Transparency by floor

Level	Wall sf	Glazing sf	Total sf	Transparent
1st	598	191	789	24 %
2nd	378	135	513	26 %

OVERHEAD ROLL-UP COILING DOOR SECTION
TYPICAL FOR ALL GARAGE ENTRIES

PRELIMINARY NOT FOR CONSTRUCTION

J BRADLEY MOORE
& ASSOCIATES, INC.
4844 Jackson Road #150 • Ann Arbor, MI 48103 • (734) 930-1500

Three Oaks Communities
Charlevoix
Auburn Angara Oaks
Exterior Elevation
Building A - South (Garage) Facade

City Review	07.21.23
Revised	01.22.24

Elevation
South (Garage)
Bldg A

JBMA Project No.
222051

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A2.4a

PRELIMINARY NOT FOR CONSTRUCTION

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Three Oaks Communities
Charlevoix
Auburn Flats
Exterior Elevation
Buildings B, C - South (Garage) Facade

City Review	07.21.23

Elevation
South (Garage)
Bldgs B, C

JBMA Project No.
222051

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A2.4bc

Transparency by floor

Level	Wall sf	Glazing sf	Total sf	Transparent
1st	587	202	789	26 %
2nd	378	135	513	26 %

CHARLEVOIX - AUBURN
STREET END ELEVATION
BUILDIGN D - SOUTH FACADE
SCALE 1/4" = 1'-0"

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& ASSOCIATES, INC.
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Three Oaks Communities
Charlevoix
Auburn Flats
Exterior Elevation
Building D - South (Street) Facade

City Review	07..23

Elevation
South (Street)
Bldg D

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A2.4d

Transparency by floor

Level	Wall sf	Glazing sf	Total sf	Transparent
1st	587	202	789	26 %
2nd	378	135	513	26 %

CHARLEVOIX - AUBURN
STREET ELEVATION
BUILDING E - SOUTH FACADE
SCALE 1/4" = 1'-0"

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Three Oaks Communities
Charlevoix
Auburn Flats
Exterior Elevation
Building E - South (Street) Facade

City Review	07.21.23

Elevation
South (Street)
Bldg E

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A2.4e

AUBURN ANGARA OAKS FARMSTAND AND GREENHOUSE

Code Analysis summary, taged to Planning Review comments. See Architectural sheet T1.2 for complete information

Project Address:
Auburn Anagra Oaks Development - Produce Sales Market Building and Greenhouse.
3046 Anagra Drive
Rochester Hills, Michigan 48309
Description of Work:

Proposed new one-story Market building for fresh produce sales
and attached agricultural greenhouse for produce production.

Reference Standards:

Michigan Building Code	(2015)	ICC/ANSI A117.1 and Michigan Barrier Free Design Law	(2009)
Internatonal Energy Code	(2015)	International Fire Code	(2015)
ASHRAE 90.1	(2013)	NFPA 13 - Fire Sprinkler Systems	(2013)
Michigan Mechnical Code	(2015)	NFPA 72 - Fire Alarm Code	(2013)
Michigan Plumbing Code	(2015)	Michigan Electrical Code (IEC + Part 8 State amendments)	(2017)

1 Mercantile (Retail market space for produce sales) Use Group M
Utility (Agricultrual greenhouse for production of fresh produce) Use Group U

2a Unseparated Mixed Use: Per Sect. 508.3, most restrictive allowances shall apply to the entire building.

3 Type of Construction: 5B - (1) stories above grade on slab-on-grade

ALLOWABLE HEIGHT and BUILDING AREAS (per TABLES 504.3, 504.4 & 506.2):

ALLOWABLE HEIGHT:

4

	NOT sprinkler system equipped*	
Use Group:	Height (Feet)	Height (Stories)
M (Mercantile) - Type 5B constr'n*	40 feet	1 stories
U (Greenhouse) - Type 5B constr'n*	40 feet	2 stories
ACTUAL building height in Feet/Stories	17-8 1/2"	1 Story

*no sprinkler system required, per Section 903.2

ALLOWABLE AREA SUMMARY (per story):

5

Floor (Use Groups):	Max. Allowed (sf)	Provided (sf)
M (Mercantile) - Type 5B constr'n*	9,000	476
U (Greenhouse) - Type 5B constr'n*	5,500	801
TOTAL ACTUAL BLDG. AREA (unseparated)	9,000	1,277

*no sprinkler system required, per Section 903.2

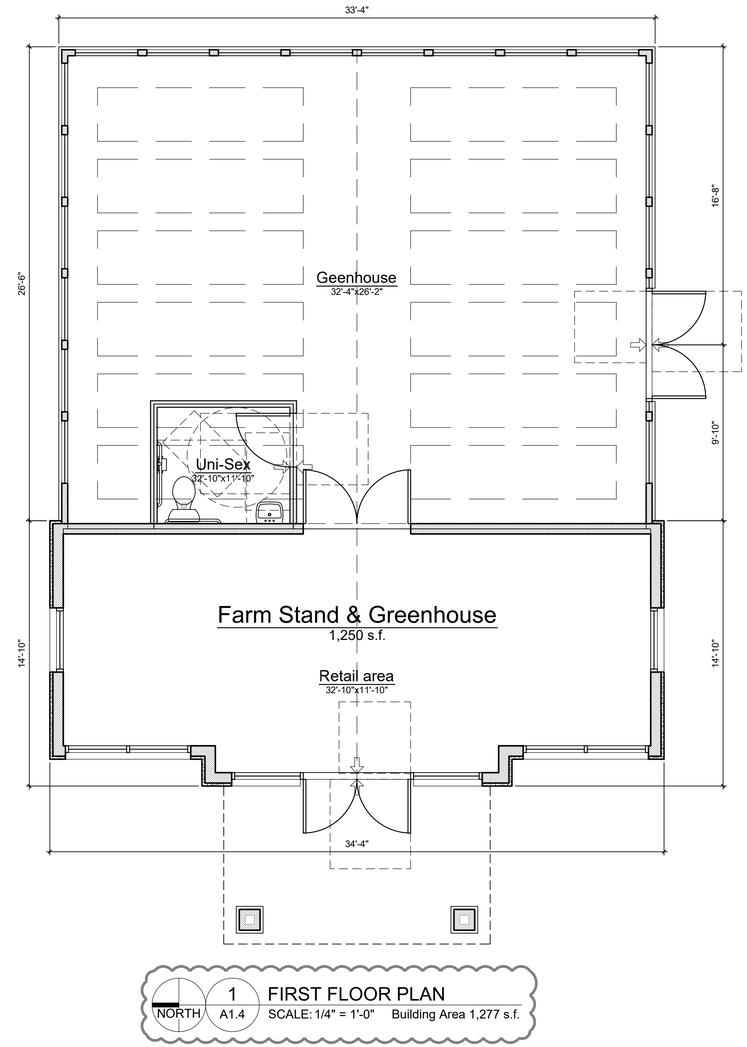
6 CHAPTER 9 Fire Protection Systems

(903)	Automatic Sprinkler System Fully Sprinkled	Yes ___	No X
	NFPA 13 or 13R	13 ___	13R n/a
(905)	Standpipe System *	Yes ___	No X
(907)	Alarm System	Yes ___	No X
	Smoke Control System	Yes ___	No X
	Fire Control Room	Yes ___	No X

7 Separation of multiple buildings on site per Sect. 503.1.2, 602

7i Exterior Rating based on Fire Separation Distance per Table 602

	Fire Sep'n Dist. (ft)	Req'd Rating	UL Listing and Notes
North	10' or more	0 hr.	n/a
East	10' or more	0 hr.	n/a
South	10' or more	0 hr.	n/a
West	10' or more	0 hr.	n/a



1 FIRST FLOOR PLAN
NORTH A1.4 SCALE: 1/4" = 1'-0" Building Area 1,277 s.f.

PRELIMINARY NOT FOR CONSTRUCTION

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Three Oaks Communities
Charlevoix
Auburn Angara Oaks
Floor Plan
Farm Stand & Greenhouse

City Review	07.21.23
Revised	01.22.24

Floor Plan
Farm Stand & Greenhouse

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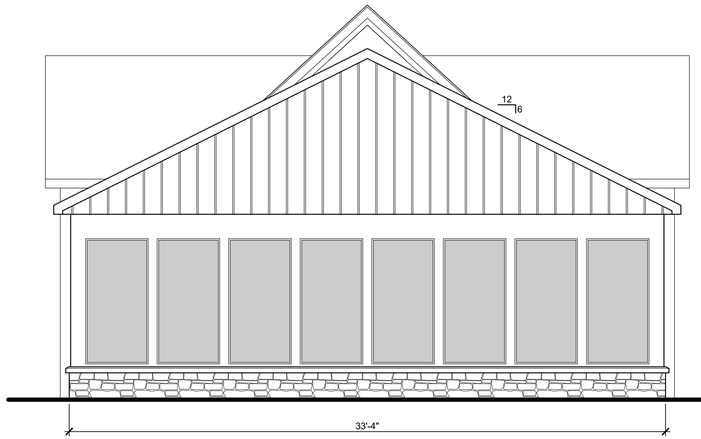
A1.4f



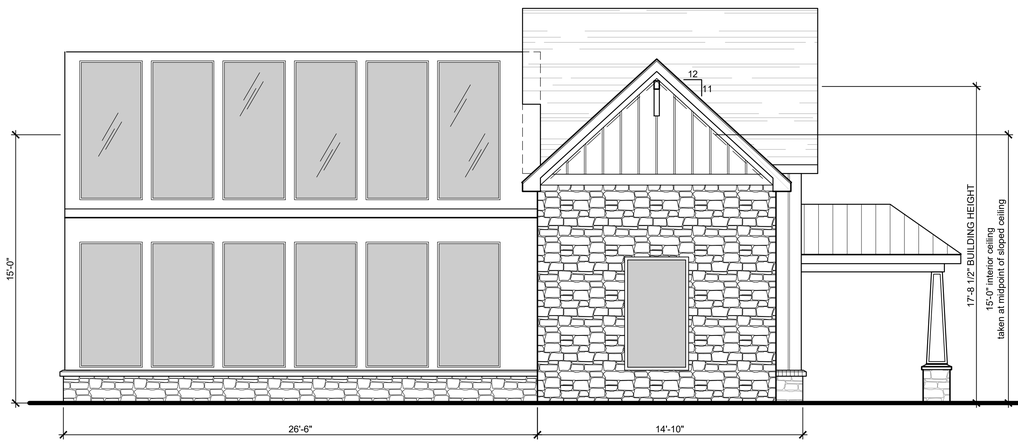
East Rear facade
Greenhouse

201 SF wall
158 SF glazing = 79%

South Side facade
Retail area

247 SF Wall
120 SF Glazing = 49%

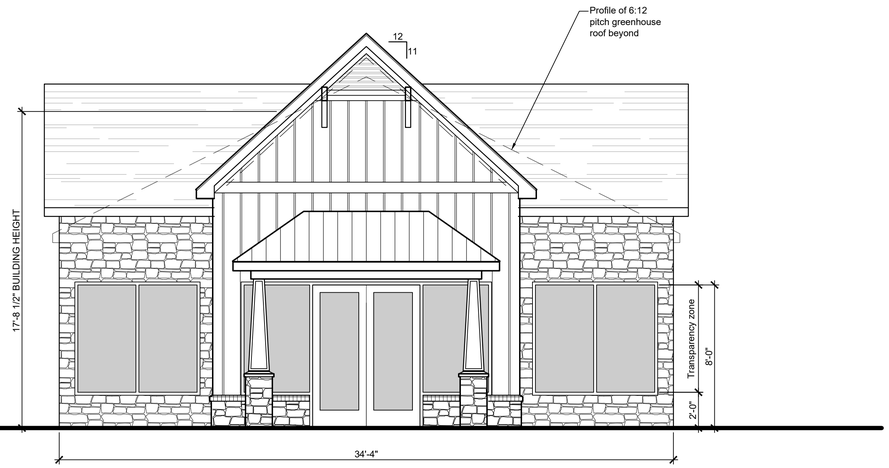
South Side facade
Greenhouse



North Side facade
Greenhouse

247 SF Wall
138 SF Glazing = 56%

North Side facade
Retail area



West Front facade
Retail area

206 SF Wall
146 SF Glazing = 71%
Streetside Minimum req'd = 70%

Wall and glazing areas are measured from 2' to 8' above grade to determine transparency

Farm Stand/Greenhouse
Auburn Angara site
04.25.23

Scale 1/4"=1'-0"

0 1 2 4 8 16

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Three Oaks Communities
Charlevoix
Auburn Flats
Exterior Elevations
Building F

City Review	07.21.23

Elevations
Bldg F

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222051

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A2.5f

AUBURN ANGARA OAKS
NT ROWHOUSES
FRONT ELEVATION

Code Analysis summary, taged to Planning Review comments. See Architectural sheet T1.2 for complete information

Project Address:
Auburn Anagra Oaks Development - Rowhouse-style Multi-Family Building.
3046 Anagra Drive
Rochester Hills, Michigan 48309

Description of Work:
Proposed new 5 unit, residiential apartment (condominium) building.

Reference Standards:

Michigan Building Code	(2015)	ICC/ANSI A117.1 and Michigan Barrier Free Design Law		(2009)
Internatonal Energy Code	(2015)	International Fire Code		(2015)
ASHRAE 90.1	(2013)	NFPA 13 - Fire Sprinkler Systems		(2013)
Michigan Mechnical Code	(2015)	NFPA 72 - Fire Alarm Code		(2013)
Michigan Plumbing Code	(2018)	Michigan Electrical Code (IEC + Part 8 State amendments)		(2017)

1 — Residential (Primary use - dwelling units/ accessory spaces) — Use Group R-2
Storage (Low-hazard storage / parking garage) — Use Group S-2

2a — Separated Mixed Use: Per Sect. 508.4, requires min. 1 hour fire separation between S and R uses (in building w/ 903.3.1.1 [full NFPA-13] compliant sprinkler system)

3 — Type of Construction: 5B - (2) stories above grade w/ (1) story below grade garage

ALLOWABLE HEIGHT and BUILDING AREAS (per TABLES 504.3, 504.4 & 506.2):

4 — ALLOWABLE HEIGHT:

	Sprinkler system equipped*	
Use Group:	Height (Feet)	Height (Stories)
S-2 (Parking garage) @ Type 5B constr'n	60 feet	3 stories
R-2 (Permanent dwelling) @ Type 5B constr'n	60 feet	3 stories
ACTUAL building height in Feet/Stories	27'-9"	2 Stories

*NFPA 13 complying with Section 903.3.1.1(and **NOT** NFPA13R 903.3.1.2)

5 — ALLOWABLE BUILDING AREA (per story):

Floor (Use Groups):	Max. Allowed* (sf)	Provided (sf)
Basement (Garage) Level: (S-2)	40,500	4,315
First Floor: (S-2)	21,000	6,782
Second Floor: (R-2)	21,000	7,347
TOTAL ACTUAL BLDG. AREA		18,444

*NFPA 13 complying with Section 903.3.1.1(and **NOT** NFPA13R 903.3.1.2)

6 — CHAPTER 9 Fire Protection Systems

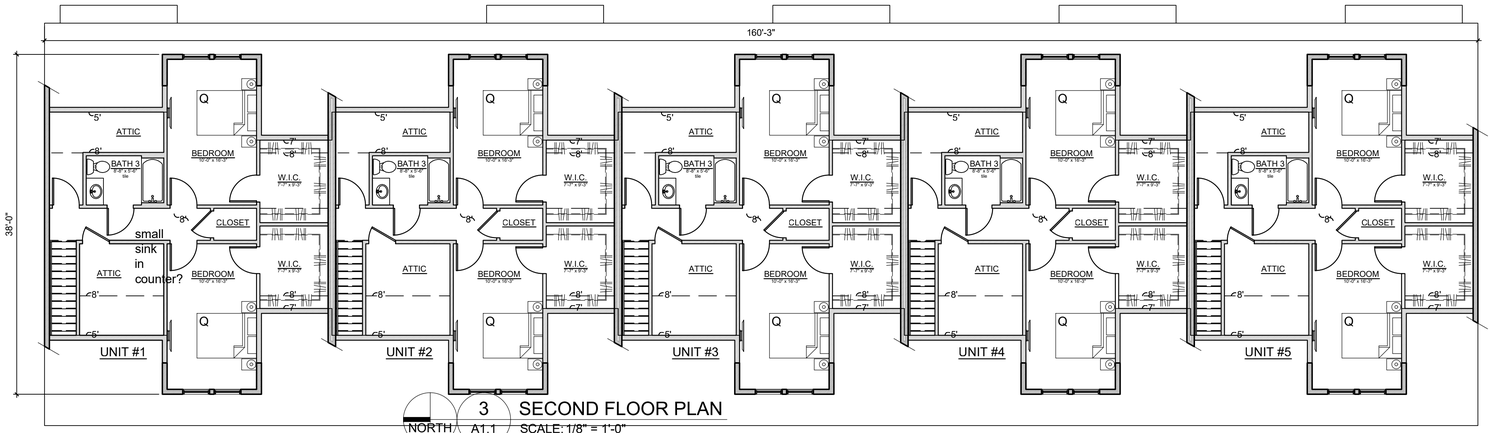
(903)	Automatic Sprinkler System Fully Sprinkled	Yes	X	No	
	NFPA 13 or 13R	13	X	13R	
(905)	Standpipe System *	Yes		No	X
(907)	Alarm System	Yes	X	No	
	Smoke Control System	Yes		No	X
	Fire Control Room	Yes		No	X

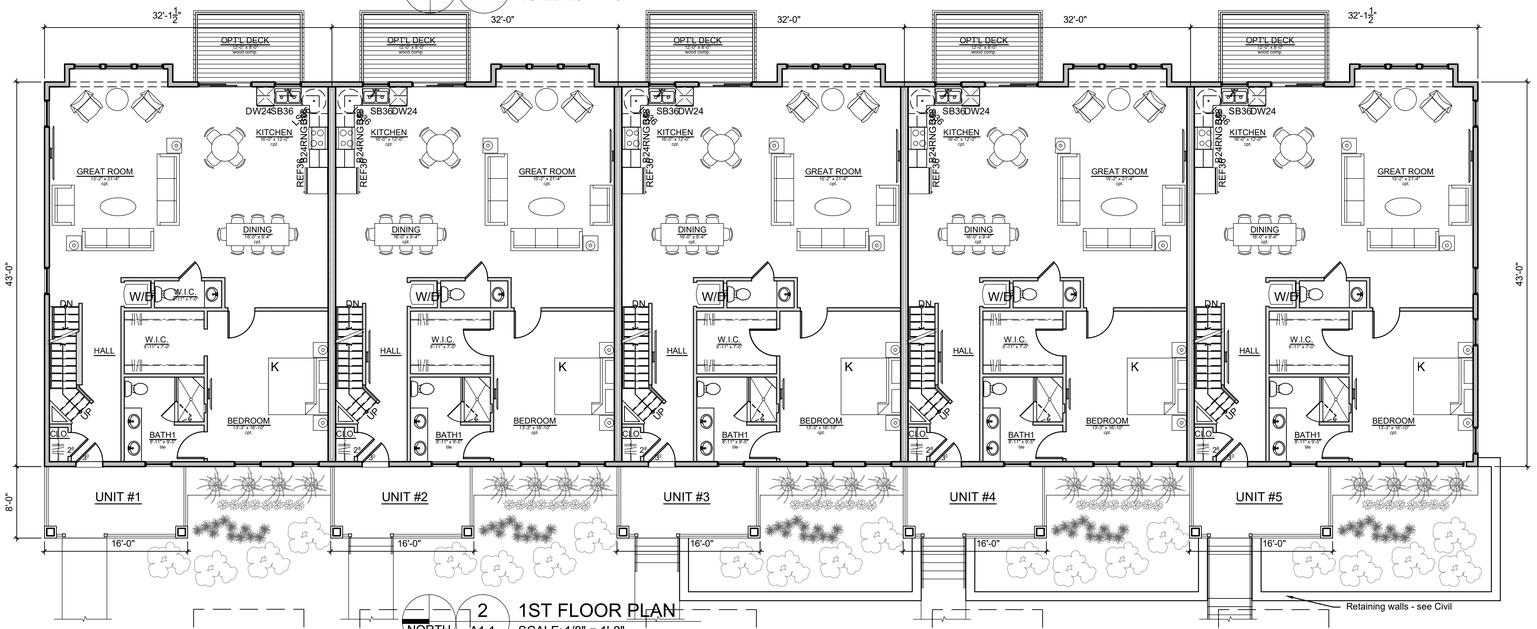
* highest floor is 21'-1" = less than 30' above lowest fire vehicle access

