LAUREL LAKE VILLAS

HUDSON, OHIO

SCHEMATIC DESIGN PACKAGE: DECEMBER 5TH, 2023

PROJECT TEAM

OWNER:

LAUREL LAKE RETIREMENT COMMUNITY
MAILING ADDRESS: 200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236
CONTACT: ERIC REDD
DIRECTOR OF ENVIRONMENTAL SERVICES
PHONE: 330 - 655 - 1412
E-MAIL: EREDD@LAURELLAKE.ORG

CIVIL ENGINEER:

RIVERSTONE
MAILING ADDRESS: 3800 LAKESIDE AVENUE, SUITE 100
CLEVELAND, OHIO 44114
CONTACT: JEFF JARDINE, PROJECT ENGINEER
E-MAIL: JJARDINE@RIVERSTONESURVEY.COM

ARCHITECT:

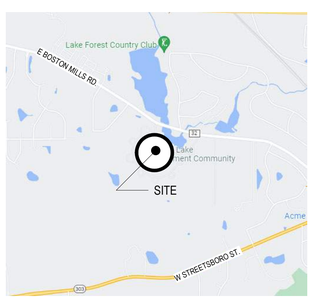
RDL ARCHITECTS
MAILING ADDRESS: 16102 CHAGRIN BLVD, STE 200
SHAKER HTS, OH 44120
CONTACT: EILEEN NACHT
TITLE: SENIOR LIVING DIRECTOR
PHONE: 216-752-4300
E-MAIL: EILEEN@RDLARCHITECTS.COM

INTERIOR DESIGN:

RDL ARCHITECTS
MAILING ADDRESS: 16102 CHAGRIN BLVD, STE 200
SHAKER HTS, OH 44120
CONTACT: KATALIN SIGNS
TITLE: INTERIOR DESIGN DIRECTOR
PHONE: 216-752-4300
E-MAIL: KATALIN@RDLARCHITECTS.COM

DRAWING INDEX

LOCATION MAP







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LAUREL LAKE

Laurel Lake Retirement Community
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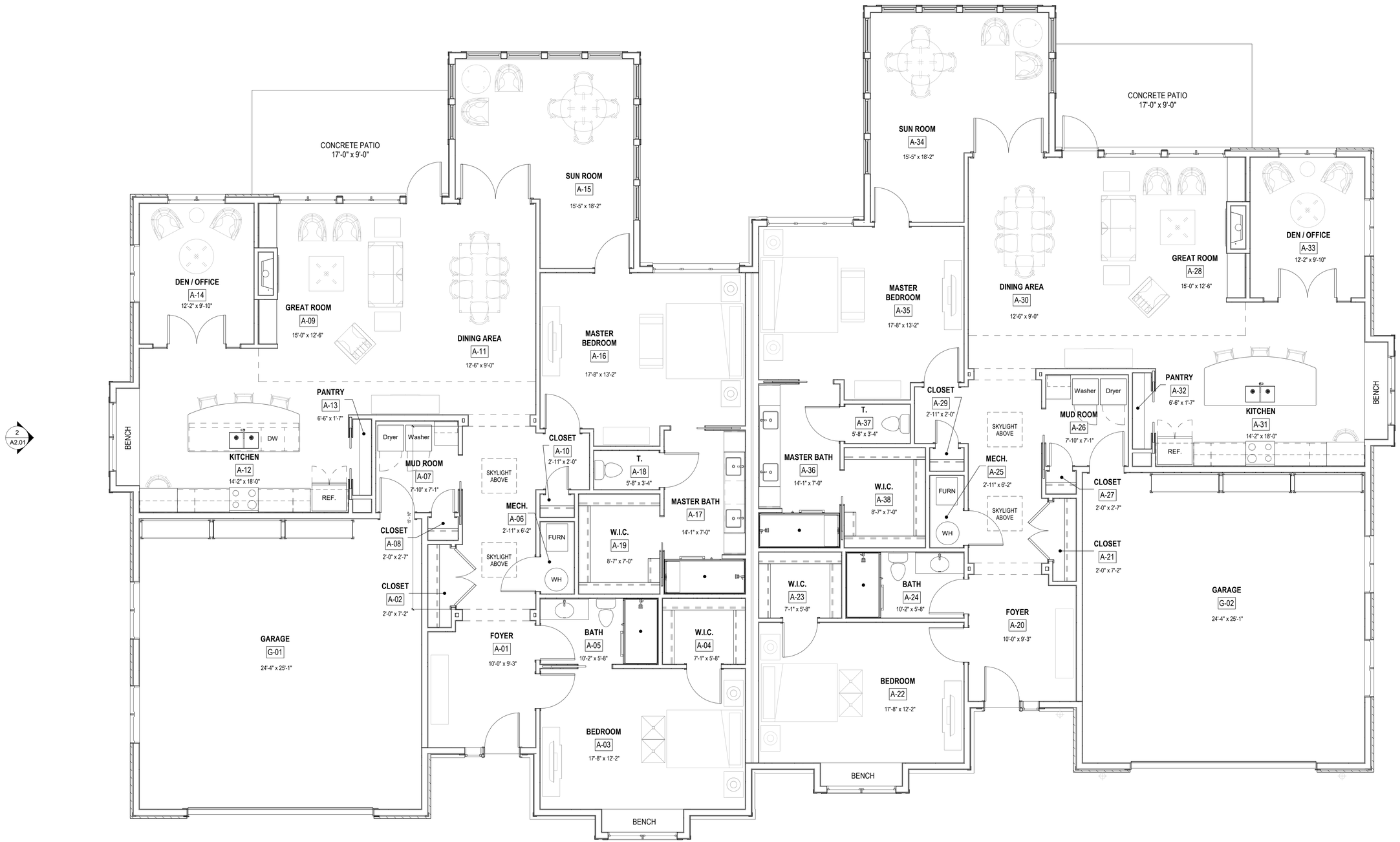
Hudson, Ohio 44236
PH: 330.650.2100
www.laurellake.org



1 BRANDYWINE - 1ST FLOOR PLAN

1/4" = 1'-0"

GROSS SQ. FT. - 2350

GARAGE SQ. FT. - 649

PLAN

12/05/2023 rdla: #22063s

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LAUREL LAKE VILLAS

BRANDYWINE

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200 Laurel Lake Dr.
Hudson, Ohio 44236
PH: 330.650.2100
www.laurellake.org

1 FRONT ELEVATION
3/16" = 1'-0"

3 RIGHT ELEVATION
3/16" = 1'-0"

2 LEFT ELEVATION
3/16" = 1'-0"

4 REAR ELEVATION
3/16" = 1'-0"

12/05/2023 rdla: #22063s

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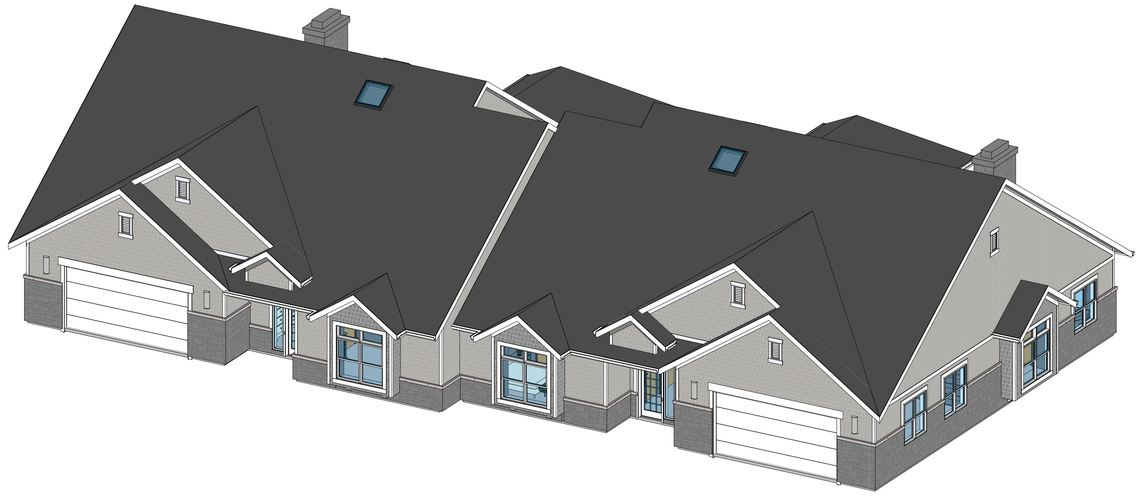
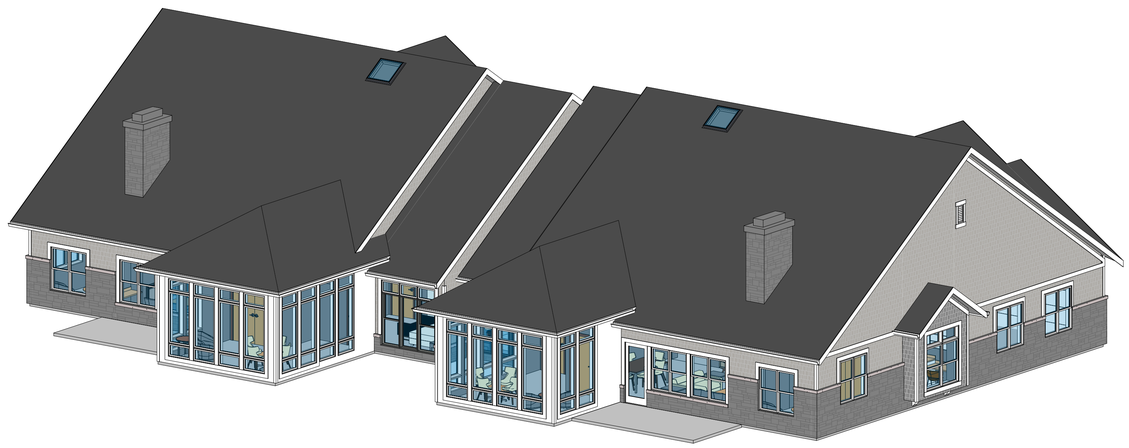


1 3D SKETCH VIEW - FRONT



2 3D SKETCH VIEW - REAR

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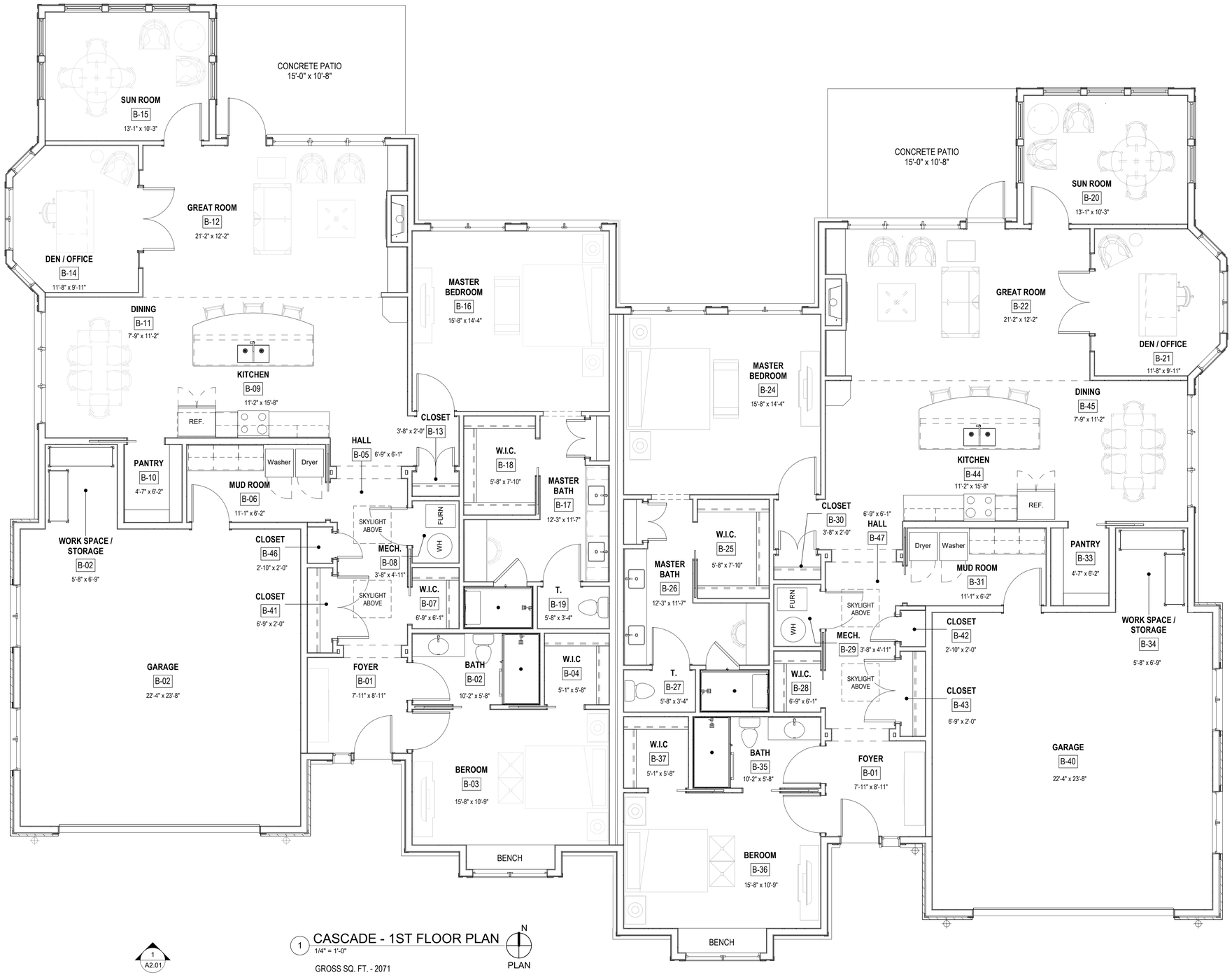
12/05/2023 rdla: #22063s



1 CASCADE - 1ST FLOOR PLAN
1/4" = 1'-0"

GROSS SQ. FT. - 2071
GARAGE SQ. FT. - 604

12/05/2023 rdla: #22063s

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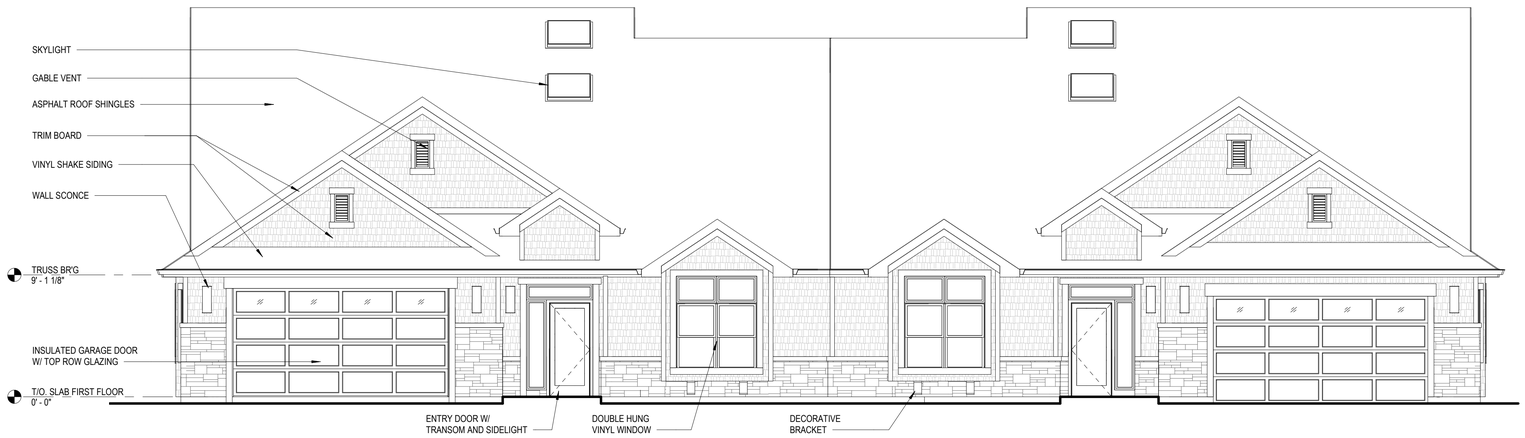
LAUREL LAKE VILLAS

CASCADE

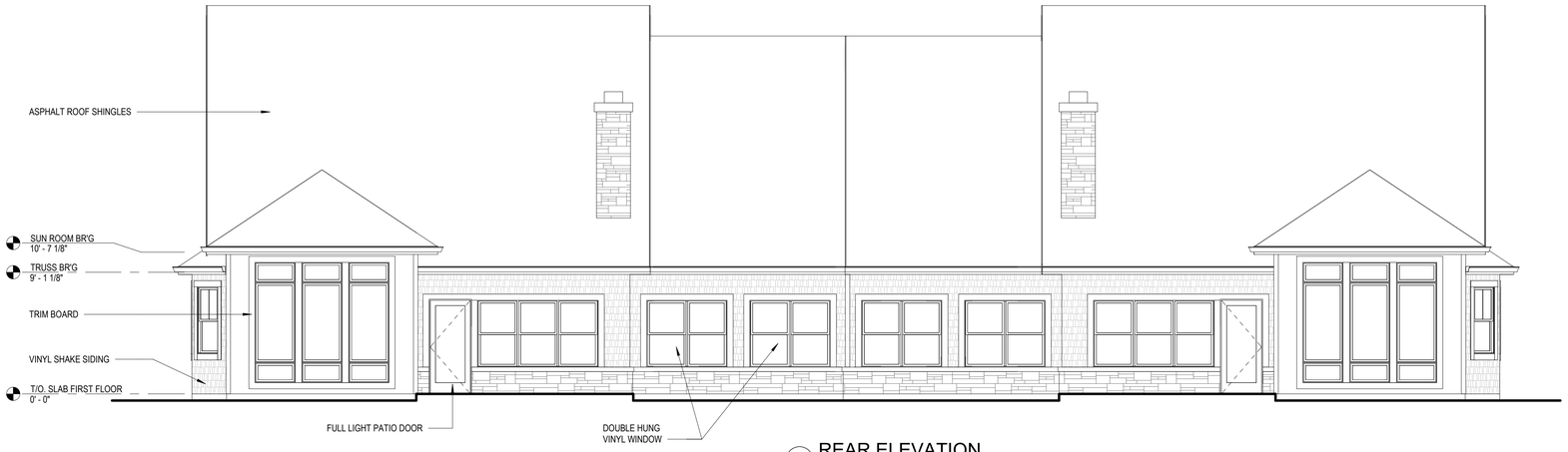
Laurel Lake Retirement Community
200 Laurel Lake Dr.
Hudson, Ohio 44236
PH: 330.650.2100
www.laurellake.org



1 FRONT ELEVATION
3/16" = 1'-0"

2 LEFT ELEVATION
3/16" = 1'-0"

3 RIGHT ELEVATION
3/16" = 1'-0"



4 REAR ELEVATION
3/16" = 1'-0"

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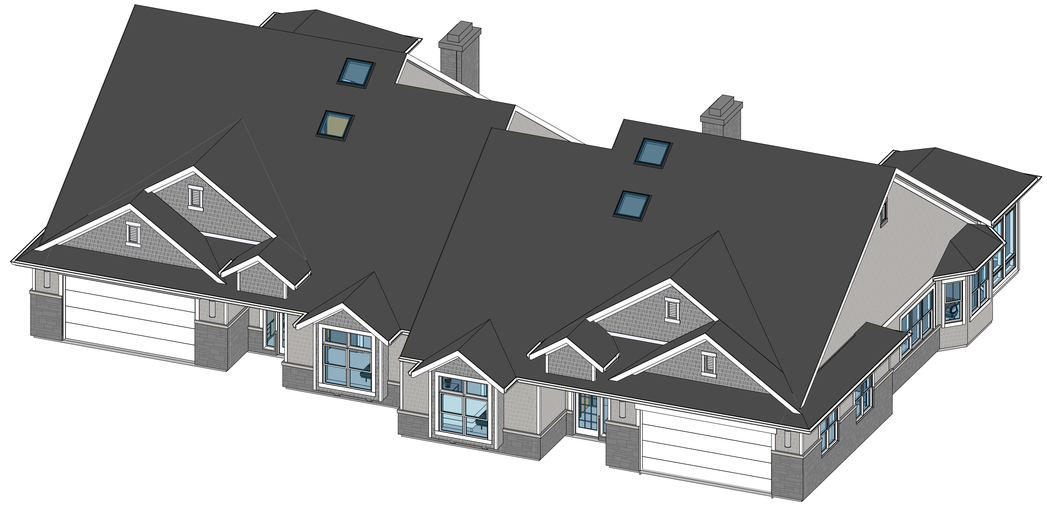
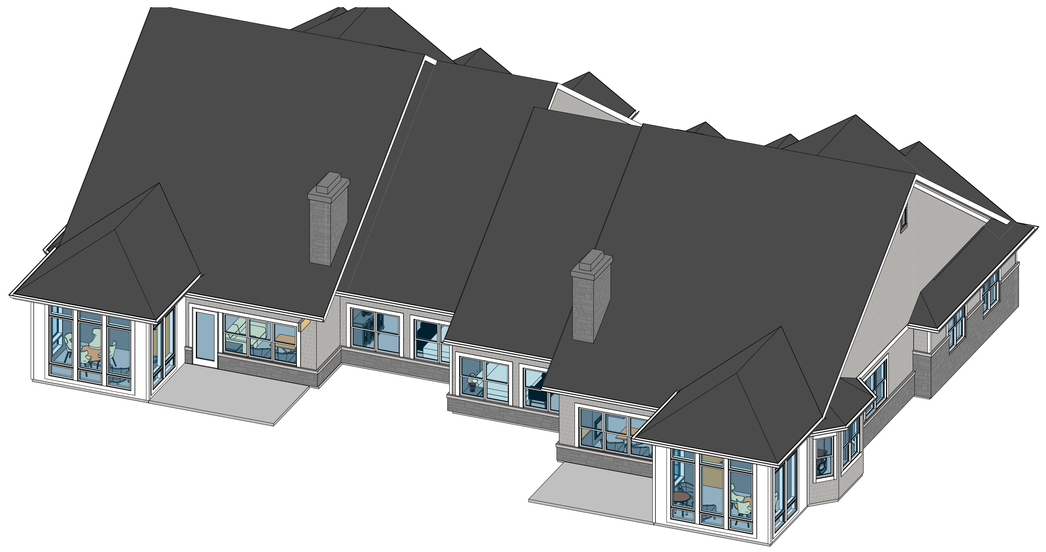


1 3D SKETCH VIEW - FRONT



2 3D SKETCH VIEW - REAR

12/05/2023 rdla: #22063s

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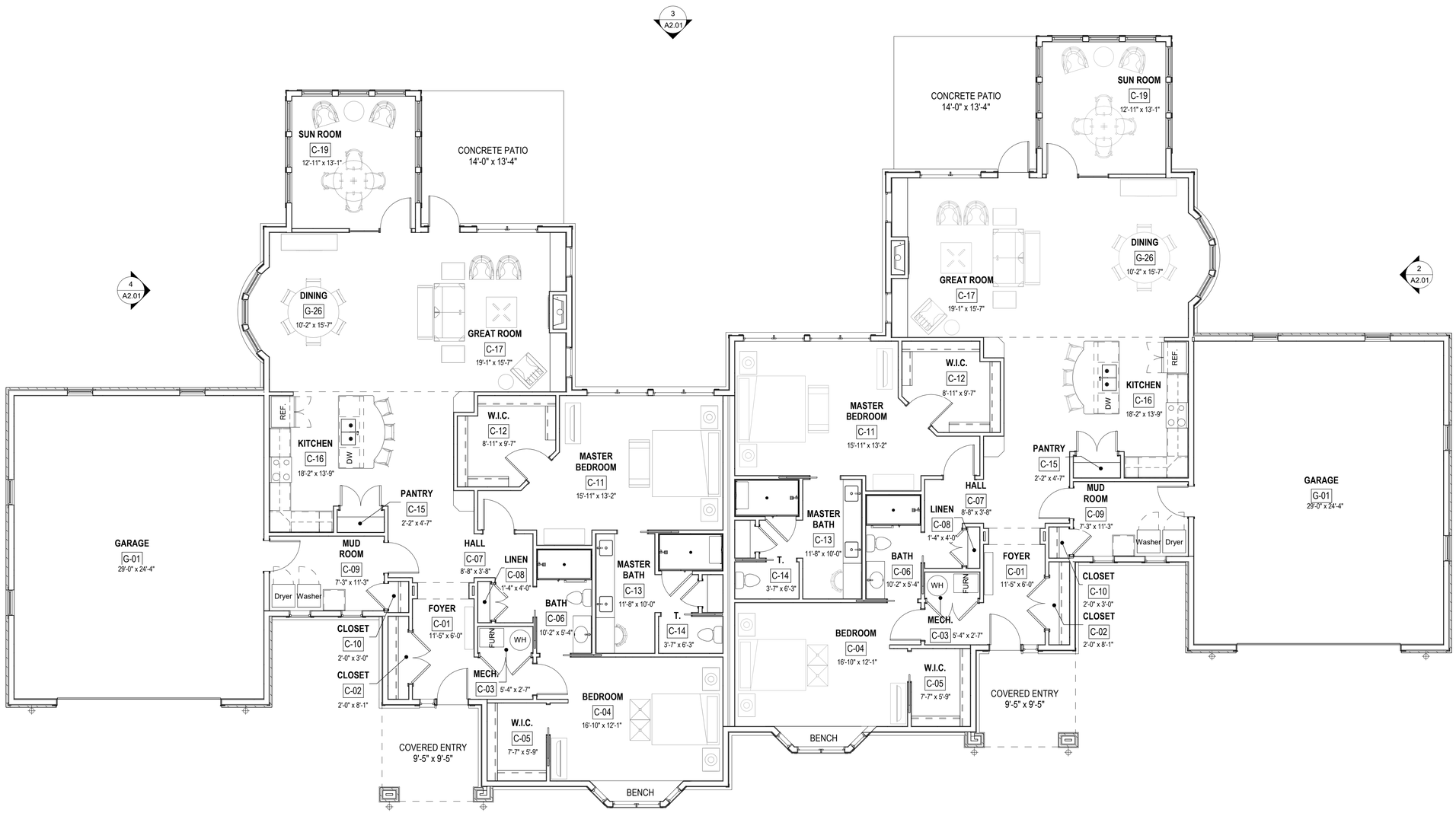

1 PORTAGE - 1ST FLOOR PLAN
3/16" = 1'-0"

N
PLAN

GROSS SQ. FT. - 2185
GARAGE SQ. FT. - 775

12/05/2023 rdla: #22063s

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PORTAGE

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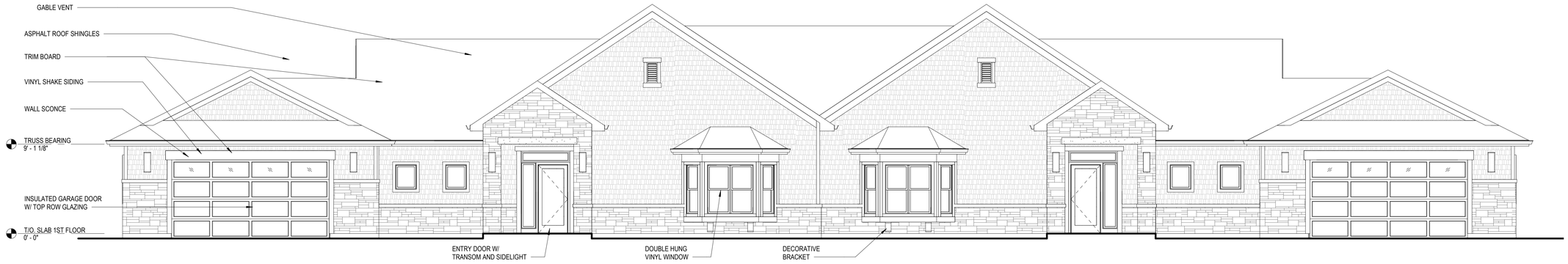

1 FRONT ELEVATION
3/16" = 1'-0"

4 LEFT ELEVATION
3/16" = 1'-0"

2 RIGHT ELEVATION
3/16" = 1'-0"

3 REAR ELEVATION
3/16" = 1'-0"

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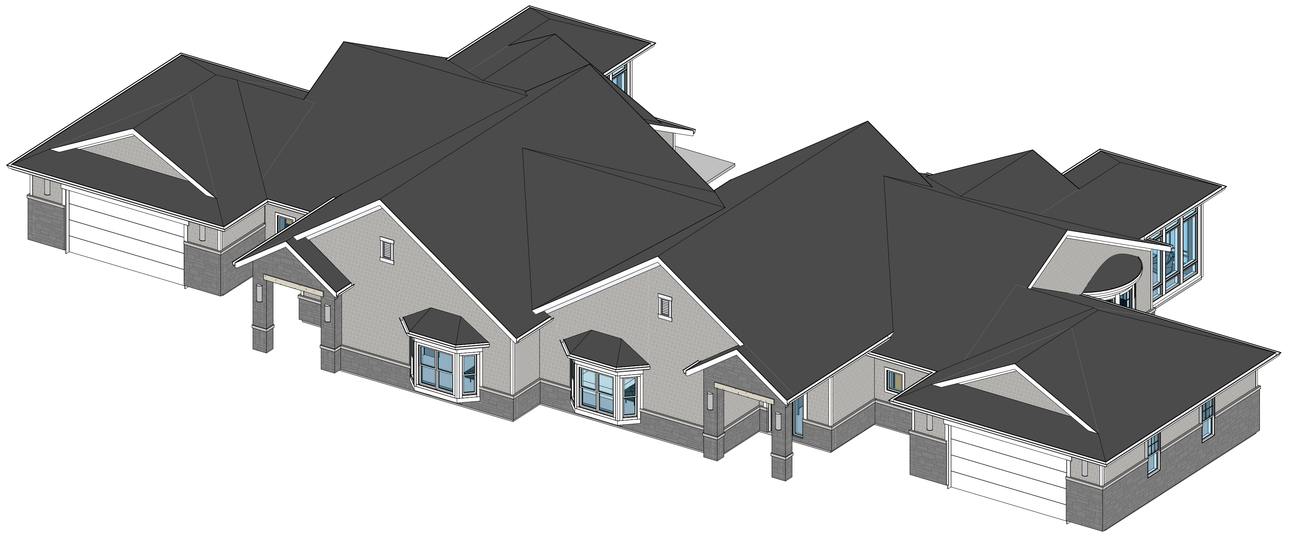
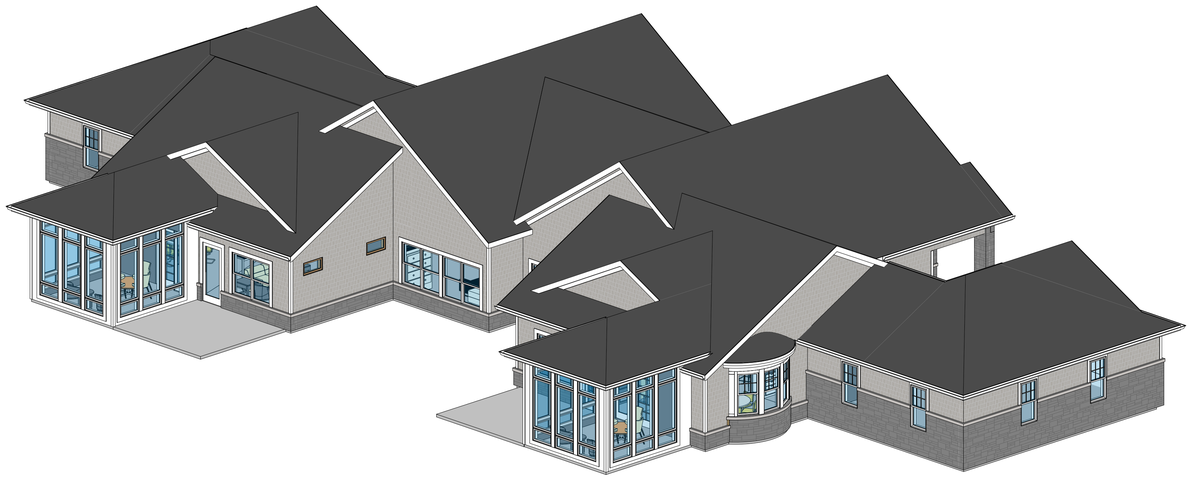


2 3D SKETCH VIEW - FRONT



1 3D SKETCH VIEW - REAR

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PORTAGE

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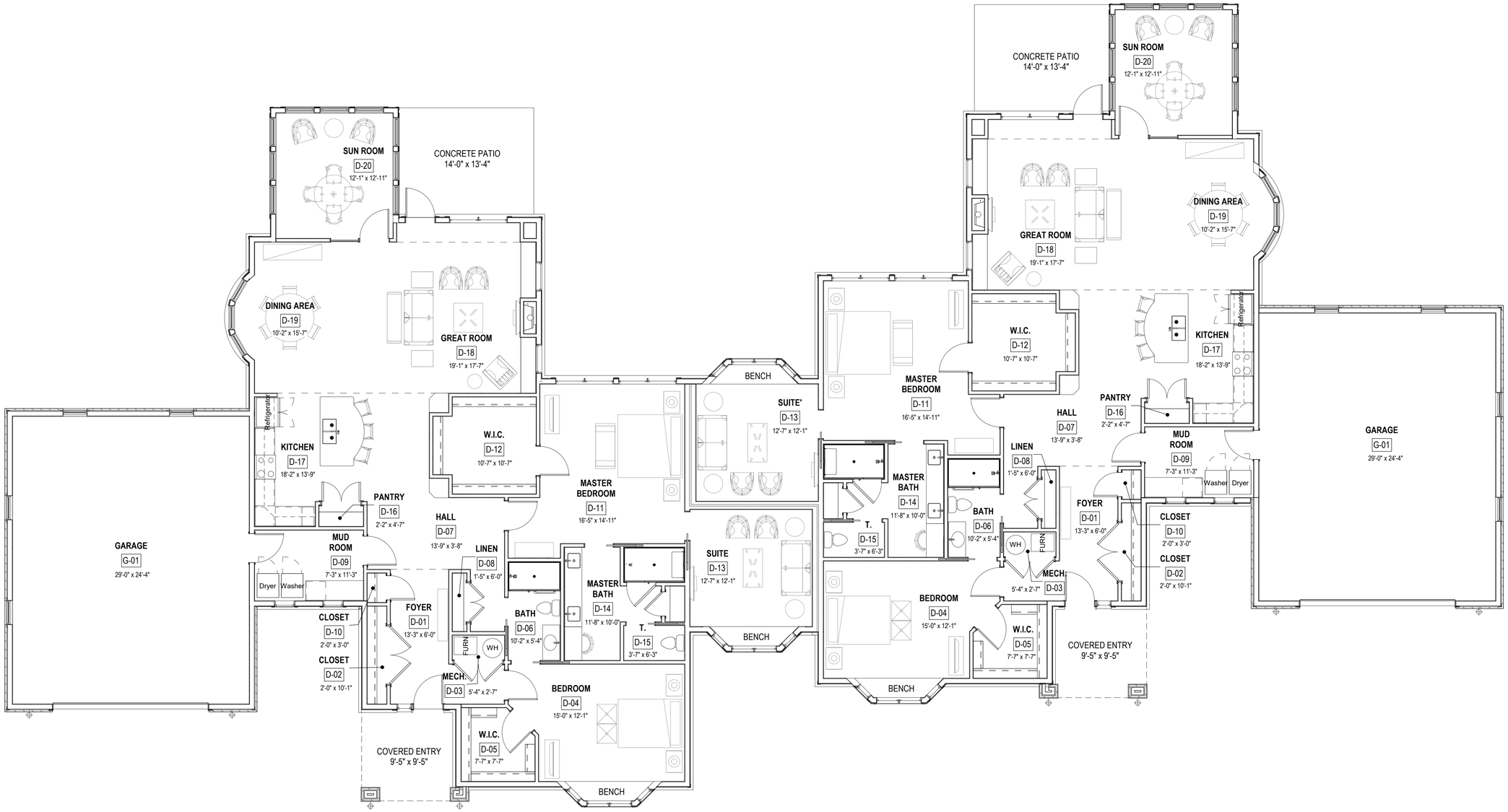

1 CUYAHOGA - 1ST FLOOR PLAN
3/16" = 1'-0"

N
PLAN

GROSS SQ. FT. - 2490
GARAGE SQ. FT. - 776

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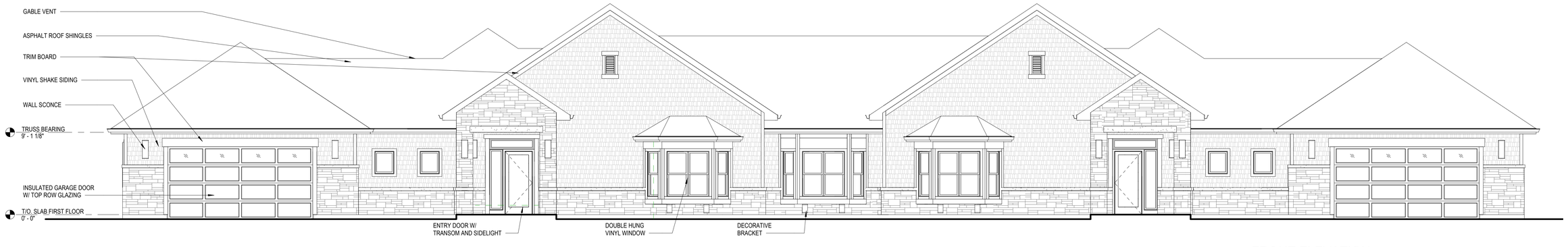
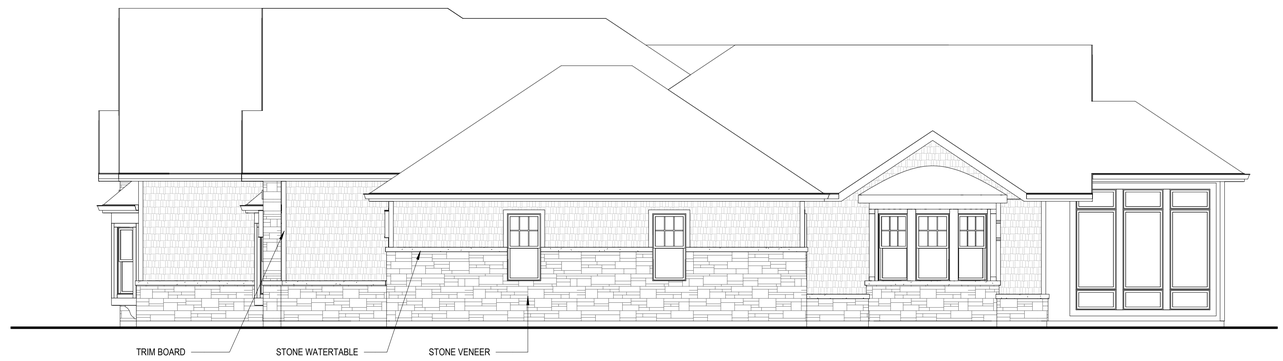


1 FRONT ELEVATION
3/16" = 1'-0"

4 LEFT ELEVATION
3/16" = 1'-0"



2 RIGHT ELEVATION
3/16" = 1'-0"

3 REAR ELEVATION
3/16" = 1'-0"

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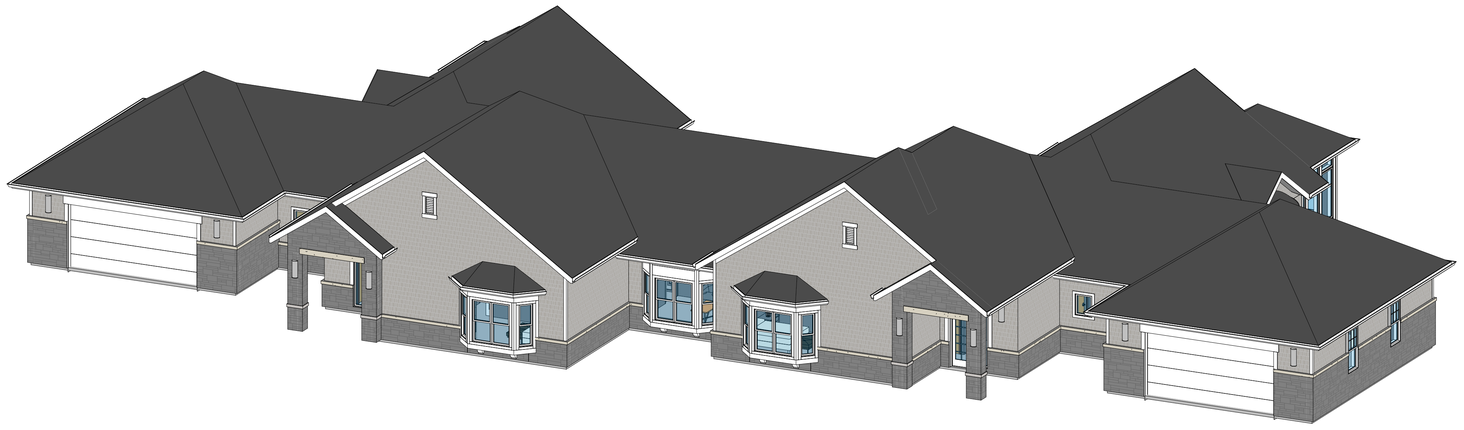
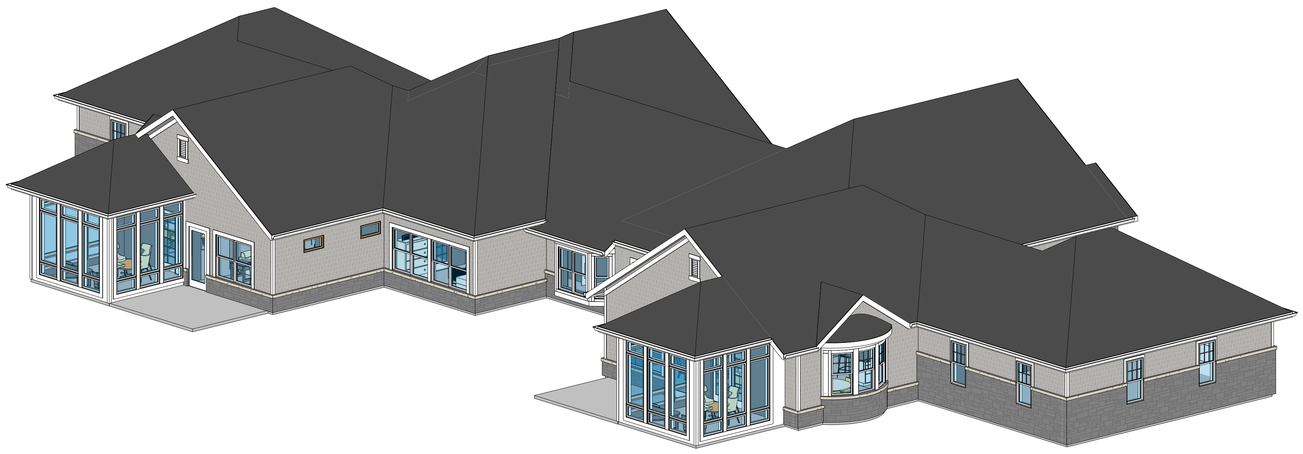


1 3D SKETCH VIEW - FRONT



11 3D SKETCH VIEW - REAR

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LAUREL LAKE VILLAS

CUYAHOGA

LAUREL LAKE

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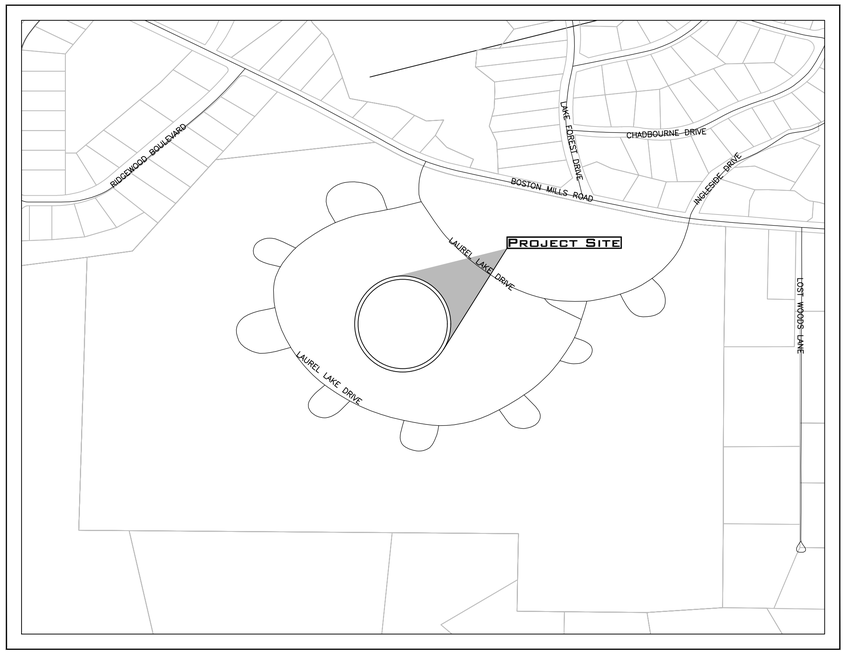
www.laurellake.org

12/05/2023 rdla: #22063s

Improvement Plans
For
Laurel Lake Villa
Additional Buidings 1-5, 8,9

The City Of Hudson, County Of Summit And State Of Ohio

Index to Drawings



Vicinity Map
Scale: 1" = 400'

DAVID A. PIETRANTONE E-61756 STATE OF OHIO PROFESSIONAL ENGINEER

David Pietrantone P.E. #61756

3/17/25
Date

Prepared For:

Laurel Lake
200 Laurel Lake Drive
Hudson, Ohio 44236

DAVID A. PIETRANTONE E-61756 STATE OF OHIO PROFESSIONAL ENGINEER

RIVERSTONE
Land Surveying - Engineering - Design
5800 Lake Forest Drive, Suite 100
Cleveland - Ohio - 44114
Phone: (216) 491-2000 Fax: (216) 491-9640
www.riverstonesurvey.com

2023-186

Plan Revisions:

Page Revisions:
10/11/2024
Fire Comments

Issued For:
PC Applicaiton
3/17/25
Not for construction

Laurel Lake Villa
200 Laurel Lake Drive

Title Page

Ohio Utilities Protection Service Call 811 before you dig

OGPUPS
Ohio Oil & Gas Producers Underground Protection Service
Call (614) 715-2964 or 811

C1.01

GENERAL NOTES:

TOTAL AREA 141.9 ACRES
TOTAL IMPERVIOUS AREA: 23.18 ACRES
IMPERVIOUS COVERAGE: 16.3%

PARCEL NUMBER 3203045
LAUREL LAKE RETIREMENT COMMUNITY INC.

LEGEND

M = Monument Box Found	Existing / PROPOSED = Spot Elevation Tag
= Iron Pin or Pipe Found	= Hydrant
= 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747	= Water Service Valve
= P.K. Nail	= Water Valve
= Gas Meter	= Water Meter
= Gas Valve	= Reducer
= Utility Pole	= Storm Manhole
= Light Pole	= Sanitary Manhole
= Guy Anchor & Line	= Curb Inlet
= Telephone Box	= Catch Basin
= Electric Box	= Property Line
= Cable Box	= Centerline
= Bollard	
= Cleanout / Test Tee	

Ex. Parcel line
Original Sublot Line
Original Lot Line
Centerline
Property Line
Right-of-way Line (R/W)
Easement Line
Railroad Tracks

	Existing	PROPOSED
Electric Line		
Gas Line		
Sanitary/Combination Sewer		
Storm Sewer		
Waterline		
Fence Line (Wooden)		
Fence Line (Chain-Link)		
Guardrail		

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	L.F.	Lineal Feet
A.F.N.	Auditor's File Number	M.E.	Match Existing
Asp.	Asphalt	Meas./M.	Measured
B.F.	Basement Floor	MH	Manhole
BW	Bottom of Wall	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R	Cuyahoga County Map Records	Prop	Proposed
C.L.F.	Chain-link Fence	Rec./R.	Record
Clr.	Clears	R/W	Right-of-way
C.O.	Clean Out	San.	Sanitary
Comb.	Combination	S.F.	Square Feet
Conc.	Concrete	S/L	Sublot
Conn.	Connection	Stm.	Storm
D.H.	Drill Hole	T.B.M.	Temporary Bench Mark
D.I.W.M.	Ductile Iron Water Main	TBR	To Be Removed
		T/C	Top of Curb
Elec	Electric	Tele	Telephone
Elev	Elevation	T.F.	Top Of Footer
Encr.	Encroaches	T.T.	Test Tee
Ex.	Existing	TW	Top of Wall
F.F.	Finished Floor	Typ.	Typical
GUT	Gutter	Vol.	Volume
Inv	Invert	Wat	Water

SURVEY NOTE: SURVEY, BOUNDARY AND UTILITY INFORMATION COMPLETED BY CT CONSULTANTS AND WAS PROVIDED TO THE RIVERSTONE COMPANY FOR USE. THE ENGINEER IS NOT RESPONSIBLE FOR MISSING OR INCOMPLETE INFORMATION. THE ENGINEER RECOMMENDS CONTRACTOR VISIT SITE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS AND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY.

GRAPHIC SCALE
20 0 10 20 30
(IN FEET)
1 inch = 20 ft.

STATE OF OHIO — REGISTERED PROFESSIONAL ENGINEER

RIVERSTONE
LAND SURVEYING · ENGINEERING · DESIGN
3800 LAKESIDE AVENUE · SUITE 100
CLEVELAND, OHIO · 44114
PHONE: (216) 491-2000 FAX: (216) 491-9640
WWW.RIVERSTONESURVEY.COM

2023-186

PLAN REVISIONS:

PAGE REVISIONS:

ISSUED FOR:
PC APPLICAITON
3/17/25
NOT FOR CONSTRUCTION

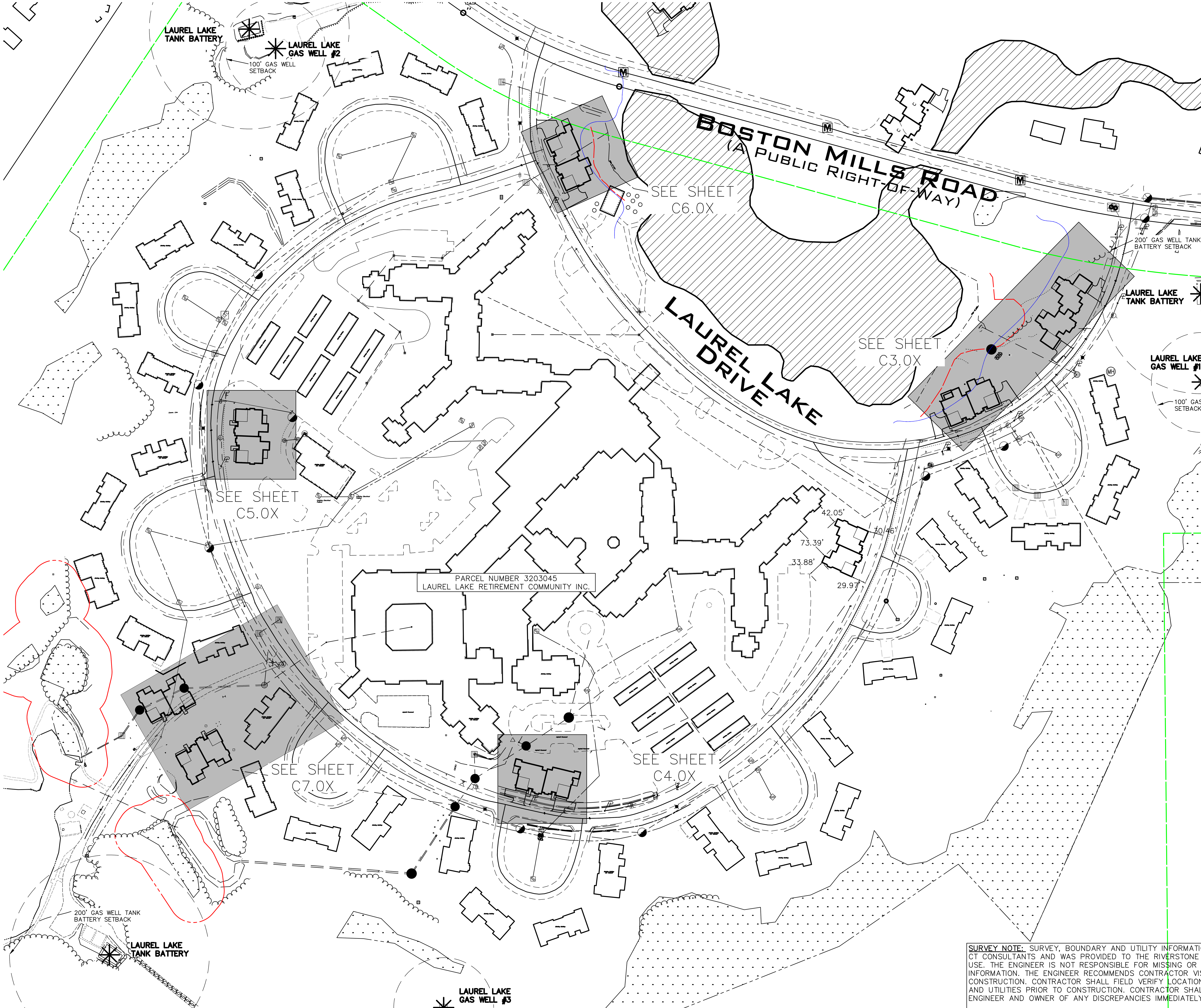
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

EXISTING CONDITIONS

C2.00

GENERAL NOTES:

TOTAL AREA 141.9 ACRES
TOTAL IMPERVIOUS AREA: 23.93 ACRES
IMPERVIOUS COVERAGE: 16.9%



LEGEND

M	= Monument Box Found	Existing / PROPOSED	= Spot Elevation Tag
○	= Iron Pin or Pipe Found		= Hydrant
●	= 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747		= Water Service Valve
	= P.K. Nail		= Water Valve
G	= Gas Meter	W	= Water Meter
△	= Gas Valve		= Reducer
	= Utility Pole		= Storm Manhole
	= Light Pole		= Sanitary Manhole
	= Guy Anchor & Line		= Curb Inlet
TELE	= Telephone Box		= Catch Basin
ELEC	= Electric Box	PL	= Property Line
CABLE	= Cable Box	CL	= Centerline
	= Bollard		
	= Cleanout / Test Tee		

Ex. Parcel line
Original Sublot Line
Original Lot Line
Centerline
Property Line
Right-of-way Line (R/W)
Easement Line
Railroad Tracks

	Existing	PROPOSED
Electric Line		
Gas Line		
Sanitary/Combination Sewer		
Storm Sewer		
Waterline		
Fence Line (Wooden)		
Fence Line (Chain-Link)		
Guardrail		

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	L.F.	Lineal Feet
A.F.N.	Auditor's File Number	M.E.	Match Existing
Asp.	Asphalt	Meas./M.	Measured
B.F.	Basement Floor	MH	Manhole
BW	Bottom of Wall	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R	Cuyahoga County Map Records	Prop	Proposed
C.L.F.	Chain-link Fence	Rec./R.	Record
Clr.	Clears	R/W	Right-of-way
C.O.	Clean Out	San.	Sanitary
Comb.	Combination	S.F.	Square Feet
Conc.	Concrete	S/L	Sublot
Conn.	Connection	Stm.	Storm
D.H.	Drill Hole	T.B.M.	Temporary Bench Mark
D.I.W.M.	Ductile Iron Water Main	TBR	To Be Removed
Elec	Electric	T/C	Top of Curb
Elev	Elevation	Tele	Telephone
Encr.	Encroaches	T.F.	Top Of Footer
Ex.	Existing	T.T.	Test Tee
F.F.	Finished Floor	TW	Top of Wall
GUT	Gutter	Typ.	Typical
Inv	Invert	Vol.	Volume
		Wat	Water

SURVEY NOTE: SURVEY, BOUNDARY AND UTILITY INFORMATION COMPLETED BY CT CONSULTANTS AND WAS PROVIDED TO THE RIVERSTONE COMPANY FOR USE. THE ENGINEER IS NOT RESPONSIBLE FOR MISSING OR INCOMPLETE INFORMATION. THE ENGINEER RECOMMENDS CONTRACTOR VISIT SITE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS AND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY.

