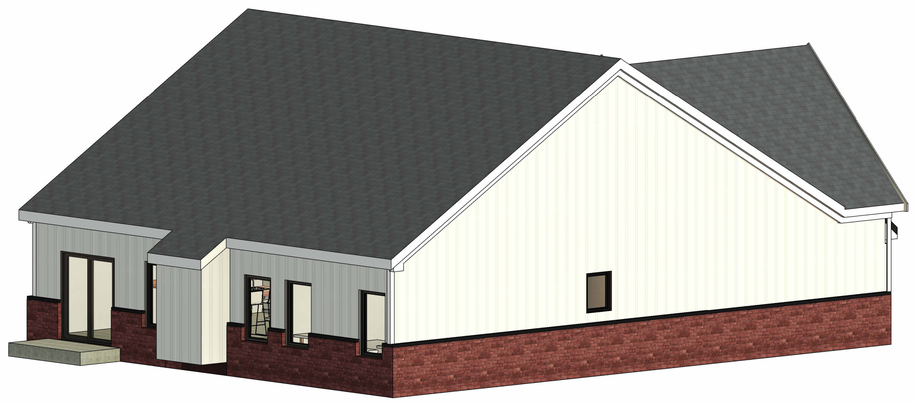
Sheet Number:
A200

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1001031108
LICENSED ARCHITECT

4/22/2024 2:25:43 PM







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Client:

GFA
Development

Project Title:

VILLAGE OF
HASTINGS

Troy, MI

Sheet Title:

3D VIEWS

Project Number: 22312
Drawn By: JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

Issued:

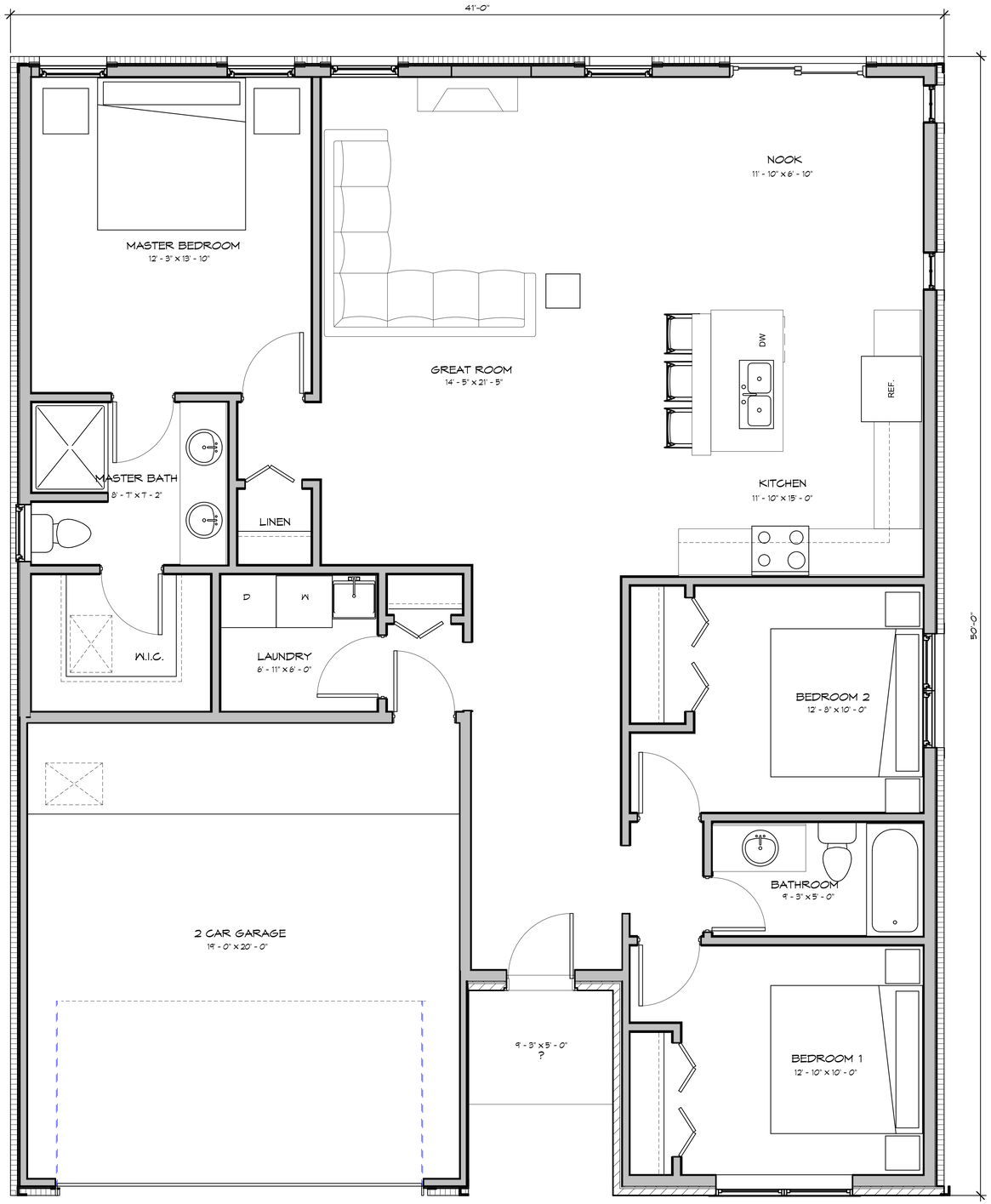
Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:

A300

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1001031108
LICENSED ARCHITECT

4/22/2024 2:25:54 PM



FIRST FLOOR PLAN

Scale: 3/8" = 1'-0"

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Client:

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Project Title:

VILLAGE OF HASTINGS

Troy, MI

Sheet Title:

FIRST FLOOR UNIT PLAN

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

Issued:

Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:

A100

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1001031108
LICENSED ARCHITECT