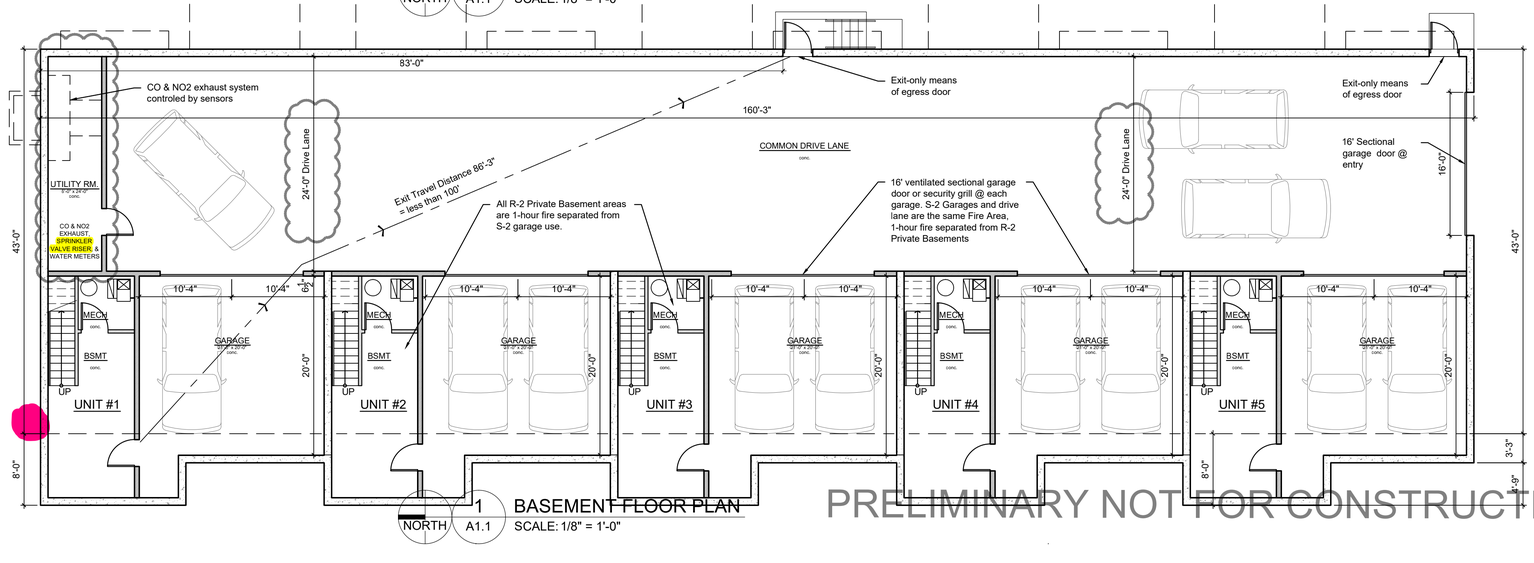
7 — Separation of multiple buildings on site per Sect. 503.1.2, 602

7i — Exterior Rating based on Fire Separation Distance per Table 602

	Fire Sep'n Dist. (ft)	Req'd Rating	UL Listing and Notes
North	10' or more	0 hr.	n/a
East	10' or more	0 hr.	n/a
South	10' or more	0 hr.	n/a
West	10' or more	0 hr.	n/a







PRELIMINARY NOT FOR CONSTRUCTION

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Three Oaks Communities
Rowhouse Style Condominiums
Auburn Angara Oaks
Overall Floor Plans
Units 1-5

Review	01.22.24
Revised	02.21.24

Overall
Floor Plans
Units 1-5

JBMA Project No.
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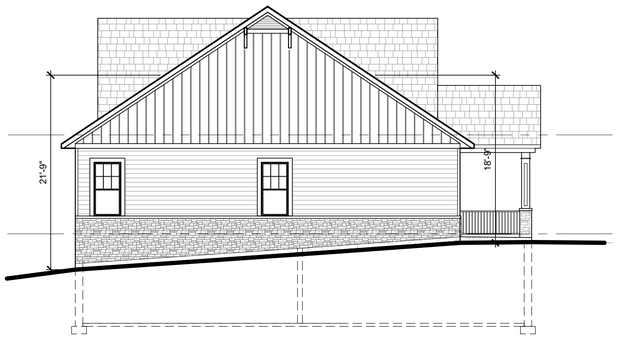
A1.1

4 A2.1 WEST (REAR) ELEVATION
SCALE: 1/8" = 1'-0"



3 A2.1 NORTH (SIDE) ELEVATION
SCALE: 1/8" = 1'-0"

2 A2.1 SOUTH (SIDE) ELEVATION
SCALE: 1/8" = 1'-0"

Transparency by floor

Level	Wall sf	Glazing sf	Total sf	Transparent
1st	3050	1088	4138	26 %
2nd	494	210	704	30 %

Basment wall:
1,365 sf. exposed 3,543 s.f. total = 39% above grade.
The above grade wall area of basement is less than than 50%, therefore the building is considered a 2 story building per City of Rochester Hills Zoning Code definitions of story, including basements.

1 A2.1 EAST (FRONT) ELEVATION
SCALE: 1/8" = 1'-0"

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Three Oaks Communities
Rowhouse Style Condominiums
Auburn Angara Oaks
Exterior Elevations

Review	01.22.24
Reviewed	02.21.24

Exterior Elevations

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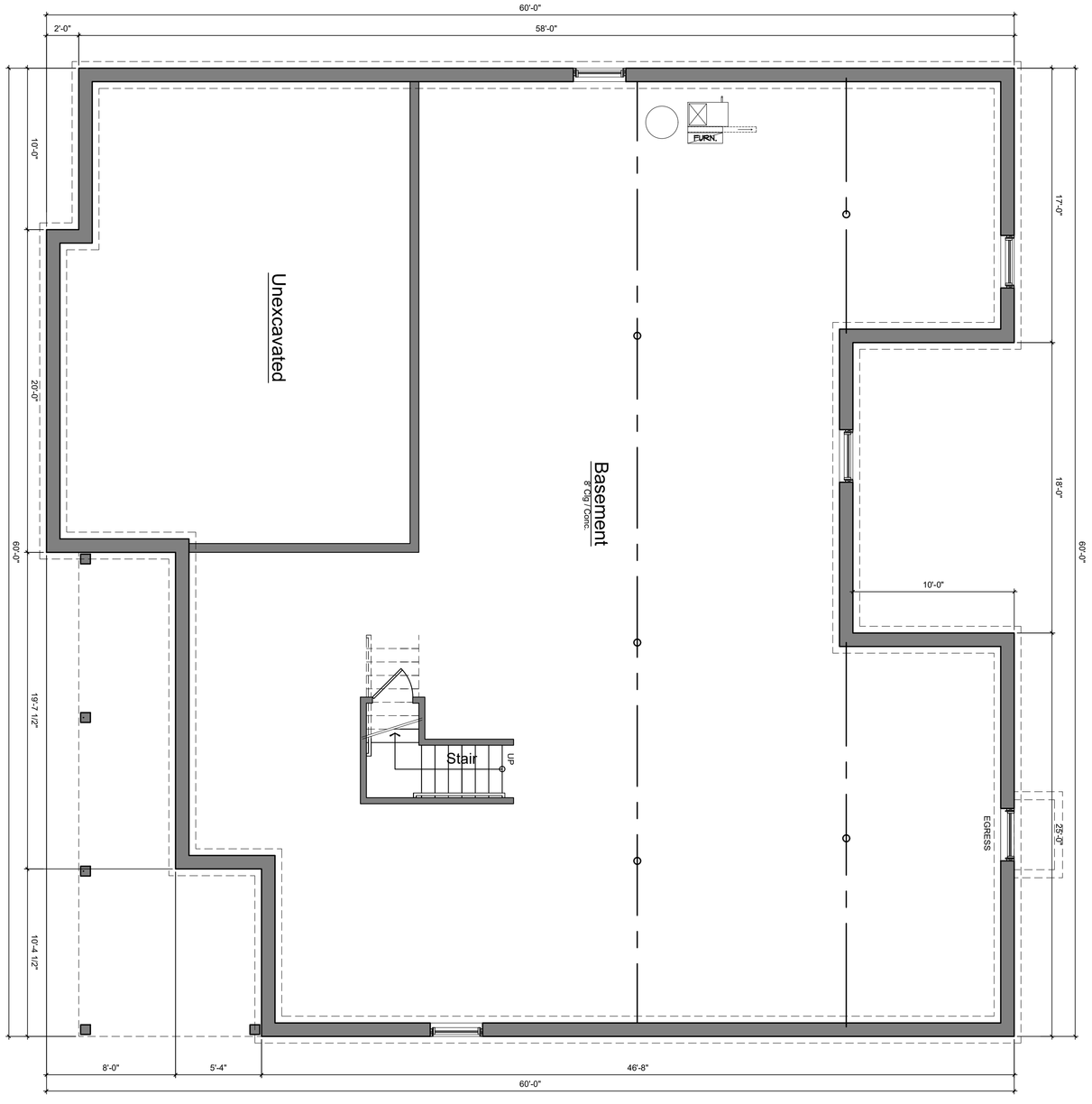
A2.1

MICHIGAN PLAN
NT HOME
ALTERNATE ELEVATION 3

PRELIMINARY NOT FOR CONSTRUCTION



1 A1.0 Basement Floor Plan - Michigan - Flat

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

A1.0a

Basement
Floor Plan
Flat Fndn

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Marketing 03.31.23

Three Oaks Commuties

MICHIGAN

Flat Foundation
Basement Floor Plan

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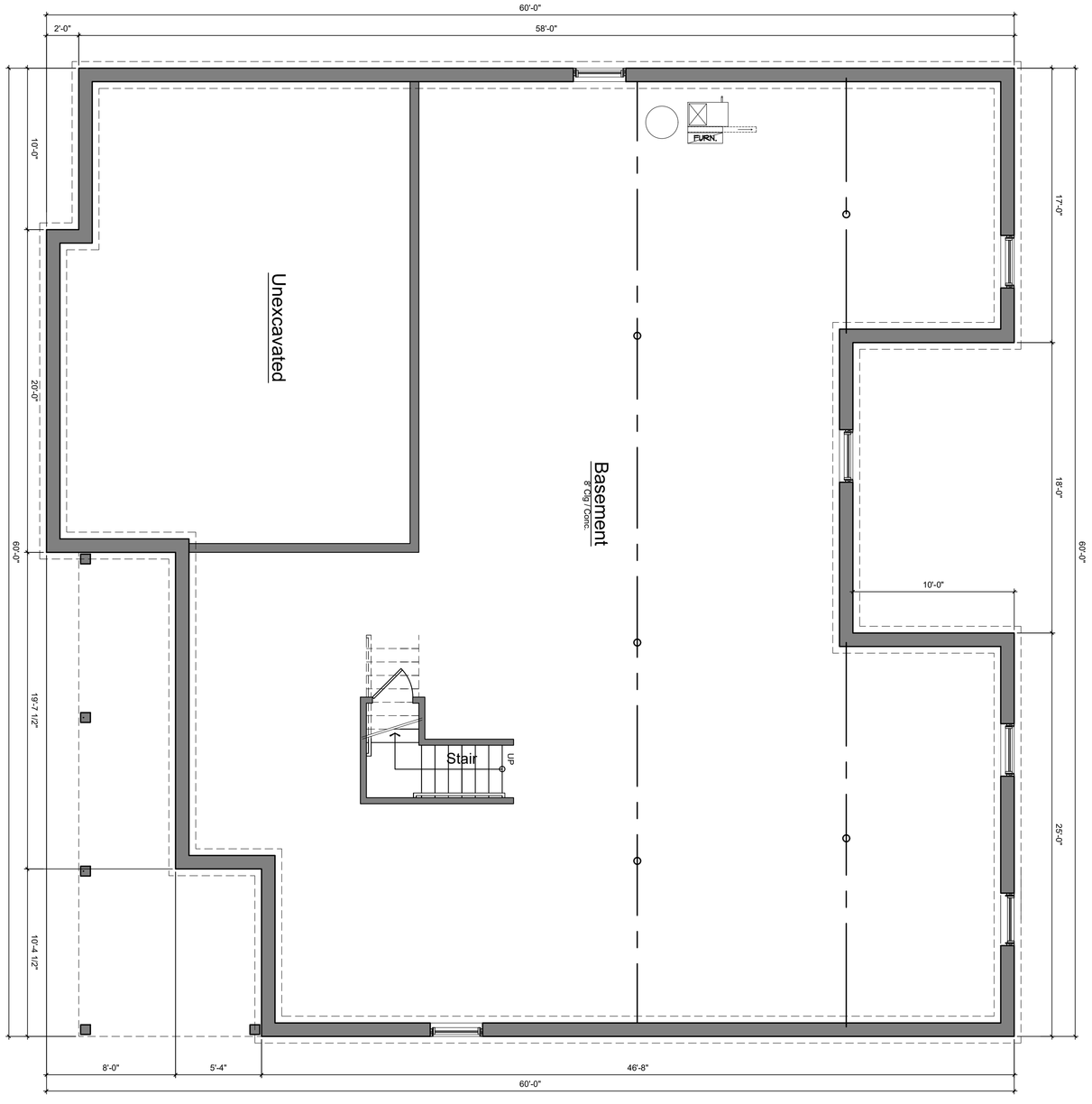

1 A1.0 SCALE: 1/4" = 1'-0"

Basement Floor Plan - Michigan - Daylight

A1.0b

Basement
Floor Plan
Daylight Fndn

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Marketing	03.31.23

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MICHIGAN

Daylight Foundation
Basement Floor Plan

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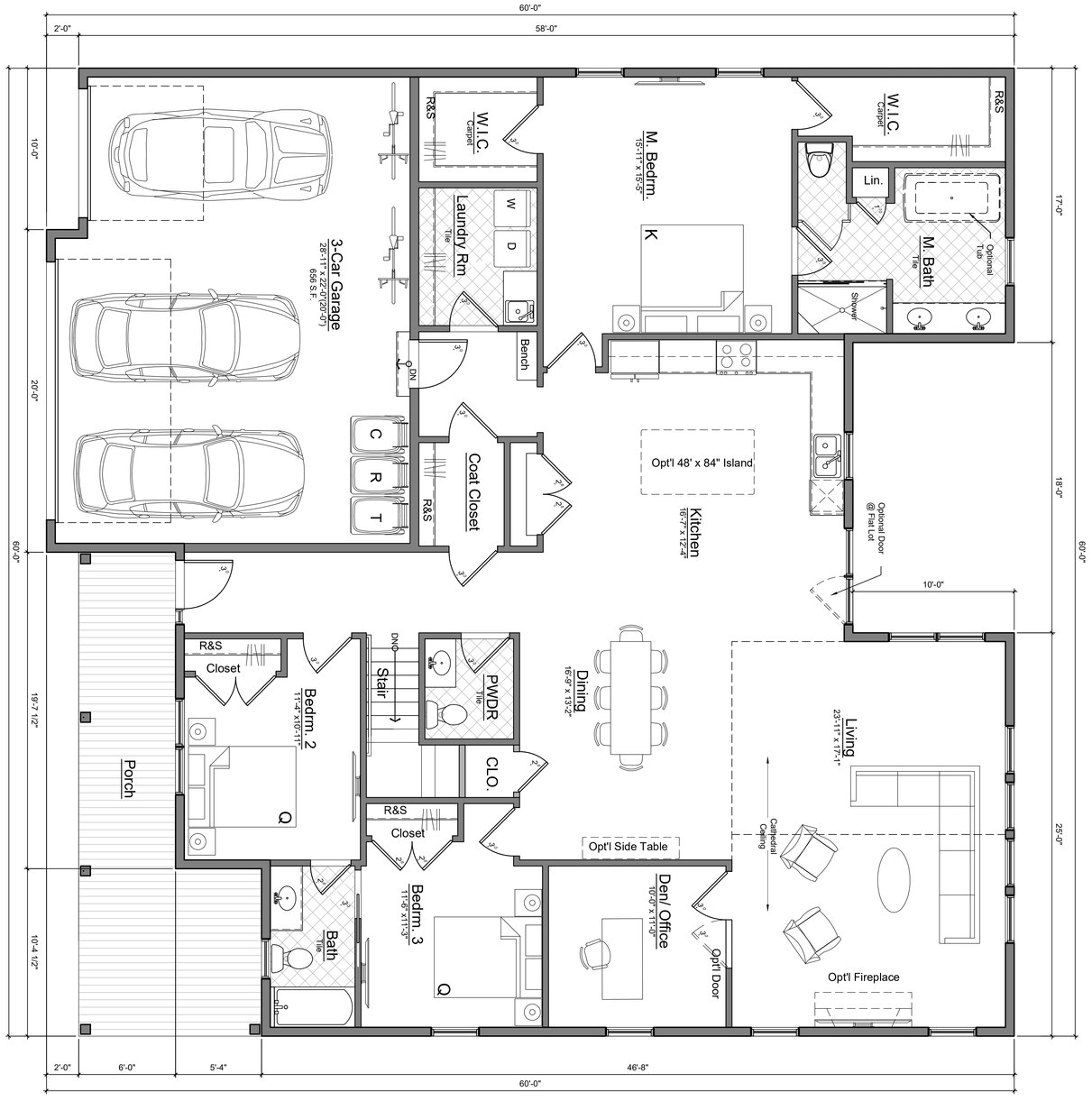

1 A1.1 First Floor Plan - Michigan - 1-Story

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

Gross: 2,449 S.F.

A1.1a

First Floor Plan

1- Story

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1- Story Model
First Floor Plan

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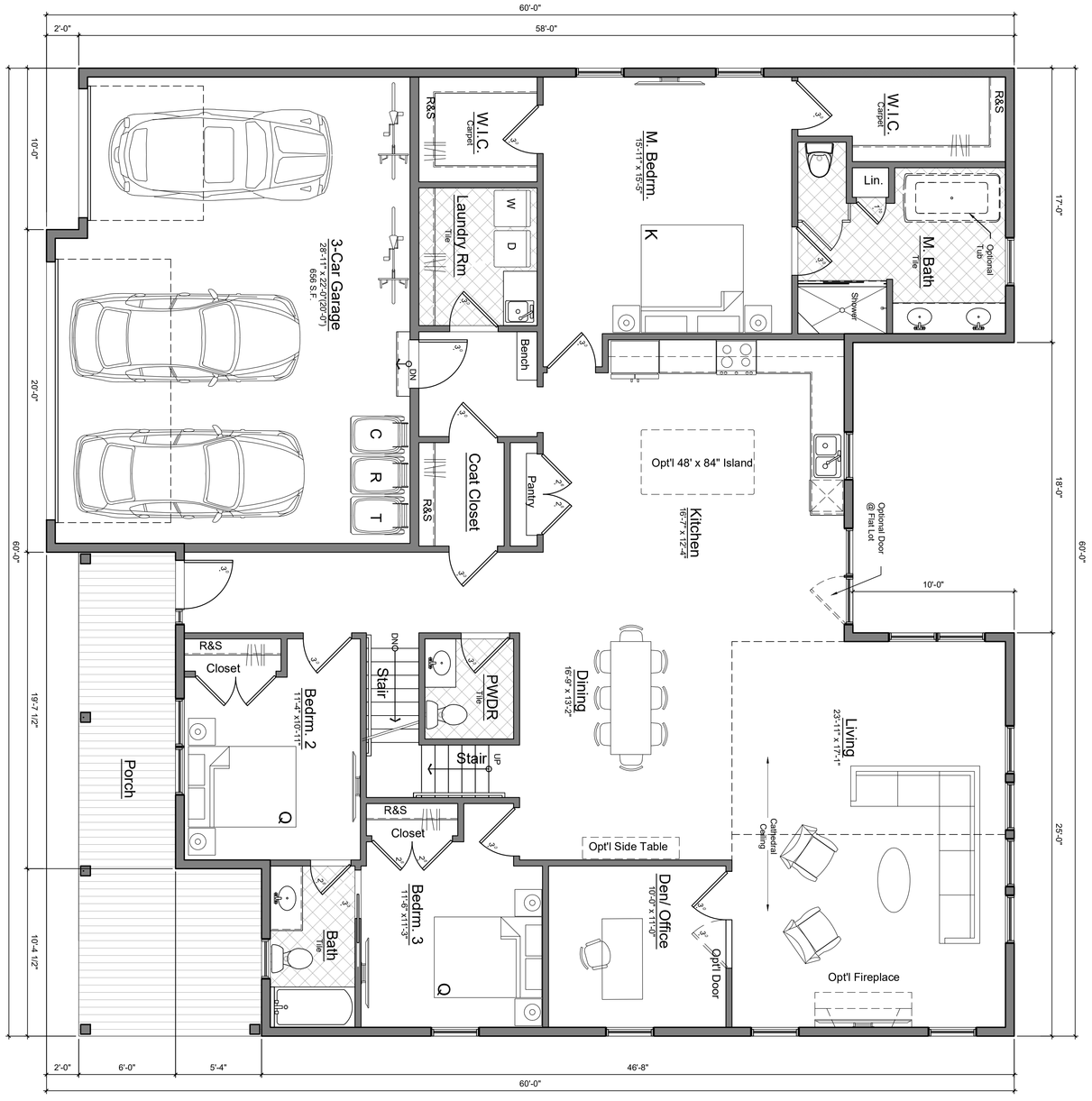

1 A1.1 First Floor Plan - Michigan - 2-Story

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

Gross: 2,449 S.F.