GRAPHIC SCALE

20 0 10 20 30

(IN FEET)
1 inch = 20 ft.

STATE OF OHIO
DAVID A. PIETRANTONE
E-61756
REGISTERED
PROFESSIONAL ENGINEER
Preliminary Not for Construction

RIVERSTONE
LAND SURVEYING - ENGINEERING - DESIGN
3800 LAKESIDE AVENUE - SUITE 100
CLEVELAND - OHIO - 44114
PHONE: (216) 491-2000 FAX: (216) 491-9640
WWW.RIVERSTONESURVEY.COM

2023-186

PLAN REVISIONS:

PAGE REVISIONS:

ISSUED FOR:
PC APPLICAITON
3/17/25
NOT FOR CONSTRUCTION

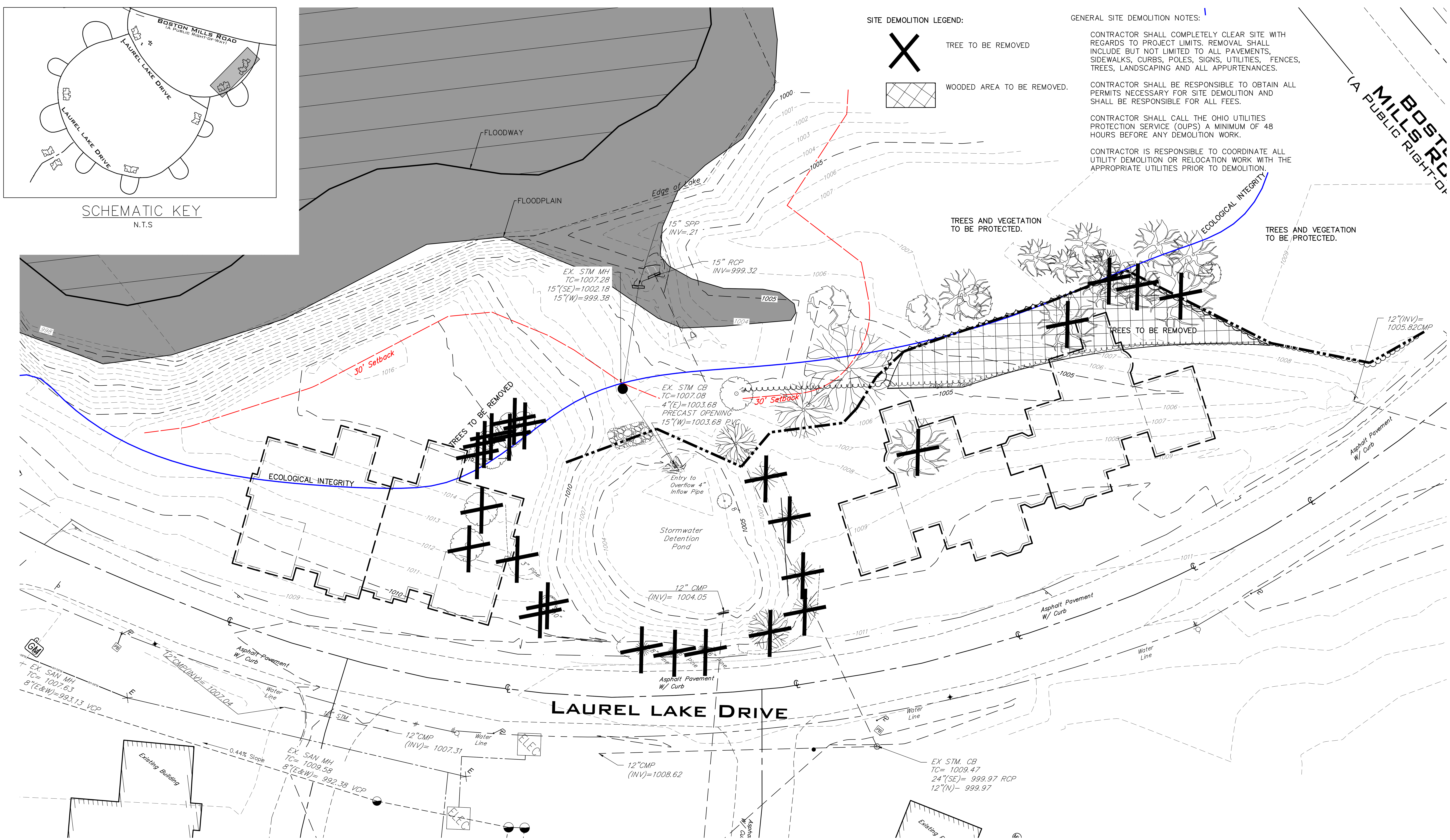
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

SCHEMATIC PLAN

Ohio Utilities Protection Service
Call 811 before you dig

OGPUPS
Ohio Oil & Gas Producers Underground Protection Service

C2.01



SITE DEMOLITION LEGEND:

X — TREE TO BE REMOVED

WOODED AREA TO BE REMOVED.

GENERAL SITE DEMOLITION NOTES:

CONTRACTOR SHALL COMPLETELY CLEAR SITE WITH REGARDS TO PROJECT LIMITS. REMOVAL SHALL INCLUDE BUT NOT LIMITED TO ALL PAVEMENTS, SIDEWALKS, CURBS, POLES, SIGNS, UTILITIES, FENCES, TREES, LANDSCAPING AND ALL APPURTENANCES.

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LEGEND

- = Monument Box Found
- = Iron Pin or Pipe Found
- = 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747
- = P.K. Nail
- = Gas Meter
- = Gas Valve
- = Utility Pole
- = Light Pole
- = Guy Anchor & Line
- = Telephone Box
- = Electric Box
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- = Bollard
- Existing / PROPOSED = Spot Elevation Tag
- = Hydrant
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- = Water Valve
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- = Reducer
- = Storm Manhole
- = Sanitary Manhole
- = Curb Inlet
- = Catch Basin
- = Round Curb Inlet
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Ex. Parcel line
Original Sublot Line
Original Lot Line
Centerline
Property Line
Right-of-way Line
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Electric Line
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Guardrail

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	Meas./M.	Measured
Asp.	Asphalt	MH	Manhole
B.F.	Basement Floor	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R.	Cuyahoga County Map Records	PL	Property Line
CL	Centerline	Rec./R.	Record
C.L.F.	Chain-link Fence	R/W	Right-of-way
Clr.	Clears	San.	Sanitary
Conc.	Concrete	S.F.	Square Feet
Conn.	Connection	S/L	Sublot
D.H.	Drill Hole	Stm.	Storm
D.I.W.M.	Ductile Iron Water Main	T.B.M.	Temporary Bench Mark
Elec	Electric	TBR	To Be Removed
Encr.	Encroaches	Tele	Telephone
Ex.	Existing	T.F.	Top Footer
F.F.	Finished Floor	Vol.	Volume
		Wat	Water

STATE OF OHIO — DAVID A. PIETRANTONE — E-61756 — PROFESSIONAL ENGINEER
Preliminary Not for Construction

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2023-186

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PAGE REVISIONS:

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3/17/25
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LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

SITE DEMOLITION PLAN - BUILDING 1&2

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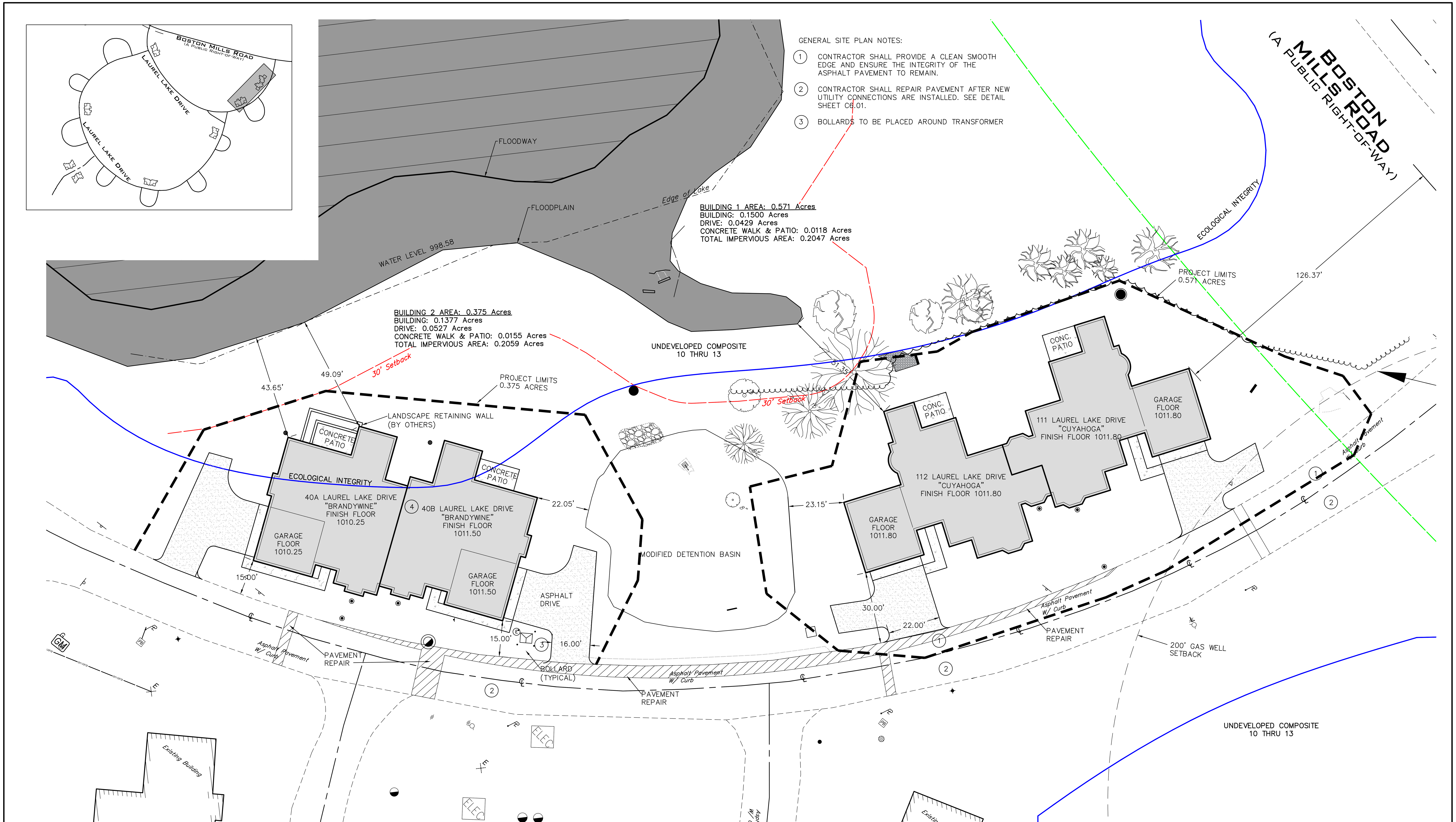
OGPUPS Ohio Oil & Gas Producers Underground Protection Service Call (614) 715-2984 or 811

C3.01



GENERAL SITE PLAN NOTES:
1 CONTRACTOR SHALL PROVIDE A CLEAN SMOOTH EDGE AND ENSURE THE INTEGRITY OF THE ASPHALT PAVEMENT TO REMAIN.
2 CONTRACTOR SHALL REPAIR PAVEMENT AFTER NEW UTILITY CONNECTIONS ARE INSTALLED. SEE DETAIL SHEET C6.01.
3 BOLLARDS TO BE PLACED AROUND TRANSFORMER
BOSTON MILLS ROAD (A PUBLIC RIGHT-OF-WAY)
LAUREL LAKE DRIVE
FLOODWAY
FLOODPLAIN
WATER LEVEL 998.58
Edge of Lake
BUILDING 1 AREA: 0.571 Acres
BUILDING: 0.1500 Acres
DRIVE: 0.0429 Acres
CONCRETE WALK & PATIO: 0.0118 Acres
TOTAL IMPERVIOUS AREA: 0.2047 Acres
BUILDING 2 AREA: 0.375 Acres
BUILDING: 0.1377 Acres
DRIVE: 0.0527 Acres
CONCRETE WALK & PATIO: 0.0155 Acres
TOTAL IMPERVIOUS AREA: 0.2059 Acres
UNDEVELOPED COMPOSITE 10 THRU 13
ECOLOGICAL INTEGRITY
PROJECT LIMITS 0.571 ACRES
PROJECT LIMITS 0.375 ACRES
30' Setback
LANDSCAPE RETAINING WALL (BY OTHERS)
CONCRETE PATIO
CONC. PATIO
40A LAUREL LAKE DRIVE "BRANDYWINE" FINISH FLOOR 1010.25
GARAGE FLOOR 1010.25
40B LAUREL LAKE DRIVE "BRANDYWINE" FINISH FLOOR 1011.50
GARAGE FLOOR 1011.50
111 LAUREL LAKE DRIVE "CUYAHOGA" FINISH FLOOR 1011.80
GARAGE FLOOR 1011.80
112 LAUREL LAKE DRIVE "CUYAHOGA" FINISH FLOOR 1011.80
GARAGE FLOOR 1011.80
MODIFIED DETENTION BASIN
ASPHALT DRIVE
BOLLARD (TYPICAL)
PAVEMENT REPAIR
Asphalt Pavement W/ Curb
200' GAS WELL SETBACK
Existing Building
ELEC
43.65'
49.09'
126.37'
22.05'
23.15'
15.00'
16.00'
30.00'
22.00'
GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

LEGEND

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FLOODPLAIN

FLOODWAY

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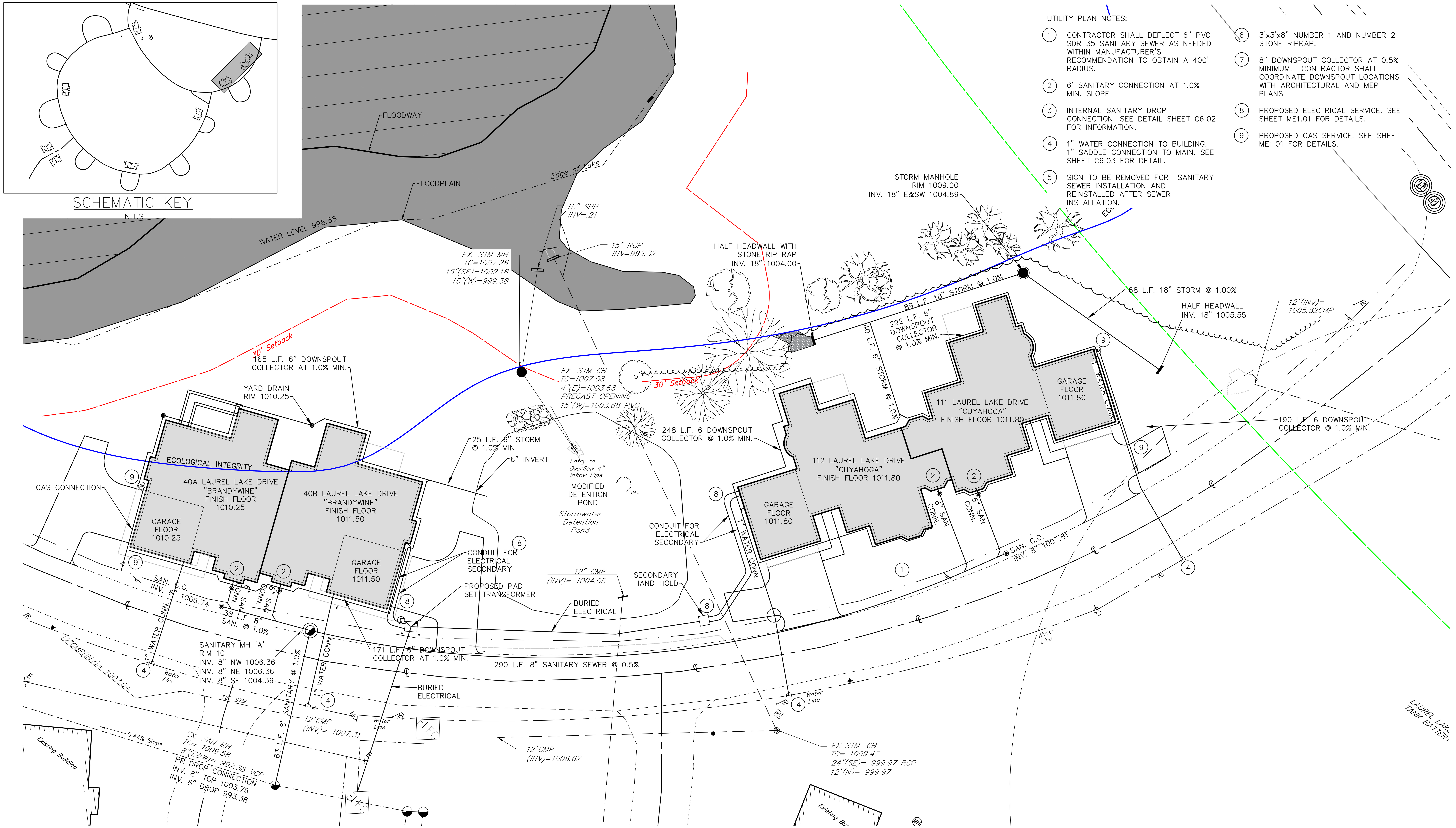
SITE PLAN - BUILDING 1 & 2

C3.02


SCHEMATIC KEY
N.T.S.
FLOODWAY
FLOODPLAIN
Edge of Lake
WATER LEVEL 998.58
15" SPP
INV.=.21
15" RCP
INV=999.32
EX. STM MH
TC=1007.28
15"(SE)=1002.18
15"(W)=999.38
30' Setback
165 L.F. 6" DOWNSPOUT
COLLECTOR AT 1.0% MIN.
YARD DRAIN
RIM 1010.25
EX. STM CB
TC=1007.08
4"(E)=1003.68
PRECAST OPENING
15"(W)=1003.68 PVC
STORM MANHOLE
RIM 1009.00
INV. 18" E&SW 1004.89
HALF HEADWALL WITH
STONE RIP RAP
INV. 18" 1004.00
89 L.F. 18" STORM @ 1.0%
68 L.F. 18" STORM @ 1.00%
HALF HEADWALL
INV. 18" 1005.55
12"(INV)=
1005.82CMP
292 L.F. 6"
DOWNSPOUT
COLLECTOR
@ 1.0% MIN.
40 L.F. 6" STORM @ 1.0%
GARAGE
FLOOR
1011.80
111 LAUREL LAKE DRIVE
"CUYAHOGA"
FINISH FLOOR 1011.80
190 L.F. 6 DOWNSPOUT
COLLECTOR @ 1.0% MIN.
25 L.F. 6" STORM
@ 1.0% MIN.
6" INVERT
Entry to
Overflow 4"
Inflow Pipe
MODIFIED
DETENTION
POND
Stormwater
Detention
Pond
248 L.F. 6 DOWNSPOUT
COLLECTOR @ 1.0% MIN.
112 LAUREL LAKE DRIVE
"CUYAHOGA"
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FLOOR
1011.80
ECOLOGICAL INTEGRITY
GAS CONNECTION
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"BRANDYWINE"
FINISH FLOOR
1011.50
GARAGE
FLOOR
1011.50
CONDUIT FOR
ELECTRICAL
SECONDARY
PROPOSED PAD
SET TRANSFORMER
12" CMP
(INV)= 1004.05
BURIED
ELECTRICAL
SECONDARY
HAND HOLD
CONDUIT FOR
ELECTRICAL
SECONDARY
WATER CONN.
6" SAN CONN.
SAN. C.O.
INV. 8" 1007.81
SAN. C.O.
INV. 8" 1006.74
38 L.F. 8"
SAN. @ 1.0%
SANITARY MH 'A'
RIM 10
INV. 8" NW 1006.36
INV. 8" NE 1006.36
INV. 8" SE 1004.39
171 L.F. 6" DOWNSPOUT
COLLECTOR AT 1.0% MIN.
290 L.F. 8" SANITARY SEWER @ 0.5%
BURIED
ELECTRICAL
63 L.F. 8" SANITARY @ 1.0%
12"CMP
(INV)= 1007.31
12"CMP
(INV)=1008.62
12"CMP(INV)= 1007.04
EX. SAN MH
TC= 1009.58
8"(E&W)= 992.38 VCP
PR DROP CONNECTION
INV. 8" TOP 1003.76
INV. 8" DROP 993.38
0.44% Slope
Existing Building
Water Line
ELEC
EX STM. CB
TC= 1009.47
24"(SE)= 999.97 RCP
12"(N)= 999.97
LAUREL LAKE TANK BATTERY
Existing Bu

UTILITY PLAN NOTES:

1. CONTRACTOR SHALL DEFLECT 6" PVC SDR 35 SANITARY SEWER AS NEEDED WITHIN MANUFACTURER'S RECOMMENDATION TO OBTAIN A 400' RADIUS.
2. 6' SANITARY CONNECTION AT 1.0% MIN. SLOPE
3. INTERNAL SANITARY DROP CONNECTION. SEE DETAIL SHEET C6.02 FOR INFORMATION.
4. 1" WATER CONNECTION TO BUILDING. 1" SADDLE CONNECTION TO MAIN. SEE SHEET C6.03 FOR DETAIL.
5. SIGN TO BE REMOVED FOR SANITARY SEWER INSTALLATION AND REINSTALLED AFTER SEWER INSTALLATION.
6. 3'x3'x8" NUMBER 1 AND NUMBER 2 STONE RIPRAP.
7. 8" DOWNSPOUT COLLECTOR AT 0.5% MINIMUM. CONTRACTOR SHALL COORDINATE DOWNSPOUT LOCATIONS WITH ARCHITECTURAL AND MEP PLANS.
8. PROPOSED ELECTRICAL SERVICE. SEE SHEET ME1.01 FOR DETAILS.
9. PROPOSED GAS SERVICE. SEE SHEET ME1.01 FOR DETAILS.

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GRAPHIC SCALE
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(IN FEET)
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UTILITY PLAN - BUILDING 1&2

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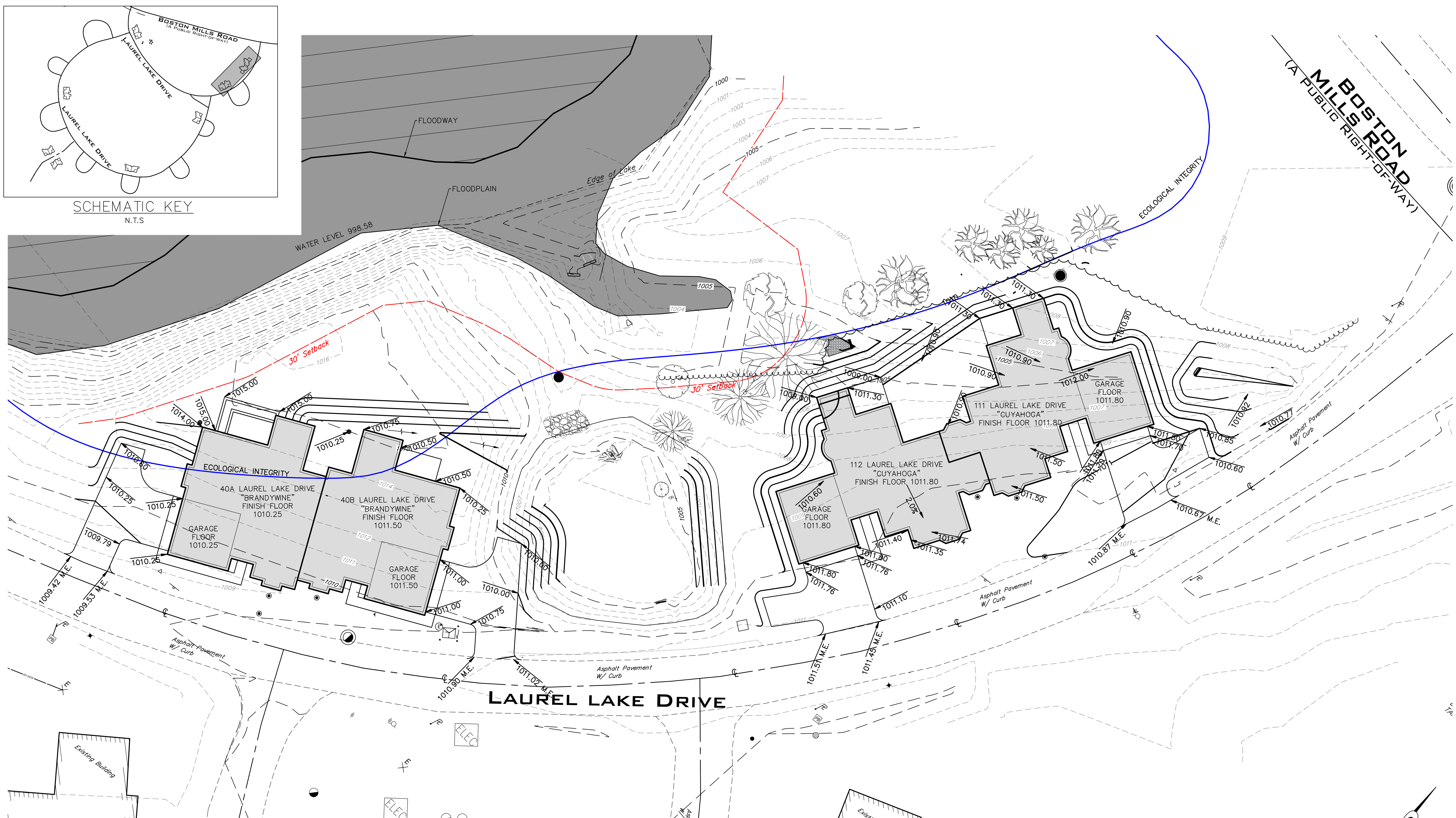
C3.03



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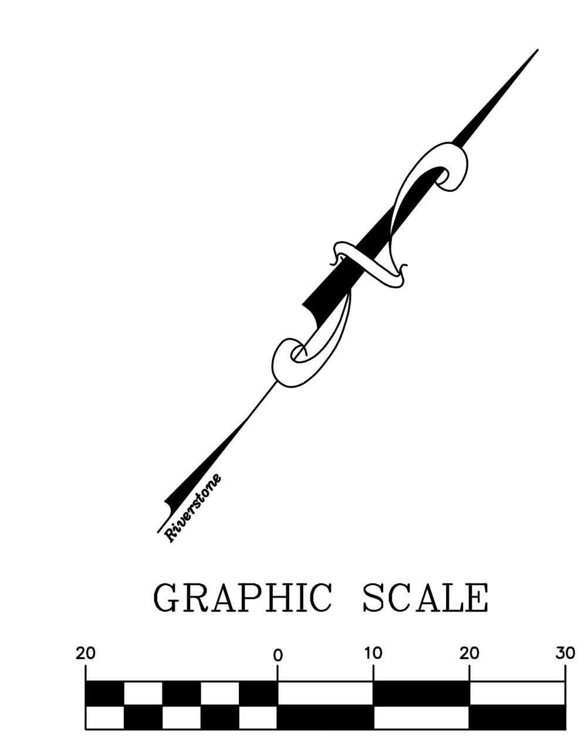

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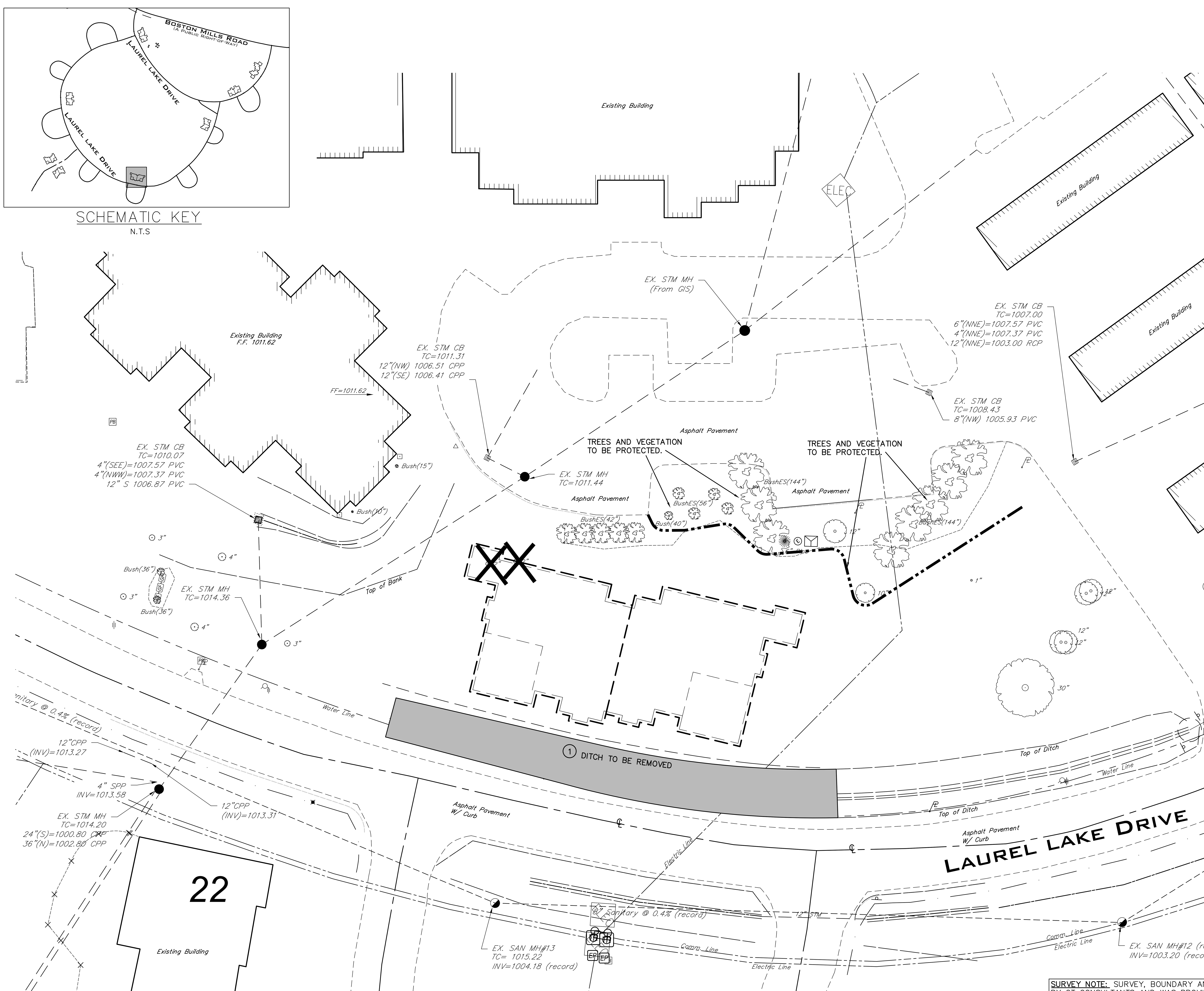

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STATE OF OHIO
PROFESSIONAL ENGINEER

RIVERSTONE
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3800 LAKESIDE AVENUE · SUITE 100
CLEVELAND · OHIO · 44114
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WWW.RIVERSTONESURVEY.COM

2023-186

PLAN REVISIONS:

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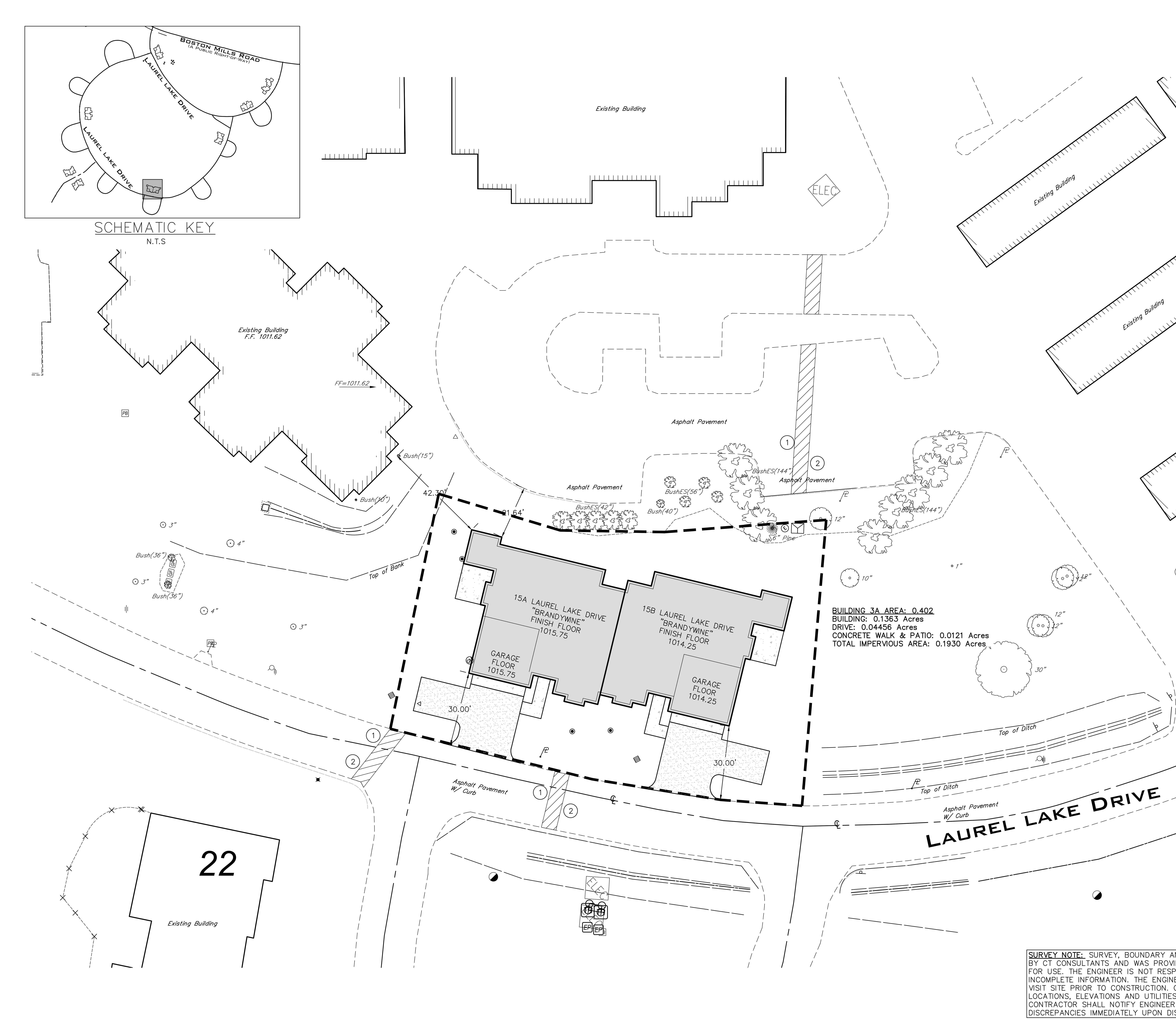
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

SITE DEMOLITION PLAN - BUILDING 3

Ohio Utilities Protection Service
Call 811
before you dig

OGPUPS
Ohio Oil & Gas Producers Underground Protection Service

C4.01



GENERAL SITE PLAN NOTES:

1. CONTRACTOR SHALL PROVIDE A CLEAN SMOOTH EDGE AND ENSURE THE INTEGRITY OF THE ASPHALT PAVEMENT TO REMAIN.
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LEGEND

- = Monument Box Found
- = Iron Pin or Pipe Found
- = 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747
- = P.K. Nail
- = Gas Meter
- = Gas Valve
- = Utility Pole
- = Light Pole
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Ex. Parcel line
Original Sublot Line
Original Lot Line
Centerline
Property Line
Right-of-way Line (R/W)
Easement Line
Railroad Tracks

	Existing	PROPOSED
Electric Line		
Gas Line		
Sanitary/Combination Sewer		
Storm Sewer		
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Fence Line (Wooden)		
Fence Line (Chain-Link)		
Guardrail		

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	L.F.	Lineal Feet
A.F.N.	Auditor's File Number	M.E.	Match Existing
Asp.	Asphalt	Meas./M.	Measured
B.F.	Basement Floor	MH	Manhole
BW	Bottom of Wall	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R	Cuyahoga County Map Records	Prop	Proposed
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Clr.	Clears	R/W	Right-of-way
C.O.	Clean Out	San.	Sanitary
Comb.	Combination	S.F.	Square Feet
Conc.	Concrete	S/L	Sublot
Conn.	Connection	Stm.	Storm
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GRAPHIC SCALE

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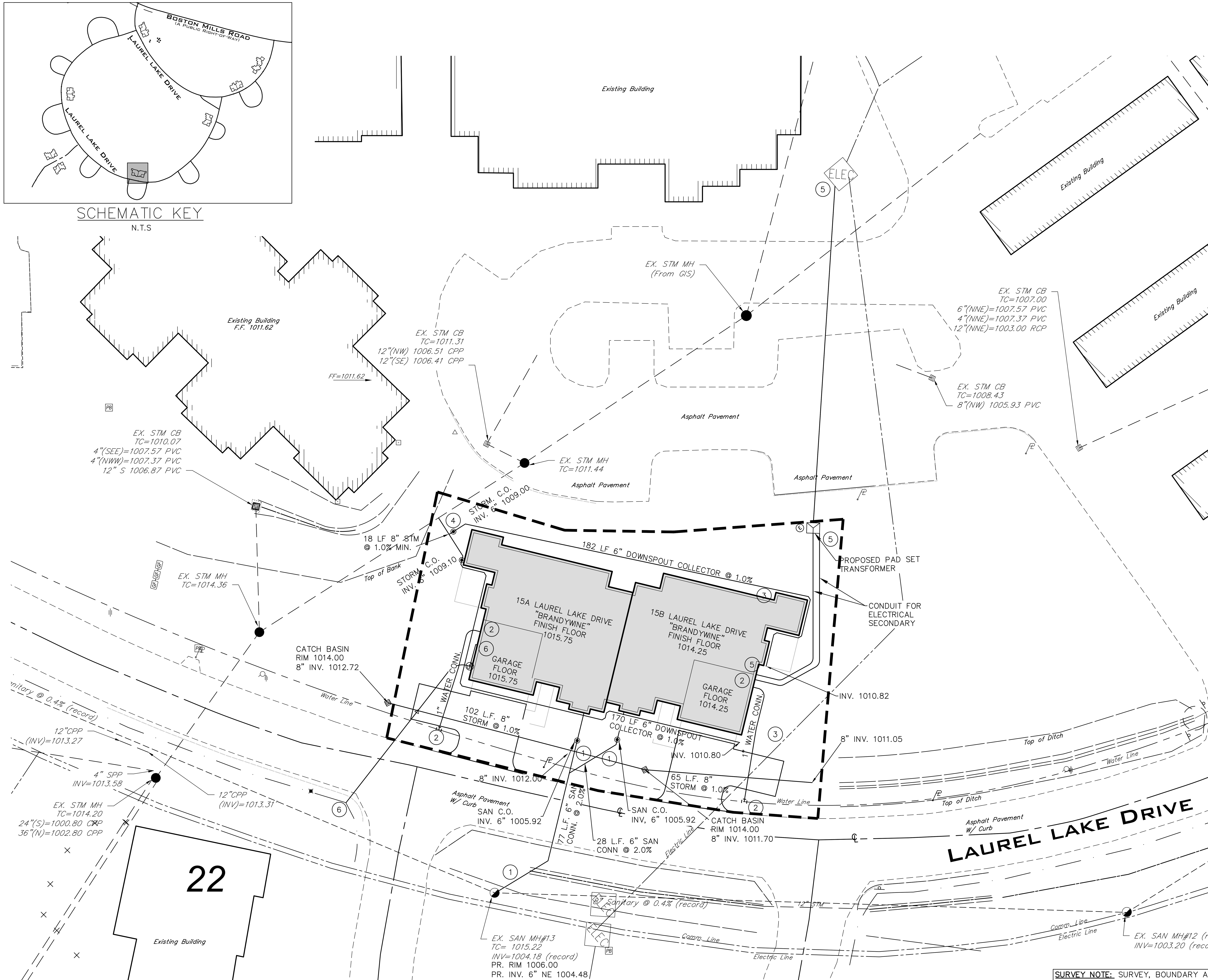
C4.02



SCHEMATIC KEY
N.T.S
BOSTON MILLS ROAD
LAUREL LAKE DRIVE
Existing Building
Existing Building F.F. 1011.62
EX. STM CB TC=1011.31 12"(NW) 1006.51 CPP 12"(SE) 1006.41 CPP
EX. STM MH (From GIS)
EX. STM CB TC=1007.00 6"(NNE)=1007.57 PVC 4"(NNE)=1007.37 PVC 12"(NNE)=1003.00 RCP
EX. STM CB TC=1008.43 8"(NW) 1005.93 PVC
EX. STM CB TC=1010.07 4"(SEE)=1007.57 PVC 4"(NWW)=1007.37 PVC 12" S 1006.87 PVC
EX. STM MH TC=1011.44
Asphalt Pavement
18 LF 8" STM @ 1.0% MIN.
STORM C.O. INV. 6" 1009.00
STORM C.O. INV. 6" 1009.10
182 LF 6" DOWNSPOUT COLLECTOR @ 1.0%
PROPOSED PAD SET TRANSFORMER
CONDUIT FOR ELECTRICAL SECONDARY
EX. STM MH TC=1014.36
15A LAUREL LAKE DRIVE "BRANDYWINE" FINISH FLOOR 1015.75
15B LAUREL LAKE DRIVE "BRANDYWINE" FINISH FLOOR 1014.25
GARAGE FLOOR 1015.75
GARAGE FLOOR 1014.25
CATCH BASIN RIM 1014.00 8" INV. 1012.72
1" WATER CONN.
102 L.F. 8" STORM @ 1.0%
170 LF 6" DOWNSPOUT COLLECTOR @ 1.0%
INV. 1010.82
8" INV. 1011.05
INV. 1010.80
8" INV. 1012.00
65 L.F. 8" STORM @ 1.0%
Top of Ditch
Water Line
Sanitary @ 0.4% (record)
12"CPP (INV)=1013.27
4" SPP INV=1013.58
12"CPP (INV)=1013.31
EX. STM MH TC=1014.20 24"(S)=1000.80 CPP 36"(N)=1002.80 CPP
SAN C.O. INV. 6" 1005.92
77 L.F. 6" SAN CONN. @ 2.0%
28 L.F. 6" SAN CONN @ 2.0%
CATCH BASIN RIM 1014.00 8" INV. 1011.70
LAUREL LAKE DRIVE
Asphalt Pavement W/ Curb
12" STM
22
EX. SAN MH#13 TC= 1015.22 INV=1004.18 (record) PR. RIM 1006.00 PR. INV. 6" NE 1004.48
EX. SAN MH#12 (rec INV=1003.20 (record
Comm. Line
Electric Line
ELEC

UTILITY PLAN NOTES:

1. 6" SANITARY CONNECTION AT 2.0% SLOPE
2. 1" WATER CONNECTION TO BUILDING. 1" SADDLE CONNECTION TO MAIN. SEE SHEET C6.03 FOR DETAILS.
3. 6" DOWNSPOUT COLLECTOR AT 1.0% MINIMUM. CONTRACTOR SHALL COORDINATE DOWNSPOUT LOCATIONS WITH ARCHITECTURAL AND MEP PLANS.
4. PRIOR TO CONSTRUCTION CONTRACTOR SHALL LOCATE AND EXPOSE THE EXISTING STORM SEWER. CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE LOCATION AND DEPTH OF THE EXISTING STORM SEWER TO VERIFY PIPE SLOPES AND PROPOSED INVERTS.
5. PROPOSED ELECTRICAL SERVICE. SEE MEP PLANS SHEET ME1.01 FOR DETAILS.
6. PROPOSED GAS SERVICE. SEE MEP PLANS SHEET ME1.01 FOR DETAILS.

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UTILITY PLAN - BUILDING 3

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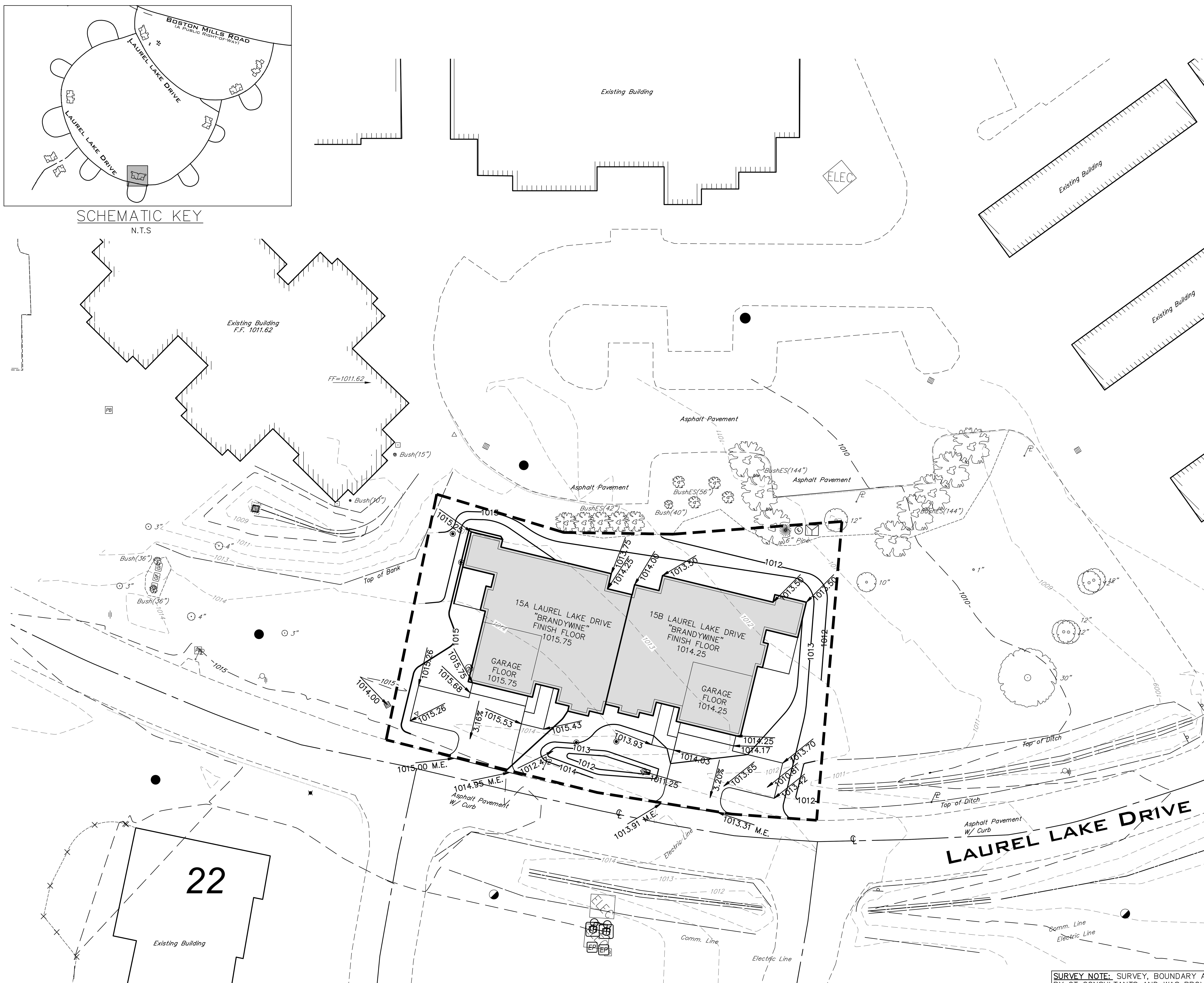
C4.03



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GRADING PLAN - BUILDING 3

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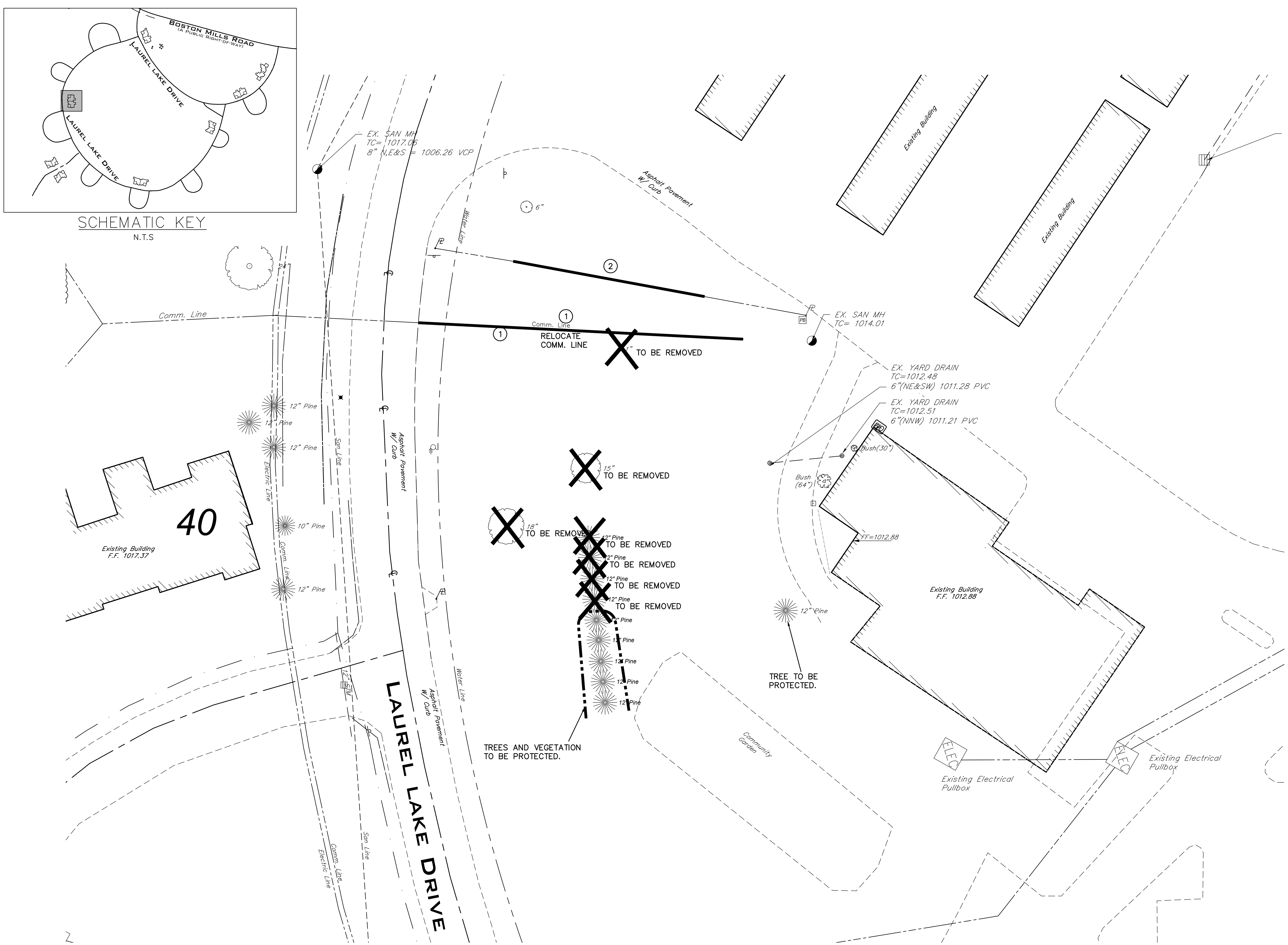

GENERAL SITE DEMOLITION NOTES:

CONTRACTOR SHALL COMPLETELY CLEAR SITE WITH REGARDS TO PROJECT LIMITS. REMOVAL SHALL INCLUDE BUT NOT LIMITED TO ALL PAVEMENTS, SIDEWALKS, CURBS, POLES, SIGNS, UTILITIES, FENCES, TREES, LANDSCAPING AND ALL APPURTENANCES.

CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL PERMITS NECESSARY FOR SITE DEMOLITION AND SHALL BE RESPONSIBLE FOR ALL FEES.

CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE (OUPS) A MINIMUM OF 48 HOURS BEFORE ANY DEMOLITION WORK.

CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL UTILITY DEMOLITION OR RELOCATION WORK WITH THE APPROPRIATE UTILITIES PRIOR TO DEMOLITION.

SITE DEMOLITION LEGEND:

X — TREE TO BE REMOVED

WOODED AREA TO BE REMOVED.

SITE DEMOLITION PLAN KEYNOTES:

1. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANIES TO RELOCATE COMM. LINE.
2. EXISTING ELECTRIC LINE TO BE RELOCATED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTION.