4/22/2024 2:37:32 PM

1 FRONT ELEVATION
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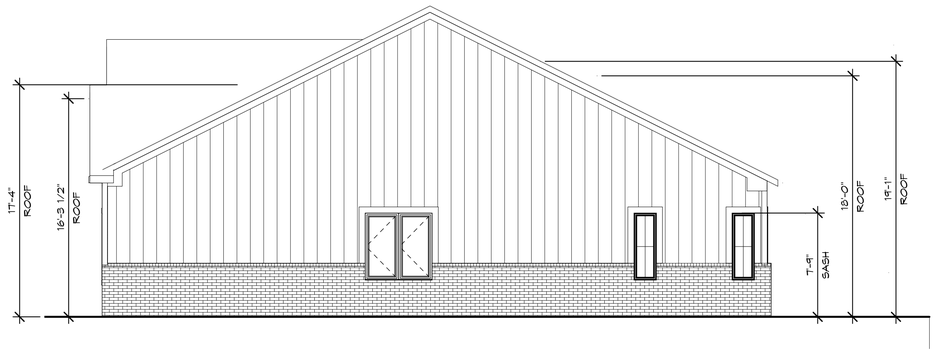

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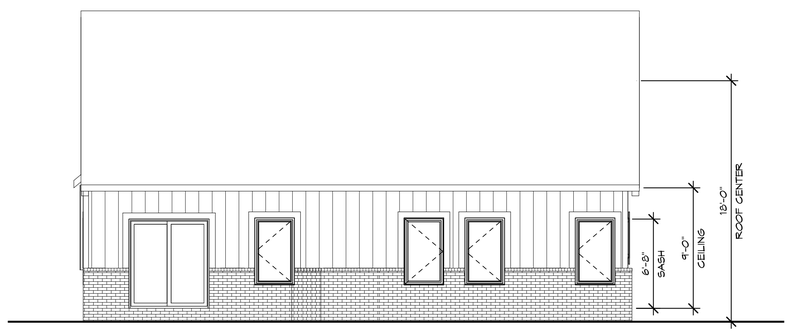

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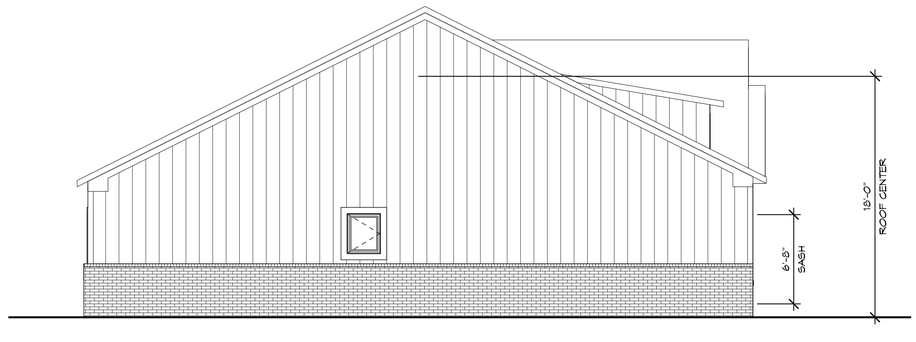

3 LEFT ELEVATION
Scale: 3/16" = 1'-0"

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Client:
GFA
Development

Project Title:
VILLAGE OF
HASTINGS

Troy, MI

Sheet Title:
ELEVATIONS

Project Number: 22312
Drawn By: AJM, JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

Issued:

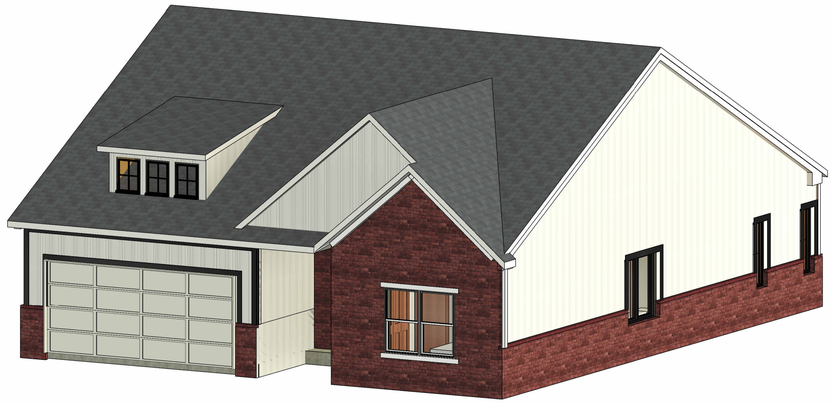
Review	08-04-16
Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:
A200

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1001031108
LICENSED ARCHITECT

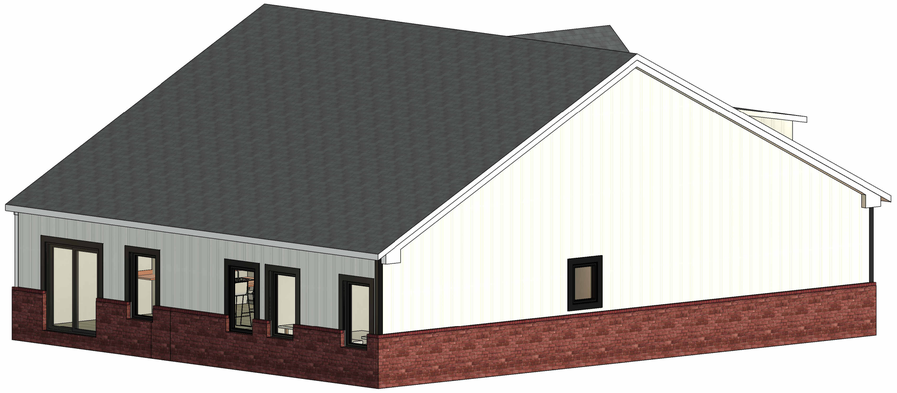
4/22/2024 2:37:35 PM

3D VIEW 1



3D VIEW 2

3D VIEW 3



3D VIEW 4

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Client:

GFA
Development

Project Title:

VILLAGE OF
HASTINGS

Troy, MI

Sheet Title:

3D VIEWS

Project Number: 22312
Drawn By: JS
Checked By: AJM
Approved By: AJM
Date:06-16-2023

Issued:

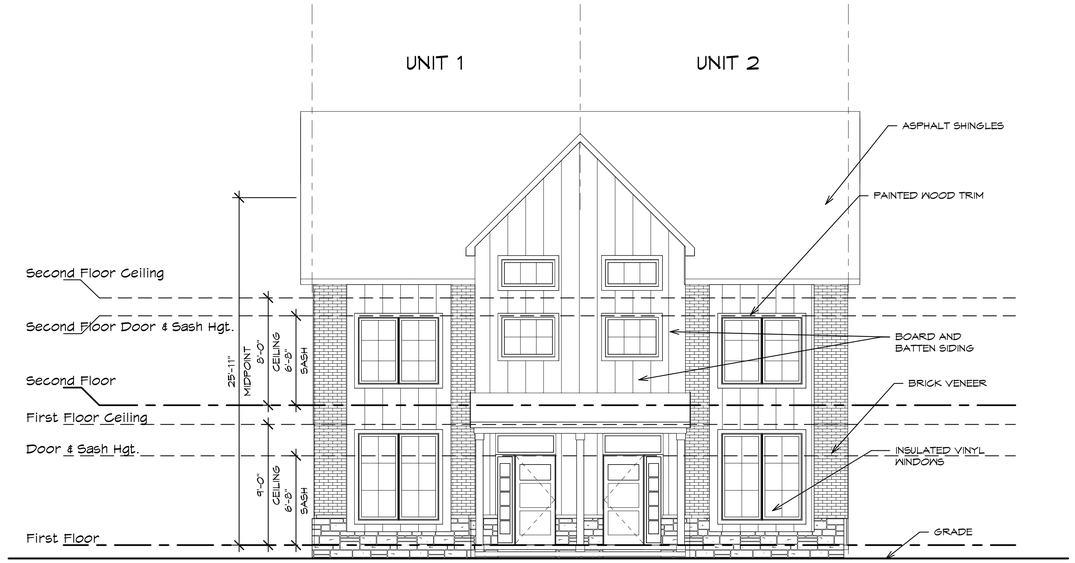
Owner's Review	06-16-23
Owner's Review	11-09-2023

Sheet Number:

A300

STATE OF MICHIGAN
ANDREW J. MOISEEV
ARCHITECT
No. 1001031108
LICENSED ARCHITECT

4/22/2024 2:37:47 PM



1 A101 SOUTH ELEVATION
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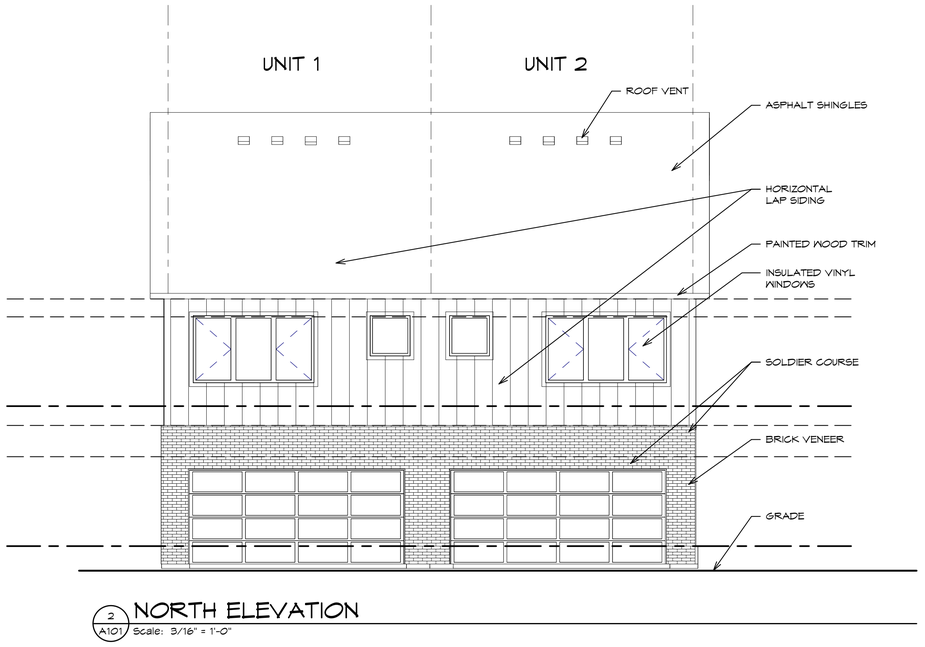

2 A101 NORTH ELEVATION
Scale: 3/16" = 1'-0"

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Client:
2 UNIT TOWNHOUSE

Project Title:
The Village of Hastings

Troy, MI

Sheet Title:
STANDARD NORTH & SOUTH ELEVATION

Project Number: 22312
Drawn By: AJM, JH
Checked By: AJM
Approved By: AJM
Date: 11-03-23

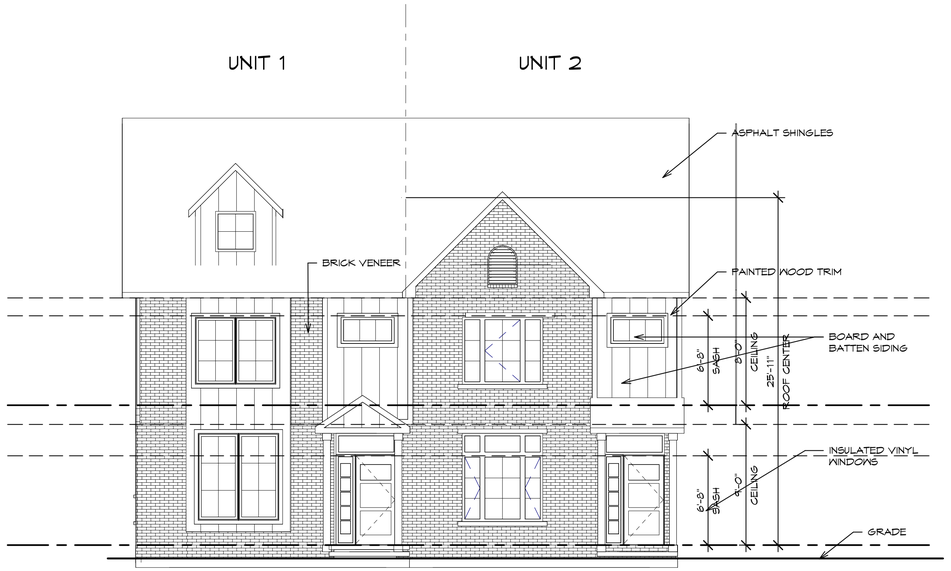
Issued:

Review	08-04-16
Owner's Review	06-29-23
Site Plan Approval	4-30-24

Sheet Number:
A200

PRELIMINARY NOT FOR CONSTRUCTION

11/8/2024 4:35:47 PM



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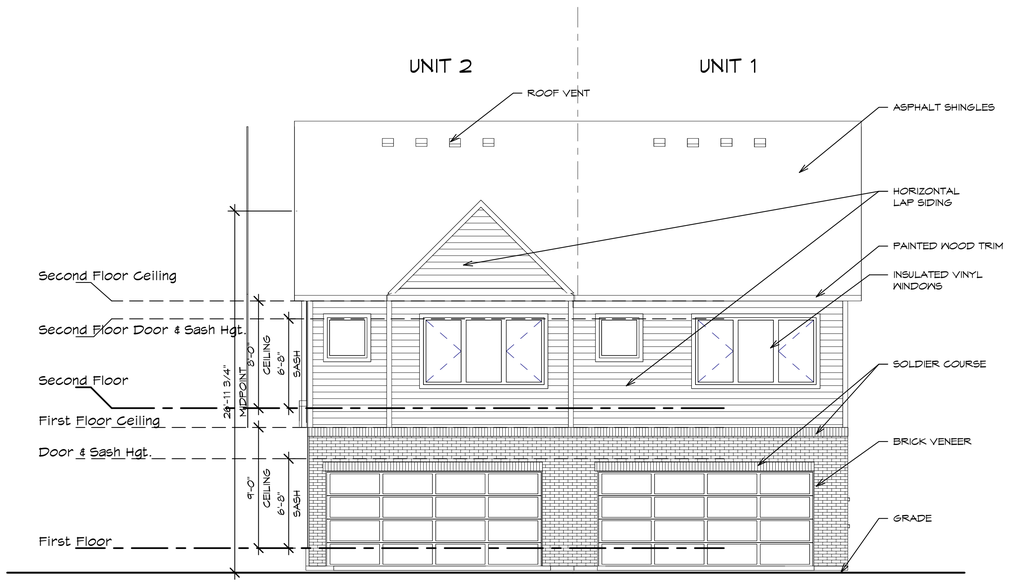

2 A101 NORTH ELEVATION
Scale: 3/16" = 1'-0"

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Client:
2 UNIT TOWNHOUSE

Project Title:
The Village of Hastings

Troy, MI

Sheet Title:
STANDARD NORTH & SOUTH ELEVATION

Project Number: 22312
Drawn By: AJM, JH
Checked By: AJM
Approved By: AJM
Date: 11-03-23

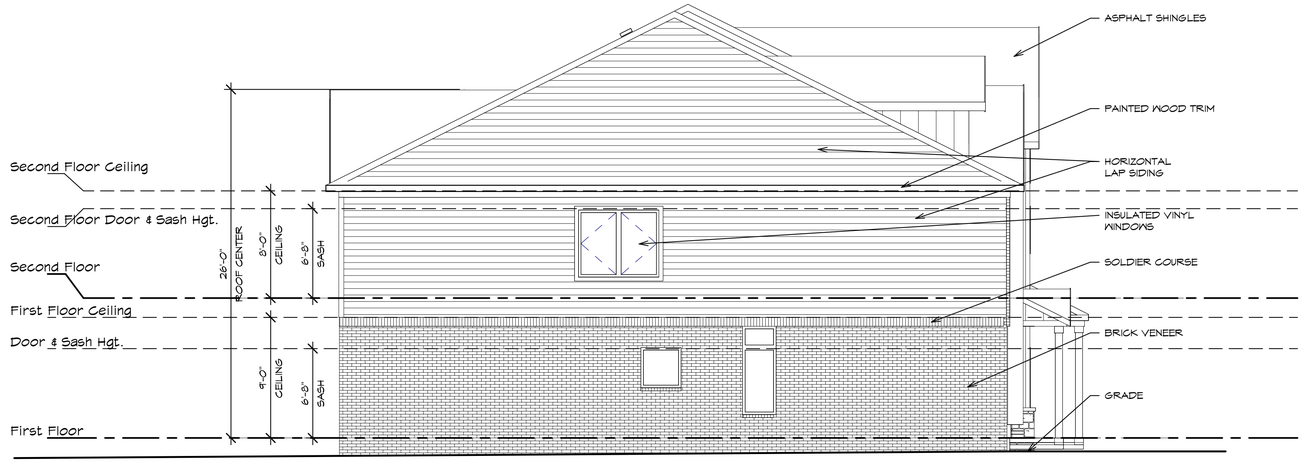
Issued:

Review	08-04-16
Owner's Review	06-29-23
Site Plan Approval	4-30-24

Sheet Number:
A200

PRELIMINARY NOT FOR CONSTRUCTION

11/8/2024 4:35:20 PM



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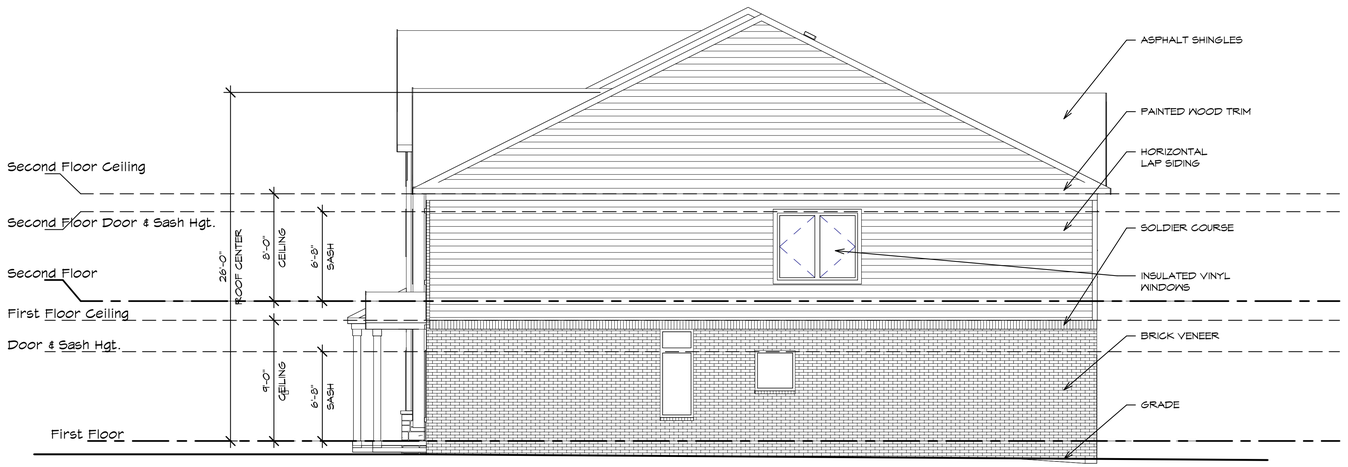