A1.1b

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First Floor Plan

2- Story

Marketing 03.31.23

Three Oaks Commuties

MICHIGAN

2- Story Model
First Floor Plan

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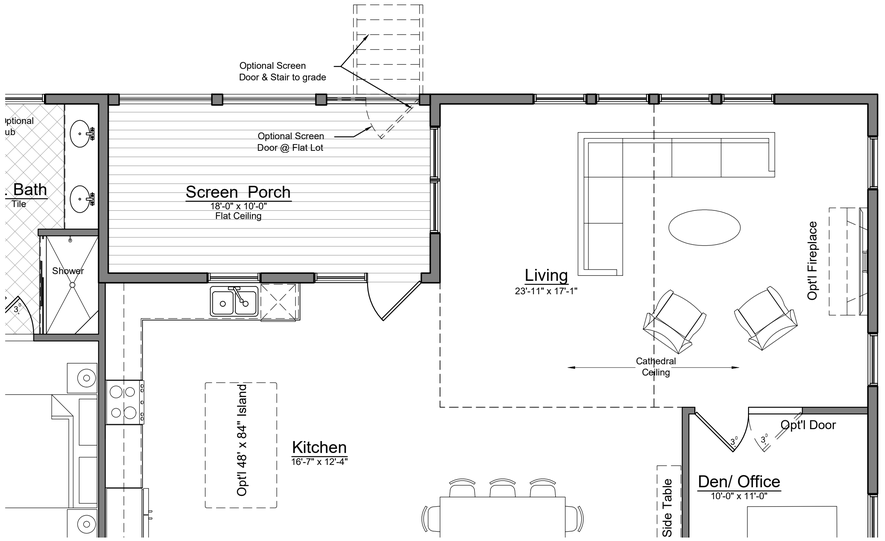
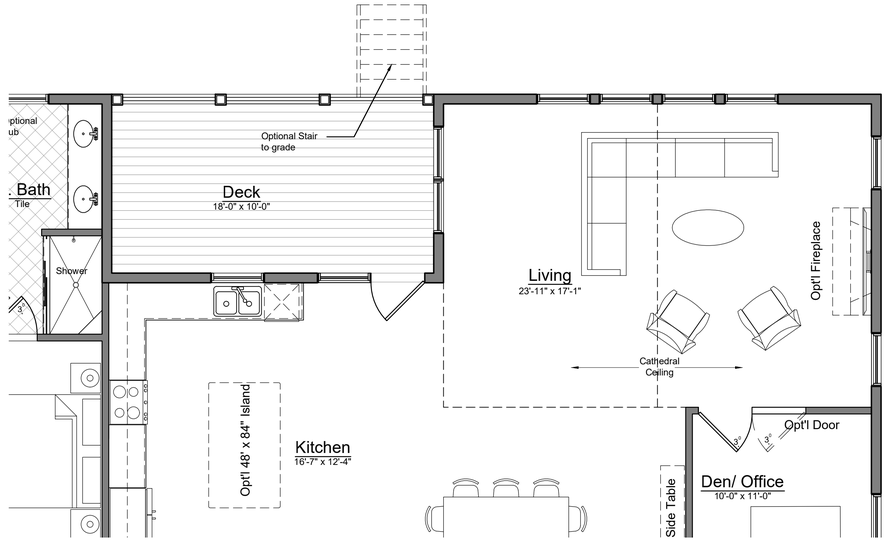
PRELIMINARY NOT FOR CONSTRUCTION



3 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Michigan - Screened-in Porch

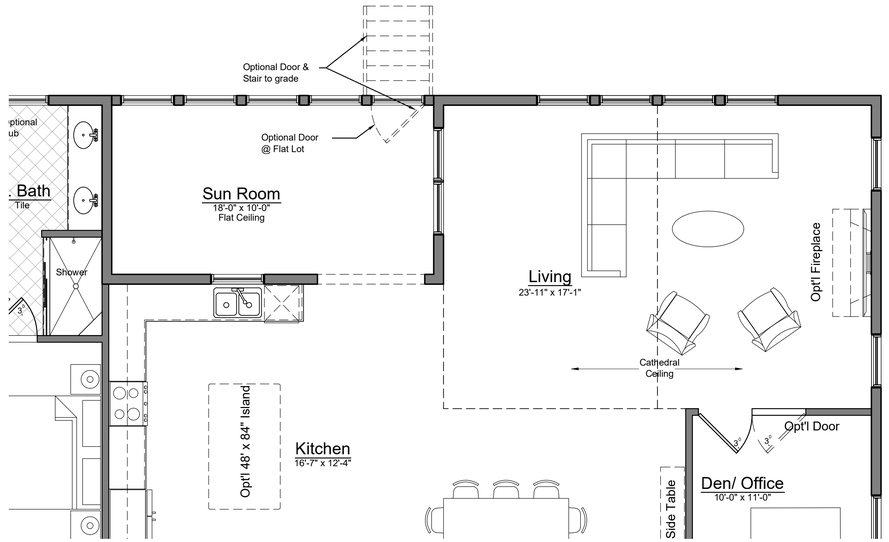
Gross: 2,449 S.F.



2 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Michigan - Deck

Gross: 2,449 S.F.



1 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Michigan - Sun Room

Gross: 2,449 S.F.

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Three Oaks Commuties

MICHIGAN

Structural Options
First Floor Plan

Marketing	03.31.23

First Floor Plan
Structural
Options

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223020

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A1.1c

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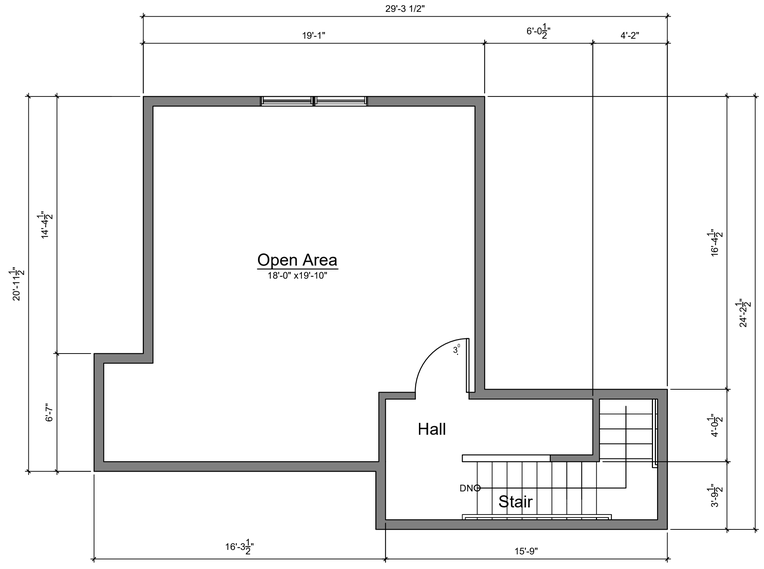
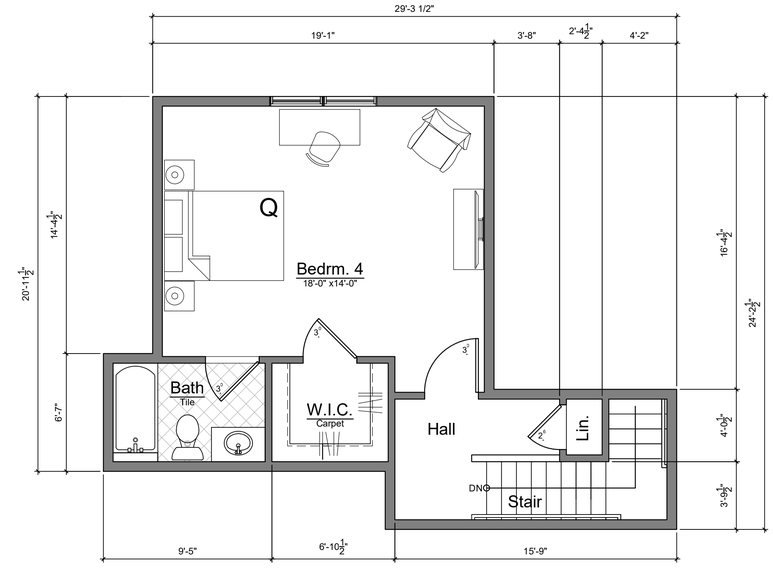


1 A1.2 Second Floor Plan - Michigan - w/ Open Loft Area

SCALE : 1/4" = 1'-0" Gross: 518 S.F. 2-STORY



1 A1.2 Second Floor Plan - Michigan - w/ Mastersuite

SCALE : 1/4" = 1'-0" Gross: 518 S.F. 2-STORY

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Three Oaks Commuties

MICHIGAN

Second Floor Plan

Marketing	03.31.23

Second Floor Plan

JBMA Project No.
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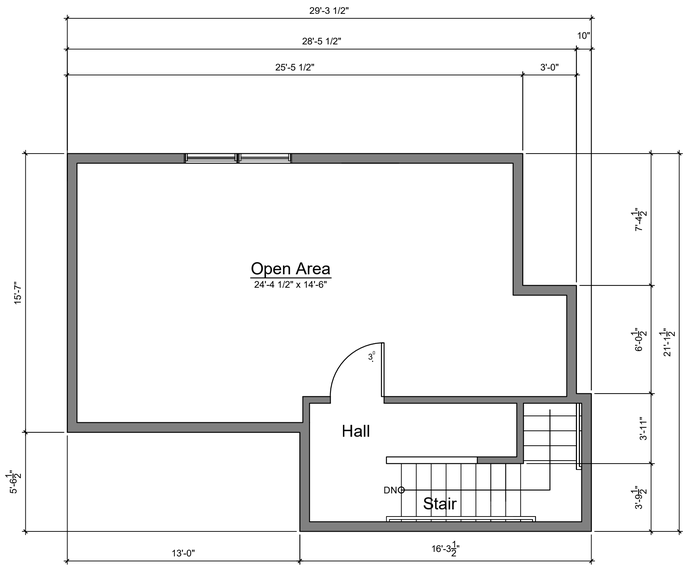
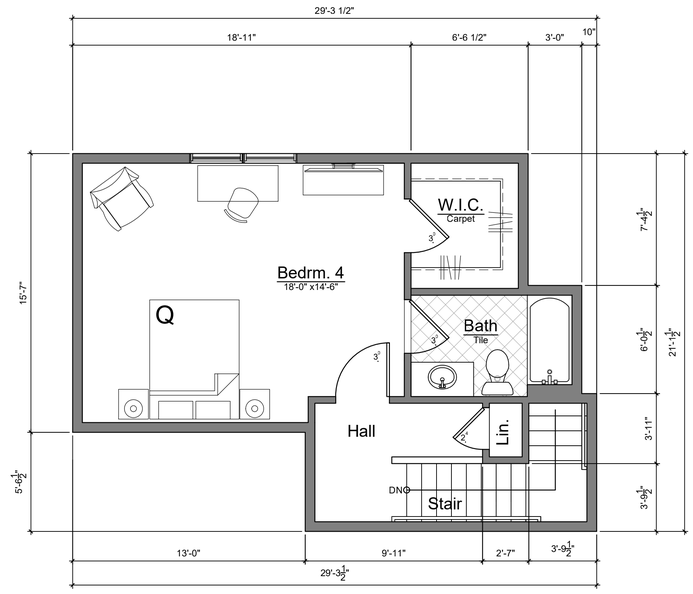
A1.2a

PRELIMINARY NOT FOR CONSTRUCTION



1 A1.2 Second Floor Plan - Michigan - w/ Open Loft Area

SCALE : 1/4" = 1'-0" Gross: 513 S.F. 2-STORY



1 A1.2 Second Floor Plan - Michigan - w/ Mastersuite

SCALE : 1/4" = 1'-0" Gross: 513 S.F. 2-STORY

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Three Oaks Commuties

MICHIGAN

Second Floor Plan

Marketing	03.31.23

Second Floor Plan

JBMA Project No.
223020

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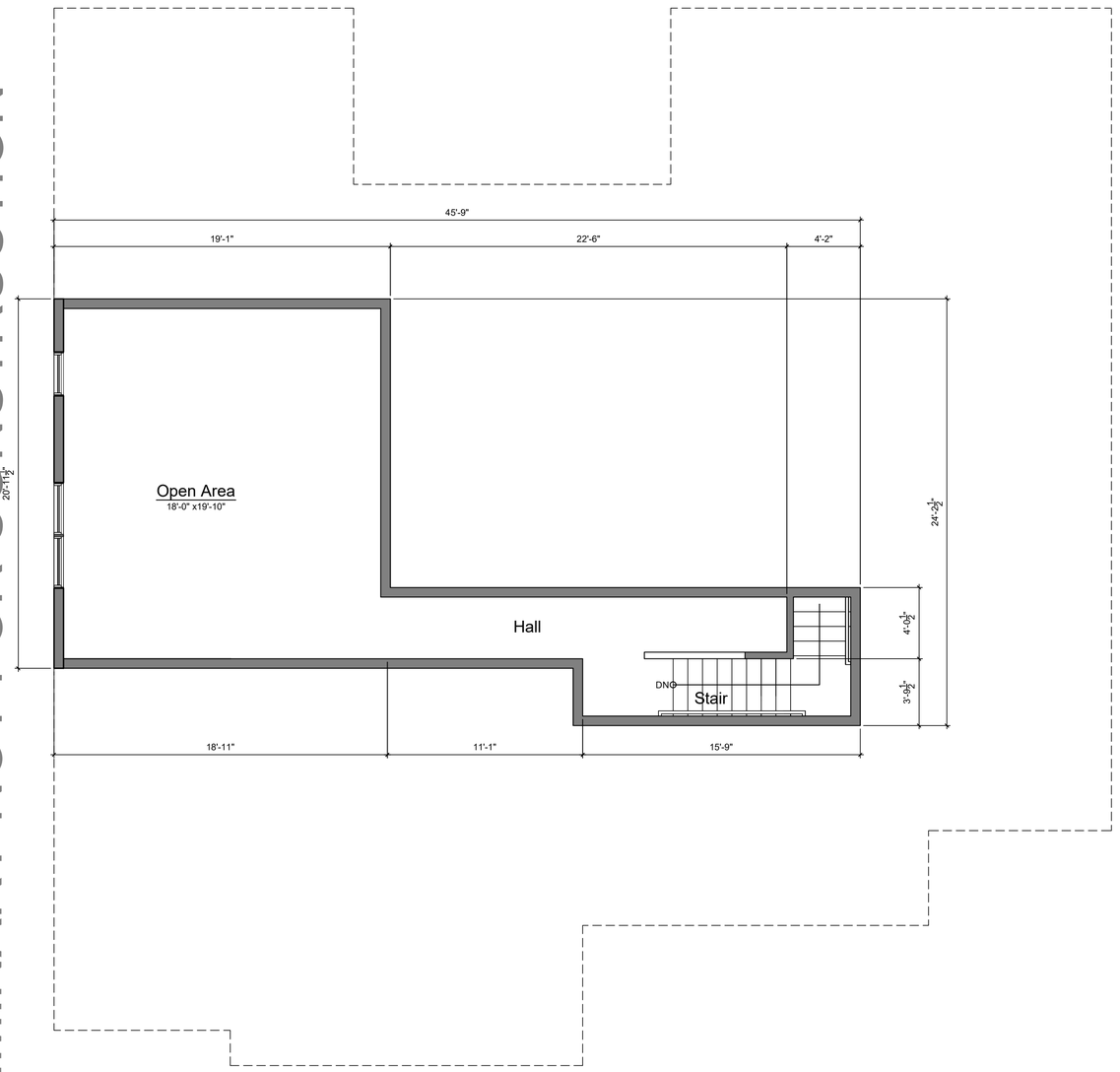
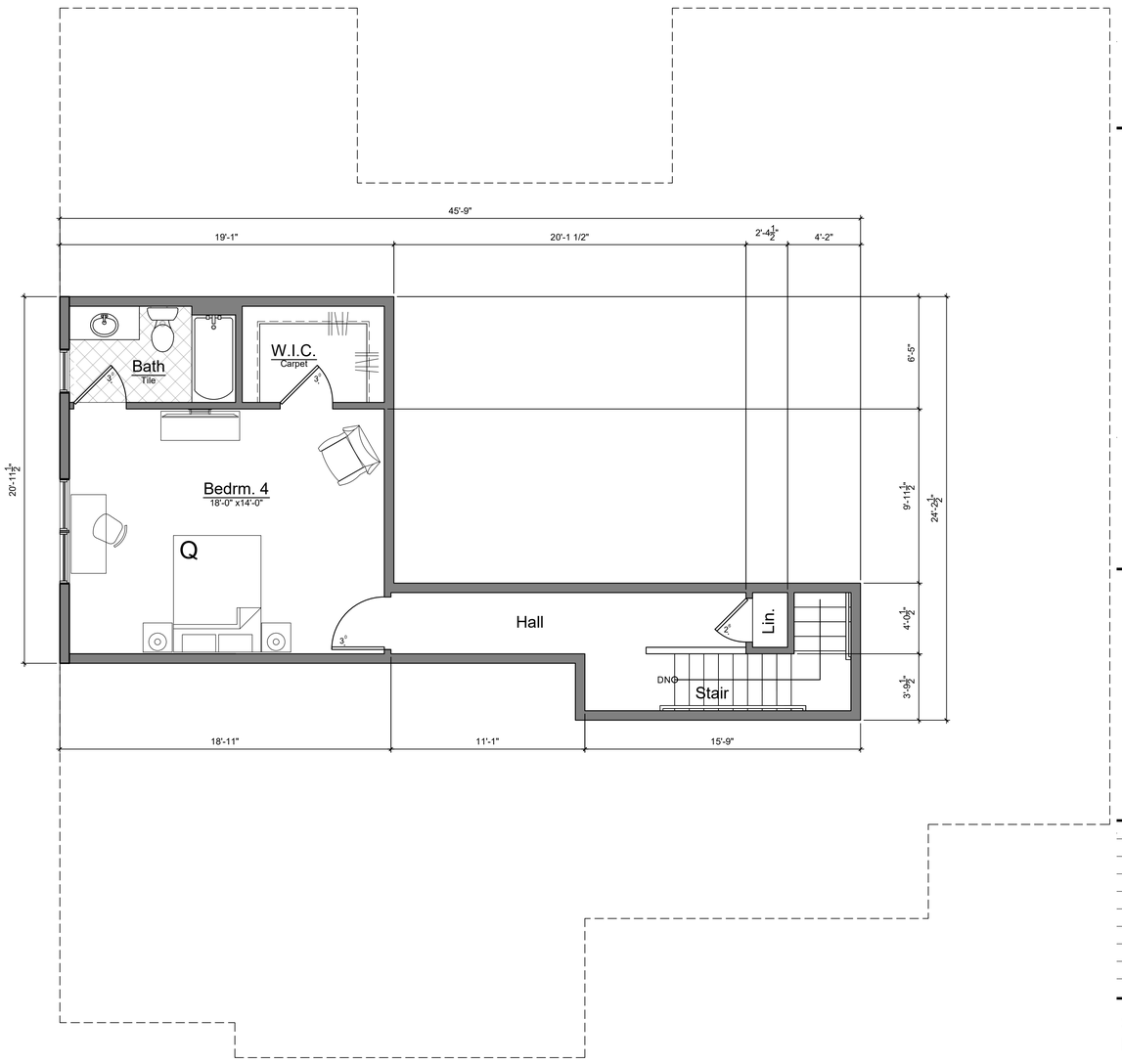
A1.2b