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SITE DEMOLITION PLAN - BUILDING 4

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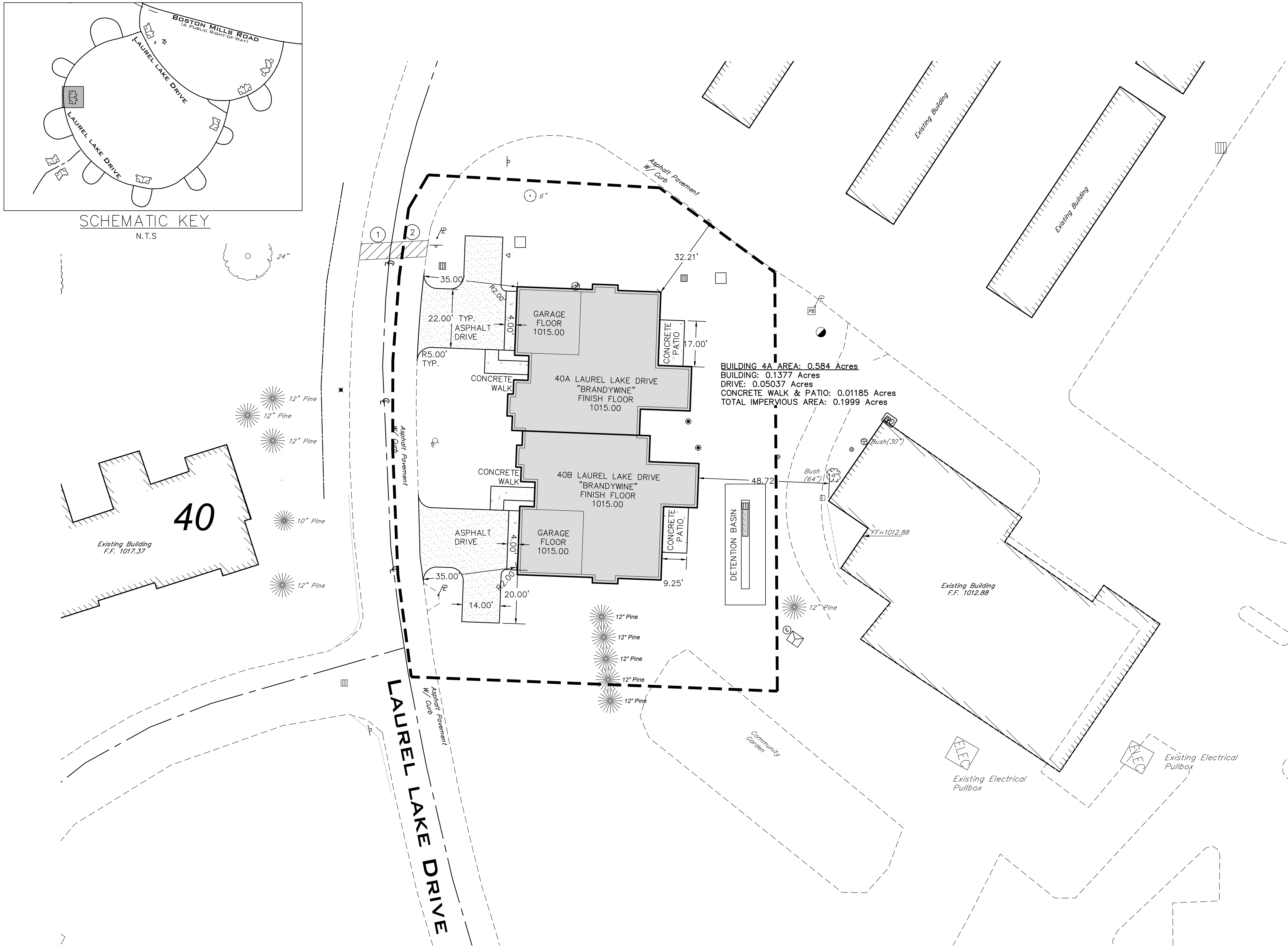

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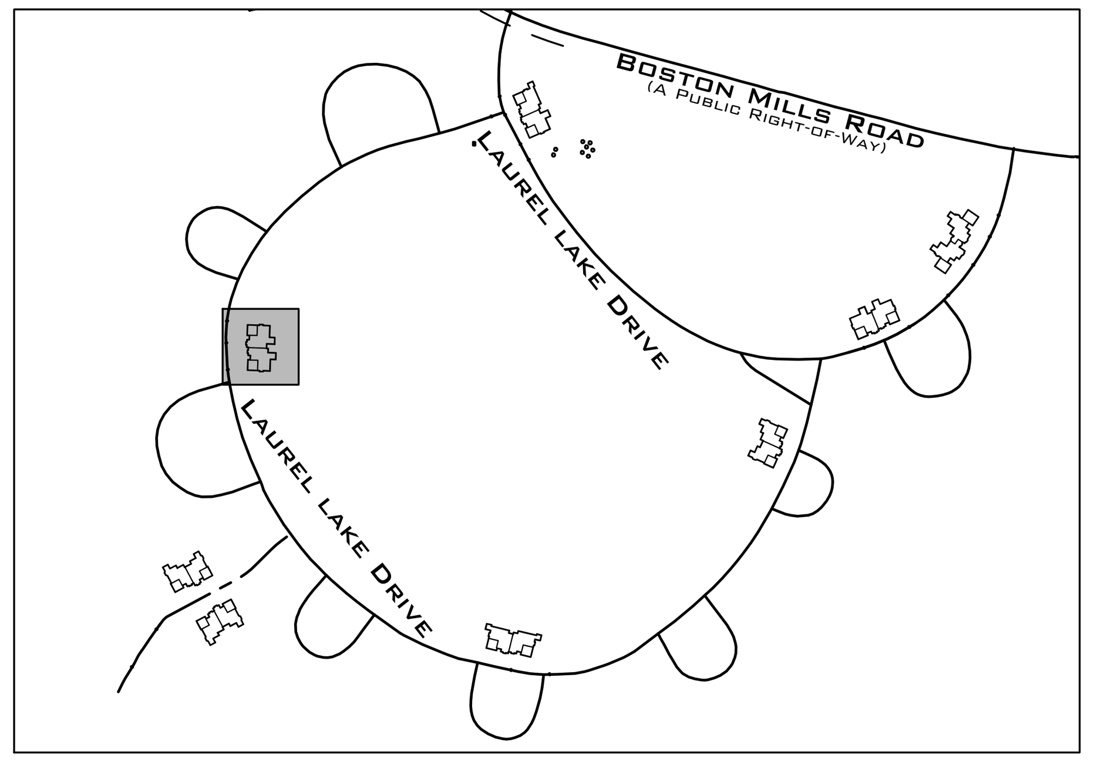
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

SITE PLAN - BUILDING 4

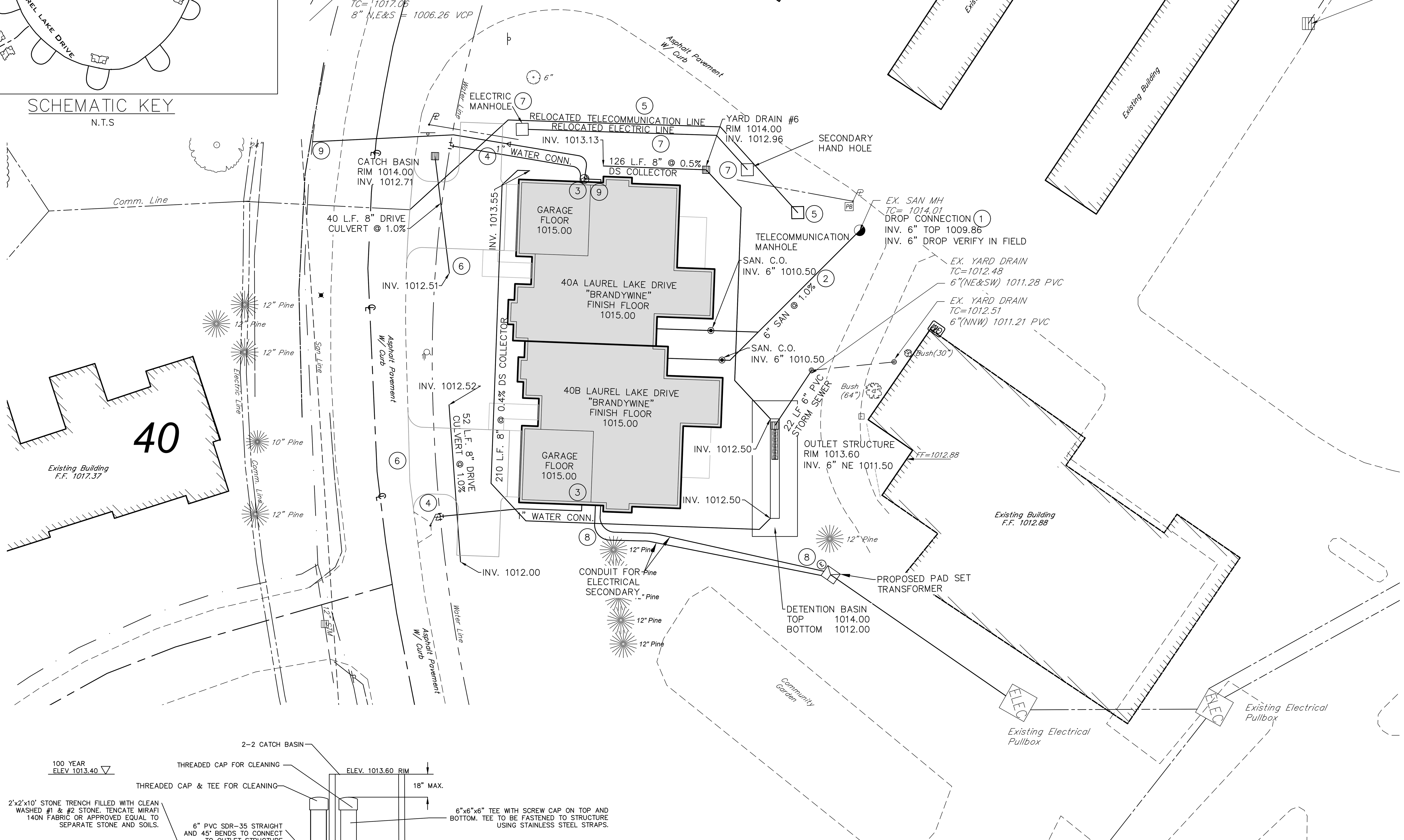
Ohio Utilities Protection Service
Call 811 before you dig

OGPUPS
Ohio Oil & Gas Producers Underground Protection Service

C5.02

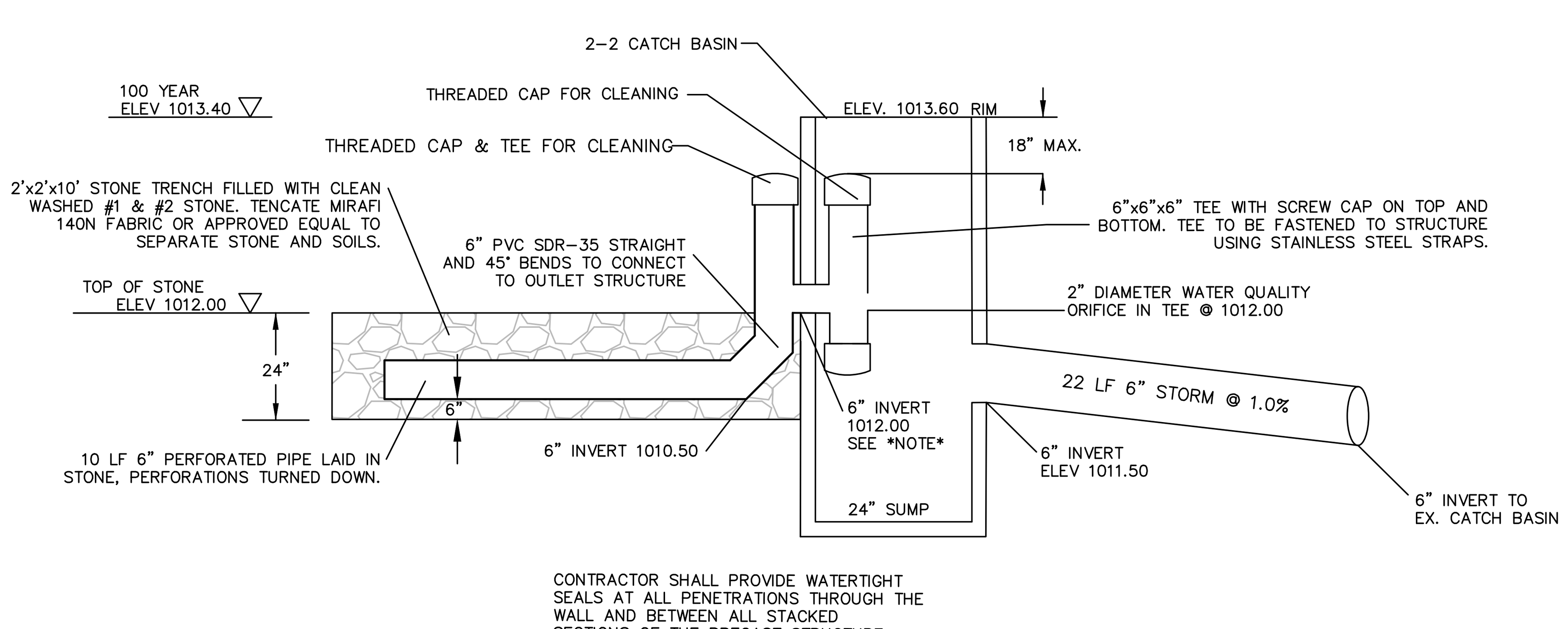


SCHEMATIC KEY
N.T.S



UTILITY PLAN NOTES:

1. 6" SANITARY CONNECTION WITH INTERNAL DROP CONNECTION. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING SEWER INVERT ELEVATION AND NOTIFY ENGINEER FOR DROP CONNECTION INVERT.
2. 6" SANITARY CONNECTION AT 1.0% SLOPE
3. 1" WATER CONNECTION. SEE DETAIL SHEET C6.03.
4. 1" SADDLE CONNECTION TO MAIN. SEE DETAIL SHEET C6.03.
5. COMMUNICATION LINE IS TO BE RELOCATED AROUND PROPOSED BUILDING. CONTRACTOR IS TO COORDINATE WITH LOCAL UTILITY COMPANIES.
6. 8" PVC DRIVE CULVERT. SEE SHEET C6.02 FOR DETAILS.
7. RELOCATED ELECTRICAL CONDUIT. CONTRACTOR SHALL COORDINATE WITH FIRST ENERGY PRIOR TO CONSTRUCTION.
8. PROPOSED ELECTRICAL SERVICE. SEE MEP PLANS SHEET ME1.03 FOR DETAILS.
9. PROPOSED GAS SERVICE. SEE MEP PLANS SHEET ME1.03 FOR DETAILS.



2-2 OUTLET STRUCTURE
N.T.S.

LEGEND

- M = Monument Box Found
- ○ = Iron Pin or Pipe Found
- ● = 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747
- = P.K. Nail
- = Gas Meter
- = Gas Valve
- = Utility Pole
- = Light Pole
- = Guy Anchor & Line
- = Telephone Box
- = Electric Box
- = Cable Box
- = Bollard
- = Cleanout / Test Tee
- = Spot Elevation Tag
- = Hydrant
- = Water Service Valve
- = Water Valve
- = Water Meter
- = Reducer
- = Storm Manhole
- = Sanitary Manhole
- = Curb Inlet
- = Catch Basin
- = Property Line
- = Centerline

Ex. Parcel line
Original Sublot Line
Original Lot Line
Centerline
Property Line
Right-of-way Line
Easement Line
Railroad Tracks

	Existing	PROPOSED
Electric Line		
Gas Line		
Sanitary/Combination Sewer		
Storm Sewer		
Waterline		
Fence Line (Wooden)		
Fence Line (Chain-Link)		
Guardrail		

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	L.F.	Lineal Feet
A.F.N.	Auditor's File Number	M.E.	Match Existing
Asp.	Asphalt	Meas./M.	Measured
B.F.	Basement Floor	MH	Manhole
BW	Bottom of Wall	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R	Cuyahoga County Map Records	Prop	Proposed
C.L.F.	Chain-link Fence	Rec./R.	Record
Clr.	Clears	R/W	Right-of-way
C.O.	Clean Out	San.	Sanitary
Comb.	Combination	S.F.	Square Feet
Conc.	Concrete	S/L	Sublot
Conn.	Connection	Stm.	Storm
D.H.	Drill Hole	T.B.M.	Temporary Bench Mark
D.I.W.M.	Ductile Iron Water Main	TBR	To Be Removed
Elec	Electric	T/C	Top of Curb
Elev	Elevation	Tele	Telephone
Encr.	Encroaches	T.F.	Top Of Footer
Ex.	Existing	T.T.	Test Tee
F.F.	Finished Floor	TW	Top of Wall
GUT	Gutter	Typ.	Typical
Inv	Invert	Vol.	Volume
		Wat	Water

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GRAPHIC SCALE
20 0 10 20 30
(IN FEET)
1 inch = 20 ft.

STATE OF OHIO
PROFESSIONAL ENGINEER

RIVERSTONE
LAND SURVEYING · ENGINEERING · DESIGN
3800 LAKESIDE AVENUE · SUITE 100
CLEVELAND, OHIO · 44114
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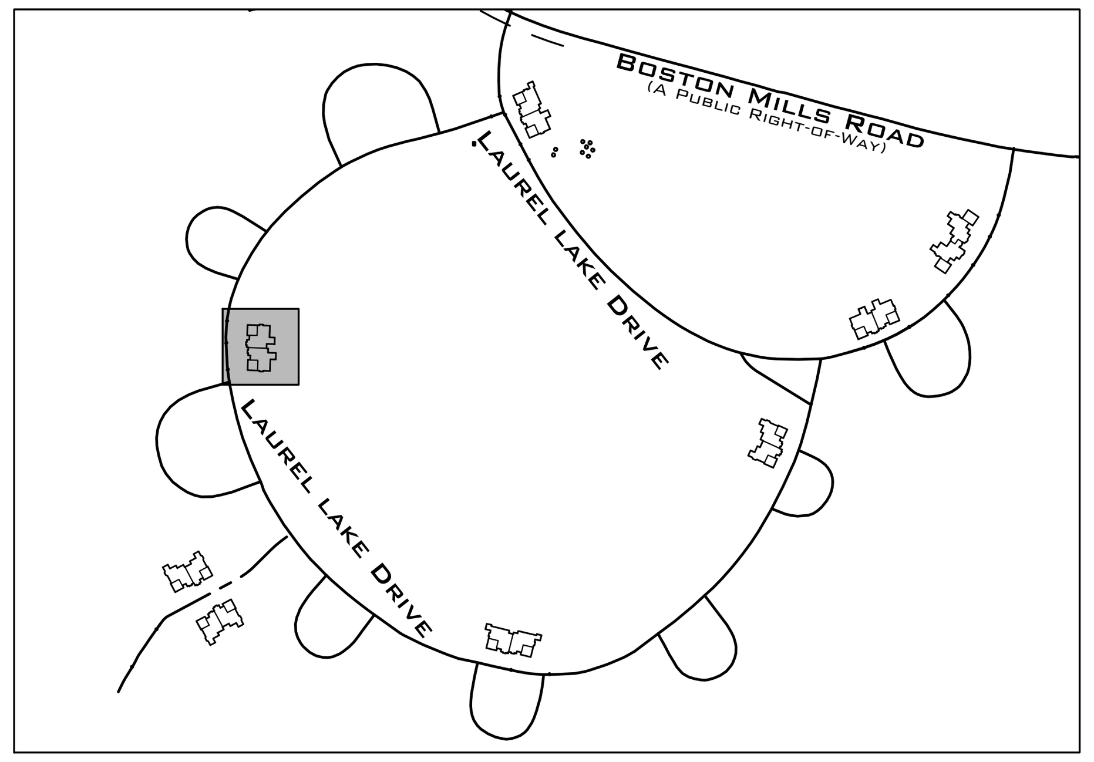
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

UTILITY PLAN - BUILDING 4

C5.03



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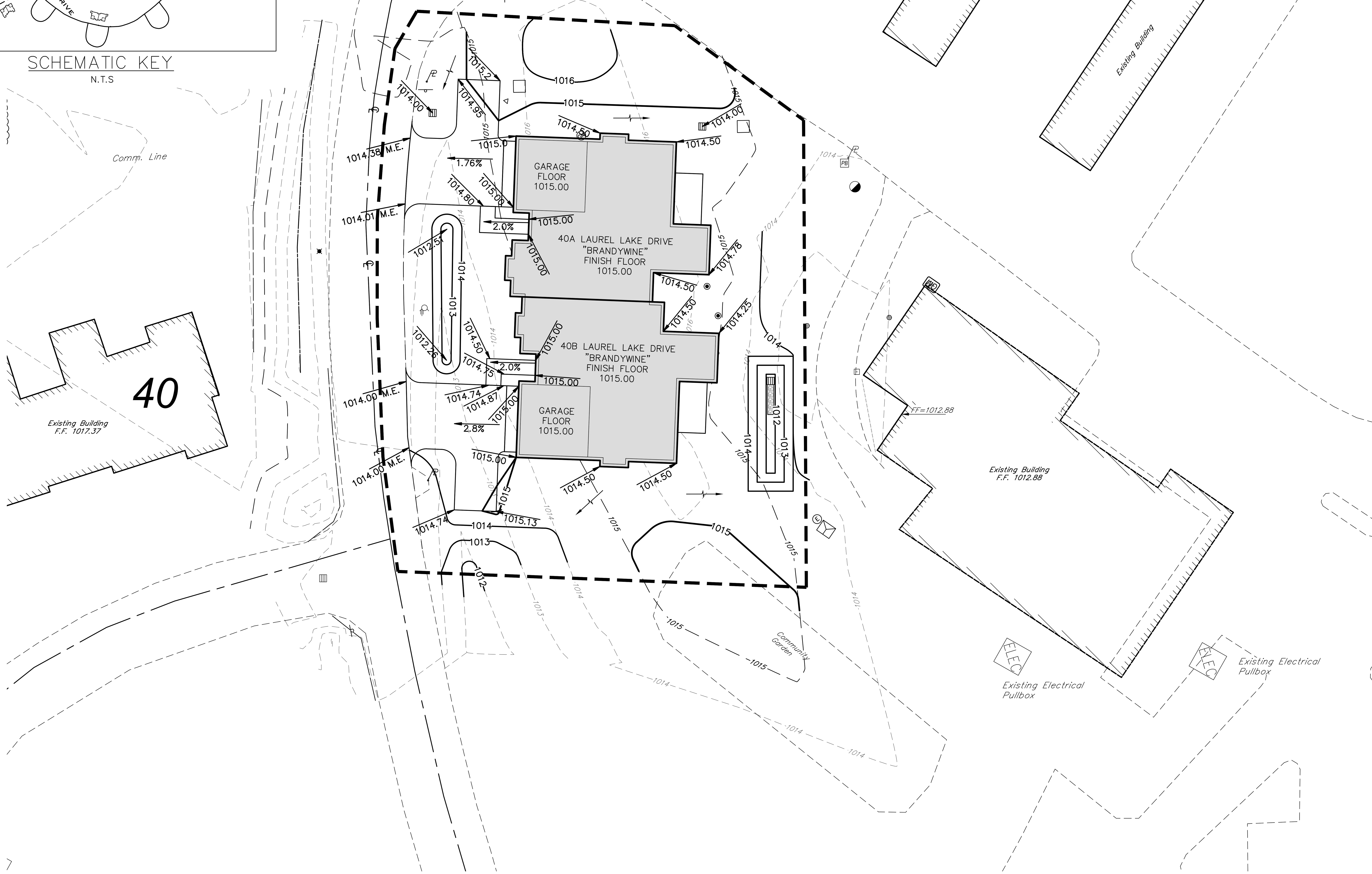

LEGEND

Symbol	Meaning	Symbol	Meaning
M	Monument Box Found	Existing / PROPOSED	Spot Elevation Tag
○	Iron Pin or Pipe Found		Hydrant
●	5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747	⊗	Water Service Valve
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G	Gas Meter	W	Water Meter
△	Gas Valve		Reducer
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	Light Pole		Sanitary Manhole
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∘	Bollard		
◉	Cleanout / Test Tee		

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Riverstone

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DAVID A. PIETRANTONE
E-61756
REGISTERED
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Preliminary Not for Construction

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Plan Revisions:

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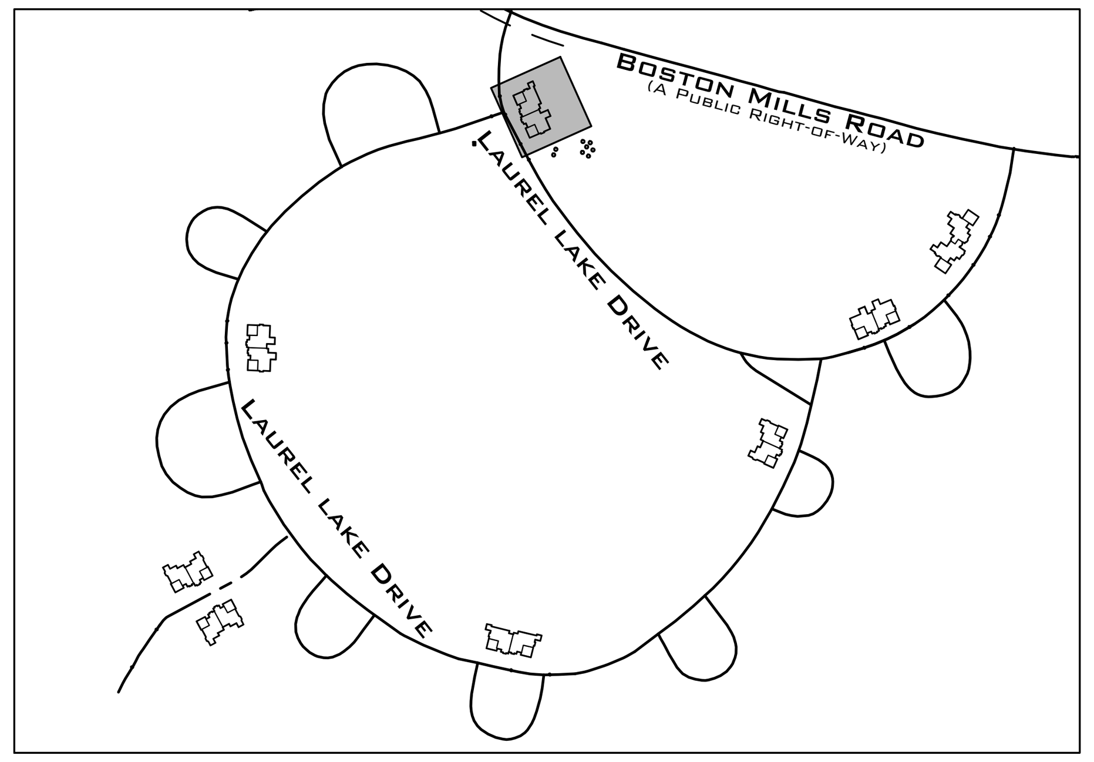
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

Grading Plan - Building 4

C5.04



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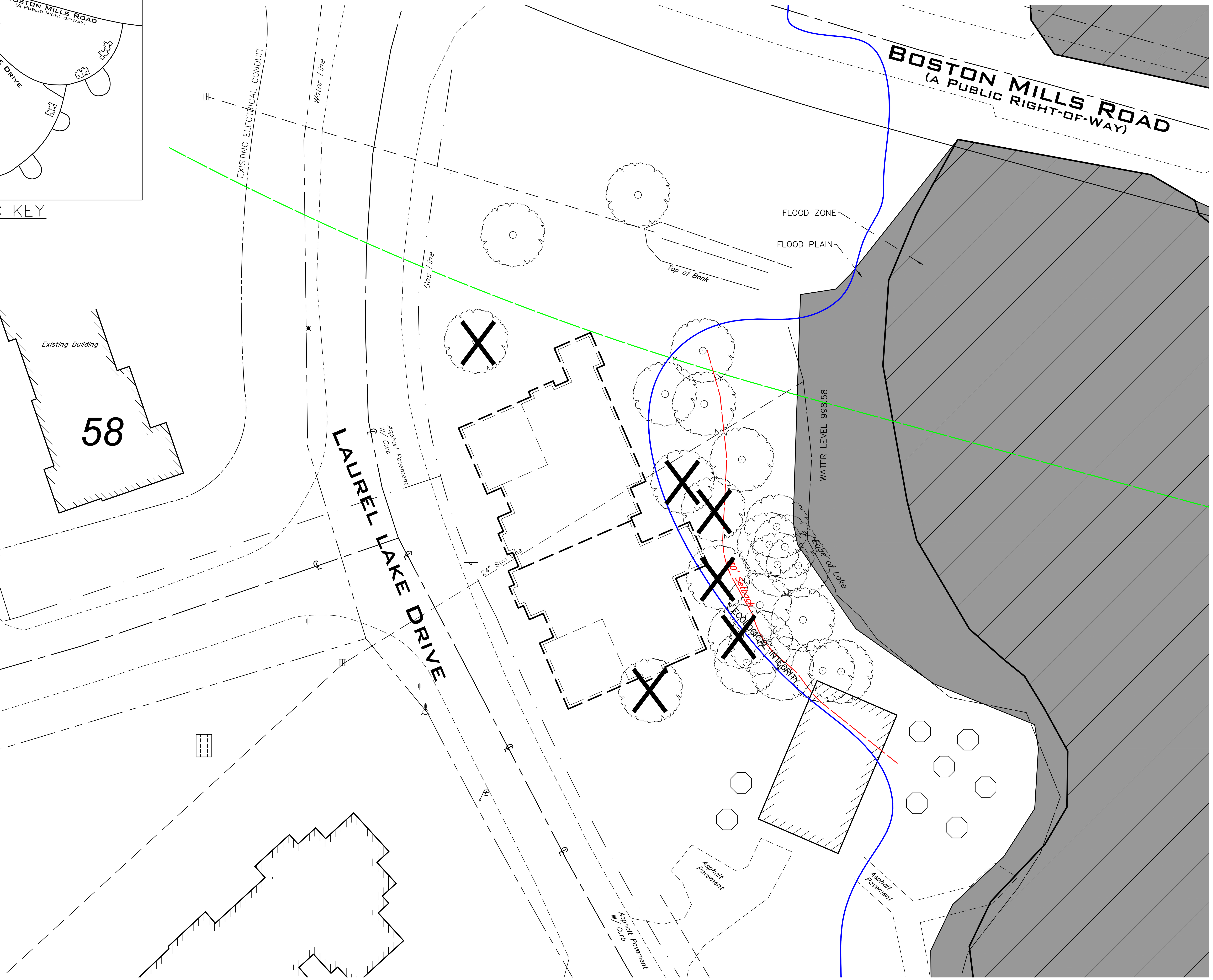

GENERAL SITE DEMOLITION NOTES:

CONTRACTOR SHALL COMPLETELY CLEAR SITE WITH REGARDS TO PROJECT LIMITS. REMOVAL SHALL INCLUDE BUT NOT LIMITED TO ALL PAVEMENTS, SIDEWALKS, CURBS, POLES, SIGNS, UTILITIES, FENCES, TREES, LANDSCAPING AND ALL APPURTENANCES.

CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL PERMITS NECESSARY FOR SITE DEMOLITION AND SHALL BE RESPONSIBLE FOR ALL FEES.

CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE (OUPS) A MINIMUM OF 48 HOURS BEFORE ANY DEMOLITION WORK.

CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL UTILITY DEMOLITION OR RELOCATION WORK WITH THE APPROPRIATE UTILITIES PRIOR TO DEMOLITION

SITE DEMOLITION LEGEND:

X TREE TO BE REMOVED

WOODED AREA TO BE REMOVED.

SITE DEMOLITION PLAN KEYNOTES:

(1) EXISTING 24" STORM SEWER TO BE RELOCATED.

LEGEND

= Monument Box Found	Existing / PROPOSED = Spot Elevation Tag
= Iron Pin or Pipe Found	= Hydrant
= 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747	= Water Service Valve
= P.K. Nail	= Water Valve
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LAUREL LAKE VILLA
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SITE DEMOLITION PLAN - BUILDING 5

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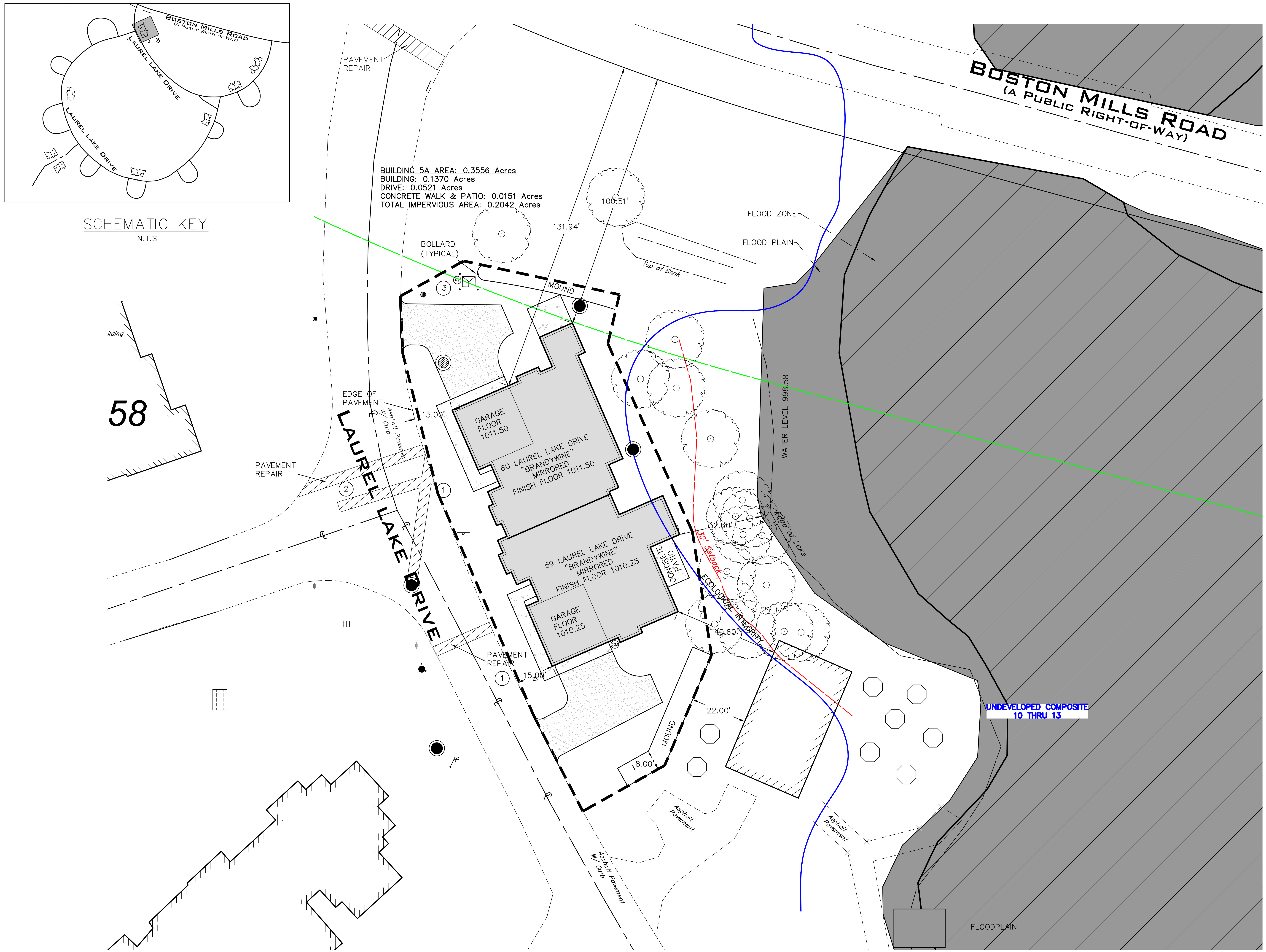
C6.01



FLOODWAY

GENERAL SITE PLAN NOTES:

1. CONTRACTOR SHALL PROVIDE A CLEAN SMOOTH EDGE AND ENSURE THE INTEGRITY OF THE ASPHALT PAVEMENT TO REMAIN.
2. CONTRACTOR SHALL REPAIR PAVEMENT AFTER NEW UTILITY CONNECTIONS ARE INSTALLED. SEE DETAIL SHEET C6.01.
3. BOLLARDS TO BE PLACED AROUND TRANSFORMER

LEGEND

Symbol	Meaning	Symbol	Meaning
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LAUREL LAKE VILLA
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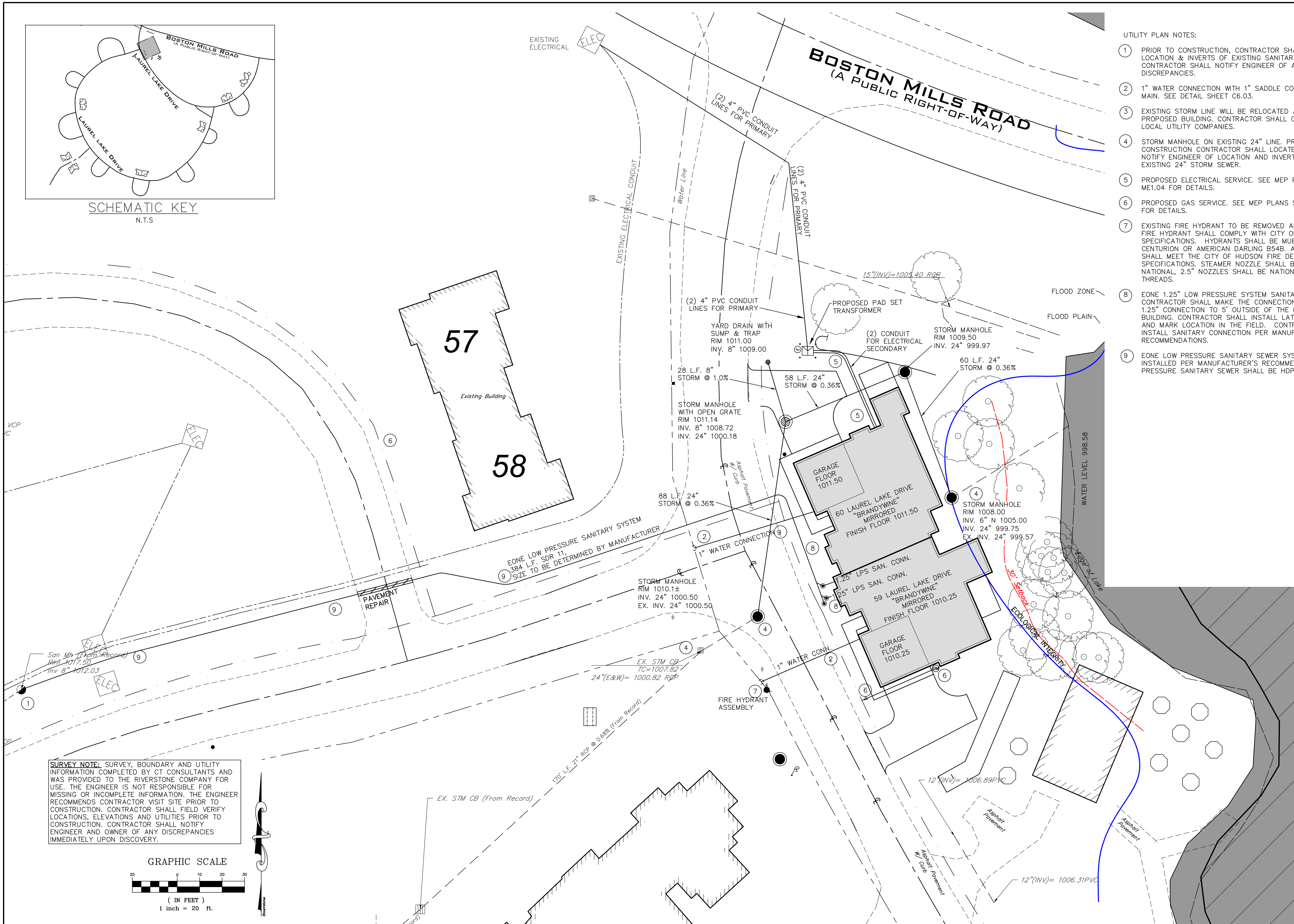
SITE PLAN - BUILDING 5

C6.02



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UTILITY PLAN NOTES:

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY LOCATION & INVERTS OF EXISTING SANITARY MANHOLE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. 1" WATER CONNECTION WITH 1" SADDLE CONNECTION TO MAIN. SEE DETAIL SHEET C6.03.
3. EXISTING STORM LINE WILL BE RELOCATED AROUND THE PROPOSED BUILDING. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES.
4. STORM MANHOLE ON EXISTING 24" LINE. PRIOR TO CONSTRUCTION CONTRACTOR SHALL LOCATE, EXPOSE AND NOTIFY ENGINEER OF LOCATION AND INVERT ELEVATION OF EXISTING 24" STORM SEWER.
5. PROPOSED ELECTRICAL SERVICE. SEE MEP PLANS SHEET ME1.04 FOR DETAILS.
6. PROPOSED GAS SERVICE. SEE MEP PLANS SHEET ME1.04 FOR DETAILS.
7. EXISTING FIRE HYDRANT TO BE REMOVED AND REPLACED. FIRE HYDRANT SHALL COMPLY WITH CITY OF HUDSON SPECIFICATIONS. HYDRANTS SHALL BE MUELLER A423 CENTURION OR AMERICAN DARLING B54B. ALL THREADS SHALL MEET THE CITY OF HUDSON FIRE DEPARTMENT SPECIFICATIONS. STEAMER NOZZLE SHALL BE MACK NATIONAL, 2.5" NOZZLES SHALL BE NATIONAL STANDARD THREADS.
8. EONE 1.25" LOW PRESSURE SYSTEM SANITARY CONNECTION. CONTRACTOR SHALL MAKE THE CONNECTION AND EXTEND 1.25" CONNECTION TO 5' OUTSIDE OF THE PROPOSED BUILDING. CONTRACTOR SHALL INSTALL LATERAL ASSEMBLY AND MARK LOCATION IN THE FIELD. CONTRACTOR SHALL INSTALL SANITARY CONNECTION PER MANUFACTURER RECOMMENDATIONS.
9. EONE LOW PRESSURE SANITARY SEWER SYSTEM TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. LOW PRESSURE SANITARY SEWER SHALL BE HDPE SDR 11.

STATE OF OHIO — PROFESSIONAL ENGINEER — E-81756

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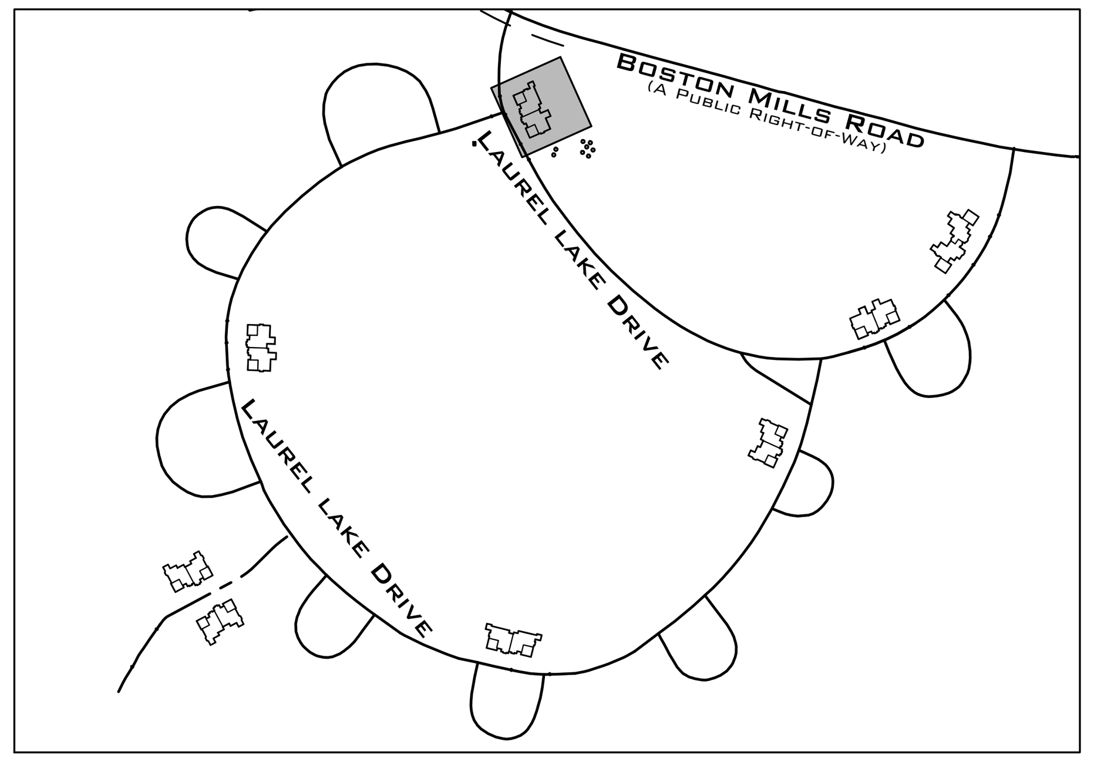

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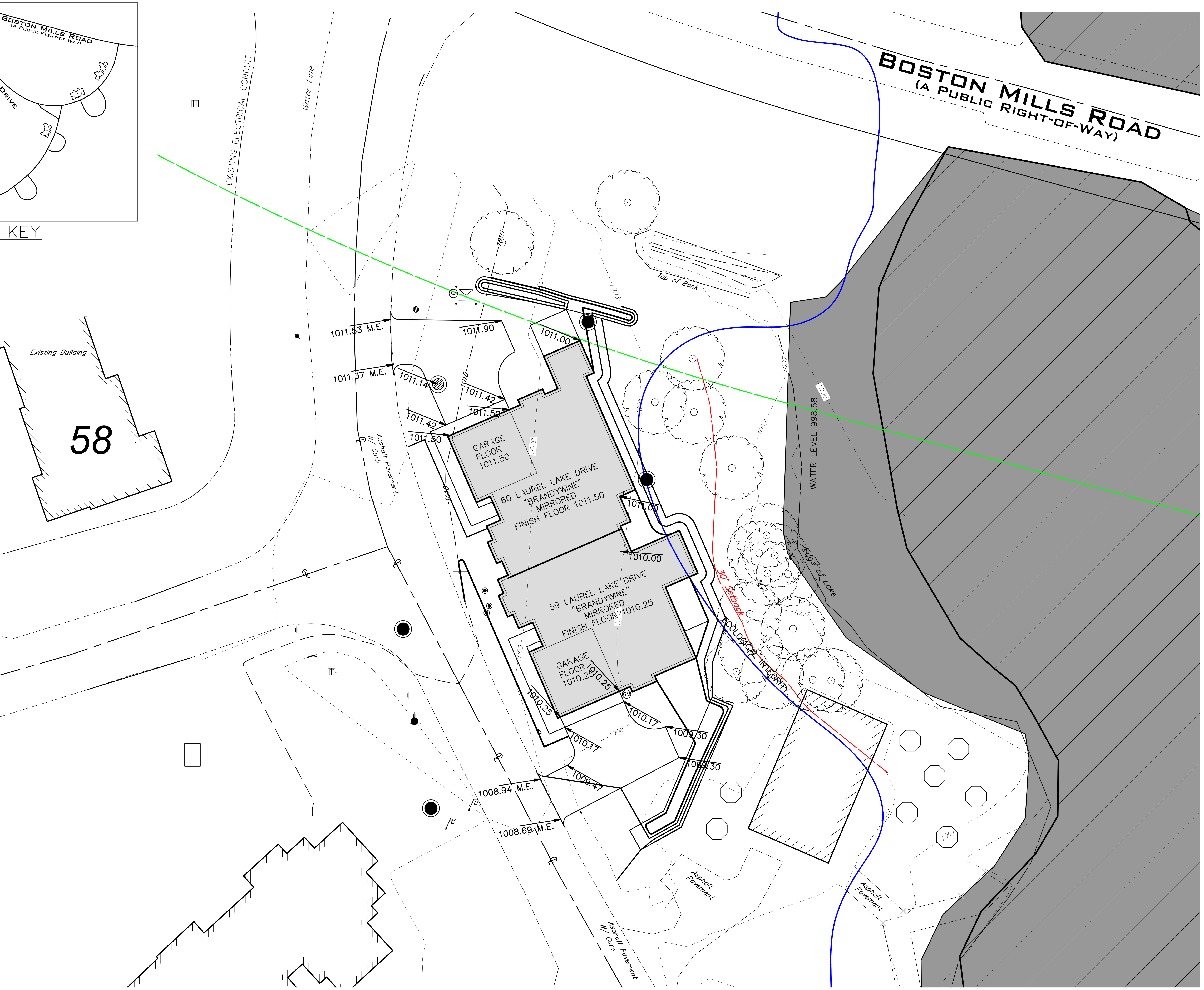

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GRAPHIC SCALE
20 0 10 20 30
(IN FEET)
1 inch = 20 ft.

STATE OF OHIO
PROFESSIONAL ENGINEER
E-61756
Preliminary Not for Construction

RIVERSTONE
LAND SURVEYING - ENGINEERING - DESIGN
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CLEVELAND - OHIO - 44114
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WWW.RIVERSTONESURVEY.COM

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LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

GRADING PLAN - BUILDING 5

C6.04

GENERAL SITE DEMOLITION NOTES:

CONTRACTOR SHALL COMPLETELY CLEAR SITE. REMOVAL SHALL INCLUDE BUT NOT LIMITED TO ALL PAVEMENTS, SIDEWALKS, CURBS, POLES, SIGNS, UTILITIES, FENCES, TREES, LANDSCAPING AND ALL APPURTENANCES WITHIN THE SITE.

CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL PERMITS NECESSARY FOR SITE DEMOLITION AND SHALL BE RESPONSIBLE FOR ALL FEES.

CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE (OUPS) A MINIMUM OF 48 HOURS BEFORE ANY DEMOLITION WORK.

CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL UTILITY DEMOLITION WORK WITH THE APPROPRIATE UTILITIES PRIOR TO DEMOLITION. ALL UTILITY CONNECTIONS SHALL BE REMOVED ACCORDING TO UTILITY COMPANY REQUIREMENTS.

SITE DEMOLITION LEGEND:

X — TREE TO BE REMOVED

(hatched) — PAVEMENT TO BE REMOVED.

SITE DEMOLITION PLAN KEYNOTES:

1. ASPHALT PAVEMENT TO BE REMOVED. CONTRACTOR SHALL SAWCUT AND REMOVE ASPHALT PAVEMENT. CONTRACTOR SHALL PROVIDE A CLEAN SMOOTH EDGE OF PAVEMENT AND ENSURE THE INTEGRITY OF THE PAVEMENT TO REMAIN.
2. CONTRACTOR TO REMOVE INVISIBLE FENCE.
3. DURING DEMOLITION, THE CONTRACTOR SHALL LOCATE, EXPOSE, MARK, AND INSPECT EXISTING STORM LINES AND MANHOLES. CONTRACTOR WILL NOTIFY ENGINEER OF LOCATION, CONDITION, AND INVERT ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE RELOCATION WITH UTILITY COMPANIES PRIOR TO CONSTRUCTION.
4. EXISTING ELECTRIC BOX AND ELECTRIC LINES TO BE RELOCATED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
5. VEGETATION AREA TO BE CLEARED INCLUDING TREES, SHRUBS, BUSHES, AND ROCKS.
6. COMMUNICATION POLES & LINES TO BE RELOCATED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES.
7. GAS LINE TO BE RELOCATED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES.

LEGEND

M = Monument Box Found		Spot Elevation Tag	
○ = Iron Pin or Pipe Found		= Hydrant	
● = 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747		= Water Service Valve	
= P.K. Nail		= Water Valve	
= Gas Meter		= Water Meter	
= Gas Valve		= Reducer	
= Utility Pole		= Storm Manhole	
= Light Pole		= Sanitary Manhole	
= Guy Anchor & Line		= Curb Inlet	
= Telephone Box		= Catch Basin	
= Electric Box		= Property Line	
= Cable Box		= Centerline	
= Bollard			
= Cleanout / Test Tee			

Ex. Parcel line
Original Sublot Line
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Right-of-way Line
Easement Line
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Existing / PROPOSED
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Fence Line (Wooden)
Fence Line (Chain-Link)
Guardrail

Ac.	Acres	L.C.A.	Limited Common Area
Adj.	Adjacent	L.F.	Lineal Feet
A.F.N.	Auditor's File Number	M.E.	Match Existing
Asp.	Asphalt	Meas./M.	Measured
B.F.	Basement Floor	MH	Manhole
BW	Bottom of Wall	Obs.	Observed
Calc./C.	Calculated	Pg.	Page
CB	Catch Basin	P.P.N.	Permanent Parcel Number
C.C.M.R	Cuyahoga County Map Records	Prop	Proposed
C.L.F.	Chain-link Fence	Rec./R.	Record
Clr.	Clears	R/W	Right-of-way
C.O.	Clean Out	San.	Sanitary
Comb.	Combination	S.F.	Square Feet
Conc.	Concrete	S/L	Sublot
Conn.	Connection	Stm.	Storm
D.H.	Drill Hole	T.B.M.	Temporary Bench Mark
D.I.W.M.	Ductile Iron Water Main	TBR	To Be Removed
		T/C	Top of Curb
Elec	Electric	Tele	Telephone
Elev	Elevation	T.F.	Top Of Footer
Encr.	Encroaches	T.T.	Test Tee
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SITE DEMOLITION PLAN - BUILDING 8&9

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C7.01

GENERAL SITE PLAN NOTES:

1. RETAINING WALL TO BE DESIGNED BY OTHERS. SEE GRADING PLAN SHEET C7.07 FOR ELEVATIONS
2. FIRE LANE. CURB TO BE PAINTED RED.
3. FIRE LANE SIGN. "FIRE LANE NO PARKING"
4. BOLLARDS TO BE PLACED AROUND TRANSFORMER.