2 A101 EAST ELEVATION
Scale: 3/16" = 1'-0"

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Client:
2 UNIT TOWNHOUSE

Project Title:
The Village of Hastings

Troy, MI

Sheet Title:
STANDARD EAST & WEST ELEVATION

Project Number:22312
Drawn By: AJM,JS
Checked By: JS
Approved By: JS
Date:11-03-23

Issued:

Owner's Review	08-29-23
Site Plan Approval	4-30-24

Sheet Number:
A201

PRELIMINARY NOT FOR CONSTRUCTION

11/8/2024 4:37:12 PM

From:	Brent Savidant
To:	Planning Commission
	Julie Q Dufrane; Jackie Ferencz; bcarlisle@cwaplan.com
Cc:	FW: Conditional Rezone Request Square Lake and Livernois
Subject:	Monday, February 17, 2025 8:31:51 AM
Date:	
Attachments:	image001.png
	image002.png
	image003.png
	image004.png
	image005.png
	image006.png
	PC Letter to Commissioners REV 1 2-16-25.docx

All:

The resident requested that this email be sent to the PC in advance of the packet going out. I was obliging to his request because I believe he is the spokesperson for a number of residents.

I will not be blowing up your inbox with similar emails.

R. Brent Savidant, AICP
Community Development Director
City of Troy
O: 248.524.3366

From: Jeff Williams <savetroycorners@gmail.com>
Sent: Sunday, February 16, 2025 3:44 PM
To: Brent Savidant <SavidantB@troymi.gov>
Cc: Marcia Bossenberger <mkboss131@gmail.com>; Deborah Louzecky <Deb@debrealtor.com>; LEASA WILLIAMS <leasawilliams91@gmail.com>; Ann Coleman <bioannergy@gmail.com>
Subject: Re: Conditional Rezone Request Square Lake and Livernois

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Brent,

Here are a few items that might give the Planning Commissioners some background information for the meeting coming up on February 25th regarding

the Village of Hastings request for a RT Conditional Rezone. Could I please ask that you share this with the Commissioners.

Thank you,
Jeff Williams
159 Telford Dr
HOA Board
248 670 2020

On Wed, Feb 5, 2025 at 2:12 PM Brent Savidant <SavidantB@troymi.gov> wrote:

> See attached updated letter which includes strengthened voluntarily offered conditions.
>
> **R. Brent Savidant, AICP**
> **Community Development Director**
> **City of Troy**
> O: 248.524.3366
>
> ---
>
> **From:** Jeff Williams <savetroycorners@gmail.com>
> **Sent:** Thursday, January 30, 2025 10:04 AM
> **To:** Brent Savidant <SavidantB@troymi.gov>
> **Cc:** Marcia Bossenberger <mkboss131@gmail.com>; Deborah Louzecky <Deb@debrealtor.com>; LEASA WILLIAMS <leasawilliams91@gmail.com>; Ann Coleman <bioannergy@gmail.com>
> **Subject:** Fwd: Conditional Rezone Request Square Lake and Livernois
>
> You don't often get email from savetroycorners@gmail.com. Learn why this is important
>
> **CAUTION:** This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.
>
> Brent,
> I wanted to follow up on an email sent on Tuesday. We are trying to gather as much information as possible regarding the Conditional Rezone request for the Square Lake Rd and Livernois properties.
> Can I pick up or can you send me a copy of the submission from the developer? Most importantly,

what is the zoning designation being requested and the conditions the applicant is offering to the city.
Thanks,
Jeff Williams
159 Telford Dr
248 670 2020

---------- Forwarded message ---------
From: **Jeff Williams** <savetroycorners@gmail.com>
Date: Tue, Jan 28, 2025 at 2:58 PM
Subject: Conditional Rezone Request Square Lake and Livernois
To: <SavidantB@troymi.gov>
Cc: Deborah Louzecky <Deb@debrealtor.com>, Ann Coleman <bioannergy@gmail.com>, Marcia Bossenberger <mkboss131@gmail.com>, LEASA WILLIAMS <leasawilliams91@gmail.com>

Brent,
We are following the new proposed plan for the NE corner of Sq. Lake rd and Livernois. It is a conditional rezone request. Can I pick up or can you send me a copy of the submission from the developer? Most importantly, what is the zoning designation being requested and the conditions the applicant is offering to the city.
Thanks,
Jeff Williams
159 Telford Dr
248 670 2020

Future Development to the East:

A **BIG** concern for the Telford Ridge subdivision neighbors are the two properties to the east of this proposed rezone request. I know it is not part of the agenda, but it really ties into the “bigger future development”.

Our Telford Ridge HOA was told for the past several years, in every single meeting with Gary, that he owns the two properties to the east or has an agreement to purchase them.

Our subdivision’s biggest fear is connecting to a new development or directly connecting to Square Lake rd. **Gary said he would connect our sub to his new development or directly to Square Lake road if our HOA did not support the previous attempts for a PUD rezone.**

It would go a long way towards neighborhood trust and support if Gary would acknowledge in writing or verbally state that he will not try to rezone from R-1B or try to attach a new development to the Telford Ridge subdivision if and when he closes on the two abutting properties to the east.

I have included the exact drawings presented at all our HOA meetings. I want to show that his previous attempts to have the properties rezoned to a PUD, the developer always showed the two abutting properties to the east as part of his bigger plan.

That is why we are concerned that he is not showing the Planning Commissioners the same thing he showed our Telford Ridge HOA.

Plus, if this gets rezoned to an RT, does that set a precedent for all future properties to the east?

Please see Plan B with the two properties to the east being in play.

Community Engagement:

Gary and I had multiple conversations via email (September 2024) after the City Council voted no to a rezone request for a PUD.

There was a request made to see if we could meet to explore other options for the properties, **after the City Council vote**. We were always told that a PUD was the only rezoning available, and we did not support a PUD. **We felt that the City Council ruled in favor of the by-right plan and my neighbors did not**

understand why there should be more discussion on having a higher density of units than what the current R-1B zoning allows.
I explained that in depth to Gary. We all supported the City Council's ruling and believed that staying with R-1B was the decision that serves the community.