PRELIMINARY NOT FOR CONSTRUCTION



2 A1.2 Second Floor Plan - Michigan - w/ Open Loft Area

SCALE : 1/4" = 1'-0" Gross: 575 S.F. 2-STORY



1 A1.2 Second Floor Plan - Michigan - w/ Mastersuite

SCALE : 1/4" = 1'-0" Gross: 575 S.F. 2-STORY

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Three Oaks Commuties

MICHIGAN

Second Floor Plan

Marketing	03.31.23

Second Floor Plan

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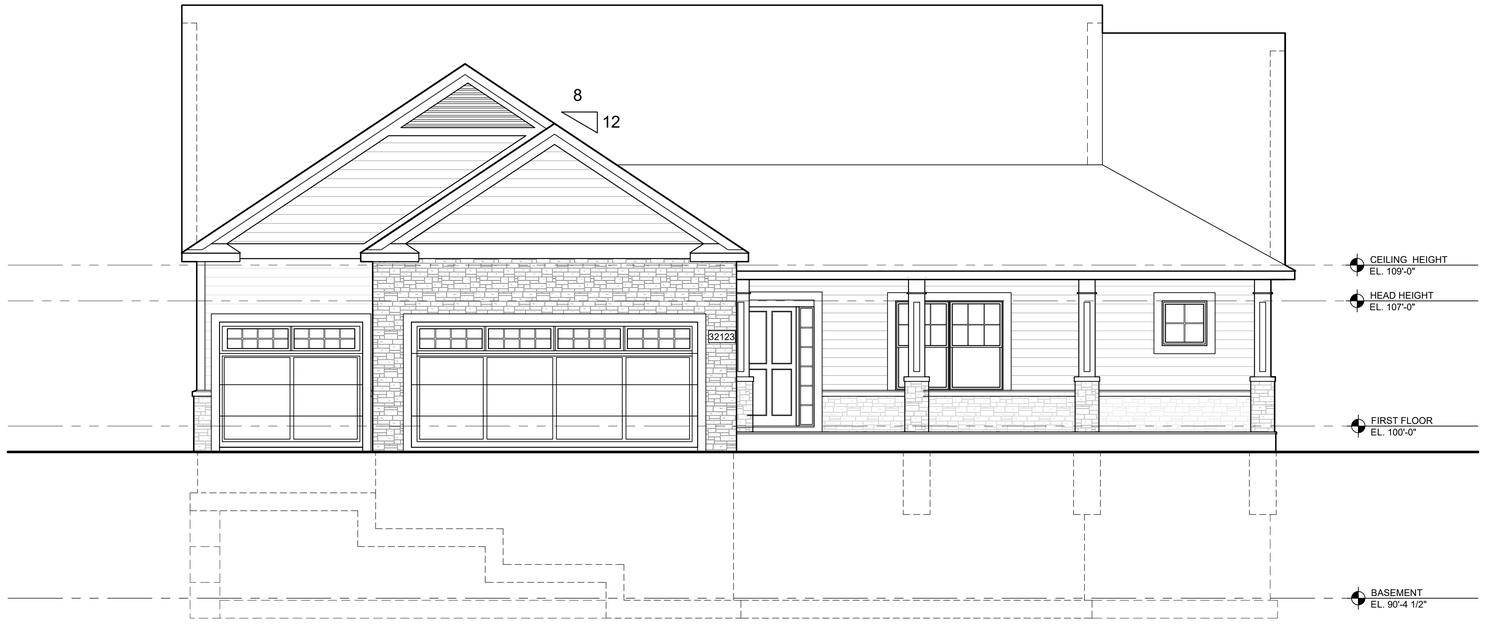
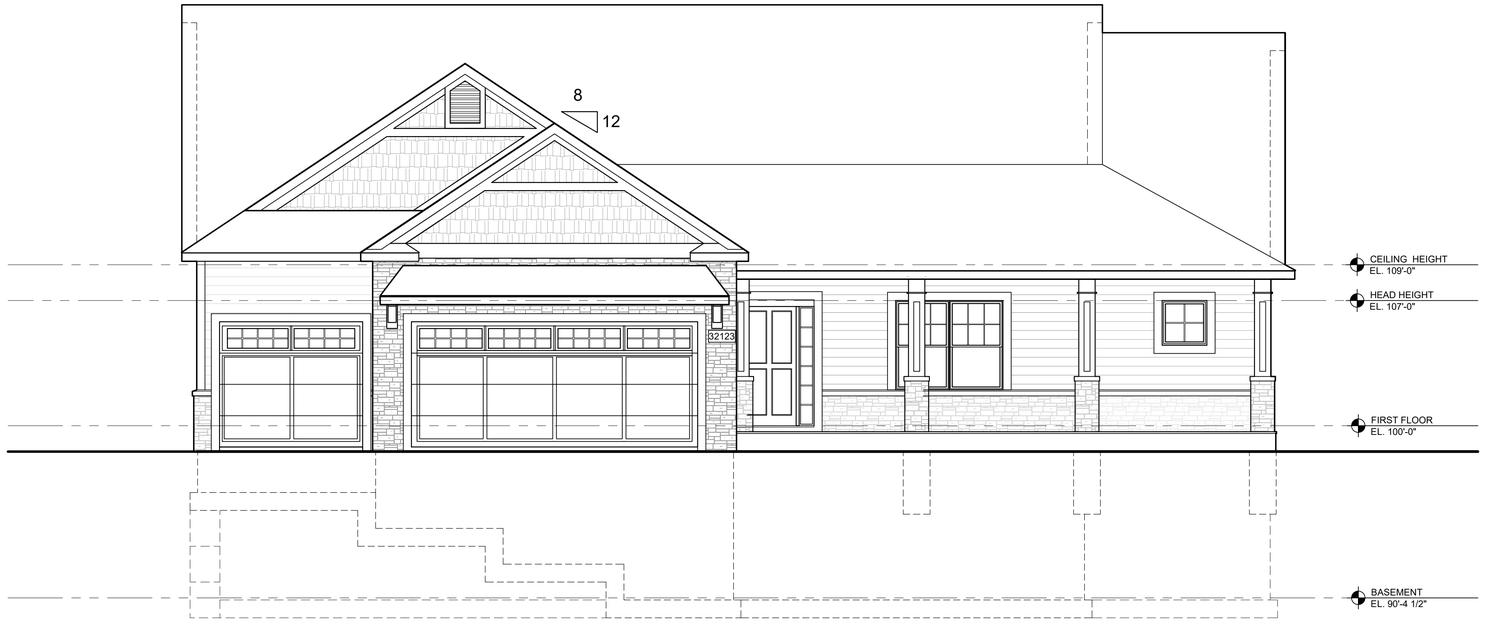
A1.2c

PRELIMINARY NOT FOR CONSTRUCTION



1 / A2.1 Front Elevation - Michigan - Base Elevation

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



1 / A2.1 Front Elevation - Michigan - Alternate Elevation 1

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

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The Oaks Commuties

MICHIGAN

Flat Foundationm Base Facade
Elevations

Marketing	03.31.23

Elevations
Base Facade
Alt. 1 Facade

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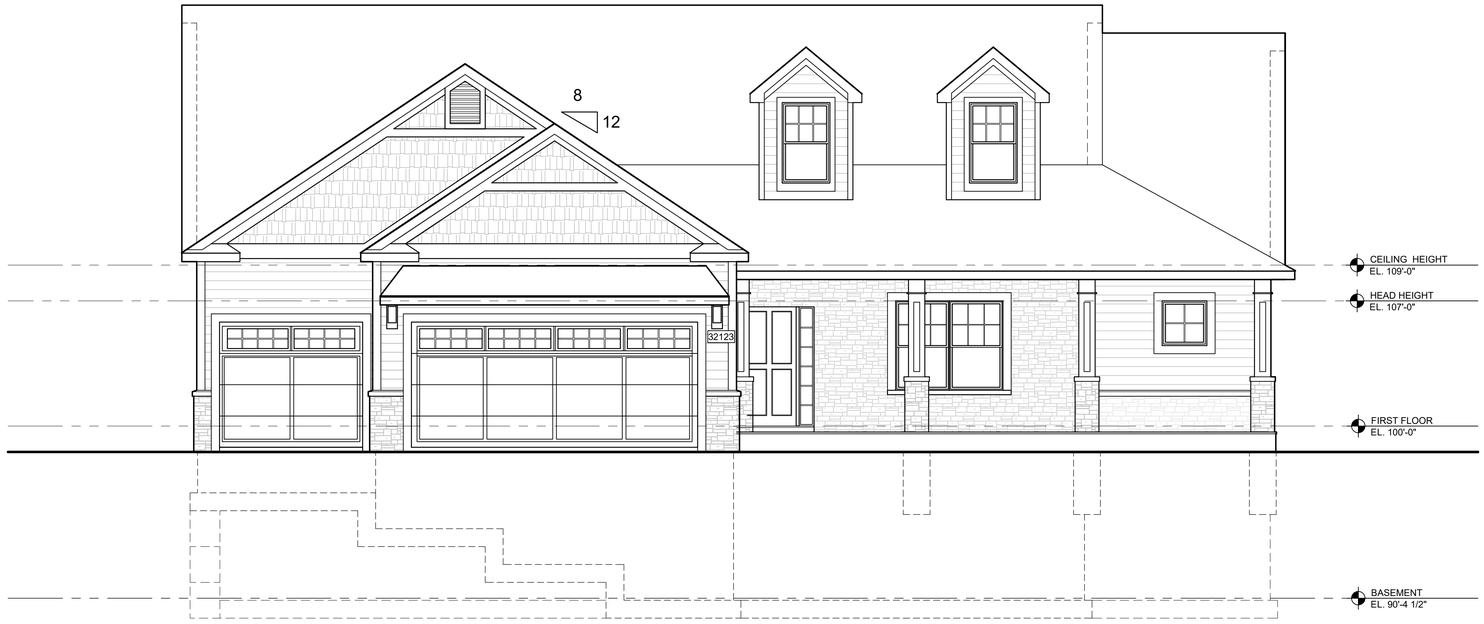
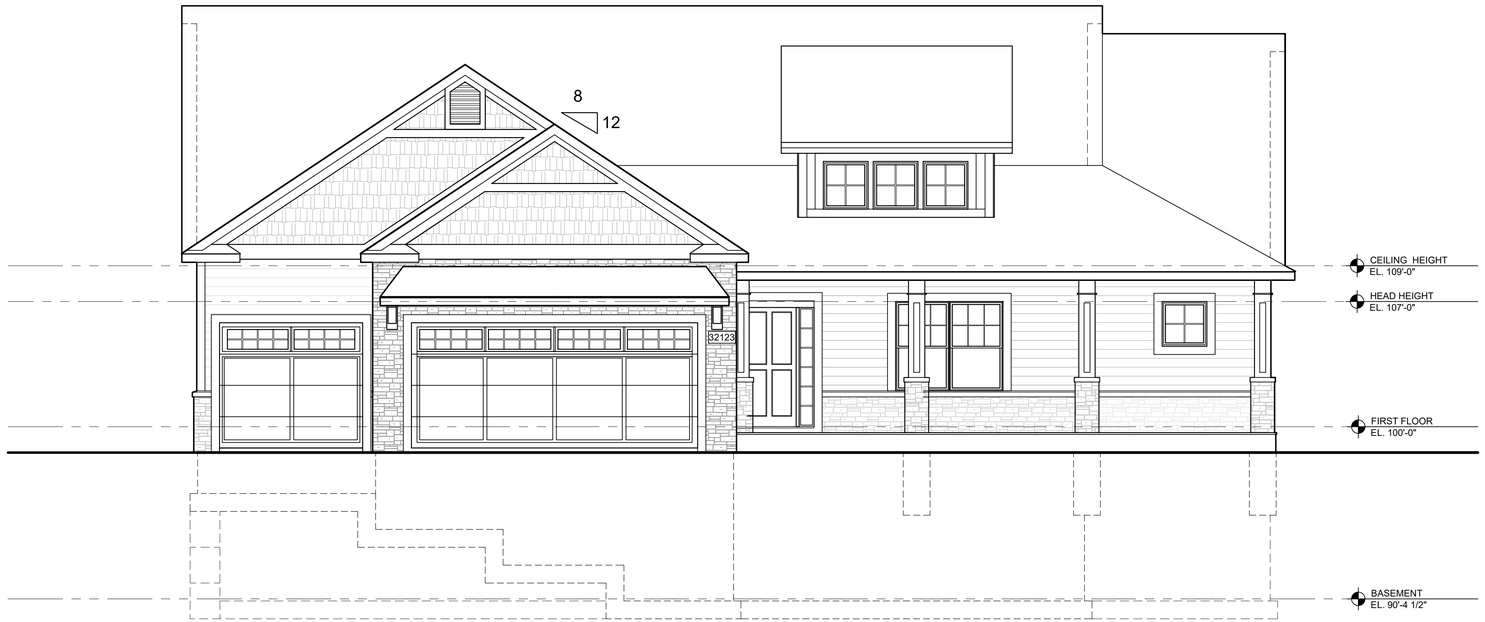
A2.1a

PRELIMINARY NOT FOR CONSTRUCTION



1 / A2.1 Front Elevation - Michigan - Alternate Elevation 2

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



2 / A2.1 Front Elevation - Michigan - Alternate Elevation 3

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

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The Oaks Commuties
MICHIGAN
Flat Foundationm Base Facade
Elevations

Marketing	03.31.23

Elevations
Alt. 2 Facade
Alt. 3 Facade

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©2023

A2.1b

PRELIMINARY NOT FOR CONSTRUCTION

1 A2.2 Rear Elevation - Michigan - Flat
SCALE : 1/4" = 1'-0"

2 A2.2 Rear Elevation - Michigan - Daylight
SCALE : 1/4" = 1'-0"

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Three Oaks Commuties

MICHIGAN

Rear Elevations

Marketing	03.31.23

Rear Elev. - Flat
Rear Elev. - Dayight

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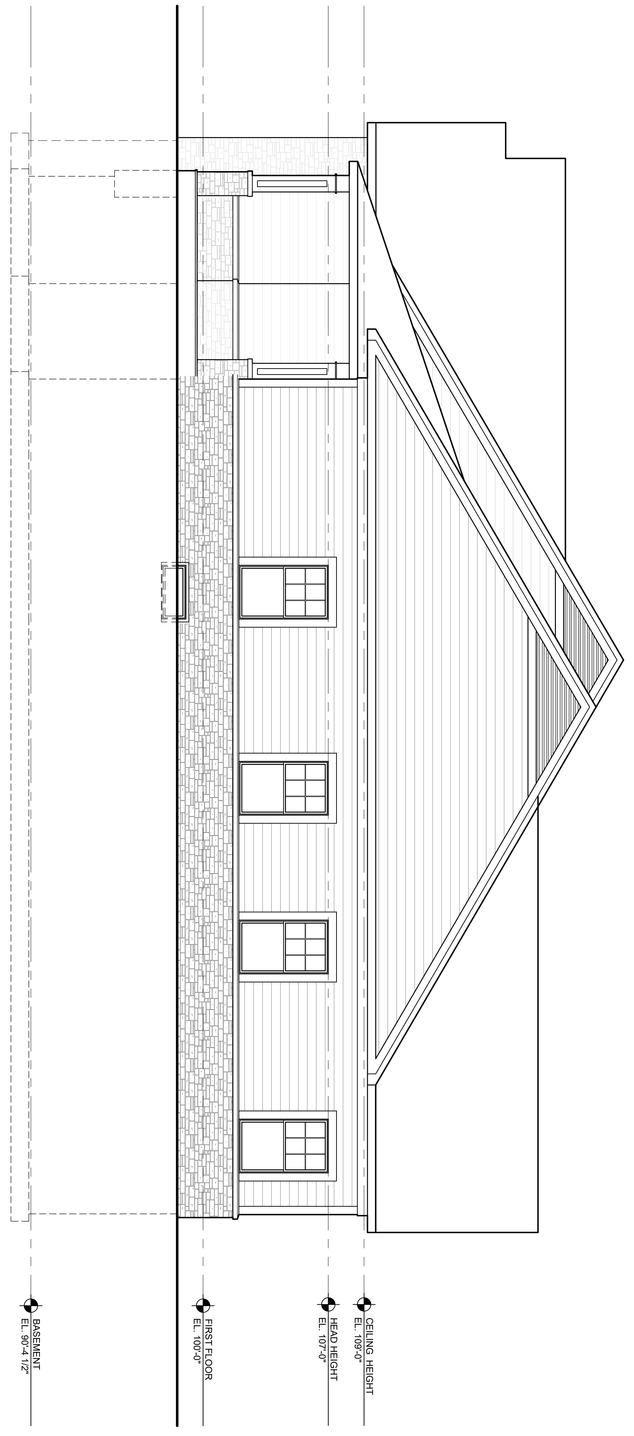
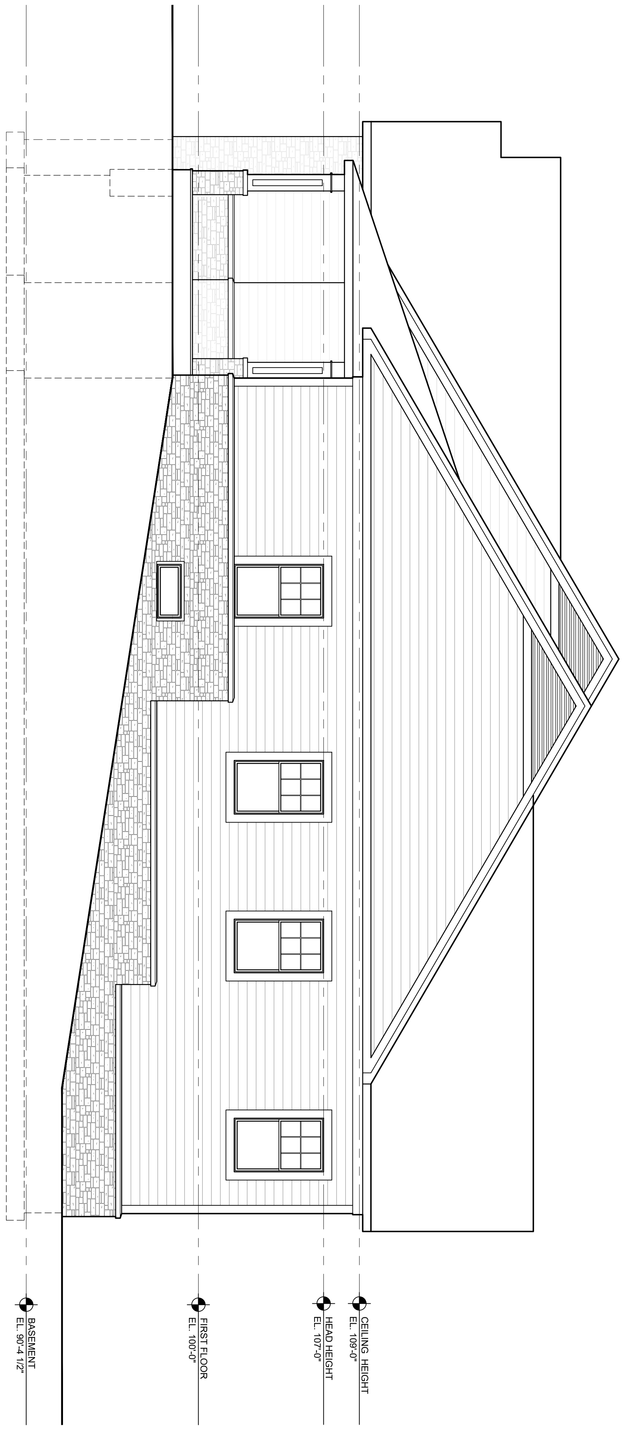
A2.2

PRELIMINARY NOT FOR CONSTRUCTION



1 A2.3 Right Side Elevation - Michigan - Flat
SCALE: 1/4" = 1'-0"



2 A2.3 Right Side Elevation - Michigan - Daylight
SCALE: 1/4" = 1'-0"

Three Oaks Commuties
MICHIGAN
Right Side Elevations

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Side Elev. - Flat
Side Elev. -
Daylight