LEGEND

- Monument Box Found
- Iron Pin or Pipe Found
- 5/8" Iron Pin Set and Capped Riverstone Company Dudley PS6747
- P.K. Nail
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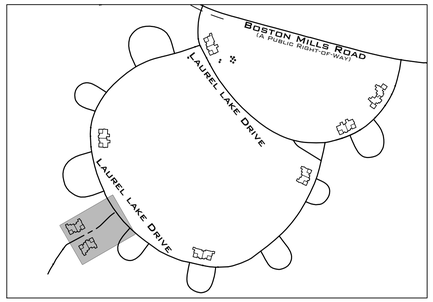
SITE PLAN - BUILDING 8&9

C7.02



SCHEMATIC KEY

N.T.S

STM MH 1
RIM 1002.08
INV 30" NW 997.74
INV 30" NE 997.74
INV 12" N 997.74
INV 12" S 997.74

STM CB 2
RIM 1001.40
INV 12" S 997.87

STM CB 3
RIM 1001.36
INV 12" N 997.88

STM MH 4
RIM 1004.43
INV 30" NW 998.57
INV 30" NE 998.57
INV 12" N 1000.01
INV 12" S 1000.01

STM CB 5
RIM 1004.15
INV 12" S 1000.15

STM CB 6
RIM 1004.15
INV 12" N 1000.15

STM MH 7
RIM 1005.92
INV 30" NW 999.30
INV 30" NE 999.30
INV 12" N 1000.56
INV 12" S 1000.54

STM CB 8
RIM 1004.70
INV 12" S 1000.70

STM CB 9
RIM 1004.70
INV 12" N 1000.70

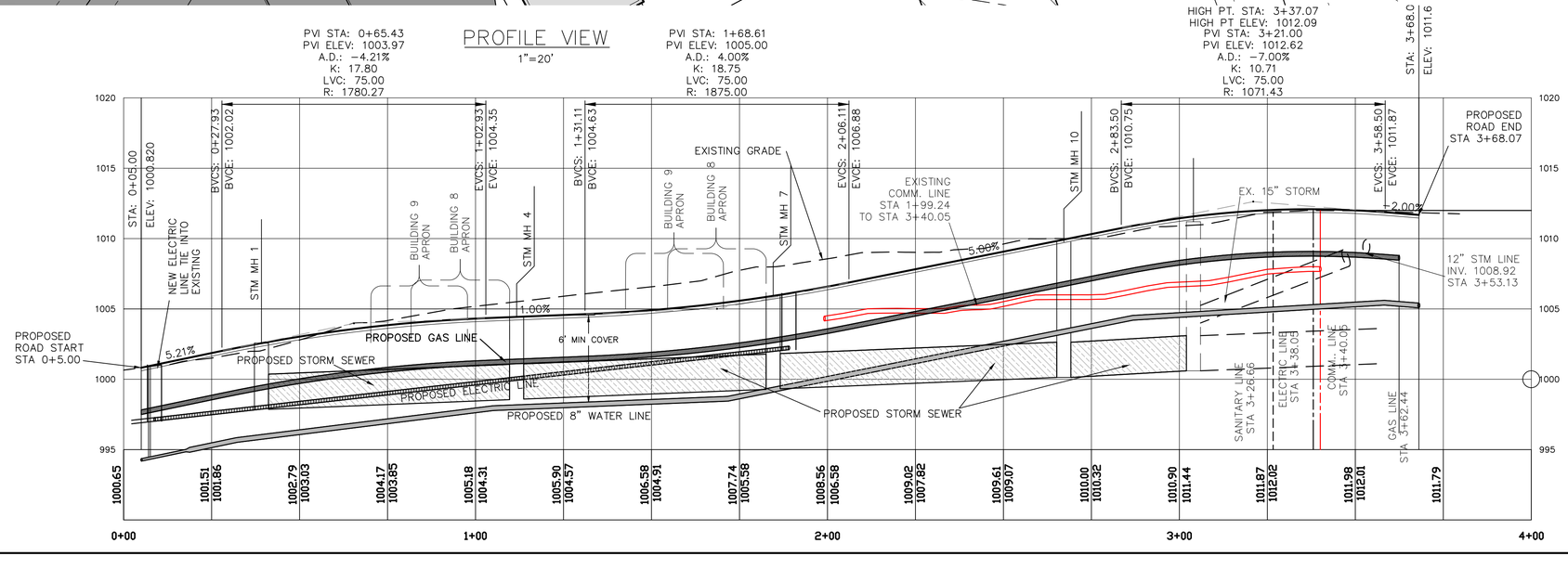
STM MH 10
RIM 1009.76
INV 30" NW 1000.15
INV 30" NE 1000.15
INV 12" N 1004.49
INV 12" S 1004.58

STM CB 11
RIM 1008.71
INV 12" S 1004.71

STM CB 12
RIM 1008.64
INV 12" N 1004.64

PROFILE VIEW

1"=20'



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PLAN & PROFILE VIEW - BUILDING 8&9

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C7.03

UTILITY PLAN NOTES:

1. EONE 1.25" LOW PRESSURE SYSTEM SANITARY CONNECTION. CONTRACTOR SHALL MAKE THE CONNECTION AND EXTEND 1.25" CONNECTION TO 5' OUTSIDE OF THE PROPOSED BUILDING. CONTRACTOR SHALL INSTALL LATERAL ASSEMBLY AND MARK LOCATION IN THE FIELD. CONTRACTOR SHALL INSTALL SANITARY CONNECTION PER MANUFACTURER RECOMMENDATIONS.
2. EONE LOW PRESSURE SANITARY SEWER SYSTEM TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. LOW PRESSURE SANITARY SEWER SHALL BE HDPE SDR 11.
3. 1" WATER CONNECTION TO BUILDING. 1" SADDLE CONNECTION TO MAIN.
4. CONTRACTOR SHALL DEFLECT 8" WATERLINE AS NEEDED WITHIN MANUFACTURER'S RECOMMENDATION TO OBTAIN A 216' RADIUS.
5. PROPOSED ELECTRICAL SERVICE. SEE MEP PLANS SHEET ME1.05 FOR DETAILS.
6. PROPOSED GAS SERVICE. SEE MEP PLANS SHEET ME1.05 FOR DETAILS.
7. RELOCATED ELECTRICAL CONDUIT. CONTRACTOR SHALL COORDINATE WITH HUDSON PUBLIC POWER PRIOR TO CONSTRUCTION.
8. RELOCATED TELECOMMUNICATIONS CONDUIT. CONTRACTOR SHALL COORDINATE WITH TELECOMMUNICATIONS PROVIDER PRIOR TO CONSTRUCTION.
9. PROPOSED FIRE HYDRANTS SHALL COMPLY WITH CITY OF HUDSON SPECIFICATIONS. HYDRANTS SHALL BE MUELLER A423 CENTURION OR AMERICAN DARLING B54B. ALL THREADS SHALL MEET THE CITY OF HUDSON FIRE DEPARTMENT SPECIFICATIONS. STEAMER NOZZLE SHALL BE MACK NATIONAL, 2.5" NOZZLES SHALL BE NATIONAL STANDARD THREADS.

LEGEND

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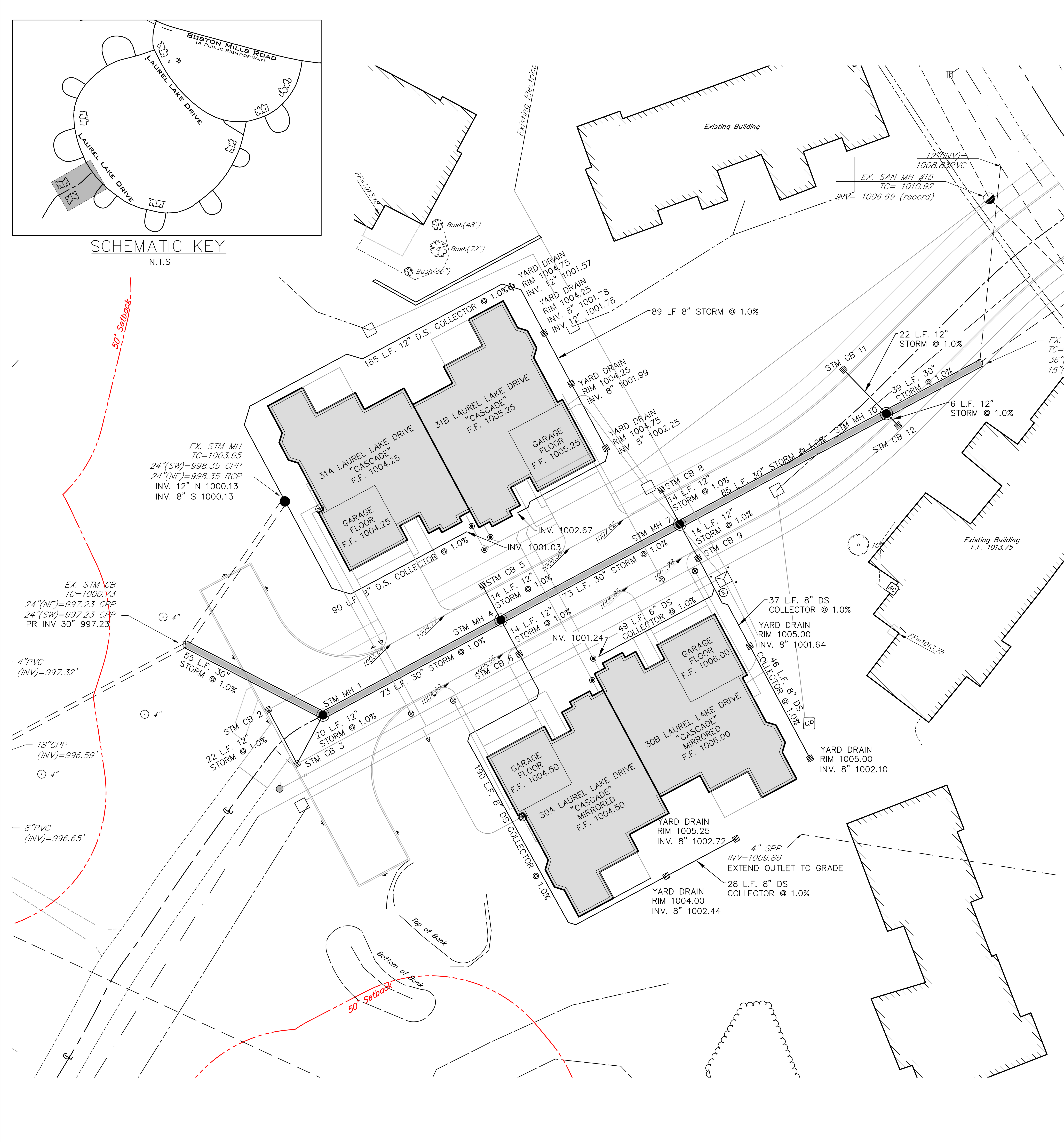

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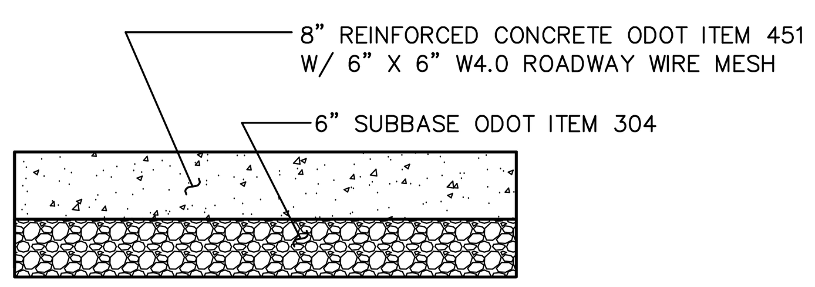
PC APPLICAITON
3/17/25
NOT FOR CONSTRUCTION

LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

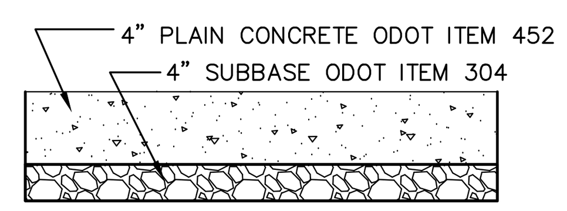
GRADING PLAN - BUILDING 8&9

Ohio Utilities Protection Service
Call 811 before you dig

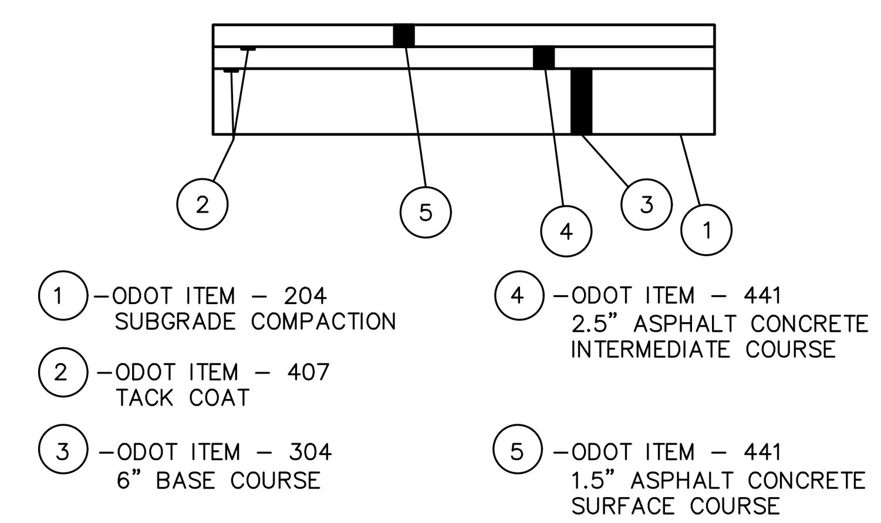
OGPUPS
Ohio Oil & Gas Producers Underground Protection Service



8" REINFORCED CONCRETE
DRIVE AND APRON
N.T.S.



CONCRETE SIDEWALK
REPLACEMENT/NEW
N.T.S.



1 – ODOT ITEM – 204
SUBGRADE COMPACTION

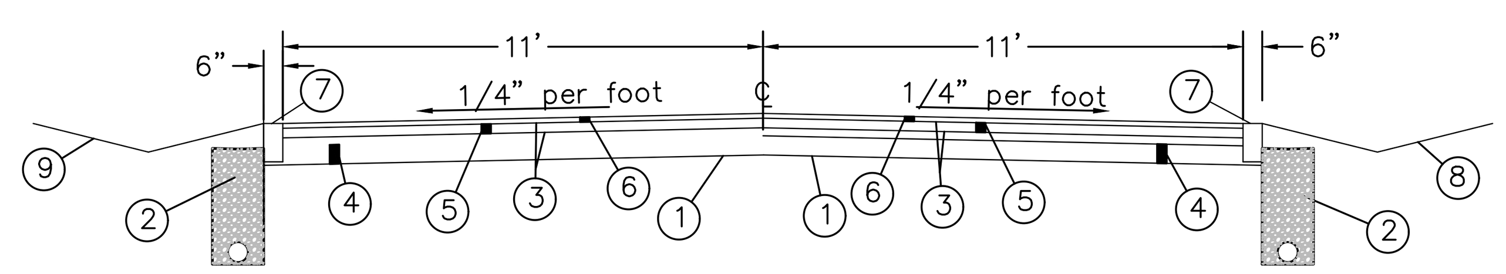
2 – ODOT ITEM – 407
TACK COAT

3 – ODOT ITEM – 304
6" BASE COURSE

4 – ODOT ITEM – 441
2.5" ASPHALT CONCRETE
INTERMEDIATE COURSE

5 – ODOT ITEM – 441
1.5" ASPHALT CONCRETE
SURFACE COURSE

TYPICAL ASPHALT
DRIVEWAY SECTION
N.T.S.



1 ODOT ITEM – 204
SUBGRADE COMPACTION

2 ODOT ITEM – 605
6" PERFERATED PVC
UNDERDRAIN 707.41

3 ODOT ITEM 407
TACK COAT

4 ODOT ITEM 304
8" AGGREGATE BASE

4 ODOT ITEM 304
8" AGGREGATE BASE

5 ODOT ITEM – 402
3 1/2" ASPHALT
INTERMEDIATE COURSE

6 ODOT ITEM – 404
1 1/2" ASPHALT
SURFACE COURSE

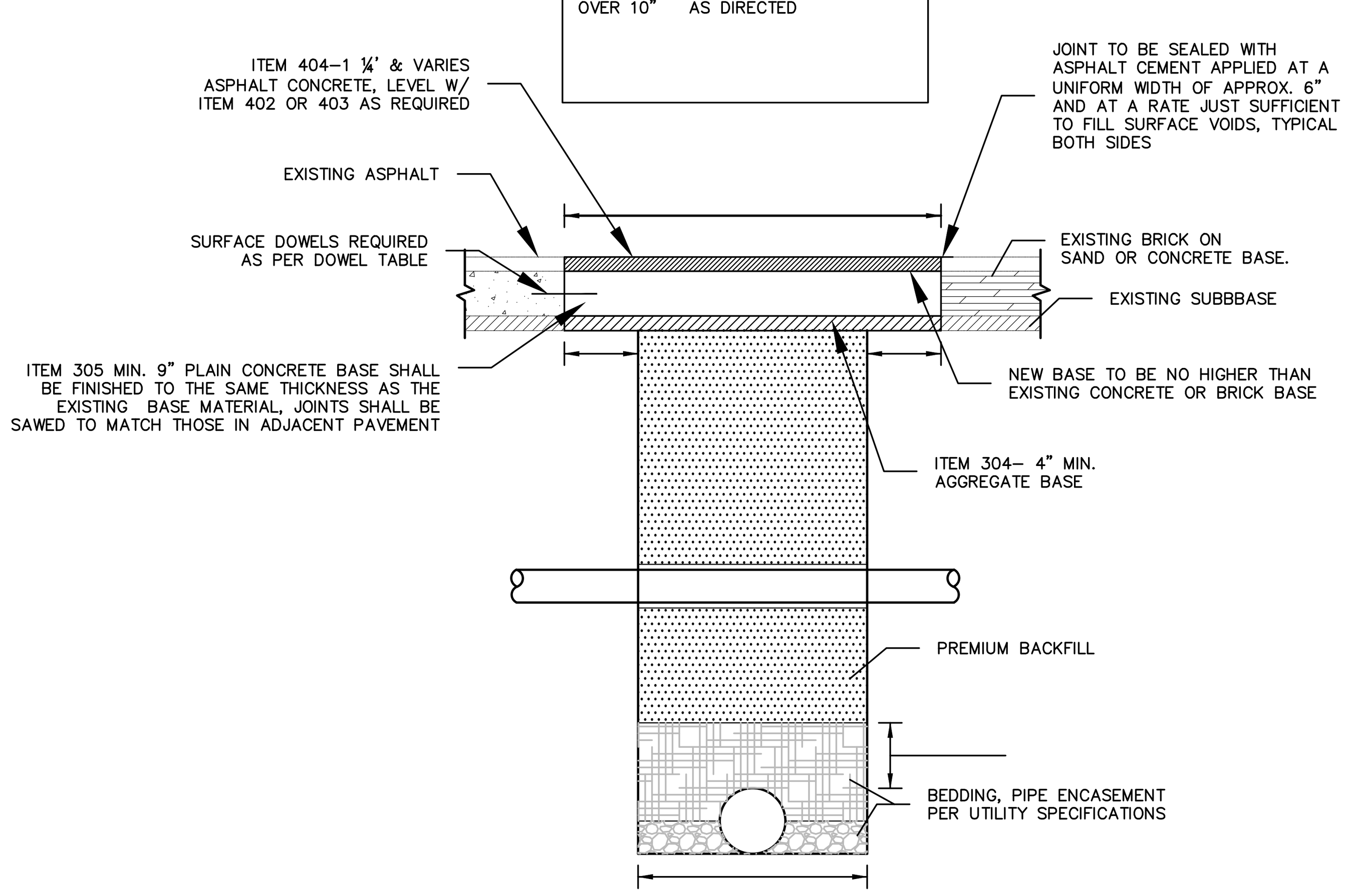
7 ODOT ITEM – 609
FLUSH CONCRETE CURB

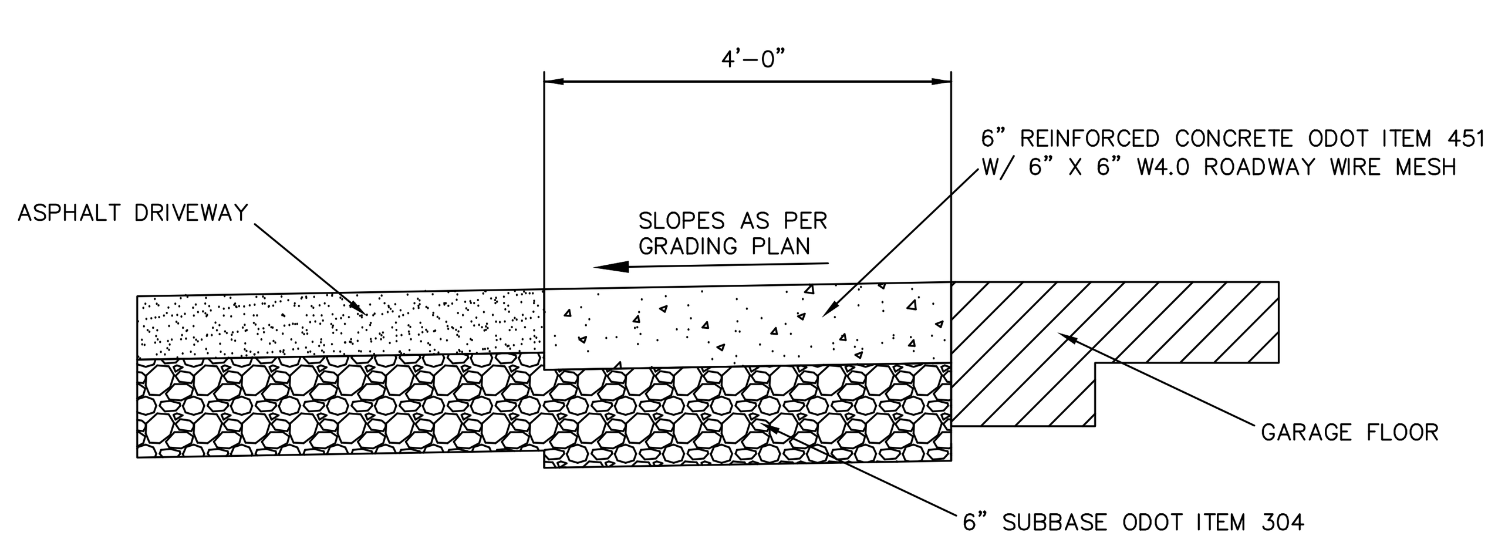
8 ODOT ITEM – 659
SEEDING AND MULCHING ITEM 653
3" TOPSOIL FURNISHED AND PLACED

TYPICAL ASPHALT SECTION
WITH FLUSH CONCRETE CURB
N.T.S.

DOWEL TABLE

PAVEMENT THICKNESS	DIAMETER OF DOWELS
8" OR LESS	1"
9"	1.125"
10"	1.25"
OVER 10"	AS DIRECTED





CONCRETE APRON AT GARAGE
N.T.S.

PROOF ROLL

A MINIMUM OF TWO (2) PROOF ROLLINGS WILL BE REQUIRED AS DIRECTED BY THE ENGINEER BEFORE PAVING. THE FIRST PROOF ROLLING SHALL BE PERFORMED AFTER THE INSTALLATION OF ALL UNDERGROUND IMPROVEMENTS AND ROUGH GRADING HAS BEEN COMPLETED. AFTER FINE GRADING, JUST PRIOR TO PAVING, THE SUBGRADE SHALL BE PROOF ROLLED AGAIN. A PROOF ROLLING SHALL CONSIST OF TRAVELING THE ENTIRE AREA OF THE PREPARED SUBGRADE WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PROVIDED BY THE CONTRACTOR. MOISTURE CONTENT ADJUSTMENT METHODS USED AT THE TIME OF PROOF ROLLING SHALL CONFORM TO SECTION 203.11 OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. WHERE THIS OPERATION SHOWS THE SUBGRADE TO BE UNSTABLE OR TO HAVE NON–UNIFORM STABILITY, THE CONTRACTOR SHALL CORRECT THE UNSTABLE AREAS AS DIRECTED BY THE ENGINEER. THE MINIMUM EQUIPMENT SHALL CONSIST OF A SINGLE UNIT, TANDEM AXLE DUMP TRUCK CAPABLE OF BEING LOADED TO 30,000 POUND AXLE LOAD, 60,000 POUND GVW. TIRE PRESSURE SHALL BE MAINTAINED AT 90 PSI OR AS SPECIFIED UNDER SECTION 203.14 OF ODOT SPECIFICATIONS. ANY AREA PERMITTING TIRES TO LEAVE A GROOVE OF ONE (1) INCH OR MORE SHALL BE UNACCEPTABLE FOR PAVING. ANY AREA PERMITTING THE TEST VEHICLE TIRES TO LEAVE A GROOVE OF ZERO (0) TO ONE–HALF (1/2) INCH DEEP SHALL BE ACCEPTABLE. ANY AREA PERMITTING THE TEST VEHICLE TIRES TO LEAVE A GROOVE OF ONE–HALF (1/2) INCH TO ONE (1) INCH DEEP SHALL BE AT THE ENGINEER'S DISCRETION.

GENERAL NOTES

1.) A PRE–CONSTRUCTION CONFERENCE SCHEDULED BY THE CONTRACTOR SHALL BE HELD PRIOR TO START OF ANY WORK. IN ADDITION, THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE CITY ENGINEER PRIOR TO BEGINNING WORK TO ARRANGE FOR INSPECTION.
2.) ANY AND ALL CHANGES IN PLAN QUANTITIES OR MATERIALS SHALL BE APPROVED IN WRITING BY THE DEVELOPER PRIOR TO INCORPORATION IN THE WORK.
3.) EARTHWORK QUANTITIES:
   A) ALL STUMPS, TREES AND OTHER CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF–SITE.
   B) THE CONTRACTOR SHALL PLACE AND COMPACT ALL SUITABLE FILL MATERIAL EXCAVATED DURING HIS CONSTRUCTION OPERATIONS WITHIN THE FILL AREAS DESIGNATED ON THE GRADING PLAN AND/OR AS DIRECTED BY THE DEVELOPER AND/OR HAULED OFF–SITE AT THE DEVELOPER'S DISCRETION.
   C) NO DISPOSAL SITE WITHIN THE PROJECT LIMITS SHALL BE UTILIZED.
4.) SEEDING AND MULCHING: SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY SEEDING AND MULCHING IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISHED GRADING IN ACCORDANCE WITH ITEM 659 OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
5.) ALL TRENCHES IN PAVED AREAS SHALL BE BACKFILLED WITH GRANULAR MATERIALS FROM THE TOP OF THE TRENCH BEDDING. BACKFILL TO BE MECHANICALLY COMPACTED. SLAG NOT ALLOWED.
6.) ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SYSTEM PROHIBITED.
7.) PRIOR TO CONNECTION CONSTRUCTION, CONTRACTOR TO VERIFY LOCATIONS, SIZE AND DEPTH OF EXISTING SEWER & WATER TIE–INS.
8.) THE UTILITY OWNERSHIPS ARE AS FOLLOWS:

OHIO UTILITIES PROTECTION SERVICE
106 WEST RYEN – ROOM 427
YOUNGSTOWN, OHIO 44051
PH: (800) 362–2764

DOMINION ENERGY
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OHIO 44333
PH: (877) 542–2630

CITY OF HUDSON DEPARTMENT
OF PUBLIC WORKS
1769 GEORGETOWN ROAD
HUDSON, OHIO 44236
PH: (330) 342–1750

SUMMIT COUNTY DEPARTMENT
OF SANITARY SEWER SERVICES
1180 S MAIN STREET SUITE 201
AKRON, OHIO 44301
PH: (330) 926–2400

SUMMIT PETROLEUM INC.
9345 RAVENNA ROAD
TWINSBURG, OHIO 44087
PH: (330) 487–5494

CENTURYLINK
4000 CHESTER AVENUE
CLEVELAND, OHIO 44102
PH: (216) 906–6284

MCI (VERIZON)
120 RAVINE STREET
AKRON, OHIO 44303
PH: (330) 329–5495

THE LOCATION OF UNDERGROUND UTILITIES ARE PLOTTED ACCORDING TO THE INFORMATION FURNISHED BY THE UTILITIES CONCERNED AND THE ENGINEER DOES NOT GUARANTEE THE ACCURACY THEREOF.

9.) ALL WORK CONTEMPLATED UNDER THIS CONTRACT SHALL COMPLY WITH U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT, THE STANDARD SPECIFICATIONS OF THE CITY OF HUDSON AND THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS
LATEST EDITION, EXCEPT WHERE SPECIFICALLY SPECIFIED IN THESE PLANS.
10.) IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN INVESTIGATION OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL.
11.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL MATERIAL TESTING AND ALL PERMITS REQUIRED FOR THIS PROJECT.
12.) THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY FACILITIES ARE SHOWN ON THE PLANS FROM DATA AVAILABLE AT THE TIME OF THE FIELD SURVEY IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF THE EXISTING UTILITY OWNERS AND UTILITY PROTECTION SERVICE LISTED ABOVE IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE AND AS OUTLINED IN PROJECT SPECIFICATIONS.
13.) ALL WORK CONTEMPLATED SHALL BE GOVERNED BY THE RULES, REGULATIONS AND SPECIFICATIONS OF THE CITY OF HUDSON AND AT ALL TIMES BE SUBJECT TO THEIR DIRECT SUPERVISION AND INSPECTION.
14.) ALL SANITARY SEWER CONNECTIONS SHALL BE 6" DIAMETER V.C.P. C–700 E.S. w/PREMIUM JOINTS (OR THERMOPLASTIC AS SPECIFIED) @ 1.0% MIN. (INCLUDING TEST TEE LOCATED AT R/W – SEE DETAIL).
15.) ALL EXISTING CONNECTIONS SHALL BE TESTED WITH DYE AND CAMERA BEFORE TYING IN FOR USE WITH PROPOSED LOTS.
16.) COLOR DVD VIDEO OF THE SANITARY AND STORM SEWERS (8" AND GREATER) SHALL BE GIVEN TO THE CITY OF HUDSON DIVISION OF WATER POLLUTION CONTROL.
17.) COST OF REMOVAL, FILLING, ABANDONING AND DISPOSAL OF EXISTING SEWERS & CONNECTIONS TO BE INCLUDED IN PRICES BID UNDER OTHER ITEMS (OF SPECIFICATIONS) AND NO ADDITIONAL COMPENSATION WILL BE MADE.
18.) TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE CONTRACTOR.
19.) ALL SANITARY AND STORM MAIN LINE SEWERS & HOUSE CONNECTIONS SHALL HAVE PREMIUM JOINTS.
20.) FLEXIBLE GASKETS SHALL BE PROVIDED AT ALL SANITARY AND STORM MANHOLES.
21.) FOR CURB INLET MANHOLE, BRICK MAY BE USED TO FIT CASTING.

ENVIRON. IMPACT NOTES

1.) IF, DURING THE COURSE OF CONSTRUCTION, EVIDENCE OF ANY DEPOSIT OF HISTORICAL AND/OR ARCHAEOLOGICAL INTEREST IS FOUND, CEASE OPERATIONS AFFECTING THE FIND AND NOTIFY THE OHIO HISTORIC PRESERVATION OFFICE AT (614) 297–3470. NO FURTHER DISTURBANCE OF THE DEPOSITS SHALL OCCUR UNTIL THE CONTRACTOR HAS BEEN NOTIFIED BY THE OWNER THAT HE OR SHE MAY PROCEED. THE OWNER WILL ISSUE THE NOTICE TO PROCEED ONLY AFTER THE STATE OHIO OFFICIAL HAS SURVEYED THE FIND AND MADE SUCH A DETERMINATION.
2.) ACCESS FOR EMERGENCY VEHICLES MUST BE PROVIDED AT ALL TIMES.
3.) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES, AND TO PROVIDE WHATEVER TEMPORARY MATERIALS ARE NECESSARY TO PROVIDE A SAFE, ADEQUATE DRIVE SURFACE.
4.) NO MANHOLE OR SEWER EXCAVATION WILL BE LEFT OPEN AWAITING CONNECTION OR REMOVAL AT A LATER DATE BY THE CONTRACTOR'S FORCES, OR OTHERS, BUT SHALL BE TEMPORARILY BACKFILLED AND RESURFACED, IF APPLICABLE, WITH A TEMPORARY PAVEMENT PASSABLE TO TRAFFIC.
5.) NO MORE THAN 200 TO 300 FEET OF SEWER TRENCH SHALL REMAIN OPEN AT ONE TIME. MATERIALS EXCAVATED DURING TRENCHING SHALL BE PILED ON THE UPHILL SIDE OF THE TRENCH.
6.) STOCKPILED TOPSOIL AND FILL MATERIALS SHALL BE PROTECTED WITH EROSION CONTROL BARRIERS OR TEMPORARY SEEDING. EXCESS SOIL THAT IS STOCKPILED MUST BE EITHER REMOVED OR REGRADED WITHIN 15 DAYS OF THE COMPLETION OF CONSTRUCTION.
7.) IF TREE REMOVAL IS NECESSARY, TREES SHALL BE FELLED IN A MANNER THAT AVOIDS DAMAGE TO ADJACENT REMAINING TREES. WHERE ROOT DAMAGE CANNOT BE AVOIDED, PRUNING AND PAINTING AS APPROPRIATE TO COMPENSATE FOR DAMAGE WILL BE DONE BY AN AUTHORIZED ARBORIST.

STATE OF OHIO
DAVID A. PIETRANTONE
E-61756
REGISTERED
PROFESSIONAL ENGINEER
Preliminary
Not for
Construction

RIVERSTONE
LAND SURVEYING - ENGINEERING - DESIGN
3800 LAKESIDE AVENUE - SUITE 100
CLEVELAND - OHIO - 44114
PHONE: (216) 491-2000 FAX: (216) 491-9640
WWW.RIVERSTONESURVEY.COM

2023-186

PLAN REVISIONS:

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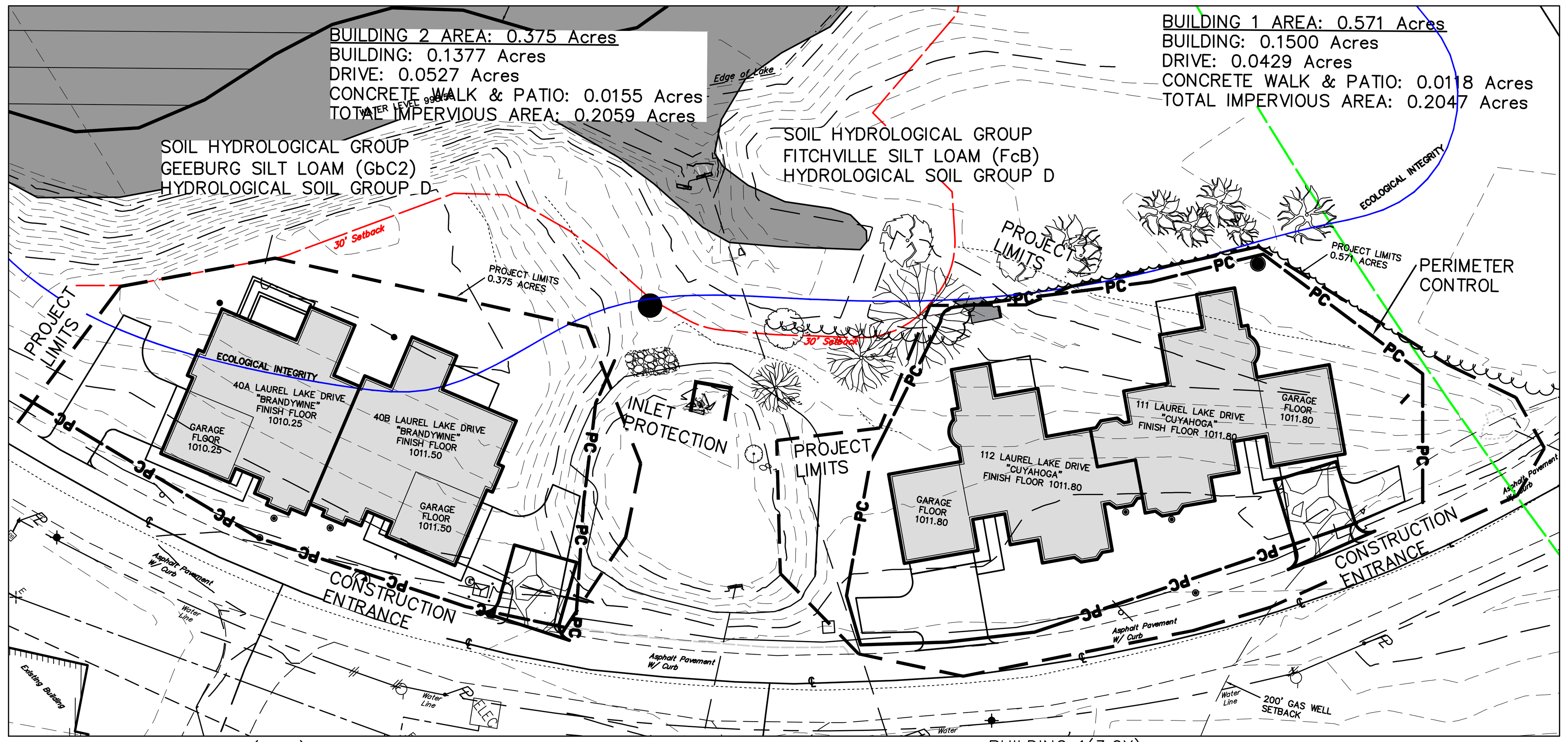
LAUREL LAKE VILLA
200 LAUREL LAKE DRIVE

NOTES & DETAILS

Ohio Utilities Protection Service
Call 811
before you dig

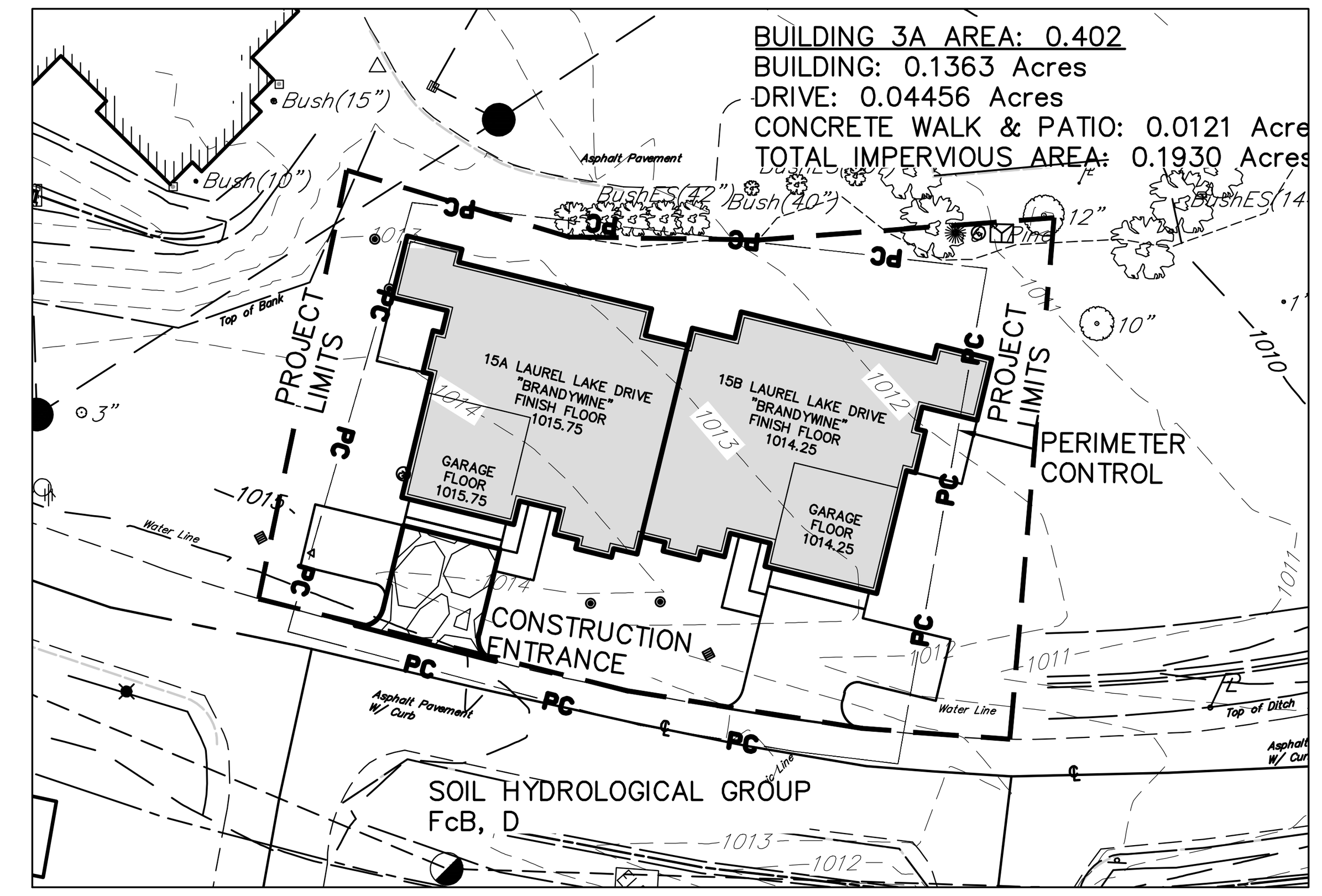
OGPUPS
Ohio Oil & Gas Producers Underground Protection Service
Call (614) 715-2984 or 811

C8.01



BUILDING 2(3.0X)
PROJECT LIMITS: 0.375 ACRES
IMPERVIOUS AREA: 0.206 ACRES
OPEN AREA: 0.169 ACRES

BUILDING 1(3.0X)
PROJECT LIMITS: 0.571 ACRES
IMPERVIOUS AREA: 0.205 ACRES
OPEN AREA: 0.366 ACRES



BUILDING 3A (4.0X)
PROJECT LIMITS: 0.402 ACRES
IMPERVIOUS AREA: 0.193 ACRES
OPEN AREA: 0.209 ACRES

GENERAL SWPPP NOTES:

TOTAL LOT AREA = 141.9 ACRES
DISTURBED AREA = 4.37 ACRES

LOCATION OF WASTE STORAGE AND DISPOSAL SHOWN ON THE PLANS SHALL BE VERIFIED BY CONTRACTOR. LOCATION MAY BE CHANGED AND THE SWPPP AMENDED.

A COPY OF THE SWPPP AND ALL ADDENDUM TO THE SWPPP SHALL BE KEPT ON SITE AT ALL TIMES.

ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED AS PER PLAN. ALL PRACTICES MUST BE MAINTAINED AND FUNCTIONAL DURING CONSTRUCTION ACTIVITIES.

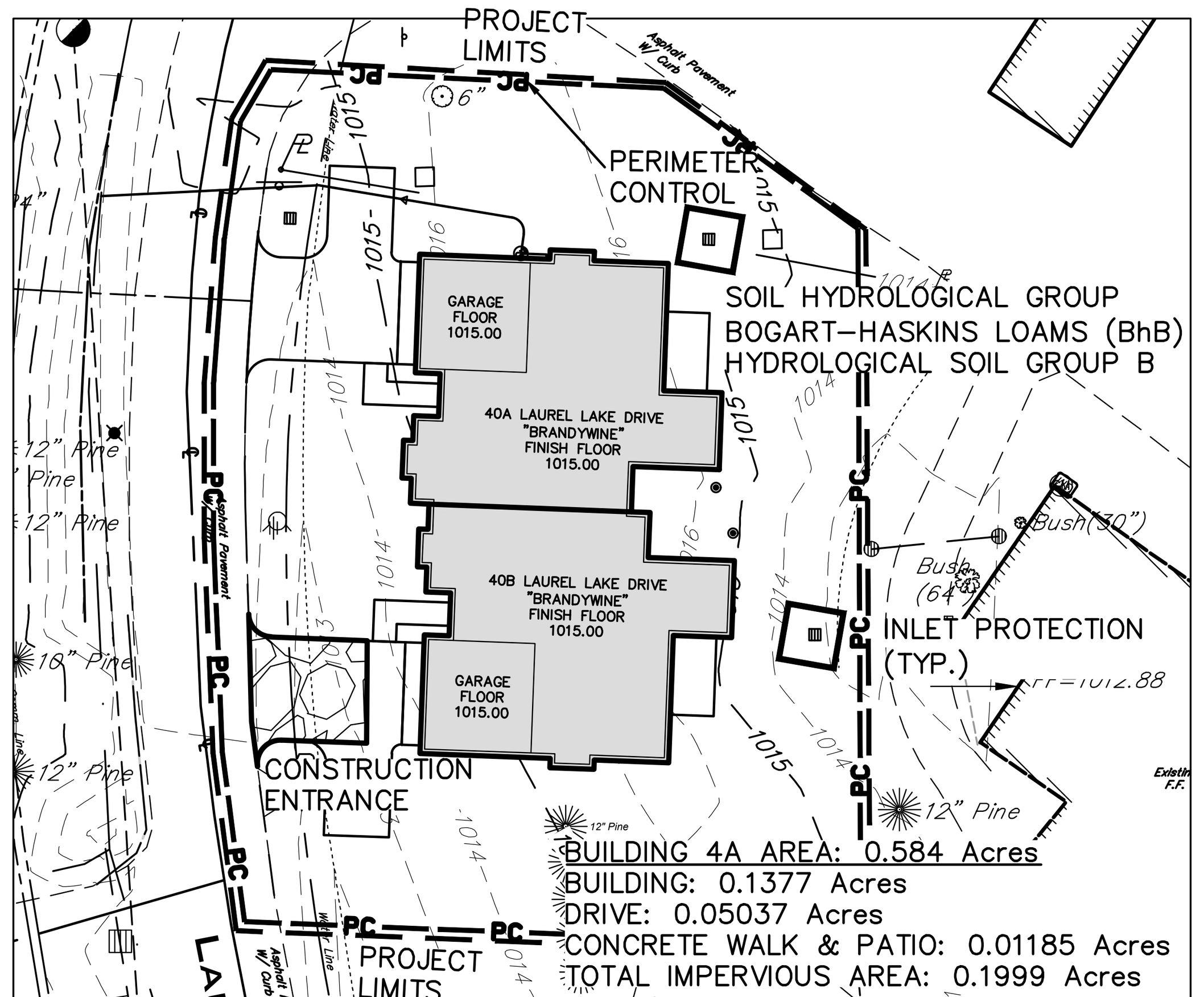
EROSION CONTROL BLANKETS WITH MATTING SHALL BE USED ON SLOPES GREATER THAN 6%.

EXCESS SEDIMENT SHALL BE REMOVED FROM THE TEMPORARY SEDIMENT BASIN WHEN THE SEDIMENT OCCUPIES 40% OF THE SEDIMENT STORAGE ZONE.

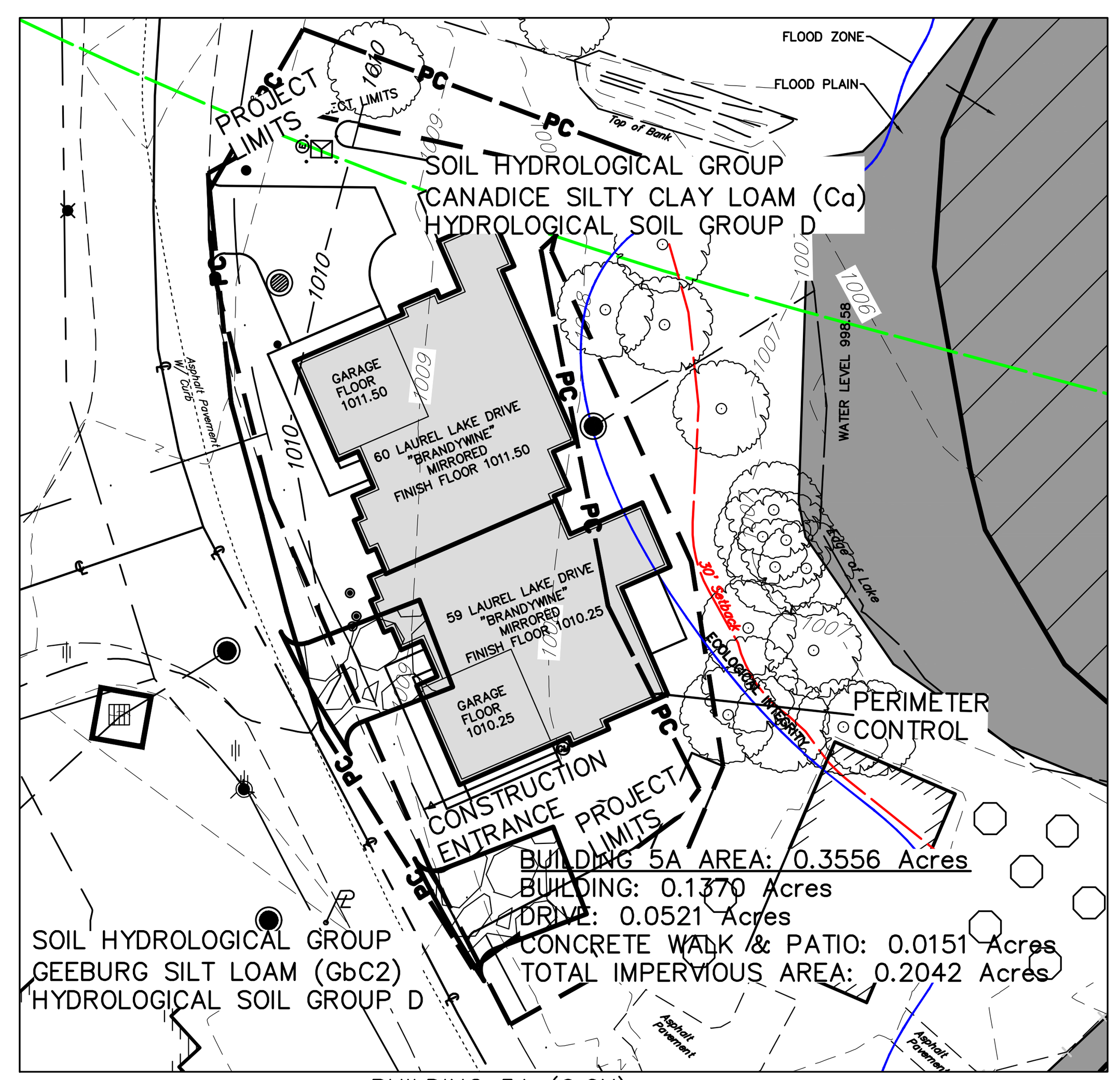
ONCE THE SITE HAS BEEN STABILIZED AND PROPER AUTHORIZATION HAS BEEN OBTAINED, CONSTRUCTION BMPS MAY BE REMOVED.

CONSTRUCTION SCHEDULE

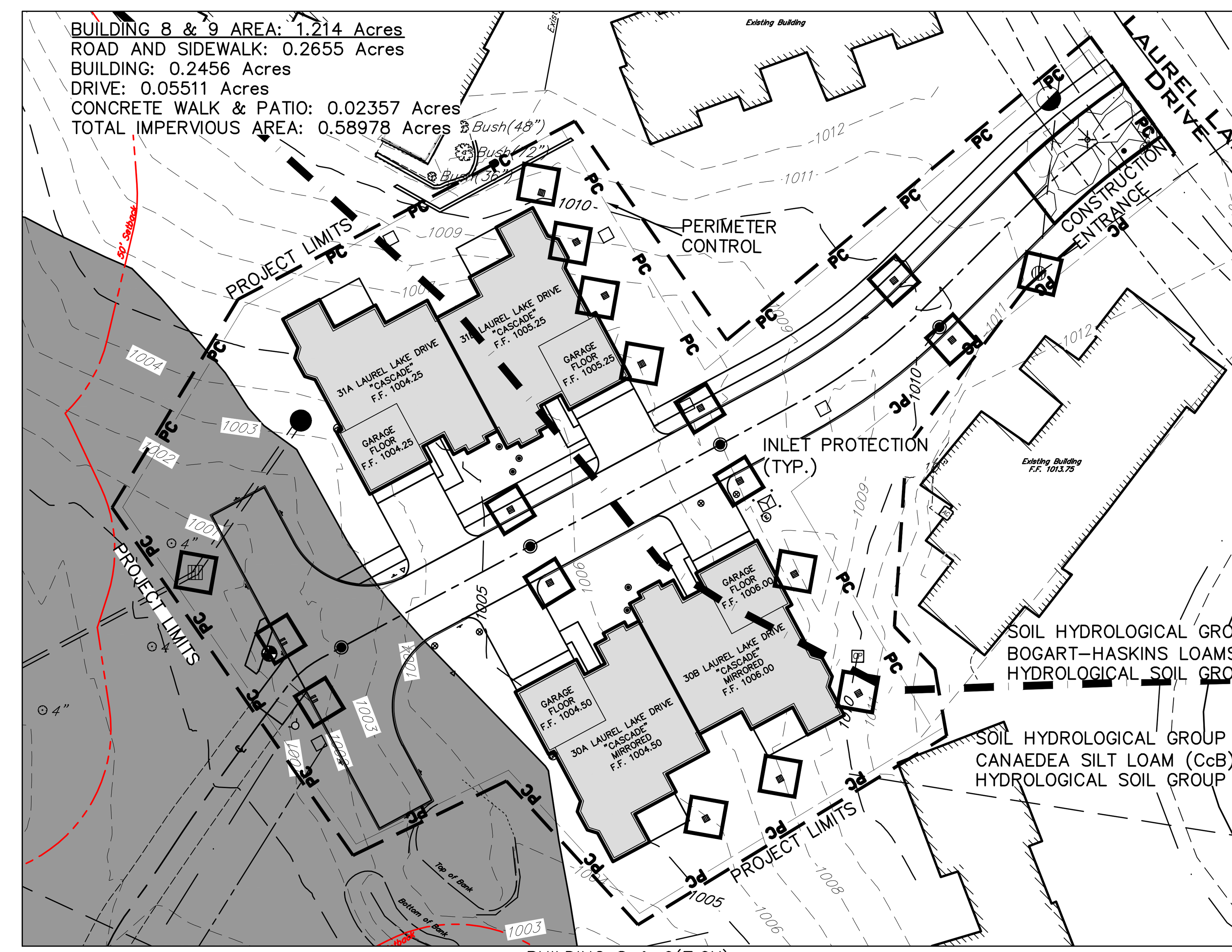
1. INSTALL TEMPORARY STONE CONSTRUCTION ENTRANCE.
2. INSTALL PERIMETER CONTROL.
3. CLEAR AND GRUB WITHIN CONSTRUCTION LIMITS.
4. STRIP TOPSOIL.
5. MASS GRADE AND APPLY SOIL STABILIZATION AS REQUIRED.
6. INSTALL UTILITIES.
7. INSTALL INLET PROTECTION ON NEW CATCH BASINS.
8. INSTALL BUILDING FOUNDATION.
9. PAVE
10. AFTER PROPER AUTHORIZATION HAS BEEN OBTAINED BY THE GOVERNING AGENCY, REMOVE EROSION AND/OR SEDIMENT BMP'S.



BUILDING 4A (5.0X)
PROJECT LIMITS: 0.584 ACRES
IMPERVIOUS AREA: 0.200 ACRES
OPEN AREA: 0.384 ACRES



BUILDING 5A (6.0X)
PROJECT LIMITS: 0.3556 ACRES
IMPERVIOUS AREA: 0.2042 ACRES
OPEN AREA: 0.1514 ACRES



BUILDING 8 & 9(7.0X)
PROJECT LIMITS: 1.214 ACRES
IMPERVIOUS AREA: 0.59 ACRES
OPEN AREA: 0.624 ACRES

SITE DATA: THE PROJECT IS LOCATED ON LAUREL LAKE DRIVE IN THE CITY OF HUDSON. THE ENTIRE AREA OF THE SITE IS APPROXIMATELY 141.9 ACRES. THE PROJECT LIMITS IS APPROXIMATELY 4.37 ACRES. EXISTING STORM WATER ON SITE IS COLLECTED INTO DRAINAGE SYSTEM BEFORE BEING DEPOSITED INTO A DETENTION BASIN OR DIRECTLY INTO ONE OF TWO LAKES ON SITE. DETENTION BASINS ON SITE DEPOSIT INTO LAKES. THE LARGER OF THE TWO LAKES– LAUREL LAKE FLOWS INTO PINE LAKE OFF SITE.