We believed the intent for another discussion was to reverse the City Councils ruling and agree to more than 2.2 houses per acre.

The developer also reached out to our “Save Troy Corners” group **after** the City Council denied the PUD rezone request.

He asked for input from the community regarding what we would like by showing us a blank parcel. **We responded with “the by-right is what we would like per the City Council vote”.**

We also posted his request on our “Save Troy Corners” Facebook page for everyone to review **(December 3rd, 2024)**. **There were 18 comments posted**.

We requested Gary to interact with the group to show what he wants to do with the properties. **He did not respond**.

We also posted a drawing from one of the neighbors showing a cool design, that kept the “by-right” zoning but added some nice features. **He did not respond.** The developer’s son, Michael Abitheira, joined our Facebook page **(January 19th 2025)**. We reached out to Michael through Facebook Messenger regarding the development.

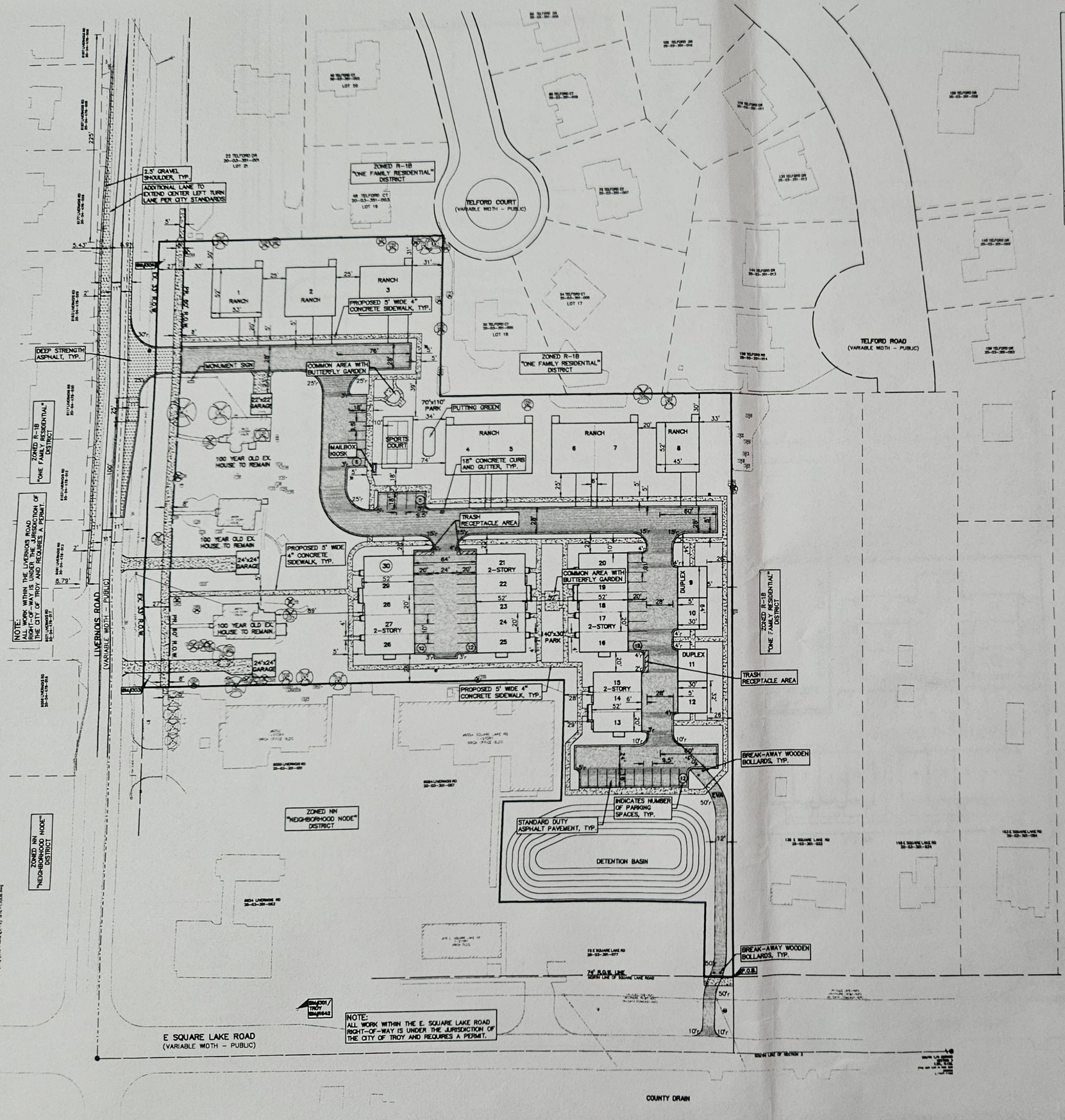
Michael and Gary did not respond to any of the comments or to Messenger.

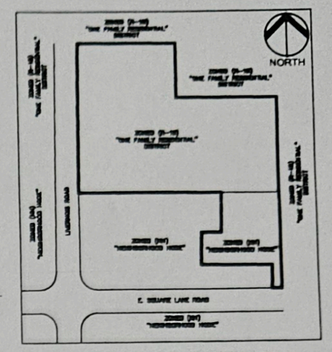
The “Save Troy Corners” page is “public” and we welcome anyone and everyone to join the site.

Here is the “Save Troy Corners” Facebook page.

https://www.facebook.com/groups/363535922814718

******GARY HAS NOT REACHED OUT OR CONTACTED MYSELF OR ANYONE FROM THE SAVE TROY CORNERS TEAM SINCE THIS NEW CONDITIONAL REZONE REQUEST WAS POSTED AND SIGNS WERE PUT ON SQUARE LAKE RD AND ON LIVERNOIS***





ZONING SKETCH
NOT TO SCALE

LEGEND

EXISTING

PROPOSED

SITE DATA:

LOCATION OF PROJECT:
LIVERNOIS ROAD, NORTH OF SQUARE LAKE ROAD

SIZE OF PROPERTY: 8.31 ACRES GROSS, 8.05 ACRES NET

PROPOSED USE OF PROPERTY: THREE (3) EXISTING HOMES TO REMAIN, EIGHT (8) RANCH STYLE SINGLE FAMILY HOMES, EIGHTEEN (18) 2 STORY ATTACHED SINGLE FAMILY HOMES, FOUR (4) SINGLE FAMILY DUPLEX HOMES.