Marketing	03.31.23

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A2.3

PRELIMINARY NOT FOR CONSTRUCTION

1 / A2.4 Left Side Elevation - Michigan - Flat

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

2 / A2.4 Left Side Elevation - Michigan - Daylight

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

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Three Oaks Commuties

MICHIGAN

Left Side Elevations

Marketing	03.31.23

Side Elev. - Flat
Side Elev. - Daylight

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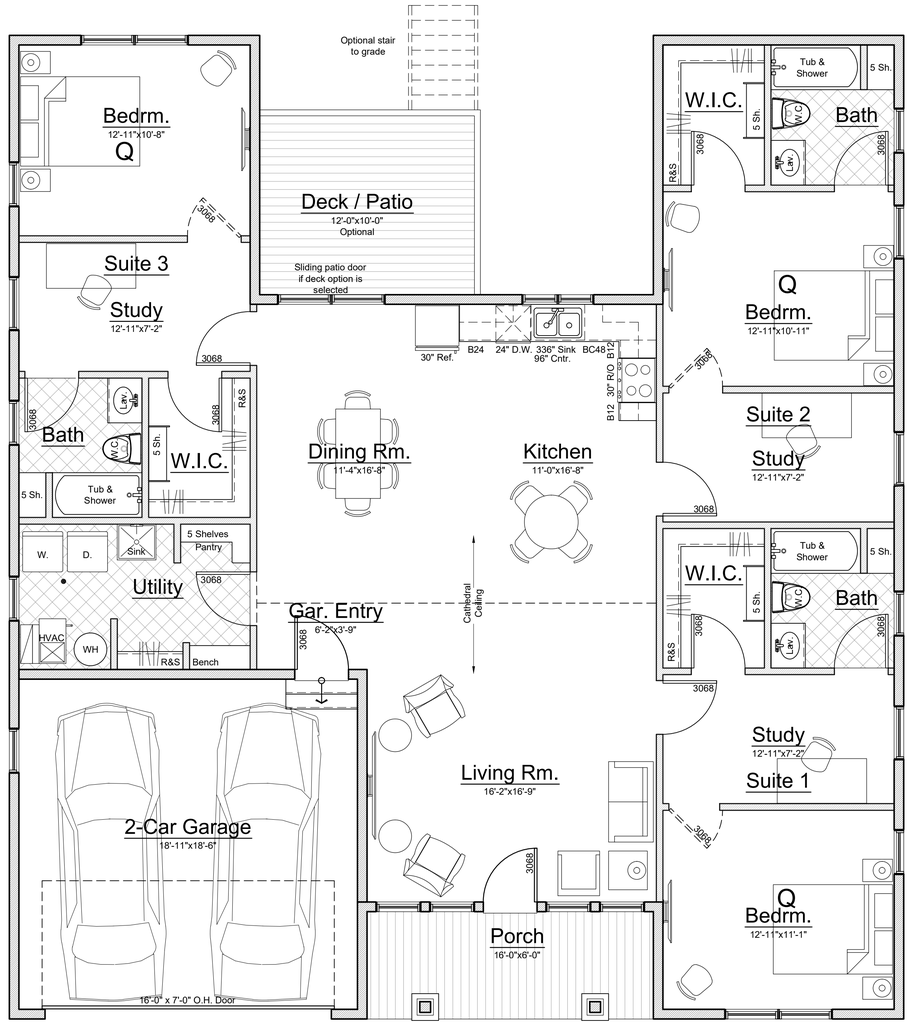
A2.4

CHELSEA STANDARD PLAN
IDD HOME
FRONT ELEVATION



First Floor Plan - Chelsea: 1834

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

Living Gross: 1,834 S.F.

PRELIMINARY NOT FOR CONSTRUCTION

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Three Oaks Community

The Chelsea

Chelsea 1834 - Slab

First Floor Plan

Marketing	04.13.23

Floor Plans
Slab- 3 Bd/ 3 Ba
Unit 1834

JBMA Project No.
221156

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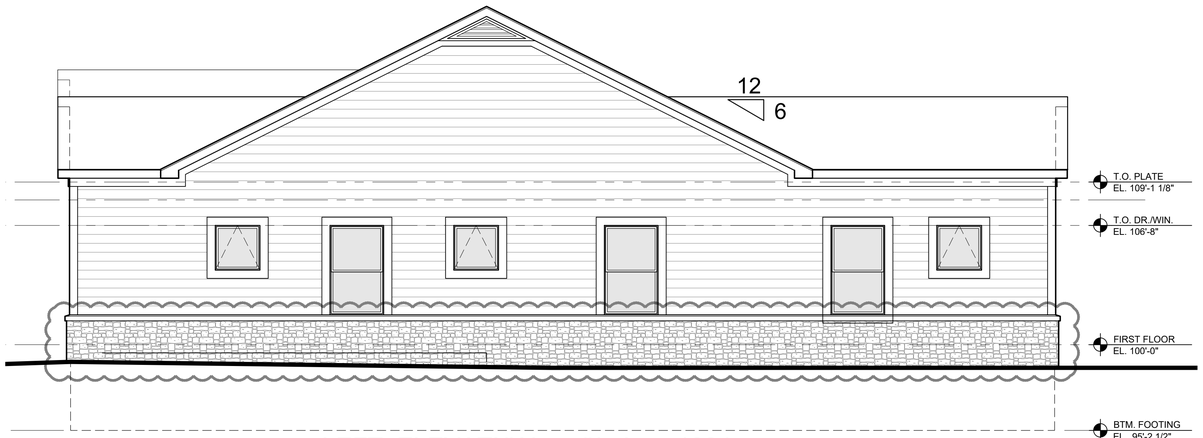
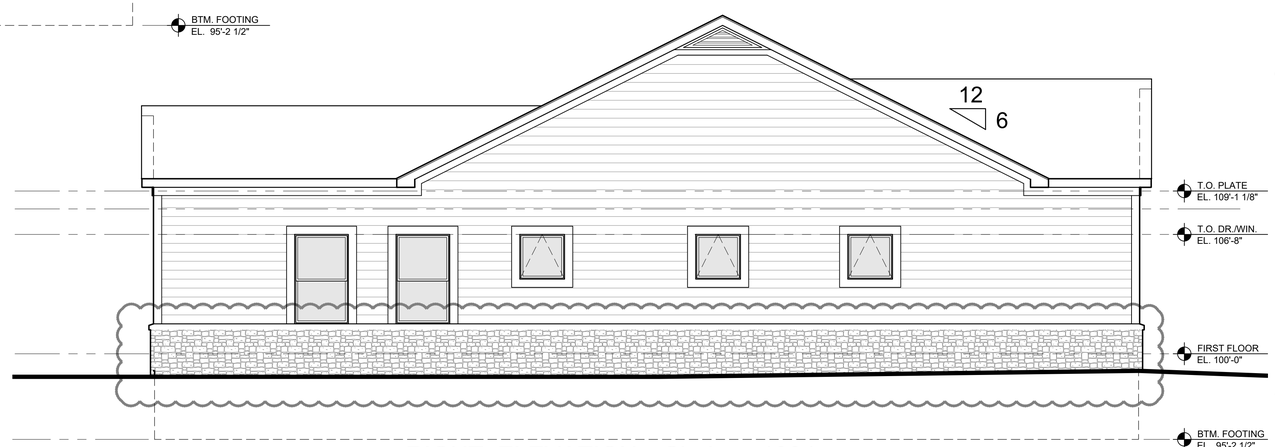
A1.1



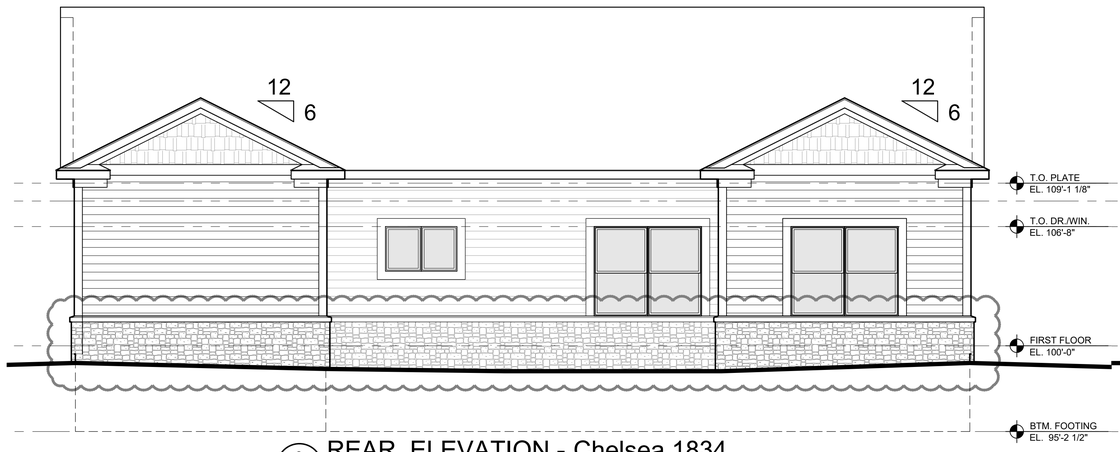
4 / A2.1 LEFT ELEVATION - Chelsea 1834

SCALE : 1/4" = 1'-0" Chelsea - Slab: 3 Bd/ 3Ba



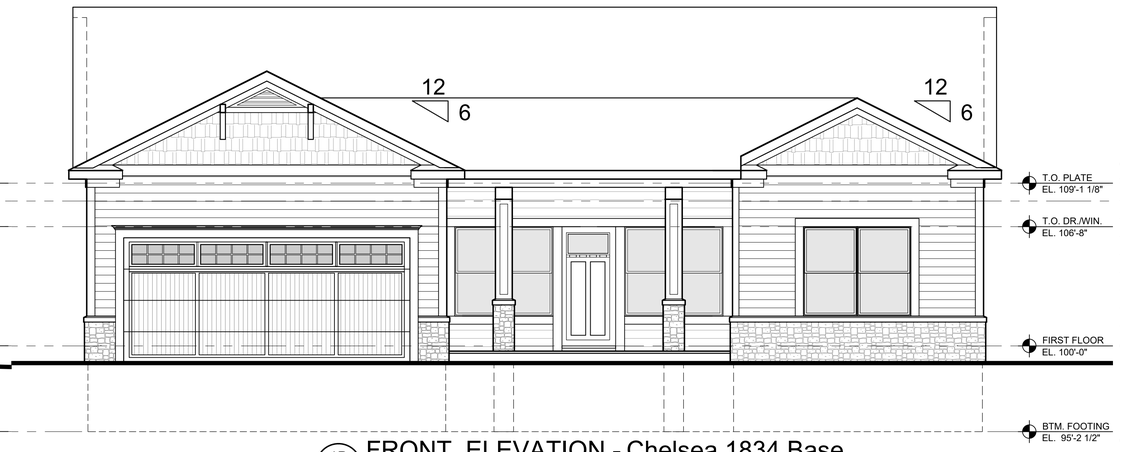
2 / A2.1 RIGHT ELEVATION - Chelsea 1834

SCALE : 1/4" = 1'-0" Chelsea - Slab: 3 Bd/ 3Ba



3 / A2.1 REAR ELEVATION - Chelsea 1834

SCALE : 1/4" = 1'-0" Chelsea - Slab: 3 Bd/ 3Ba



1B / A2.1 FRONT ELEVATION - Chelsea 1834 Base

SCALE : 1/4" = 1'-0" Chelsea - Slab: 3 Bd/ 3Ba

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Three Oaks Community

The Chelsea

Chelsea 1834 - Slab

Elevations

Marketing	04.13.23
Revised	01.22.24

Elevations Base
Slab - 3 Bd/3 Ba
Unit 1834

JBMA Project No.
221156

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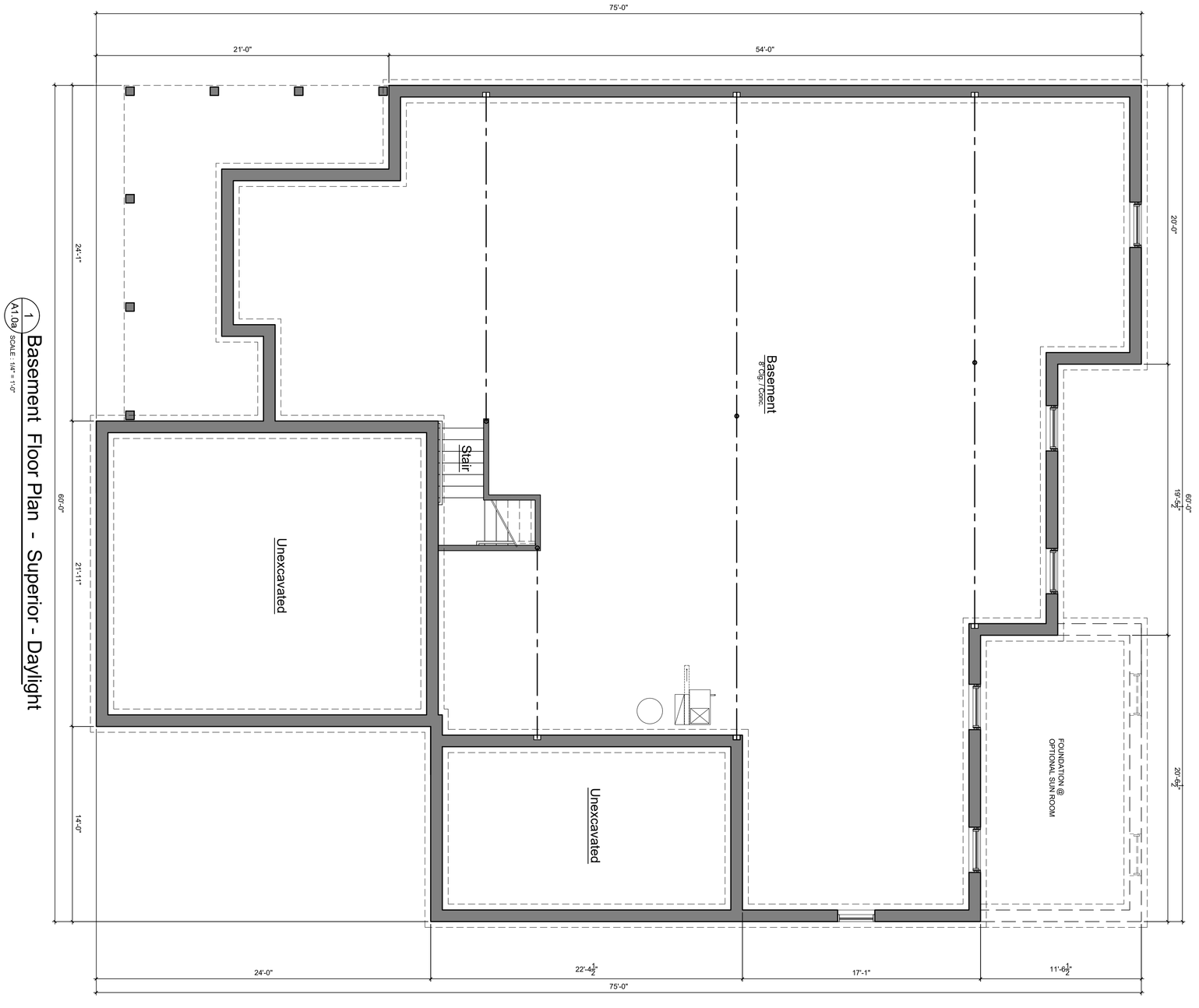
A2.1

Superior Plan
Alternate 2 Elevation

PRELIMINARY NOT FOR CONSTRUCTION



1 A1.0a SCALE: 1/4" = 1'-0"

Basement Floor Plan - Superior - Daylight

A1.0a

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Basement
Floor Plan
Daylight Fndn

Marketing 03.14.23

Three Oaks Communities

SUPERIOR

Daylight Foundation
Basement Floor Plan

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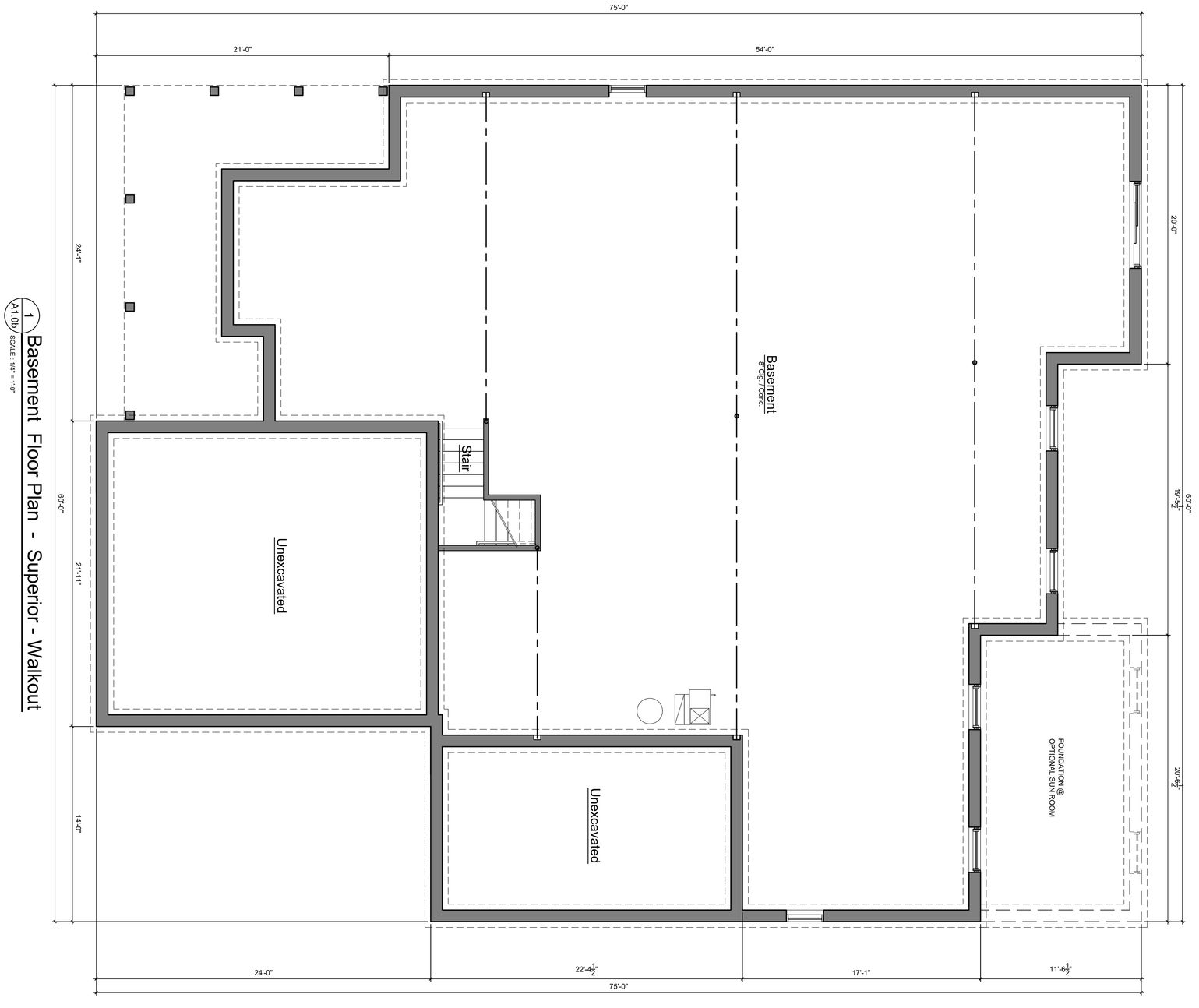
PRELIMINARY NOT FOR CONSTRUCTION



1 A1.0b SCALE: 1/4" = 1'-0"

Basement Floor Plan - Superior - Walkout

A1.0b

Basement
Floor Plan
Walkout Fndn

JBMA Project No.
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Marketing 03.14.23

Three Oaks Communities

SUPERIOR

Walkout Foundation
Basement Floor Plan

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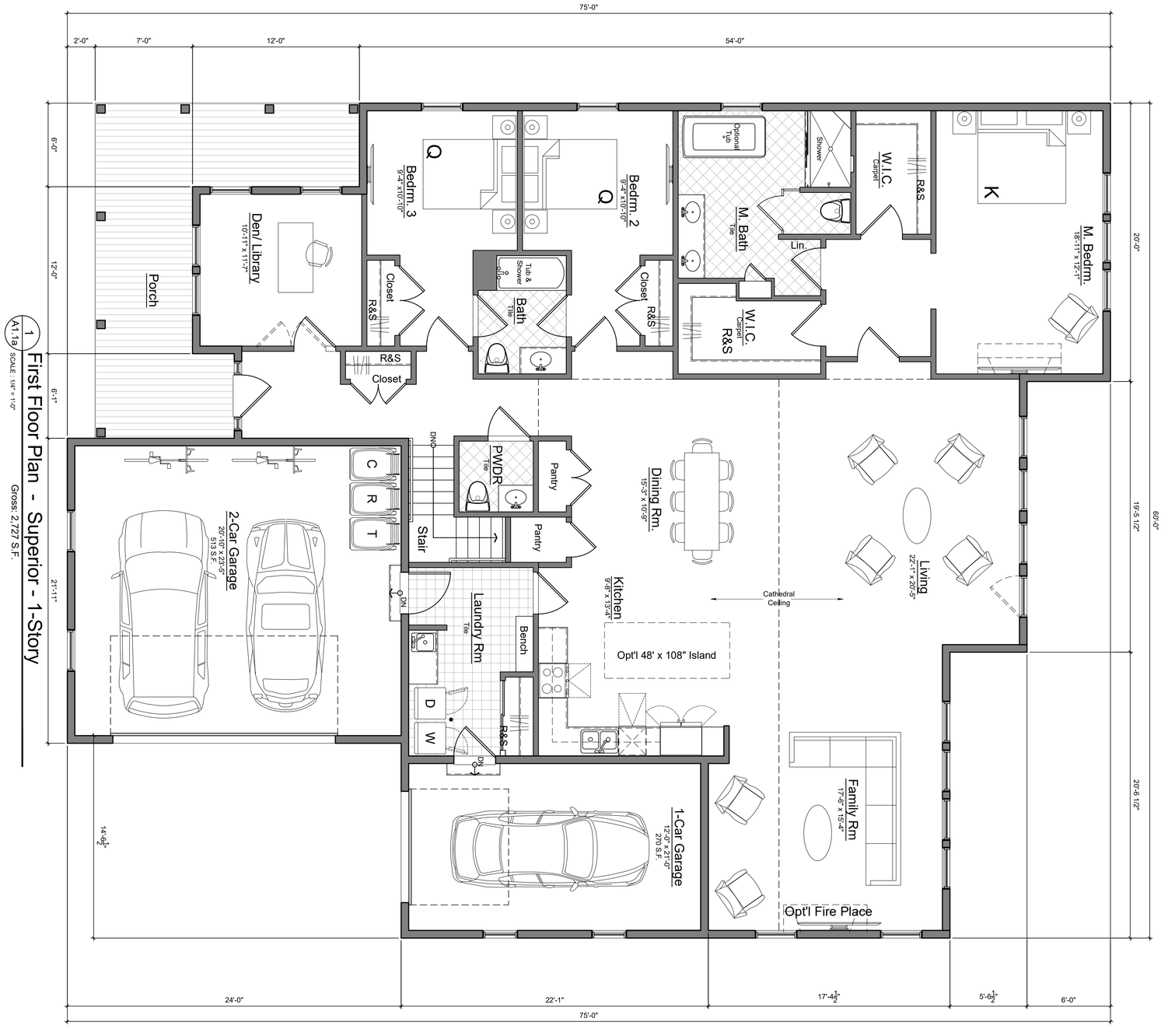
PRELIMINARY NOT FOR CONSTRUCTION



1 A1.1a SCALE: 1/4" = 1'-0"

First Floor Plan - Superior - 1-Story

Gross: 2,727 S.F.