PRE CONSTRUCTION WEIGHTED C VALUE (PROJECT LIMITS)

Surface	c	Area	CxArea
Woods (Fair)	0.41	0.18	0.0738
Impervious	0.96	0.36	0.1344
Open (Fair)	0.57	3.57	2.0349
Total		4.11	2.2431

Weighted C = 2.2431 / 4.11 = 0.546

PRE CONSTRUCTION % IMPERVIOUSNESS (PROJECT LIMITS)
0.36 / 4.11 = 8.8%

PRE CONSTRUCTION % IMPERVIOUSNESS (TOTAL SITE)
23.18 / 141.9 = 16.3%

SOILS: THE NATIONAL RESOURCE CONSERVATION SERVICE WEB SOIL SURVEY OF SUMMIT COUNTY IDENTIFIES THE SOILS ON SITE AS SUCH:

BUILDING 1 – GEEBURG SILT LOAM (GbC2), HSG D
BUILDING 2 – FITCHVILLE SILT LOAM (FcB), HSG D
BUILDING 3A – FITCHVILLE SILT LOAM (FcB), HSG D
BUILDING 4A – BOGART–HASKINS LOAMS (BhB), HSG B
BUILDING 5 – CANADICE SILTY CLAY LOAM (Ca), HSG D
BUILDING 8 – CANAEDEA SILT LOAM (CcB), HSG D
BOGART–HASKINS LOAMS (BhB), HSG B
BUILDING 9 – CANAEDEA SILT LOAM (CcB), HSG D
BOGART–HASKINS LOAMS (BhB), HSG B

CONSTRUCTION ACTIVITY: CONSTRUCTION ACTIVITY WILL INCLUDE THE CLEARING AND GRUBBING OF THE PROJECT LIMITS SITE AND THE CONSTRUCTION OF PROPOSED BUILDINGS. CONSTRUCTION WILL ALSO INCLUDE THE INSTALLATION OF NEW UTILITY CONNECTIONS AND STORM SEWER SYSTEM THAT DEPOSITS STORM SEWER WATER INTO LAUREL LAKE. EACH BUILDING WILL EITHER DEPOSIT DIRECTLY INTO THE LAKE, DEPOSIT INTO THE LOCAL SYSTEM WHICH EVENTUALLY DEPOSITS INTO THE LAKE, OR DEPOSIT INTO A LOCAL DETENTION SYSTEM WHICH WILL DEPOSIT INTO THE LAKE.

POST CONSTRUCTION WEIGHTED C VALUE

Surface	C	Area	CxArea
Bldg Site	0.90	1.2983	1.1685
Road	0.90	0.2655	0.2390
Open (Fair)	0.57	2.5462	1.4513
Total		4.11	2.8588

Weighted C = 2.8588 / 4.11 = 0.70

POST CONSTRUCTION % IMPERVIOUSNESS
1.5638 / 4.11 = 0.380 = 38.0%

POST CONSTRUCTION % IMPERVIOUSNESS (TOTAL SITE)
24.38 / 141.9 = 17.2%

FUTURE STORM WATER:
FUTURE STORM WATER WILL BE COLLECTED IN STORM SEWERS ON SITE. BUILDINGS 1,2 AND 5A WILL BE DISCHARGED DIRECTLY TO LAKE FOREST. LAKE FOREST HAS A DRAINAGE AREA OF APPROXIMATELY 3,200 ACRES. THE TOTAL IMPERVIOUS AREA DRAINING TO THE LAKE IS LESS THAN 5% OF THE TOTAL DRAINAGE AREA, THEREFORE WATER QUALITY DOES NOT NEED TO BE INCLUDED. BUILDING 4A DRAINS TO A SMALL DETENTION BASIN TO REDUCE THE PEAK FLOW FROM THE UNIT BEFORE BEING DISCHARGED INTO A STORM SEWER ON SITE. THIS ALSO DRAINS TO LAKE FOREST. BUILDING 3A, 8 AND 9 DRAIN TO THE LAUREL LAKE BEHIND THE DEVELOPMENT. LAUREL LAKE HAS A DRAINAGE AREA OF APPROXIMATELY 46 ACRES. THE INCREASE IN IMPERVIOUS AREA DRAINING TO THE LAKE IS LESS THAN 5% OF THE TOTAL DRAINAGE AREA AND THEREFORE WATER QUALITY IS NOT REQUIRED.

NOTICE OF INTENT (NOI) & NOTICE OF TERMINATION (NOT):
PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, A NOTICE OF INTENT (NOI) SHALL BE FILED BY THE OWNER WITH THE OHIO EPA. CONSTRUCTION ACTIVITIES WILL COMPLY IN WITH CITY OF HUDSON CODIFIED ORDINANCE AND OEPA CONSTRUCTION GENERAL PERMIT #OHC000005. ONCE CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED THE DEVELOPER SHALL SUBMIT A NOTICE OF TERMINATION (NOT) WITH THE OHIO EPA.

NOI PERMIT # ____________

CONSTRUCTION:
START: WINTER 2023 – COMPLETION: SPRING 2024

SWPPP CHANGES & AMENDMENTS: ALL CHANGES AND AMENDMENTS TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE APPROVED BY DAVID A. PIETRANTONE P.E., THE RIVERSTONE COMPANY.

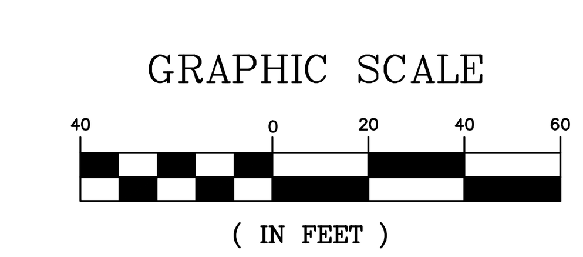
THE RIVERSTONE COMPANY
3800 LAKESIDE AVENUE, SUITE 100
CLEVELAND, OHIO 44114
PHONE: (216) 491–2000

PREPARED FOR & OWNER:
LAUREL LAKE RETIREMENT COMMUNITY
ANDREW LOVANO
PH: 330–655–1402

CONTRACTOR:
____
____
____
____

SWPPP LEGEND

- PERIMETER CONTROL; SILT FENCE OR COMPOST FILLED FILTER SOCK
- CONSTRUCTION LIMITS
- SOIL TYPE
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- INLET PROTECTION



STATE OF OHIO
DAVID A. PIETRANTONE
E-61756
PROFESSIONAL ENGINEER

RIVERSTONE
LAND SURVEYING · ENGINEERING · DESIGN
3800 LAKESIDE AVENUE · SUITE 100
CLEVELAND, OHIO · 44114
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2023-186

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200 LAUREL LAKE DRIVE

SWPPP

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OGPUPS
Ohio Oil & Gas Producers Underground Protection Service
Call (614) 715-2984 or 811

C9.01

200 Laurel Lake Drive
Hudson, OH 44236

330-650-0681
Fax 330-655-1707

www.laurellake.org

Mr. Nick Sugar
City Planner/Community Development
1140 Terex Rd
Hudson OH 44236

Re: Development of 14 Villas in 7 duplexes within the campus at Laurel Lake Retirement Community at 200 Laurel Lake Dr, in Hudson, OH

Hello Nick,

This letter is being sent to satisfy the Affidavit requirement as part of the Submittal for the upcoming Planning Commission Hearing on our above-mentioned project.

Project scope: 14 villas in 7 duplexes spread across various locations within our campus. Most are located along existing drives, and a few are located where a small driveway extension is needed.

Laurel Lake assumes full liability associated with this project.

The Consultants' team and Builder are as follows….

Architect of Record: RDL Architects Inc.
2111 Chagrin Blvd, Suite 110
Beachwood, OH 44122
Contact: Eileen Nacht, AIA, LEED, AP, EDC.
Studio Director
216-752-4300

Design Architect, Programming & Strategic Planning:
Shekhar Bhushan, NCARB
5574 S Jasper Way
Centennial CO 80015
303-503-5600

Civil Engineer: Riverstone Survey
3800 Lakeside Ave, Suite 100
Cleveland OH 44114
Contact: Jeff Jardine PE
216-491-2000 ext. 211

Landscape Planner:

The Mannik & Smith Group, Inc.
1160 Dublin Road, Suite 100
Columbus, OH 43215
Nicklaus A. Fawver
Landscape and Site Designer
614-441-4222 ext. 1242 (Office)
330-807-7263 (Cell)

Mechanical/Electrical and Plumbing:
Denk Associates
503 East 200th Street
Cleveland OH 44119
Contact: Mike Denk PE
216-531-8880

Builder/Contractor: Boutique Homes LLC
7310 Valley View Rd
Hudson, OH 44236
Contact: Tracy Corpus
330-715-1865

Please feel free to contact me for any clarifications or additional information you may need.

Sincerely,

May 30, 2024
Charlene Kulesza

NOTARY PUBLIC STATE OF OHIO
CHARLENE B KULESZA
Notary Public
State of Ohio
My Comm. Expires
November 14, 2027

Andrew Lovano
Health Care Administrator
Laurel Lake Retirement Community
200 Laurel Lake Drive
Hudson Ohio, 44236

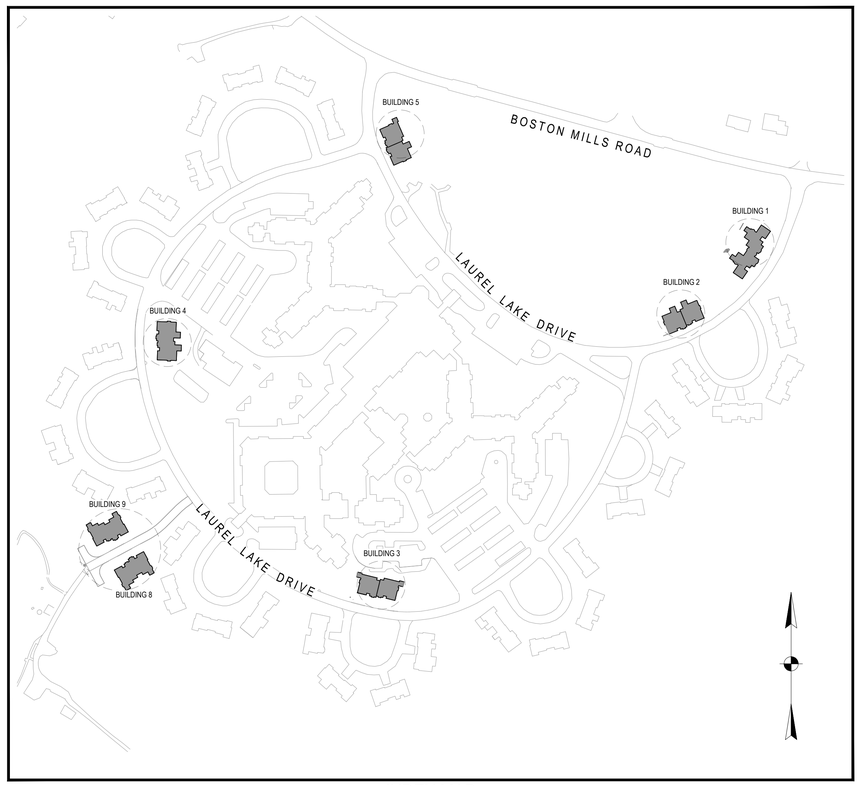
SITE IMPROVEMENT PLANS FOR

LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

VICINITY MAP

NOT TO SCALE



INDEX MAP

0 100 200 400

SCALE: 1" = 200'

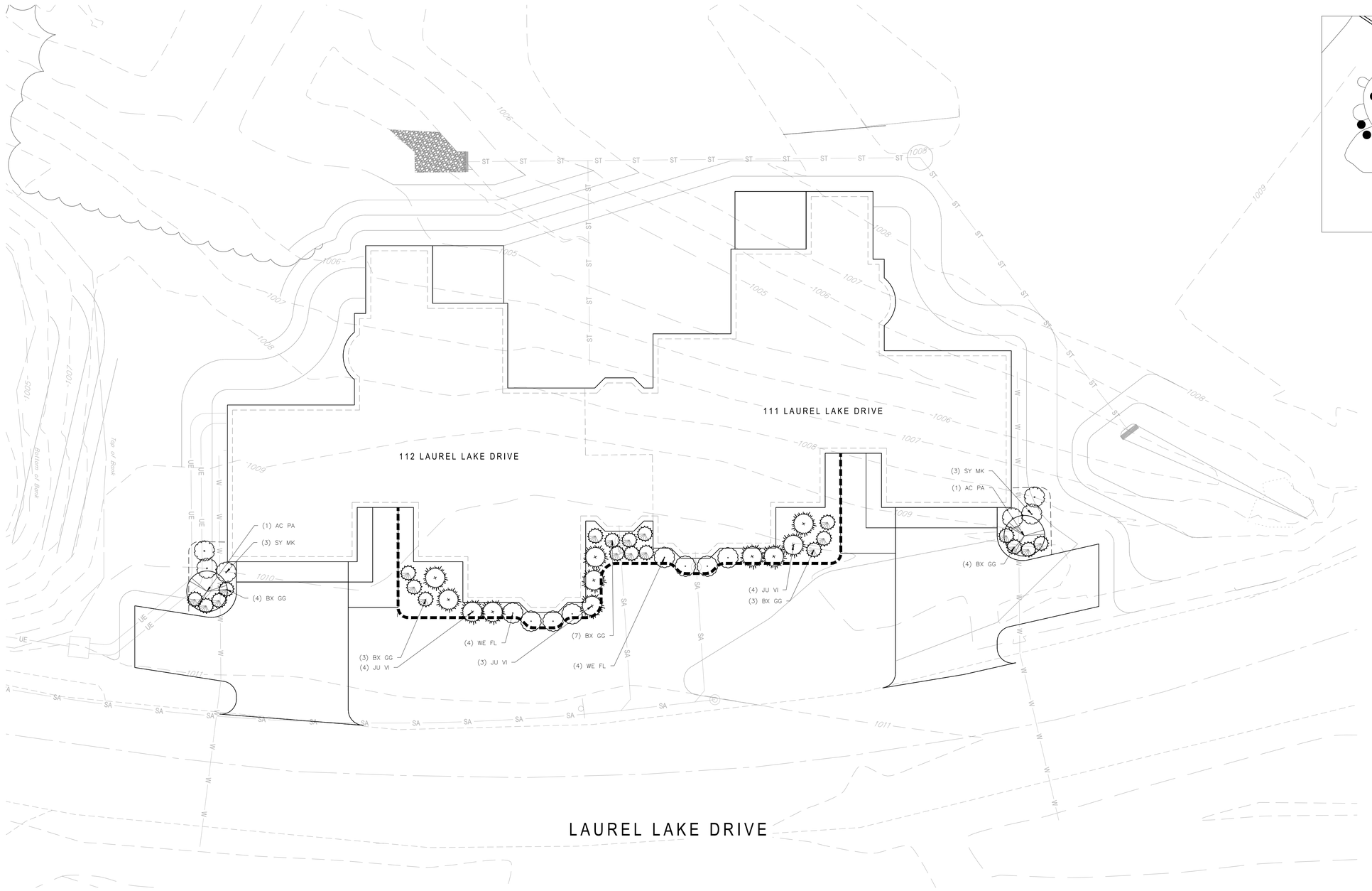
INDEX OF SHEETS

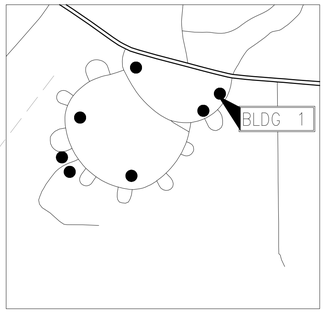
REV NO	DATE	BY	REVISION DESCRIPTION

PROJECT DATE: 6/7/2024

PROJECT NO.: 2400545

L100





CONTEXT MAP

NOT TO SCALE

BUILDING 1 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	2	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
SHRUBS						
SY MK	6	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
JU VI	11	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	30" HEIGHT MIN.	B&B	EVERGREEN SHRUB
BX GG	21	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	8	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB

LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL-CUT EDGE

0 5 10 20

SCALE: 1 IN = 10 FT

NO. | DATE | BY | DESCRIPTION

1160 DUBLIN ROAD
SUITE 100
COLUMBUS, OH 43215
TEL: 614.441.4222
FAX: 888.488.7340

PROJECT DATE: JUNE 2024
PROJECT NO: 2400545
DRAWN BY: DDS
CHECKED BY: NAF

Mannik Smith GROUP
TECHNICAL SKILL. CREATIVE SPIRIT.
www.MannikSmithGroup.com

PREPARED FOR:

LAUREL LAKE

201 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

LANDSCAPE PLAN FOR

LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 1 LANDSCAPE PLAN

L101

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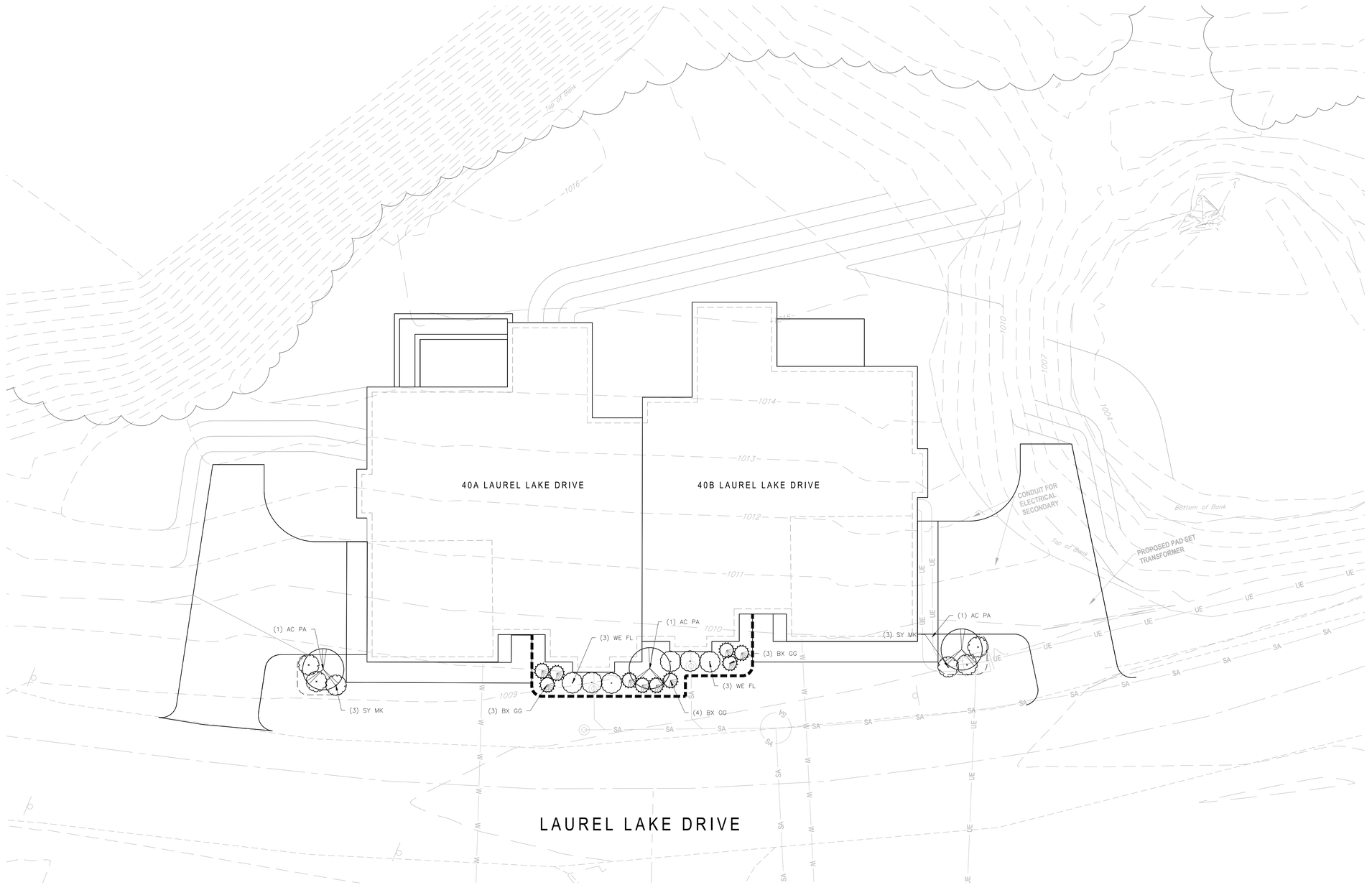

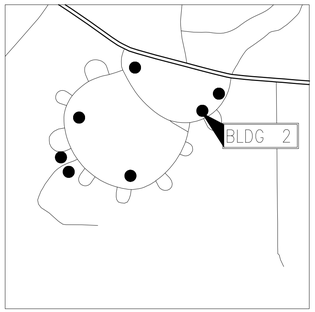

CONTEXT MAP

NOT TO SCALE

BUILDING 2 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	3	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1–1/2" CAL	B&B	ORNAMENTAL TREE
SHRUBS						
SY MK	6	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
BX GG	10	BUXUS MICHROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB

LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL–CUT EDGE

0 5 10 20

SCALE: 1 IN = 10 FT

NO.	DATE	BY	DESCRIPTION

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PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

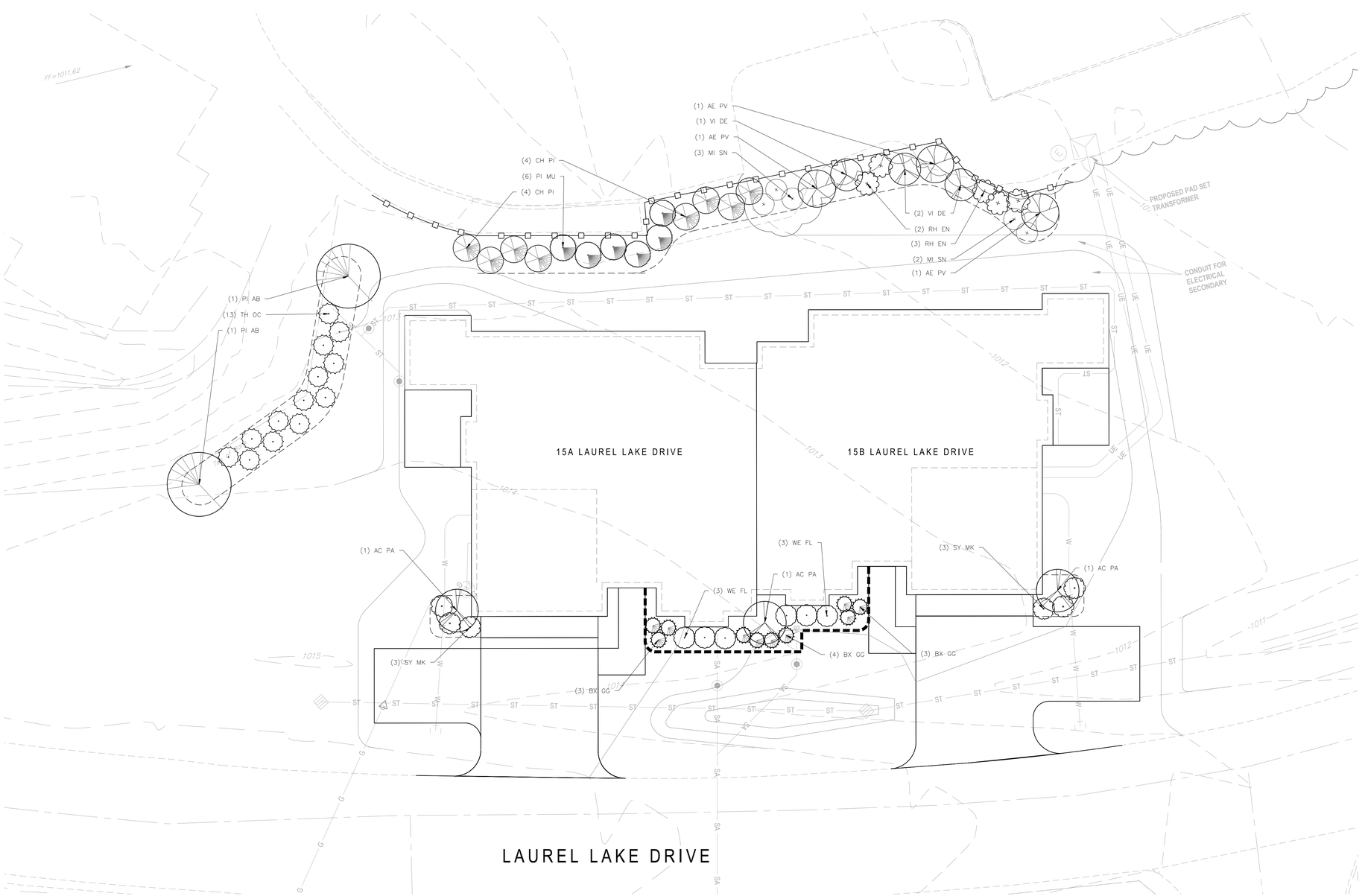
LANDSCAPE PLAN FOR

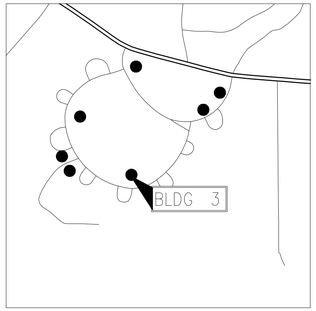
LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 2 LANDSCAPE PLAN

L102





CONTEXT MAP

NOT TO SCALE

BUILDING 3 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	3	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
PI AB	3	PICEA ABIES	NORWAY SPRUCE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
SHRUBS						
TH OC	13	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
SY MK	6	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
BX GG	10	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
VI DE	3	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE VIBURNUM	36" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
CH PI	8	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP FALCE CYPRESS	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
AE PV	3	AESCULUS PARVIFLORA	BOTTLEBRUSH BUCKEYE	5 GALLON	CONT.	DECIDUOUS SHRUB
RH EN	5	RHODODENDRON 'ENCORE'	ENCORE AZALEA	24" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
PI MU	6	PINUS MUGO 'PUMILIO'	DWARF MUGO PINE	36" HEIGHT MIN.	B&B	EVERGREEN SHRUB

LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL-CUT EDGE

0 5 10 20

SCALE: 1 IN = 10 FT

NO.	DATE	BY	DESCRIPTION

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PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

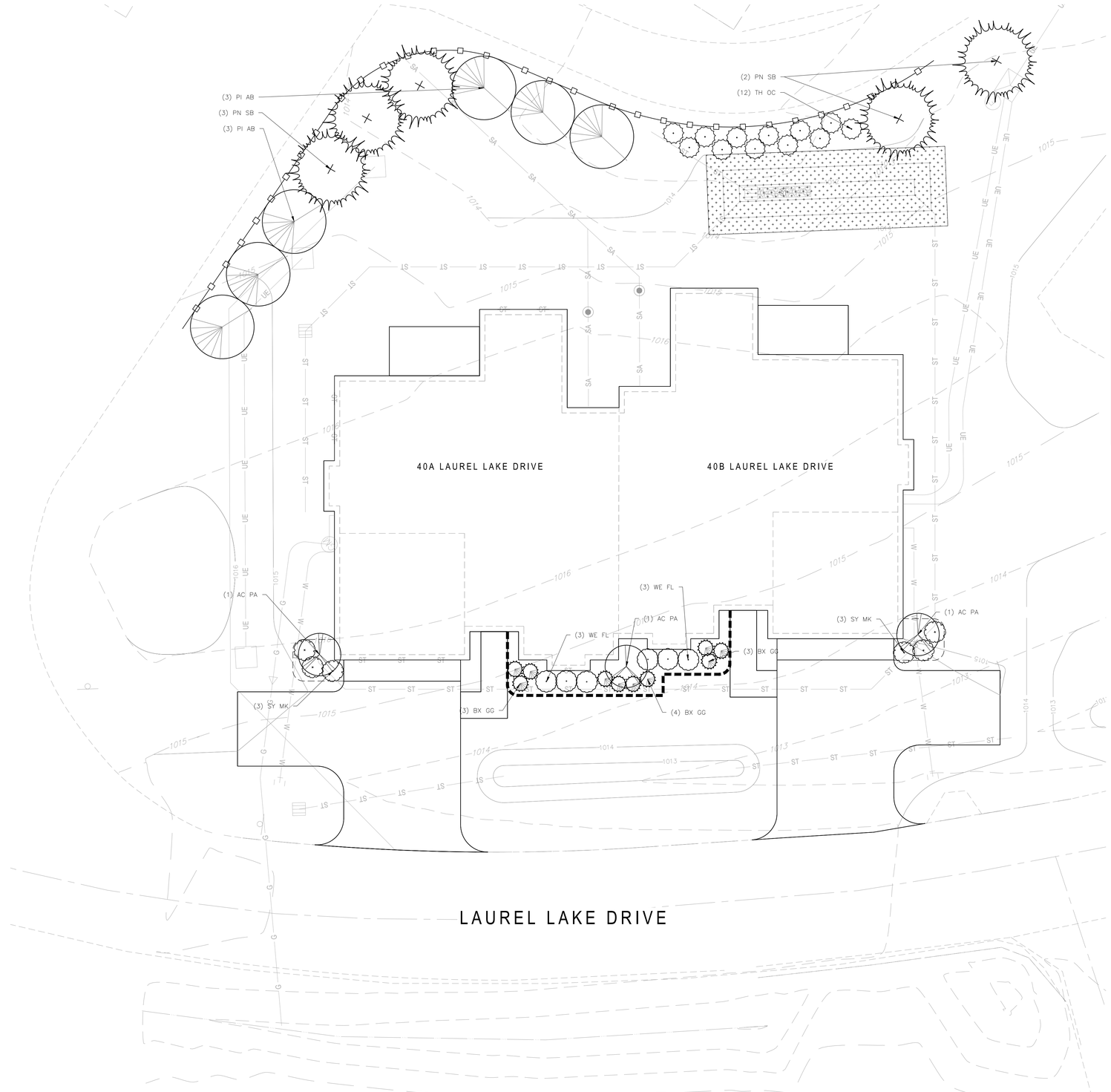
LANDSCAPE PLAN FOR

LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

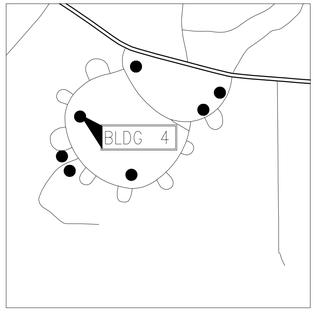
BUILDING 3
LANDSCAPE PLAN

L103



LEGEND

- LANDSCAPING BLOCK EDGE TO MATCH EXISTING
- LANDSCAPING SHOVEL-CUT EDGE
- 8' WHITE VINYL FENCING
- NO MOW MIX



CONTEXT MAP

NOT TO SCALE

BUILDING 4 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	3	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
PI AB	6	PICEA ABIES	NORWAY SPRUCE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
PN SB	5	PINUS STROBUS	EASTERN WHITE PINE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
SY MK	6	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
SHRUBS						
TH OC	12	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
BX GG	10	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIIW'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB

NO MOW SEED MIX

ECONOMY PRAIRIE (VENDOR: STANTEK OR SIMILAR)

BOTANICAL NAME	COMMON NAME	PLS OZ/ACRE
PERMANENT GRASSES		
ANDROPOGON GERARDII	BIG BLUESTEM	12.00
BOUTELOUA CURTIPENDULA	SIDE-OATS GRAMA	16.00
CAREX SPP.	PRAIRIE SEDGE SPECIES	3.00
ELYMUS CANADENSIS	CANADA WILD RYE	24.00
PANICUM VIRGATUM	SWITCH GRASS	2.50
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	32.00
SORGHASTRUM NUTANS	INDIAN GRASS	12.00
		TOTAL 101.50
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	512.00
		TOTAL 512.00
FORBS		
ASCLEPIAS SYRIACA	COMMON MILKWEED	3.00
ASCLEPIAS TUBEROSA	BUTTERFLY WEED	1.00
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	10.00
COREOPSIS LANCEOLATA	SAND COREOPSIS	6.00
ECHINACEA PURPUREA	BROAD-LEAVED PURPLE CONEFLOWER	8.00
HELIOPSIS HELIANTHOIDES	FALSE SUNFLOWER	0.50
MONARDA FISTULOSA	WILD BERGAMOT	0.50
PENSTEMON DIGITALIS	FOXGLOVE BEARD TONGUE	2.00
RATIBIDA PINNATA	YELLOW CONEFLOWER	4.00
RUDBECKIA HIRTA	BLACK-EYED SUSAN	8.00
SOLIDAGO SPECIOSA	SHOWY GOLDENROD	0.50
SYMPHYOTRICHUM LAEVE	SMOOTH BLUE ASTER	1.00
SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	0.50
		TOTAL 45.00

0 5 10 20

SCALE: 1 IN = 10 FT

NO.	DATE	BY	DESCRIPTION

1160 DUBLIN ROAD
SUITE 100
COLUMBUS, OH 43215
TEL: 614.441.4222
FAX: 888.488.7340

PROJECT DATE: JUNE 2024
PROJECT NO: 2400545
DRAWN BY: DDS
CHECKED BY: NAF

TECHNICAL SKILL. CREATIVE SPIRIT.

Mannik Smith GROUP

www.MannikSmithGroup.com

PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

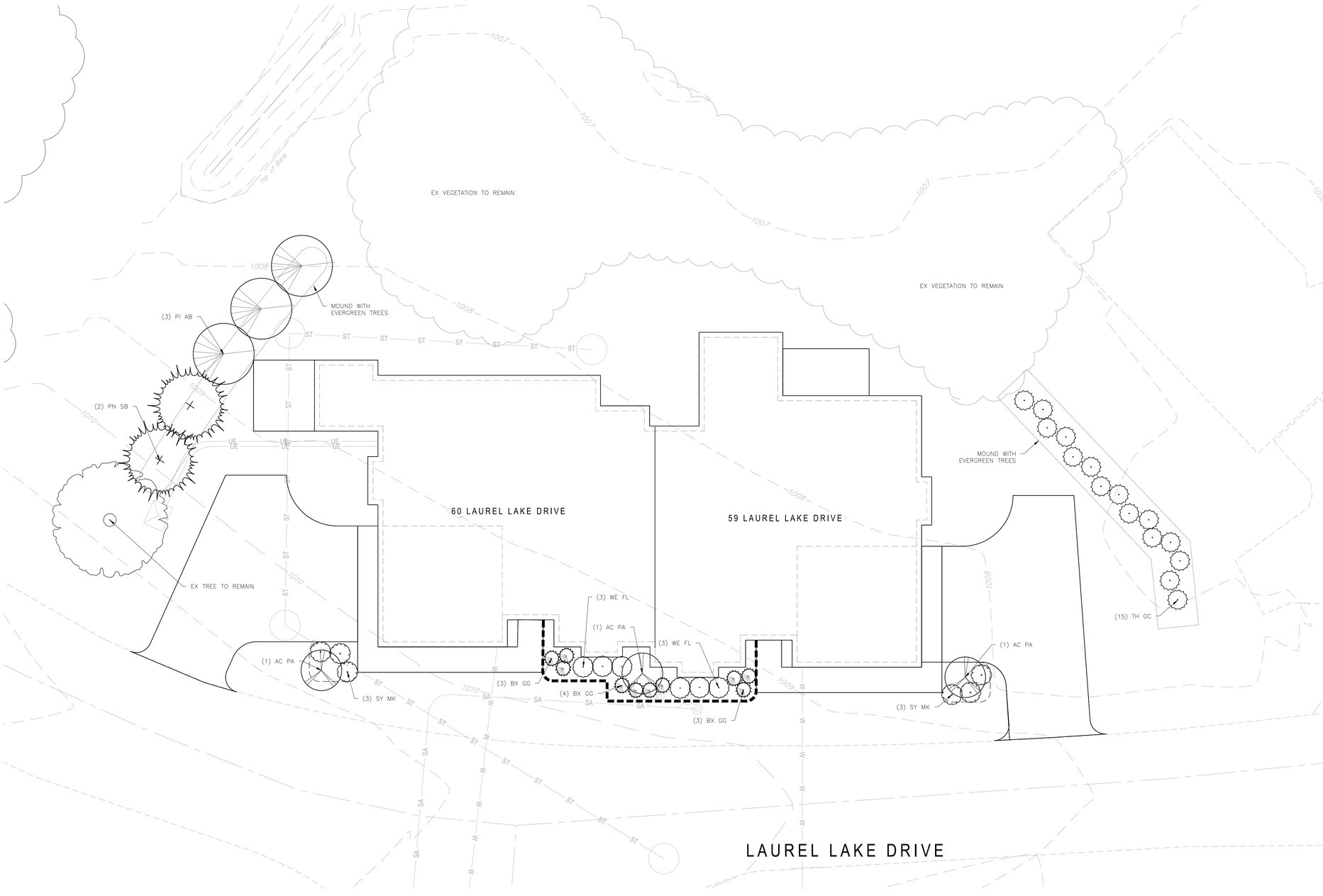
LANDSCAPE PLAN FOR

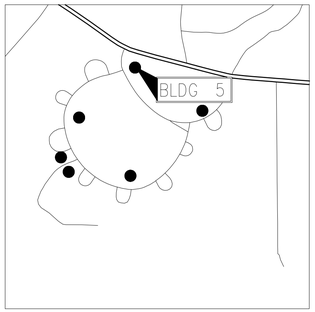
LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 4 LANDSCAPE PLAN

L104





CONTEXT MAP

NOT TO SCALE

BUILDING 5 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	2	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
PI AB	3	PICEA ABIES	NORWAY SPRUCE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
PN SB	2	PINUS STROBUS	EASTERN WHITE PINE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
SHRUBS						
TH OC	15	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
BX GG	10	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB
SY MK	6	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB

LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL-CUT EDGE

0 5 10 20

SCALE: 1 IN = 10 FT

NO.	DATE	BY	DESCRIPTION

1160 DUBLIN ROAD
SUITE 100
COLUMBUS, OH 43215
TEL: 614.441.4222
FAX: 888.488.7340

PROJECT DATE: JUNE 2024
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PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

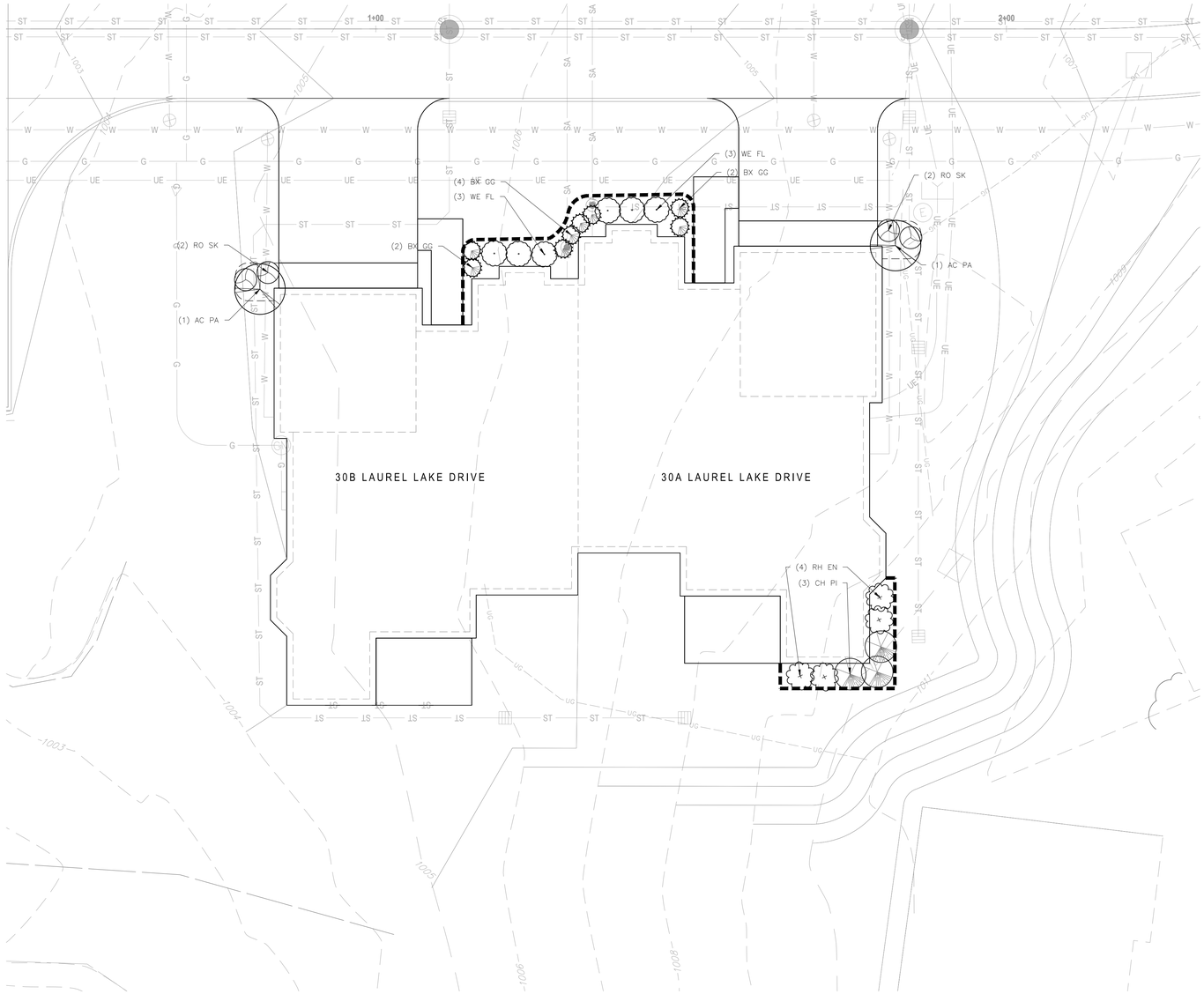
LANDSCAPE PLAN FOR

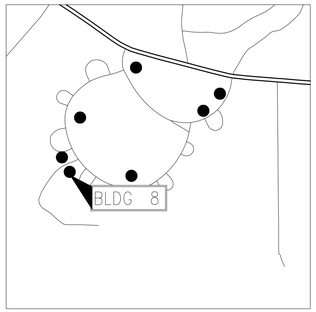
LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 5 LANDSCAPE PLAN

L105





CONTEXT MAP

NOT TO SCALE

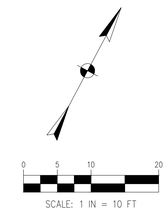
LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL-CUT EDGE

BUILDING 8 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	2	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
SHRUBS						
RO SK	4	ROSA 'RADSUNNY'	SUNNY KNOCK OUT ROSE	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
BX GG	8	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB
CH PI	3	CHAMAECYPARIS PISIFERA 'GOLD MOPS'	EMERALD GREEN ARBORVITAE	6' HEIGHT MIN.	B&B	EVERGREEN SHRUB
RH EN	4	RHODODENDRON 'ENCORE'	ENCORE AZALEA	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB



NO.	DESCRIPTION	DATE	BY

1160 DUBLIN ROAD
SUITE 100
COLUMBUS, OH 43215
TEL: 614.441.4222
FAX: 888.488.7340

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PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

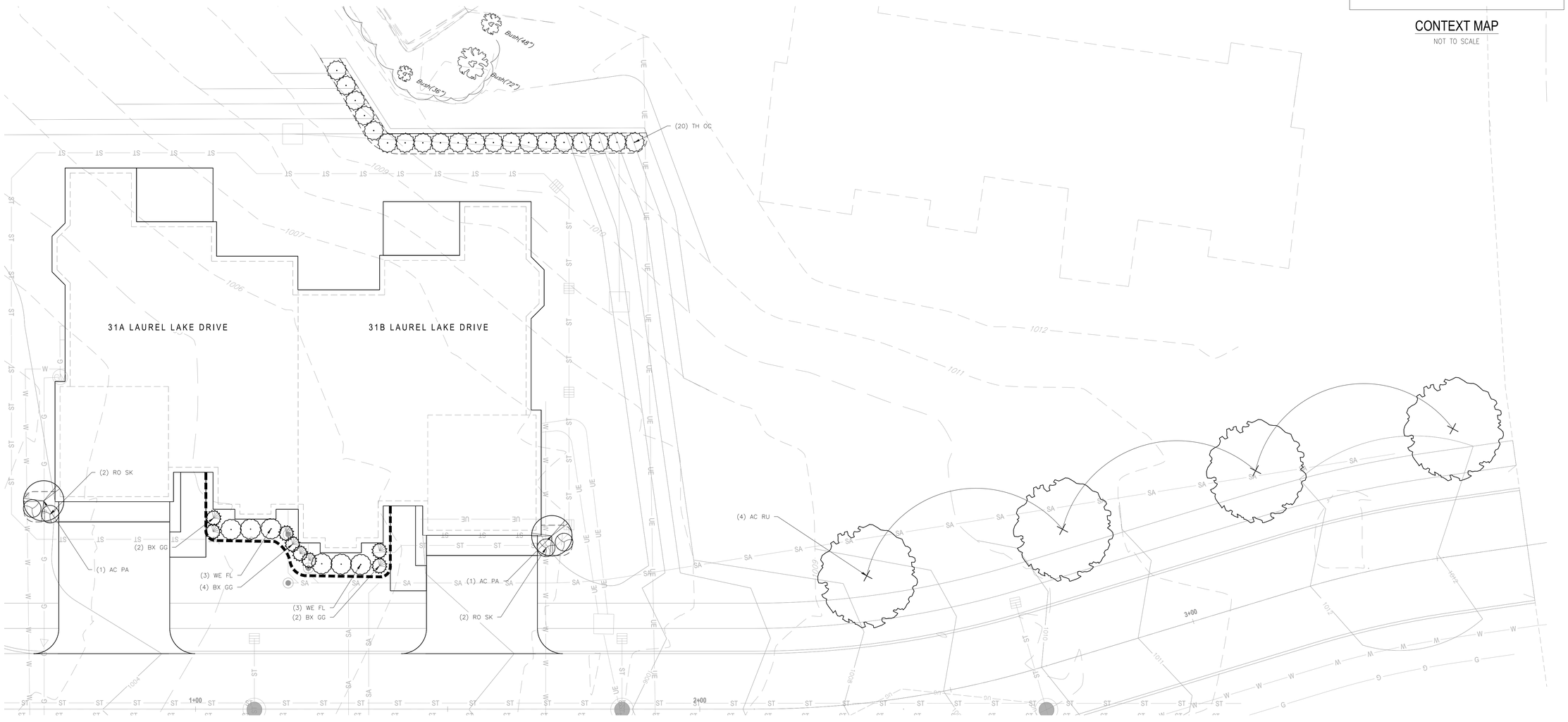
LANDSCAPE PLAN FOR

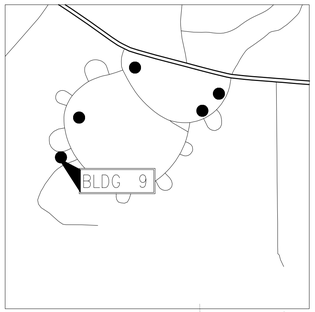
LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 8 LANDSCAPE PLAN

L106





CONTEXT MAP

NOT TO SCALE

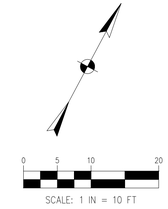
LEGEND

LANDSCAPING BLOCK EDGE TO MATCH EXISTING

LANDSCAPING SHOVEL-CUT EDGE

BUILDING 9 LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC PA	2	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
AC RU	4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2" CAL	B&B	DECIDUOUS TREE
SHRUBS						
RO SK	4	ROSA 'RADSUNNY'	SUNNY KNOCK OUT ROSE	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
BX GG	8	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
WE FL	6	WEIGELA FLORIDA 'BOKRASPIW'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	CONT.	ORNAMENTAL SHRUB
TH OC	20	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB



SCALE: 1 IN = 10 FT

NO.	DATE	BY	DESCRIPTION

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SUITE 100
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PREPARED FOR:

LAUREL LAKE

200 LAUREL LAKE DRIVE
HUDSON, OHIO 44236

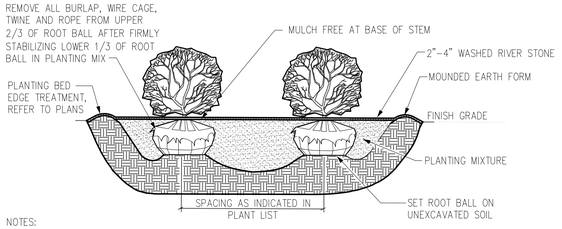
LANDSCAPE PLAN FOR

LAUREL LAKE VILLAS

200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

BUILDING 9
LANDSCAPE PLAN

L107



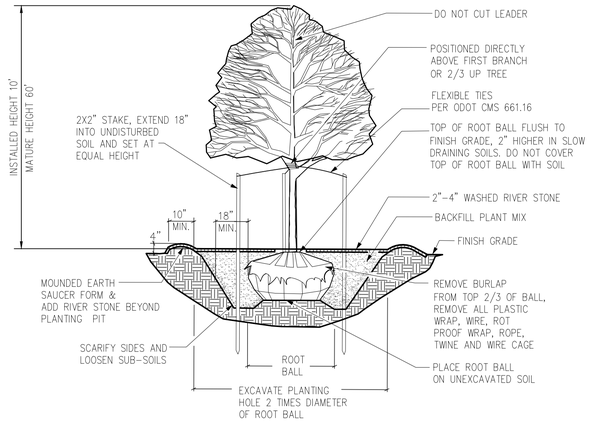
NOTES:

ALL SHRUBS PLANTED IN ROWS OR MASSES SHALL BE MATCHED IN SIZE AND FORM.

SHRUBS SHALL BEAR SAME RELATION TO FINISH GRADE AS THEY BORE TO EXISTING GRADE IN THE PREVIOUSLY PLANTED CONDITION.

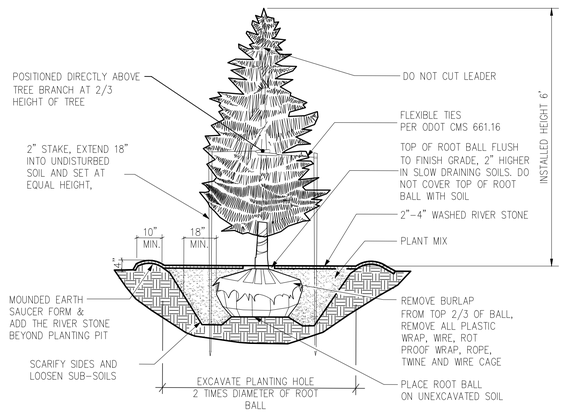
MASS SHRUB PLANTING DETAIL (B&B OR CONTAINER)

NO SCALE



DECIDUOUS TREE PLANTING DETAIL

NO SCALE



EVERGREEN TREE PLANTING DETAIL

NO SCALE

OVERALL LANDSCAPE PLANT LIST

ABRV.	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	TYPE	REMARKS
TREES						
AC RU	4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2" CAL	B&B	DECIDUOUS TREE
AC PA	18	ACER PALMATUM 'KATSURA'	KATSURA JAPANESE MAPLE	1 1/2" CAL	B&B	ORNAMENTAL TREE
PI AB	11	PICEA ABIES	NORWAY SPRUCE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
PI SB	6	PINUS STROBUS	EASTERN WHITE PINE	6' HEIGHT MIN.	B&B	EVERGREEN TREE
SHRUBS						
RO SK	8	ROSA 'RADSUNNY'	SUNNY KNOCK OUT ROSE	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
SY MK	30	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
WE FL	43	WEIGELA FLORIDA 'BOKRASPIWI'	SPILLED WINE WEIGELA	30" HEIGHT MIN.	B&B	ORNAMENTAL SHRUB
JU VI	11	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	30" HEIGHT MIN.	B&B	EVERGREEN SHRUB
BX GG	77	BUXUS MICROPHYLLA VAR. KOREANA	KOREAN LITTLELEAF BOXWOOD	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
PI MU	6	PINUS MUGO 'PUMILIO'	DWARF MUGO PINE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB
AE PV	3	AESCULUS PARVIFLORA	BOTTLEBRUSH BUCKEYE	36" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
RH EN	9	RHODODENDRON 'ENCORE'	ENCORE AZALEA	24" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
VI DE	3	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE VIBURNUM	36" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
CH PI	11	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP FALCE CYPRESS	36" HEIGHT MIN.	CONT.	DECIDUOUS SHRUB
TH OC	60	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	36" HEIGHT MIN.	CONT.	EVERGREEN SHRUB

LANDSCAPE PLAN NOTES

1. THE CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY ON ALL PLANTS AND VEGETATION PROPOSED ON THE LANDSCAPING PLAN. ANY TREES, SHRUBS, GROUND COVER OR OTHER VEGETATION PLANTED AS PART OF THIS PROJECT THAT DO NOT SURVIVE ONE YEAR FROM PLANTING SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PERTINENT UTILITY COMPANIES THREE WORKING DAYS IN ADVANCE OF ANY DIGGING. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF ANY UTILITIES.

3. REFER TO THE LANDSCAPE PLAN FOR ADDITIONAL NOTES. LANDSCAPE IMPROVEMENTS SHALL CONFORM TO THE LATEST EDITION OF ODOT CONSTRUCTION SPECIFICATIONS.

4. ALL PLANTING MATERIALS: SHALL BE PLANTED PER ODOT SPECIFICATIONS. EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE BROKEN, LOW HANGING AND OTHER UNDESIRABLE GROWTH TO ENSURE HEALTHY AND SYMMETRICAL NEW GROWTH.

5. PLANTING BEDS. ONE MONTH BEFORE CULTIVATION AND AFTER DAYTIME TEMPERATURES HAVE WARMED TO 60° CONSISTENTLY, TREAT ALL PLANTING BEDS THAT ARE TO BE DEVELOPED IN AREAS OF EXISTING TURF WITH PRE-EMERGENT AND POST-EMERGENT TYPE HERBICIDES. USE A STATE-LICENSED PESTICIDE APPLICATOR TO APPLY THE HERBICIDE. REPEAT HERBICIDE APPLICATION TWO WEEKS LATER AND UNTIL ALL HERBACEOUS MATERIALS HAVE BEEN KILLED. BEFORE PLANTING, TOP DRESS ALL PLANTING BEDS WITH A MINIMUM OF 6 INCHES OF BACKFILL MIX, THEN CULTIVATE PLANTING AREA TO A DEPTH OF 6 INCHES USING A PLOW, DISC, OR ROTO-TILLER.

6. BACKFILL MIX. FOR ALL PLANTINGS, USE BACKFILL MIX CONSISTING OF THE FOLLOWING:
A. ONE PART EXCAVATED SOIL.
B. ONE PART TOPSOIL.
C. ONE PART EPA RATED CLASS IV COMPOST.
D. A SLOW RELEASE COMMERCIAL FERTILIZER (0-20-20 OR EQUAL) ADDED AT A RATE OF 5 POUNDS PER CUBIC YARD TO THE BACKFILL MIX.
E. IF SOIL AREAS ARE OF HIGH PH (GREATER THAN 6.5), APPLY 1.25 POUNDS OF ELEMENTAL SULFUR PER CUBIC YARD OF BACKFILL MIX.
NOTE: CONTRACTOR SHALL SUPPLY A DETAILED SOIL ANALYSIS PRIOR TO ALL PLANT BED PREPARATION. ANALYSIS SHALL INDICATE SOIL PH, TEXTURE, MAJOR NUTRIENTS, SALTS, ETC. SOIL ANALYSIS SHALL BE FROM A REPUTABLE, INDEPENDENT LAB. SOIL AMENDMENTS SHALL BE INCORPORATED INTO BACKFILL/PLANT MIX AS RECOMMENDED BY THE INDEPENDENT LAB.