CURRENT ZONING: R-1B, ONE-FAMILY RESIDENTIAL DISTRICT AND (NN) NEIGHBORHOOD NODE Q, SITE TYPE NN-B, BUILDING FORM: C

PROPOSED ZONING: PUD, PLANNED RESIDENTIAL DEVELOPMENT

SURROUNDING PROPERTY DETAILS:

DIRECTION	ZONING	USE
NORTH	R-1B, ONE-FAMILY RESIDENTIAL DISTRICT	SINGLE-FAMILY HOMES
SOUTH	NEIGHBORHOOD NODE Q	COMMERCIAL
EAST	R-1B, ONE-FAMILY RESIDENTIAL DISTRICT	SINGLE-FAMILY HOMES
WEST	NEIGHBORHOOD NODE Q	COMMERCIAL

REQUIRED AND PROVIDED LOT DIMENSIONS:

	REQUIRED:	PROVIDED:
FRONT	10'(NN) & 40'(R-1B) SETBACK	30' SETBACK
REAR	30'(NN) & 45'(R-1B) SETBACK	30' SETBACK
SIDES	N/A(NN) & 12.5(R-1B) SETBACK	16' SETBACK
MAXIMUM HEIGHT	4 STORIES/55'(NN), 2.5 STORIES/30'(R-1B)	30 FEET, 2 STORY
OPEN SPACE	15%(NN)	28%
LOT COVERAGE BY ALL BLDGS	30%(NN)	18%

PROJECT AND SITE DESCRIPTION:
PROPOSED DEVELOPMENT OF A 33-UNIT RESIDENTIAL CONDOMINIUM LOCATED ON LIVERNOIS ROAD NORTH OF SQUARE LAKE ROAD. THE SITE CONSISTS OF 28 ATTACHED UNITS AND 4 DETACHED SINGLE FAMILY UNITS, ACCOMPANYING THE DEVELOPMENT IS THE PRESERVATION OF 3 CENTENNIAL SINGLE FAMILY HOUSES. ACCESS TO ALL UNITS WILL BE VIA CONNECTION TO LIVERNOIS ROAD, WITH TWO OF THE PRESERVED HOUSES HAVING DIRECT ACCESS TO LIVERNOIS, AND AN EMERGENCY VEHICLE ACCESS (EVA) WILL BE PROVIDED TO SQUARE LAKE ROAD. THE PROPOSED RESIDENTIAL USE IS PERMITTED BY-RIGHT IN THE (NN) NEIGHBORHOOD NODE Q DISTRICT AND THE R-1B PORTION OF THE SITE, DUE TO THE MIXED HOUSING PRODUCTS AND MIXED ZONING A PUD IS PROPOSED FOR THIS PROPERTY.

NATURAL RESOURCES:
THE SITE CURRENTLY HAS MODERATE TREE COVER.

FLOODPLAIN:
THE PROPERTY IS NOT LOCATED WITHIN THE FLOOD HAZARD AREA INDICATED BY FLOOD INSURANCE RATE MAP (FIRM) NO. 26125C0532F DATED: SEPTEMBER 29, 2006 (ZONE X).

WETLAND:
PER THE 2022 SEMCOG WETLAND DATA, THE SITE CONTAINS NO WETLANDS.

ACCESS AND CIRCULATION:

VEHICULAR ACCESS AND CIRCULATION:
VEHICULAR ACCESS TO ALL UNITS WILL BE VIA A PRIVATE ROAD OFF OF LIVERNOIS ROAD. THE NEW ROAD WILL HAVE A TWENTY-EIGHT (28) FOOT WIDE ACCESS AGREEMENT. AN EVA WILL BE PROVIDED TO SQUARE LAKE ROAD.

PEDESTRIAN ACCESS AND CIRCULATION:
SIDEWALKS ARE PROVIDED AT BUILDING ENTRANCES TO PARKING FIELDS. THIS WILL BE A WALK FRIENDLY DEVELOPMENT WITH CIRCULATION THROUGHOUT THE DEVELOPMENT WITH CONNECTIONS TO LIVERNOIS ROAD VIA THE EVA.

UTILITIES:
UTILITIES ARE PLACED WITHIN EASEMENTS APPROVED AS TO SIZE AND LOCATION BY THE CITY ENGINEER.

ALL SITES ARE SERVED BY PUBLIC WATER, SANITARY SEWER, STORM WATER AND DETENTION/RETENION SYSTEMS CONSTRUCTED TO CITY STANDARDS, AT THE EXPENSE OF THE DEVELOPER. EASEMENTS OVER THESE SYSTEMS SHALL BE CONVEYED AND RECORDED BEFORE OCCUPANCY PERMITS ARE ISSUED FOR DWELLING UNITS.

100-YEAR DETENTION IS PROPOSED WITH A RESTRICTED OUTLET DISCHARGING THROUGH CITY OF TROY STORM SEWER.

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 25 50 100
SCALE: 1" = 50'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATIONS. NO GUARANTEE IS GIVEN THAT ALL SUCH UTILITIES ARE SHOWN, NOR IS IT GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
GFA DEVELOPMENT, INC.
3361 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E., TROY, MI

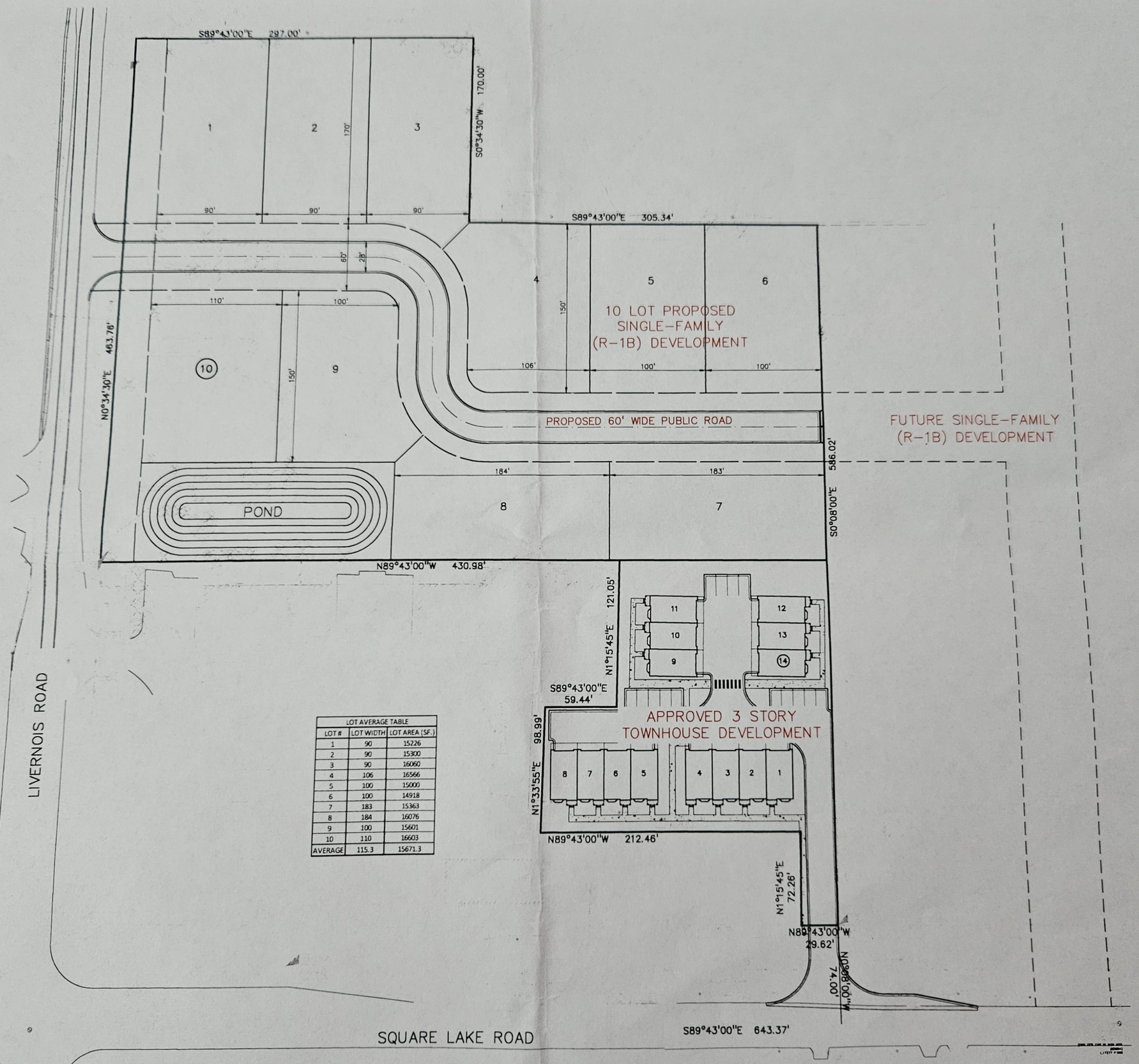
REVISIONS	
REV. PER COMMENTS 6/2/2023	8/
REV. PER COMMENTS 8/24/2023	11/
REV. PER PC COMMENTS 11/28/2023	1/
REV. PER PC COMMENTS 1/9/2024	1/

ORIGINAL ISSUE DATE:
JUNE 1, 2023

DRAWING TITLE
PRELIMINA
SITE PLA

PEA JOB NO.	
P.M.	
DN.	
DES.	
DRAWING NUMBER:	P-2

NOT FOR CONSTRUCTION



LOT AVERAGE TABLE		
LOT #	LOT WIDTH	LOT AREA (SF.)
1	90	15226
2	90	15300
3	90	16060
4	106	16566
5	100	15000
6	100	14918
7	183	15363
8	184	16076
9	100	15601
10	110	16603
AVERAGE	115.3	15671.3

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 20 40 80
SCALE: 1" = 40'

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CLIENT
GFA DEVELOPMENT, INC.
3301 MIRAGE DRIVE
TROY, MI 48083

PROJECT TITLE
THE VILLAGE OF HASTINGS
PART OF THE SW 1/4 OF SECTION 3, T. 02N., R. 11E.,
TROY, MI

REVISIONS	
REV. PER COMMENTS 6/2/2023	8/9/2023
REV. PER COMMENTS 8/24/2023	11/17/2023
REV. PER PC COMMENTS 11/28/2023	12/7/2023

ORIGINAL ISSUE DATE:
JUNE 1, 2023

DRAWING TITLE
PARALLEL PLAN

PEA JOB NO.	2017-009
P.M.	JBT
DN.	KMB
DES.	DSK

DRAWING NUMBER:

NOT FOR CONSTRUCTION PARALLEL

From: Ann Coleman
To: Brent Savidant; Planning
Subject: questions regarding passing lane for Hastings project
Date: Monday, February 17, 2025 8:00:32 PM

CAUTION: This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Brent,

Looking over the map of the proposed Village of Hastings I am deeply concerned about the safety issues of adding a passing lane to southbound Livernois. I am wondering if you can forward my questions to the Planning Commission with the request that they ask the developer these questions during the upcoming Public Hearing.

In speaking with Antonio in Engineering I got clarification on the map in the packet from the planning portal. I learned that approximately 2 feet of land in the front of my house could be allocated to the passing lane. As you can see from the first attached picture, there is less than 2 feet of land before the ditch starts. My yard has significant flooding in the spring and during heavy rains, and the ditches fill to the brim to manage the run off. See other 3 photos. The water on the north side of 6091 drains east towards Livernois Road.

1) Can/has a survey of water runoff be/been done to determine if a passing lane will get flooded?
2) Is the developer prepared to add a culvert if the area of the ditch is needed for the passing lane?
3) ***What is the impact of having a southbound passing lane end just as a left hand turn lane is beginning, when there are 2 more driveways to account for?*** I am concerned that people will view the passing lane as the ability to proceed at normal speed, giving a false sense of safety, when there are 2 driveways that people could potentially be turning left into from northbound traffic, risking a t-bone accident. **Note that in order to turn left into the 6091 driveway from northbound Livernois, the left turn lane at that point is narrower than the width of a car, causing northbound cars to either back up or go onto the right shoulder to pass.** This is a lot of potential congestion!
4) Can the developer make the entrance to the village off Square Lake road to avoid the traffic congestion hazards on Livernois?

Thank you for your service to the city of Troy,
Ann Coleman

flooding northeast corner between houses.JPG

Flooding southeast corner ditch.JPG

BEWARE
OF DOG