First Floor Plan

One Story

JBMA Project No.
221155

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A1.1a

Marketing 03.14.23

Three Oaks Communities

SUPERIOR

One Story Model
First Floor Plan

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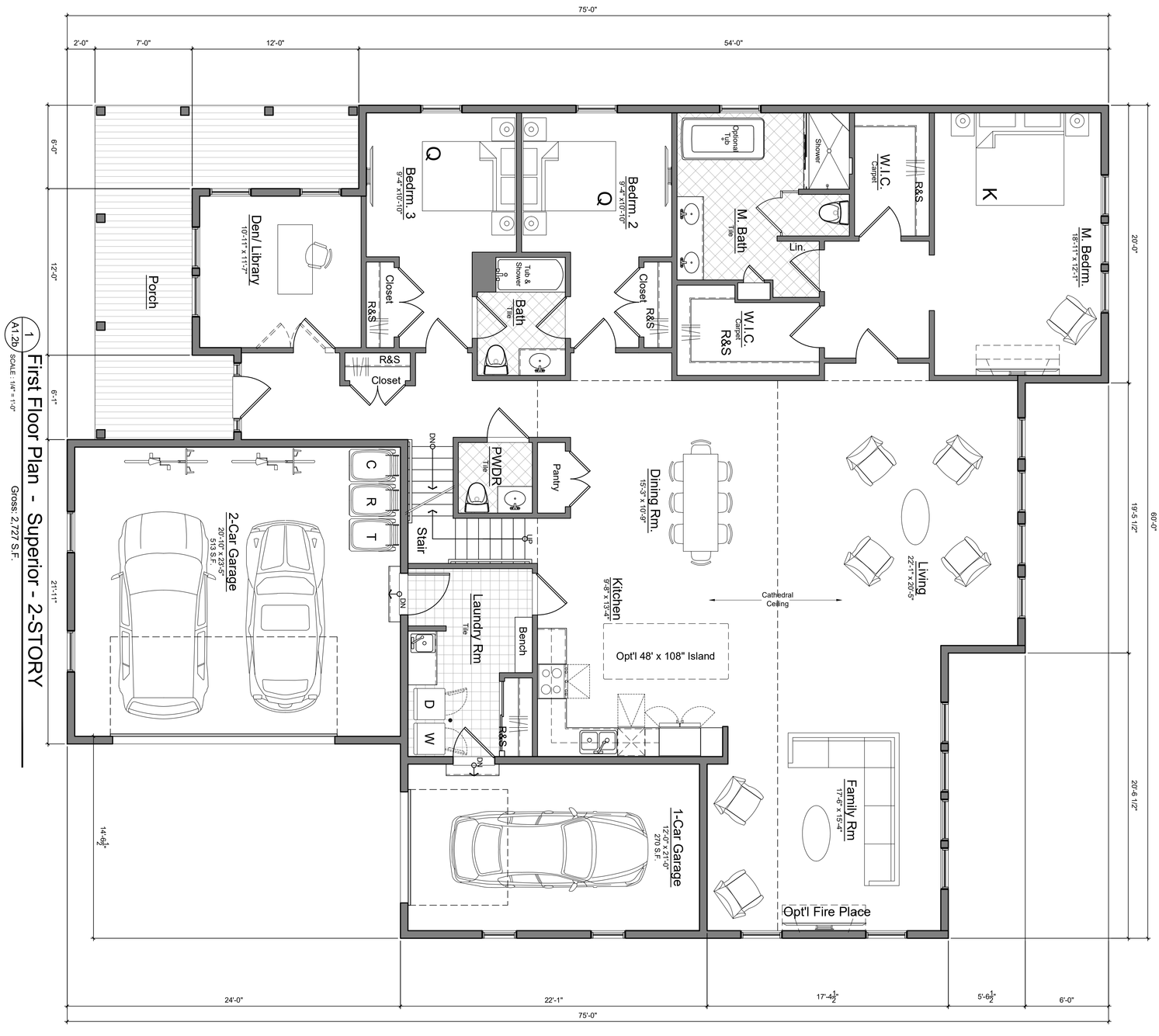
PRELIMINARY NOT FOR CONSTRUCTION



1 A1.2b SCALE: 1/4" = 1'-0"

First Floor Plan - Superior - 2-STORY

Gross: 2,727 S.F.

Marketing	03.14.23

First Floor Plan

Two Story

JBMA Project No.

221155

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A1.1b

Three Oaks Communities

SUPERIOR

Two Story Model

First Floor Plan

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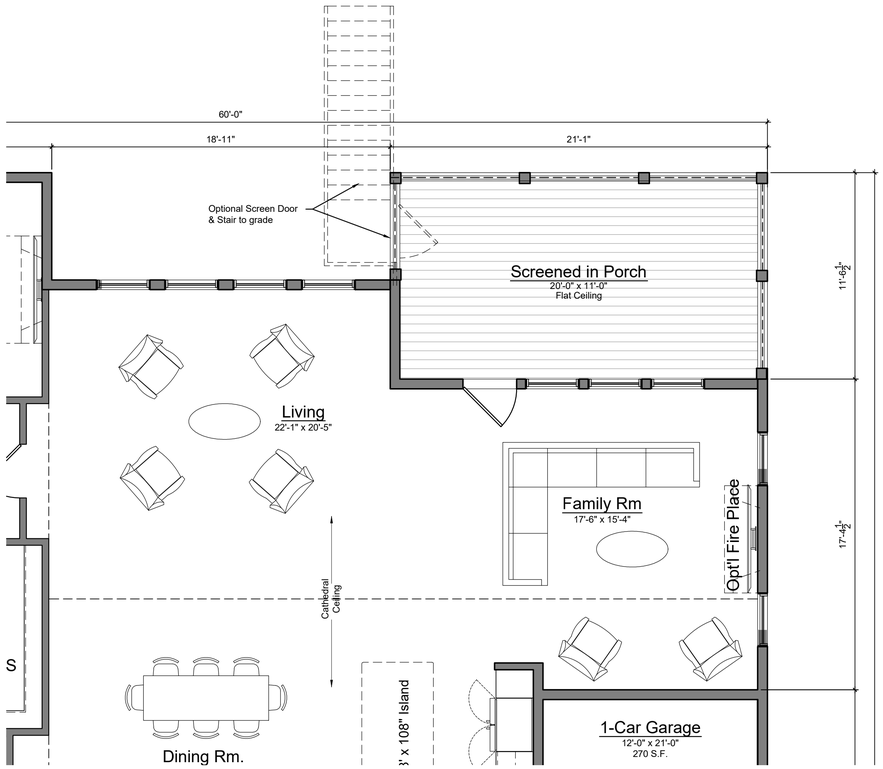
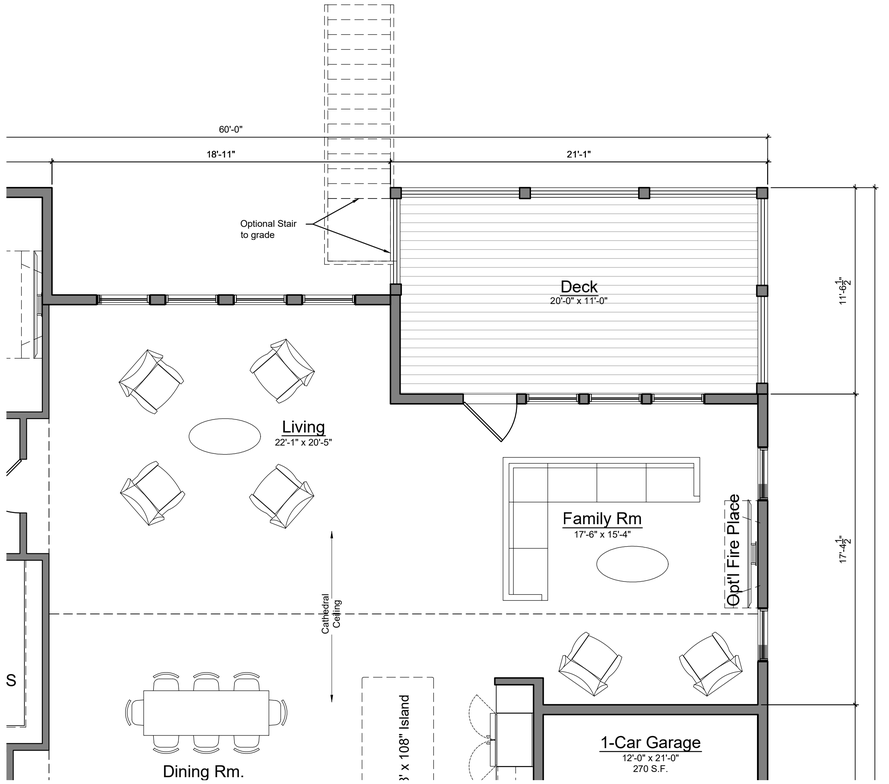
PRELIMINARY NOT FOR CONSTRUCTION



3 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Superior - SCREEN PORCH

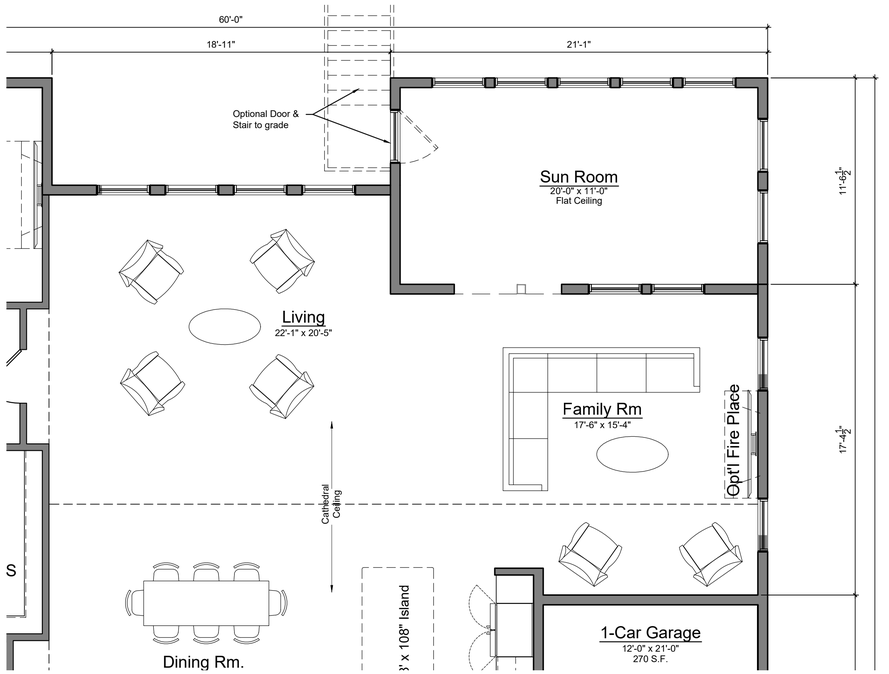
Gross: 2,727 S.F.



2 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Superior - DECK

Gross: 2,727 S.F.



1 A1.1c SCALE : 1/4" = 1'-0"

First Floor Plan - Superior - SUNROOM

Gross: 2,727 S.F.

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Three Oaks Communities
SUPERIOR
Structural Options
First Floor Plan

Marketing	03.14.23

First Floor Plan
Structural
Options

JBMA Project No.
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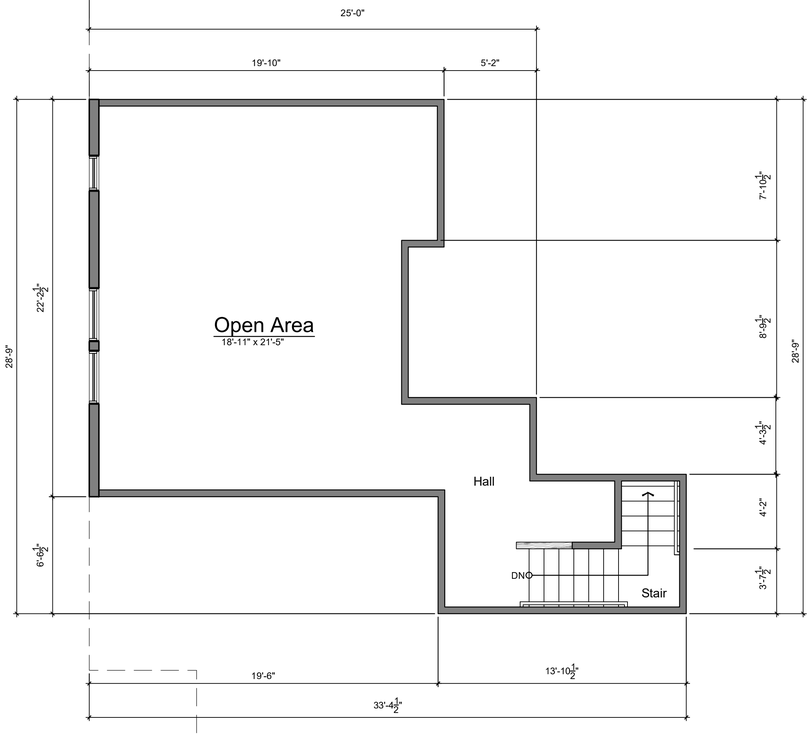
A1.1c

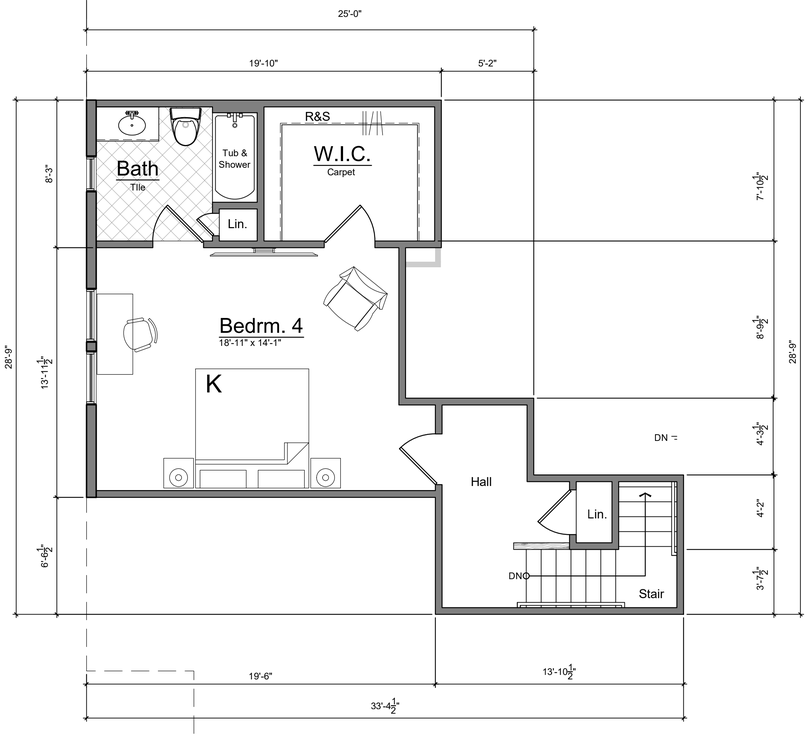
PRELIMINARY NOT FOR CONSTRUCTION



2 A 1.2 Second Floor Plan - Superior - w/ Open Loft Area

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

Gross: 586 S.F.



1 A 1.2 Second Floor Plan - Superior - w/ Mastersuite

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

Gross: 586 S.F.