7. WASHED RIVER STONE MULCH. SMOOTH AND SHAPE THE BACKFILL MIX TO FORM A SHALLOW BASIN SLIGHTLY LARGER THAN THE PLANTING HOLE. ADD STONE TO ALL PLANTING AREAS WITH A LAYER OF 2"-4" WASHED RIVER STONE. PLANTS GROUPED IN MASSES SHALL HAVE THE ENTIRE CONTIGUOUS PLANTING BED OR ISLAND MULCHED WITH THE WASHED RIVER STONE. SMOOTH THE ENTIRE AREA OF THE PLANTING BEDS. AFTER ADDING THE STONE AND BEFORE WATERING, ADD A SLOW RELEASE COMMERCIAL FERTILIZER (12-12-12 OR EQUAL), IN GRANULAR FORM, TO THE TOP OF THE STONE AT A RATE OF 5 POUNDS PER 1000 SQUARE FEET. DO NOT ALLOW FERTILIZER TO CONTACT THE STEMS, BRANCHES, ROOTS OR LEAVES.

8. PERIOD OF ESTABLISHMENT. BEFORE FINAL INSPECTION, PLACE ALL PLANTS, SEED ALL LAWNS, AND CARE FOR THEM FOR A PERIOD OF ESTABLISHMENT. THE PERIOD OF ESTABLISHMENT BEGINS IMMEDIATELY UPON COMPLETION OF THE PLANTING OPERATIONS AND CONTINUES UNTIL OCTOBER 1. THE MINIMUM PERIOD OF ESTABLISHMENT IS ONE GROWING SEASON, JUNE 1 THROUGH OCTOBER 1. DURING THE PERIOD OF ESTABLISHMENT, FOLLOW STANDARD HORTICULTURAL PRACTICES TO ENSURE THE VIGOR AND GROWTH OF THE TRANSPLANTED MATERIAL. WATER, REMULCH, RESTAKE, GUY, AND CULTIVATE AS NECESSARY. PERFORM AT LEAST TWO WEEDING AND MOWING PROGRAMS (AROUND TREES, GUY STAKES, SHRUBS, AND BED EDGES) OF SUCH INTENSITY AS TO COMPLETELY RID THE PLANTED AND MULCHED AREAS OF WEEDS AND GRASSES. BEGIN THE FIRST PROGRAM ON OR ABOUT JUNE 15 AND THE SECOND APPROXIMATELY 8 WEEKS LATER. ON OR ABOUT AUGUST 15, THE ENGINEER WILL INSPECT THE PLANTING AND SUPPLY THE CONTRACTOR WITH A LIST OF MISSING AND DEAD PLANTS AND THOSE THAT HAVE DIED BACK BEYOND NORMAL PRUNING LINES. REPLANT AS REQUIRED ACCORDING TO THE SPECIFICATIONS OF THE ORIGINAL MATERIAL. REPLACEMENT PLANTS ARE SUBJECT TO A NEW PERIOD OF ESTABLISHMENT. IMMEDIATELY REPLACE PLANTS PLANTED INITIALLY IN THE FALL THAT HAVE DIED BEFORE THE SPRING PLANTING SEASON. CARE FOR THE REPLACEMENT PLANTS DURING THE NEW ESTABLISHMENT PERIOD.

9. RESTORATION OF DISTURBED AREAS FOR NEW LAWN:
ALL DISTURBED AREAS NOT COVERED BY BUILDING, PAVEMENT OR LANDSCAPE PLANTING BEDS SHALL BE PREPARED FOR GRASS SEED AND SEEDED. LOOSEN RUTS AND WORK THE SOIL AREAS TO A MINIMUM OF 6" DEEP PRIOR TO FINE GRADING AND SEEDING WORK. AREAS TO RECEIVE GRASS SEED SHALL HAVE A MIN. 4" TOPSOIL PLACED, SEEDED AND A STRAW/MULCH BLANKET COVER PLACED OVER THE SEEDED AREAS PER ODOT SPECIFICATIONS. FERTILIZE WITH ONE POUND OF ACTUAL NITROGEN PER 1000 SQUARE FEET WITH A SLOW RELEASE COMMERCIAL STARTER FERTILIZER (LESCO 18-24-12 OR EQUAL).

10. LANDSCAPE TREES, SHRUBS AND PERENNIAL WATERING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, DELIVERING, APPLYING, MEASURING AND SCHEDULING A SUFFICIENT AMOUNT OF WATER NECESSARY TO KEEP EACH PLANT IN A HEALTHY GROWING CONDITION THROUGHOUT THE PERIOD OF ESTABLISHMENT. THE CONTRACTOR SHALL APPLY 1" OF WATER PER WEEK TO ALL NEW PLANTS. THE CONTRACTOR SHALL INSTALL & MAINTAIN SUPPLEMENTAL DRIP WATERING TREE BAGS (SUCH AS 20 GALLON TREE GATOR WATER BAG) TO PROVIDE ADEQUATE, SLOW RELEASE OF WATER. WATER BAGS SHALL BE REMOVED AT THE END OF THE SECOND GROWING SEASON.

11. TURF GROUNDCOVER (SODDING, SEEDING AND SEED MULCHING):
ALL SEEDING INSTALLATION SHALL CONFORM TO ODOT SPECIFICATIONS AND NOTE 9 ABOVE. SEED AT 6 LBS/1000 SF WITH THE FOLLOWING SEED MIXTURE:

TITAN TALL-TYPE TURF FESCUE	70%
SR 4100 PERENNIAL RYEGRASS	20%
MERIT KENTUCKY BLUEGRASS	10%

NO.	DATE	BY	DESCRIPTION

1160 DUBLIN ROAD
SUITE 100
COLUMBUS, OH 43215
TEL: 614.441.4222
FAX: 888.488.7340

PROJECT DATE: JUNE 2024
PROJECT NO: 2400545
DRAWN BY: DDS
CHECKED BY: NAF

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HUDSON, OHIO 44236

LANDSCAPE PLAN FOR
LAUREL LAKE VILLAS
200 LAUREL LAKE DRIVE HUDSON, OHIO 44236

LANDSCAPE NOTES AND DETAILS

L200

Wetland Delineation

Laurel Lake, Hudson, Ohio

PREPARED FOR

RDL Architects

Address
16102 Chagrin Boulevard
Shaker Heights, Ohio 44120

ISSUED: 08.26.2022

Table of Contents

Appendices

1.0 INTRODUCTION

As requested by RDL Architects a wetland delineation has been performed by CT Consultants, Inc. (CT) on the Laurel Lake property located in the city of Hudson, Summit County, Ohio in June and August of 2022. There was a previous Wetland Delineation performed within the same parcel on January 31, 2020 and this report is a continuation of the previous 2020 Wetland Delineation Report. The purpose of this wetland delineation is to determine the presence, extent, and quality of wetlands, streams, and other surface water resources that may be subject to regulation under Section 404 and 401 of the United States Clean Water Act. The wetland delineation was performed in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2012 Regional Supplement to the Corps of Engineers Delineating manual: Northcentral and Northeast Region (January 2012, Version 2.0). This report summarizes the results of our wetland investigation.

A review of the available data has been completed to evaluate potential conditions of the site. A walk through of the property revealed that there were wetland areas on the property. Points were plotted on the property to best characterize the wetland and non-wetland areas. Field investigations were completed to determine the wetland boundaries. Delineated wetland boundaries have been marked on the property using neon pink wetland flagging. These boundaries were plotted on a map of the site and the areas were digitally calculated. Thus, it was determined that 7.21 acres of wetlands, 388.8 linear feet of stream, and 1.40 acres of open water are present on the study site.

1.1 SITE LOCATION

The study site is approximately 28 acres in size and is located at Laurel Lake Drive within the city of Hudson, Summit County, Ohio. The subject property is contained within PPN: 3203045. The site is divided into three (3) separate study areas.

Boundaries of each study area are as indicated on the attached maps. See Resource Maps (Appendix A) and Water Resource Maps (Appendix B) for details.

2.0 METHODOLOGY

On August 17, 1991 the U.S. Army Corps of Engineers was directed under the 1991 appropriation bill to utilize the 1987 Corps of Engineers Wetlands Delineation Manual. The Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) was issued in January 2012 and is to be used in conjunction with the 1987 Manual. This Supplement is applicable to all or portions of Connecticut, Illinois, Indiana, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

An experienced wetland scientist has reviewed all available resources of information including historic aerial photographs and topographic maps, as well as technical criteria and field indicators to assess the site. Following are the techniques utilized for making a wetland determination and delineation.

2.1 HYDROPHYTIC VEGETATION

Methods outlined in these manuals specify that hydrophytic vegetation decisions are based on the wetland indicator status of species that make up the plant community. The frequency and duration of soil inundation or soil saturation exerts a controlling influence on the species of vegetation growing in an area. These plant species are placed into five categories and reflect the occurrence of these species in wetland or non-wetland areas. These categories, called wetland probability indicators, were appended to plant life by a National Interagency Panel. These indicators are as follows:

- **Obligate Wetland (OBL) -** greater than 99% probability of occurrence in wetlands.
- **Facultative Wetland (FACW) -** 67-99% probability of occurrence in wetlands.
- **Facultative (FAC) -** 34-66% probability of occurrence in wetlands.
- **Facultative Upland (FACU) -** 1-32% probability of occurrence in wetlands.

- **Obligate Upland (UPL) -** less than 1% probability of occurrence in wetlands.

Following this methodology, representative observation points, or sample points, are placed in each plant community type on the project site. Vegetative sampling is done using visual estimates of percent aerial coverage of the dominant species.

To determine if hydrophytic vegetation was present, the percentage of plant species coverage was assessed, and a dominance test was conducted. Percentage of plant species dominance is the accepted method of quantification. If greater than 50 percent of the dominant species in each vegetative layer is FAC, FACW or OBL, then hydrophytic vegetation is present. If the percentage is lower than 50 percent, prevalence index and morphological adaptations are subsequent methods in determining the presence of hydrophytic vegetation.

2.2 HYDRIC SOIL

To be considered a wetland, the presence of hydric soils must be confirmed. Hydric soils are those that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper horizons. This anaerobic condition favors the growth of hydrophytic vegetation. The colors of various soil components are often the most diagnostic indicators of hydric soils. Colors of these components are strongly influenced by the frequency and duration of soil saturation, which leads to reducing soil conditions. Specifically, gleyed (gray colored) soils develop when anaerobic soil conditions produce a heavily reducing environment. Mineral hydric soils that are saturated for substantial periods of the growing season (but not long enough to produce gleyed soils) will either have bright mottles and a low matrix chroma or will lack mottles but have a low matrix chroma (USACE, 1987).

Soil samples were collected, at locations indicated on the Wetland Delineation map (Appendix B), to a depth of 20 inches from the soil surface. Soil samples were visually

compared to *Munsell Soil Color Charts* (Munsell, 2000) to document color and assess the presence of hydric soil indicators.

2.3 WETLAND HYDROLOGY

It is essential to establish that the area under investigation is temporarily or periodically inundated with water or has saturated soils during the growing season. The inundation of water has an overriding influence on the plant life so that there is a dominance of hydrophytic vegetation. Also, the inundation of water results in the formation of hydric soils due to the anaerobic and reducing conditions. While wetland hydrology is the overriding factor of wetland formation, it may also be the most difficult to identify. Wetland hydrology is assumed to be present if one or more primary hydrology indicators or two or more secondary indicators are observed. Refer to the data sheets (Appendix D) for a list of these indicators.

3.0 DISCUSSION

CT Consultants has initially reviewed the available data which might provide some insight into existing conditions within the property.

3.1 AGENCY RESOURCE INFORMATION

USDA SOIL SURVEY

The US Department of Agriculture *Web Soil Survey* (Appendix A) indicated the presence of the following soil types in declining order that are present on the site:

1. Sb	(23.1%)	Sebring silt loam	0 to 2 percent slopes
2. CcB	(25.7%)	Caneadea silt loam	2 to 6 percent slopes
3. FcB	(13.3%)	Fitchville silt loam	2 to 6 percent slopes
4. GbC2	(4.3%)	Geeburg silt loam	6 to 12 percent slopes
5. BhB	(15.4%)	Bogart-Haskins loams	2 to 6 percent slopes
6. Le	(1.8%)	Lobdell silt loam	
7. CoC2	(0.2%)	Chili gravelly loam	6 to 12 percent slopes
8. Ca	(16%)	Canadice silty clay loam	
9. W	(0.2%)	Water	

Of the above listed soil series, the Sebring (Sb) silt loam and Canadice (Ca) silty clay loam is listed as “hydric” within the Hydric Soils of the United States (1987). Additionally, the Fitchville (FcB) silt loam has the potential for hydric inclusions in drainage ways and depressions.

NATIONAL WETLAND INVENTORY

An examination of the US Fish and Wildlife *National Wetland Inventory (NWI) Map*, (Appendix A) indicates a previously mapped palustrine scrub/shrub broad-leaved deciduous emergent persistent seasonally flooded freshwater (PSS1/EMC1) wetland and four (4) palustrine unconsolidated bottom intermittently exposed (PUBG) freshwater ponds within the study site. These mapped areas roughly correspond to the currently mapped W-Q, W-R, W-S, Pond 1, Pond 2, Pond 3 and Stormwater Basin 2 currently mapped on the Water Resource Map found in Appendix B. The NWI map has been compiled using aerial photography in conjunction with collateral data sources and fieldwork. It should be noted that, however useful it may be as a preliminary wetland resource, the size and shape of wetlands could vary greatly between the available data sources and the on-site observed conditions. NWI maps are not to be construed as the final authority for wetlands existence.

3.2 SITE CHARACTERISTICS

This property is located within the glaciated Allegheny Plateau Region of northeastern Ohio. The surficial geology of the property was formed by the deposition of silty glacial till or loamy material over silty glacial till. The soils on the property are of the Sebring association and are nearly level, poorly drained soils on stream terraces throughout the county. These soils formed in sediment high in silt content.

The property consists primarily of forested and emergent plant communities with mowed lawn areas. There are three (3) freshwater ponds. Two (2) of the ponds are connected to adjacent streams that flow off site. Within the northern section, Pond 1 is connected to Lake Forest and drains north to an unnamed tributary to Brandywine Creek. Within the western area, Pond 3 drains south into an unnamed tributary to Mud Brook. The central section is made up of a stream and associated wetland system draining south to another unnamed tributary to Mud Brook. Surrounding land use is primarily residential and forested.

3.3 FUTURE SITE USAGE

The site is proposed to construct additional retirement homes, parking lots, and sidewalks within the Laurel Lake Retirement Community. However, no plans have been finalized at this time.

4.0 WETLAND DELINEATION RESULTS

It was determined that 7.21 acres of wetlands, 388.8 linear feet of stream, and 1.4 acres of open water are present on the study site. It is the opinion of CT Consultants that wetlands and streams present are considered federally jurisdictional ‘Waters of the United States’ (WOTUS) with the exception of the two (2) stormwater basins containing emergent wetland vegetation.

4.1 EXTENT OF WATER RESOURCES

The wetland boundaries were plotted on a map of the site and the areas were digitally calculated. See the Delineation Map in Appendix B. The following tables show a breakdown of the wetland and stream areas.

Table 1. Extent of Water Resources- Wetlands

Wetland Label	Area (ac.)	Wetland Type[1]	Jurisdictional Status[2]	ORAM Category	Latitude	Longitude
W-M	0.73	PFO	Jurisdictional	Mod 2	41.245447°	-81.474375°
W-N	0.25	PFO	Jurisdictional	Mod 2	41.244436°	-81.474780°
W-O	0.04	PFO	Jurisdictional	Mod 2	41.243254°	-81.474823°
W-P	0.04	PEM/PFO	Jurisdictional	Mod 2	41.242930°	-81.475017°
W-Q	0.18	PEM	Jurisdictional	Mod 2	41.242884°	-81.474744°
W-R	0.08	PEM	Jurisdictional	Mod 2	41.242507°	-81.474727°
W-S	0.12	PEM/PFO	Jurisdictional	Mod 2	41.241827°	-81.473936°
W-T	0.19	PFO	Jurisdictional	Mod 2	41.241437°	-81.472469°
W-U	5.17	PFO	Jurisdictional	2	41.241767°	-81.468066°
W-V	0.08	PFO	Jurisdictional	Mod 2	41.245335°	-81.467970°
Stormwater Basin 1	0.10	PEM	Non-Jurisdictional	N/A	41.244455°	-81.467770°
Stormwater Basin 2	0.23	PEM	Non-Jurisdictional	N/A	41.241878°	-81.473719°
TOTAL	**7.21**					

[1]PFO- Palustrine Forested, PEM- Palustrine Emergent

[2]Preliminary jurisdictional status based on the professional opinion of CT Consultants; subject to review by USACE.

Table 2. Extent of Water Resources- Streams

Stream Label	Length On-site (LF)	Flow Regime[1]	Drainage Area (sq-mi)	Jurisdictional Status[2]	HHEI Score	Latitude	Longitude
S-5	334.5	I	0.12	Jurisdictional	24	41.242955°	-81.474631°
S-6	54.3	I	<0.10	Jurisdictional	19	41.245472°	-81.473573°
TOTAL	**388.8**						

[1]I-intermittent

[2]Preliminary jurisdictional status based on the professional opinion of CT Consultants; subject to review by USACE

Table 3. Extent of Water Resources- Open Water

Pond Label	Area on-site (Acres)	Jurisdictional Status[1]	Relation to Stream[2]	Latitude	Longitude
Pond 1	0.80	Jurisdictional	RPW	41.244744°	-81.468428°
Pond 2	0.57	Jurisdictional	RPW	41.242223°	-81.468225°
Pond 3	0.03	Jurisdictional	RPW	41.242025°	-81.473890°
TOTAL	**1.40**				

[1]Preliminary jurisdictional status based on the professional opinion of CT Consultants; subject to review by USACE

[2]RPW - Relatively Permanent Water

4.2 LAND COVER/PLANT COMMUNITIES

Plant communities and/or land covers were determined by characterizing the dominant vegetative strata present within areas that share similar topographical relief, soil types and hydrology.

1. Mixed Hardwood, Hydrophytic:

Wetlands present observed the following species: Red Maple (*Acer rubrum*), Sugar Maple (*Acer saccharinum*), Swamp White Oak (*Quercus bicolor*), Green Ash (*Fraxinus pennsylvanica*), Pin Oak (*Quercus palustris*), American Elm (*Ulmus americana*), Jewelweed (*Impatiens capensis*), Common Rush (*Juncus effusus*), Sedges (*Carex spp.),* and Creeping Jenny (*Lysimachia nummularia*).

2. Mixed Hardwood, Mesophytic:

Species include: Red Maple (*Acer rubrum*), American Elm (*Ulmus americana*), Green Ash (*Fraxinus pennsylvanica*), Multifloral Rose (*Rosa multiflora*), Sedges (*Carex spp.),* and Posion Ivy (*Toxicodendron radicans*).

3. Emergent, Hydrophytic:

Species include: Reed Canary grass (*Phalaris arundinacea*), Sedge species (*Carex spp.),* Narrow-leaf Cattail (*Typha angustifolia*), Common reed (*Phragmites australis*), Creeping Jenny (*Lysimachia nummularia*), and Jewelweed (*Onoclea sensibilis*).

4. Mowed Lawn Mesophytic:

This area contains mowed herbaceous vegetation including: Grass species (*Poa spp*.), Field Clover (*Trifolium capestre*), and Dandelion (*Taraxacum officinale*).

5.0 CONCLUSION

Wetlands and streams in Ohio are regulated under the US Army Corps of Engineers (USACE) and the Ohio Environmental Protection Agency (Ohio EPA). USACE will initially make a determination as to whether the water resources on site are considered Waters of the United States (WOTUS) and federally jurisdictional. If it is determined that any water features present are considered non-jurisdictional by USACE, the OEPA will determine state jurisdiction.

It is the opinion of CT Consultants that all water features on-site are federally jurisdictional WOTUS with the exception of the two (2) labeled stormwater basins. A Section 404 and 401 permit is required to authorize the placement of any fill into WOTUS, including wetlands. If the project meets specific criteria, a Nationwide Permit may be applicable for the project. For instance, Nationwide Permit #29 can be used for residential developments and authorizes the loss of up to 1/2 an acre of waters of the U.S. including wetlands. For projects that have impacts over these levels, an Individual Permit and/or Water Quality Certification may be required by the USACE and/or the OEPA.

Coordination with other governmental agencies may also be necessary to obtain a permit. This may include archaeological analysis with the State Historic Preservation Office and evaluations for endangered species with the U.S. Fish and Wildlife**.** Because of the wooded area on this site, a bat habitat survey may need to be completed. Other endangered species may also need to be evaluated in relation to developing this site.

This wetland delineation will be supported by CT Consultants for five years from the date of this wetland delineation or date of Jurisdictional Determination verification letter from the U.S. Army Corps of Engineers, whichever is later. Wetland boundaries vary over time and will need to be re-evaluated after expired verification.

I hope the preceding information will be of help to you. Please feel free to contact me with any questions you may have concerning this report. CT Consultants looks forward to further serving you in the future.

Respectfully,

CT Consultants, Inc.

Emily Nagle
Environmental Specialist

Lindsey Jakovljevic
Environmental Specialist

6.0 SOURCES

Brown, L. (2012). Weeds and Wildflowers In Winter. Vermont: The Countryman Press.

Brown, L. (1979). Grasses, An Identification Guide. Boston: Houghton Mifflin.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. (1979). Classifications of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Department of Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Google Earth V 7.3.2.5776 (December 13, 2018). Hudson. 41.242697°, -81.467880°. Altitude 2000-4000. DigitalGlobe 2020. Digital Map http://www.earth.google.com [July 2022].

Mack, J.J. (2000). ORAM v. 5.0 Quantitative Score Calibration. Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Unit, Columbus, Ohio.

Mack, J.J. (2001). Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms. Ohio EPA Technical Report WET/2001-1. Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit, Columbus, Ohio.

Munsell Soil Color Book. (2009). Munsell Soil Color Charts (Rev. ed.). Grand Rapids, Michigan.

Newcomb, L. (1977). Wildflower Guide. New York: Little, Brown and Company.

Ohio Environmental Protection Agency. (2006). Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). OEPA Technical Bulletin EAS/2006-06-1. OEPA Division of Surface Water, Columbus, Ohio.

Ohio Environmental Protection Agency. (2012). Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Version 3.0. OEPA Division of Surface Water, Columbus, Ohio. 117 pp.

Ohio Department of Natural Resources and U.S. Fish and Wildlife Service. Ohio Mussel Survey Protocol. April 2020 https://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf

Peterson, R. and McKenny, M. (1998). A field guide to wildflowers. Boston: Houghton Mifflin.

Petrides, G. (1958) Trees and Shrubs. Boston: Houghton Mifflin.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/

U.S. Army Corps of Engineers Wetland Delineation Manual, 1987. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. Cooperative Technical Publication, Washington D.C.

U.S. Army Corps of Engineers. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region Version 2.0). Vicksburg, MS 39180-6199

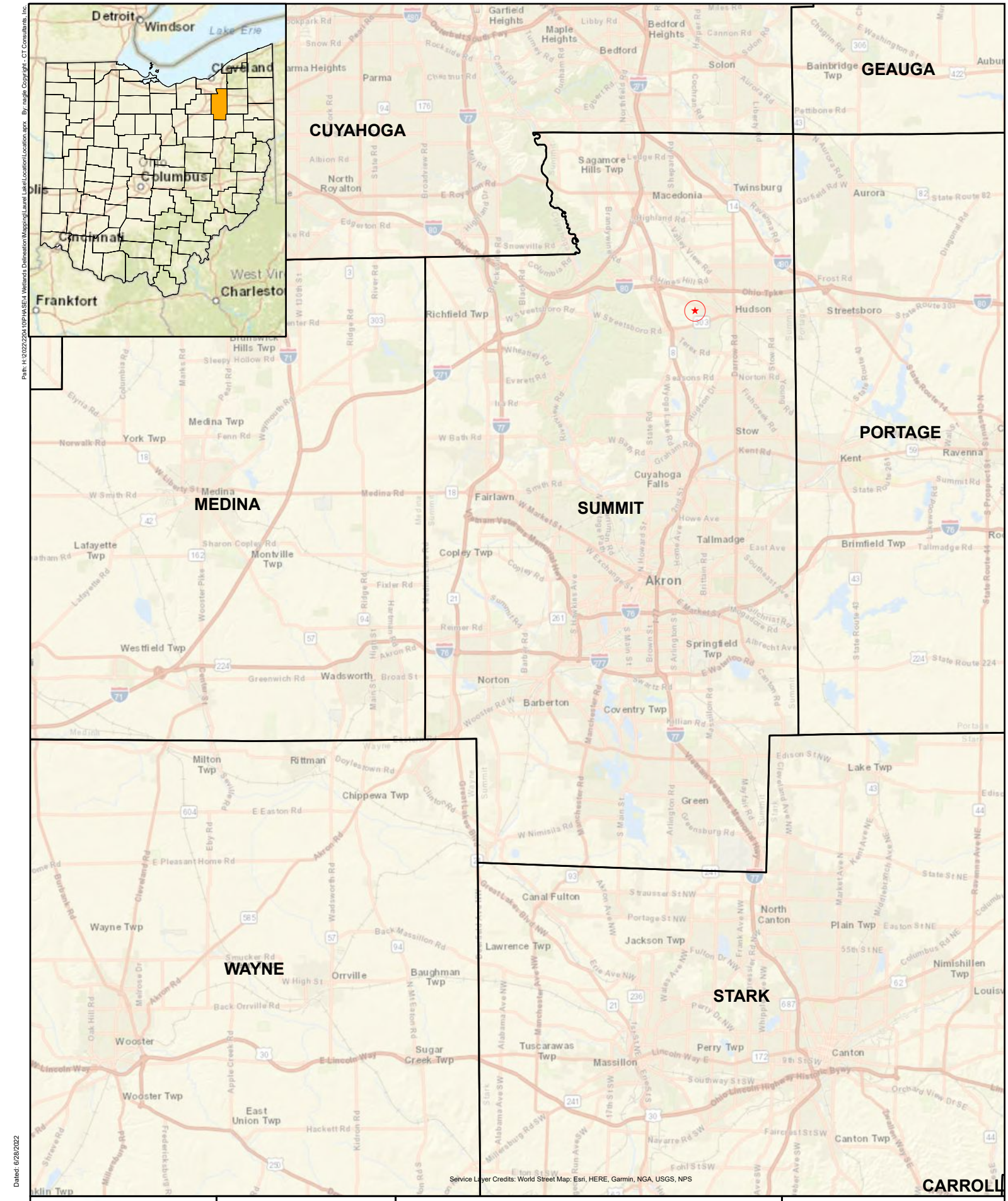
USDA, NRCS. 2019. National List of Hydric Soils. USDA-NRCS Soils. Available online at https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

U.S. Fish and Wildlife Service. Publication date (found in metadata). National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/

Woods, A.J., J.M. Omernick, C.S. Brockman, T.D. Gerber, W.D. Hosteter and S.H. Azevedo. (1998). Ecoregions of Indiana and Ohio. U.S. Geological Survey, Denver, Colorado

Appendix A

Resource Maps



Path: H:\2022\2204\10\PHASE\4 Wetlands Delineation\Mapping\Laurel Lake\Location\Location.aprx By: nagle Copyright - CT Consultants, Inc.

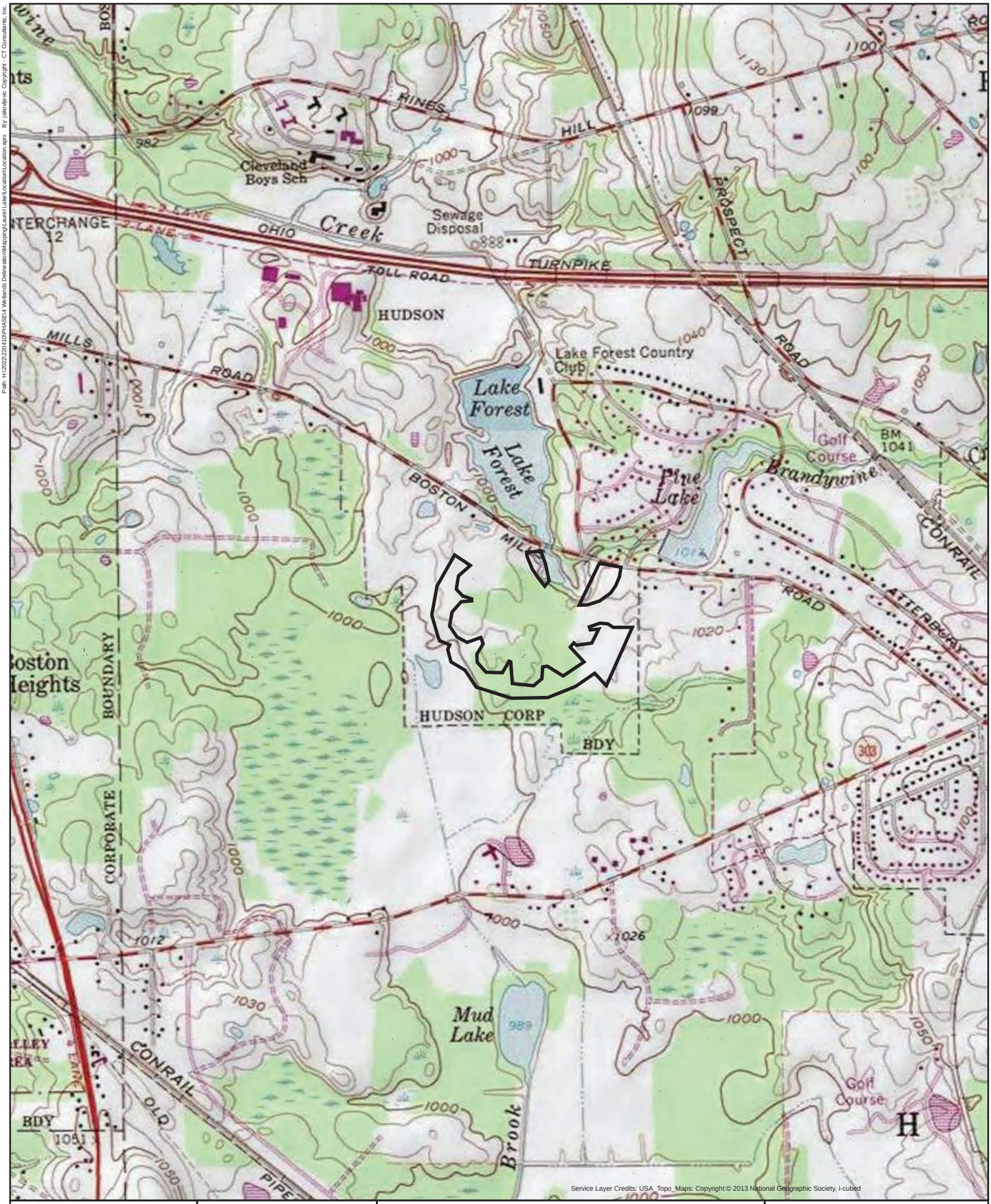
Dated: 6/28/2022

Project Location

Figure 1. Location Map
Laurel Lakes, Hudson, Ohio

0 2.5 5 Miles

N



Project Area

Figure 2. USGS Topographic Map
Laurel Lakes, Hudson, Ohio

0 750 1,500 Feet

N

Dated: 8/22/2022

Project Area

Figure 3. USDA Soils Map
Laurel Lakes, Hudson, Ohio

0 175 350 Feet

N

Path: H:\2022\220410\PHASE4 Wetlands Delineation\Mapping\Laurel Lake\Location\Location.aprx By: jakovljevic Copyright - CT Consultants, Inc.

Dated: 8/22/2022

Project Area

Figure 4. USFWS National Wetland Inventory
Laurel Lakes, Hudson, Ohio

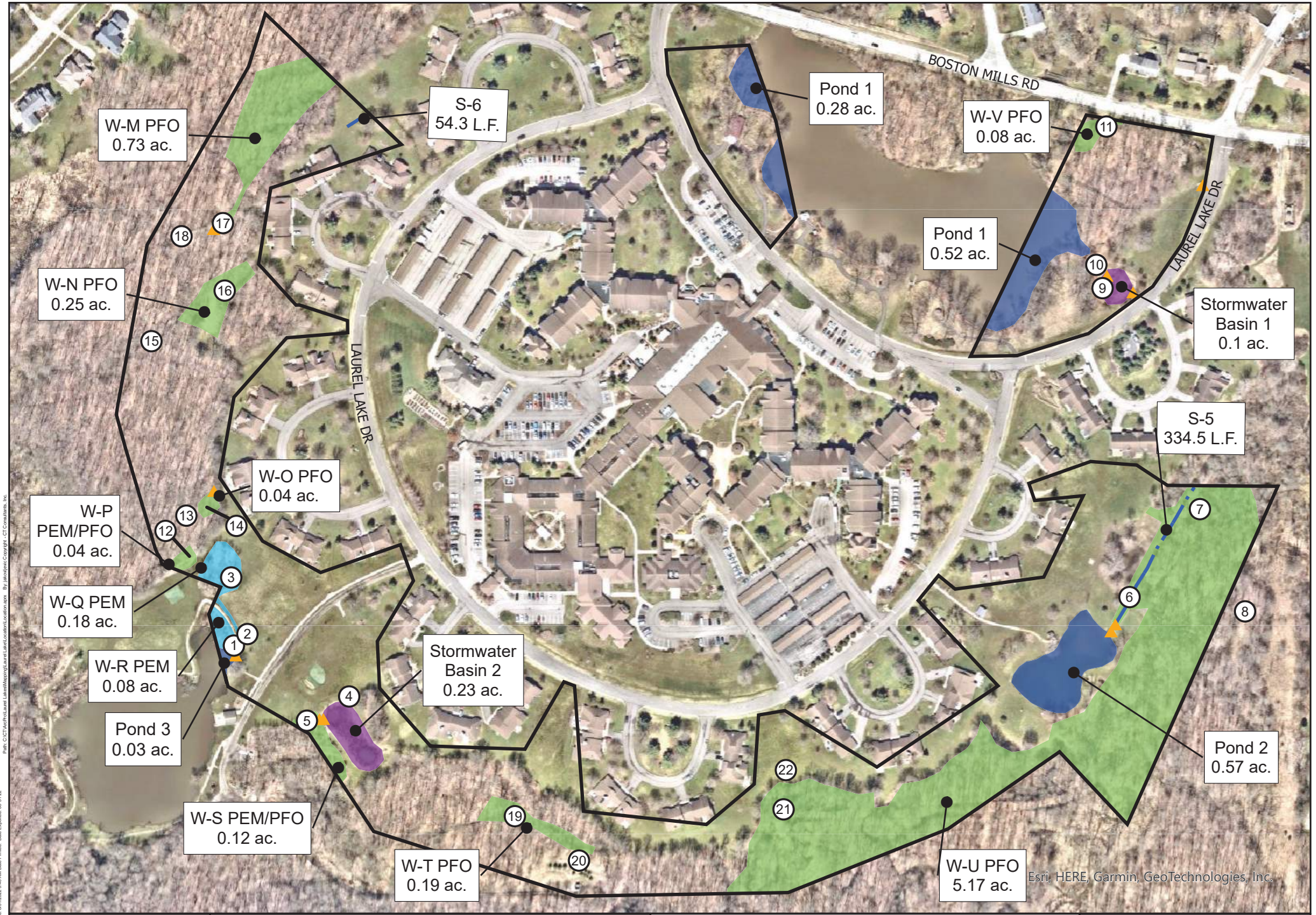
0 175 350 Feet

N

Figure 5. FEMA Flood Hazard
Laurel Lake, Hudson, Ohio

Appendix B

Delineation Map



Project Area
Culvert
Sample Point
Intermittent Stream
Open Water
Emergent Wetland
Forested Wetland
Stormwater Basin

Figure 6: Water Resource Map
Laurel Lakes, Hudson, Ohio

N
0 130 260 Feet

Appendix C

Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 1

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Pond Local relief (concave, convex, none): Flat Slope %: 1

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242452° Long: -81.474642° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-R

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	75	Yes	FACW
2. *Onoclea sensibilis*	20	No	FACW
3. *Rubus occidentalis*	5	No	UPL
4. *Typha angustifolia*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	105	x 2 =	210
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	115 (A)		240 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	75	10YR 5/4	25	C	M	Loamy/Clayey	Distinct redox concentrations
8-20	10YR 2/2	70	10YR 5/1	15	C	PL/M	Loamy/Clayey	Distinct redox concentrations
			7.5YR 5/8	15	C	PL/M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 2

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Lawn Local relief (concave, convex, none): Flat Slope %: 1

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242456° Long: -81.474589° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Poa pratensis*	40	Yes	FACU
2. *Juncus tenuis*	30	Yes	FAC
3. *Trifolium repens*	20	Yes	FACU
4. *Eleocharis obtusa*	5	No	OBL
5. *Prunella vulgaris*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	97 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	32	x 3 =	96
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	97 (A)		341 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	75	10YR 5/4	25	C	M	Loamy/Clayey	Distinct redox concentrations
8-20	10YR 2/2	70	10YR 5/1	15	C	PL/M	Loamy/Clayey	Distinct redox concentrations
			7.5YR 5/8	15	C	PL/M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 3

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Flat Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242851° Long: -81.474657° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-Q

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 1

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Juncus effusus*	35	Yes	OBL
2. *Phalaris arundinacea*	30	Yes	FACW
3. *Scirpoides holoschoenus*	15	No	OBL
4. *Carex lupuliformis*	10	No	OBL
5. *Carex vulpinoidea*	5	No	OBL
6. *Myosotis scorpioides*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	85	7.5YR 4/4	15	C	PL/M	Mucky Loam/Clay	Prominent redox concentrations
10-20	10YR 5/1	90	7.5YR 4/4	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 4

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): Flat Slope %: 10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242048° Long: -81.473642° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Quercus palustris*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Lonicera maackii*	20	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	30	Yes	FACU
2. *Toxicodendron radicans*	15	Yes	FAC
3. *Rubus occidentalis*	15	Yes	UPL
4. *Trifolium repens*	15	Yes	FACU
5. *Lonicera maackii*	10	No	UPL
6. *Bellis perennis*	10	No	UPL
7. *Quercus palustris*	5	No	FACW
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	45	x 3 =	135
FACU species	45	x 4 =	180
UPL species	55	x 5 =	275
Column Totals:	175 (A)		650 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Roots

Depth (inches): 3

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 5

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Flat Slope %: 4

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242023° Long: -81.474099° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-S

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 5

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	85	Yes	FACW
2. *Juncus effusus*	10	No	OBL
3. *Toxicodendron radicans*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		215 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	80	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
8-20	10YR 3/1	70	10YR 6/1	15	C	PL/M	Loamy/Clayey	Distinct redox concentrations
			7.5YR 5/6	15	C	PL		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 6

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242674° Long: -81.474099° Datum: NAD 83

Soil Map Unit Name: Sb NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-U

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 6

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Quercus palustris*	25	Yes	FACW
3. *Ulmus americana*	10	No	FACW
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	25	Yes	FACW
2. *Juncus effusus*	10	No	OBL
3. *Carex lupulina*	20	Yes	OBL
4. *Juncus tenuis*	10	No	FAC
5. *Solidago rugosa*	10	No	FAC
6. *Phleum pratense*	25	Yes	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	60	x 2 =	120
FAC species	65	x 3 =	195
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	180 (A)		445 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Muck	
5-18	10YR 5/1	90	10YR 6/8	10	C	PL/M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Top 2 inches is organic material

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 7

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): scrub Local relief (concave, convex, none): Concave Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.243183° Long: -81.467144° Datum: NAD 83

Soil Map Unit Name: Sb NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-U

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- X Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 7

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2. *Rhamnus alnifolia*	20	Yes	OBL
3. *Lonicera maackii*	5	No	UPL
4.			
5.			
6.			
7.			
	75 =Total Cover		
Herb Stratum (Plot size:)			
1. *Lysimachia nummularia*	60	Yes	FACW
2. *Toxicodendron radicans*	10	No	FAC
3. *Persicaria virginiana*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	110	x 2 =	220
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	150 (A)		310 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	90	7.5YR 4/3	10	C	M	Mucky Loam/Clay	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 8

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242582° Long: -81.466804° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 8

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Rhamnus alnifolia*	45	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size:)			
1. *Rhamnus alnifolia*	15	Yes	OBL
2. *Anthoxanthum odoratum*	15	Yes	FACU
3. *Solidago rugosa*	10	No	FAC
4. *Poa pratensis*	30	Yes	FACU
5. *Geum macrophyllum*	5	No	FACW
6. *Toxicodendron radicans*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	5	x 2 =	10
FAC species	75	x 3 =	225
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	185 (A)		475 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Roots

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 9

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244483° Long: -81.467878° Datum: NAD 83

Soil Map Unit Name: GbC2 NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Stormwater Basin 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 9

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	95	Yes	FACW
2. *Solidago rugosa*	2	No	FAC
3. *Urtica dioica*	2	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	99 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	4	x 3 =	12
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	99 (A)		202 (B)

Prevalence Index = B/A = 2.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	
6-20	10YR 2/2	80	10YR 5/3	20	C	PL/M	Mucky Loam/Clay	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

First 4 inches is organic material

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 10

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244619° Long: -81.467924° Datum: NAD 83

Soil Map Unit Name: GbC2 NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 10

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Symphyotrichum lateriflorum*	40	Yes	FAC
2. *Taraxacum officinale*	20	Yes	FACU
3. *Daucus carota*	15	No	UPL
4. *Poa pratensis*	15	No	FACU
5. *Lotus corniculatus*	10	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	45	x 4 =	180
UPL species	15	x 5 =	75
Column Totals:	100 (A)		375 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 5/4	95	10YR 6/4	5	C	M	Loamy/Clayey	Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 06/23/2022

Applicant/Owner: RDL Architects State: OH Sampling Point: 11

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave Slope %: 8

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.24541941° Long: -81.46783003° Datum: NAD 83

Soil Map Unit Name: FcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-V

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- X Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 1
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 11

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	25	Yes	FACW
2. *Quercus bicolor*	20	Yes	FACW
3. *Acer saccharinum*	10	No	FACW
4. *Acer rubrum*	10	No	FAC
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size:)			
1. *Lysimachia nummularia*	35	Yes	FACW
2. *Impatiens capensis*	15	Yes	FACW
3. *Carex alopecoidea*	15	Yes	FACW
4. *Carex leptalea*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	135	x 2 =	270
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		305 (B)

Prevalence Index = B/A = 2.03

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	90	7.5YR 4/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 12

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 3

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.242962° Long: -81.474999° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-P

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 12

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Quercus palustris*	20	Yes	FACW
3. *Nyssa sylvatica*	10	No	FAC
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Quercus palustris*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Juncus effusus*	20	Yes	OBL
2. *Asclepias incarnata*	15	Yes	OBL
3. *Carex lupulina*	10	Yes	OBL
4. *Apocynum cannabinum*	10	Yes	FAC
5. *Phalaris arundinacea*	5	No	FACW
6. *Solidago canadensis*	5	No	FACU
7. *Chasmanthium latifolium*	5	No	FACW
8. *Doellingeria umbellata*	3	No	FACW
9.			
10.			
11.			
12.			
	73	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	43	x 2 =	86
FAC species	80	x 3 =	240
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	173 (A)		391 (B)

Prevalence Index = B/A = 2.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	90	10YR 5/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations
6-20	10YR 5/2	85	10YR 6/8	15	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 13

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): none Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.243215° Long: -81.474999° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 13

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Crataegus pruinosa*	10	Yes	UPL
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	30	Yes	FACU
2. *Solidago canadensis*	15	Yes	FACU
3. *Potentilla simplex*	10	No	FACU
4. *Chasmanthium latifolium*	10	No	FACW
5. *Rosa multiflora*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	95	x 4 =	380
UPL species	10	x 5 =	50
Column Totals:	180 (A)		630 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	95	10YR 5/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots

Depth (inches): 3

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 14

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 3

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.243280° Long: -81.474826° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-O

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 14

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	45	Yes	FACW
2. *Quercus bicolor*	15	Yes	FACW
3. *Quercus rubra*	10	No	FACU
4. *Acer saccharum*	5	No	FACU
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Crataegus pruinosa*	10	Yes	UPL
2. *Quercus rubra*	10	Yes	FACU
3. *Fraxinus pennsylvanica*	15	Yes	FACW
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size:)			
1. *Leersia virginica*	40	Yes	FACW
2. *Juncus effusus*	30	Yes	OBL
3. *Symphyotrichum ericoides*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	115	x 2 =	230
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	10	x 5 =	50
Column Totals:	190 (A)		450 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	90	10YR 5/4	10	C	M	Mucky Loam/Clay	Distinct redox concentrations
8-20	10YR 5/1	80	10YR 6/6	20	C	PL/M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 15

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): none Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244238° Long: -81.475253° Datum: NAD 83

Soil Map Unit Name: BhB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 15

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Crataegus pruinosa*	10	Yes	UPL
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	30	Yes	FACU
2. *Solidago canadensis*	15	Yes	FACU
3. *Potentilla simplex*	10	No	FACU
4. *Rosa multiflora*	10	No	FACU
5. *Toxicodendron radicans*	10	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Parthenocissus quinquefolia*	15	Yes	FACU
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	60	x 3 =	180
FACU species	115	x 4 =	460
UPL species	10	x 5 =	50
Column Totals:	200 (A)		720 (B)

Prevalence Index = B/A = 3.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	95	10YR 5/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots

Depth (inches): 3

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 16

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244529° Long: -81.474681° Datum: NAD 83

Soil Map Unit Name: BhB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-N

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- X Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 16

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	40	Yes	FACW
2. *Populus deltoides*	20	Yes	FAC
3. *Acer rubrum*	15	No	FAC
4. *Crataegus pruinosa*	10	No	UPL
5. *Malus coronaria*	10	No	UPL
6.			
7.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Boehmeria cylindrica*	15	No	OBL
3. *Juncus effusus*	15	No	OBL
4. *Leersia virginica*	8	No	FACW
5. *Symphyotrichum ericoides*	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	123	x 2 =	246
FAC species	35	x 3 =	105
FACU species	2	x 4 =	8
UPL species	20	x 5 =	100
Column Totals:	210 (A)		489 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	95	7.5YR 5/6	5	C	M	Mucky Loam/Clay	Prominent redox concentrations
10-20	10YR 4/1	80	7.5YR 5/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 17

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244924° Long: -81.474689° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-M

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 1

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 17

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	40	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Aesculus flava*	10	No	FACU
4. *Nyssa sylvatica*	10	No	FAC
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Quercus palustris*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size:)			
1. *Athyrium angustum*	20	Yes	FAC
2. *Osmundastrum cinnamomeum*	20	Yes	FACW
3. *Impatiens capensis*	10	No	FACW
4. *Dryopteris cristata*	10	No	OBL
5. *Boehmeria cylindrica*	15	Yes	OBL
6. *Leersia oryzoides*	15	Yes	OBL
7. *Onoclea sensibilis*	5	No	FACW
8. *Persicaria sagittata*	5	No	OBL
9. *Toxicodendron radicans*	5	No	FAC
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	110	x 2 =	220
FAC species	35	x 3 =	105
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	200 (A)		410 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Mucky Loam/Clay	
4-20	10YR 6/1	70	10YR 6/8	30	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 18

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): none Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244850° Long: -81.475010° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 18

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	20	Yes	FACU
2. *Solidago canadensis*	15	Yes	FACU
3. *Toxicodendron radicans*	15	Yes	FAC
4. *Rosa multiflora*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	130 (A)		445 (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	95	10YR 5/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 19

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.241435° Long: -81.472480° Datum: NAD 83

Soil Map Unit Name: Ca NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N , Soil N , or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: W-T

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)	X Drainage Patterns (B10)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Moss Trim Lines (B16)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Dry-Season Water Table (C2)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Crayfish Burrows (C8)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Saturation Visible on Aerial Imagery (C9)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Stunted or Stressed Plants (D1)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	X Microtopographic Relief (D4)
___ Sparsely Vegetated Concave Surface (B8)		___ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 19

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Acer rubrum*	10	No	FAC
4. *Ulmus rubra*	10	No	FAC
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Quercus palustris*	15	Yes	FACW
2. *Fraxinus pennsylvanica*			FACW
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size:)			
1. *Glyceria striata*	50	Yes	OBL
2. *Toxicodendron radicans*	20	Yes	FAC
3. *Rosa multiflora*	10	No	FACU
4. *Juncus effusus*	5	No	OBL
5. *Persicaria sagittata*	2	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	87	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	57	x 1 =	57
FACW species	65	x 2 =	130
FAC species	40	x 3 =	120
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	172 (A)		347 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/1	85	7.5YR 5/6	15	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 20

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.241171° Long: -81.471988° Datum: NAD 83

Soil Map Unit Name: Ca NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 20

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Nyssa sylvatica*	10	Yes	FAC
3. *Tsuga canadensis*	5	No	FACU
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Frangula alnus*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Alopecurus pratensis*	60	Yes	FAC
2. *Poa pratensis*	30	Yes	FACU
3. *Solidago canadensis*	10	No	FACU
4. *Solidago altissima*	10	No	FACU
5. *Sorghum halepense*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	115	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Parthenocissus quinquefolia*	15	Yes	FACU
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	175 (A)		605 (B)

Prevalence Index = B/A = 3.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	95	10YR 5/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 21

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): Concave Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.241456° Long: -81.470398° Datum: NAD 83

Soil Map Unit Name: FcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: W-U

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 21

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Quercus palustris*	30	Yes	FACW
3. *Ulmus rubra*	10	No	FAC
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		280 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	100						Organic Matter
2-18	10YR 5/2	80	7.5YR 4/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Laurel Lakes City/County: Hudson/Summit Sampling Date: 8/16/22

Applicant/Owner: RDL Architects State: OH Sampling Point: 21

Investigator(s): Emily Nagle, Lindsey Jakovljevic Section, Township, Range:

Landform (hillside, terrace, etc.): forested Local relief (concave, convex, none): none Slope %: 2

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.244850° Long: -81.475010° Datum: NAD 83

Soil Map Unit Name: CcB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 21

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	10	Yes	FACW
2. *Quercus palustris*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Rhamnus alnifolia*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	70	Yes	FACU
2. *Taraxacum officinale*	20	No	FACU
3. *Trifolium repens*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	130 (A)		465 (B)

Prevalence Index = B/A = 3.58

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	95	10YR 5/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-M
Vegetation Communit(ies):	Forested
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.245250° -81.474501°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	8/16/2022
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	CcB
Delineation report/map	See Attached

Name of Wetland:	**W-M**
Wetland Size (acres, hectares):	0.51 on-site

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 39	**Category: CAT MOD 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/23/22

3	3	**Wetland:**	W-M
subtotal	max6pts		

39	1
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
3	10 to <25 acres (4 to <10.1ha) (4 pts)
3	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

11	8
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

		WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
4	4	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
		NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

		VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
4	5	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

23	12
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
		Between stream/lake and other human use (1)
1	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
		Regularly inundated/saturated (3)
2	2	Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
	7	Recovered (7)
7		Recovering (3)
		Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☐	other - culvert

37	14
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
4	4	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
		Good (5)
4	4	Moderately good (4)
		Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

37
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/23/22
			Wetland:	W-M	

37
Subtotal1st page

37	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

39	2
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
0	Shrub
1	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
1	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
-3	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
1	Coarse woody debris > 15cm (6in)
2	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39.0 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

			YES	NO	Result
Narrative Rating	Question 1 Critical Habitat		☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species		☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland		☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat		☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands		☐	☑	If yes, Category 1.
	Question 6. Bogs		☐	☑	If yes, Category 3.
	Question 7. Fens		☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest		☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants		☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings		☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1.	Size	3		
	Metric 2. Buffers and surrounding land use		8		
	Metric 3. Hydrology		12		
	Metric 4. Habitat		14		
	Metric 5. Special Wetland Communities		0		
	Metric 6. Plant communities, interspersion, microtopography		2		
	TOTAL SCORE		39		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

CAT MOD 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-N
Vegetation Communit(ies):	Emergent
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.244523° -81.47800°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	8/16/2022
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	BhB & CcB
Delineation report/map	See Attached

Name of Wetland:	**W-N**
Wetland Size (acres, hectares):	0.25

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 37	**Category: CAT MOD 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	Rater(s):	Emily Nagle, Lindsey Jakovljevic	Date:	8/26/22

1	1	Wetland:	W-N
subtotal	max6pts		

37	MOD 2
Final Score	Category

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

10	9
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

		WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
4	4	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
		NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

7		VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5		LOW. Old field (>10 years), shrubland, young second growth forest. (5)
3	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

23	13
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
		Between stream/lake and other human use (1)
1	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
	3	Regularly inundated/saturated (3)
3		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
	7	Recovered (7)
7		Recovering (3)
		Recent or no recovery (1)

Check all disturbances observed

☑	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☐	other - culvert

36	13
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
4	4	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
		Good (5)
3		Moderately good (4)
	3	Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☑	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☑	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

36
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/26/22
			Wetland:	W-N	

36
Subtotal1st page

36	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

37	1
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
2	0 Shrub
1	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
2	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

-5	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
-5	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
1	Coarse woody debris > 15cm (6in)
2	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

37.0 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	13		
	Metric 4. Habitat	13		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	37		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

CAT MOD 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-O& W-P
Vegetation Communit(ies):	Forested
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.243340° 81.474896°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	8/16/2022
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey	BhB & CcB
Delineation report/map	See Attached

Name of Wetland:	**W-O & W-P**
Wetland Size (acres, hectares):	0.08

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 37	**Category: Modified CAT 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lakes	**Rater(s):**	Emily Nagle, Lindsey Jakovjevic	**Date:**	8/23/22

0	0	**Wetland:**	W-O& W-P
subtotal	max6pts		

37	Mod 2
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
0	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
0	<0.1 acres (0.04ha) (0 pts)

6	6
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
1	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
1	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
	VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

7	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19	13
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
		Between stream/lake and other human use (1)
1	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
	3	Regularly inundated/saturated (3)
3		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

	None or none apparent (12)
7	Recovered (7)
	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☐	other - culvert

32	13
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
3	3	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
		Good (5)
4	4	Moderately good (4)
		Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

32
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lakes	**Rater(s):**	Emily Nagle, Lindsey Jakovjevic	**Date:**	8/23/22
			Wetland: W-O& W-P		

32
Subtotal1st page

32	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

37	5
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
0	Shrub
2	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
-1	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
	Coarse woody debris > 15cm (6in)
2	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

37.0 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	6		
	Metric 3. Hydrology	13		
	Metric 4. Habitat	13		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	5		
	TOTAL SCORE	37		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Modified CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-Q and W-R
Vegetation Communit(ies):	Emergent
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.242912° -81.474768°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	6/22/2022
National Wetland Inventory Map	PSS1/EM1C
Ohio Wetland Inventory Map	PSS1/EM1C
Soil Survey	CcB
Delineation report/map	See Attached

Name of Wetland:	**W-Q and W-R**
Wetland Size (acres, hectares):	0.2

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 39.5	**Category: CAT MOD 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	Rater(s):	Emily Nagle, Lindsey Jakovljevic	Date:	8/23/22

1	1	Wetland:	W-Q and W-R
subtotal	max6pts		

39.5	Mod 2
Final Score	Category

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

7	6
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
1	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
1	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
	VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

7	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

23	16
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

	High pH groundwater (5)
	Other groundwater (3)
1	Precipitation (1)
	Seasonal/Intermittent surface water (3)
5	Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

	100 year floodplain (1)
1	Between stream/lake and other human use (1)
1	Part of wetland/upland (e.g. forest), complex (1)
	Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

	>0.7 (27.6in) (3)
	04. to 0.7m (15.7 to 27.6in) (2)
1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

4	Semi-to permanently inundated/saturated (4)
	Regularly inundated/saturated (3)
	Seasonally inundated (2)
	Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

	None or none apparent (12)
	Recovered (7)
3	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

☑	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☑	dirt road
☐	weir	☐	dredging
☑	stormwater input	☑	other - culvert

33.5	10.5
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

	None or none apparent (4)
3	Recovered (3)
	Recovering (2)
	Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

	None or none apparent (9)
4.5	Recovered (6)
3	Recovering (3)
	Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

	Excellent (7)
	Very good (6)
	Good (5)
3	Moderately good (4)
3	Fair (3)
	Poor to fair (2)
	Poor (1)

Check all disturbances observed

☑	mowing	☑	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☑	woody debris removal	☐	farming
☐	toxic pollutants	☑	nutrient enrichment

33.5
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/23/22
			Wetland:	W-Q and W-R	

33.5
Subtotal1st page

33.5 subtotal | 0 max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

39.5 subtotal | 6 max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
0	Shrub
	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
3	Moderate (3)
	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
-3	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

	Vegetated hummocks/tussocks
2	Coarse woody debris > 15cm (6in)
4	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.
Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp
Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more
Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	6		
	Metric 3. Hydrology	16		
	Metric 4. Habitat	10.5		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	6		
	TOTAL SCORE	39.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

CAT MOD 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-S
Vegetation Communit(ies):	Forested
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.241842° -81.474311°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	6/22/2022 and 8/16/2022
National Wetland Inventory Map	PSS1/EM1C
Ohio Wetland Inventory Map	PSS1/EM1C
Soil Survey	Ca & CcB
Delineation report/map	See Attached

Name of Wetland:	**W-S**
Wetland Size (acres, hectares):	0.12

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 42	**Category: Modified CAT 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/26/22

1	1	**Wetland:**	W-S
subtotal	max6pts		

42	MOD 2
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

10	9
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

		WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
4	4	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
		NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

7		VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5		LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

25	15
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

	1	100 year floodplain (1)
	1	Between stream/lake and other human use (1)
3	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
	3	Regularly inundated/saturated (3)
3		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
	7	Recovered (7)
7		Recovering (3)
		Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☑	other - culvert

38	13
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
4	4	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
		Good (5)
3		Moderately good (4)
	3	Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☑	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☑	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

38
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/26/22
			Wetland:	W-S	

38
Subtotal1st page

38	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

42	4
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
2	0 Shrub
1	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
3	3 Moderate (3)
	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
-3	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
1	Coarse woody debris > 15cm (6in)
2	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42.0 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	15		
	Metric 4. Habitat	13		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	4		
	TOTAL SCORE	42		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Modified CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-T
Vegetation Communit(ies):	Forested
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.241492° -81.472615°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	8/16/2022
National Wetland Inventory Map	Na
Ohio Wetland Inventory Map	Na
Soil Survey	Ca
Delineation report/map	See Attached

Name of Wetland:	**W-T**
Wetland Size (acres, hectares):	0.19

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 39.5	**Category: Modified CAT 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/26/22

1	1	**Wetland:**	W-T
subtotal	max6pts		

39.5	MOD 2
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

13	12
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

7	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
7	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
	VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

7	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

23	10
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

	High pH groundwater (5)
	Other groundwater (3)
1	Precipitation (1)
	Seasonal/Intermittent surface water (3)
	Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

	100 year floodplain (1)
	Between stream/lake and other human use (1)
1	Part of wetland/upland (e.g. forest), complex (1)
	Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

	>0.7 (27.6in) (3)
1	04. to 0.7m (15.7 to 27.6in) (2)
1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

	Semi-to permanently inundated/saturated (4)
	Regularly inundated/saturated (3)
2	Seasonally inundated (2)
	Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

	None or none apparent (12)
7	Recovered (7)
5	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☑	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☑	other - culvert

34.5	11.5
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

	None or none apparent (4)
3	Recovered (3)
	Recovering (2)
	Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

	None or none apparent (9)
4.5	Recovered (6)
	Recovering (3)
	Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

	Excellent (7)
	Very good (6)
	Good (5)
4	Moderately good (4)
	Fair (3)
	Poor to fair (2)
	Poor (1)

Check all disturbances observed

☑	mowing	☑	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☑	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

34.5
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	8/26/22
			Wetland:	W-T	

34.5
Subtotal1st page

34.5	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

39.5	5
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
2	Shrub
1	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
3	Moderate (3)
	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
-1	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
	Coarse woody debris > 15cm (6in)
1	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	12		
	Metric 3. Hydrology	10		
	Metric 4. Habitat	11.5		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	5		
	TOTAL SCORE	39.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Modified CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	8/23/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-U
Vegetation Communit(ies):	Emergent/ Scrub-Shurb/ and Forsted
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.2425521° -81.4674226°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	6/23/2022 & 8/16/2022
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	FcB,Sb, Ca
Delineation report/map	See Attached

Name of Wetland:	**W-O**
Wetland Size (acres, hectares):	5.04 on-site

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 52	**Category: CAT 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	6/30/22

4	4	**Wetland:**	W-U
subtotal	max6pts		

52	2
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

		> 50 acres (<20.2ha) (6 pts)
		25 to <50 acres (10.1 to <20.2ha) (5 pts)
4	4	10 to <25 acres (4 to <10.1ha) (4 pts)
		3 to 10<acres (1.2 to <4ha) (3 pts)
		0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
		0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
		<0.1 acres (0.04ha) (0 pts)

16	12
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

	7	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
7		MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
		NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

	7	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
5		LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

29	13
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
	1	Between stream/lake and other human use (1)
2		Part of wetland/upland (e.g. forest), complex (1)
	1	Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

	4	Semi-to permanently inundated/saturated (4)
		Regularly inundated/saturated (3)
4		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
	7	Recovered (7)
5	3	Recovering (3)
		Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☑	stormwater input	☑	other - culvert

42	13
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

	4	None or none apparent (4)
3.5	3	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
4.5	6	Recovered (6)
	3	Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
	5	Good (5)
5		Moderately good (4)
		Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☑	nutrient enrichment

42
Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lake	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	6/30/22
			Wetland:	W-U	

42
Subtotal1st page

42	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

52	10
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
5	2 Shrub
2	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
4	Moderately high (4)
4	Moderate (3)
	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
-1	-1 Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

1	Vegetated hummocks/tussocks
1	Coarse woody debris > 15cm (6in)
2	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

52.0 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

			YES	NO	Result
Narrative Rating	Question 1 Critical Habitat		☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species		☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland		☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat		☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands		☐	☑	If yes, Category 1.
	Question 6. Bogs		☐	☑	If yes, Category 3.
	Question 7. Fens		☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest		☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants		☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings		☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies		☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1.	Size	4		
	Metric 2. Buffers and surrounding land use		12		
	Metric 3. Hydrology		13		
	Metric 4. Habitat		13		
	Metric 5. Special Wetland Communities		0		
	Metric 6. Plant communities, interspersion, microtopography		10		
	TOTAL SCORE		52		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emily Nagle
Date:	6/30/2022
Affiliation:	CT Consultants
Address:	8150 Sterling Court, Mentor Ohio
Phone Number:	440-417-6698
e-mail address:	enagle@ctconsultants.com
Name of Wetland:	W-V
Vegetation Communit(ies):	Forested
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See attached.

Lat/Long or UTM Coordinate	41.2453660° -81.4679608°
USGS Quad Name	Hudson
County	Summit
City/Township	Hudson
Section and Subsection	T4N R10W
Hydrologic Unit Code	041100020401
Site Visit	6/23/2022
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	FcB
Delineation report/map	See Attached

Name of Wetland:	**W-V**
Wetland Size (acres, hectares):	0.08

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 37	**Category: Modified CAT 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus eleqans var. qlaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oliqosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lakes	Rater(s):	Emily Nagle, Lindsey Jakovljevic	Date:	6/30/22

subtotal	max6pts	Wetland:	W-V
1	1		

Final Score	Category
37	Mod 2

Metric 1. Wetland Area (size).

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

subtotal	max14pts
8	7

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
4	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
	VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
3	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

subtotal	max30pts
24	16

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

	High pH groundwater (5)
	Other groundwater (3)
4	1 Precipitation (1)
	3 Seasonal/Intermittent surface water (3)
	Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

1	100 year floodplain (1)
1	Between stream/lake and other human use (1)
3	Part of wetland/upland (e.g. forest), complex (1)
1	Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

	>0.7 (27.6in) (3)
1	04. to 0.7m (15.7 to 27.6in) (2)
1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

	Semi-to permanently inundated/saturated (4)
3	Regularly inundated/saturated (3)
3	Seasonally inundated (2)
	Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

	None or none apparent (12)
7	Recovered (7)
5 3	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

☑	ditch	☐	point source (non stormwater)
☐	tile	☐	filling/grading
☐	dike	☑	dirt road
☐	weir	☐	dredging
☐	stormwater input	☐	other - culvert

subtotal	max20pts
33	9

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

	None or none apparent (4)
2.5 3	Recovered (3)
2	Recovering (2)
	Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

	None or none apparent (9)
3.5 6	Recovered (6)
	Recovering (3)
1	Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

	Excellent (7)
	Very good (6)
	Good (5)
3	Moderately good (4)
3	Fair (3)
	Poor to fair (2)
	Poor (1)

Check all disturbances observed

☑	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☑	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

33

Subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Laurel Lakes	**Rater(s):**	Emily Nagle, Lindsey Jakovljevic	**Date:**	6/30/22
			Wetland:	W-V	

33
Subtotal1st page

33	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
0	Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie Coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See question 1 Qualitative Rating - 10

37	4
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
1	Shrub
1	Forest
	Mudflats
	Open water
	Other

6b. Horizontal (plan view) interspersion.

Select only one.

	High (5)
	Moderately high (4)
2	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
0	Sparse 5-25% cover (-1)
0	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

	Vegetated hummocks/tussocks
1	Coarse woody debris > 15cm (6in)
1	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

37.0 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	7		
	Metric 3. Hydrology	16		
	Metric 4. Habitat	9		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	4		
	TOTAL SCORE	37		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Modified CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 24

SITE NAME/LOCATION Laurel Lakes, Hudson, Ohio
SITE NUMBER S-5 RIVER BASIN Mud Brook RIVER CODE 04110002 DRAINAGE AREA (mi²) 0.12
LENGTH OF STREAM REACH (ft) 340.6 LAT 41.2429554° LONG -81.4674729° RIVER MILE _____
DATE 06-23-22 SCORER EBN, LJ COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]		☒	LEAF PACK/WOODY DEBRIS [3 pts]	50%
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	20%
☐	COBBLE (65-256 mm) [12 pts]		☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]		☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0% (A) **SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:** 6 (B) **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points Substrate Max = 40: 9 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☒	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS No water was present **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☒	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (≤ 3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		

COMMENTS _____ **AVERAGE BANKFULL WIDTH (meters):** 1.2

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☑	☑ Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☑ Moderate 5-10m	☐	☐ Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☑	☑ Narrow <5m	☑	☑ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS Floodplain contained both residential & wetland/forest.

FLOW REGIME (*At Time of Evaluation*) (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☒	Dry channel, no water (ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☒	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Brandywine Creek — Distance from Evaluated Stream 0.15

☐ CWH Name: _____ — Distance from Evaluated Stream _____

☐ EWH Name: _____ — Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Hudson — NRCS Soil Map Page: _____ — NRCS Soil Map Stream Order: _____

County: Summit — Township/City: Hudson

MISCELLANEOUS

Base Flow Conditions? (Y/N): _____ Date of last precipitation: _____ Quantity: _____

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): — Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

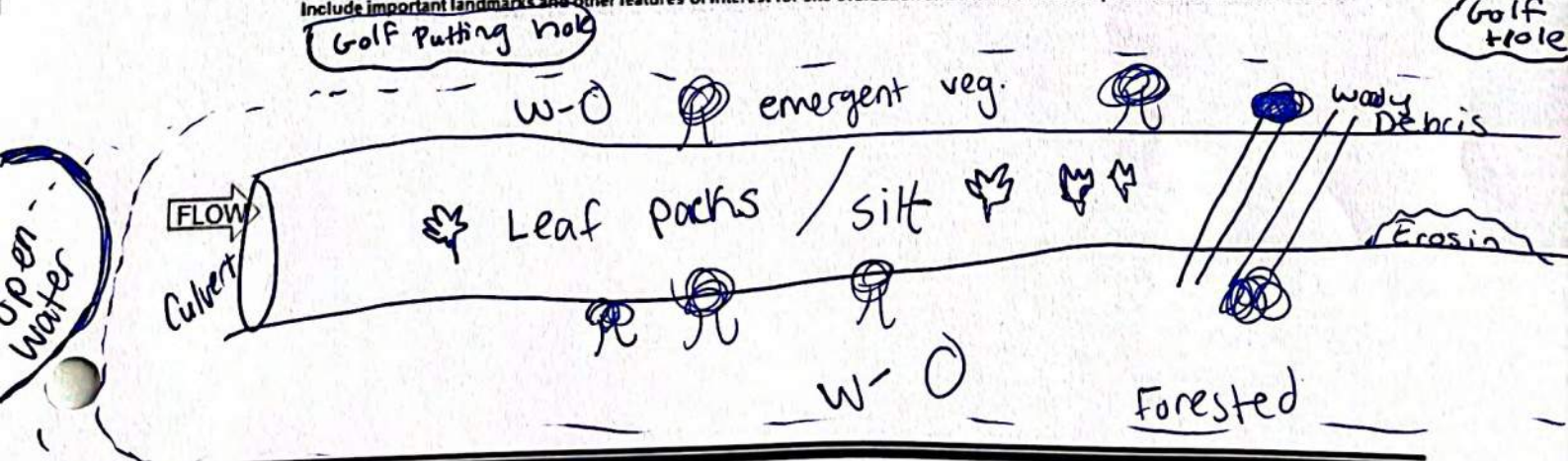
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 19

SITE NAME/LOCATION: Laurel Lakes in Hudson Ohio

SITE NUMBER: S-6 RIVER BASIN: DRAINAGE AREA (mi²): <0.10

LENGTH OF STREAM REACH (ft): 54 LAT.: 41.245472° LONG.: -81.473573° RIVER CODE: RIVER MILE:

DATE: 8/16/2022 SCORER: LNJ, EN COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	40%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	50%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	10%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% **(A)** Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):**

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 0.60

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☑	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Brandywine Creek** Distance from Evaluated Stream **0.15**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Hudson** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Summit** Township / City: **Hudson**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: **0.00**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **10%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

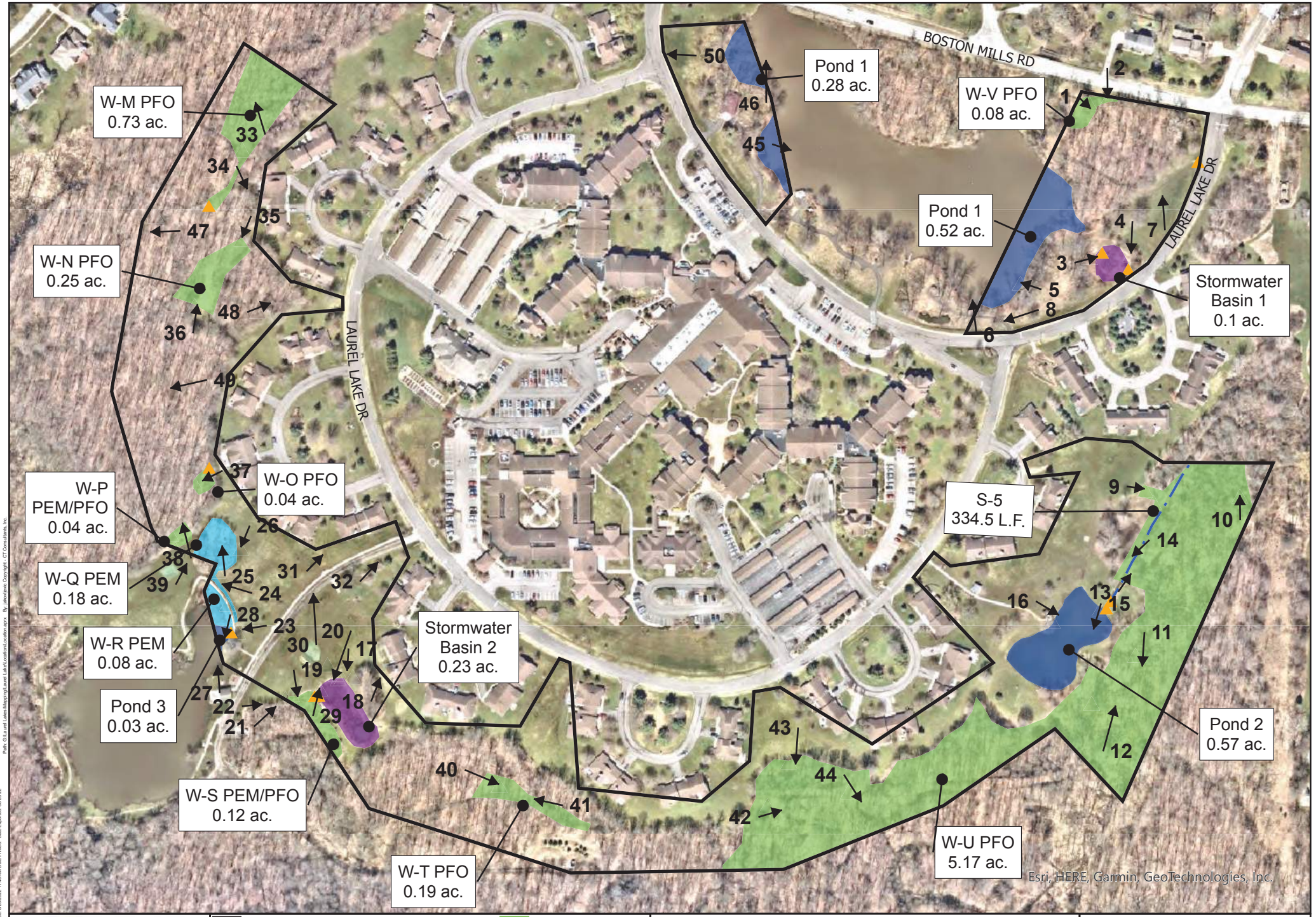
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

Save as pdf Reset Form

Appendix D

Site Photographs



Project Area
Culvert
Photo Locations
Intermittent Stream
Open Water
Emergent Wetland
Forested Wetland
Stormwater Basin

Figure 7: Photo Location Map
Laurel Lakes, Hudson, Ohio

N
0 130 260 Feet

PHOTOGRAPH 1

DESCRIPTION

View of Wetland V

DIRECTION

East

DATE

06/24/2022

PHOTOGRAPH 2

DESCRIPTION

View of Wetland V

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 3

DESCRIPTION

View of Stormwater Basin 1

DIRECTION

East

DATE

06/24/2022

PHOTOGRAPH 4

DESCRIPTION

View of Stormwater Basin 1

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 5

DESCRIPTION

Open Water

DIRECTION

West

DATE

06/24/2022

PHOTOGRAPH 6

DESCRIPTION

Open Water

DIRECTION

Northwest

DATE

06/24/2022

PHOTOGRAPH 7

DESCRIPTION

Upland

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 8

DESCRIPTION

Upland

DIRECTION

West

DATE

06/24/2022

PHOTOGRAPH 9

DESCRIPTION

View of Wetland U

DIRECTION

East

DATE

06/24/2022

PHOTOGRAPH 10

DESCRIPTION

View of Wetland U

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 11

DESCRIPTION

View of Wetland U

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 12

DESCRIPTION

View of Wetland U

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 13

DESCRIPTION

S-5

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 14

DESCRIPTION

S-5

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 15

DESCRIPTION

Open Water

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 16

DESCRIPTION

Open Water

DIRECTION

East

DATE

06/24/2022

PHOTOGRAPH 17

DESCRIPTION

Upland

DIRECTION

Southeast

DATE

06/24/2022

PHOTOGRAPH 18

DESCRIPTION

Upland

DIRECTION

Northeast

DATE

06/24/2022

PHOTOGRAPH 19

DESCRIPTION

View of Stormwater Basin 2

DIRECTION

Southwest

DATE

06/24/2022

PHOTOGRAPH 20

DESCRIPTION

View of Stormwater Basin 2

DIRECTION

Southeast

DATE

06/24/2022

PHOTOGRAPH 21

DESCRIPTION

View of Wetland S

DIRECTION

Northeast

DATE

06/24/2022

PHOTOGRAPH 22

DESCRIPTION

View of Wetland S

DIRECTION

East

DATE

06/24/2022

PHOTOGRAPH 23

DESCRIPTION

View of Wetland R

DIRECTION

West

DATE

06/24/2022

PHOTOGRAPH 24

DESCRIPTION

View of Wetland R and Wetland Q

DIRECTION

Northwest

DATE

06/24/2022

PHOTOGRAPH 25

DESCRIPTION

View of Wetland Q

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 26

DESCRIPTION

View of Wetland Q

DIRECTION

Southwest

DATE

06/24/2022

PHOTOGRAPH 27

DESCRIPTION

Open Water

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 28

DESCRIPTION

Open Water

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 29

DESCRIPTION

View of Stormwater Basin 2

DIRECTION

South

DATE

06/24/2022

PHOTOGRAPH 30

DESCRIPTION

Upland

DIRECTION

North

DATE

06/24/2022

PHOTOGRAPH 31

DESCRIPTION

Upland

DIRECTION

Northeast

DATE

06/24/2022

PHOTOGRAPH 32

DESCRIPTION

Upland

DIRECTION

Northeast

DATE

06/24/2022

PHOTOGRAPH 33

DESCRIPTION

Wetland M

DIRECTION

North

DATE

08/16/2022

PHOTOGRAPH 34

DESCRIPTION

Wetland M

DIRECTION

Southeast

DATE

08/16/2022

PHOTOGRAPH 35

DESCRIPTION

Wetland N

DIRECTION

South

DATE

08/16/2022

PHOTOGRAPH 36

DESCRIPTION

Wetland N

DIRECTION

North

DATE

08/16/2022

PHOTOGRAPH 37

DESCRIPTION

Wetland O

DIRECTION

West

DATE

08/16/2022

PHOTOGRAPH 38

DESCRIPTION

Wetland P

DIRECTION

North

DATE

08/16/2022

PHOTOGRAPH 39

DESCRIPTION

Wetland P

DIRECTION

East

DATE

08/16/2022

PHOTOGRAPH 40

DESCRIPTION

Wetland T

DIRECTION

East

DATE

08/16/2022

PHOTOGRAPH 41

DESCRIPTION

Wetland T

DIRECTION

West

DATE

08/16/2022

PHOTOGRAPH 42

DESCRIPTION

Wetland U

DIRECTION

East

DATE

08/16/2022

PHOTOGRAPH 43

DESCRIPTION

Wetland U

DIRECTION

South

DATE

08/16/2022

PHOTOGRAPH 44

DESCRIPTION

Wetland U

DIRECTION

Southeast

DATE

08/16/2022

PHOTOGRAPH 45

DESCRIPTION

Pond 1

DIRECTION

East

DATE

08/16/2022

PHOTOGRAPH 46

DESCRIPTION

Pond 1

DIRECTION

North

DATE

08/16/2022

PHOTOGRAPH 47

DESCRIPTION

Upland

DIRECTION

West

DATE

08/16/2022

PHOTOGRAPH 48

DESCRIPTION

Upland

DIRECTION

East

DATE

08/16/2022

PHOTOGRAPH 49

DESCRIPTION

Upland

DIRECTION

West

DATE

08/16/2022

PHOTOGRAPH 50

DESCRIPTION

Upland

DIRECTION

West

DATE

08/16/2022

DEISNER RICHARD ALAN ,	31 LAKE FOREST DR ,	HUDSON ,OH ,44236	
WILSON EDWARD J ,	6231 SIMON LANE ,	HUDSON ,OH ,44236	
KIRKWOOD JEFFREY J ,	409 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
D & D ENERGY COMPANY ,	6033 MERELIS AVENUE NE	CANTON ,OH ,44721	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
PUNG KIEO TRUSTEE ,	849 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
CREAHAN CHRISTOPHER J ,	837 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
SUMMIT PETROLEUM INC ,	9345 RAVENNA RD UNIT A	TWINSBURG ,OH ,4408	
VIAR GARY A ,	15 CHADBOURNE DR ,	HUDSON ,OH ,44236	
GRANT GARY W JR ,	820 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
ULMER THOMAS A CO TRUSTEE ,	876 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
MORRISON KARRI ,	35 CHADBOURNE DR ,	HUDSON ,OH ,44236	
READY MARGARET M TRUSTEE ,	828 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
MOLESKI JEANETTE A ,	6381 LOST WOODS LANE ,	HUDSON ,OH ,44236	
GREENBAUM THOMAS T ,	45 INGLESIDE DR ,	HUDSON ,OH ,44236	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
LAUREL LAKE RETIREMENT COMMUNITY INC ,	200 LAUREL LAKE DR ,	HUDSON ,OH ,44236	
SEAL CONST CO INC ,	ATT R G KONDAN ROOM 13	PHILADELPHIA ,PA ,191	
OHIO VALLEY ENERGY SYSTEM CORP ,	200 VICTORIA RD BLDG 4 ,	YOUNGSTOWN ,OH ,44	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
MURFIN JUDITH L TRUSTEE ,	389 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
SILK ADAM M TRUSTEE ,	6420 LOST WOODS LN ,	HUDSON ,OH ,44236	
MACWHERTER JOHN B JR ,	34 LAKE FOREST DR ,	HUDSON ,OH ,44236	
NGUYEN THOMAS A ,	395 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
PETO JOHN A ,	800 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
AUDIA DAMON J ,	6372 LOST WOODS LN ,	HUDSON ,OH ,44236	
KEPLER SUZANNE K TRUSTEE ,	852 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
EARP ROBERT H III ,	6330 LOST WOODS LANE ,	HUDSON ,OH ,44236	
LAMARCA GENE R ,	868 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
HOCH EUGENE A ,	P O BOX 925 ,	HUDSON ,OH ,44236	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
ESKAMANI SUZANNE B TRUSTEE ,	6 LAKE FOREST DR ,	HUDSON ,OH ,44236	
GOUGH KEVIN ,	22 LAKE FOREST DR ,	HUDSON ,OH ,44236	

LAUREL LAKE RETIREMENT COMMUNITY INC ,	200 LAUREL LAKE DR ,	HUDSON ,OH ,44236	
DAUGHERTY JASON T ,	401 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
MCCLOSKEY SEAN ,	844 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
YODER KENT ,	892 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
GVI LLC ,	778 MCCAULEY RD #100 ,	STOW ,OH ,44224	
JAHN FREDERICK J ,	26 CHADBOURNE DR ,	HUDSON ,OH ,44236	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
DAY GARY L ,	415 W STREETSBORO ST ,	HUDSON ,OH ,44236	
SMALL ROBERT ,	873 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
SIMMONDS MATTHEW F ,	49 CHADBOURNE DR ,	HUDSON ,OH ,44236	
ROTEN RICHARD A ,	812 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
WINTERS BRADLEY D ,	29 CHADBOURNE DR ,	HUDSON ,OH ,44236	
FELTNER LAURA O TRUSTEE ,	6343 LOST WOODS LANE ,	HUDSON ,OH ,44236	
SEGURA MARY F FLORES ,	34 CHADBOURNE DR ,	HUDSON ,OH ,44236	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
OHIO VALLEY ENERGY SYSTEM CORP ,	200 VICTORIA RD BLDG 4 ,	YOUNGSTOWN ,OH ,44	
OHIO VALLEY ENERGY SYSTEM CORP ,	200 VICTORIA RD BLDG 4 ,	YOUNGSTOWN ,OH ,44	
TUBBS DANIEL G ,	42 LAKE FOREST DR ,	HUDSON ,OH ,44236	
WILSON RICHARD E ,	43 S CHADBOURNE DR ,	HUDSON ,OH ,44236	
SEAL NANCY A TRUSTEE ,	857 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
NIEMOCIENSKI ROBERT E TRUSTEE ,	525 W STREETSBORO ST ,	HUDSON , ,44236	
BRANDHORST ROBERT CO TRUSTEE ,	6329 LOST WOODS LN ,	HUDSON ,OH ,44236	
ZT ETAL ,	860 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	
LAKE FOREST COUNTRY CLUB ,	100 LAKE FOREST DR ,	HUDSON ,OH ,44236	
GVI LLC ,	778 MCCAULEY RD #100 ,	STOW ,OH ,44224	
GREENBAUM MICHAEL EMERSON ,	35 INGLESIDE DR ,	HUDSON ,OH ,44236	
GVI LLC ,	778 MCCAULEY RD #100 ,	STOW ,OH ,44224	
MELLERT LOGAN ,	6495 LOST WOODS LN ,	HUDSON ,OH ,44236	
LAZARIDES STEVEN C ,	884 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
OHIO VALLEY ENERGY SYSTEM CORP ,	200 VICTORIA RD BLDG 4 ,	YOUNGSTOWN ,OH ,44	
SEAL CONST CO INC ,	ATT R G KONDAN ROOM 13	PHILADELPHIA ,PA ,191	
HUDSON TOWNSHIP BOARD OF PARK COMMISSION ,	1140 TEREX RD ,	HUDSON ,OH ,44236	

KHEDER KAMRAN ,	897 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
ASHENFELTER JASON TRUSTEE ,	6435 LOST WOODS LN ,	HUDSON ,OH ,44236	
PASSELL BRIAN J ,	55 CHADBOURNE DR ,	HUDSON ,OH ,44236	
GVI LLC ,	778 MCCAULEY RD #100 ,	STOW ,OH ,44224	
TRENKA CHRISTOPHER G ,	806 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
COENEN LISE P ,	391 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
NELSEN BRIAN ,	21 CHADBOURNE DRIVE ,	HUDSON ,OH ,44236	
BERGER ALAN ,	381 BOSTON MILLS RD ,	HUDSON ,OH ,44236	
JOSE LILY ,	784 HAMPSHIRE RD ,	STOW ,OH ,44224	
MCDONNELL RALPH E TRUSTEE ,	14 LAKE FOREST DR ,	HUDSON ,OH ,44236	
WALDRON DAVID A & ASSOC INC ,	PO BOX 766 ,	WOOSTER ,OH ,44691	
SATZ KENNETH E ,	28 LAKE FOREST DR ,	HUDSON ,OH ,44236	
LAUREL LAKE RETIREMENT COMMUNITY INC ,	200 LAUREL LAKE DR ,	HUDSON ,OH ,44236	
SUSANY REBECCA A TRUSTEE ,	881 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
CORSI RONALD A ,	5 LAKE FOREST RD ,	HUDSON ,OH ,44236	
KLEIN JENNIFER A TRUSTEE ,	836 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	
RESERVE AT RIVER OAKS HOMEOWNERS ,	5090 PARK AVE WEST ,	SEVILLE ,OH ,44273	
HUTCHINSON THOMAS L ,	900 RIDGEWOOD BLVD ,	HUDSON ,OH ,44236	

Asphalt Pavement Design Calculations (based on ODOT Flexible Pavement Design Manual)

Service Life	20	Years
CBR	5	
Subgrade Resilient Modulus	6000	PSI
Initial Reliability	4.5	
Terminal Reliability	2.5	
Design Serviceability Loss	2	
Reliability	85%	
Standard Deviation	0.49	

Equivalent Loads

Vehicle	weight	Trips / Day	Equivalent Axle Load
Passenger Cars	4,000 lbs	150	410
Panel Truck	10,000 lbs	0	10.5
Semi Truck	20,000 lbs	0	0.656
Fire Truck	60,000 lbs	0.5	0.0081
Garbage Truck	60,000 lbs	0	0.008

Total EAL

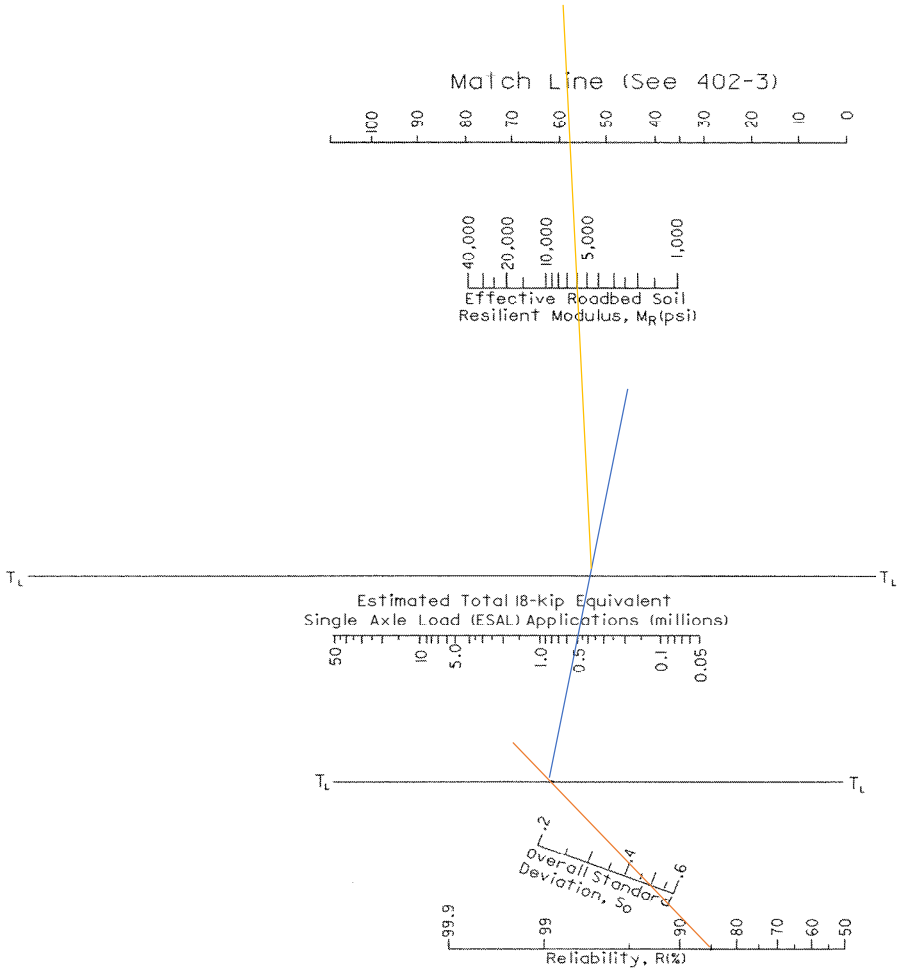
Passenger Cars	150 x 365 days/year x (20 year / 410 EAL) =	2671
Panel Truck	0 x 365 days/year x (20 year / 10.5 EAL) =	0
Semi Truck	0 x 365 days/year x (20 year / 0.656 EAL) =	0
Fire Truck	0.5 x 365 days/year x (20 year / 0.0081 EAL) =	450617
Garbage Truck	0 x 365 days/year x (20 year / 0.008 EAL) =	0
TOTAL ESAL		453288
		0.453

Strucural Number Coefficients		Depth (in)	SN
Asphalt Surface Course	0.43	1.5	0.645
Asphalt Intermediate Course	0.43	3.5	1.505
Asphalt Concrete Base 301	0.36	0	0
Aggregate Base	0.14	8	1.12
Aggregate Subbase	0.09	0	0
TOTAL SN			3.27

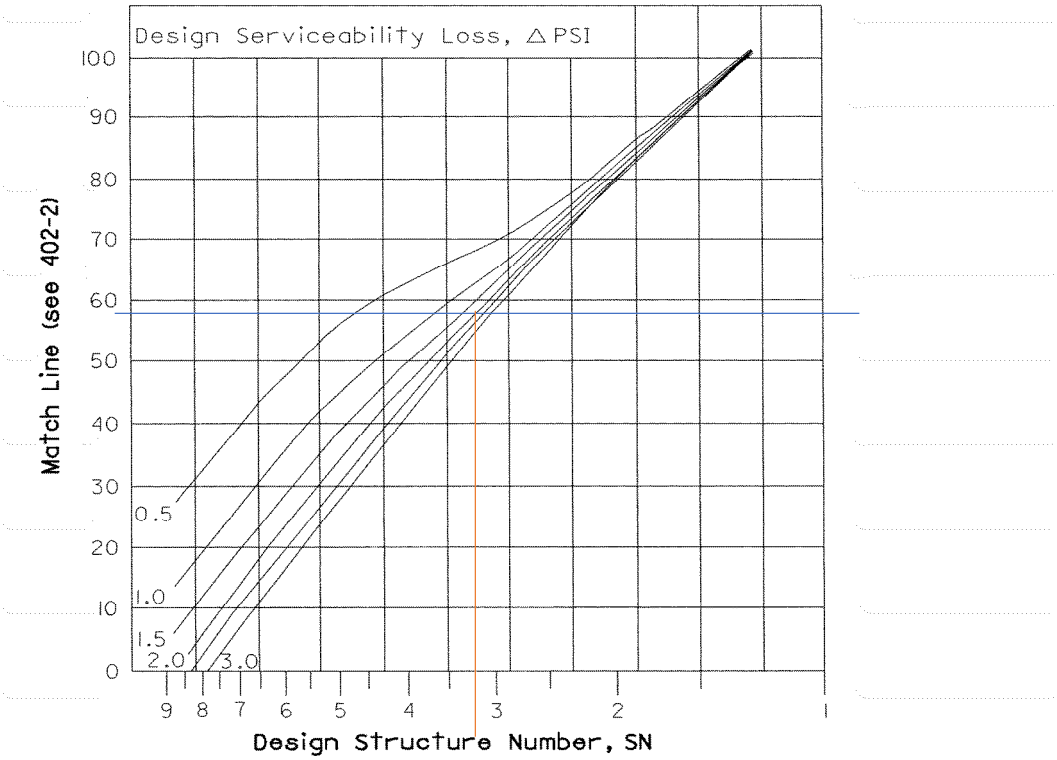
ODOT Chart 402-3	
SN	3.25
Calculated SN	3.27

Pavement Section SN is larger than minimum SN

Flexible Pavement Design Chart Segment 1	402-2 July 2008 Reference Section & Figure 402, 402-1(step 3)



Flexible Pavement Design Chart Segment 2	402-3 July 2008 Reference Section & Figure 402, 402-1(step 3)



consultants
engineers • architects • planners
A Verdantas Company

Memorandum

To: Eileen Nacht, AIA, LEED AP, EDAC (Senior Living Director, RDL Architects)

From: Lene Hill, PE, LEED AP (Senior Project Engineer, CT Consultants, Inc.);
Jay Korros, PE, PTOE (Senior Traffic Engineer, CT Consultants, Inc.);
Doug Gerda, (Civil Co-op, CT Consultants, Inc.)

Subject: Laurel Lake Retirement Community Trip Generation Study

Date: August 10, 2022 *(Revised May 24, 2024)*

This memorandum summarizes the revised trip generation study performed for the existing Laurel Lake Retirement Community located in the City of Hudson, Ohio.

Project Description:

Laurel Lake Retirement Community currently provides various combinations of senior adult housing (both-single-family and multi-family), congregate care, assisted living, and nursing home. The community also provides special services such as medical, dining, recreational, communal transportation, and some limited, supporting retail facilities. The community is planning to add 7 duplexes with two units. The existing site map and proposed preliminary site plan of the community are attached to this memo.

Trip Generation:

Trip generation estimates were prepared for the existing and proposed Laurel Lake Retirement Community development using the Institute of Transportation Engineers (ITE), 11th Edition, as shown in Table 1 and Table 2, respectively.

The ITE Trip Generation Manual includes several types of senior or retirement homes as listed below:

- Senior Adult Housing – Single-Family (ITE Land Use Code: 251)
- Senior Adult Housing – Multifamily (ITE Land Use Code: 252)
- Assisted Living (ITE Land Use Code: 254)

- Nursing Home (ITE Land Use Code: 620)
- Continuing Care Retirement Community (ITE Land Use Code: 255)

Continuing Care retirement communities (CCRC) are land uses that provides multiple elements of senior adult living. Housing options may include various combinations of senior adult housing (both single-family and multifamily), congregate care, assisted living, and nursing home. To be conservative as shown in Table 1, rather than using all-inclusive CCRC trip generation estimates, combination of several land use trip generation estimates was selected to compare the trips generated by existing and proposed development site. Figure 1 shows the comparison between the trips generated by the existing and proposed development site.

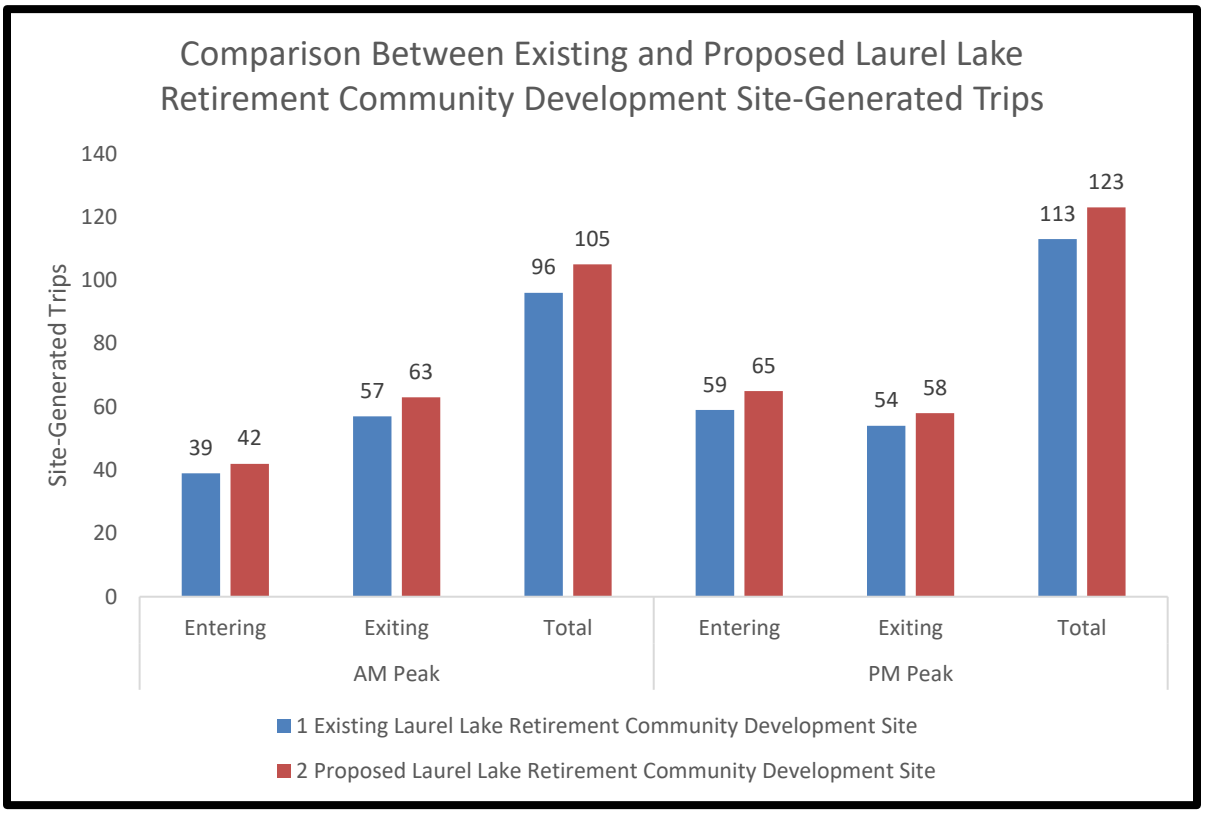
Table 1: Existing Laurel Lake Retirement Community Site Trip Generation Summary

S.N.	Development Description	ITE Land Use	ITE Land Use Code	Independent Variable	AM Peak			PM Peak		
					Entering	Exiting	Total	Entering	Exiting	Total
1	Independent Living - 66 villas (semi-attached homes with attached 1 or 2-car garages)	Senior Adult Housing - Single Family	251	66 DU	9	19	28	19	13	32
2	Independent Living – 224 apartments located in two 3-story apartment buildings, Eastwood and Westwood	Senior Adult Housing - Multi-Family	252	224 DU	15	30	45	31	25	56
3	Greenwood Assisted Living – 56 apartments (studios, 1-bedrooms, 2-bedrooms) located in Greenwood 3-story building, Greenwood Suites, and Greenwood Studios	Assisted Living	254	56 Beds	6	4	10	5	8	13
4	Crown Center 24-hour Skilled Nursing & Rehabilitation - 75 bed licensed skilled nursing facility	Nursing Home	620	75 Beds	9	4	13	4	8	12
Total (Combination of Trip Generation from Above-Listed Developments)					39	57	96	59	54	113
5	Laurel Lake Retirement Community (Includes all the Above-Listed Developments)	Continuing Care Retirement Community	255	421 DU	49	27	76	43	67	110

Table 2: Proposed Laurel Lake Retirement Community Site Trip Generation Summary

S.N.	Development Description	ITE Land Use	ITE Land Use Code	Independent Variable	AM Peak			PM Peak		
					Entering	Exiting	Total	Entering	Exiting	Total
1	Independent Living - 66 villas (semi-attached homes with attached 1 or 2-car garages)	Senior Adult Housing - Single Family	251	66 DU	9	19	28	19	13	32
2	Independent Living – 224 apartments located in two 3-story apartment buildings, Eastwood and Westwood	Senior Adult Housing - Multi-Family	252	224 DU	15	30	45	31	25	56
3	Greenwood Assisted Living – 56 apartments (studios, 1-bedrooms, 2-bedrooms) located in Greenwood 3-story building, Greenwood Suites, and Greenwood Studios	Assisted Living	254	56 Beds	6	4	10	5	8	13
4	Crown Center 24-hour Skilled Nursing & Rehabilitation - 75 bed licensed skilled nursing facility	Nursing Home	620	75 Beds	9	4	13	4	8	12
5	Independent Living - 7 duplexes with two units each - Total of 14 new units.	Senior Adult Housing - Single Family	251	14 DU	3	6	9	6	4	10
Total (Combination of Trip Generation from Above-Listed Developments)					42	63	105	65	58	123

Figure 1: Trip Generation Comparison Between and Existing and Proposed Laurel Lake Retirement Community Development Site-Generated Trips



Findings:

The trip-generation study shows that only a total of 9 trips and 10 trips are anticipated to increase with the addition of 7 duplexes at the existing Laurel Lake Retirement Community Development site.

If any of the information in the memo is not consistent with what we discussed or any information is missing, please let us know and the memo will be updated accordingly.

Appendix

Laurel Lake Retirement Community
200 Laurel Lake Drive, Hudson OH 44236
330-650-2100 / www.laurellake.org

Residences & Neighborhoods
Roads
Walks
Grass & Woodlands
Wetland Habitat

BOSTON MILLS ROAD (60' R.O.W.)
LAUREL LAKE
LAUREL LAKE DRIVE
VILLAS
BARLOW PAVILLION
OUTLOOK POINT
ROSE ARBOR
FOX HILL GAZEBO
WALT'S POND
WALLACE GAZEBO
WESTWOOD
EASTWOOD
TOWN CENTER
Atrium
PAT'S PATIO
SALON
FITNESS CENTER
AQUATIC CENTER
THERAPY CENTER
GREENWOOD PATIO
GREENWOOD
CARPORTS
WORKSHOP & GARAGE SALE
MAINTENANCE GARAGE
COMMUNITY GARDEN
LOOP ROAD
SERENITY CHAPEL
SUTCLIFFE TRANQUILITY COURTYARD
CROWN CENTER
PRACTICE GOLF COURSE
THE BELVEDERE AT RIDER LAKE PAVILION
RIDER LAKE

1ST FLOOR

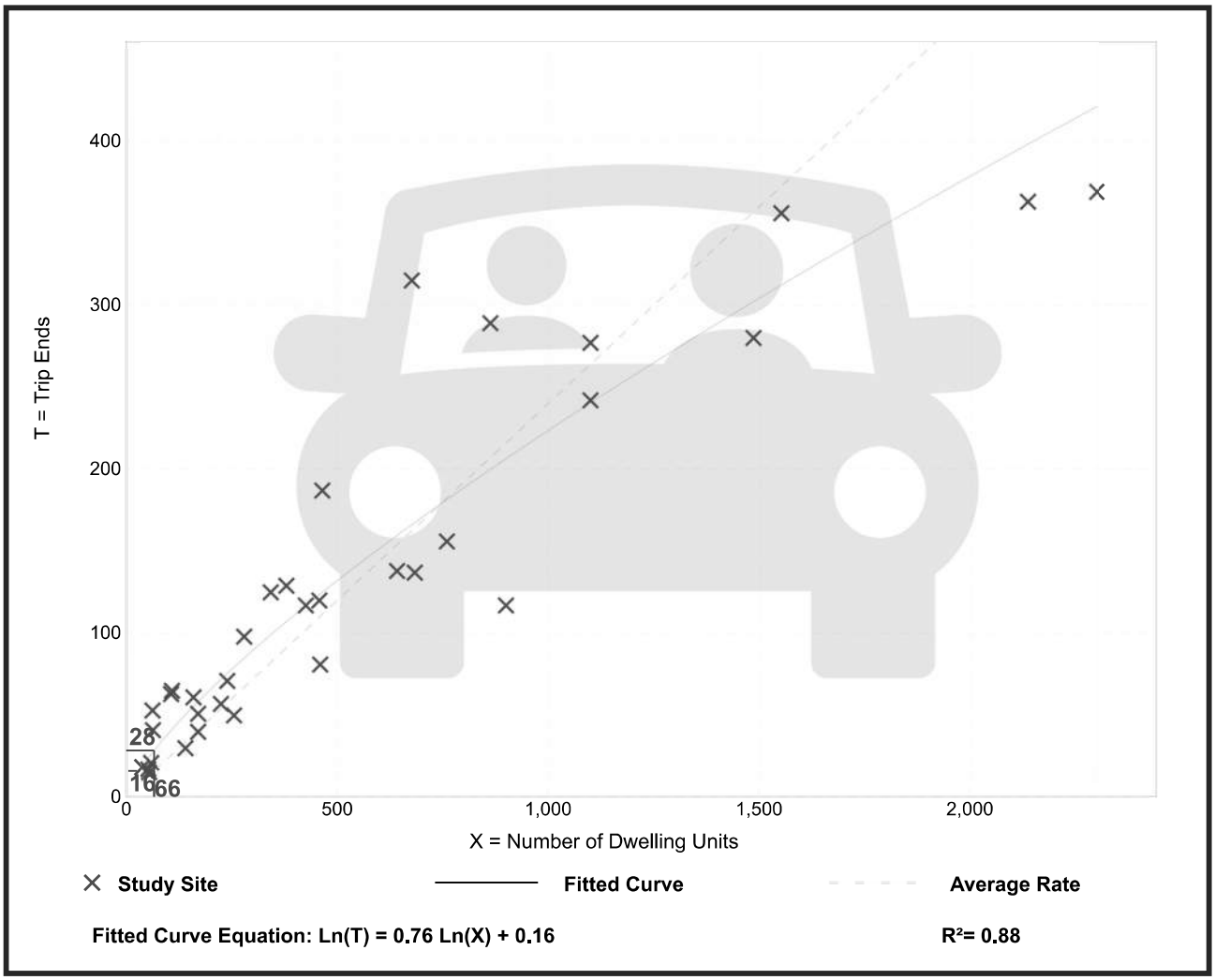
Senior Adult Housing - Single-Family
(251)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 7 and 9 a.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	34
Avg. Num. of Dwelling Units:	557
Directional Distribution:	33% entering, 67% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.24	0.13 - 0.84	0.10

Data Plot and Equation



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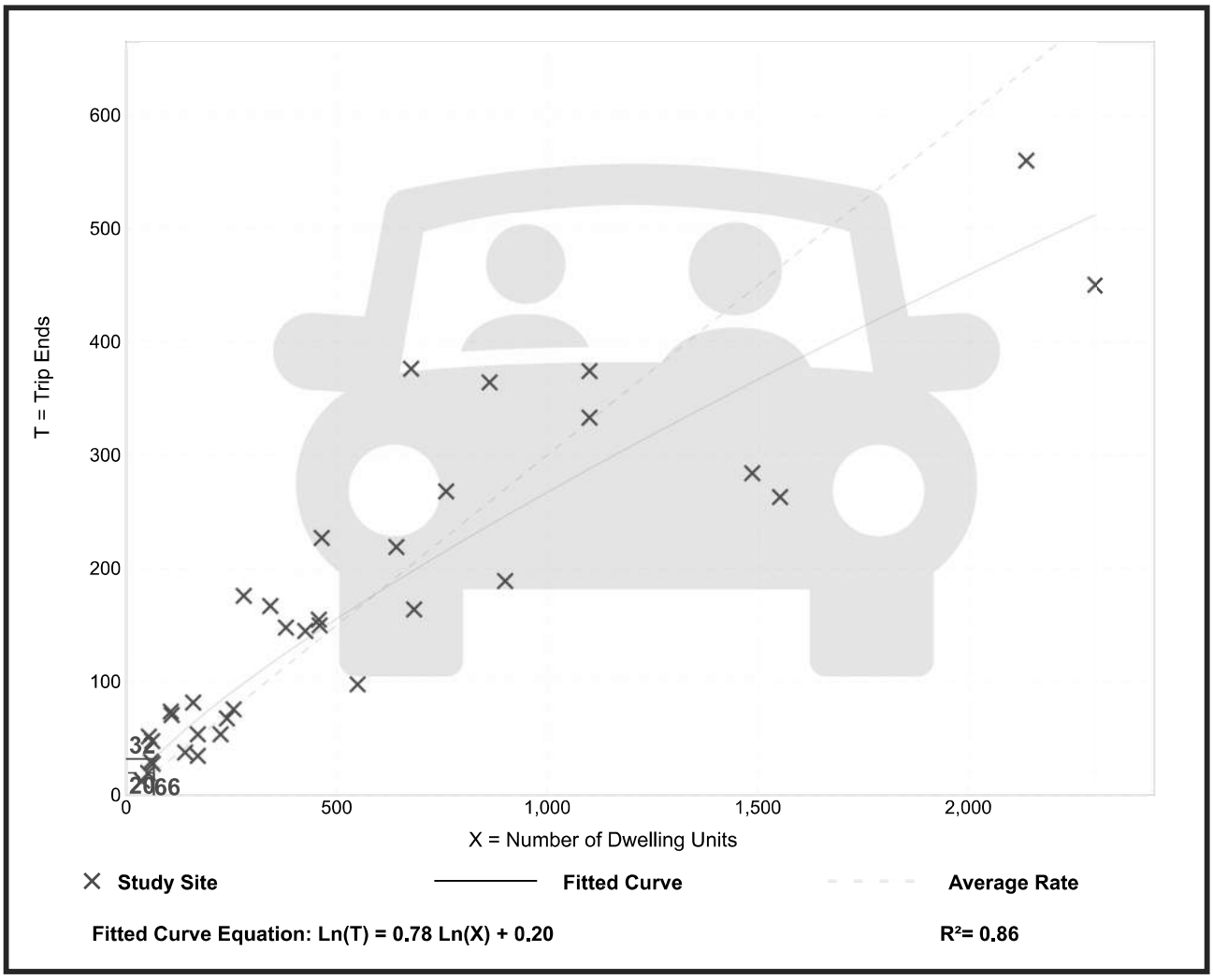
Senior Adult Housing - Single-Family
(251)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	35
Avg. Num. of Dwelling Units:	556
Directional Distribution:	61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.30	0.17 - 0.95	0.12

Data Plot and Equation



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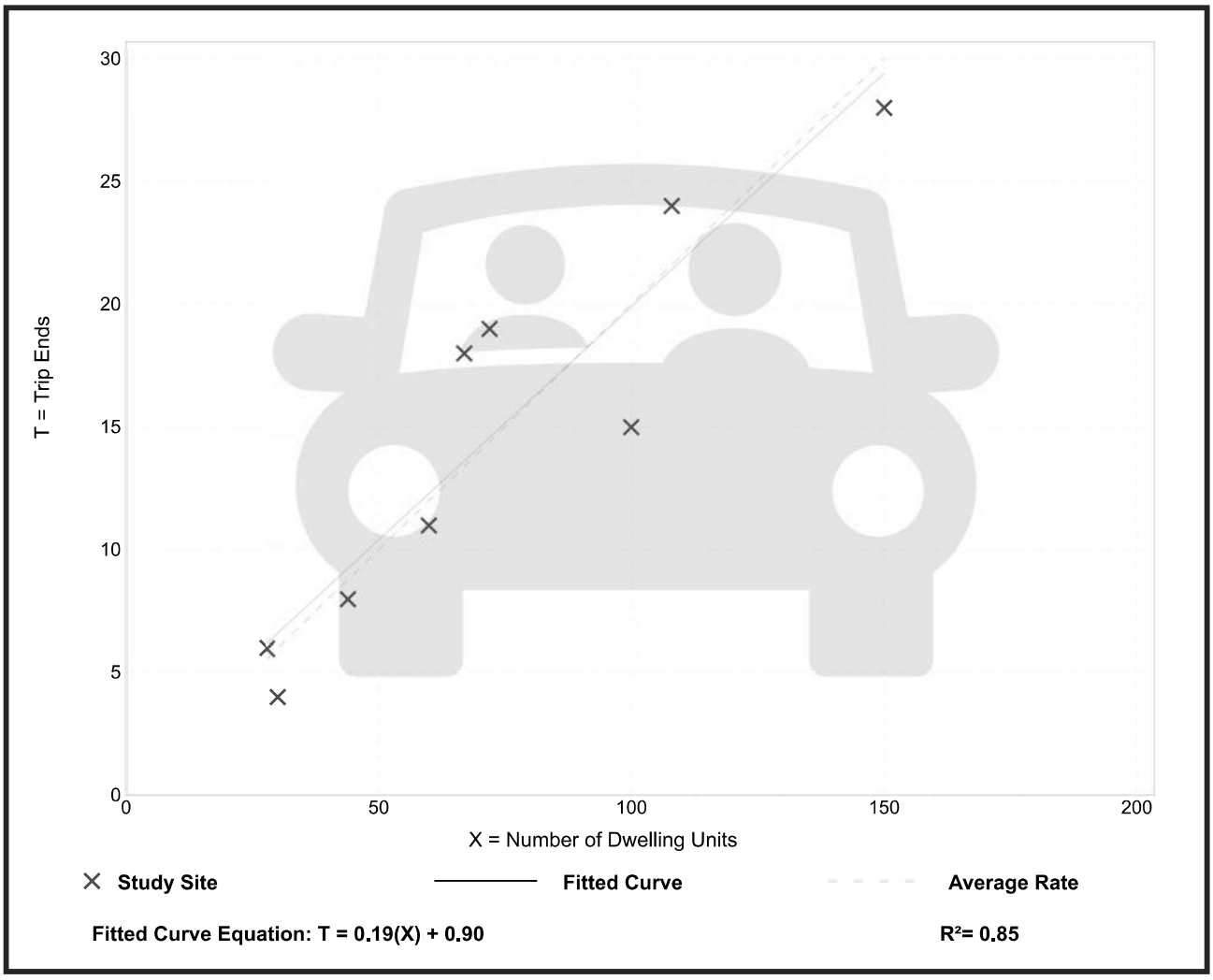
Senior Adult Housing - Multifamily
(252)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 9
Avg. Num. of Dwelling Units: 73
Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.13 - 0.27	0.04

Data Plot and Equation



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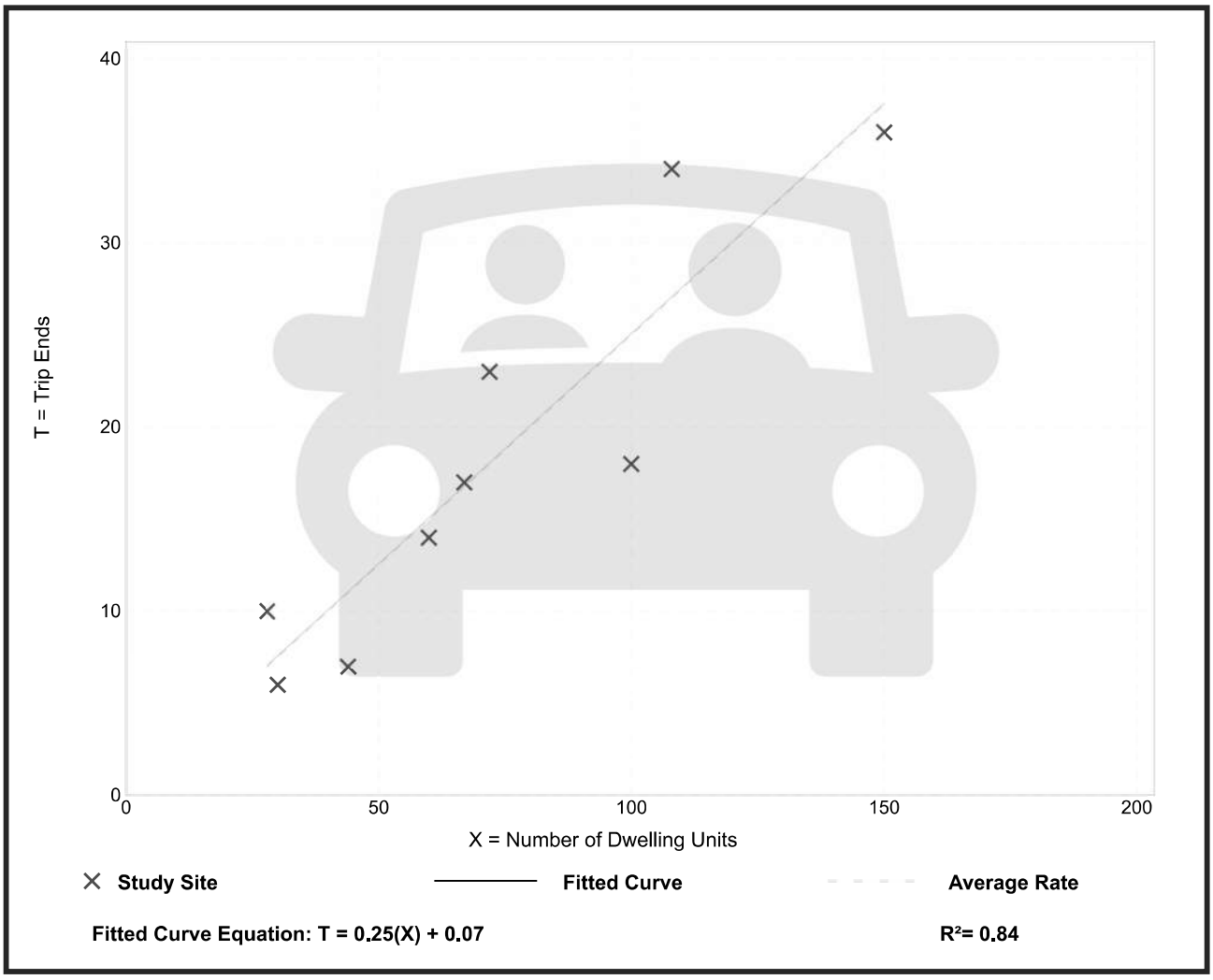
Senior Adult Housing - Multifamily
(252)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	9
Avg. Num. of Dwelling Units:	73
Directional Distribution:	56% entering, 44% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.25	0.16 - 0.36	0.06

Data Plot and Equation



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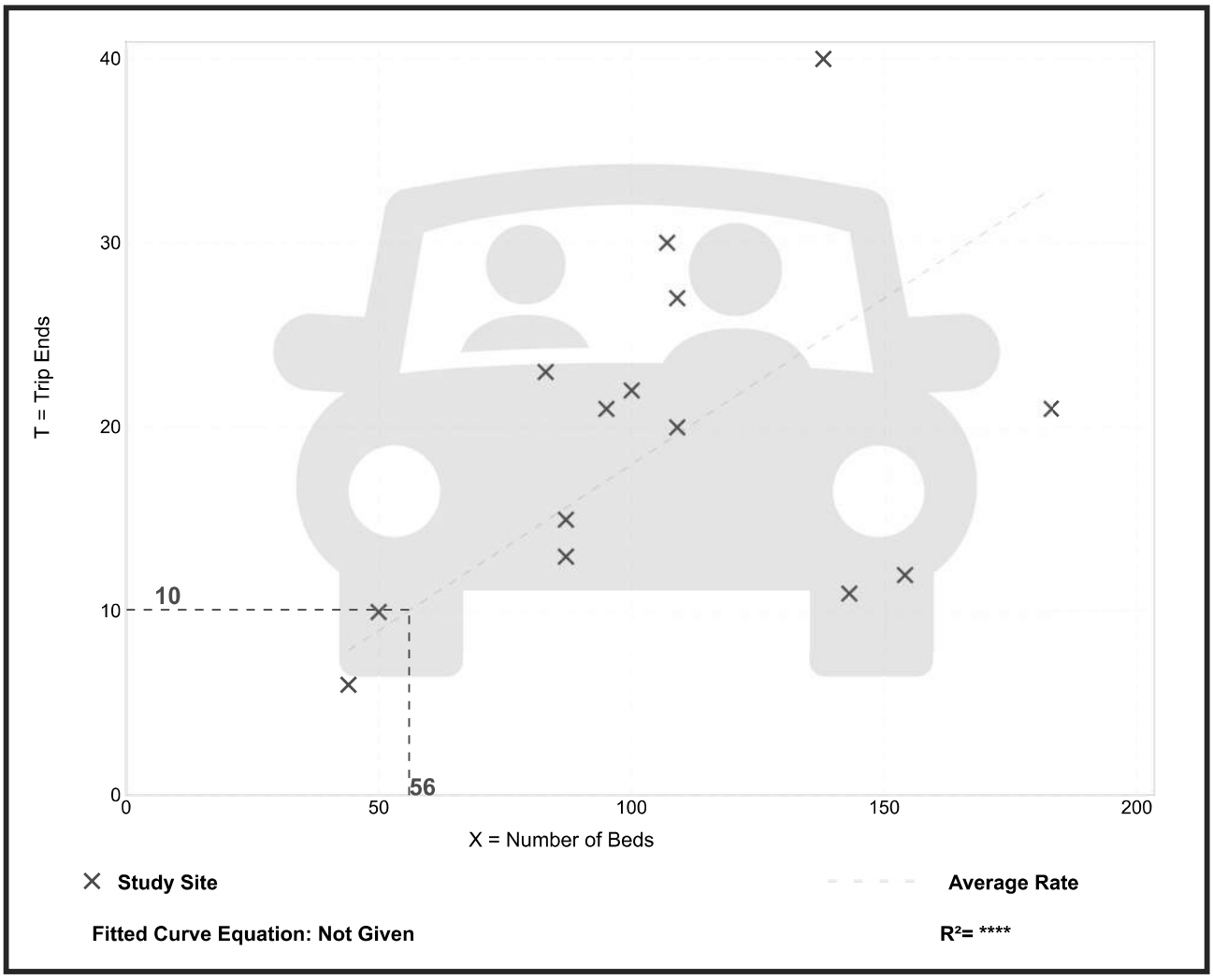
Assisted Living
(254)

Vehicle Trip Ends vs:	**Beds**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 7 and 9 a.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	14
Avg. Num. of Beds:	106
Directional Distribution:	60% entering, 40% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.29	0.08

Data Plot and Equation



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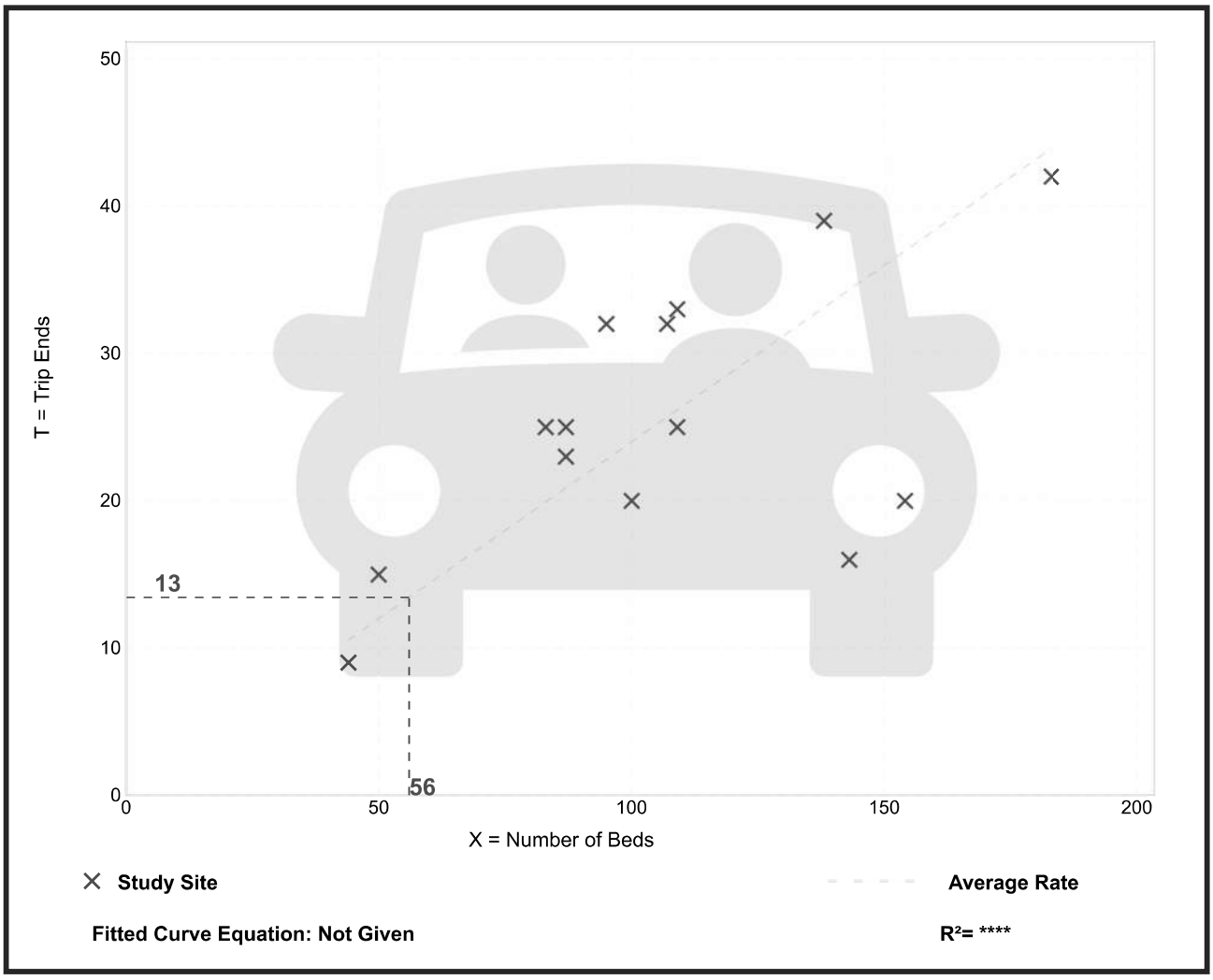
Assisted Living
(254)

Vehicle Trip Ends vs:	**Beds**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	14
Avg. Num. of Beds:	106
Directional Distribution:	39% entering, 61% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.24	0.11 - 0.34	0.07

Data Plot and Equation



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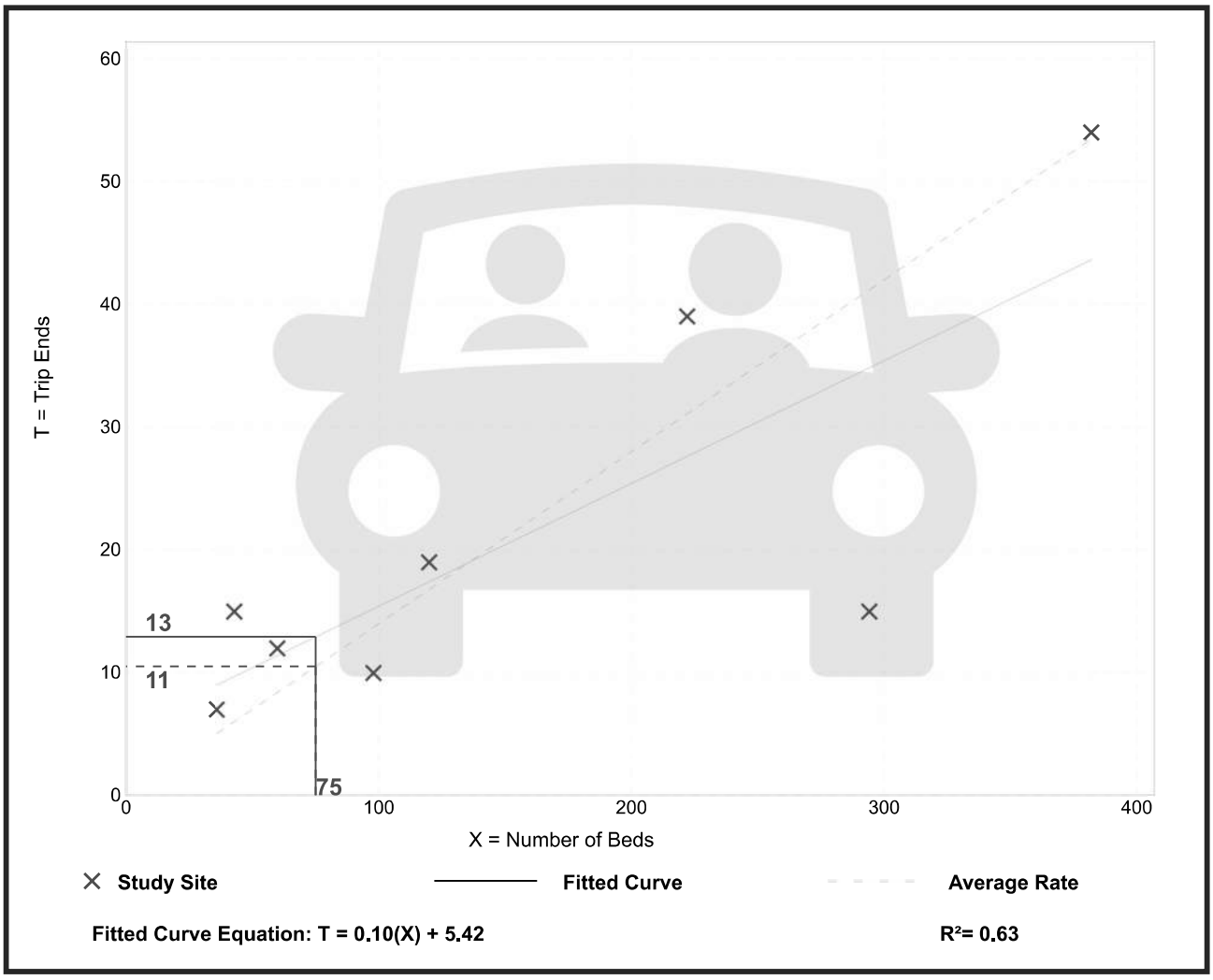
Nursing Home
(620)

Vehicle Trip Ends vs: **Beds**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. Num. of Beds: 157
Directional Distribution: 72% entering, 28% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.14	0.05 - 0.35	0.07

Data Plot and Equation



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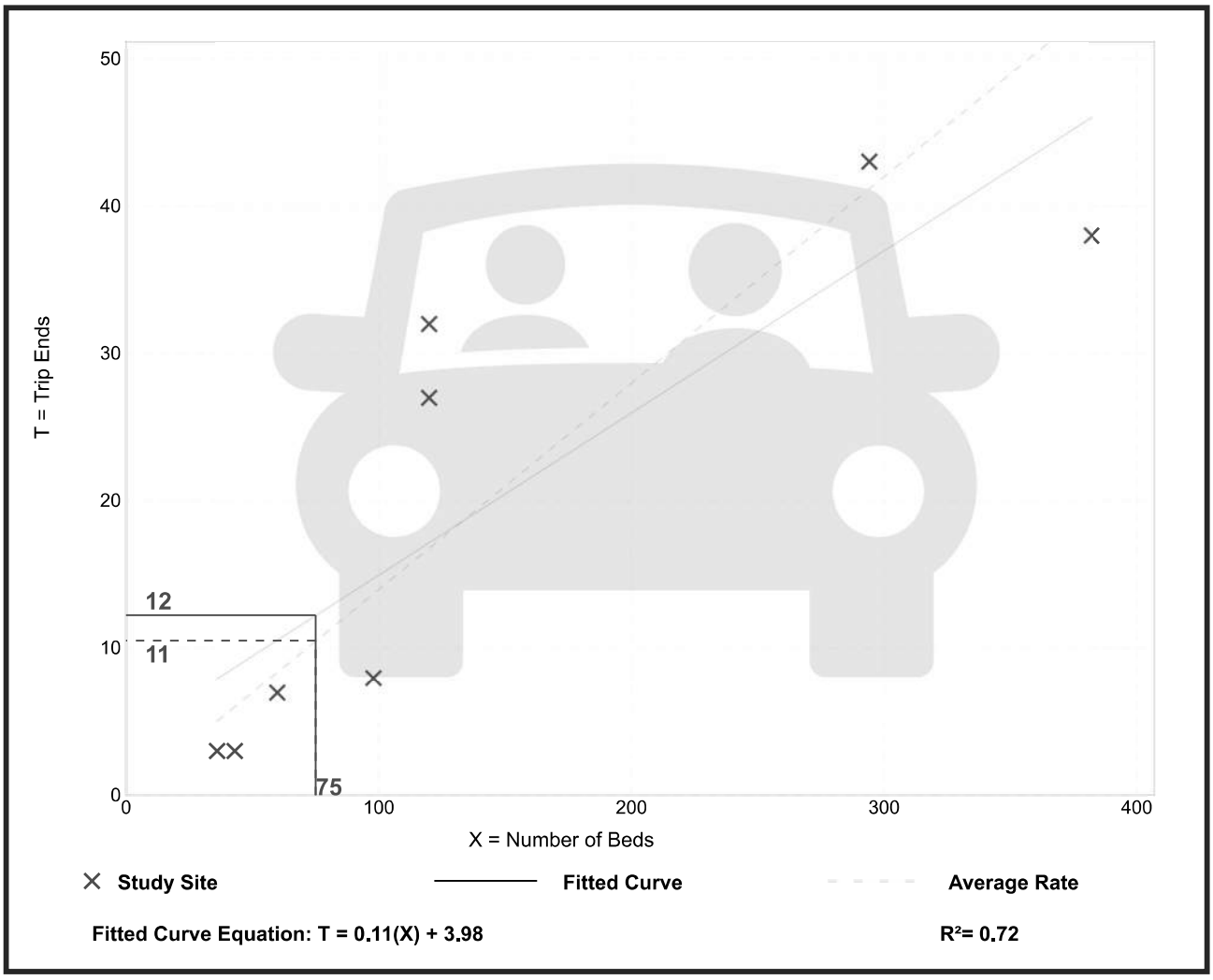
Nursing Home
(620)

Vehicle Trip Ends vs: **Beds**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. Num. of Beds: 144
Directional Distribution: 33% entering, 67% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.14	0.07 - 0.27	0.06

Data Plot and Equation



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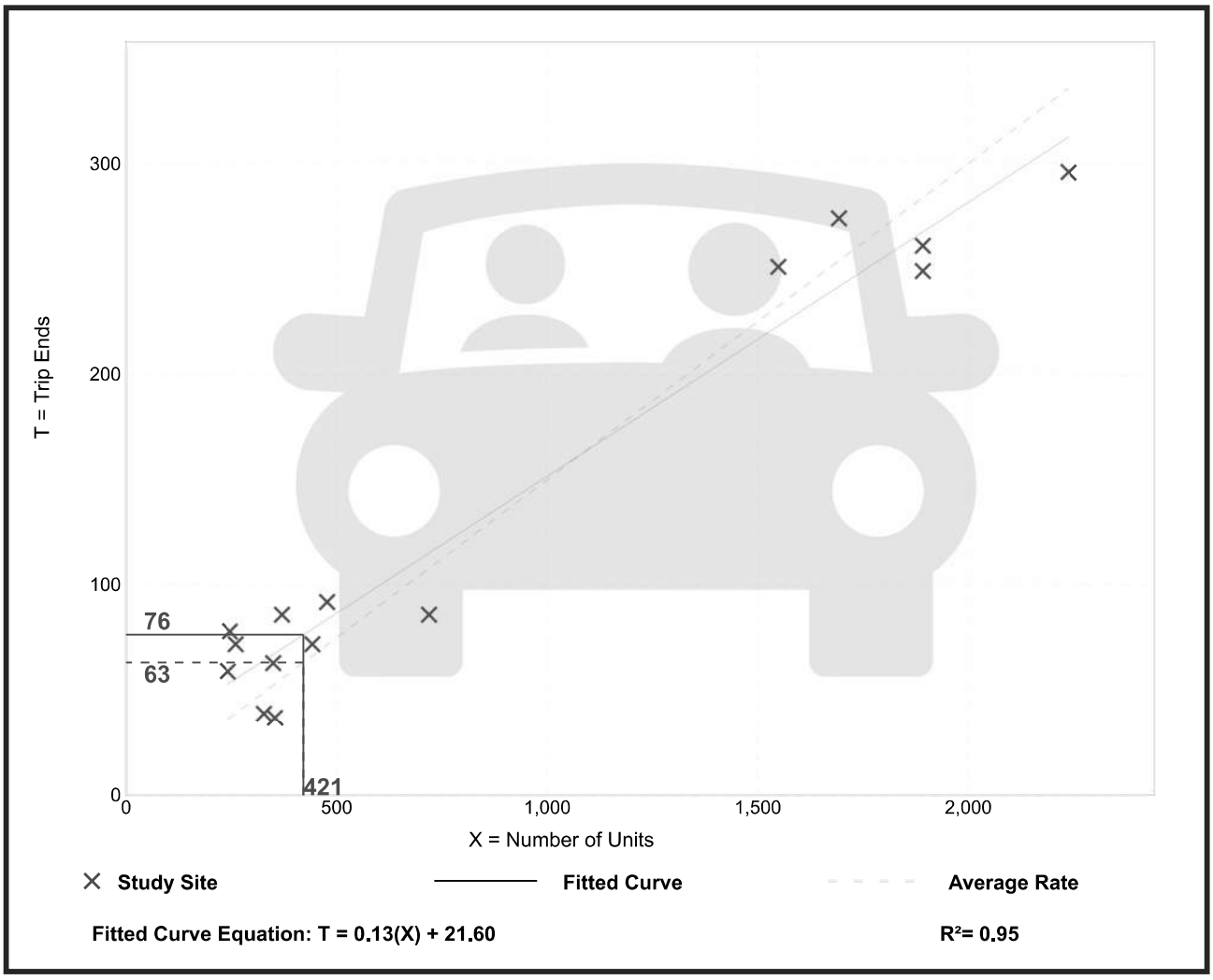
Continuing Care Retirement Community
(255)

Vehicle Trip Ends vs: **Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 15
Avg. Num. of Units: 871
Directional Distribution: 65% entering, 35% exiting

Vehicle Trip Generation per Unit

Average Rate	Range of Rates	Standard Deviation
0.15	0.10 - 0.32	0.04

Data Plot and Equation



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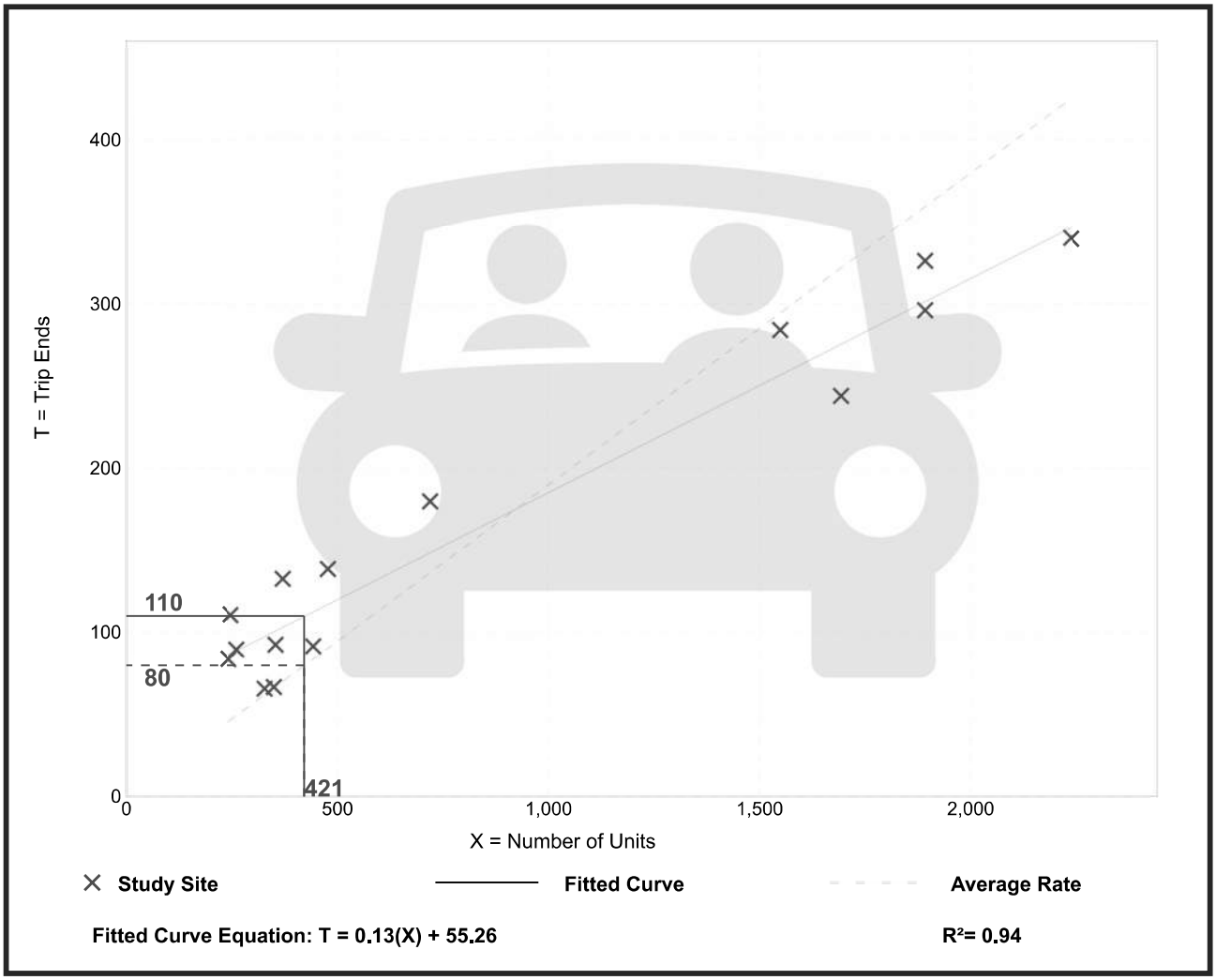
Continuing Care Retirement Community
(255)

Vehicle Trip Ends vs: **Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 15
Avg. Num. of Units: 871
Directional Distribution: 39% entering, 61% exiting

Vehicle Trip Generation per Unit

Average Rate	Range of Rates	Standard Deviation
0.19	0.14 - 0.45	0.07

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

RIVERSTONE
LAND SURVEYING • ENGINEERING • DESIGN

June 7, 2024

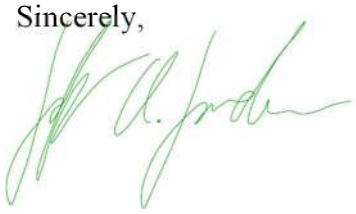
Mr. Nick Sugar, AICP, City Planner
City of Hudson, Community Development
1140 Terex Road,
Hudson, Ohio 44236

Re: Laurel Lake Development Plan, 200 Laurel Lake Drive - NOI

Mr. Sugar
The proposed development of Laurel Lake will disturb more than 1 acre of land, and therefore prior to earth disturbing activities the owner will need to file a Notice of Intent (NOI) with the Ohio Environmental Protection Agency (Ohio EPA). The improvement plan includes a similar note on sheet C9.01. The Riverstone Company will work with Laurel Lake to ensure the NOI is submitted to the Ohio EPA, prior to construction.

Should you have any questions pertaining to this letter or any submittals please contact our office at your earliest convenience.

Sincerely,



Jeffrey. A. Jardine P.E.

3800 Lakeside Avenue Suite 100
Cleveland, Ohio 44114
Phone 216•491•2000 • Fax 216•491•9640
Internet • www.riverstonesurvey.com

8150 Sterling Ct.
Mentor, OH 44060
+1 440.951.9000

March 13, 2025

Mr. John Ducatman, RA.
RDL Architects
16102 Chagrin Boulevard
Shaker Heights, Ohio 44120
johnd@rdlarchitects.com

RE: Laurel Lake Wetland Delineation – Pond 1

Dear Mr. Ducatman:

Verdantas, LLC (formerly CT Consultants, Inc.) prepared the Wetland Delineation Report for the Laurel Lake, Hudson, Ohio property in August 2022. We have been requested to provide clarification around Pond-1 jurisdiction and the type of surface water feature this is considered.

Pond-1 as labeled on the attached Water Resource Map for Laurel Lake, is considered a tributary impoundment under (a)(3) of the Waters of the United States (WOTUS) Regulatory Ruling. Pond-1 does not contain wetland vegetation and is not considered a wetland by definition. This feature is an open water impoundment that extends upstream as a part of Lake Forest on the north side of Boston Mills Road. This feature is an impoundment of an unnamed tributary to Brandywine Creek, that drains to the Cuyahoga River and ultimately into Lake Erie.

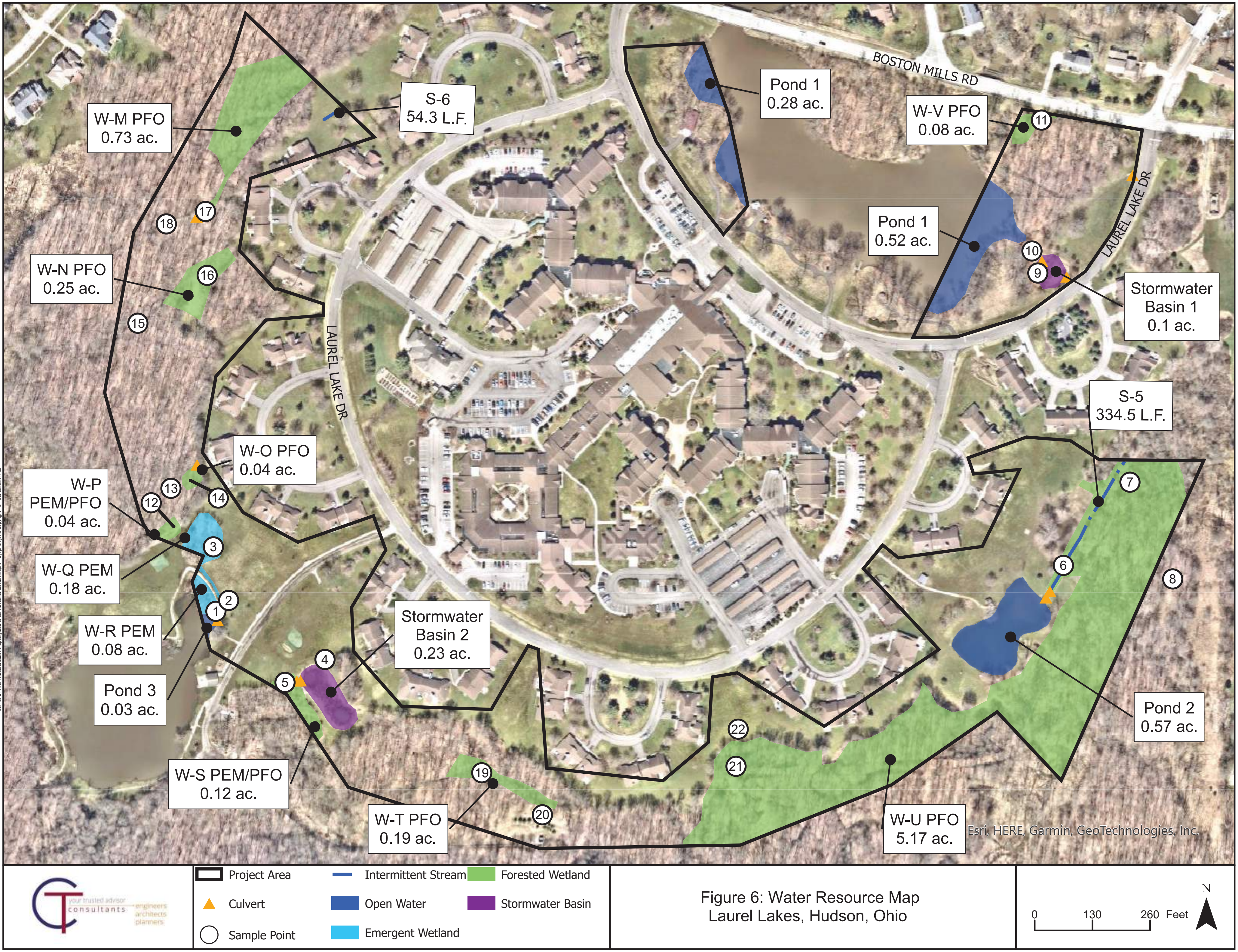
I hope the preceding information provides the necessary clarification.

Respectfully,

Carrie Ricker
Project Manager
cricker@verdantas.com
(440) 530-2208

CC:
Lene Hill, PE, LEEP AP; LHill@verdantas.com
John Crawford, PS; JCrawford@verdantas.com

Attachment A



CT consultants — your trusted advisor — engineers architects planners

Figure 6: Water Resource Map
Laurel Lakes, Hudson, Ohio

Your submission

Submitted Mar 17, 2025 at 1:49pm

Contact Information

Jeffrey Jardine

Email address
jjardine@riverstonesurvey.com

Phone Number
216-491-2000 ext. 211

Mailing Address
3800 Lakeside Avenue Suite 100, Cleveland, OH 44114

Locations

1 location total

PRIMARY LOCATION

200 LAUREL LAKE DR
Hudson, OH 44236

Project Information

Detailed Project Description: *
Construction of 7 buildlings for a total of 14 units for senior living and the construction of a new access road with fire department turnaround for 2 of the 7 bulidings.

Proposed Use *
Continuing Care Retirement Community

Gross Area of Proposed Building *
0.9443

Height of Building *
25

Estimated Cost of Project
$1,500,000

Estimated total number of employees
no change

All Parcels Involved with Application

Parcel Number
3203045

Site Improvement Set-Backs and Information

Front
100

Back
--

Left
--

Right
--

Open Space
117.97

Lot Coverage Percentage
16.9

Are there any wetlands on the property? *
Yes

Acreage of Wetland *
7.21

Engineer Information

Name *
Jeffrey A. Jardine

Engineering Firm *
The Riverstone Company

Mailing Address *
3800 Lakeside Avenue, Suite 100
Cleveland, OH 44114

Phone Number *
2164912000 ext 211

E-Mail *
jjardine@riverstonesurvey.com

Architect Information

Name *
Eileen Nacht

Architect Firm *
RDL Architects

Mailing Address *
21111 Chagrin Blvd, Suite 110
Beachwood, OH 44122

Phone Number *
2167524300 ext 166

E-Mail *
eileen@rdlarchitects.com

Contractor Information

Name *
To Be Determined

Company *
To Be Determined

Mailing Address *
To Be Determined

Phone Number *
To Be Determined

E-Mail *
To Be Determined

Attorney Information

Name
--

Law Firm
--

Mailing Address
--

Phone Number
--

E-Mail
--

PC Meeting Attendance Authorization

The following persons are authorized to represent this application with respect to all matters associated with it. *
Jeff Jardine, Tony Berardi

Choose a future Planning Commission meeting date for your application: *
04/14/2025

By checking this box, I do hereby certify that the information to the City of Hudson in and with this application is true and accurate and consents to employees and/or agents of the City of Hudson entering upon the premises of this application for purposes of inspection and verification of information pertaining to the application, and if this application is approved, to verify conformance to requirements and conditions of such approval. I acknowledge that City reviews or approvals do not absolve the subject property from deed restrictions, easements, or homeowner association covenants, restrictions, or regulations regarding structures and uses on the property. *
☑

CT consultants
engineers • architects • planners
A Verdantas Company

Memorandum

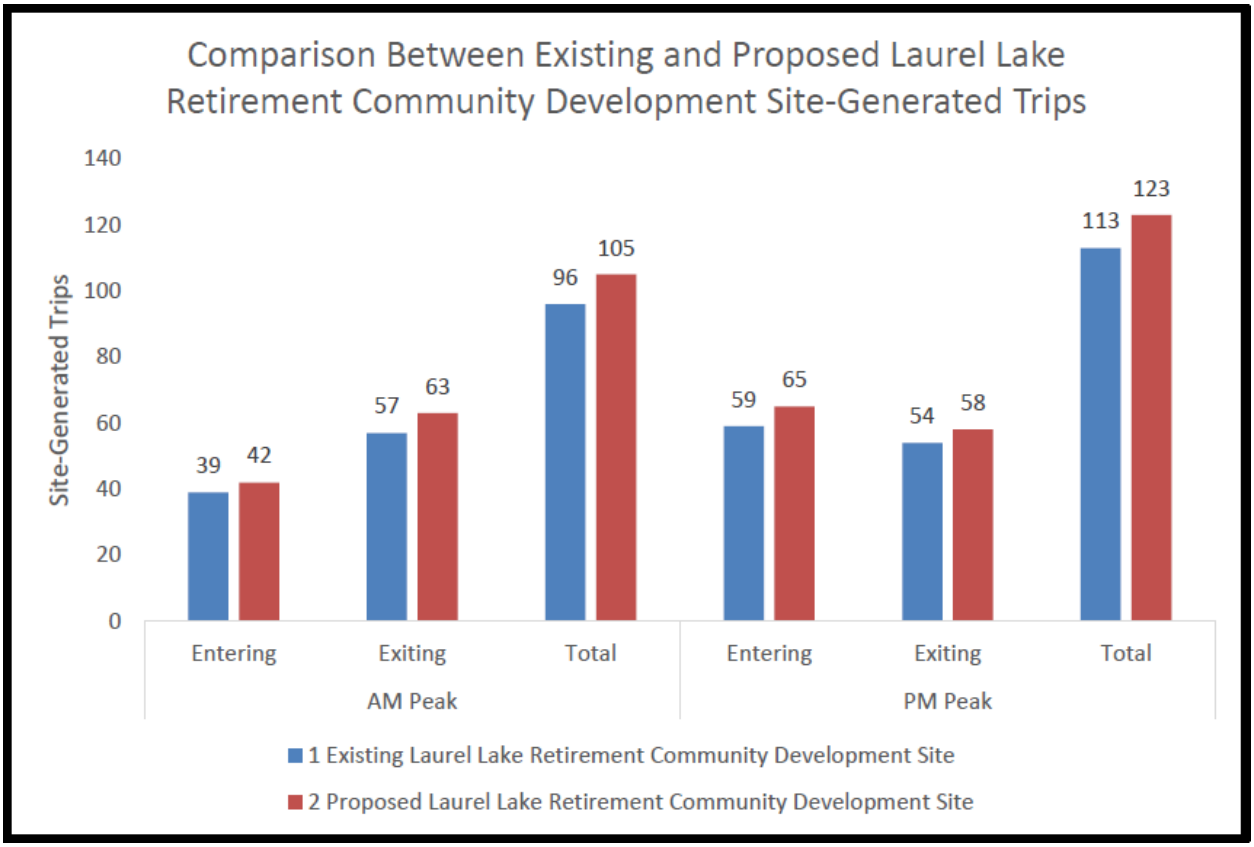
To: Eileen Nacht, AIA, LEED AP, EDAC
RDL Architects

From: Paul Ciupa, Senior Traffic Engineer
Lene Hill, PE, LEED AP

Subject: Laurel Lake Retirement Community
Trip Generation Study

Date: December 12, 2024

On May 24, 2024, CT Consultants prepared a Trip Generation Study for the Laurel Lake Retirement Community using the most recent Institute of Transportation Engineers Common Trip Generation Rates (AM/PM Peak Hour) (Trip Generation Manual, 11th Edition) Publishing Date**:** 9/20/2021. The chart from that Trip Generation Study shows that the number of trips that are generated are quite low, which is to be expected from a retirement community.



The trip-generation study shows that only a total of 9 trips and 10 trips are anticipated to increase with the addition of 7 duplexes at the existing Laurel Lake Retirement Community Development site. The AM Peak Hour total of the proposed site shows 42 entering and 63 exiting trips. This amount is split between the two intersections with Boston Mills Road over one hour in the AM Peak Hour. This is less than one vehicle entering the site per minute split between the two Boston Mills Road intersections and approximately one vehicle exiting per minute. The same is true for the PM Peak Hour where there is approximately one (1) vehicle entering and exiting per minute split between the two (2) Boston Mills Road intersections.

The principal issue to be considered for each home is the sight distance for the driver when exiting the driveway. The sight distance is crucial for driver safety and an especially important design element for intersections and driveways. The approximate centerline distance from the T-Intersection north of 59 Laurel Lake Drive is 105 feet while the approximate centerline distance from the T-Intersection south of 60 Laurel Lake Drive is 80 feet. These distances shall be used to determine the intersection sight distances for each of the proposed homes on Laurel Lake Drive.

The following is from the most recent edition of the **Federal Manual of Traffic Control Devices 11th Edition, December 2023**. This applies to all road/driveway intersections.

Section 2B.08 Right-of-Way Intersection Control Considerations

Guidance:

Before converting to a more restrictive form of right-of-way control at an unsignalized intersection, the following alternative treatments to address safety, operational, or other concerns should be among those to be considered:
Where yield or stop controlled, installing Yield Ahead or Stop Ahead signs on the appropriate approaches to the intersection.

- *Removing parking on one or more approaches*

  Since on street parking is not permitted on Laurel Lake Drive this will not be an issue.

- *Removing sight distance obstructions*

  Landscaping will not be permitted within fifteen feet of the homes and Laurel Lake Drive.

The following excerpts are from the **Ohio Department of Transportation Location and Design Manual - Volume 1, Published: July 19, 2024** which is used for roadway design.

201.3 Intersection Sight Distance (ISD)

Intersections generally have a higher potential for vehicular conflict than a continuous section of roadway due to the occurrence of numerous traffic movements. Providing adequate sight distance at the intersection can greatly reduce the likelihood of these conflicts.

The driver of a vehicle approaching an intersection should have an unobstructed view of the entire intersection and sufficient lengths along the intersecting highway to permit the driver to anticipate and avoid potential collisions. When entering or crossing a highway, motorists should be able to observe the traffic at a distance that will allow them to safely make the desired movement. The methods for determining sight distance needed by drivers approaching an intersection are based on the same principles as stopping sight distance, but incorporate modified assumptions based on observed driver behavior at intersections.

To enhance traffic operations, intersection sight distance should be provided at all intersections. **(As shown in the diagrams at the end of this report, the intersection sight distance is provided at the driveways for 59 Laurel Lake Drive and 60 Laural Lake Drive).**

If intersections sight distance cannot be provided due to environmental or right-of-way constraints, then as a minimum, the stopping sight distance for vehicles on the major road should be provided. By providing only stopping sight distance, this will require the major-road vehicle to stop or slow down to accommodate the maneuver of the minor-road vehicle. If the intersection sight distance cannot be attained, additional safety measures should be provided. These may include, but are not limited to, advance warning signs and flashers and/or reduced speed limit zones in the vicinity of the intersection.

201.3.1 Sight Triangles

Specified areas along intersection approach legs and across their included corners should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. These unobstructed areas are known as sight triangles (see Figure 201-4). The

waiting vehicle is assumed to be located at a minimum of 14.4 ft. and preferably 17.8 ft. from the through road edge of traveled way. **(For driveway design, we have assumed the waiting vehicle is assumed to be 5 feet from the through road edge of traveled way.)** The position of the waiting vehicle is the vertex of the sight triangle on the minor road, otherwise referred to as the decision point. It represents the typical position of the minor-road driver's eye when a vehicle is stopped relatively close to the major road. The left edge of the moving vehicle on the through road is assumed to be a ½ lane width for vehicles approaching from the left, or 1 ½ lane widths for vehicles approaching from the right. The design speed of the through road is used to select the appropriate ISD length (see Figure 201-5). The dimension "b" in Figure 201-4 is the ISD length.

The provision of sight triangles allows the driver on the major road to see any vehicles stopped on the minor road approach and to be prepared to slow or stop, if necessary.

201.3.2.1 Left Turn from the Minor Road

The intersection sight distance along the major road is determined by the following formula:

English Units: ISD = 1.4 7x V major x tg

ISD = intersection sight distance (length of the leg of sight triangle along the major road) (ft)

V major = design speed of major road (mph) **(A speed of 15 mph was used for the calculation of the ISD).**

tg = time gap for minor road vehicle to enter the major road (sec.)

The design values for intersection sight distance for passenger cars are shown in Figure 201-5.

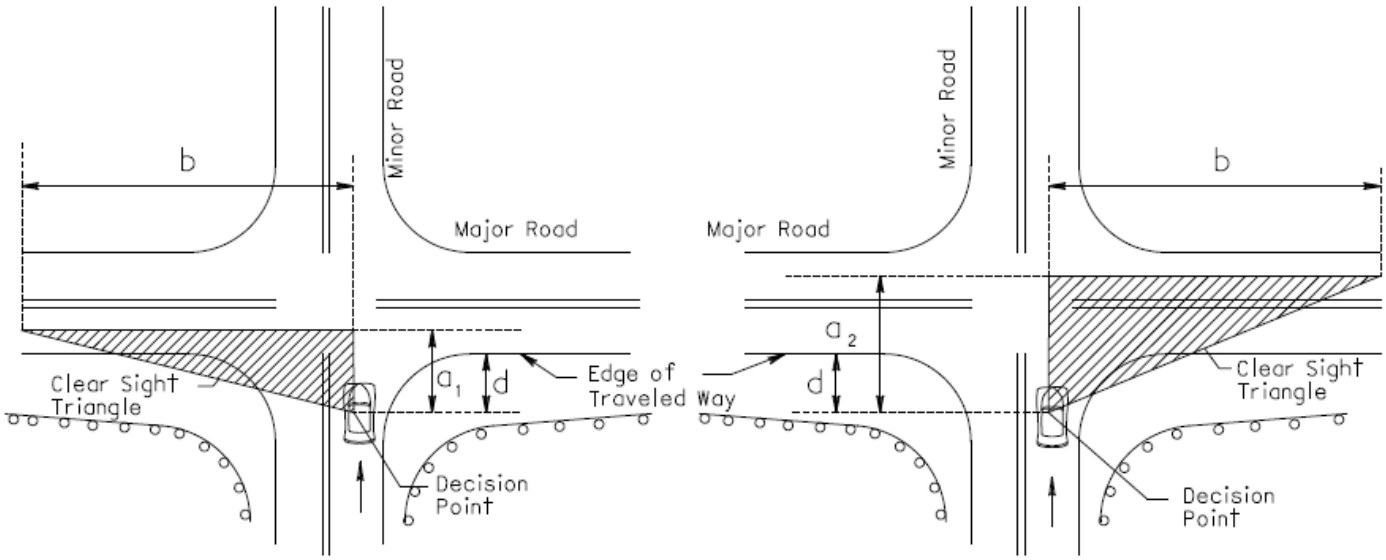
201.3.2.2 Right Turn from the Minor Road

The intersection sight distance for right turns is determined using the same methodology as that used for left turns, except that the time gaps differ. The time gap for right turns is decreased by 1.0 second. Also, the sight triangle for traffic approaching from the left should be used for right turns onto a major road. The design values for intersection sight distance for passenger cars are shown in Figure 201-5.

INTERSECTION SIGHT TRIANGLES

201-4

REFERENCE SECTION
201.3.1 & 201.3.3



Sight Triangle for Viewing Traffic Approaching from the Left

Sight Triangle for Viewing Traffic Approaching from the Right

DIAGRAM A - SIGHT TRIANGLES

a_1 = The distance, along the minor road, from the decision point to 1/2 the lane width of the approaching vehicle on the major road.

a_2 = The distance, along the minor road, from the decision point to 1 1/2 the lane width of the approaching vehicle on the major road.

b = Intersection Sight Distance

d = The distance from the edge of the traveled way of the major road to the decision point. The distance should be a minimum of 14.4′ and 17.8′ preferred.

INTERSECTION SIGHT DISTANCE

201-5

REFERENCE SECTION 201.3, 201.3.1, 201.3.2 & 201.3.3

(See Following Page for Additional Figures & Notes)

HEIGHT OF EYE 3.50′ HEIGHT OF OBJECT 3.50′

DESIGN SPEED (mph)	Passenger Cars Completing a Left Turn from a Stop (assuming a t_g of 7.5 sec.)		Passenger Cars Completing a Right Turn from a Stop or Crossing Maneuuver (assuming a t_g of 6.5 sec.)	
	ISD (ft.)	K-CREST VERT. CURVE	ISD (ft.)	K-CREST VERT. CURVE
15	170	10	145	8
20	225	18	195	14
25	280	28	240	21
30	335	40	290	30
35	390	54	335	40
40	445	71	385	53
45	500	89	430	66
50	555	110	480	82
55	610	133	530	100
60	665	158	575	118
65	720	185	625	140
70	775	214	670	160

$$ISD = 1.47 \times V_{major} \times t_g$$

ISD = intersection sight distance (ft.)

V_{major} = design speed of major road (mph)

t_g = time gap for minor road vehicle to enter the major road (sec.)

Figure 201-5 of the **Ohio Department of Transportation Location and Design Manual - Volume 1** shows that an ISD = intersection sight distance (feet) of 170 feet is required for a vehicle making a left turn out of the driveway and an ISD = intersection sight distance (feet) of 145 feet for a vehicle making a right turn. The road elevation is negligible for these calculations.

The Left Turn and Right Turn Intersection Sight Distance requirements for 60 Laurel Lake Drive meet the standards as set forth in the **Ohio Department of Transportation Location and Design Manual - Volume 1, Published: July 19, 2024.**

The Left Turn and Right Turn Intersection Sight Distance requirements for 59 Laurel Lake Drive meet the standards as set forth in the **Ohio Department of Transportation Location and Design Manual - Volume 1, Published: July 19, 2024**