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Three Oaks Communities

SUPERIOR

Second Floor Plan

Marketing	03.14.23

Second Floor Plan

JBMA Project No.
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A1.2

PRELIMINARY NOT FOR CONSTRUCTION

2 A2.1a Side Elevation - Superior - Daylight
SCALE: 1/4" = 1'-0"

1 A2.1a Front Elevation - Superior - Base Elevation
SCALE: 1/4" = 1'-0"

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Three Oaks Communities
SUPERIOR
Daylight Foundation, Base Facade Elevations

Marketing	03.14.23

Elevations
Base Facade
Daylight Fndn

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A2.1a

PRELIMINARY NOT FOR CONSTRUCTION

2 A2.1b Side Elevation - Superior - Walkout
SCALE: 1/4" = 1'-0"

1 A2.1b Front Elevation - Superior - Alternate Elevation 1
SCALE: 1/4" = 1'-0"

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Three Oaks Communities
SUPERIOR
Walkout Foundation, Alternate Facade Elevations

Marketing	03.14.23

Elevations
Alternate Facade
Walkout Fndn

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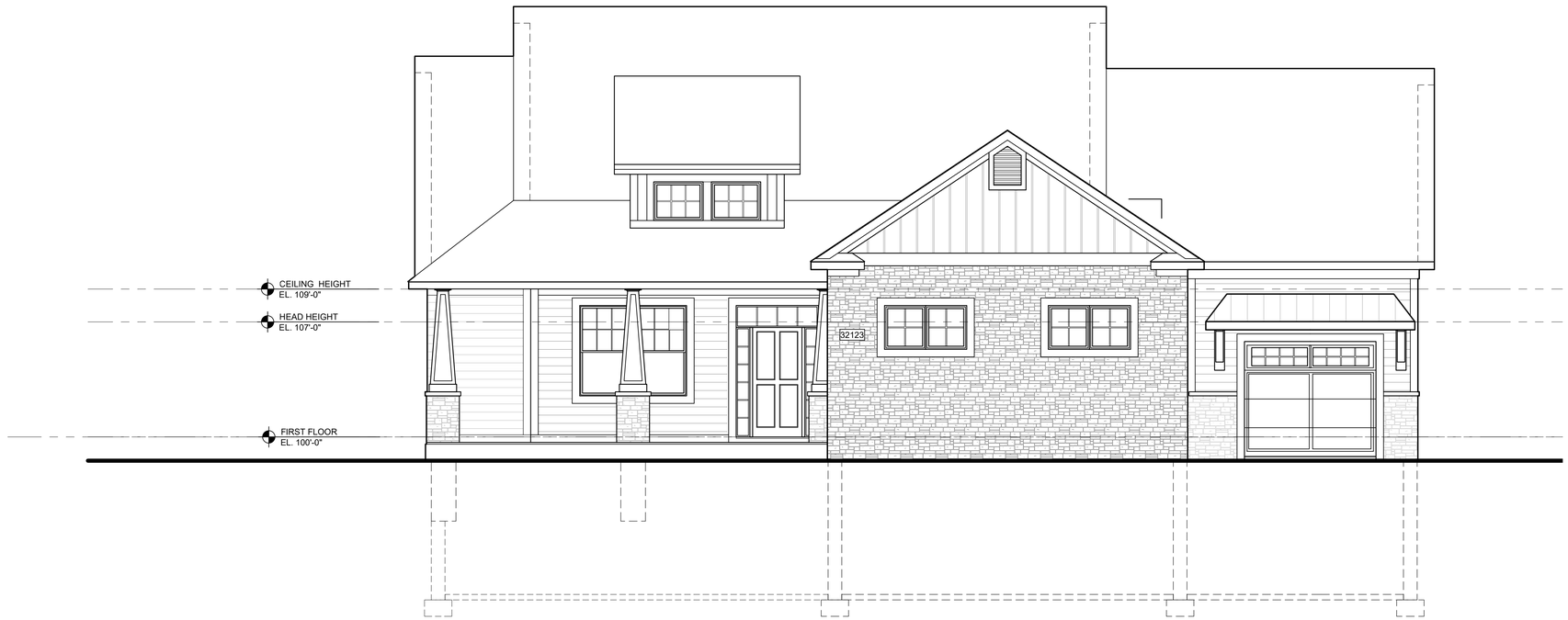
A2.1b

PRELIMINARY NOT FOR CONSTRUCTION



2 A2.1c Front Elevation - Superior - Alternate Elevation 3
SCALE: 1/4" = 1'-0"

1 A2.1c Front Elevation - Superior - Alternate Elevation 2
SCALE: 1/4" = 1'-0"

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Three Oaks Communities
SUPERIOR
Alternate 2 & 3 Facade
Elevations

Marketing	03.14.23

Elevations
Alt 2 Facade
Alt 3 Facade

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A2.1c

PRELIMINARY NOT FOR CONSTRUCTION

2 / A2.2a Side Elevation - Superior - Daylight
SCALE: 1/4" = 1'-0"

1 / A2.2a Rear Elevation - Superior - Daylight
SCALE: 1/4" = 1'-0"

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Three Oaks Communities
SUPERIOR
Daylight Foundation
Elevations

Marketing	03.14.23

Elevations

Daylight Fndn

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A2.2a

PRELIMINARY NOT FOR CONSTRUCTION

2 A2.2b Side Elevation - Superior - Walkout
SCALE: 1/4" = 1'-0"

1 A2.2b Rear Elevation - Superior - Walkout
SCALE: 1/4" = 1'-0"

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Three Oaks Communities
SUPERIOR
Walkout Foundation
Elevations

Marketing	03.14.23

Elevations

Walkout Fndn

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A2.2b

resourceful. naturally.
engineering and environmental consultants

BARR

September 4, 2024

Bruce Michael
Three Oaks Communities
P.O. Box 8307
Ann Arbor, MI 48107

Re: Wetland Delineation Report – Angara Drive (Parcels 15-32-201-001; -002; -003; -004; -006)
City of Rochester Hills, Oakland County, Michigan

Dear Mr. Michael:

At your request, Barr Engineering Co. (Barr), conducted a wetland delineation of the approximately 7.36-acre above-referenced property. The purpose of this report is to summarize the results of the wetland delineations conducted on May 30 and re-evaluated on July 9, 2024, and to provide a professional opinion as to potential Michigan Department of Environment, Great Lakes, and Energy (EGLE) and City of Rochester Hills jurisdiction over the identified wetland areas. On October 30, 2023 Barr performed a delineation the proposed route for the directional drilling of utilites on the south end of the site. Prior to the July 9 site visit, the City of Rochester Hills consultant, Kyle Hottinger of ASTI, Inc., was on site to address an action taken by a neighbor regarding the hydrology between the site and the neighboring property. A culvert drained this area of the site to the property to the northeast and that culvert had been blocked over the last winter season resulting in water ponding onto the site.

1.0 Area of Investigation Description

The Area of Investigation (AOI) is located west of Crooks Road and south of Auburn Road. The land cover within the AOI consists of mowed lawn, two houses and two garages, and a woodlot. The surrounding land use is comprised of residential development and vacant land.

1.1 Desktop Review

Barr conducted a desktop review to evaluate digital imagery for topography, soil types, and mapped wetlands within the AOI prior to the wetland delineation. As part of the desktop review, Barr staff reviewed resources such as the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS; Figure 1), Michigan Final Wetlands Inventory (MFWI; Figure 2), and aerial photography (Attachment 1).

A review of aerial photography shows evidence of past disturbance on parcel 15-32-201-006, the eastern most parcel of the site. It appears that from approximately 2014 to approximately 2019 the northern portion of this parcel was used as a landscaping storage and staging yard, and the previous owner brought in large cobble to establish a parking and storage area.

According to the WSS (Figure 1), the AOI includes well drained Fox sandy loam, till plain, 2 to 6 percent slopes (18B); somewhat poorly drained Thetford loamy fine sand, 0 to 3 percent slopes (35A); very poorly drained Granby loamy sand, 0 to 2 percent slopes (39); and well drained Urban land-Spinks complex, 0 to 8

percent slopes (62B). The Granby soil is the hydric (wetland) soil mapped within the AOI. Hydric soils are soils that developed under prolonged periods of saturation or inundation and typically support wetland habitats in an undrained condition.

The MFWI (Figure 2) shows the AOI to contain wetland in the southeastern corner of the property as identified by the National Wetland Inventory (NWI) and Michigan Resource Inventory System (MIRIS) maps. It also shows the central and southwestern portions of the AOI to contain soil areas which include wetland soils.

Figure 1. NRCS Web Soil Survey

Figure 2. Michigan Final Wetlands Inventory

1.2 Methodology

The wetland delineation was conducted in a manner consistent with the *Corps of Engineers Wetlands Delineation Manual (USACE 1987)* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0, USACE 2010)*. The wetland delineation procedures outlined in these manuals require the evaluation of on-site vegetation, soils, and hydrologic characteristics.

The wetland boundaries were flagged in the field with alpha numerically labeled pink flagging tape and pin flags. The wetland boundaries were subsequently surveyed by Monument Engineering Group Associates, Inc. Site observations are described in the sections below.

1.3 Results

The AOI includes palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) habitats. The on-site investigation identified two wetlands. These wetlands were labeled as Wetland A and Wetland B. The wetland and upland areas within the AOI are described below.

Vegetation, Soil, and Hydrology

Wetland A

Wetland A is a PEM/PSS wetland located within the central portion of the AOI. Wetland A continues off-site, both east and west of the AOI. The on-site portion of Wetland A is approximately **1.8** acres in size. The vegetation identified within the wetland included species such as lake sedge (*Carex lacustris*), skunk cabbage (*Symplocarpus foetidus*), common buckthorn (*Rhamnus cathartica*), and American elm (*Ulmus americana*). During the July 9th reevaluation of the wetlands, five (5) soil pits and data forms were completed at five (5) sampling points on the north edge of Wetland A, attached are data forms SP1 through SP5, along with a photolog showing the location of the sampling points. The eastern end of Wetland A exists on previously disturbed land and soil pits could not be dug due to the presence of large cobble at the surface. Hydric soil and primary and secondary wetland hydrology indicators were observed in other areas of Wetland A. The boundaries of this wetland were identified using flags A1 through A57.

Wetland B

Wetland B is a PFO wetland located in the southern portion of the AOI. Wetland B continues off-site south of the AOI. The on-site portion of Wetland B is approximately **0.2** acres in size. The vegetation identified within the wetland included species such as silver maple (*Acer saccharinum*). Hydric soil was assumed to be present within Wetland B. A soil pit was not dug because the soil surface was inundated by 6 inches of water. Primary and secondary wetland hydrology indicators were observed in Wetland B. The boundaries of this wetland were identified using flags B1 through B12. On October 30, 2023 the south side of Wetland B was delineated during the site visit to determine if there were any wetlands within in the proposed path of the directional drilling. There were no other wetlands found within the proposed path.

Upland

The upland areas of the site were characterized by mowed lawn and scrub-shrub areas and woods. The upland areas of the site contained species such as white clover (*Trifolium repens*), dandelion (*Taraxacum officinale*), multiflora rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergia*), prickly ash (*Zanthoxylum americanum*), common buckthorn, Morrow's honeysuckle (*Lonicera morrowii*), black locust (*Robinia pseudoacacia*), and black cherry (*Prunus serotina*). Hydric soils and wetland hydrology indicators were not observed in the upland areas of the site.

The attached Site Survey depicts the location of the wetland areas encountered on the site. Wetland Determination Data Forms are attached for further detailed information on the wetland and upland areas within the AOI.

1.4 Conclusions

Based on observations of topography, vegetation, soil, and indicators of hydrology, Barr has determined that wetland habitat is present within the AOI. These wetland areas were identified as a PEM, PSS, and PFO wetland habitat types. According to Part 303, Wetlands Protection, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, wetlands regulated by the State of Michigan include wetlands that are:

1. Located within 500 feet of, or having a direct surface water connection to, an inland lake, pond, river, or stream; or
2. Greater than 5 acres in size; or
3. Located within 1,000 feet of, or having a direct surface water connection to, the Great Lakes or Lake St. Clair; or

4. A water of the United States as that term is used in section 502(7) of the Federal Water Pollution Control Act, 33 USC 1362; or
5. Known to have a documented presence of an endangered or threatened species under Part 365 of State of Michigan 1994 PA 451, as amended or the Federal Endangered Species Act of 1973, Public Law 93-205; or
6. Rare or imperiled.

Wetland A may be regulated under Part 303 because it continues off-site, beyond the limits of the AOI. The total size of Wetland A was not determined. If Wetland A is greater than 5 acres in size it would be regulated.

Wetland B may be regulated under Part 303 because it is part of a larger wetland complex that extends off-site and may be greater than 5 acres in total size. If Wetland B is greater than 5 acres in size it would be regulated.

The City of Rochester Hills regulates all wetlands regulated by EGLE and, in addition, regulates noncontiguous wetlands two acres in size or greater. The City of Rochester Hills also regulates noncontiguous wetlands less than two acres in size if the wetlands are deemed essential to the preservation of the natural resources of the city. Wetland A and Wetland B are likely to be regulated by the City of Rochester Hills because they appear to be greater than 2 acres in size.

Please be advised that EGLE, and the City of Rochester Hills, has regulatory authority regarding the wetland boundary location(s) and jurisdictional status of wetlands on this site. Barr's wetland determination was performed in general accordance with accepted procedures for conducting wetland determinations. Barr provides no warranty, guarantee, or other agreement in respect to the period of time for which this wetland determination will remain valid. Barr's conclusions reflect our professional opinion based on the site conditions within the AOI observed during the site visit. Discrepancies may arise between current and future wetland determinations and delineations due to changes in vegetation and/or hydrology as the result of land use practices or other environmental factors, whether on-site or on adjacent or nearby properties. We recommend our wetland boundary determination and jurisdictional opinion be reviewed by EGLE prior to undertaking any activity within any identified wetlands.

Thank you for the opportunity to provide this wetland delineation. If you have any questions, please contact me at your convenience at 810-247-1229 or Fthompson@barr.com.

Sincerely,

BARR ENGINEERING CO.

Fran Thompson
Ecologist

References

U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual.* Washington, DC.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*

Figure:
Site Survey

Attachments:
Attachment 1 – Historic Aerial Photography
Attachment 2 – USACE Wetland Determination Data Sheets

ROCHESTER HILLS
MICHIGAN

FIRE DEPARTMENT

Todd Gary
Chief of Fire and Emergency Services

From: Vince Foisy
To: Planning Dept.
Date: Sept. 16, 2024
Re: Angora Drive Condos - Section #32 – City Project # 22-051 Review #8

APPROVED

The street names submitted on the drawings I received by Planning on 09/16/2024 have been reviewed as follows:

The following name(s) is/are Approved:

Prefix	Street Name	Suffix
	Angara	**Drive**
	Angara	**Court**
	Harvey	**Street**

The following name(s) is/are Not Approved:

Prefix	Street Name	Suffix

NOTE: Units 49 through 58 shall be **Angara Court** addresses

If you have any further questions, please contact me at 248.841.2709

_____
VINCENT B. FOISY
Communication Systems Administrator

ASTI ENVIRONMENTAL

Assessment • Remediation • Compliance
Compliance • Incentives

10448 Citation Drive, Suite 100
Brighton, MI 48116

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Sent Via Email Only

September 23, 2024

Chris McLeod, Planning Manager
Department of Planning and
Economic Development
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309-3033

Subject: **Auburn Angara Oaks Development**
(Sidwell Nos. 70-15-32-201-001, -003, -004, & -006)
Wetland Site Plan Review #8
Site Plans dated September 4, 2024
ASTI File No. A24-1482.86

Applicant: **Auburn Angara Oaks, LLC**

Dear Mr. McLeod:

The above-referenced project proposes to construct fifteen residential structures and one outbuilding on 9.03 acres of land located along Auburn Road, west of Devondale Road and east of Richmond Drive. The site includes wetland regulated by the City of Rochester Hills and also likely regulated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

ASTI has reviewed the site plans received by the City, dated September 4, 2024 (Current Plans), for conformance to the Wetland and Watercourse Protection Ordinance and the Natural Features Setback Ordinance and offers the following comments for your consideration.

COMMENTS

1. **Applicability of Chapter (§126-500).** The Wetland and Watercourse Protection Ordinance is applicable to the subject site because the subject site is not included within a site plan which has received final approval, or a preliminary subdivision plat which received approval prior to January 17, 1990, which approval remains in effect and in good standing, and the proposed activity has not been previously authorized.

2. **Wetland and Watercourse Determinations (§126-531).** This Section lists specific requirements for completion of a Wetland and Watercourse Boundary Determination.

   a. This review has been undertaken in the context of a Wetland and Watercourse Boundary Determination completed on the site, which was inspected in the field by ASTI on August 1, 2024. The Current Plans show who completed the on-site delineation (Barr Engineering) and the date it was completed (July 9, 2024). ASTI revised the wetland delineation in the field for Wetland A. ASTI added flags in the west central and east central portions of Wetland A labeled RH-1 through RH-15. The applicant has surveyed the additional flagging placed by ASTI and has shown them on the Current Plans.

      The Current Plans also indicate that the south boundary of Wetland B was delineated by Barr Engineering on October 30, 2023. This area is shown on the Current Plans to ASTI's satisfaction.

      A response document from the applicant pertaining to the previous site plan review also indicates the area proposed for directional drilling from Devondale Road to Wetland B was delineated by Barr Engineering. The Current Plans now state that Barr Engineering completed a wetland delineation in this area on October 30, 2023, and that no wetland was found. This is to ASTI's satisfaction.

   b. Two wetlands were found on-site as shown on the Current Plans (Wetlands A and B). Their quality assessments are below.

      Wetland Quality Assessments

      Wetland A
      Wetland A is a forested, scrub/shrub, and emergent wetland located in the central portion of the site. The tree layer of Wetland A was dense to sparse and was dominated by the common native species of green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and cottonwood (*Populus deltoides*). The shrub layer was dense and overwhelmingly dominated by the non-native species glossy buckthorn (*Frangula alnus*). The herbaceous layer was sparse and was dominated by the common native species of eastern wood sedge (*Carex blanda*), calico aster (*Symphyotrichum lateriflorum*), panicled aster (*Symphyotrichum lanceolatum*), and fowl manna grass (*Glyceria striata*), along with non-native species of redtop (*Agrostis gigantea*) and reed canary grass (*Phalaris arundinacea*). Overall, vegetation within Wetland A was dominated by common native species in the tree layer (75-85%) and herbaceous layer (50-60%) and dominated by non-native species in the shrub layer (80-100%). Soils within Wetland A were comprised of sandy loams and sandy clay loams and appeared to be relatively undisturbed.

Observations of primary wetland hydrology indicators within Wetland A included sparsely vegetated concave surfaces, surface water, water-stained leaves, and oxidized rhizospheres on living roots. Surface water was encountered within many portions of Wetland A on the day of the site inspection. Additionally, surface water was observed in connected wetland off-site to the west, indicating a water table and the potential for ground water contact and groundwater flows within Wetland A during periods of normal precipitation and ground water levels. These hydrological factors indicate Wetland A detains seasonal localized surface water runoff from precipitation and conducts potential ground water flow to the south/southeast, based on topographical information on the Current Plans and other publicly available data. Wetland A is a portion of a larger wetland headwater system that extends to the west and south that is in direct hydrological contact with the River Rouge to the south of the Project Area. The River Rouge is a regionally important watercourse.

Wetland A is not within floodplain and does not appear to have any significant flood storage on-site. Wetland A is a portion of a wetland system greater than five acres in size, which is also directly connected to the River Rouge to the south, and thus, warrants regulation from the City. Wetland A contains significant non-native species and likely only supports transient faunal usage by small wildlife and birds on-site. However, it is a portion of a larger wetland system to the south that appears to contain less significant non-native species composition based on limited field observations by ASTI. Based on these factors, it is ASTI's opinion that Wetland A is generally of low ecological quality and function but is part of a wetland system that, at minimum, is greater than ten acres in size including off-site extents that is directly connected to the River Rouge. Thus, it should be considered a medium-quality natural resource by the City.

Wetland B

Wetland B is a forested wetland, located in the south-central portion of the site, and is connected to Wetland A off-site to the south/southwest of the Project Area. Vegetation within Wetland B was dominated by the common native tree species of silver maple (*Acer saccharinum*) and American elm, which comprised approximately 70-80% of the total vegetation. The shrub layer was relatively sparse and was dominated by common native species of green ash saplings, American elm saplings, and the invasive shrub species of glossy buckthorn, generally in equal distribution. The herbaceous layer was sparse and was dominated by the common native species of fowl manna grass and calico aster. Overall, vegetation within Wetland B was dominated by native species (90%) with minor non-native species inclusions (10%). Soils within Wetland B were comprised of sandy loams with areas of a 0.5 inch to 1 inch muck layer and appeared to be relatively undisturbed.

Observations of primary wetland hydrology indicators within Wetland B included sparsely vegetated concave surfaces, 2 cm of muck over sandy loam soils, water marks, and oxidized rhizospheres on living roots. Neither groundwater nor surface water was encountered within Wetland B on the day of the site inspection. However, watermarks on trees within Wetland B were observed and measured by ASTI and ranged from 0.5 feet to greater than 2 feet in length, which indicates this area

regularly exhibits surface water, which could be an expression of groundwater based on observations within Wetland B and from reviewed historical aerial photography. These hydrological indicators suggest Wetland B detains varying amounts of seasonal localized surface water runoff from precipitation and conducts potential varying amounts of ground water.

Wetland B is not within floodplain and does not appear to have any significant flood storage on-site. Wetland B is connected to Wetland A off-site and, thus, should be considered one wetland system in an ecological sense, warranting regulation from the City. Wetland B contains very little non-native species and is part of a higher quality habitat, which could support higher rates of faunal usage by small wildlife and birds on-site. Moreover, it is a portion of a larger wetland system to the south that appears to contain less significant non-native species composition based on limited field observations by ASTI. Based on these factors, it is ASTI's opinion that Wetland B is of high ecological quality and function, is part of a wetland system at minimum larger than 10 acres in size including off-site extents, and is connected to the River Rouge; thus, it should be considered a high-quality natural resource by the City.

3. **Use Permit Required (§126-561).** This Section establishes general parameters for activity requiring permits, as well as limitations on nonconforming activity. This review of the Current Plans has been undertaken in the context of those general parameters, as well as the specific requirements listed below.

   a. On-site wetland boundaries are shown accurately on the Current Plans as inspected and revised in the field by ASTI on August 1, 2024 for the purposes of this review. The Current Plans also indicate that Barr Engineering completed the on-site wetland delineation on July 24, 2024.

      All on-site wetlands are regulated by the City and likely EGLE, because they are a portion of the same wetland system that is greater than five acres in size that is directly connected to the River Rouge to the south, which meets the definition of a stream under Part 301.

   b. A table showing all proposed wetland impacts for this project was presented on Sheet C-2.3; these amounts were used for ASTI's review of the Current Plans.

   c. The Current Plans indicate that 38,949 ft^2 of Wetland A will be impacted from the construction of a portion of Angara Court, Henry Street, and proposed Units 49-54 and associated utilities. The wetland impacts in this area are significant. However, ASTI recognizes that some impacts to Wetland A will be unavoidable to construct prudent site access to the southern portion of the development. Moreover, although the totality of Wetland A should be considered of medium ecological quality to the City, the portion of Wetland A proposed to be impacted in this area is of poor quality (dense non-native species content and low ecological function). Therefore, ASTI conditionally recommends the City allow for these impacts. However, the remaining portions of Wetland A on-site must be protected from further development. In earlier plan reviews, ASTI recommended that a retaining wall be placed along the west side

of the proposed access road where Wetland A will be impacted as allowed by the City's engineering standards. A retaining wall, which is subject to final City approval, is now shown in these areas of impacts, which is to ASTI's satisfaction. This construction will minimize wetland impacts by reducing the proposed typical roadbed width as proposed within Wetland A while still being structurally sound. These actions should minimize the amount of proposed impacts to Wetland A, minimize the potential for unplanned impacts, reduce flashy storm flows into Wetland A, and potentially improve site aesthetics and native wetland vegetation.

Post construction, a City-approved wetland seed mix comprised of native Michigan species must be installed in any areas of unplanned temporary impacts to Wetland A, as well as along wetland side of the final retaining wall structure. All of this information is shown on the Current Plans on Sheet C2.3 to ASTI's satisfaction.

d. The Current Plans show that 361 ft^2 of permanent impacts to Wetland B will result from the construction of the City-required cul-de-sac of the site access road. These impacts are small and based on City safety and engineering standards, ASTI recommends the City allow for these impacts. Care must be taken during construction to avoid any unplanned impacts to Wetland B, which should be considered a high-quality natural resource to the City. A retaining wall, which is subject to City engineering standards, is proposed along the boundary of impacts to Wetland B, which should minimize any further impacts to Wetland B in this area. This is shown on Sheet C2.3 of the Current Plans and is to ASTI's satisfaction.

   ASTI recommends that a City-approved wetland seed mix be applied to any areas of Wetland B incidentally disturbed from construction in this area; this information is shown to ASTI's satisfaction on Sheet C2.3 of the Current Plans.

e. Sheet C2.3 shows that 113 linear feet (2,440 square feet) of Wetland B, on- and off-site, will be temporarily impacted from the extension of an existing sanitary sewer line from Devondale Road in the southeast portion of the project area through directional drilling. This action qualifies for an exemption to the Wetland and Watercourse Ordinance provided that: (1) a prior written notice is given to the City Engineer and written consent is obtained from the City Mayor prior to work commencing; (2) the work is conducted using best management practices (BMPs) to ensure flow and circulation patterns and chemical and biological characteristics of wetlands are not impacted; and (3) such that all impacts to the aquatic environment are minimized. Any wetland areas disturbed by directional drilling activities must be seeded with a City-approved wetland seed mix. This is noted on the Current Plans to ASTI's satisfaction. Please note a permit from EGLE will likely be required for this activity.

f. The Current Plans indicate that 25 ft^2 of Wetland A will be impacted from the construction of a portion of the driveway and grading activities associated with Unit 59. The wetland impacts in this area are very small. Moreover, although the totality of Wetland A should be considered of medium ecological quality to the City, the portion of Wetland A proposed to be impacted in this area is of poor quality (dense non-native species content and low ecological function). Therefore, ASTI

conditionally recommends the City allow for these impacts. However, the remaining portions of Wetland A on-site must be protected from further development. A split rail fence is shown along the remaining portion of Wetland A in this area. The split rail fence will clearly mark the remaining area of Wetland A in this area and should minimize any unforeseen post-construction impacts to Wetland A. Therefore, ASTI recommends the City allow for these impacts as proposed.

g. The Current Plans show that 69 ft^2 of permanent impacts to Wetland B will occur from grading from the proposed detention basin inlet. This action qualifies for an exemption to the Wetland and Watercourse Ordinance provided that: (1) a prior written notice is given to the City Engineer and written consent is obtained from the City Mayor prior to work commencing; (2) the work is conducted using best management practices (BMPs) to ensure flow and circulation patterns and chemical and biological characteristics of wetlands are not impacted; and (3) such that all impacts to the aquatic environment are minimized. Any wetland areas disturbed by directional drilling activities must be seeded with a City-approved wetland seed mix. This is noted on the Current Plans to ASTI's satisfaction. Please note a permit from EGLE will likely be required for this activity.

h. Post construction, a City-approved wetland seed mix comprised of native Michigan species must be installed in any areas of unplanned impacts to Wetland A, as well as along wetland side of the final retaining wall structure. All of this information is shown on the Current Plans on Sheet C2.3 to ASTI's satisfaction.

4. **Use Permit Approval Criteria (§126-565).** This Section lists criteria that shall govern the approval or denial of an application for a Wetland Use Permit. The following items must be addressed on a revised and dated Wetland Use Permit application and additional documentation submitted for further review:

   a. A Wetland Use Permit from the City is required for this project as proposed on the Current Plans. It is likely that a Part 303 permit from EGLE will also be required. However, EGLE should be contacted to confirm this assertion. Any applicable permits from EGLE and any other applicable agencies must be obtained by the applicant prior to construction activities.

5. **Natural Features Setback (§21.23).** This Section establishes the general requirements for Natural Features Setbacks and the review criteria for setback reductions and modifications.

   a. The Current Plans show Natural Features Setback areas and impacts are in linear feet as calculated by the applicant and per City per the revised wetland delineation by ASTI to ASTI's satisfaction.

   b. The Natural Features Setback around Wetland A is generally comprised of young upland forest, upland scrub/shrub, and lawn areas. The tree layer within the forested area, which was prevalent around the northwest and southeast portions of Wetland A, was dominated by the common native tree species of cottonwood and black

cherry (*Prunus serotina*) with significant inclusions of the non-native species of glossy buckthorn, which was thick within the shrub layer; the upland scrub/shrub Natural Features Setback was observed around the majority areas of Wetland A and was dominated by the non-native species of glossy buckthorn. Herbaceous coverage within the upland forested and upland scrub/shrub areas was sparse at the time of the inspection; common native vegetation such as eastern wood sedge, and calico aster as well as the non-native species of reed canary grass were observed. The lawn area portion was comprised of mowed lawn and active unimproved vehicle trails. Vegetation within this area was dominated by Kentucky blue grass (*Poa pratensis*) and other common lawn species.

The Natural Features Setback around Wetland A was dominated by non-native species (65%) with significant common native species inclusions (35%). Due to the Natural Features Setback being generally dominated by non-native species, it should be considered a low-quality buffer to Wetland A.

c. Regardless of the low-quality of the Natural Features Setback around Wetland A, it does provide at least minimal natural buffering for Wetland A. Therefore, steps should be taken to preserve the remaining portions of this area, which will also minimize unplanned impacts to the remaining portion of Wetland A on-site. To help minimize unplanned impacts to the remaining Natural Features Setbacks, and presumably Wetland A, ASTI recommended fieldstone or boulder wall or some other City-approved permanent structure at least 18 inches in height be constructed along the northern boundary of the proposed detention pond to ensure no further unplanned impacts from lawn maintenance or residential activities occur. The Current Plans show that a spilt rail fence and 18" boulders are proposed in these areas, which is to ASTI's satisfaction.

d. The Current Plans show 1,297 linear feet of permanent impacts to the Natural Features Setback associated with Wetland A will occur from the construction of a portion of Angara Court, Henry Street, and Units 32-55. The Natural Features Setback in this area is mainly comprised of mowed lawn areas and is of low quality and function. Therefore, ASTI recommends the City allow for these impacts.

e. Upon completion of construction of Lot 58, the cul-de-sac, and the detention pond as proposed on the Current Plans, ASTI recommends a City-approved wetland edge seed mix be installed in any unplanned areas disturbed by the construction of these areas. This is noted on Sheet C2.3 on the Current Plans to ASTI's satisfaction.

f. In previous site plan reviews, ASTI recommended that signs stating no mowing, application of chemicals, etc. and as approved by the City should be placed around the Natural Features Setback to around what is now the northern boundary of the proposed detention basin. The Current Plans indicate that signage will be placed behind the split rail/boulder design specified above at an interval of 50 feet prohibiting mowing and the application of chemicals behind the fencing and boulders, which is to ASTI's satisfaction.

g. The Natural Features Setback around Wetland B was generally comprised of young upland forest. This area was dominated by vegetation of the common native tree species of silver maple, black cherry, American elm, and box elder (*Acer negundo*). The shrub layer was sporadic and was comprised of the common native species of gray dogwood (*Cornus racemosa*) and the non-native species of glossy buckthorn, generally in equal distribution. Herbaceous coverage was sparse at the time of the inspection and was generally dominated by the common native species of eastern wood sedge and panicled aster. The Natural Features Setback around Wetland B was dominated by common native species (75%) with significant inclusions of non-native species (25%). Due to the higher percentage of native species within the Natural Features Setback around Wetland B, it should be considered a medium quality buffer to Wetland B and impacts should be minimized.

h. Approximately 70 linear feet of permanent Natural Features Setback Impacts are proposed at the proposed cul-de-sac at the southern portion of the access drive. ASTI recognizes the only prudent area to complete the City-required cul-de-sac is partially within the northern portion of the Natural Features Setback associated with Wetland B. Thus, ASTI recommends the City allow for these impacts.

i. Steps to protect the remaining portions of the medium-quality Natural Features Setback around the high-quality Wetland B against unplanned impacts must be taken to preserve their remaining quality and functions. The Current Plans propose 89 linear feet of Natural Features impacts around Wetland B from the construction of Lot 58 and the cul-de-sac of Angara Court. To help minimize unplanned impacts to the remaining Natural Features Setbacks, and presumably Wetland B, ASTI recommended a fieldstone or boulder wall or some other City-approved permanent structure at least 18 inches in height be constructed along the western boundary of the proposed Lot 58 to ensure no further unplanned impacts from lawn maintenance or residential activities occur. A retaining wall, which is subject to final City approval, is now shown in these areas of impacts, which is to ASTI's satisfaction. This construction will minimize wetland impacts by reducing the proposed typical roadbed width as proposed within Wetland B, while still being structurally sound.

j. In the previous plan review, ASTI recommended signs stating no mowing, application of chemicals, etc. and as approved by the City and as referred to in Comment 5.e above, should be placed around the Natural Features Setback to remain around the western boundary of what is now Lot 58. Signage as recommended is proposed in this area on the Current Plans, which is to ASTI's satisfaction.

k. The Current Plans show 113 linear feet of temporary Natural Features Setback impacts associated with Wetland B will occur from directional drilling associated with the sanitary sewer extension from Devondale Road. ASTI recommends the City allow for these impacts on the condition that any disturbances in the Natural Features Setback in this area should be graded to original elevations with on-site soils and seeded with a City-approved seed mix. This is noted on the Current Plans to ASTI's satisfaction.

i. The Current Plans show that 4,373 linear feet of Natural Features Setback associated with Wetland B will be permanently impacted from the construction of the proposed on-site detention pond in the southern portion of the site.

   This action would qualify for an exception to the Natural Features Setback ordinance provided that: (1) a prior written notice is given to the City Engineer and written consent is obtained from the City Mayor prior to work commencing; (2) the work is conducted using best management practices (BMPs) to ensure flow and circulation patterns and chemical and biological characteristics of wetlands are not impacted; and (3) such that all impacts to the aquatic environment are minimized. BMPs must be implemented during the construction phase of the proposed project and any temporarily impacted areas must be restored to original grade with original soils or equivalent soils, where applicable, and seeded with a City-approved seed mix. This is noted on the Current Plans to ASTI's satisfaction.

RECOMMENDATION

ASTI recommends the City approve the Current Plans.

Respectfully submitted,

ASTI ENVIRONMENTAL

Kyle Hottinger
Wetland Ecologist
Professional Wetland Scientist #2927

Dianne Martin
Director of Ecological Services
Professional Wetland Scientist #1313

SITE PLAN UPDATED 09-09-24.pdf Markup Summary

Building Department (3)

Subject: Building Department
Author: J Rhoades
Date: 9/24/2024 7:19:13 AM
Status:

Jason Rhoades 248-841-2435
RhoadesJa@RochesterHills.org

Subject: Building Department
Author: J Rhoades
Date: 9/24/2024 7:19:09 AM
Status:

Yes with conditions

Subject: Building Department
Author: J Rhoades
Date: 9/24/2024 7:22:34 AM
Status:

Revise codes to current codes:

2021 Michigan Plumbing Code
2021 Michigan Mechanical Code
2023 NEC

Engineering Department (1)

Subject: Engineering Department
Author: Jason Boughton
Date: 9/9/2024 1:48:50 PM
Status:

Fire Department (1)

Subject: Fire Department
Author: Ann Echols
Date: 9/10/2024 11:16:54 AM
Status:

Group (8)

Subject: Group
Author: macdonaldj
Date: 9/9/2024 11:20:55 AM
Status:

City of Rochester Hills Planning & Economic Development

Subject: Group
Author: C.McLeod
Date: 9/23/2024 10:52:45 AM
Status:

Subject: Group
Author: C.McLeod
Date: 9/23/2024 10:57:12 AM
Status:

SP

Subject: Group
Author: C.McLeod
Date: 9/23/2024 10:57:12 AM
Status:

LIP

Subject: Group
Author: C.McLeod
Date: 9/23/2024 10:57:12 AM
Status:

Subject: Group
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Date: 9/23/2024 10:57:12 AM
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NFSM

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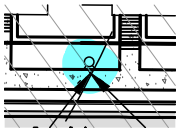
Date: 9/23/2024 10:57:12 AM
Status:

WP

Subject: Group
Author: C.McLeod
Date: 9/23/2024 10:57:12 AM
Status:

BP

Highlight (40)



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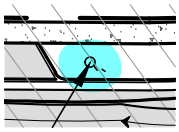
Date: 9/10/2024 10:55:29 AM
Status:



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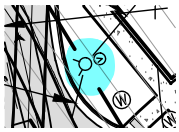

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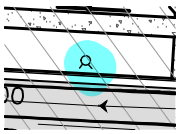

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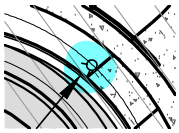
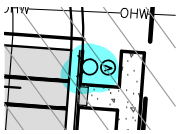
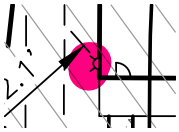


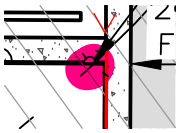
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:56:36 AM
Status:



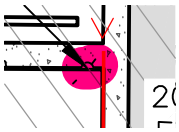
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:56:45 AM
Status:



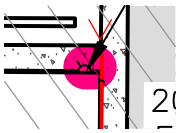
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:04 AM
Status:



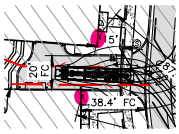
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:06 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:08 AM
Status:



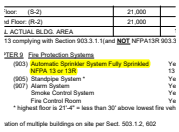
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:10 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:13 AM
Status:

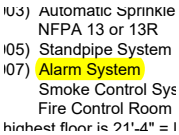
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:43 AM
Status:

led



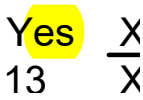
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:48 AM
Status:

Automatic Sprinkler System Fully Sprinkled
NFPA 13 or 13R



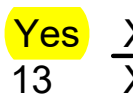
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:53 AM
Status:

Alarm System



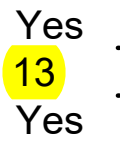
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:55 AM
Status:

es



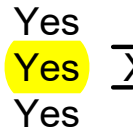
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:58 AM
Status:

Yes



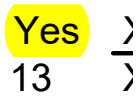
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:57:59 AM
Status:

13



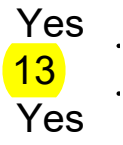
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 10:58:14 AM
Status:

Yes



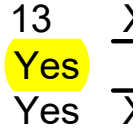
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:29 AM
Status:

Yes



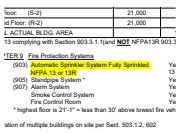
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:30 AM
Status:

13



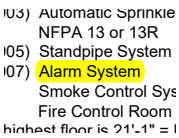
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:31 AM
Status:

Yes



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:37 AM
Status:

Automatic Sprinkler System Fully Sprinkled
NFPA 13 or 13R



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:40 AM
Status:

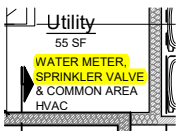
Alarm System

Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:09:54 AM
Status:

MULTIFAMILY BUILDINGS

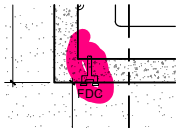
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:10:02 AM
Status:

ROWHOUSE STYLE ATTACHED CONDOS

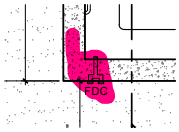


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:11:26 AM
Status:

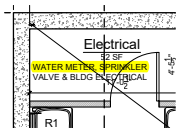
WATER METER,
SPRINKLER VALVE



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:11:41 AM
Status:

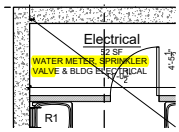


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:11:52 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:01 AM
Status:

WATER METER, SPRINKLER

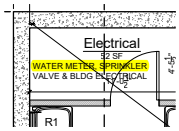


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:03 AM
Status:

WATER METER, SPRINKLER
VALV

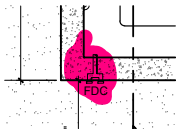
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:06 AM
Status:

E

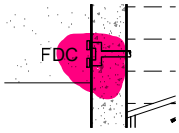


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:23 AM
Status:

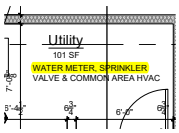
WATER METER, SPRINKLER



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:29 AM
Status:

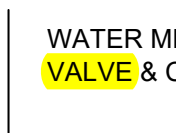


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:12:36 AM
Status:



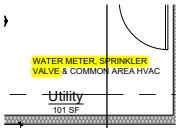
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:13:40 AM
Status:

WATER METER, SPRINKLER



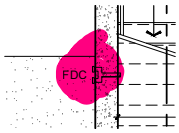
Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:13:49 AM
Status:

VALVE

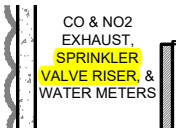


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:13:56 AM
Status:

WATER METER, SPRINKLER VALVE

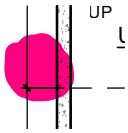


Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:14:08 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:14:52 AM
Status:

SPRINKLER VALVE RISER



Subject: Highlight
Author: Ann Echols
Date: 9/10/2024 11:15:16 AM
Status:

Jenny McGuckin - YES (1)

Subject: Jenny McGuckin - YES
Author: Seth Bucholz
Date: 9/23/2024 12:04:30 PM
Status:

Natural Resouces (1)

Subject: Natural Resouces
Author: Matt Einheuser
Date: 9/17/2024 3:02:26 PM
Status:

Planning Department (5)

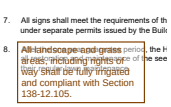
Subject: Planning Department
Author: C.McLeod
Date: 9/19/2024 1:47:58 PM
Status:

Subject: Planning Department
Author: C.McLeod
Date: 9/23/2024 10:53:09 AM
Status:

Maintenance. The owner, tenant, occupant or person responsible for any property which was the subject of an approved site plan shall maintain the property and the improvements thereon in accordance with the approved site plan or an approved amendment thereof. This responsibility shall include the duty to maintain in a condition substantially similar as approved, including the duty to replace, if necessary, all improvements such as, but not by way of limitation, all greenbelts, planting, walls, fences, paving, trash receptacles, handicapped parking areas, etc.

Subject: Planning Department
Author: C.McLeod
Date: 9/23/2024 10:53:55 AM
Status:

All ground mounted utilities shall be fully screened from view.



Subject: Planning Department
Author: C.McLeod
Date: 9/23/2024 10:54:10 AM
Status:

All landscape and grass areas, including rights of way shall be fully irrigated and compliant with Section 138-12.105.

Subject: Planning Department
Author: C.McLeod
Date: 9/24/2024 1:12:49 PM
Status:

Assessing | Yes

Traffic (1)

Subject: Traffic
Author: Keith
Date: 9/24/2024 1:20:55 PM
Status: